# Panasonic ideas for life



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'ECO IDEAS' FOR LIFESTYLES: WE WILL PROMOTE LIFESTYLES WITH VIRTUALLY ZERO CO, EMISSIONS THROUGHOUT THE WORLD. SPECIFICALLY:

- 30% of total sales will be achieved through "eco labeled" products. This includes both external labels such as EU eco flower, Blue Angel or Nordic Swan, and our internal 'eco ideas' label, which is given to products which achieve industry-leading environmental performance. 11
- 3,500,000t of contribution in reducing  ${\rm CO_2}$  emissions with energy solution products (such as Solar Panels, Fuel Cells, Heat Pumps, Energy Recovering Ventilation, LED and Energy Saving Lamps). <sup>2)</sup>
- Educate 100,000 children on eco related topics through the 'kids school eco learning' programme.

'ECO IDEAS' FOR BUSINESS-STYLES: WE WILL CREATE AND PURSUE BUSINESS-STYLES THAT MAKE THE BEST USE OF RESOURCES AND ENERGY:

- 99% of waste materials generated in European production will be recycled <sup>31</sup>, meaning less than 1% will be allowed to go to landfill.
- 1,000t of reduction in  ${\rm CO_2}$  emissions from Panasonic's offices across Europe.  $^{4)}$
- 7,000t of contribution in reducing CO<sub>2</sub> emissions from production activities. <sup>5)</sup>
- Products awarded the 'eco ideas' label include those whose environmental performance is greater than the industry's No.2 model by 10% or more at the time of release, and those which achieve the highest rank in the market by external environmental labels in accordance to environmental performance.
- An amount of CO<sub>2</sub> reduction compared to the estimated figure assuming no improvement Measures were taken after March 31, 2006.
- 3) Includes all Panasonic Group's European factories with the exception of IPS-Alpha and Panasonic 4) Based on offices with 100 employees or more; based on FY 2009.
- An amount of CO<sub>2</sub> reduction compared to the estimated figure assuming no improvement. Measures were taken after March 31, 2006.

### PANASONIC GLOBAL VISION

The Panasonic Group strives to be a green innovation company with a global perspective. Its aim is to be the leading green company in the electronics sector by 2018 - the year that Panasonic celebrates its centenary.

### **HEATING & COOLING**

Panasonic Home Appliances is the European leader in heating and cooling solutions for the home. When it comes to market share, Panasonic is the No. 1 company for home solutions in Europe, the No. 1 company for domestic cooling & heating solutions in Spain, and the No. 1 company for heating systems in the Nordic countries.

Panasonic invests significantly in Research & Development, with a strong network of design, manufacturing and training centres throughout Europe. As part of Panasonic's continued programme of growth, a new R&D facility is open in Langen, Germany. The centre is focused on developing products to meet the needs of European customers, as well as European legislation.

### ECO IDEAS FOR LIFESTYLES

Panasonic is making the environment central to all of its business activities. It will become the No. 1 green innovation company in the electronics sector through its eco ideas initiative: eco ideas for lifestyles to change people's lives and eco ideas for business to bring forth green innovation in Panasonic's own global business operations.

Panasonic always strives to offer better living, with a sense of joy, security and comfort, as well as with virtually zero  $CO_2$  emissions in the entire house or building.

### ECO IDEAS FOR BUSINESS

Panasonic will create and pursue a business-style which makes the best use of resources and energy. As well as making eco-conscious products and delivering them to customers, Panasonic aims to reduce waste of energy and resources during the manufacturing process. As well as tackling its own business, Panasonic will take a leading role for sharing and working on environmental challenges in entire societies.















# **heating**and**cooling**systems



FDITORIAL

AQUAREA

- 16 ADUAREA AND ADUAREA PRO, ADUAREA'S NEW AIR-TO-WATER HEAT PLIMP
- "GREEN" HIGH-EFFICIENCY IDEAS FOR A CLEANER FUTURE
- REALISING ECO-CONSCIOUS SOLUTIONS IN ENTIRE TOWNS 20
- 12 PANASONIC PROFESSIONAL
- PANASONIC AIR CONDITIONING PRODUCTS YOU CAN TRUST

PANASONIC - LEADING THE WAY IN HEATING & COOLING

- NEW LINE-UP
- NEW AQUAREA 3 AND 5 KW BI-BLOC AND 6 AND 9 KW MONO-BLOC HEAT PUMP + PHOTOVOLTAIC
- INVERTER+ COMPRESSOR FOR EVEN GREATER EFFICIENCY
- WHAT MAKES THE AIR-TO-WATER HEAT PUMP WORK
- CONTROL YOUR HEAT PUMP WITH YOUR SMART DEVICE -SMARTPHONE &
- CONNECTIVITY
- HP BI-BLOC AND MONO-BLOC APPLICATION EXAMPLES
- 35 HP MONO-BLOC APPLICATION EXAMPLES
- AQUAREA LINE-UP
- BI-BLOC // HIGH CONNECTIVITY // 3 AND 5 KW AQUAREA // HEATING ONLY SDF // HEATING AND COOLING - SDC
- AQUAREA MDF & MDC // MONO-BLOC // HIGH CONNECTIVITY // 6 AND 9 KW AQUAREA // HEATING AND COOLING // SINGLE-PHASE
- AQUAREA SDF // BI-BLOC // HIGH CONNECTIVITY // HEATING ONLY SINGLE-
- AQUAREA SDC // BI-BLOC // HIGH CONNECTIVITY // HEATING AND COOLING SINGLE-PHASE // THREE-PHASE
- AQUAREA MDF // MONO-BLOC // HIGH CONNECTIVITY // HEATING ONLY SINGLE-PHASE // THREE-PHASE
- AQUAREA MDC // MONO-BLOC // HIGH CONNECTIVITY // HEATING AND SINGLE-PHASE // THREE-PHASE
- AQUAREA SXF // BI-BLOC // T-CAP // HEATING ONLY SINGLE-PHASE // THREE-
- AQUAREA SXC // BI-BLOC // T-CAP // HEATING AND COOLING SINGLE-PHASE // THREE-PHASE
- AQUAREA MXF // MONO-BLOC // T-CAP // HEATING ONLY SINGLE-PHASE // THREE-PHASE
- AQUAREA MXC // MONO-BLOC // T-CAP // HEATING AND COOLING SINGLE-PHASE // THREE-PHASE
- AQUAREA SHF // BI-BLOC // HT // HEATING ONLY SINGLE-PHASE // THREE-
- AQUAREA MHF // MONO-BLOC // HT // HEATING ONLY SINGLE-PHASE // THREE-PHASE
- AQUAREA PRO // NEW ECOI 2-WAY 6 SERIES WITH WATER HEAT EXCHANGER
- AQUAREA PRO // NEW GAS VRF ECO G WITH WATER HEAT EXCHANGER
- HEATING CAPACITY TABLE BASED ON OUTLET TEMPERATURE AND OUTSIDE
- ACCESSORIES
- ERROR CODES TABLE

#### DOMESTIC

- WELCOME TO NEW DOMESTIC RANGE 80
- THE NEW ETHEREA RANGE PURE EFFICIENCY WITH ECONAVI
- ECONAVI SUNLIGHT SENSOR
- ECONAVI INTELLIGENT SENSORS
- NANOE-G AIR PURIFYING SYSTEM
- INVERTER TECHNOLOGY
- PANASONIC TECHNOLOGY FOR COMFORT 92
- CONTROL YOUR AIR CONDITIONER WITH YOUR SMART DEVICE SMARTPHONE & INTERNET-
- CONNECTIVITY
- DOMESTIC AIR CONDITIONER RANGE
- FFATURE EXPLANATIONS 100
- FEATURE COMPARISON
- WALL MOUNTED ETHEREA // INVERTER+ // SILVER
- WALL MOUNTED ETHEREA // INVERTER+ // SILVER
- WALL MOUNTED ETHEREA // INVERTER+ // WHITE
- WALL MOUNTED ETHEREA // INVERTER+ // WHITE
- WALL MOUNTED FTHEREA // INVERTER+
- WALL MOUNTED RE TYPE // STANDARD INVERTER 112
- WALL MOUNTED TYPE // INVERTER+ // -15 °C
- WALL-MOUNTED TYPE // STANDARD HEAT PUMP
- WALL-MOUNTED TYPE // STANDARD COOLING ONLY
- FLOOR CONSOLE TYPE // INVERTER+
- 122 SINGLE SPLIT FLOOR OR CEILING TYPE // INVERTER
- 2X1 WALL MOUNTED MRE TYPE // STANDARD INVERTER
- ETHEREA MULTI SPLIT 2X1 // INVERTER+ 126
- ETHEREA MULTI SPLIT 2X1 // INVERTER+
- 130 ETHEREA MULTI SPLIT 3X1 // INVERTER+
- ETHEREA MULTI SPLIT 4X1 // INVERTER+
- FREE MULTI SYSTEM
- INDOOR UNITS FOR FREE MULTI COMBINATIONS
- OUTDOOR LINITS FOR FREE MULTI COMBINATIONS
- FREE MULTI COMBINATIONS 138
- SELF DIAGNOSIS DESCRIPTION AND CHECK POINT TABLE
- OPTIONAL ACCESSORIES



### AQUAREA AIR TO WATER HEAT PUMP

Aquarea's new air-to-water heat pump for residential applications from 3 kW to 16 kW. The biggest line-up on the market to meet your demands! Cost-effective and environmentally friendly.

This creates perfect comfort whatever the weather conditions, even at outdoor temperatures as low as -15 °C.

Panasonic new heat pumps are designed in response to the new demand for low consumption housing, with high efficiency and low running costs.



### DOMESTIC AIR TO AIR HEAT PUMP

With its innovative design, high efficiency and incomparable purification system, the range has been designed with your clients in mind. Above all, it is also a range for air conditioning professionals, such as yourself, thanks to its broad range of products which are capable of conditioning rooms of all sizes – always with optimal efficiency and incomparable ease of installation. The Etherea range guarantees that you are offering your clients the very best.

#### COMMERCIAL

146 WELCOME TO THE COMMERCIAL RANGE

#### 148 PACI ELITE

- NEW 360° AIR FLOW 4 WAY 90x90 CASSETTE PACI ELITE 150
- PACI ELITE: OUTDOOR UNIT
- PACI ELITE: INDOOR UNIT
- RANGE OF INDOOR/DIJTDOOR/AHIJ KIT JINITS PACI 154
- 156 WALL PACE FLITE // INVERTER+
- 4-WAY 60x60 CASSETTE PACI FLITE // INVERTER+ 158
- 4 WAY 90x90 CASSETTE PACI ELITE // INVERTER+ 160
- LOW STATIC PRESSURE HIDE AWAY PACI ELITE // INVERTER+
- HIGH STATIC PRESSURE HIDE AWAY PACI ELITE // INVERTER+
- CEILING PACI ELITE // INVERTER+
- HIGH STATIC PRESSURE HIDE AWAY 8-10 HP PACI // 3 PHASE INVERTER+
- 170 TWIN TRIPLE AND DOLIRLE TWIN SYSTEM
- CONTROL SYSTEMS FOR PACI 172
- PACI CONNECTIVITY 174
- PACI CONNECTIVITY INDOOR UNITS
- AIR HANDLING UNIT 28 KW FOR PACI
- 180 PACI INDOOR UNITS DIMENSIONS
- 184 PACI OUTDOOR UNITS DIMENSIONS
- 186 **FS INVERTER**
- FS INVERTER OUTDOOR UNITS 188
- FS INVERTER INDOOR UNITS 189
- RANGE OF INDOOR/OUTDOOR UNITS FS
- 4-WAY 60x60 CASSETTE // INVERTER
- 4-WAY 90x90 CASSETTE FS // INVERTER
- 196 4-WAY 90x90 CASSETTE FS // HEAT PUMP
- 198 4-WAY 90x90 CASSETTE ES // COOLING ONLY
- LOW STATIC PRESSURE HIDE AWAY ES // INVERTER
- 200
- LOW STATIC PRESSURE HIDE AWAY FS // HEAT PUMP 202
- LOW STATIC PRESSURE HIDE AWAY FS // COOLING ONLY
- HIGH STATIC PRESSURE HIDE AWAY FS // INVERTER
- HIGH STATIC PRESSURE HIDE AWAY FS // HEAT PUMP
- HIGH STATIC PRESSURE HIDE AWAY FS // COOLING ONLY
- 212 CEILING ES // INVERTER
- CEILING ES // HEAT PLIMP 214
- CEILING FS // COOLING ONLY 216
- TWIN FLEXI SYSTEM FS // INVERTER // HEAT PUMP // COOLING ONLY
- CONTROL SYSTEMS FOR FS

#### VRF SYSTEMS

274 THE NEW PANASONIC INDUSTRIAL VRF SYSTEMS

#### NEW FS MULTI VRF FROM PANASONIC 226

- FS MULTI OUTDOOR UNITS 228
- FS MULTI CONNECTIVITY
- INDIVIDUAL CONTROL SYSTEMS
- 236 COMBINATION TABLE
- 237 BRANCH PIPES
- ES MULTI UNITS RANGE 238
- FEATURE COMPARISON 240
- 4, 5 AND 6 HP, OUTDOOR UNITS 242 8 AND 10 HP, OUTDOOR UNITS
- 246 WALL-MOUNTED TYPE // SILVER COLOUR
- 248 WALL-MOUNTED TYPE // WHITE COLOUR // WHITE COLOUR WIDE TYPE
- 250 CASSETTE TYPE (ANVAN)
- CASSETTE TYPE (90x90) 252
- LOW-SILHOUETTE // DUCT TYPE // LOW STATIC PRESSURE 254
- LOW-SILHOUETTE // DUCT TYPE // MID STATIC PRESSURE 256

#### PANASONIC INTRODUCING THE NEW ECOI 258

- 260 ECOI OUTDOOR UNITS RANGE
- 262 2-PIPE MINI ECOI LE1 SERIES
- 266 MINI FCOI HIGH FFFICIENCY
- 2-PIPE ECOI 6N SERIES 268
- 8-12 HP // 2-PIPE ECOi 6N SERIES 272
- 14-16 HP // 2-PIPE ECOi 6N SERIES 274
- 276 18-20 HP // 2-PIPE ECOi 6N SERIES
- 2-PIPE ECOI 6N SERIES // COMBINATION FROM 22 TO 60 HP
- 280 10-12 HP // 2-PIPE ECOi 6N SERIES // HIGH COP SETTING MODEL
- 282 14-16 HP // 2-PIPE ECOI 6N SERIES // HIGH COP SETTING MODEL
- 2-PIPE ECOL AN SERIES // HIGH COP SETTING MODEL // COMBINATION FROM 18 TO 48 HP 284
- 3-PIPE ECOi MF1 SERIES 286
- 290 8-16 HP // 3-PIPE ECOi MF1 SERIES
- 3-PIPE ECOI MF1 SERIES // COMBINATION FROM 18 TO 48 HP

### PANASONIC INTRODUCING THE GAS DRIVEN VRF

- ECO G OUTDOOR UNITS RANGE 296
- 298 ECO G AND ECO G MILITI
- FCO G WATER HEAT EXCHANGER FOR HYDRONIC APPLICATIONS 300
- ECO G AND ECO G MULTI 302
- ECO G 3 WAY MULTI 304
- FEATURES // PANASONIC'S DIAGNOSIS SOFTWARE

#### 308 THE NEW PANASONIC SOLUTION FOR CHILLED AND HOT WATER PRODUCTION!

- NEW ECOI 2-PIPE WITH WATER HEAT EXCHANGER FOR CHILLED AND HOT WATER PRODUCTION 312 NEW ECO G WITH WATER HEAT EXCHANGER FOR CHILLED AND HOT WATER PRODUCTION
- INDOOR LINITS FOR MINI FCOI, FCOI AND FCO G 314
- VRF INDUSTRIAL INDOOR LINITS RANGE 316
- U1 TYPE // 4-WAY 90x90 CASSETTE // SEMI CONCEALED CASSETTE
- Y1 TYPE // 4-WAY 60x60 CASSETTE // MINI SEMI CONCEALED CASSETTE
- L1 TYPE // 2-WAY CASSETTE
- D1 TYPE // 1-WAY CASSETTE // SEMI CONCEALED SLIM CASSETTE
- 326 F2 TYPE // LOW STATIC PRESSURE HIDE AWAY
- M1 TYPE // SLIM LOW STATIC PRESSURE HIDE AWAY // CONCEALED DUCT 328
- F1 TYPE // HIGH STATIC PRESSURE HIDE AWAY // CONCEALED DUCT HIGH-STATIC PRESSURE 330 T1 TYPE // CEILING 332
- 334 K1 TYPE // WALL MOUNTED
- P1 TYPE // FLOOR STANDING
- 338 R1 TYPE // CONCEALED FLOOR STANDING

#### 340 CONTROL SYSTEMS FOR PACI AND VRF

- INDIVIDUAL CONTROL SYSTEMS
- CENTRALISED CONTROL SYSTEMS
- CONNECTIVITY WITH ECOI AND GHP
- ECOI CONNECTIVITY INDOOR UNITS
- VRF RENEWAL
- PANASONIC VRF DESIGNER: NEW SOFTWARE FOR EASY VRF CALCULATION
- BRANCHES AND HEADERS 362
- CONTROL EQUIPMENT EXTERNAL DIMENSIONS
- ECOI 6N INDOOR UNITS DIMENSIONS



#### ENERGY RECOVERY VENTILATION

- 376 PANASONIC VENTILATION SOLUTIONS
- AIR HANDLING UNIT KIT
- AHU CONNECTION KIT. 28 KW AND 56 KW FOR FCOI AND GHP
- ENERGY RECOVERY VENTIL ATOR
- AIR CURTAIN



## COMMERCIAL AIR TO AIR

Panasonic's Commercial air conditioners are impressively efficient. This range confirms our commitment to the environment. All our air conditioners use R410A gas. This environmentally friendly gas is totally harmless to the ozone layer. Our Inverter compressors optimise performance and thus reduce energy costs.



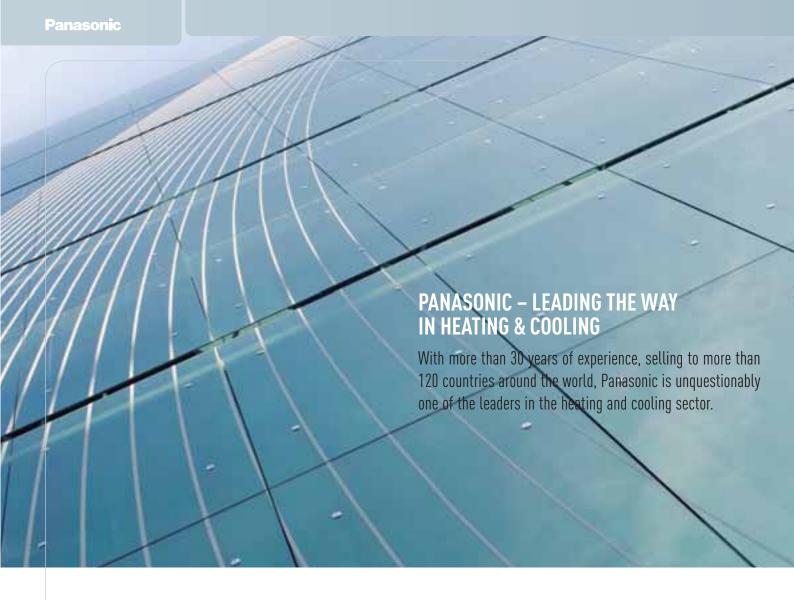
### **VRF SYSTEMS**

Professional solutions for all types of projects. The new Panasonic VRF system is specifically designed for energy saving, easy installation and high efficiency performance, with a wide choice of outdoor and indoor unit models and unique features which are designed for the most demanding offices and big buildings. Panasonic VRF Systems: ECOi (Mini ECOi VRF. 2-PIPE ECOi 6N series and 3-PIPE ECOi MF1 series), ECO G and FS Multi VRF.



### ENERGY RECOVERY VENTILATION

Energy recovery ventilators offer ventilation which increases comfort and saves energy. They efficiently recover the heat lost in ventilation during the heat recovery process. Energy consumption is dramatically reduced by using a counter-flow heat exchange element. Air conditioning load is reduced by approximately 20%, resulting in significant energy savings.



# HISTORY OF AIR CONDITIONING GROUP

Panasonic starts with a desire to create things of value. As hard work and dedication results in one innovative product after another, the fledgling company takes its first steps towards becoming the electronics giant of today.



1936 First electric Fan with Automatic Oscillation (36 cm table top model).



First room air conditioner launched for domestic installation.
Prior to this date, air conditioners were large and only for commercial use. Panasonic developed the first compact air conditioner for windows; it was lightweight and easy to install, improving the quality of life in Japanese homes.
1,100 units were sold in Japan in the first year, and just two years later, in 1960, this figure rose to

1958

230,000.



1973
Panasonic launches the first highly efficient air-to-water heat pump in Japan.



1975
Panasonic becomes
the first Japanese air
conditioner
manufacturer in Europe.

The company is also a world leader in innovation as it has filed more than 91539 patents to improve its customers' lives. Moreover, Panasonic is determined to remain at the forefront of its market. In all, the company has produced more than 200 million compressors and its products are manufactured in 294 plants which are located all over the world. You can be assured of the extremely high quality of Panasonic's heat pumps. This wish to excel has made Panasonic the international leader in heating and turn-key air conditioning solutions for homes, medium-sized buildings such as offices and restaurants, and large-scale buildings. These offer maximum effectiveness, comply with the strictest environmental standards and meet the most avant-garde construction requirements of our time. At Panasonic we know what a great responsibility it is to install heating and cooling systems. Because offering you the best solutions in heating and cooling matters.



### **PANASONIC EUROPE**

Panasonic is committed to offering our customers innovative products in the heating and cooling market across Europe, which not only meet but exceed their requirements. Key to success is Panasonic's investment in R&D, manufacture and training to ensure innovative, cutting edge products and investment in our distribution channels and partners so that these products are accessible in Europe. Panasonic has developed a comprehensive network across Europe of training centers and training academies for installers, design offices and service teams in all major countries.



# PANASONIC FACTORIES AND R&D DEPARTMENT

There is a close relationship between R&D innovation and good manufacturing processes, and so Panasonic has placed its R&D facilities very close to its manufacturing bases. This ensures good integration between all divisions to deliver high quality and reliable solutions to our markets.



### 2002

The Ion and Oxygen Generator — two of the most important contributions to air conditioning systems.



### 2008

Etherea new concept of air conditioning systems: high efficiency and high performances with a great design. Etherea also includes a very innovative air quality sensor and air purifier in order to enjoy healthy air at home at all times.



### 2010

### New Aquarea

Panasonic has created Aquarea, an innovative new, low-energy system, designed to help you enjoy ideal temperatures and hot water in your home, even with extreme outdoor temperatures. Aquarea cools or heats to ensure maximum comfort.

Aquarea is far cleaner, safer, cheaper and environmentally friendly than alternatives using gas, oil and other electrical systems.



### 2011

New Eco i VRF solution
The new Panasonic VRF solution
for big buildings is the most
efficient in the industry in more
than 74% of combinations. ECO
i satisfies the most demanding
standards required by design
offices, architects, owners and
installers.



### 2012

New GHP units Pansonic's gas-driven VRF systems are ideal for projects where power restrictions apply. In 2012, Panasonic extends the Gas Heat Pump range with a new GHP line-up, new GHP G Power (electricity production) and the new Chiller Units.



# Ideas for a Cleaner Future

Panasonic is committed to developing environmentally-conscious products from three aspects: prevention of global warming, effective utilisation of resources and chemical substances management.



In an era when the world is tackling the reduction of  $CO_2$  emissions, Panasonic proposes a lifestyle with virtually zero  $CO_2$  emissions throughout the entire home.  $CO_2$  emissions are thoroughly reduced by enhancing energy-saving performance of home appliances and utilising building materials with high insulation performance. And energy required will be supplied by creating and storing energy by a combination of solar power generators, fuel cells and storage batteries. The Panasonic energy management system realises a lifestyle with virtually zero  $CO_2$  emissions by linking these benefits together and smartly controlling all energy use. Meanwhile, intelligent use will also be made of natural elements such as air, light, water and heat to realise a more comfortable lifestyle. Experience an ecological and comfortable lifestyle that only Panasonic can present.





# REALISING ECO-CONSCIOUS SOLUTIONS IN ENTIRE TOWNS

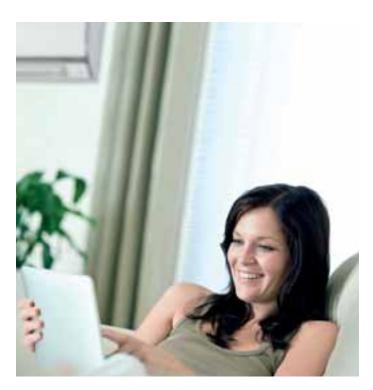
### **TIANJIN ECO-CITY**

Panasonic is taking part in a pioneering project by China and Singapore to create the Tianjin Eco-City, some 40 km from Tianjin city centre and 150 km from Beijing. Designed to be practical, replicable and scalable, the Tianjin Eco-city will demonstrate the determination of both countries in tackling environmental protection, resource and energy conservation, and sustainable development, and serve as a model for sustainable development for other cities in China. By 2020, there will be around 30 square kilometres of city capable of accommodating a population of around 400,000.



### HOME ENERGY MANAGEMENT SYSTEM

Panasonic is supplying each of the houses built in Tianjin Eco-City with a mini-VRF air conditioning system with Home Energy Management System (HEMS). The HEMS will be central to saving energy in homes. By linking a whole range



of domestic appliances, solar power generation equipment, electric vehicle chargers, storage batteries and other devices, the HEMS shows the amount of energy being used in the home. The system will indicate whether or not energy-saving goals are being achieved and will display advice on where further savings could be made.

By using easily-read displays on all screens throughout the home, homeowners will become more conscious of energy-saving activities and adopt a more natural and eco-friendly lifestyle.

### **FUJISAWA SUSTAINABLE SMART TOWN**

Panasonic is converting its former factory site in Fujisawa City in Japan, 50 km west of Tokyo, into a smart town deploying services and energy systems based on Panasonic's eco ideas for green lifestyles. Panasonic is working in partnership with eight other companies and Fujisawa City to build an innovative smart town. The developers, manufacturers and service providers will work closely together throughout every phase of the project, from the master planning stage to actual operation of the town that will have about 1,000 households spread over 19 hectares.

Homes will employ the full range of Panasonic's most advanced systems for energy production, storage and management. Houses will be fully self-sufficient by generating power from efficient solar modules and fuel cell systems, with energy stored in powerful lithium-ion batteries. Low energy lighting, air conditioning and household appliances will be interconnected via a computer system, and televisions and PCs will be used to display energy consumption and tips on savings.



### **SOFTWARE**

Panasonic provides bespoke software helping system designers, installers and dealers to very quickly design and size systems, create wiring diagrams and issue bills of quantities at the push of a button.



### ECOI VRF DESIGNER

The VRF Designer Software is very easy to use. By using it, engineers can develop projects quickly, by either using the drag and drop icons or the project wizard. It comes fully loaded with all appropriate Panasonic product details and

is designed with flexibility in mind so that several different system designs can be created within one project.

The program will check system designs and correction factors are automatically applied to indoor unit capacities, depending on height differences, piping lengths, indoor/outdoor capacity ratio and design conditions. VRF Designer will also calculate any additional amounts of refrigerant that may be required, based on configuration and piping lengths. Existing projects can easily be modified or even extended at a later stage. Reports can be exported and printed showing piping and wiring diagrams, power supply diagrams as well as bill of quantities.



### AQUAREA DESIGNER

This program allows HVAC designers, installers and distributors to identify the correct heat pump for a particular application from Panasonic's Aquarea range, calculate

the savings compared to other heat sources and very quickly calculate  $\mathrm{CO}_2$  emissions.

Using Panasonic's Aquarea Designer, projects can be developed simply and easily, by either using the Quick Design or Expert Design options. Each allows the user to build up the project data in a simple step-by-step process and choose to output reports (in either Quick or Large formats) as HTML files or as print outs.

Aquarea Designer will calculate the project's energy costs in terms of hot water, heating and pumping. It will show the equipment running times and calculate the COP (coefficient of performance). It then allows the designer to show clients a comparison with other equipment options such as heating by conventional gas-fired boilers, oil systems, wood, standard electric heating and electric night storage heaters. This compares running costs, initial investment costs and maintenance costs. The comparison can also be made for CO<sub>2</sub> emissions and savings.

### iPAD APP

For a quick and easy introduction to the Aquarea Heat Pump range, the iPad app can be used to show clients the benefits of this energy-efficient heating and hot water system.







### **Panasonic**

PRO Club

### PANASONIC PRO CLUB

Panasonic announces a new initiative for all professionals involved in the heating and cooling business - the Panasonic PRO Club (www.panasonicproclub.com). This exciting new portal provides distributors, installers, engineers and specifiers with a direct communication channel with one of the industry's major manufacturers.

The website contains a wealth of information from the latest versions of Panasonic's Aquarea and Etherea Design Software, to Technical Documentation, Catalogues and Images for the company's wide range of heating and cooling systems - all in an easy to navigate and use website.

Also, registered users will be able to access news regarding special promotions and take advantage of these offers, as well as access helpful business advice such as ideas and guidelines for showroom decoration or van livery featuring Panasonic logos and display material.

### www.panasonicproclub.com

or connect simply with your smartphone to the proclub using this  ${\tt QR}\colon$ 



## **Panasonic**

PRO Academy

### THE PANASONIC PRO-ACADEMY OPENS ITS DOORS

Panasonic takes its responsibility to its distributors, specifiers and installers seriously and has developed a comprehensive Training Programme. The Panasonic Pro-Academy encompasses the traditional hands-on approach, as well as embracing today's technology to offer an eLearning facility available 24 hours, 7 days a week!

### **NEW TRAINING COURSES COVER THREE LEVELS**

### Design, installation, and commissioning & trouble-shooting

Training courses include:

- VRF ECOi
- Aquarea air source heat pumps (MCS accredited)
- GHP (2012

The courses are offered on site at Panasonic's premises across Europe as well as via the Panasonic ProClub eLearning site. The Training Centres display Panasonic's latest product range and give delegates an opportunity to get hands-on experience with the latest controllers, indoor and outdoor units from the VRF ECOi, Etherea, GHP and Aquarea ranges.

# PANASONIC – AIR CONDITIONING PRODUCTS YOU CAN TRUST

The desire to advance has made Panasonic the international leader in air conditioning. Our industrial capabilities and firm commitment to the environment enable us to open new avenues of research and to develop innovative technologies which can enhance today's way of life.

Our ranges, from the domestic, to light industrial and VRF ranges, together with the new Aquarea heat pump system, are all designed to meet the construction needs and environmental demands of our time. At Panasonic we know what a great responsibility it is to install heating and cooling systems. Because offering you the best solutions in heating and cooling matters.



Aquarea's new air-to-water heat pump for residential applications from 3 kW to 16 kW. The biggest line-up on the market to meet your demands! Cost-effective and environmentally friendly.

This creates perfect comfort whatever the weather conditions, even at outdoor temperatures as low as -15 °C.

Panasonic new heat pumps are designed in

DOMESTIC AIR TO AIR HEAT PUMP

response to the new demand for low

and low running costs.

consumption housing, with high efficiency

With its innovative design, high efficiency and incomparable purification system, the range has been designed with your clients in mind. Above all, it is also a range for air conditioning professionals, such as yourself, thanks to its broad range of products which are capable of conditioning rooms of all sizes – always with optimal efficiency and incomparable ease of installation. The Etherea range guarantees that you are offering your clients the very best.

### **COMMERCIAL AIR TO AIR**

Panasonic's Commercial Air Conditioners are impressively efficient. This range confirms our commitment to the environment. All our air conditioners use R410A gas. This environmentally friendly gas is totally harmless to the ozone layer. Our Inverter compressors optimise performance and thus reduce energy costs.

PACI. Panasonic has developed an impressive range of highly efficient Commercial Air Conditioners. This range confirms our commitment to the environment. Our Inverter compressors optimise performance and thus reduce energy costs.

FS Inverter. Improved energy performance. All Panasonic's FS Inverter series models are equipped with DC Inverters to give operation with improved energy efficiency. Their new quiet, highly efficient design reduces operating costs.

### VRF SYSTEMS

Professional solutions for all types of projects. The new Panasonic VRF system is specifically designed for energy saving, easy installation and high efficiency performance, with a wide choice of outdoor and indoor unit models and unique features which are designed for the most demanding offices and big buildings.

Panasonic VRF Systems: ECOi (Mini ECOi VRF, 2-Pipe ECOi 6N series and 3-Pipe ECOi MF1 series), ECO G and FS

### ENERGY RECOVERY VENTILATION

Energy recovery ventilators offer ventilation which increases comfort and saves energy. They efficiently recover the heat lost in ventilation during the heat recovery process. Energy consumption is dramatically reduced by using a counter-flow heat exchange element. Air conditioning load is reduced by approximately 20%, resulting in significant energy savings.

































# AQUAREA'S NEW AIR-TO-WATER HEAT PUMP FOR RESIDENTIAL APPLICATIONS

Offering capacities from 3kW to 16kW, the Aquarea Heat Pump Range is the biggest line-up on the market, designed to meet all your heating and cooling demands. Cost-effective and environmentally friendly.



# AQUAREA'S NEW AIR-TO-WATER HEAT PUMP FOR RESIDENTIAL COMMERCIAL, AND CHILLER APPLICATIONS

Up to 80 kW capacity from an easy-to-install system providing impressive efficiency, even at outdoor temperatures as low as -20  $^{\circ}$ C.







<sup>\*</sup> Not all products certified. As the certification process is on-going and the list of certified products constantly changing, please check for latest details on the official websites.



# PANASONIC'S NEW AQUAREA AIR-TO-WATER SYSTEM PROVIDES MAXIMUM EFFICIENCY AND CAPACITY EVEN AT -15 °C

Panasonic's new Aquarea system, based on high-efficiency heat pump technology, not only heats your home and hot water, but also cools your home in summer with incredible operating performance. This creates perfect comfort whatever the weather conditions, even at outdoor temperatures as low as -15 °C.

Panasonic new heat pumps are designed in response to the new demand for low consumption housing, with high efficiency and low running costs.

# **ENERGY SAVING**



INVERTER+ SYSTEM
The A Inverter+
system provides
energy savings of up
to 30% compared to
non inverter models.
Both you, and nature,



REFRIGERANT R410A / R407C R410A / R407C offers optimal performance and involves no environmental cost since it does not harm the ozone layer.



UP TO -20 °C IN HEATING MODE The air conditioner works in heat pump mode with an outdoor temperature as low as -20 °C.

# HIGH CONNECTIVITY



RENOVATION
Our Aquarea heat
pumps can be
connected to an
existing or new boiler
for optimum comfort
even at very low
outdoor temperatures



SOLAR KIT
For even greater
efficiency, our
Aquarea heat pumps
can be connected
to photovoltaic
solar panels with an
optional kit.



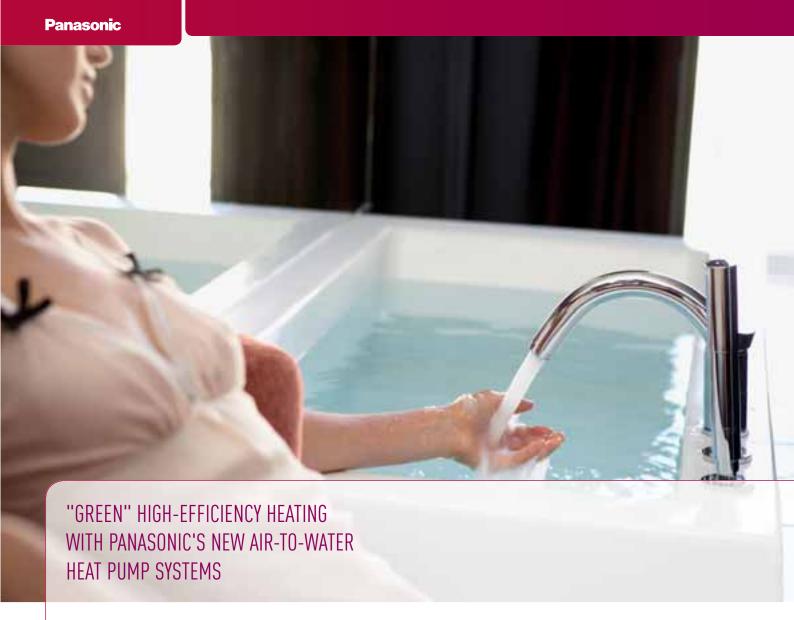
DHW
With Aquarea you
can also heat your
domestic hot water
at a very low cost
with the optional hot
water cyclinder.

easy control by BMS

CONNECTIVITY
The communication port is integrated into the indoor unit and provides easy connection to, and control of, your Panasonic heat pump to your home or building management system.



5 YEARS WARRANTY We guarantee the compressors in the entire range for five years.



# At the forefront of energy innovation, Aquarea is resolutely positioned as a "green" heating and air-conditioning system.

Aquarea is part of a new generation of heating and air-conditioning systems that use a renewable, free energy source – the air – to heat or cool the home and to produce hot water. The Aquarea heat pump is a much more flexible and cost-effective alternative to a traditional fossil fuel boiler.

### An ideal heating solution for both new and old properties:

- A wide range from 3 to 16 kW, single and three phase, mono-bloc and bi-bloc
- 3 Versions:
  - The Standard Heat Pump
  - The High Temperature Heat Pump (output water temperature of 65 °C)
  - The Total Capacity Heat Pump even at -15 °C
- The High-efficiency Heat Pump which operates at outside temperatures as low as  $-20~^{\circ}\text{C}$
- Reduces energy costs with its COP of 4.74\*
- Reduces energy consumption and CO<sub>2</sub> emissions
- · Provides cooling in summer
- Highly flexible:
  - Connects to an existing heating system
  - Connects to photovoltaic solar panels

We are surrounded by an endless supply of free energy: supplied by the sun and present in all spheres of our environment, the air, the ground, the groundwater...

Heat pumps enable us to recover this free, inexhaustible energy and to harness its power to heat our homes. These systems have the huge advantage, apart from reducing your electricity bill, of saving fossil fuels and at the same time limiting greenhouse gas emissions\*.

Thus, Panasonic's Aquarea system is an air/water heat pump system that uses energy from the outdoor air and transmits them via a heat exchanger to the water used to heat your home in winter, in addition, some Aquarea models can even be used to cool your house in summer time and produce hot water all year round.

\* We note that ADEME (French environmental and energy management agency) encourages consumers to choose heating and cooling systems that use heat pump systems.

<sup>\*</sup> COP: energy efficiency in heating mode. COP of 4.74 for the 9kW WH-MDF09C9E8 or WH-UD09CE8 models at an outside temperature of 7 °C, and for water. input and output temperatures of 30 °C and 35 °C (according to EN 14511-2) We note that ADEME (French environmental and energy management agency) encourages consumers to choose heating and cooling systems that use heat pump systems.

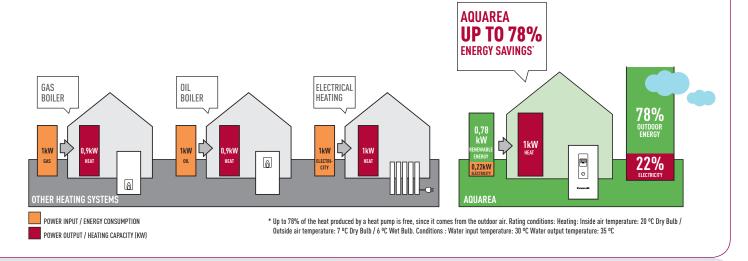




### UP TO 78% ENERGY SAVINGS\*

Panasonic's Aquarea heat pump provides savings of up to 78% on heating expenses compared to electrical heaters. For example, the Aquarea 9 kW system has a COP of 4.74. This is 3.74 kW more than a conventional electrical heating system which has a maximum COP of 1. This is equivalent to a 78% saving.

Consumption can be further reduced by connecting photovoltaic solar panels to the Aquarea system.





# **GIVE THE BEST TO OUR CUSTOMERS**

### THERE ARE SEVERAL TYPES OF HEAT PUMP AVAILABLE:

### The mono-bloc system

This only has an outdoor unit. The installation doesn't require a refrigerated connection and is only connected to the heating system.



### The bi-bloc system

This system is made up of an outdoor unit and a hydraulic module, normally located in the utility room or garage.



\* Tank Optional

### AQUAREA INCREASE LINE-UP!

- New 3 and 5 KW Bi-bloc for low energy homes
- New 6 and 9 KW Mono-bloc Heat Pumps for low energy homes
- New line-up of High Temperature Heat Pumps (output water temperature of 65 °C)

### WHICH PRODUCT FOR WHICH APPLICATION?



### **AQUARFA HIGH CONNECTIVITY**

For a house with low temperature radiators or under-floor heating, our high connectivity Aquarea heat pump is a good solution. This solution can work as a stand-alone unit or can be combined with a gas- or oil-fired depending on requirements.



### AQUAREA **HT**

For a house with high temperature radiators (for example, cast iron radiators), the Aquarea High Temperature Solution is the most appropriate as the Aquarea HT provides output water temperatures of 65 °C even at -15 °C.

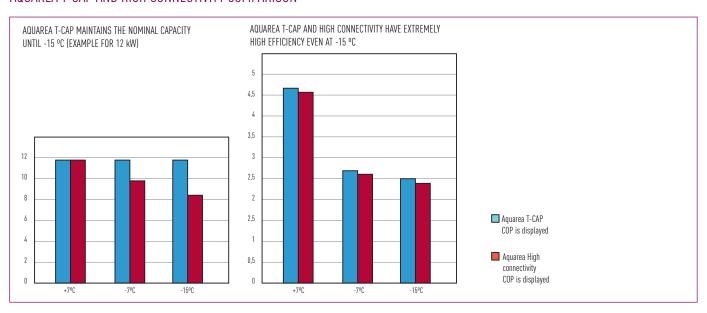
Aquarea HT is able to deliver hot water to 65  $^{\circ}\text{C}$  with the Heat Pump alone.



### AQUAREA T-CAP

If the most important aspect is to keep nominal heating capacities even at temperatures as low as -7 °C or -15 °C, select the Aquarea T-CAP. This ensures that there is always enough capacity to heat the house without help from an external boiler – even at extremely low temperatures. Aquarea T-CAP always has high efficiency and high heating capacity even at extremely low temperatures. With Aquarea T-CAP, you can always enjoy high savings.

### AQUAREA T-CAP AND HIGH CONNECTIVITY COMPARISON



<sup>\*</sup> Conditions : Water input temperature: 30 °C. Water output temperature: 35 °C; outside temperature: +7 °C.



NEW AQUAREA 3 AND 5 KW BI-BLOC AND 6 AND 9 KW MONO-BLOC AIR TO WATER HEAT PUMP MAXIMUM SAVINGS, MAXIMUM EFFICIENCY, MINIMUM CO<sub>2</sub> EMISSIONS, MINIMUM OF SPACE

Panasonic has designed the new Aquarea Bi-bloc and Monobloc heat pumps for homes which have high performance requirements.

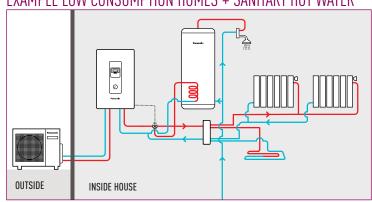
Whatever the weather, Aquarea will always give you maximum efficiency, even at -20 °C! The New Aquarea is easy to install on new or existing installations, in all types of properties.

down to -20°C in heating mode



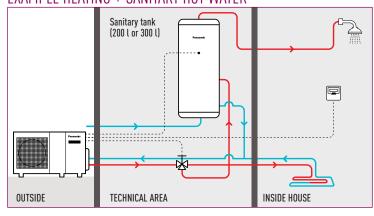
# **BI-BLOC APPLICATION**

### EXAMPLE LOW CONSUMPTION HOMES + SANITARY HOT WATER

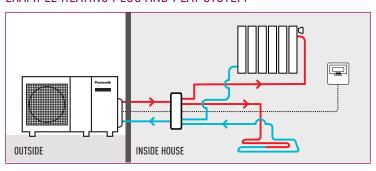


# **MONO-BLOC APPLICATION**

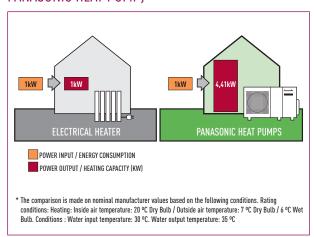
### EXAMPLE HEATING + SANITARY HOT WATER



### EXAMPLE HEATING PLUG AND PLAY SYSTEM



### COP COMPARISON (ELECTRICAL HEATER WITH PANASONIC HEAT PUMP)



### TECHNICAL BENEFITS

- · Plug and play heating system
- No indoor box needed ( for 6 and 9 KW Monobloc)
- Extremely compact system
- 3 kW heater included
- High efficiency even at -20 °C

### TECHNICAL ELEMENTS

- Mono-bloc unit includes:
- Heat exchanger
- 3 speed hot water circulator
- 6-litre vessel
- Safety valve
- Pressure gauge
- 3 kW electrical heater





# HIT Photovoltaic solar panel from Panasonic

# HEAT PUMP + PHOTOVOLTAIC PHOTOVOLTAIC SOLAR PANELS: THE BEST SOLUTION FOR BIG SAVINGS

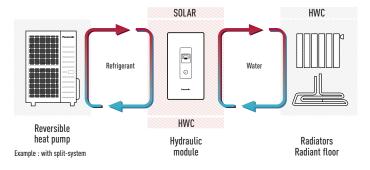
Panasonic Aquarea heat pumps can easily be integrated with photovoltaic solar panels in order to achieve maximum energy savings, cut fuel bills, and to reduce  ${\rm CO}_2$  emissions.





### HOW DOES THE AQUAREA SYSTEM WORK?

An air to water heat pump system uses heat energy present in the outdoor air to heat the house, cool it and also to produce hot water. The Aquarea system therefore uses free energy to heat or cool your home. It only consumes electricity to operate the compressor, the electronics, the pumps and in the event of very low temperatures, the electric elements. The result is very high efficiency and real energy savings.



### PHOTOVOLTAIC SOLAR PANELS FOR EVEN MORE SAVINGS

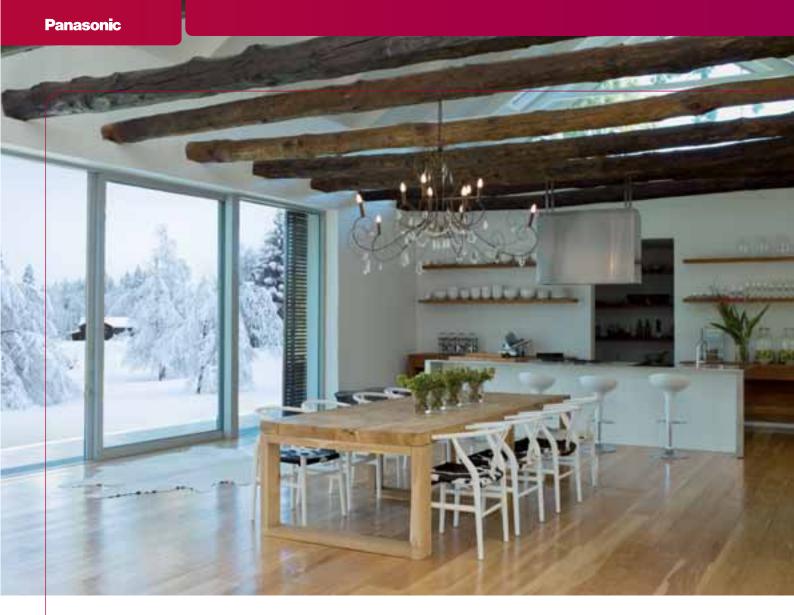
Combining photovoltaic solar panels with your heat pump can help to further reduce your electrical consumption and  $\mathrm{CO}_2$  emissions. Additionally, with the unique HIT photovoltaic solar panel technology from Panasonic, you can produce more electricity per square meter, helping you to increase your energy savings still further.

### HIT cell technology

The Panasonic HIT (Heterojunction with Intrinsic Thin layer) solar cell is made of a thin mono crystalline silicon wafer surrounded by ultra-thin amorphous silicon layers. This product provides the industry's leading performance and value using state-of-the-art manufacturing techniques.

### **Environmentally-Friendly Solar Cell**

More Clean Energy. HIT can generate more clean Energy than other conventional crystalline solar cells.



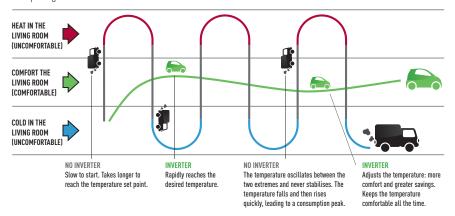


## **INVERTER+ COMPRESSOR FOR EVEN GREATER EFFICIENCY**

Panasonic has clearly demonstrated it status as lead in this field with over 200 million compressors supplied and the excellent quality and reliability of its heat pumps. With a Panasonic Inverter+ compressor, you can save up to 30% energy compared to a traditional system with no inverter. With a Panasonic Inverter compressor, the heat pump is always producing heat with the maximum of efficiency and adapting the capacity to the element.

### THE ADVANTAGES OF INVERTER AIR CONDITIONERS

Comparing Inverter and non-Inverter air conditioners.



# COMFORT, SAVINGS AND POWER EVEN AT VERY LOW TEMPERATURES

### Panasonic's inverter+ system

After quickly reaching the selected temperature, the Inverter+ system will gradually adjust the power in order to maintain a constant temperature. Thus, there will not be any sudden changes in temperature and the capacity of the power also guarantees a constant and pleasant temperature, even when the outside temperature changes.

### Maximum efficiency even at extremely low temperatures

The Aquarea range has been specially designed to provide maximum efficiency even at extreme temperatures when compared with electrical heaters or gas boilers.

SDF/SDC/MDF/MDC	7 kW	9 kW	12kW	14 kW	16 kW
Heating Capacity at +7 °C (kW)	7	9	12	14	16
COP at +7 °C with heating water temperature at 35 °C	4,4	4,74	4,67	4,5	4,23
Heating Capacity at +2 °C	6,55	9	11,4	12,4	13
COP at +2 °C with heating water temperature at 35 °C	3,31	3,53	3,4	3,32	3,25
Heating Capacity at -7 °C (kW)	5,15	9	10	10,7	11,4
COP at -7 °C with heating water temperature at 35 °C	2,65	2,81	2,7	2,62	2,55
Heating Capacity at -15 °C (kW)	4,6	8,3	8,9	9,5	10,3
COP at -15 °C with heating water temperature at 35 °C	2,3	2,55	2,43	2,35	2,33

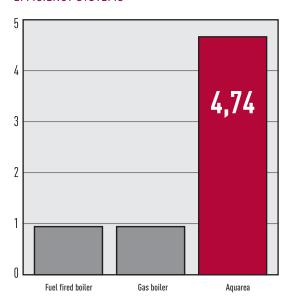
SXF/SXC/MXF/MXC	9 kW	12 kW	
Heating Capacity at +7 °C (kW)	9	12	
COP at +7 °C with heating water temperature at 35 °C	4,74	4,67	
Heating Capacity at +2 °C	9	12	
COP at +7 °C with heating water temperature at 35 °C	3,53	3,4	
Heating Capacity at -7 °C (kW)	9	12	
COP at -7 °C with heating water temperature at 35 °C	2,81	2,7	
Heating Capacity at -15 °C (kW)	9	12	
COP at -15 °C with heating water temperature at 35 °C	2,54	2,4	

Conditions : Water input temperature: 30 °C. Water output temperature: 35 °C.

# HEAT PUMPS: MORE EFFICIENT THAN OTHER HEATING SYSTEMS

Panasonic heat pumps have a maximum COP of 4.74 at +7 °C which makes them much more efficient than fossil fuel fired boilers, gas boilers and electrical heaters.

# BEST EFFICIENCY COMPARED TO OTHER HEATING EFFICIENCY SYSTEMS





### **AQUAREA DESIGNER**

Using Panasonic's Aquarea Designer, projects can be developed simply and easily, by either using the Quick Design or Expert Design options. Each allows the engineer to build up the project data in a simple step-by-step process and choose to output reports (in either Quick or Large formats) as HTML files or as print outs. To create the useful reports, project data is input, including:

- · Heated area
- Heating requirement
- Heating flow and return temperatures
- Climate data (from a simple drop-down menu) including outdoor design temperature
- Type of hot water tank, storage capacity and hot water target temperature.

Aquarea Designer will calculate the project's energy costs in terms of hot water, heating and pumping. It will show the equipment running times and calculate the Annual COP (coefficient of performance). It then allows the designer to show clients a comparison with other equipment options such as heating by conventional gas-fired boilers, oil systems, wood, standard electric heating and electric night storage heaters. This compares running costs, initial investment costs and maintenance costs. The comparison can also be made for CO<sub>2</sub> emissions and savings.

Available to download from www.panasonicproclub.com or by using this QR Code:











# WHAT MAKES THE AIR-TO-WATER HEAT PUMP WORK

- The outdoor unit: this captures the free energy from the outdoor air and brings it into the house by means of the hydraulic module. This free energy is transported to the hydraulic module using an environmentally-friendly refrigerant gas with a high thermal exchange coefficient (R407C).
- Via the hydraulic module, with control panel, the temperature inside the house can be controlled and efficiency maximised. It has a heat exchanger which transmits the energy contained in the refrigerant coming from the outdoor unit to the water used for the home's heating and hot water. The hydraulic module manages priorities in terms of heating and hot water production.

In the case of the bi-bloc system, this hydraulic module is situated inside the property, and it is in the outdoor unit in the mono-bloc system.

The hot water cylinder heats the hot water. It is made of stainless steel, which
guarantees it a very long life. It is also fitted with a 3 kW element to ensure
maximum comfort when outdoor temperatures are very low. The heater, situated

at the top of the cylinder, guarantees maximum efficiency and faster heat-up. A 3-way valve for the hot water cylinder connection is supplied with the hot water cylinder.

- Other necessary or optional features (not provided by Panasonic):
  - Room temperature thermostat, which can be connected to the Aquarea system to ensure optimum room temperature conditions.
  - Solar kit, to connect photovoltaic solar panels for even greater efficiency.
- A 3 kW immersion heater is included within the hot water tank to ensure:
- Maximum comfort
- Maximum efficiency and more for ensure protection against the legionella virus

### TWO OR THREE EARTH LEAKAGE CUT-OUTS

The Aquarea hydraulic module has differential cut-off ensuring maximum safety in the event of a short circuit:

- 2 differential cut-outs: 3 and 5 and 6 and 9 kW

- 3 differential cut-outs: 12. 14 and 16 kW



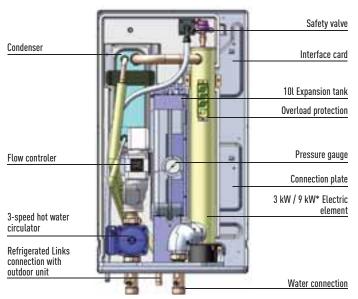
### THE CONTROL PANEL

The control panel allows accurate temperature control based on the outdoor temperature, providing maximum efficiency and comfort.

The control panel controls the heating temperature and the hot water cylinder temperature very simply.

### THE HYDRAULIC MODULE





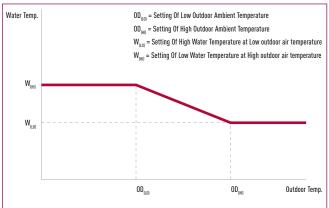
<sup>\* 3</sup> kW for 7 and 9 kW, 6 kW for 12, 14, 16 kW single-phase 9 kW for 12, 14, 16 kW three-phase

### EASY PROGRAMMING OF THE CONTROL PANEL

The primary circuit temperature is controlled based on the outdoor temperature.

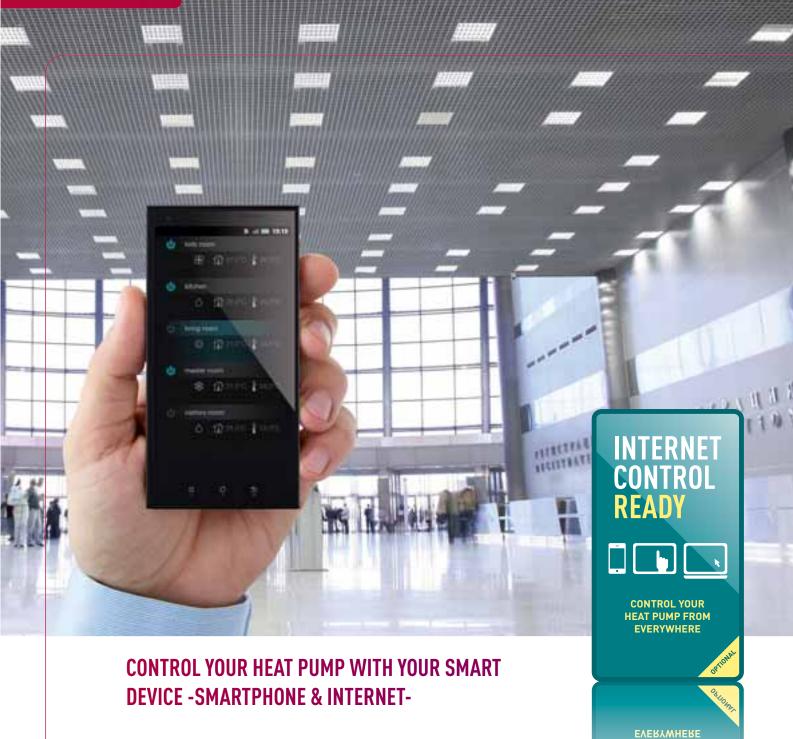
The control parameters are adjusted through the remote control during the commissioning of the system as is shown in the diagram below.

Your heating specialist must also select the type of operation you need: heating priority or hot water cylinder priority.



### EASY READING OF CONTROL OF WATER PRESSURE

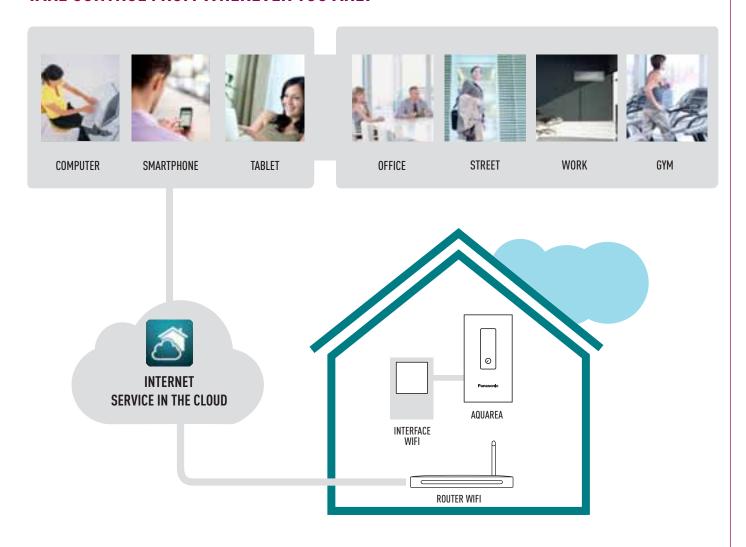




Panasonic has always offered its customers the most efficient Heat Pumps and Air Conditioners. Now it has taken a step forward and presents a control solution taking advantage of the latest Cloud Technology to enable you to manage your climate system from anywhere in the world.

Control your environment from your iPad, iPhone, any Android device or from a PC with Internet access using this add-on service. Offering the same functions as if you were at home: start/stop, Mode Operation, Set Temperature, etc. Experience the new, advanced functionality provided by Panasonic to achieve the best comfort and efficiency with the lowest energy consumption. For full details of this impressive control solution, contact your local Panasonic office. The interface needs to have Wifi connection. Please check if Wifi is available in the area where the box is installed (normally near the indoor unit).

## TAKE CONTROL FROM WHEREVER YOU ARE!



### ADVANCED SERVICE HOSTED IN THE CLOUD THAT PROVIDES ACCESS FROM ANYWHERE TO YOUR AC SYSTEM.

### **FUNCTIONALITY**

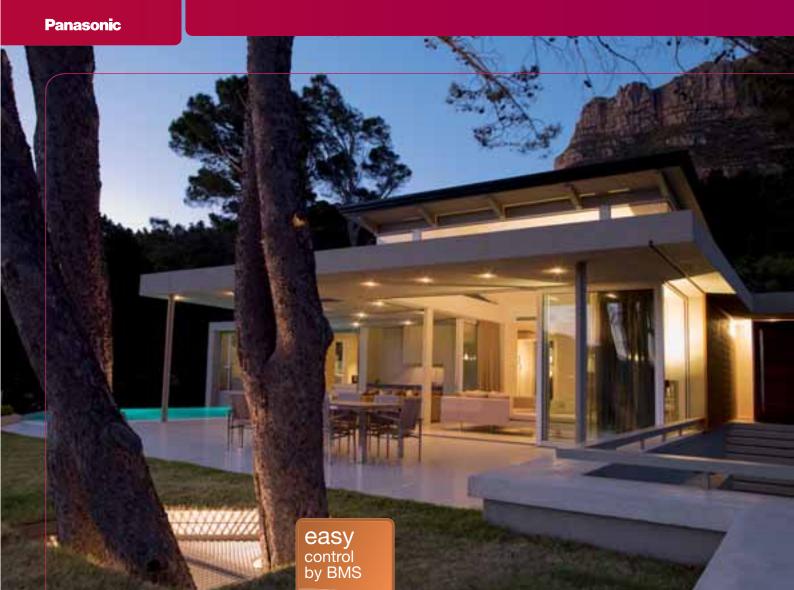
- Remote control: On/Off, Mode, Temp. Setting, etc.
- Scheduler calendar, Energy Saving functions, Preset configuration features
- Maintenance functions:
- Technical Service network
- Error list
- ECO advices.
- Multi-lingual application

### INSTALLATION

- Easy installation.
- · Videos and Manuals from Panasonic
- · Helpline (Phone & Internet).
- · Automatic updates.

### REFERENCE

• PA-AW-WIFI-1 for Aquarea









### CONNECTIVITY

CONNECTIVITY

GREAT FLEXIBILITY FOR INTEGRATION INTO YOUR KNX / ENOCEAN / MODBUS PROJECTS ALLOWS FULLY BI-DIRECTIONAL MONITORING AND CONTROL OF ALL THE FUNCTIONING PARAMETERS

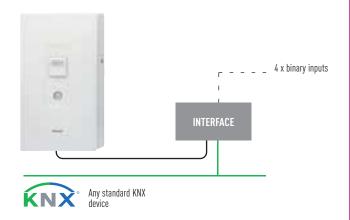
Panasonic works with partners to ensure the optimum solutions for our clients. Our partner has designed a range of interfaces specifically for Panasonic to provide complete monitoring, control and full functionality of the entire Aquarea line-up from KNX, EnOcean and Modbus installations.

This connectivity solution is made by a third party company, please contact Panasonic for more information

### INTERFACE TO CONNECT AQUAREA TO KNX

This new Aquarea-KNX interface allows monitoring and control, fully bi-directionally, all the functioning parameters of Aquarea control from KNX installations.

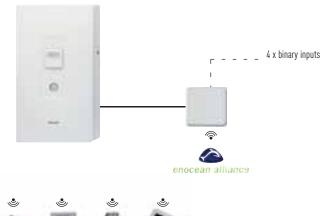
- Small dimensions.
- Quick installation and possibility of hidden installation.
- External power not required.
- · Direct connection to the unit.
- Fully KNX interoperable. Control and monitoring, from sensors or gateways, of the internal variables of the indoor unit and error codes and indication.
- Aquarea unit can be controlled simultaneously by the remote control of the Aquarea unit and by KNX devices.
- 4 Binary inputs, they work as standard KNX Binary Inputs (On/Off, Send value, Lights, Blinds, etc) as well as being used to control the Aquarea unit directly.



### INTERFACE TO CONNECT AQUAREA TO ENOCEAN

This new Aquarea-EnOcean interface allows monitoring and control, fully bi-directionally, all the functioning parameters of the Aquarea control from EnOcean installations.

- Small dimensions.
- Quick installation.
- · External power not required.
- Direct connection to the Aquarea unit using the same parameters as on the
- Fully EnOcean interoperable. Control and monitoring, from sensors or gateways, of the internal variables of the indoor unit and error codes and indication.
- Aquarea unit can be controlled simultaneously by the remote control of the Aquarea unit and by EnOcean devices.
- 4 binary inputs. They work as standard EnOcean binary inputs as well as being used to control the Aquarea unit directly.

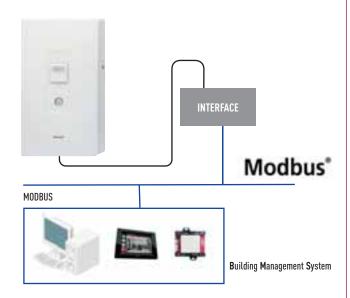




### INTERFACE TO CONNECT AQUAREA TO MODBUS

This new Aquarea-Modbus RTU Slave interface allows monitoring and control, fully bi-directionally, all the functioning parameters of Aquarea control from Modbus installations.

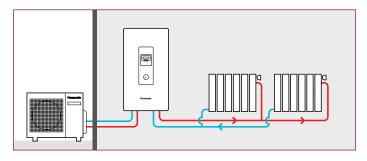
- · Small dimensions.
- Quick installation and possibility of hidden installation.
- · External power not required.
- · Direct connection to the unit.
- Fully Modbus interoperable. Control and monitoring, from any BMS or PLC Modbus Master, of internal variables of the indoor unit and error codes and indication.
- Aquarea unit can be controlled simultaneously by the remote control of the Aquarea unit and by Modbus Master device.



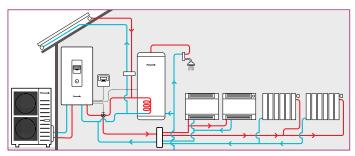
These interfaces are from third party companies. Please contact Panasonic for more information.

## **HP BI-BLOC APPLICATION EXAMPLES**

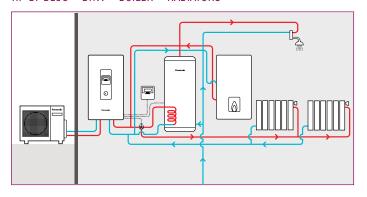
HP BI-BLOC + RADIATORS



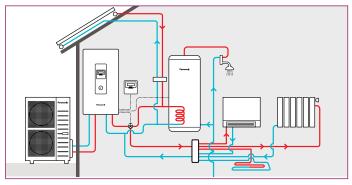
HP BI-BLOC + BOILER + RADIATORS + FAN COILS + SOLAR KIT



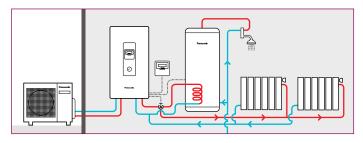
HP BI-BLOC + DHW + BOILER + RADIATORS



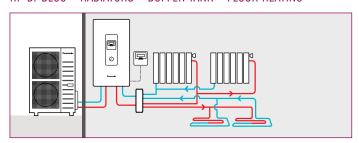
HP BI-BLOC + DHW+ BUFFER TANK + RADIATORS + FLOOR HEATING + SOLAR KIT



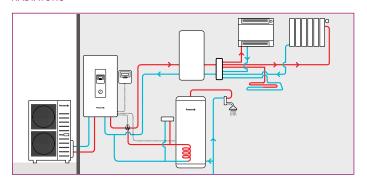
HP BI-BLOC + DHW+ RADIATORS



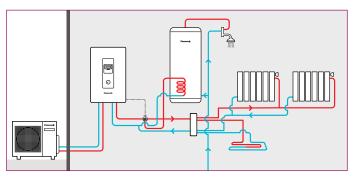
HP BI-BLOC + RADIATORS + BUFFER TANK + FLOOR HEATING



HP BIBLOC + DHW + BUFFER TANK +FAN COIL + FLOOR HEATING + RADIATORS

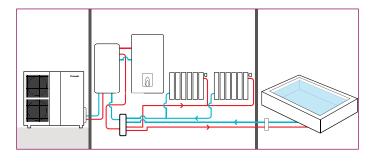


HP BI-BLOC 3 AND 5 KW. LOW CONSUMPTION + SANITARY HOT WATER + BUFFER TANK + RADIATORS + FLOOR HEATING

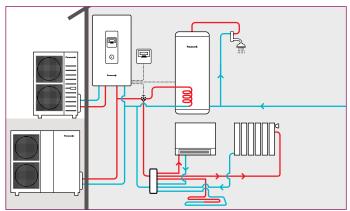


# **HP MONO-BLOC APPLICATION EXAMPLES**

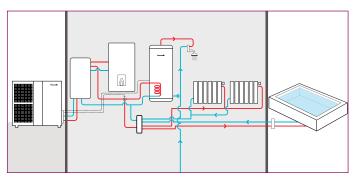
HP MONO-BLOC + BUFFER TANK + BOILER + RADIATORS + **SWIMMING POOL** 



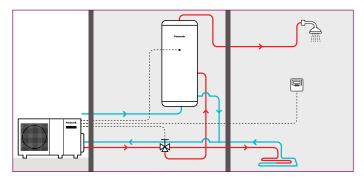
HP MONO-BLOC + BI-BLOC + DHW + RADIATORS + FLOOR HEATING



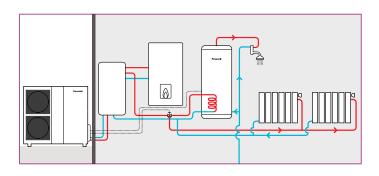
HP MONO-BLOC + BUFFER TANK + DHW +BOILER + RADIATORS + **SWIMMING POOL** 



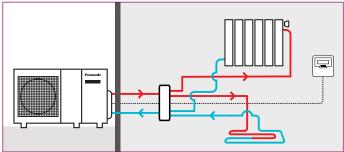
HP MONO-BLOC 6 AND 9 kW. EASY TO INSTALL, WITHOUT ANY BOX INSIDE THE HOUSE + DHW + FLOOR HEATING



HP MONO BLOC + BUFFER TANK + DHW + BOILER + RADIATORS



HP MONO-BLOC 6 AND 9 kW. EASY TO INSTALL, WITHOUT ANY BOX INSIDE THE HOUSE + RADIATORS + FLOOR HEATING + BUFFER TANK



# **AQUAREA LINE-UP!**



LINE UP				3KW		5KW		6KW	7KW
Aquarea High Connectivity	Bi-Bloc	Single phase	Heating only	WH-SDF03E3E5* <sup>[F1]</sup> WH-UD03EE5	NEW 2012	WH-SDF05E3E5* (F1) WH-UD05EE5	NEW 2012		WH-SDF07C3E5 WH-UD07CE5-A (F2)
			Heating and cooling	WH-SDC03E3E5* <sup>[F1]</sup> WH-UD03EE5	NEW 2012	WH-SDC05E3E5* (F1) WH-UD05EE5	NEW 2012		WH-SDC07C3E5 WH-UD07CE5-A (F2)
		Three phase	Heating only						
			Heating and cooling						
	Mono-Bloc	Single phase	Heating only					WH-MDF06D3E5 (F5) NEW 2012	
			Heating and cooling					WH-MDC06E3E5 ** (F5) NEW 2012	
		Three phase	Heating only						
			Heating and cooling						
Aquarea T-CAP	Bi-Bloc	Single phase	Heating only						
			Heating and cooling						
		Three phase	Heating only						
			Heating and cooling						
	Mono-Bloc	Single phase	Heating only						
			Heating and cooling						
		Three phase	Heating only						
			Heating and cooling						
Aquarea High temperature	Bi-Bloc	Single phase	Heating only						
		Three phase	Heating only						
	Mono-Bloc	Single phase	Heating only						
		Three phase	Heating only						
AQUAREA PRO	VRF ECOi + Water Heat Exchanger	Three phase	Heating and cooling						
	GAS VRF ECO G + Water Heat Exchanger	Three phase	Gas. Heating and cooling						

Low connectivity: control of 3 way valve, tank heater 0n/0ff signal, tank thermostat signal reception, 0n/0ff from external control, weekly timer High connectivity: Low connectivity + solar pannels connection, room thermostat connection







9KW	12KW	14KW	16KW	28KW	50KW	71 kW
WH-SDF09C3E5 WH-UD09CE5-A <sup>[F2]</sup>	WH-SDF12C6E5 WH-UD12CE5-A <sup>[F3]</sup>	WH-SDF14C6E5 WH-UD14CE5-A <sup>[F3]</sup>	WH-SDF16C6E5 WH-UD16CE5-A <sup>[F3]</sup>			
WH-SDC09C3E5 WH-UD09CE5-A <sup>(F2)</sup>	WH-SDC12C6E5 WH-UD12CE5-A <sup>[F3]</sup>	WH-SDC14C6E5 WH-UD14CE5-A <sup>[F3]</sup>	WH-SDC16C6E5 WH-UD16CE5-A <sup>[F3]</sup>			
WH-SDF09C3E8 WH-UD09CE8 <sup>[F3]</sup>	WH-SDF12C9E8 WH-UD12CE8 (F3)	WH-SDF14C9E8 WH-UD14CE8 <sup>[F3]</sup>	WH-SDF16C9E8 WH-UD16CE8 <sup>[F3]</sup>			
WH-SDC09C3E8 WH-UD09CE8 <sup>[F3]</sup>	WH-SDC12C9E8 WH-UD12CE8 <sup>(F3)</sup>	WH-SDC14C9E8 WH-UD14CE8 <sup>[F3]</sup>	WH-SDC16C9E8 WH-UD16CE8 <sup>[F3]</sup>			
WH-MDF09C3E5 (F4) WH-MDF09D3E5 (F5)	WH-MDF12C6E5 [F4]	WH-MDF14C6E5 (F4)	WH-MDF16C6E5 (F4)			
WH-MDC09C3E5 (F4) WH-MDC09E3E5** (F5)	WH-MDC12C6E5 (F4)	WH-MDC14C6E5 (F4)	WH-MDC16C6E5 (F4)			
WH-MDF09C3E8 (F4)	WH-MDF12C9E8 [F4]	WH-MDF14C9E8 <sup>[F4]</sup>	WH-MDF16C9E8 (F4)			
WH-MDC09C3E8 (F4)	WH-MDC12C9E8 <sup>[F4]</sup>	WH-MDC14C9E8 (F4)	WH-MDC16C9E8 (F4)			
WH-SXF09D3E5 WH-UX09DE5 (F2)	WH-SXF12D6E5 WH-UX12DE5 (F3)					
WH-SXCO9D3E5 WH-UX09DE5 (F2)	WH-SXC12D6E5 WH-UX12DE5 [F3] NEW 2012					
WH-SXF09D3E8 WH-UX09DE8 (F3)	WH-SXF12D9E8 WH-UX12DE8 [F3] NEW 2012					
WH-SXCO9D3E8 WH-UX09DE8 (F3)	WH-SXC12D9E8 WH-UX12DE8 [F3]					
WH-MXF09D3E5 (F4)	WH-MXF12D6E5 (F4) NEW 2012					
WH-MXCO9D3E5 (F4)	WH-MXC12D6E5 (F4) NEW 2012					
WH-MXF09D3E8 (F4)	WH-MXF12D9E8 (F4) NEW 2012					
WH-MXCO9D3E8 (F4)	WH-MXC12D9E8 (F4) NEW 2012					
WH-SHF09D3E5 WH-UH09DE5 (F3)	WH-SHF12D6E5 WH-UH12DE5 (F3)					
WH-SHF09D3E8 WH-UH09DE8 (F3)	WH-SHF12D9E8 WH-UH12DE8 (F3)					
WH-MHF09D3E5 (F4)	WH-MHF12D6E5 (F4) NEW 2012					
WH-MHF09D3E8 (F4)	WH-MHF12D9E8 (F4) NEW 2012					
				S-250WX2E5 [F6] NEW 2012	S-500WX2E5 (F6)	
				S-250WX2E5 [F6] NEW 2012	S-500WX2E5 (F6) NEW 2012	S-710WX2E5 (F7)

<sup>\*\*</sup> Avaiable in November 2012



# BI-BLOC // HIGH CONNECTIVITY // 3 AND 5 KW AQUAREA // HEATING ONLY - SDF // HEATING AND COOLING - SDC

The new 3 kW and 5 kW Aquarea heat pump from Panasonic is specially designed for low energy homes and achieves an impressive COP of 5 (on the 3.2 kW).

Thanks to the system's high degree of technology and advanced control, it is able to maintain a high capacity and efficiency even at -7 °C and -15 °C. The Aquarea's software is optimised to the requirements of low consumption homes in order to maximise energy efficiency.

Whatever the weather, Aquarea will always give you maximum efficiency, even at -20 °C.

The compact design of the outdoor unit makes installation very easy.













1.11

5-15

10

20

-20~35





1.11

5-15

10

20

-20~35



			SINGLE-PHASE HEATING ON	ILY	SINGLE-PHASE HEATING AN	ID COOLING
NDOOR UNIT			WH-SDF03E3E5*	WH-SDF05E3E5*	WH-SDC03E3E5*	WH-SDC05E3E5*
Heating Capacity at +	-7 °C	kW	3.20	5.00	3.20	5.00
	ating water temperature at	35 °C	5.00	4.63	5.00	4.63
Heating Capacity at -		kW	3.20	4.20	3.20	4.20
Heating Capacity at -		kW	3.20	4.20	3.20	4.20
Cooling capacity at 3		kW	-	-	3.20	4.50
ER at 35 °C with co	ling water temperature at '	7/12 ºC	-	-	3.08	2.69
Dimensions	H x W x D	mm	892 x 353 x 502	892 x 353 x 502	892 x 353 x 502	892 x 353 x 502
Veight		Kg	43	43	44	44
Vater pipe connecto	1	mm	28	28	28	28
l class Pump	No. of Speed	·	3	3	3	3
leating water flow (	∆T=5 K. 35 °C)	l/min	9.17	14.33	9.17	14.33
Capacity of integrate	d electric heater	kW	3	3	3	3
nput Power		kW	0.64	1.08	0.64	1.08
Running and starting	Current	Α	2.99	5.05	2.99	5.05
Maximum Current		Α				
OUTDOOR UNIT			WH-UD03EE5	WH-UD05EE5	WH-SDC03E3E5	WH-SDC05E3E5
Sound pressure level		dB(A)	47	48	47	48
Sound power level		dB				
Dimensions	H x W x D	mm	622 x 824 x 299	622 x 824 x 299	622 x 824 x 299	622 x 824 x 299
Veight	-	Kg	38	38	38	38
Pipe Diameter	Liquid	mm (Inch)	6.4 (1/4)	6.4 (1/4)	6.4 (1/4)	6.4 (1/4)
	Gas	mm (Inch)	12.7 (1/2)	12.7 (1/2)	12.7 (1/2)	12.7 (1/2)

1.11

5-15

10

20

-20~35

Refrigerant (R410A)

Pipe Length Range

Operation Range

Pipe Length for nominal capacity

Pipe Length for additional gas

Additional Gas Amount (R410A)

I/D&O/D Hight Difference

Performance calculation in agreement with EN14511.

Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height.

Outdoor Ambient

Water Outlet (at-2/-7/-15) 2) °C

#### TANKS (MORE TANK ON THE ACCESSORIES PART)

OPTIONAL STANDARD SANIT	ARY TANK	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume		L	200	300
Max. water temperature		oC.	85	85
Dimension	Hight / Diameter	mm	1230 / 580	1700 / 580
Weight		Kg	42	54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface		m²	1.4	1.8
Energy loss at 65 °C (insulated	tested under EN12897)	kWh/24h	1.7	2.0
3 Way valve included			Yes	Yes

1.11

5-15

10

20

-20~35

Kg

m

m

m

g/m

<sup>\*</sup> Preliminary specifications.



- SUPER EFFICIENT: COP OF 5 IN THE 3.2 kW!
- NEW! OPTIONAL SMARTPHONE CONTROL
- SPECIAL SOFTWARE FOR LOW CONSUMPTION HOMES A CLASS PUMP
- MAXIMUM OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- EASY AND FAST TO INSTALL

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- Super efficient even at outdoor temperatures as low as -15  $^{\rm o}{\rm C}$
- Environmentally-friendly refrigerant gas R410A

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55  $^{\rm o}{\rm C}$
- Energy performance optimised based on the return water temperature
- · Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Wired control panel for installation in the house
- Easy programming on the control panel
- Ipad/Android ready (optional)

- Easy to open outdoor unit
- Expansion vessel included



WH-UD03EE5



WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA MDF & MDC // MONO-BLOC // HIGH CONNECTIVITY // 6 AND 9 KW AQUAREA // HEATING AND COOLING // SINGLE-PHASE

Panasonic has designed the new Aquarea Mono-bloc heat pump for houses which have high performance requirements but limited space to install the outdoor unit.

Whatever the weather, Aguarea will always give you maximum efficiency, even at -20 °C. The Mono-bloc is easy to install in new and existing residential properties.













SINGLE-PHASE			WH-MDF06D3E5	WH-MDF09D3E5	WH-MDC06E3E5*	WH-MDC09E3E5*
Heating Capacity at +	.7 °C	kW	6	9	6	9
COP at +7 °C with he	ating water temperature at 35 °C		4.41	4.10	4.41	4.10
Heating Capacity at +	-2 °C	kW	5	7	5	7
COP at +2 °C with he	ating water temperature at 35 °C		3.4	3	3.4	3
Heating Capacity at -	7 °C	kW	5.15	7.45	5.15	7.45
COP at -7 °C with hea	ting water temperature at 35 °C		2.65	3.10	2.65	3.10
Heating Capacity at -	15 °C	kW	5.9	7.6	5.9	7.6
COP at -15 °C with he	eating water temperature at 35 °C		2.2	2.0	2.2	2.0
Cooling capacity at 35 °C			-	-	5.5	7.0
EER at 35 °C with cool	ling water temperature at 7/12 °C		-	-	2.71	2.41
Sound pressure level		dB(A)	47	49	47	49
Sound power level		dB	65	67	65	67
Dimensions (H x W x	D)	mm	865 x 1283 x 320			
Weight		Kg	112	112	112	112
Water pipe connector			R 1-3/16	R 1-3/16	R 1-3/16	R 1-3/16
Pump	No. of Speed		3	3	3	3
	Water Flow (∆T=5 K. 35 °C)	l/min	17.2	25.8	17.2	25.8
	Input Power	W	75	75	75	75
Capacity of integrated	d electric heater	kW	3.0	3.0	3.0	3.0
Input Power at +7 °C kV		kW	1.36	2.2	1.36	2.2
Running and starting Current at +7 °C A		Α	6.2	10.1	6.2	10.1
Maximum Current		Α	20.5	22.9	20.5	22.9
Operation Range	Outdoor Ambient	oC .	-20 to 35	-20 to 35	-20 to 35	-20 to 35
	Water Outlet (at-2/-7/-15)	oC	25 - 55	25 - 55	25 - 55	25 - 55

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.
\* Preliminary specifications.

OPTIONAL STANDARD SA	NITARY TANK	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume		L	200	300
Max. water temperature		oC.	85	85
Dimension	Hight / Diameter	mm	1230 / 580	1700 / 580
Weight		Kg	42	54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface		m <sup>2</sup>	1.4	1.8
Energy loss at 65 °C (insula	kWh/24h	1.7	2.0	
3 Way valve included			Yes	Yes



- NEW! OPTIONAL SMARTPHONE CONTROL
- NEW! RANGE FROM 6 AND 9 KW, SINGLE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- PLUG AND PLAY SYSTEM

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4,41
- Environmentally-friendly refrigerant gas R410A

#### **COMFORT**

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55 °C
- · Power optimised based on the return water temperature
- Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Single-unit range, with no refrigerant connections
- Wired control panel for installation in the house
- Easy programming on the control panel

#### **EASY INSTALLATION AND MAINTENANCE**

• Easy to open outdoor unit



WH-MDF06D3E5 WH-MDF09D3E5

WH-MDF06E3E5 WH-MDF09E3E5



WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA SDF // BI-BLOC // HIGH CONNECTIVITY // HEATING ONLY SINGLE-PHASE // THREE-PHASE

The Aquarea SDF range adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating control and management.



















				POWER TO INDO					POWER TO INDO		
INDOOR UNIT			WH-SDF07C3E5	WH-SDF09C3E5	WH-SDF12C6E5	WH-SDF14C6E5	WH-SDF16C6E5	WH-SDF09C3E8	WH-SDF12C9E8	WH-SDF14C9E8	WH-SDF16C9E8
Heating Capacity at +7 c	C	kW	7	9	12	14	16	9	12	14	16
COP at +7 °C with heating	ng water temperature at 35 °C		4.4	4.10	4.67	4.5	4.23	4.74	4.67	4.5	4.23
Heating Capacity at -7 °	C	kW	5.15	5.9	10	10.7	11.4	9	10	10.7	11.4
COP at -7 °C with heating	ng water temperature at 35 °C		2.65	2.5	2.7		2.55	2.81	2.7	2.62	2.55
Heating Capacity at -15	οC	kW	4.6	5.9	8.9	9.5	10.3	8.3	8.9	9.5	10.3
COP at -15 °C with heati	ing water temperature at 35 °C		2.3	2.2	2.43	2.35	2.33	2.55	2.43	2.35	2.33
Dimensions (H x W x D)		mm	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353
Weight		Kg	43	43	49	49	49	50	51	51	51
Water pipe connector			R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4
Pump	No. of Speed		3	3	3	3	3	3	3	3	3
	Input power(max)	W	100	100	190	190	190	190	190	190	190
Heating water flow ( $\Delta T$ :	=5 K. 35 °C)	l/min	20.1	25.8	34.4	40.1	45.9	25.8	34.4	40.1	45.9
Capacity of integrated e	lectric heater	kW	3	3	6	6	6	3	9	9	9
Input Power		kW	1.59	2.2	2.57	3.11	3.78	1.9	2.57	3.11	3.78
Running and starting Cu	irrent	Α	7.3	10.1	11.7	14.1	17.1	2.9	3.9	4.7	5.7
Maximum Current		Α	21	22.9	24	25	26	7.5	8.8	9.4	9.9
OUTDOOR UNIT			WH-UD07CE5-A	WH-UD09CE5-A	WH-UD12CE5-A	WH-UD14CE5-A	WH-UD16CE5-A	WH-UD09CE8	WH-UD12CE8	WH-UD14CE8	WH-UD16CE8
Sound pressure level		dB(A)	48	49	50	51	53	49	50	51	53
Sound power level		dB	66	67	67	68	70	66	67	68	70
Dimensions (H x W x D)		mm	795 x 900 x 320	795 x 900 x 320	1340 x 900 x 320						
Weight		Kg	66	66	106	106	106	109	109	109	109
Pipe Diameter	Liquid	mm (Inch)	6.35 (1/4)	6.35 (1/4)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)
	Gas	mm (Inch)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)
Refrigerant (R410A)		Kg	1.45	1.45	2.75	2.75	2.75	2.75	2.75	2.75	2.95
Pipe Length Range		m	3 - 30	3 - 30	3 - 40	3 - 40	3 - 40	3 - 40	3 - 40	3 - 40	3 - 40
Pipe Length for nominal	capacity	m	7	7	7	7	7	7	7	7	7
Pipe Length for addition	al gas	m	10	10	30	30	30	30	30	30	30
Additional Gas Amount (	[R410A]	g/m	30	30	50	50	50	50	50	50	50
I/D&O/D Hight Differenc	е	m	20	20	30	30	30	30	30	30	30
Operation Range	Outdoor Ambient	oC O	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35
-	Water Outlet (at-2/-7/-15)	oC .	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height.

OPTIONAL STANDARD SA	NITARY TANK	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume		L	200	300
Max. water temperature		oC 20	85	85
Dimension	Hight / Diameter	mm	1230 / 580	1700 / 580
Weight		Kg	42	54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface		m²	1.4	1.8
Energy loss at 65 °C (insula	ted tested under EN12897)	kWh/24h	1.7	2.0
3 Way valve included			Yes	Yes



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 7 TO 16 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- MAXIMUM 40 m RISE BETWEEN THE OUTDOOR UNIT AND THE HYDRAULIC MODULE

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74
- Environmentally-friendly refrigerant gas R410A

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55 °C
- · Power optimised based on the return water temperature
- Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Control on the hydraulic module
- Easy programming on the control panel

- Easy-to-access pressure gauge for easy control of the water pressure
- Easy-to-open hydraulic module and outdoor unit



WH-UD07CE5-A WH-UD09CE5-A



WH-UD09CE8 WH-UD12CE8 WH-UD12CE5-A WH-UD14CE8 WH-UD14CE5-A WH-UD16CE8



...

WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA SDC // BI-BLOC // HIGH CONNECTIVITY // HEATING AND COOLING SINGLE-PHASE // THREE-PHASE

The Aquarea SDC range adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating and cooling control and management.



















			SINGLE-PHASE	POWER TO INDO	OR)			THREE-PHASE (I	POWER TO INDO	IR)	
INDOOR UNIT			WH-SDC07C3E5	WH-SDC09C3E5	WH-SDC12C6E5	WH-SDC14C6E5	WH-SDC16C6E5	WH-SDC09C9E8	WH-SDC12C9E8	WH-SDC14C9E8	WH-SDC16C9E8
Heating Capacity at +7 °	C	kW	7	9	12	14	16	9	12	14	16
COP at +7 °C with heating	ng water temperature at 35 °C		4.4	4.09	4.67	4.5	4.23	4.74	4.67	4.5	4.23
Heating Capacity at -7 °C		kW	5.15	5.9	10	10.7	11.4	9	10	10.7	11.4
COP at -7 °C with heatin	g water temperature at 35 °C		2.65	2.5	2.7	2.62	2.55		2.7	2.62	2.55
Heating Capacity at -15		kW	4.6	5.9	8.9	9.5	10.3		8.9	9.5	10.3
	ng water temperature at 35 °C		2.3	2.2	2.43	2.35	2.33		2.43	2.35	2.33
Cooling capacity at 35 °C		kW	6	7	10	11.5	12.2	7	10	11.5	12.2
	g water temperature at 7/12 °C	)	2.63	2.40	2.82	2.62	2.55	3.11	2.81	2.61	2.54
Dimensions (H x W x D)		mm	892 x 502 x 353								
Weight		Kg	45	45	51	51	51	51	52	52	52
Water pipe connector			R1 1/4								
Pump	No. of Speed		3	3	3	3	3	3	3	3	3
	Input power(max)	W	75	75	190	190	190	190	190	190	190
Heating water flow (△T=		l/min	20.1	25.8	34.4	40.1	45.9	25.8	34.4	40.1	45.9
Capacity of integrated el		kW	3	3	6	6	6	3	9	9	9
Input Power (Input powe		kW	1.59 / 2.30	2.2 / 2.9	2.57 / 3.6	3.11 / 4.4	3.78 / 4.8	1.9 / 2.25	2.57 / 3.55	3.11 / 4.4	3.78 /4.8
Running and starting Cu	rrent	Α	7.30 / 10.40		11.7 / 16.1	14.1 / 19.7	17.1 / 21.5	2.9 / 3.4	3.9 / 5.3	4.7 / 6.6	5.7 / 7.2
Maximum Current		Α	21	22.9	24	25	26	7.5	8.8	9.4	9.9
OUTDOOR UNIT			WH-UD07CE5-A			WH-UD14CE5-A			WH-UD12CE8	WH-UD14CE8	WH-UD16CE8
Sound pressure level		dB(A)	48	49	50	51	53	49	50	51	53
Sound power level		dB	66	67	67	68	70	66	67	68	70
Dimensions (H x W x D)		mm	795 x 900 x 320	795 x 900 x 320	1340 x 900 x 320		1340 x 900 x 320				
Weight		Kg	66	66	106	106	106	109	109	109	109
Pipe Diameter	Liquid	mm (Inch)	6.35 (1/4)	6.35 (1/4)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)
	Gas	mm (Inch)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)
Refrigerant (R410A)		Kg	1.45	1.45	2.75	2.75	2.75	2.75	2.75	2.75	2.95
Pipe Length Range		m	3 – 30	3 – 30	3 – 40	3 - 40	3 - 40	3 – 40	3 – 40	3 - 40	3 – 40
Pipe Length for nominal		m	7	7	7	7	7	7	7	7	7
Pipe Length for additiona		m	10	10	30	30	30	30	30	30	30
Additional Gas Amount (	· •	g/m	30	30	50	50	50	50	50	50	50
I/D&O/D Hight Difference		m	20	20	30	30	30	30	30	30	30
Operation Range	Outdoor Ambient	°C	-20 to 35								
	Water Outlet (at-2/-7/-15)	oC	25 – 55 / 5 – 20	25 – 55 / 5 – 20	25 - 55 / 5 - 20	25 – 55 / 5 – 20	25 - 55 / 5 - 20	25 – 55 / 5 – 20	25 – 55 / 5 – 20	25 – 55 / 5 – 20	25 - 55 / 5 - 20

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

<b>OPTIONAL STANDARD SANITARY 1</b>	<b>TANK</b>		WH-TD20E3E5	WH-TD30E3E5-1
Water volume		L	200	300
Max. water temperature	Max. water temperature			85
Dimension	Hight / Diameter	mm	1230 / 580	1700 / 580
Weight	Weight			54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface		m <sup>2</sup>	1.4	1.8
Energy loss at 65 °C (insulated tested	kWh/24h	1.7	2.0	
3 Way valve included		Yes	Yes	



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 7 TO 16 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- MAXIMUM 40 m RISE BETWEEN THE OUTDOOR UNIT AND THE HYDRAULIC MODULE
- COOLING TEMPERATURE RANGE 5-20 °C

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74
- Environmentally-friendly refrigerant gas R410A

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55 °C
- · Power optimised based on the return water temperature
- Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Control on the hydraulic module
- Easy programming on the control panel

- Easy-to-access pressure gauge for easy control of the water pressure
- Easy-to-open hydraulic module and outdoor unit



WH-UD07CE5-A WH-UD09CE5-A



WH-UD09CE8 WH-UD12CE8
WH-UD12CE5-A WH-UD14CE8
WH-UD14CE5-A WH-UD16CE8



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WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA MDF // MONO-BLOC // HIGH CONNECTIVITY // HEATING ONLY SINGLE-PHASE // THREE-PHASE

The Aquarea MDF range adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating control and management.



















OUTDOOR HAIT										
OUTDOOD UNIT			SINGLE-PHASE				THREE-PHASE			
OUTDOOR UNIT			WH-MDF09C3E5	WH-MDF12C6E5	WH-MDF14C6E5	WH-MDF16C6E5	WH-MDF09C3E8	WH-MDF12C9E8	WH-MDF14C9E8	WH-MDF16C9E8
Heating Capacity at +7 °C kW		(W	9	12	14	16	9	12	14	16
COP at +7 °C with heating water temperature	e at 35 °C		4.74	4.67	4.5	4.23	4.74	4.67	4.5	4.23
Heating Capacity at -7 °C	k	(W	9	10	10.7	11.4	9	10	10.7	11.4
COP at -7 °C with heating water temperatur	e at 35 °C		2.81	2.7	2.62	2.55	2.81	2.7	2.62	2.55
Heating Capacity at -15 °C	k	ίW	8.3	8.9	9.5	10.3	8.3	8.9	9.5	10.3
COP at -15 °C with heating water temperatu	re at 35 °C		2.55	2.43	2.35	2.33	2.55	2.43	2.35	2.33
Sound pressure level	d	IB(A)	49	50	51	53	49	50	51	53
Sound power level	d	IB	66	67	68	70	66	67	68	70
Dimensions (H x W x D)	m	nm	1410 x 1283 x 320							
Weight	K	<b>(</b> g	153	153	153	153	157	157	157	157
Water pipe connector			R 1 1/4							
Pump No. of Speed			3	3	3	3	3	3	3	3
Input power(max)	V	N	190	190	190	190	190	190	190	190
Heating water flow (△T=5 K. 35 °C)	L/	/min	25.8	34.4	40.1	45.9	25.8	34.4	40.1	45.9
Capacity of integrated electric heater	k	ίW	3	6	6	6	3	9	9	9
Input Power kW		ίW	1.9	2.57	3.11	3.78	1.9	2.57	3.11	3.78
Starting Current A		1	8.7	11.6	14.1	17.1	2.9	3.9	4.7	5.7
Maximum Current A		1	22.9	24	25	26	7.5	8.8	9.4	9.9
Operation Range Outdoor Ambient	0	C	-20 to 35							
Water Outlet (at-2	/-7/-15) 0	C	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55	25 - 55

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

OPTIONAL STANDARD SA	NITARY TANK	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume		L	200	300
Max. water temperature		oC 20	85	85
Dimension	Hight / Diameter	mm	1230 / 580	1700 / 580
Weight		Kg	42	54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface		m²	1.4	1.8
Energy loss at 65 °C (insula	ted tested under EN12897)	kWh/24h	1.7	2.0
3 Way valve included			Yes	Yes



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 16 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55  $^{\rm o}{\rm C}$
- Power optimised according to the return water temperature
- Autonomous management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Single-unit range, with no refrigerant connections
- Wired control panel for installation in the house
- Easy programming on the control panel

#### EASY INSTALLATION AND MAINTENANCE

• Easy to open outdoor unit



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WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA MDC // MONO-BLOC // HIGH CONNECTIVITY // HEATING AND COOLING SINGLE-PHASE // THREE-PHASE

The Aquarea MDC range adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating and cooling control and management.



















			SINGLE-PHASE				THREE-PHASE			
OUTDOOR UNIT			WH-MDC09C3E5	WH-MDC12C6E5	WH-MDC14C6E5	WH-MDC16C6E5	WH-MDC09C3E8	WH-MDC12C9E8	WH-MDC14C9E8	WH-MDC16C9E8
Heating Capacity at +7	°C	kW	9	12	14	16	9	12	14	16
COP at +7 °C with heati	ng water temperature at 35 °C		4.74	4.67	4.5	4.23	4.74	4.67	4.5	4.23
Heating Capacity at -7 °	C	kW	9	10	10.7	11.4	9	10	10.7	11.4
COP at -7 °C with heating	ng water temperature at 35 °C		2.81	2.7	2.62	2.55	2.81	2.7	2.62	2.55
Heating Capacity at -15	OC O	kW	8.3	8.9	9.5	10.3	8.3	8.9	9.5	10.3
COP at -15 °C with heat	ing water temperature at 35 °C		2.55	2.43	2.35	2.33	2.55	2.43	2.35	2.33
Cooling capacity at 35 °	C	kW	7	10	11.5	12.2	7	10	11.5	12.2
EER at 35 °C with coolir	ng water temperature at 7/12 °C	;	3.11	2.77	2.61	2.54	3.11	2.77	2.61	2.54
Sound pressure level		dB(A)	49	50	51	53	49	50	51	53
Sound power level		dB	66	67	68	70	66	67	68	70
Dimensions (H x W x D)		mm	1410 x 1283 x 320							
Weight		Kg	153	153	153	153	157	157	157	157
Water pipe connector			R 1 1/4							
Pump	No. of Speed		3	3	3	3	3	3	3	3
	Input power(max)	W	190	190	190	190	190	190	190	190
Heating water flow (△T	=5 K. 35 °C)	l/min	25.8	34.4	40.1	45.9	25.8	34.4	40.1	45.9
Capacity of integrated e	lectric heater	kW	3	6	6	6	3	9	9	9
Input Power (Input Pow	er H/C)	kW	1.9 / 2.25	2.57 / 3.6	3.11 / 4.4	3.78 / 4.8	1.9 / 2.25	2.57 / 3.6	3.11 / 4.4	3.78 / 4.8
Starting Current (Input	Power H/C)	Α	8.7 / 10.2	11.6 / 16.1	14.1 / 19.7	17.1 / 21.5	2.9 / 3.4	3.9 / 5.3	4.7 / 6.6	5.7 / 7.2
Maximum Current		Α	22.9	24	25	26	7.5	8.8	9.4	9.9
Operation Range	Outdoor Ambient	oC O	-20 to 35							
	Water Outlet (at-2/-7/-15)	oC	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

OPTIONAL STANDARD SA	NITARY TANK	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume	Water volume			300
Max. water temperature	Max. water temperature			85
Dimension	Dimension Hight / Diameter		1230 / 580	1700 / 580
Weight	Weight		42	54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface	m <sup>2</sup>	1.4	1.8	
Energy loss at 65 °C (insula	kWh/24h	1.7	2.0	
3 Way valve included				Yes



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 16 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- COOLING TEMPERATURE RANGE 5-20 °C

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55  $^{\rm o}{\rm C}$
- · Power optimised according to the return water temperature
- Autonomous management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Single-unit range, with no refrigerant connections
- Wired control panel for installation in the house
- Easy programming on the control panel

#### EASY INSTALLATION AND MAINTENANCE

• Easy to open outdoor unit







WH-TD30E3E5-1



# AQUAREA SXF // BI-BLOC // T-CAP // HEATING ONLY SINGLE-PHASE // THREE-PHASE

The Aquarea SXF is the new Aquarea product from Panasonic for central heating. T-CAP stands for Total capacity. This new line-up is able to maintain the same nominal capacity even at -15 °C without the help of an electrical booster heater. T-CAP is also able to provide extremely high efficiency, whatever the outside temperature or the water temperature.

#### The new SXF is ideal for residential properties which don't have an external boiler and require a maintained capacity level.

The SXF adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This Range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating control and management.



















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			SINGLE-PHASE (POWER TO INI	000R)	THREE-PHASE (POWER TO	INDOOR)
NDOOR UNIT			WH-SXF09D3E5	WH-SXF12D6E5	WH-SXF09D3E8	WH-SXF12D9E8
eating Capacity at +7 º	C	kW	9	12	9	12
OP at +7 °C with heatin	ng water temperature at 35 °C		4.74	4.67	4.74	4.67
eating Capacity at -7 °C		kW	9	12	9	12
OP at -7 °C with heatin	g water temperature at 35 °C		2.81	2.7	2.81	2.7
eating Capacity at -15	°C	kW	9	12	9	12
OP at -15 °C with heati	ng water temperature at 35 °C		2.54	2.4	2.54	2.4
imensions (H x W x D)		mm	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353
/eight		Kg	47	49	50	51
later pipe connector			R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4
ump	No. of Speed		3	3	3	3
	Input power(max)	W	190	190	190	190
leating water flow ( $\Delta T$ =	=5 K. 35 °C)	l/min	25.8	34.4	25.8	34.4
apacity of integrated el	ectric heater	kW	3	3	3	9
put Power		kW	1.9	2.57	1.9	2.57
tarting Current		Α	8.8	11.9	2.9	3.9
aximum Current		Α	25	29	10.4	11.9
UTDOOR UNIT			WH-UX09DE5	WH-UX12DE5	WH-UX09DE8	WH-UX12DE8
und pressure level		dB(A)	49	49	49	49
ound power level		dB	66	66	66	66
mensions (H x W x D)		mm	1340 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Veight		Kg	107	107	109	109
ipe Diameter	Liquid		9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)
	Gas	mm (Inch)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)
efrigerant (R410A)		Kg	3.10	3.10	3.10	3.10
ipe Length Range		m	3 – 30	3 – 30	3 – 30	3 – 30
pe Length for nominal		m	7	7	7	7
e Length for addition		m	15	15	15	15
lditional Gas Amount (		g/m	50	50	50	50
/D&O/D Hight Difference		m	20	20	20	20
peration Range	Outdoor Ambient	oC	-20 to 35	-20 to 35	-20 to 35	-20 to 35
	Water Outlet (at-2/-7/-15)	oC	25 - 55	25 - 55	25 - 55	25 - 55

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

<b>OPTIONAL STANDARD SANITARY 1</b>	<b>TANK</b>	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume	L	200	300	
Max. water temperature	oC	85	85	
Dimension	Dimension Hight / Diameter		1230 / 580	1700 / 580
Weight	Kg	42	54	
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface	Exchange surface			1.8
Energy loss at 65 °C (insulated tested	kWh/24h	1.7	2.0	
3 Way valve included		Yes	Yes	



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 12 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- MAXIMUM 30 m RISE BETWEEN THE OUTDOOR UNIT AND THE HYDRAULIC MODULE
- CONSTANT CAPACITY AT OUTDOOR TEMPERATURES DOWN TO -15  $^{\circ}\text{C}$  (at a heating water temperature of 35  $^{\circ}\text{C}$ )

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74
- Environmentally-friendly refrigerant gas R410A

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55 °C
- · Power optimised based on the return water temperature
- Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- · Control on the hydraulic module
- Easy programming on the control panel

- Easy-to-access pressure gauge for easy control of the water pressure  $% \left( 1\right) =\left( 1\right) \left( 1\right) \left($
- Easy-to-open hydraulic module and outdoor unit



WH-UX09DE5 WH-UX12DE5 WH-UX09DE8

WH-UX12DE8



WH-TD20E3E5



WH-TD30E3E5-1



# AQUAREA SXC // BI-BLOC // T-CAP // HEATING AND COOLING SINGLE-PHASE // THREE-PHASE

The Aquarea SXC is the new Aquarea product from Panasonic for heating and cooling. T-CAP stands for Total capacity. This new line-up is able to maintain the same nominal capacity even at -15 °C without the help of an electrical booster heater. T-CAP is also able to provide extremely high efficiency, whatever the outside temperature or the water temperature.

#### The new SXC is ideal for residential properties which don't have an external boiler and require a maintained capacity level.

The SXC adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating or cooling control and management.



















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			SINGLE-PHASE (POWER TO	INDOOR)	THREE-PHASE (POWER TO	INDOOR)
INDOOR UNIT			WH-SXC09D3E5	WH-SXC12D6E5	WH-SXC09D3E8	WH-SXC12D9E8
Heating Capacity at +7 °		kW	9	12	9	12
COP at +7 °C with heating	g water temperature at 35 °C	<u>'</u>	4.74	4.67	4.74	4.67
leating Capacity at -7 °C		kW	9	12	9	12
OP at -7 °C with heatin	g water temperature at 35 °C		2.81	2.7	2.81	2.7
leating Capacity at -15	C	kW	9	12	9	12
COP at -15 °C with heati	ng water temperature at 35 °C		2.54	2.4	2.54	2.4
Cooling capacity at 35 °C	;	kW	7	10	7	10
ER at 35 °C with cooling	g water temperature at 7/12 º		3.11	2.78	3.11	2.78
Dimensions (H x W x D)		mm	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353
Neight		Kg	48	51	51	52
Water pipe connector			R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4
Pump	No. of Speed		3	3	3	3
	Input power(max)	W	180	180	180	180
Heating water flow (∆T=	5 K. 35 °C)	l/min	25.8	34.4	25.8	34.4
Capacity of integrated el	ectric heater	kW	3	6	3	9
nput Power		kW	1.9	2.57	1.9	2.57
Starting Current		Α	10.4	16.7	3.5	5.6
Maximum Current		Α	25	29	10.4	11.9
DUTDOOR UNIT			WH-UX09DE5	WH-UX12DE5	WH-UX09DE8	WH-UX12DE8
Sound pressure level		dB(A)	49	50	49	50
Sound power level		dB	66	67	66	67
Dimensions (H x W x D)		mm	1340 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Weight		Kg	107	107	110	110
Pipe Diameter	Liquid	mm (Inch)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)
	Gas	mm (Inch)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)
Refrigerant (R410A)	•	Kg	3.10	2.75	2.75	2.75
Pipe Length Range		m	3 - 30	3 – 30	3 – 30	3 – 30
Pipe Length for nominal		m	7	7	7	7
ipe Length for addition		m	15	15	15	15
dditional Gas Amount (	R410A)	g/m	50	50	50	50
I/D&O/D Hight Difference	)	m	20	20	20	20
Operation Range	Outdoor Ambient	oC.	-20 to 35	-20 to 35	-20 to 35	-20 to 35
-	Water Outlet (at-2/-7/-15)	°C	25 - 55	25 - 55	25 - 55	25 - 55

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

OPTIONAL STANDARD SANITARY	<b>TANK</b>	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume	L	200	300	
Max. water temperature	oC	85	85	
Dimension	Dimension Hight / Diameter		1230 / 580	1700 / 580
Weight	Kg	42	54	
Power supply	Power supply			230
Material inside tank			Inox	Inox
Exchange surface	Exchange surface			1.8
Energy loss at 65 °C (insulated tester	kWh/24h	1.7	2.0	
3 Way valve included		Yes	Yes	



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 12 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- MAXIMUM 20 m RISE BETWEEN THE OUTDOOR UNIT AND THE HYDRAULIC MODULE
- CONSTANT CAPACITY AT OUTDOOR TEMPERATURES DOWN TO -15  $^{\circ}\text{C}$  (at a heating water temperature of 35  $^{\circ}\text{C}$ )
- COOLING TEMPERATURE RANGE 5-20 °C

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74
- Environmentally-friendly refrigerant gas R410A

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55 °C
- · Power optimised based on the return water temperature
- · Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- · Control on the hydraulic module
- Easy programming on the control panel

- Easy-to-access pressure gauge for easy control of the water pressure  $% \left( 1\right) =\left( 1\right) \left( 1\right) \left($
- Easy-to-open hydraulic module and outdoor unit



WH-UX09DE5 WH-UX12DE5 WH-UX09DE8 WH-UX12DE8





WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA MXF // MONO-BLOC // T-CAP // HEATING ONLY SINGLE-PHASE // THREE-PHASE

The Aquarea MXF is the new Aquarea product from Panasonic for central heating. T-CAP stands for Total capacity. This new line-up is able to maintain the same nominal capacity even at -15 °C without the help of an electrical booster heater. T-CAP is also able to provide extremely high efficiency, whatever the outside temperature or the water temperature.

# The new MXF is ideal for residential properties which don't have an external boiler and require a maintained capacity level.

The MXF adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating control and management.



















			SINGLE-PHASE		THREE-PHASE				
OUTDOOR UNIT		WH-MXF09D3E5	WH-MXF12D6E5	WH-MXF09D3E8	WH-MXF12D9E8				
Heating Capacity at +	7 °C	kW	9	12	9	12			
COP at +7 °C with hea	ating water temperature at 35 °C		4.74	4.67	4.74	4.67			
Heating Capacity at -	7 °C	kW	9	12	9	12			
COP at -7 °C with hea	ting water temperature at 35 °C		2.81	2.7	2.81	2.7			
Heating Capacity at -	15 °C	kW	9	12	9	12			
COP at -15 °C with he	ating water temperature at 35 °C		2.54	2.4	2.54	2.4			
Sound pressure level		dB(A)	49	50	49	50			
Sound power level		dB	66	67	66	67			
Dimensions (H x W x	D)	mm	1410 x 1283 x 320						
Veight		Kg	155	155	158	158			
Vater pipe connector			R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4			
Pump	No. of Speed		3	3	3	3			
	Input power(max)	W	180	180	180	180			
leating water flow (/	\T=5 K. 35 °C)	l/min	25.8	34.4	25.8	34.4			
Capacity of integrated	d electric heater	kW	3	6	3	9			
nput Power		kW	1.9	2.57	1.9	2.57			
Starting Current		Α	10.4	16.7	2.9	3.9			
Maximum Current		Α	25	29	10.4	11.9			
peration Range	Outdoor Ambient	oC O	-20 to 35	-20 to 35	-20 to 35	-20 to 35			
•	Water Outlet (at-2/-7/-15)	οС	25 - 55	25 - 55	25 - 55	25 - 55			

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

OPTIONAL STANDARD SA	NITARY TANK	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume	L	200	300	
Max. water temperature	oC.	85	85	
Dimension	Dimension Hight / Diameter		1230 / 580	1700 / 580
Weight	Weight		42	54
Power supply		٧	230	230
Material inside tank			Inox	Inox
Exchange surface	m <sup>2</sup>	1.4	1.8	
Energy loss at 65 °C (insula	kWh/24h	1.7	2.0	
3 Way valve included		Yes	Yes	



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 12 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55  $^{\rm o}{\rm C}$
- Power optimised according to the return water temperature
- Autonomous management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Single-unit range, with no refrigerant connections
- Wired control panel for installation in the house
- Easy programming on the control panel

#### EASY INSTALLATION AND MAINTENANCE

• Easy to open outdoor unit



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WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA MXC // MONO-BLOC // T-CAP // HEATING AND COOLING SINGLE-PHASE // THREE-PHASE

The Aquarea MXC is the new Aquarea product from Panasonic for heating and cooling. T-CAP stands for Total capacity. This new line-up is able to maintain the same nominal capacity even at -15 °C without the help of an electrical booster heater. T-CAP is also able to provide extremely high efficiency, whatever the outside temperature or the water temperature.

# The new MXC is ideal for residential properties which don't have an external boiler and require a maintained capacity level.

The MXC adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating or cooling control and management.



















			SINGLE-PHASE		THREE-PHASE	
OUTDOOR UNIT			WH-MXC09D3E5	WH-MXC12D6E5	WH-MXC09D3E8	WH-MXC12D9E8
Heating Capacity at +7	oC O	kW	9	12	9	12
COP at +7 °C with heat	ing water temperature at 35 °C		4.74	4.67	4.74	4.67
Heating Capacity at -7	°C	kW	9	12	9	12
COP at -7 °C with heati	ng water temperature at 35 °C		2.81	2.7	2.81	2.7
Heating Capacity at -15	i ºC	kW	9	12	9	12
COP at -15 °C with hea	ting water temperature at 35 °C		2.54	2.4	2.54	2.4
Cooling capacity at 35	°C	kW	7	10	7	10
EER at 35 °C with cooli	ng water temperature at 7/12 °C	C	3.11	2.78	3.11	2.78
Sound pressure level		dB(A)	49	50	49	50
Sound power level		dB	66	67	66	67
Dimensions (H x W x D		mm	1410 x 1283 x 320			
Weight		Kg	155	155	158	158
Water pipe connector		•	R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4
Pump	No. of Speed		3	3	3	3
	Input power(max)	W	190	190	190	190
Heating water flow (△	[=5 K. 35 °C)	l/min	25.8	34.4	25.8	34.4
Capacity of integrated	electric heater	kW	3	6	3	9
Input Power		kW	1.9	2.57	1.9	2.57
Starting Current		Α	10.4	16.7	2.9	3.9
Maximum Current		Α	25	29	10.4	11.9
Operation Range	Outdoor Ambient	oC	-20 to 35	-20 to 35	-20 to 35	-20 to 35
	Water Outlet (at-2/-7/-15)	oC.	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20	22 - 55 / 5 - 20

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

OPTIONAL STANDARD SANITARY 1	ANK	WH-TD20E3E5	WH-TD30E3E5-1	
Water volume	L	200	300	
Max. water temperature	Max. water temperature		85	85
Dimension	Dimension Hight / Diameter		1230 / 580	1700 / 580
Weight	Kg	42	54	
Power supply	Power supply			230
Material inside tank			Inox	Inox
Exchange surface	Exchange surface			1.8
Energy loss at 65 °C (insulated tested	kWh/24h	1.7	2.0	
3 Way valve included		Yes	Yes	



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 12 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 55 °C
- WORKS DOWN TO -20 °C
- COOLING TEMPERATURE RANGE 5-20 °C

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- 78% more efficient than an electrical convection system
- Maximum COP of 4.74 for the 9 kW model

#### COMFORT

- Optimum control possible with a room temperature thermostat (not supplied)
- Maximum hydraulic module output temperature: 55 °C
- · Power optimised according to the return water temperature
- Autonomous management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Single-unit range, with no refrigerant connections
- Wired control panel for installation in the house
- Easy programming on the control panel

#### EASY INSTALLATION AND MAINTENANCE

• Easy to open outdoor unit





WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA SHF // BI-BLOC // HT // HEATING ONLY SINGLE-PHASE // THREE-PHASE

For a house with high temperature radiators (for example, cast iron radiators), the Aquarea High Temperature Solution is most suited as it provides output water temperatures of  $65~^{\circ}\text{C}$  even at  $-15~^{\circ}\text{C}$ . Aquarea HT is able to deliver  $65~^{\circ}\text{C}$  with the Heat Pump alone.



















		SINGLE-PHASE (POWER TO	INDOOR)	THREE-PHASE (POWER TO	INDOOR)
INDOOR UNIT		WH-SHF09D3E5*	WH-SHF12D6E5*	WH-SHF09D3E8*	WH-SHF12D9E8*
Heating Capacity at +7 °C	W0T35 kW	9	12	9	12
COP at +7 °C with heating water temperature at 35 °		4.55	4.4	4.55	4.4
Heating Capacity at +2 °C	kW	9	12	9	12
COP at +2 °C		3.4	3.23	3.4	3.23
Heating Capacity at -7 °C	kW	9	12	9	12
COP at -7 °C		2.7	2.5	2.7	2.5
Heating Capacity at -15 °C	kW	9	12	9	12
COP at -15 °C with heating water temperature at 35 °C	C	2.4	2.15	2.4	2.15
Heating Capacity at +7 °C	W0T65 kW	9	12	9	12
COP at +7 °C with heating water temperature at 65 °		2.25	2.2	2.25	2.2
Heating Capacity at -7 °C	kW	8.9	9.6	8.9	9.6
COP at -7 °C		1.64	1.61	1.64	1.61
Heating Capacity at -15 °C	kW	7.8	8	7.8	8
COP at -15 °C with heating water temperature at 65 °	C	1.32	1.3	1.32	1.3
Dimensions (H x W x D) / Weight	mm / K	892 x 502 x 353 / 50	892 x 502 x 353 / 52	892 x 502 x 353	892 x 502 x 353
Water pipe connector		1-3/32	1-3/32	1-3/32	1-3/32
Pump No. of Speed		3	3	3	3
Input Power(max)	W	180	180	180	180
Heating water flow ( $\Delta T = 5$ K. 35 °C)	l/min	25.8	34.4	25.8	34.4
Capacity of integrated electric heater	kW	3	6	3	9
Input Power	kW	1.98	2.73		
Running and starting Current	A	9.5	13		
Maximum Current	A	28.5	29		
OUTDOOR UNIT		WH-UH09DE5	WH-UH12DE5	WH-UH09DE8	WH-UH12DE8
Sound pressure level	dB(A)	49	50	49	50
Sound power level	dB	66	67	66	67
Dimensions (H x W x D) / Weight	mm / K		1340 x 900 x 320 / 105	1340 x 900 x 320 / 105	1340 x 900 x 320 / 105
Pipe Diameter Liquid / Gas	mm (In		9.52 (3/8) / 15.88 (5/8)	9.52 (3/8) / 15.88 (5/8)	9.52 (3/8) / 15.88 (5/8)
Refrigerant (R407C)	Kg	2.99	2.99	2.95	2.95
Pipe Length Range	m	3 - 30	3 – 30	3 – 30	3 - 30
Pipe Length for nominal capacity	m	7	7	7	7
Pipe Length for additional gas	m	15	15	15	15
Additional Gas Amount (R407C)	g/m	70	70	70	70
I/D&O/D Height Difference	m	20	20	20	20
Operation Range Outdoor Ambient	oC.	-20 to 35	-20 to 35	-20 to 35	-20 to 35
W-+ 0 (-+ 0/ 7/ 1F)	00	05 /5	05 /5	05 /5	05 /5

25 - 65

25 - 65

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511. \* Tentative specifications. Single phase available from February 2012, three phase available from April 2012.

25 - 65

#### TANKS (MORE TANK ON THE ACCESSORIES PART)

Water Outlet (at-2/-7/-15)

OPTIONAL STANDARD S	ANITARY TANK		WH-TD20E3E5	WH-TD30E3E5-1
Water volume		L	200	300
Max. water temperature		oC 20	85	85
Dimension	Hight / Diameter	mm	1230 / 580	1700 / 580
Weight		Kg	42	54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface		m²	1.4	1.8
Energy loss at 65 °C (insu	ated tested under EN12897)	kWh/24h	1.7	2.0
3 Way valve included			Yes	Yes



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 12 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 65 °C
- WORKS DOWN TO -20 °C
- MAXIMUM 30 M RISE BETWEEN THE OUTDOOR UNIT AND THE HYDRAULIC MODULE

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- Maximum COP of 4.55
- Environmentally-friendly refrigerant gas R407C

#### COMFORT

- Maximum hydraulic module output temperature: 65 °C
- Optimum control possible with an outside thermometer (not supplied)
- Power optimised based on the return water temperature
- $\boldsymbol{\cdot}$  Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Control on the hydraulic module
- Easy programming on the control panel

- Easy-to-access pressure gauge for easy control of the water pressure
- · Easy-to-open hydraulic module and outdoor unit



WH-UH09DE5 WH-UH12DE5 WH-UH09DE8 WH-UH12DE8



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WH-TD20E3E5

WH-TD30E3E5-1



# AQUAREA MHF // MONO-BLOC // HT // HEATING ONLY SINGLE-PHASE // THREE-PHASE

For a house with high temperature radiators (for example, cast iron radiators), the Aquarea High Temperature Solution is most suited as it provides output water temperatures of  $65~^{\circ}\text{C}$  even at -15  $^{\circ}\text{C}$ . Aquarea HT is able to deliver 65 °C with the Heat Pump alone.



















				SINGLE-PHASE		THREE-PHASE	
INDOOR UNIT				WH-MHF09D3E5*	WH-MHF12D6E5*	WH-MHF09D3E8*	WH-MHF12D9E8*
Heating Capacity at +7 °C		W0T35	kW	9	12	9	12
COP at +7 °C with heating water	temperature at 35 °C			4.55	4.4	4.55	4.4
Heating Capacity at -7 °C			kW	9	12	9	12
COP at -7 °C				2.7	2.5	2.7	2.5
Heating Capacity at -15 °C			kW	9	12	9	12
COP at -15 °C with heating wate	r temperature at 35 °C			2.4	2.15	2.4	2.15
Heating Capacity at +7 °C		W0T65	kW	9	12	9	12
COP at +7 °C with heating water	temperature at 65 °C			2.25	2.2	2.25	2.2
Heating Capacity at -7 °C			kW	8.9	9.6	8.9	9.6
COP at -7 °C				1.64	1.61	1.64	1.61
Heating Capacity at -15 °C			kW	7.8	8	7.8	8
COP at -15 °C with heating wate	r temperature at 65 °C			1.32	1.3	1.32	1.3
Sound pressure level			dB(A)	49	50	49	50
Sound power level			dB	66	67	66	67
Dimensions (H x W x D)			mm	1410 x 1283 x 320			
Weight			Kg	155	155	166	166
Water pipe connector				1-3/16	1-3/16	1-3/16	1-3/16
Pump No. of	Speed			3	3	3	3
Input P	ower(max)		W	180	180	180	180
Heating water flow ( $\Delta T = 5 \text{ K. } 35$	oC)		l/min	25.8	34.4	25.8	34.4
Capacity of integrated electric h	eater		kW	3	6	3	9
Input Power			kW	1.98	2.73	1.98	2.65
Running and starting Current			Α	9.5	12.8	3.1	4.2
Maximum Current			Α	28.5	29	10.4	10.9
Operation Range Outdoo	r Ambient		oC	-20 to 35	-20 to 35	-20 to 35	-20 to 35
Water	Outlet (at-2/-7/-15)		oC	25 - 65	25 - 65	25 - 65	25 - 65

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance calculation in agreement with EN14511.

OPTIONAL STANDARD SANITARY	TANK		WH-TD20E3E5	WH-TD30E3E5-1
Water volume		L	200	300
Max. water temperature		oC	85	85
Dimension	Hight / Diameter	mm	1230 / 580	1700 / 580
Weight		Kg	42	54
Power supply		V	230	230
Material inside tank			Inox	Inox
Exchange surface		m <sup>2</sup>	1.4	1.8
Energy loss at 65 °C (insulated tester	d under EN12897)	kWh/24h	1.7	2.0
3 Way valve included			Yes	Yes

<sup>\*</sup> Tentative specifications.
Single phase available from April 2012, three phase available from May 2012.



- NEW! OPTIONAL SMARTPHONE CONTROL
- RANGE FROM 9 TO 12 KW, SINGLE AND THREE-PHASE
- MAXIMUM HYDRAULIC MODULE OUTPUT TEMPERATURE: 65 °C
- WORKS DOWN TO -20 °C

#### **ENERGY AND ENVIRONMENTAL EFFICIENCY**

- Maximum COP of 4.55
- Environmentally-friendly refrigerant gas R407C

#### COMFORT

- Maximum hydraulic module output temperature: 65  $^{\rm o}{\rm C}$
- Optimum control possible with an outside thermometer (not supplied)
- · Power optimised based on the return water temperature
- Built-in management of the hot water cylinder and heating

#### **EASY TO USE**

- **NEW!** Optional Smartphone control
- Easy programming on the control panel

- Easy-to-access pressure gauge for easy control of the water pressure
- Easy-to-open outdoor unit





WH-TD20E3E5

WH-TD30E3E5-1







# **AQUAREA PRO**

THE NEW PANASONIC SOLUTION FOR CHILLED AND HOT WATER PRODUCTION!

FROM 28 kW to 80 kW



#### **KEY BENEFITS:**

- No cascade installation up to 80 kW with GHP outdoor unit and 51,3 kW with ECOi
- No Glycol needed when WHE is located on the heated part of the building
- Full line-up of outdoor units which can cover up to 80 kW heat demand
- Large choice of remote controls and interfaces
- 3.25 COP with water at 45 °C and outdoor temperature of +7 °C

#### With ECOi outdoor units:

- Maximum hot water outlet temperature: 45 °C
- Minimum chilled water outlet temperature: 7 °C
- Outdoor temperature range in cooling mode: +5 °C to +43 °C
- Outdoor temperature range in heating mode: -20 °C to +15 °C

#### ECOi Water Heat Exchanger

#### Electrical VRF with water heat exchanger

 With this easy to install Aquarea Pro system, you can now cover projects up to 51 kW hot water demand or 44 kW on chilled applications in an efficient and cost effective way.

# SYSTEM EXAMPLE Floor Heating Fan Coil Unit Fan Coil Unit Water Heat Exchanger Water Piping Outdoor unit \* Standard DX type indoor unit system

Note: The mode of running of outdoor unit depends on the water heat exchanger's mode. The water pump is not

included in the water heat exchanger unit. For simultaneous operation, however, the maximum capacity is 130%

Please inquire details of this system design of Panasonic.

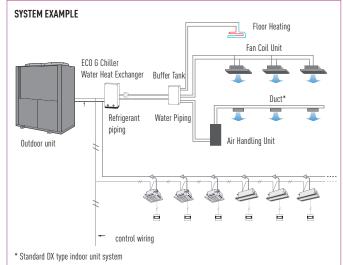
#### With GHP outdoor units:

- Hot water outlet temperatures from 35  $^{\circ}\text{C}$  to 55  $^{\circ}\text{C}$
- Chilled water outlet temperatures from 5  $^{\circ}\text{C}$  to 15  $^{\circ}\text{C}$
- Outdoor temperature range in cooling mode: -10 °C to +43 °C
- Minimum outdoor temperature in heating mode: -21 °C

#### ECO G Water Heat Exchanger

#### **Mixed System Application**

- Combined with a water heat exchanger unit, the Panasonic GHP can create a flexible system--the ideal replacement for existing chiller and boiler systems.
- The GHP Multi System can have an indoor unit plus a GHP chiller. When the two systems are operated independently, an outdoor unit with 130% capacity can be connected.



Note: The mode of running of outdoor unit depends on the water heat exchanger's mode. The water pump is not included in the water heat exchanger unit. For simultaneous operation, however, the maximum capacity is 130%. Please inquire details of this system design of Panasonic.



# AQUAREA PRO // NEW ECOi 2-WAY 6 SERIES WITH WATER HEAT EXCHANGER

#### DESIGNED FOR CHILLED AND HOT WATER PRODUCTION

With this easy to install Aquarea Pro system, you can now cover projects up to 51 kW hot water demand or 44 kW on chilled applications in an efficient and cost effective way.







		1	1
WATER HEAT EXCHANGER (ECOi)		S-250WX2E5	S-500WX2E5
Nominal Heating Capacity	kW	28	51.3
Nomimal Cooling Capacity	kW	25	50
Heating Capacity at +7 °C. with water temperature at 45 °C	kW	28.0	51.3
COP at +7 °C with heating water temperature at 45 °C		3.25	3.10
Dimensions (H x W x D)	mm	1000 x 395 x 965	1000 x 395 x 965
Weight	Kg	165	190
Water pipe connector		Rp2 Nut thread (50A)	Rp2 Nut thread (50A)
Pump No. of Speed		(Field supply)	(Field supply)
Input Power(max)	W		
Heating water flow (△T=5 K. 35 °C)	l/min	4.3	8.6
Capacity of integrated electric heater	kW	(Not equipped)	(Not equipped)
Input Power	kW	0.01	0.01
Starting Current	A		
Maximum Current	A	0.07	0.07
OUTDOOR UNIT		U-10ME1E81	U-20ME1E81
Sound pressure level	dB(A)	59	63
Sound power level	dB	73.5	77.5
Dimensions (H x W x D)	mm	1758 x 770 x 930	1758 x 1540 x 930
Weight	Kg	281	423
Pipe Diameter Liquid	mm (Inch)	22.22	28.58
Gas	mm (Inch)	9.52	15.88
Refrigerant (R410A)	Kg	6.3 *Need Additional charge at site	9.0 *Need Additional charge at site
Pipe Length Range	m	max. 170	max. 170
Pipe Length for nominal capacity	m	7.5	7.5
Pipe Length for additional gas	m	0 <	0 <
Additional Gas Amount (R410A)	g/m	Reffer to Manual	Reffer to Manual
I/D&O/D Hight Difference	m	50 (OD above) 35 (OD below)	50 (OD above) 35 (OD below)
Operation Range Outdoor Ambient	oC.	-20~ 15	-20~ 15
Water Outlet (at-2/-7/-15)	°C	35~ 45	35~ 45

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Not valid in case of mixed systems, combination ratio in case of one-to-one-systems: 100 %.



- UP TO 51 kW ON ONLY 1 OUTDOOR UNIT
- PRODUCE HOT WATER AT 45 °C WITH HIGH EFFICIENCY
- CHILLED WATER OUTLET TEMPERATURES FROM 5 °C TO 15 °C
- LARGE LINE-UP OF REMOTE CONTROLS FROM ECOI LINE-UP
- HIGH EFFICIENCY UP TO -20 °C ON HEATING MODE
- HIGH EFFICIENCY UP TO +5  $^{\rm o}{\rm C}$  on cooling mode (chiller application)

#### DESCRIPTION

- New water heat exchanger for GHP and ECOi  $\rm 6$  series, dimensions reduced by 45  $\rm \%$
- Operation and control by wired remote control CZ-RTC2
- Energy-efficient capacity control
- Stainless steel plate heat exchanger with anti-freeze protection control
- · Change-over between heating and cooling operation
- Maximum distance between outdoor unit and water heat exchanger: 170 m
- Maximum hot water outlet temperature: 45  $^{\rm o}{\rm C}$
- Minimum chilled water outlet temperature: 7  $^{\rm oC}$
- Outdoor temperature range in cooling mode: +5  $^{\rm o}{\rm C}$  to +43  $^{\rm o}{\rm C}$
- Outdoor temperature range in heating mode: -20  $^{\rm o}{\rm C}$  to +15  $^{\rm o}{\rm C}$



# AQUAREA PRO // NEW GAS VRF ECO G WITH WATER HEAT EXCHANGER

DESIGNED CHILLED AND HOT WATER PRODUCTION

NEW Aquarea Pro GHP+WHE system, based of Gas Heat Pump technology, for hot water production and chilled application even where electricity is not available!





WATER HEAT EXCHAIN	NGER (ECO G)		S-250WX2E5*	S-500WX2E5	S-710WX2E5		
Nominal Heating Capac	ity	kW	30	60	80		
Nomimal Cooling Capac	city	kW	25	50	67		
Heating Capacity at +7	°C. heating water temperature	at 45 °C	30	60	80		
COP at +7 °C with heati	ing water temperature at 45 °C	kW		1.49	1.34		
Heating Capacity at -7	°C. heating water temperature a	at 35 °C		59.2	77.4		
	rater temperature at 35 °C			0.75	0.76		
	°C. heating water temperature			59.2	77.4		
COP at -15 °C with heat	ting water temperature at 35 °C	kW		0.75	0.76		
Dimensions (H x W x D)		Kg	1000 x 395 x 965	1000 x 395 x 965	1000 x 395 x 965		
Weight			110	130	150		
Water pipe connector			Rp2 Nut thread (50A)	Rp2 Nut thread (50A)	Rp2 Nut thread (50A)		
Pump		W	(Field supply)	(Field supply)	(Field supply)		
Heating water flow ( $\Delta T$	=5 K. 35 °C)	kW	4.3	8.6	12.2		
Capacity of integrated e	electric heater	kW	(Not equipped)	(Not equipped)	(Not equipped)		
Input Power		Α	0.01	0.01	0.01		
Maximum Current			0.07	0.07	0.07		
OUTDOOR UNIT			-	U-20GE2E5	U-30GE2E5		
Sound pressure level		dB(A)		58	63		
Sound power level		dB		83	86		
Dimensions (H x W x D)		mm		2228 x 1650 x 1000	2228 x 2026 x 1000		
Weight		Kg		770	830		
Pipe Diameter	Liquid	mm (Inch)		28.58	31.75		
	Gas	mm (Inch)		15.88	19.05		
Refrigerant (R410A)		Kg		11.5 *Need additional chatge at site	11.5 *Need additional charge at site		
Pipe Length Range		m		max. 170	max. 170		
	ipe Length for nominal capacity			7	7		
ipe Length for additional gas m		m		0<	0<		
Additional Gas Amount (R410A) g/		g/m		Refer to Manual	Refer to Manual		
I/D&O/D Hight Difference		m		50 (OD above) 35 (OD below)	50 (OD above) 35 (OD below)		
Operation Range	Outdoor Ambient	oC 20		-21~ 15.5	-21~ 15.5		
	Water Outlet (at-2/-7/-15)	oC		35~ 55	35~ 55		

<sup>\*</sup> Only combined with other indoor units.

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Not valid in case of mixed systems, combination ratio in case of mixed systems; 50 to 130 %, combination ratio in case of one-to-one-systems; 100 %.



- UP TO 80 kW ON ONLY 1 OUTDOOR UNIT, WE CAN PROVIDE A 25 OR 30HP GHP FOR THIS WHF
- HOT WATER OUTLET TEMPERATURES FROM 35 °C TO 55 °C
- CHILLED WATER OUTLET TEMPERATURES FROM 5 °C TO 15 °C
- LARGE LINE-UP OF REMOTE CONTROLS FROM ECOI LINE-UP
- HIGH EFFICIENCY UP TO -20 °C ON HEATING MODE
- HIGH EFFICIENCY UP TO +5 °C ON COOLING MODE (CHILLER APPLICATION)

#### DESCRIPTION

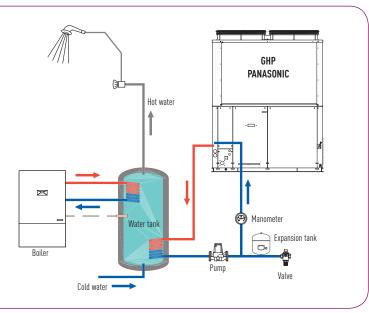
- Hot water outlet temperatures from 35  $^{\circ}\text{C}$  to 55  $^{\circ}\text{C}$
- Chilled water outlet temperatures from 5  $^{\rm o}{\rm C}$  to 15  $^{\rm o}{\rm C}$
- Operation and control by wired remote control CZ-RTC2
- Energy-efficient capacity control
- Stainless steel plate heat exchanger with anti-freeze protection control
- · Change-over between heating and cooling operation
- Maximum distance between outdoor unit and water heat exchanger: 170 m
- Possibility to mix DX and water heat exchanger systems
- · No cooling tower necessary
- Hot water outlet temperatures from 35  $^{\circ}\text{C}$  to 55  $^{\circ}\text{C}$
- Chilled water outlet temperatures from 5  $^{\circ}\mathrm{C}$  to 15  $^{\circ}\mathrm{C}$
- Outdoor temperature range in cooling mode: -10 °C to +43 °C
- Minimum outdoor temperature in heating mode: -21 °C

#### **HOT WATER SUPPLY FUNCTION**

#### SYSTEM ADVANTAGE

The engine waste heat, which is normally exhausted into the atmosphere, is recovered via the heat exchanger and effectively used as hot water, so the GHP Chiller acts as a sub system that alleviates the load on the client's main hot water system, and therefore offers 'free' hot water.

CAPACITY AT	COOLING STANDARD POINT	OUTLET	TEMP 75 °C
Outdoor unit	U-16GE2E5	kW	15.00
	U-20GE2E5		20.00
	U-25GE2E5		30.00
	U-30GE2E5		30.00
Hot water piping	allowable pressure	'	0.7
Hot water circula	ation rate	MPa	3.9
Hot water tube s	ize	m³/h	Rp 3/4



# HEATING CAPACITY TABLE BASED ON OUTLET TEMPERATURE AND OUTSIDE TEMPERATURE

#### MONO-BLOC // 6 AND 9 KW AQUAREA // HEATING ONLY // MDF

WH-MDF	06D3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	6.15	2.52	2.44	5.90	2.68	2.20	5.65	2.84	1.99	5.40	3.00	1.80	5.20	3.17	1.64	5.00	3.34	1.50
-7	5.18	1.70	3.05	5.15	1.94	2.65	5.13	2.19	2.35	5.10	2.43	2.10	5.45	2.83	1.93	5.80	3.22	1.80
2	5.00	1.25	4.02	5.00	1.47	3.40	5.00	1.70	2.95	5.00	1.92	2.60	5.00	2.21	2.26	5.00	2.50	2.00
7	6.00	1.15	5.24	6.00	1.37	4.38	6.00	1.60	3.76	6.00	1.82	3.30	6.00	2.11	2.84	6.00	2.40	2.50
25	7.30	0.80	9.18	7.10	0.95	7.47	6.90	1.11	6.24	6.70	1.26	5.32	6.50	1.43	4.55	6.30	1.60	3.94

WH-MDF	F09D3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	7.90	3.65	2.17	7.60	3.80	2.00	7.30	3.96	1.85	7.00	4.11	1.70	6.45	4.09	1.58	5.90	4.06	1.45
-7	7.80	3.41	2.29	7.70	3.66	2.10	7.60	3.91	1.94	7.50	4.16	1.80	7.55	4.62	1.63	7.60	5.08	1.50
2	7.00	2.04	3.44	7.00	2.33	3.00	7.00	2.63	2.67	7.00	2.92	2.40	7.00	3.40	2.06	7.00	3.88	1.80
7	9.00	1.90	4.75	9.00	2.20	4.09	9.00	2.51	3.59	9.00	2.81	3.20	8.95	3.34	2.68	8.90	3.87	2.30
25	9.00	1.02	8.82	9.00	1.34	6.72	9.00	1.66	5.42	9.00	1.98	4.55	9.00	2.23	4.04	9.00	2.48	3.63

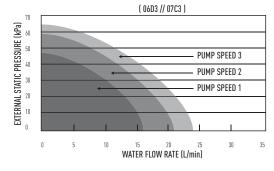
#### BI-BLOC // HIGH-CONNECTIVITY // HEATING MODE // SDF

WH-SDF	07C3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	4.60	1.87	2.46	4.60	2.00	2.30	4.60	2.19	2.10	4.60	2.42	1.90	4.55	2.68	1.70	4.50	3.00	1.50
-7	5.15	1.80	2.86	5.15	1.94	2.65	5.08	2.14	2.37	5.00	2.38	2.10	4.90	2.47	1.98	4.80	2.67	1.80
2	6.70	1.83	3.66	6.55	1.98	3.31	6.58	2.29	2.87	6.60	2.64	2.50	6.30	2.90	2.17	6.00	3.16	1.90
7	7.00	1.43	4.90	7.00	1.59	4.40	7.00	1.77	3.95	7.00	2.12	3.30	6.90	2.30	3.00	6.80	2.72	2.50
25	7.00	0.79	8.86	7.00	0.93	7.53	6.40	1.03	6.21	6.10	1.17	5.21	5.90	1.33	4.44	5.70	1.49	3.83

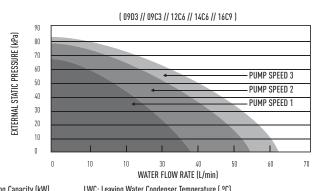
WH-SDF	09C3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	6.00	2.55	2.35	5.90	2.68	2.20	5.50	2.82	1.95	5.40	3.00	1.80	5.20	3.14	1.66	5.00	3.33	1.50
-7	6.10	2.16	2.82	5.90	2.36	2.50	5.85	2.63	2.22	5.80	2.90	2.00	5.80	3.06	1.90	5.80	3.22	1.80
2	6.80	1.87	3.64	6.70	2.16	3.10	6.70	2.38	2.82	6.60	2.64	2.50	6.30	2.90	2.17	6.00	3.16	1.90
7	9.00	1.93	4.66	9.00	2.20	4.09	9.00	2.45	3.67	9.00	2.81	3.20	8.95	3.23	2.77	8.90	3.87	2.30
25	9.00	1.07	8.41	9.00	1.27	7.09	8.40	1.40	6.00	8.00	1.59	5.03	7.80	1.81	4.31	7.50	2.03	3.69

WH-SDF	12C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.30	3.50	2.66	8.90	3.66	2.43	8.50	3.83	2.22	8.10	3.99	2.03	7.50	4.09	1.83	7.00	4.20	1.67
-7	10.40	3.41	3.05	10.00	3.70	2.70	9.60	3.99	2.41	9.20	4.28	2.15	8.70	4.30	2.02	8.20	4.31	1.90
2	11.80	3.14	3.76	11.40	3.35	3.40	11.00	3.57	3.08	10.60	3.78	2.80	9.80	3.98	2.46	9.10	4.18	2.18
7	12.00	2.14	5.61	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	12.00	1.42	8.45	12.00	1.70	7.06	11.80	1.98	5.96	11.70	2.27	5.15	11.50	2.53	4.55	11.40	2.78	4.10

#### HYDRAULIC PUMP PERFORMANCE



This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.



LWC: Leaving Water Condenser Temperature ( °C) Tamb: Ambient Temperature ( °C)



WH-SDF	14C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.90	3.91	2.53	9.50	4.05	2.35	9.00	4.19	2.15	8.60	4.33	1.99	7.90	4.45	1.78	7.30	4.56	1.60
-7	11.10	3.73	2.98	10.70	4.08	2.62	10.20	4.43	2.30	9.80	4.78	2.05	9.10	4.76	1.91	8.50	4.74	1.79
2	12.90	3.51	3.68	12.40	3.73	3.32	11.90	3.95	3.01	11.40	4.17	2.73	10.40	4.29	2.42	9.50	4.40	2.16
7	14.00	2.60	5.38	14.00	3.11	4.50	14.00	3.63	3.86	14.00	4.14	3.38	13.60	4.61	2.95	13.30	5.08	2.62
25	14.00	1.75	8.00	14.00	2.10	6.67	14.00	2.45	5.71	14.00	2.80	5.00	14.00	3.05	4.59	14.00	3.44	4.07

WH-SDF	16C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	10.60	4.13	2.57	10.30	4.42	2.33	10.00	4.71	2.12	9.70	5.00	1.94	8.80	4.98	1.77	7.90	4.95	1.60
-7	11.90	4.07	2.92	11.40	4.47	2.55	10.80	4.87	2.22	10.30	5.26	1.96	9.60	5.13	1.87	9.00	4.99	1.80
2	13.50	3.78	3.57	13.00	4.00	3.25	12.40	4.22	2.94	11.90	4.44	2.68	10.80	4.50	2.40	9.80	4.55	2.15
7	16.00	3.25	4.92	16.00	3.78	4.23	16.00	4.31	3.71	16.00	4.84	3.31	15.20	5.15	2.95	14.50	5.45	2.66
25	16.00	2.35	6.81	16.00	2.73	5.86	16.00	3.11	5.14	16.00	3.49	4.58	16.00	3.71	4.31	15.90	3.93	4.05

WH-SDF	09C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	НС	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	8.65	3.10	2.79	8.30	3.25	2.55	7.95	3.45	2.30	7.60	3.65	2.08	7.15	3.75	1.91	6.70	3.85	1.74
-7	9.35	2.95	3.17	9.00	3.20	2.81	8.85	3.58	2.47	8.70	3.96	2.20	8.30	3.93	2.11	7.90	3.90	2.03
2	9.31	2.39	3.90	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	8.90	3.53	2.52	8.80	3.98	2.21
7	9.00	1.58	5.70	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.80	3.21	9.00	3.10	2.90
25	9.00	1.09	8.26	9.00	1.28	7.03	8.73	1.48	5.90	8.46	1.68	5.04	8.28	1.86	4.45	8.10	2.04	3.97

WH-SDF	12C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	НС	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.30	3.50	2.66	8.90	3.66	2.43	8.50	3.83	2.22	8.10	3.99	2.03	7.50	4.09	1.83	7.00	4.20	1.67
-7	10.40	3.41	3.05	10.00	3.70	2.70	9.60	3.99	2.41	9.20	4.28	2.15	8.70	4.30	2.02	8.20	4.31	1.90
2	11.80	3.14	3.76	11.40	3.35	3.40	11.00	3.57	3.08	10.60	3.78	2.80	9.80	3.98	2.46	9.10	4.18	2.18
7	12.00	2.14	5.61	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	12.00	1.42	8.45	12.00	1.70	7.06	11.80	1.98	5.96	11.70	2.27	5.15	11.50	2.53	4.55	11.40	2.78	4.10

WH-SDF	14C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.90	3.91	2.53	9.50	4.05	2.35	9.00	4.19	2.15	8.60	4.33	1.99	7.90	4.45	1.78	7.30	4.56	1.60
-7	11.10	3.73	2.98	10.70	4.08	2.62	10.20	4.43	2.30	9.80	4.78	2.05	9.10	4.76	1.91	8.50	4.74	1.79
2	12.90	3.51	3.68	12.40	3.73	3.32	11.90	3.95	3.01	11.40	4.17	2.73	10.40	4.29	2.42	9.50	4.40	2.16
7	14.00	2.60	5.38	14.00	3.11	4.50	14.00	3.63	3.86	14.00	4.14	3.38	13.60	4.61	2.95	13.30	5.08	2.62
25	14.00	1.75	8.00	14.00	2.10	6.67	14.00	2.45	5.71	14.00	2.80	5.00	14.00	3.05	4.59	14.00	3.44	4.07

WH-SDF	16C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	10.60	4.13	2.57	10.30	4.42	2.33	10.00	4.71	2.12	9.70	5.00	1.94	8.80	4.98	1.77	7.90	4.95	1.60
-7	11.90	4.07	2.92	11.40	4.47	2.55	10.80	4.87	2.22	10.30	5.26	1.96	9.60	5.13	1.87	9.00	4.99	1.80
2	13.50	3.78	3.57	13.00	4.00	3.25	12.40	4.22	2.94	11.90	4.44	2.68	10.80	4.50	2.40	9.80	4.55	2.15
7	16.00	3.25	4.92	16.00	3.78	4.23	16.00	4.31	3.71	16.00	4.84	3.31	15.20	5.15	2.95	14.50	5.45	2.66
25	16.00	2.35	6.81	16.00	2.73	5.86	16.00	3.11	5.14	16.00	3.49	4.58	16.00	3.71	4.31	15.90	3.93	4.05

# HEATING CAPACITY TABLE BASED ON OUTLET TEMPERATURE AND OUTSIDE TEMPERATURE

#### BI-BLOC // HIGH-CONNECTIVITY // ON COOLING MODE // SDC

SDC												
MODELS	WH-SDC09			WH-SDC12			WH-SDC14			WH-SDC16		
Tamb	HC	IP	COP									
16	5.90	1.01	5.84	7.65	1.30	5.88	8.85	1.50	5.90	9.62	1.63	5.90
25	7.45	1.59	4.69	9.20	2.30	4.00	10.00	2.68	3.73	10.51	2.85	3.69
35	7.00	2.25	3.11	10.00	3.55	2.82	11.50	4.40	2.61	12.20	4.80	2.54
43	5.80	2.59	2.24	7.60	3.95	1.92	9.05	5.01	1.81	10.08	5.47	1.84

#### MONO-BLOC // HIGH-CONNECTIVITY // HEATING MODE // MDF

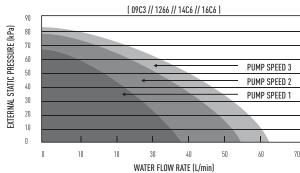
WH-MD	F09C3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	8.65	3.10	2.79	8.30	3.25	2.55	7.95	3.45	2.30	7.60	3.65	2.08	7.15	3.75	1.91	6.70	3.85	1.74
-7	9.35	2.95	3.17	9.00	3.20	2.81	8.85	3.50	2.53	8.70	3.80	2.29	8.30	3.85	2.16	7.90	3.90	2.03
2	9.31	2.39	3.90	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	8.90	3.53	2.52	8.80	3.98	2.21
7	9.00	1.58	5.70	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.80	3.21	9.00	3.10	2.90
25	9.00	1.09	8.26	9.00	1.28	7.03	8.73	1.48	5.90	8.46	1.68	5.04	8.28	1.86	4.45	8.10	2.04	3.97

WH-MDI	F12C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	НС	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.30	3.50	2.66	8.90	3.66	2.43	8.50	3.83	2.22	8.10	3.99	2.03	7.50	4.09	1.83	7.00	4.20	1.67
-7	10.40	3.41	3.05	10.00	3.70	2.70	9.60	3.90	2.46	9.20	4.10	2.24	8.70	4.20	2.07	8.20	4.31	1.90
2	11.80	3.14	3.76	11.40	3.34	3.41	11.00	3.57	3.08	10.60	3.78	2.80	9.80	3.98	2.46	9.10	4.18	2.18
7	12.00	2.14	5.61	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	12.00	1.42	8.45	12.00	1.70	7.06	11.80	1.98	5.96	11.70	2.27	5.15	11.50	2.53	4.55	11.40	2.78	4.10

WH-MDF	14C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.90	3.91	2.53	9.50	4.05	2.35	9.00	4.19	2.15	8.60	4.33	1.99	7.90	4.45	1.78	7.30	4.56	1.60
-7	11.10	3.73	2.98	10.70	4.00	2.68	10.20	4.20	2.43	9.80	4.40	2.23	9.10	4.57	1.99	8.50	4.74	1.79
2	12.90	3.51	3.68	12.40	3.73	3.32	11.90	3.95	3.01	11.40	4.17	2.73	10.40	4.29	2.42	9.50	4.40	2.16
7	14.00	2.60	5.38	14.00	3.11	4.50	14.00	3.63	3.86	14.00	4.14	3.38	13.60	4.61	2.95	13.30	5.08	2.62
25	14.00	1.75	8.00	14.00	2.10	6.67	14.00	2.45	5.71	14.00	2.80	5.00	14.00	3.05	4.59	14.00	3.44	4.07

WH-MDF	16C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	10.60	4.13	2.57	10.30	4.42	2.33	10.00	4.71	2.12	9.70	5.00	1.94	8.80	4.98	1.77	7.90	4.95	1.60
-7	11.90	4.07	2.92	11.40	4.30	2.65	10.80	4.50	2.40	10.30	4.70	2.19	9.60	4.85	1.98	9.00	4.99	1.80
2	13.50	3.78	3.57	13.00	4.00	3.25	12.40	4.22	2.94	11.90	4.44	2.68	10.80	4.50	2.40	9.80	4.55	2.15
7	16.00	3.25	4.92	16.00	3.78	4.23	16.00	4.31	3.71	16.00	4.84	3.31	15.20	5.15	2.95	14.50	5.45	2.66
25	16.00	2.35	6.81	16.00	2.73	5.86	16.00	3.11	5.14	16.00	3.49	4.58	16.00	3.71	4.31	15.90	3.93	4.05

#### **HYDRAULIC PUMP PERFORMANCE**



This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

HC: Heating Capacity (kW) IP: Power Input (kW) LWC: Leaving Water Condenser Temperature ( °C) Tamb: Ambient Temperature ( °C)



WH-MDF	F09C3E8																	
Tamb	HC	IP	COP	HC	IP	COP	НС	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	8.65	3.10	2.79	8.30	3.25	2.55	7.95	3.45	2.30	7.95	3.45	2.30	7.15	3.75	1.91	7.15	3.75	1.91
-7	9.35	2.95	3.17	9.00	3.20	2.81	8.85	3.50	2.53	8.85	3.50	2.53	8.30	3.85	2.16	8.30	3.85	2.16
2	9.31	2.39	3.90	9.00	2.55	3.53	9.00	2.82	3.19	9.00	2.82	3.19	8.90	3.53	2.52	8.90	3.53	2.52
7	9.00	1.58	5.70	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.20	4.09	9.00	2.80	3.21	9.00	2.80	3.21
25	9.00	1.09	8.26	9.00	1.28	7.03	8.73	1.48	5.90	8.73	1.48	5.90	8.28	1.86	4.45	8.28	1.86	4.45

WH-MDF	WH-MDF12C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.30	3.50	2.66	8.90	3.66	2.43	8.50	3.83	2.22	8.10	3.99	2.03	7.50	4.09	1.83	7.00	4.20	1.67
-7	10.40	3.41	3.05	10.00	3.70	2.70	9.60	3.90	2.46	9.20	4.10	2.24	8.70	4.20	2.07	8.20	4.31	1.90
2	11.80	3.14	3.76	11.40	3.34	3.41	11.00	3.57	3.08	10.60	3.78	2.80	9.80	3.98	2.46	9.10	4.18	2.18
7	12.00	2.14	5.61	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	12.00	1.42	8.45	12.00	1.70	7.06	11.80	1.98	5.96	11.70	2.27	5.15	11.50	2.53	4.55	11.40	2.78	4.10

WH-MD	WH-MDF14C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.90	3.91	2.53	9.50	4.05	2.35	9.00	4.19	2.15	8.60	4.33	1.99	7.90	4.45	1.78	7.30	4.56	1.60
-7	11.10	3.73	2.98	10.70	4.00	2.68	10.20	4.20	2.43	9.80	4.40	2.23	9.10	4.57	1.99	8.50	4.74	1.79
2	12.90	3.51	3.68	12.40	3.73	3.32	11.90	3.95	3.01	11.40	4.17	2.73	10.40	4.29	2.42	9.50	4.40	2.16
7	14.00	2.60	5.38	14.00	3.11	4.50	14.00	3.63	3.86	14.00	4.14	3.38	13.60	4.61	2.95	13.30	5.08	2.62
25	14.00	1.75	8.00	14.00	2.10	6.67	14.00	2.45	5.71	14.00	2.80	5.00	14.00	3.05	4.59	14.00	3.44	4.07

WH-MDF	WH-MDF16C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	10.60	4.13	2.57	10.30	4.42	2.33	10.00	4.71	2.12	9.70	5.00	1.94	8.80	4.98	1.77	7.90	4.95	1.60
-7	11.90	4.07	2.92	11.40	4.30	2.65	10.80	4.50	2.40	10.30	4.70	2.19	9.60	4.85	1.98	9.00	4.99	1.80
2	13.50	3.78	3.57	13.00	4.00	3.25	12.40	4.22	2.94	11.90	4.44	2.68	10.80	4.50	2.40	9.80	4.55	2.15
7	16.00	3.25	4.92	16.00	3.78	4.23	16.00	4.31	3.71	16.00	4.84	3.31	15.20	5.15	2.95	14.50	5.45	2.66
25	16.00	2.35	6.81	16.00	2.73	5.86	16.00	3.11	5.14	16.00	3.49	4.58	16.00	3.71	4.31	15.90	3.93	4.05

#### MONO-BLOC // HIGH-CONNECTIVITY // ON COOLING MODE // MDC

MDC												
MODELS	WH-MDC09			WH-MDC12			WH-MDC14			WH-MDC16		
Tamb	НС	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
16	5.90	1.01	5.84	7.65	1.30	5.88	8.85	1.50	5.90	9.62	1.63	5.90
25	7.45	1.59	4.69	9.20	2.30	4.00	10.00	2.68	3.73	10.51	2.85	3.69
35	7.00	2.25	3.11	10.00	3.60	2.78	11.50	4.40	2.61	12.20	4.80	2.54
43	5.80	2.59	2.24	7.60	3.95	1.92	9.05	5.01	1.81	10.08	5.47	1.84

# HEATING CAPACITY TABLE BASED ON OUTLET TEMPERATURE AND OUTSIDE TEMPERATURE

#### MONO-BLOC // AQUAREA T-CAP // HEATING ONLY // MXF

WH-MXF	WH-MXF09D3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.00	3.28	2.74	9.00	3.55	2.54	9.00	3.95	2.28	9.00	4.34	2.07	9.00	4.77	1.89	9.00	5.20	1.73
-7	9.00	2.75	3.27	9.00	3.20	2.81	9.00	3.66	2.46	9.00	4.11	2.19	9.00	4.31	2.09	9.00	4.50	2.00
2	9.00	2.40	3.75	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	9.00	3.60	2.50	9.00	4.11	2.19
7	9.00	1.68	5.36	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.88	3.13	9.00	3.10	2.90
25	13.60	1.54	8.83	13.60	1.75	7.77	13.20	1.97	6.70	12.80	2.18	5.87	12.00	2.45	4.90	11.20	2.71	4.13

WH-MXF	WH-MXF12D6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12.00	4.79	2.51	12.00	5.00	2.40	11.50	5.21	2.21	11.00	5.42	2.03	10.70	5.86	1.83	10.50	6.30	1.67
-7	12.00	3.89	3.08	12.00	4.45	2.70	12.00	5.02	2.39	12.00	5.58	2.15	12.00	5.94	2.02	12.00	6.30	1.90
2	12.00	3.23	3.72	12.00	3.53	3.40	12.00	3.91	3.07	12.00	4.29	2.80	12.00	4.90	2.45	12.00	5.51	2.18
7	12.00	2.22	5.41	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	13.60	1.59	8.55	13.60	1.80	7.56	13.40	2.14	6.26	13.20	2.47	5.34	12.60	2.70	4.67	12.00	2.93	4.10

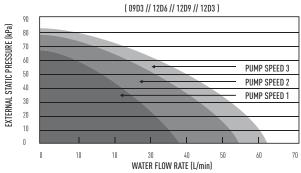
WH-MXF	WH-MXF09D3E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.00	3.28	2.74	9.00	3.55	2.54	9.00	3.95	2.28	9.00	4.34	2.07	9.00	4.77	1.89	9.00	5.20	1.73
-7	9.00	2.75	3.27	9.00	3.20	2.81	9.00	3.66	2.46	9.00	4.11	2.19	9.00	4.31	2.09	9.00	4.50	2.00
2	9.00	2.40	3.75	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	9.00	3.60	2.50	9.00	4.11	2.19
7	9.00	1.68	5.36	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.88	3.13	9.00	3.10	2.90
25	13.60	1.54	8.83	13.60	1.75	7.77	13.20	1.97	6.70	12.80	2.18	5.87	12.00	2.45	4.90	11.20	2.71	4.13

WH-MX	WH-MXF12D9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12.00	4.79	2.51	12.00	5.00	2.40	12.00	5.45	2.20	12.00	5.90	2.03	11.50	6.28	1.83	11.10	6.66	1.67
-7	12.00	3.89	3.08	12.00	4.45	2.70	12.00	5.02	2.39	12.00	5.58	2.15	12.00	5.94	2.02	12.00	6.30	1.90
2	12.00	3.23	3.72	12.00	3.53	3.40	12.00	3.91	3.07	12.00	4.29	2.80	12.00	4.90	2.45	12.00	5.51	2.18
7	12.00	2.22	5.41	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	13.60	1.59	8.55	13.60	1.80	7.56	13.40	2.14	6.26	13.20	2.47	5.34	12.60	2.70	4.67	12.00	2.93	4.10

#### BI-BLOC // AQUAREA T-CAP // ON COOLING MODE // SXC

SXC						
MODELS	WH-SXC09 E8		WH-SXC12 E8			
Tamb	НС	IP	COP	HC	IP	COP
16	7.00	1.40	5.00	7.50	1.45	5.17
25	7.65	1.95	3.92	8.90	2.20	4.05
35	7.00	2.25	3.11	10.00	3.60	2.78
43	6.25	2.70	2.31	8.00	3.05	2.62

#### HYDRAULIC PUMP PERFORMANCE



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HC: Heating Capacity (kW) IP: Power Input (kW) LWC: Leaving Water Condenser Temperature ( °C) Tamb: Ambient Temperature ( °C)

## BI-BLOC // AQUAREA T-CAP // HEATING ONLY // SXF

WH-SXF	09D3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.00	3.28	2.74	9.00	3.55	2.54	9.00	3.95	2.28	9.00	4.34	2.07	9.00	4.77	1.89	9.00	5.20	1.73
-7	9.00	2.75	3.27	9.00	3.20	2.81	9.00	3.66	2.46	9.00	4.11	2.19	9.00	4.31	2.09	9.00	4.50	2.00
2	9.00	2.40	3.75	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	9.00	3.60	2.50	9.00	4.11	2.19
7	9.00	1.68	5.36	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.80	3.21	9.00	3.10	2.90
25	13.60	1.54	8.83	13.60	1.75	7.77	13.20	1.97	6.70	12.80	2.18	5.87	12.00	2.45	4.90	11.20	2.71	4.13

WH-SXF	12D3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12.00	4.79	2.51	12.00	5.00	2.40	11.50	5.21	2.21	11.00	5.42	2.03	10.70	5.86	1.83	10.50	6.30	1.67
-7	12.00	3.89	3.08	12.00	4.45	2.70	12.00	5.02	2.39	12.00	5.58	2.15	12.00	5.94	2.02	12.00	6.30	1.90
2	12.00	3.23	3.72	12.00	3.53	3.40	12.00	3.91	3.07	12.00	4.29	2.80	12.00	4.90	2.45	12.00	5.51	2.18
7	12.00	2.22	5.41	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	13.60	1.59	8.55	13.60	1.80	7.56	13.40	2.14	6.26	13.20	2.47	5.34	12.60	2.70	4.67	12.00	2.93	4.10

WH-SXF	09D3E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.00	3.28	2.74	9.00	3.55	2.54	9.00	3.95	2.28	9.00	4.34	2.07	9.00	4.77	1.89	9.00	5.20	1.73
-7	9.00	2.75	3.27	9.00	3.20	2.81	9.00	3.66	2.46	9.00	4.11	2.19	9.00	4.31	2.09	9.00	4.50	2.00
2	9.00	2.40	3.75	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	9.00	3.60	2.50	9.00	4.11	2.19
7	9.00	1.68	5.36	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.80	3.21	9.00	3.10	2.90
25	13.60	1.54	8.83	13.60	1.75	7.77	13.20	1.97	6.70	12.80	2.18	5.87	12.00	2.45	4.90	11.20	2.71	4.13

WH-SXF	12D3E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12.00	4.79	2.51	12.00	5.00	2.40	12.00	5.45	2.20	12.00	5.90	2.03	11.80	6.28	1.88	11.60	6.66	1.74
-7	12.00	3.89	3.08	12.00	4.45	2.70	12.00	5.02	2.39	12.00	5.58	2.15	12.00	5.94	2.02	12.00	6.30	1.90
2	12.00	3.23	3.72	12.00	3.53	3.40	12.00	3.91	3.07	12.00	4.29	2.80	12.00	4.90	2.45	12.00	5.51	2.18
7	12.00	2.22	5.41	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	13.60	1.59	8.55	13.60	1.80	7.56	13.40	2.14	6.26	13.20	2.47	5.34	12.60	2.70	4.67	12.00	2.93	4.10

## HEATING CAPACITY TABLE BASED ON OUTLET TEMPERATURE AND OUTSIDE TEMPERATURE

## MONO-BLOC // AQUAREA T-CAP // HEATING ONLY // MXF

WH-MXF	09D3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.00	3.28	2.74	9.00	3.55	2.54	9.00	3.95	2.28	9.00	4.34	2.07	9.00	4.77	1.89	9.00	5.20	1.73
-7	9.00	2.75	3.27	9.00	3.20	2.81	9.00	3.66	2.46	9.00	4.11	2.19	9.00	4.31	2.09	9.00	4.50	2.00
2	9.00	2.40	3.75	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	9.00	3.60	2.50	9.00	4.11	2.19
7	9.00	1.68	5.36	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.80	3.21	9.00	3.10	2.90
25	13.60	1.54	8.83	13.60	1.75	7.77	13.20	1.97	6.70	12.80	2.18	5.87	12.00	2.45	4.90	11.20	2.71	4.13

WH-MXF	12D6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12.00	4.79	2.51	12.00	5.00	2.40	11.50	5.21	2.21	11.00	5.42	2.03	10.70	5.86	1.83	10.50	6.30	1.67
-7	12.00	3.89	3.08	12.00	4.45	2.70	12.00	5.02	2.39	12.00	5.58	2.15	12.00	5.94	2.02	12.00	6.30	1.90
2	12.00	3.23	3.72	12.00	3.53	3.40	12.00	3.91	3.07	12.00	4.29	2.80	12.00	4.90	2.45	12.00	5.51	2.18
7	12.00	2.22	5.41	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	13.60	1.59	8.55	13.60	1.80	7.56	13.40	2.14	6.26	13.20	2.47	5.34	12.60	2.70	4.67	12.00	2.93	4.10

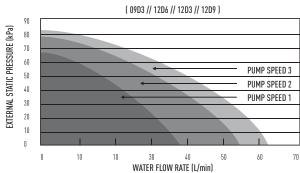
WH-MXI	F09D3E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.00	3.28	2.74	9.00	3.55	2.54	9.00	3.95	2.28	9.00	4.34	2.07	9.00	4.77	1.89	9.00	5.20	1.73
-7	9.00	2.75	3.27	9.00	3.20	2.81	9.00	3.66	2.46	9.00	4.11	2.19	9.00	4.31	2.09	9.00	4.50	2.00
2	9.00	2.40	3.75	9.00	2.55	3.53	9.00	2.82	3.19	9.00	3.09	2.91	9.00	3.60	2.50	9.00	4.11	2.19
7	9.00	1.68	5.36	9.00	1.90	4.74	9.00	2.20	4.09	9.00	2.50	3.60	9.00	2.80	3.21	9.00	3.10	2.90
25	13.60	1.54	8.83	13.60	1.75	7.77	13.20	1.97	6.70	12.80	2.18	5.87	12.00	2.45	4.90	11.20	2.71	4.13

WH-MXF	12D9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12.00	4.79	2.51	12.00	5.00	2.40	11.50	5.21	2.21	11.00	5.42	2.03	10.70	5.86	1.83	10.50	6.30	1.67
-7	12.00	3.89	3.08	12.00	4.45	2.70	12.00	5.02	2.39	12.00	5.58	2.15	12.00	5.94	2.02	12.00	6.30	1.90
2	12.00	3.23	3.72	12.00	3.53	3.40	12.00	3.91	3.07	12.00	4.29	2.80	12.00	4.90	2.45	12.00	5.51	2.18
7	12.00	2.22	5.41	12.00	2.57	4.67	12.00	3.00	4.00	12.00	3.43	3.50	12.00	3.82	3.14	12.00	4.20	2.86
25	13.60	1.59	8.55	13.60	1.80	7.56	13.40	2.14	6.26	13.20	2.47	5.34	12.60	2.70	4.67	12.00	2.93	4.10

#### MONO-BLOC // AQUAREA T-CAP // ON COOLING MODE // MXC

MXC						
MODELS	WH-MXC09			WH-MXC12		
Tamb	HC	IP	COP	HC	IP	COP
16	7.00	1.40	5.00	7.50	1.45	5.17
25	7.65	1.95	3.92	8.90	2.20	4.05
35	7.00	2.25	3.11	10.00	3.60	2.78
43	6.25	2.70	2.31	8.00	3.05	2.62

## **HYDRAULIC PUMP PERFORMANCE**



This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

HC: Heating Capacity (kW) IP: Power Input (kW) LWC: Leaving Water Condenser Temperature ( °C) Tamb: Ambient Temperature ( °C)

## BI-BLOC // AQUAREA HT // HEATING ONLY // SHF

WH-SHF09D3	BE5											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	9	3.75	2.40	8.80	4.30	2.05	8.50	4.95	1.72	7.80	5.90	1.32
-7	9	3.33	2.70	8.90	3.87	2.30	8.90	4.50	1.98	8.90	5.50	1.62
2	9	2.65	3.40	9.00	3.25	2.77	9.00	3.92	2.30	9.00	4.80	1.88
7	9	1.98	4.55	9.00	2.50	3.60	9.00	3.16	2.85	9.00	4.00	2.25

WH-SHF12I	D6E5											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	12	5.57	2.15	10.80	5.53	1.95	9.70	5.80	1.67	8.00	6.15	1.30
-7	12	4.80	2.50	11.20	5.10	2.20	10.10	5.32	1.90	9.60	5.95	1.61
2	12	3.72	3.23	11.30	4.18	2.70	10.80	4.90	2.20	10.30	5.63	1.83
7	12	2.73	4.40	12.00	3.48	3.45	12.00	4.32	2.78	12.00	5.45	2.20

WH-SHF09D	3E8											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	9	3.75	2.40	8.80	4.30	2.05	8.50	4.95	1.72	7.80	5.90	1.32
-7	9	3.33	2.70	8.90	3.87	2.30	8.90	4.50	1.98	8.90	5.50	1.62
2	9	2.65	3.40	9.00	3.25	2.77	9.00	3.92	2.30	9.00	4.80	1.88
7	9	1.98	4.55	9.00	2.50	3.60	9.00	3.16	2.85	9.00	4.00	2.25

WH-SHF12	WH-SHF12D9E8											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	12	5.57	2.15	10.80	5.53	1.95	9.70	5.80	1.67	8.00	6.15	1.30
-7	12	4.80	2.50	11.20	5.10	2.20	10.10	5.32	1.90	9.60	5.95	1.61
2	12	3.72	3.23	11.30	4.18	2.70	10.80	4.90	2.20	10.30	5.63	1.83
7	12	2.73	4.40	12.00	3.48	3.45	12.00	4.32	2.78	12.00	5.45	2.20

## HEATING CAPACITY TABLE BASED ON OUTLET TEMPERATURE AND OUTSIDE TEMPERATURE

## MONO-BLOC // AQUAREA T-CAP // HEATING ONLY // MHF

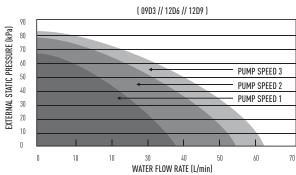
WH-MHF09	WH-MHF09D3E5											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	9	3.75	2.40	8.80	4.30	2.05	8.50	4.95	1.72	7.80	5.90	1.32
-7	9	3.33	2.70	8.90	3.87	2.30	8.90	4.50	1.98	8.90	5.50	1.62
2	9	2.65	3.40	9.00	3.25	2.77	9.00	3.92	2.30	9.00	4.80	1.88
7	9	1.98	4.55	9.00	2.50	3.60	9.00	3.16	2.85	9.00	4.00	2.25

WH-MHF12D	WH-MHF12D6E5											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	12	5.57	2.15	10.80	5.53	1.95	9.70	5.80	1.67	8.00	6.15	1.30
-7	12	4.80	2.50	11.20	5.10	2.20	10.10	5.32	1.90	9.60	5.95	1.61
2	12	3.72	3.23	11.30	4.18	2.70	10.80	4.90	2.20	10.30	5.63	1.83
7	12	2.73	4.40	12.00	3.48	3.45	12.00	4.32	2.78	12.00	5.45	2.20

WH-MHF09I	WH-MHF09D3E8											
Tamb	НС	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	9	3.75	2.40	8.80	4.30	2.05	8.50	4.95	1.72	7.80	5.90	1.32
-7	9	3.33	2.70	8.90	3.87	2.30	8.90	4.50	1.98	8.90	5.50	1.62
2	9	2.65	3.40	9.00	3.25	2.77	9.00	3.92	2.30	9.00	4.80	1.88
7	9	1.98	4.55	9.00	2.50	3.60	9.00	3.16	2.85	9.00	4.00	2.25

WH-MHF12D	WH-MHF12D9E8											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	45	45	45	55	55	55	65	65	65
-15	12	5.57	2.15	10.80	5.53	1.95	9.70	5.80	1.67	8.00	6.15	1.30
-7	12	4.80	2.50	11.20	5.10	2.20	10.10	5.32	1.90	9.60	5.95	1.61
2	12	3.72	3.23	11.30	4.18	2.70	10.80	4.90	2.20	10.30	5.63	1.83
7	12	2.73	4.40	12.00	3.48	3.45	12.00	4.32	2.78	12.00	5.45	2.20

## **HYDRAULIC PUMP PERFORMANCE**



This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

HC: Heating Capacity (kW) IP: Power Input (kW) LWC: Leaving Water Condenser Temperature ( °C) Tamb: Ambient Temperature ( °C)

## AQUAREA PRO // ECOi + S-250WX2E5 // HEATING

MDC						
Tamb	HC	IP	COP	НС	IP	COP
LWC	40	40	40	45	45	45
-15	22.90	9.76	2.34	20.70	8.83	2.34
-7	25.80	10.3	2.50	23.40	9.26	2.52
2	31.40	11.0	2.85	28.00	9.64	2.90
7	31.50	9.75	3.23	28.00	8.61	3.25
25	31.50	6.83	4.61	28.00	6.06	4.62

## AQUAREA PRO // ECOi + S-500WX2E5 // HEATING

MDC						
Tamb	HC	IP	COP	HC	IP	COP
LWC	40	40	40	45	45	45
-15	42.40	19.4	2.18	39.30	17.5	2.24
-7	48.00	20.5	2.34	44.90	18.5	2.42
2	56.00	21.0	2.66	51.30	18.4	2.78
7	56.00	18.1	3.09	51.30	16.5	3.10
25	56.00	12.8	4.37	51.30	11.5	4.46

## **ACCESSORIES**

#### THIRD PARTY TANKS

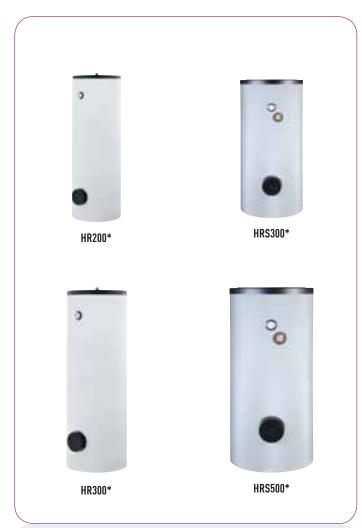
		High Efficiend	cy Tank	Super High Efficiency Tank		
		HR 200*	HR 300*	HRS 300*	HRS 500*	
Water volume	L	200	300	300	500	
Max. water temperature	oC	95	95	95	95	
Dimension. High	mm	1340	1797	1435	1806	
Diameter	mm	600	600	680	760	
Weight	Kg	108	140	170	254	
Electric heater	kW	3	3	3	3	
Power supply		230V	230V	230V	230V	
Material inside tank		enamelled	enamelled	enamelled	enamelled	
Exchange surface	$m^2$	1,80	2,60	3,50	6,00	
Energy loss at 65 °C insulated tested under EN12897	kWh/24h	1,8	2,2	2,2	2,7	
3 Way valve included		YES	YES	YES	YES	

## FIELD PROCURED OPTIONAL PARTS

SOLAR KIT		
Brand	Model No.	Feature
RESOL	FlowConS_DeltaSol_BS_Plus	Remote Control
Oventrop	Regusol X-25	Remote Control
3 WAY-VALVE		
Brand	Model No.	Feature
Siemens	SFA21/18 / VXI46/25	Spring return
2 WAY VALVE		
Brand	Model No.	Feature
Honeywell	V4043C1007	Spring return
Siemens	SFA21/18 // VVI46/25	Spring return
ROOM THERMOS	TAT ON / OFF	
Brand	Model No.	Feature
Siemens	RAA20	Dial type
Siemens	REV200	Programme
THERMAL VALVE		
Brand	Model No.	Feature
Taconova	RA57	NC
Danfoss	NC	

## **PANASONIC ACCESSORIES**

SOLAR KIT ACCESSORIES							
CZ-NS1P Solar connection PCB (for Bi-split type)							
CZ-NS3P	Solar connection PCB (for Mono-bloc 6 and 9 kW type)						
CZ-NS2P	Solar connection PCB (for Mono-bloc)						
SANITARY TANK ACC	ESSORIES						
CZ-TK1	Temperature sensor kit for third party tank						
CZ-TK3	Temperature sensor kit for third party tank for mini Monobloc						
DEICE ACCESSORIES							
CZ-NE1P Base pan heater kit							



Oventrop **REGSOL UNO X-15** FlowConS\_DeltaSol\_ BS\_Plus Siemens Taconova **Danfoss** RAA20 RA57 AVB-NC SIEMENS. 2-way valve SIEMENS. 3-way valve Siemens **REV200** Morter: SFA21/18 Morter: SFA21/18 Valve body: VVI46/25 valve body: VXI46/25

<sup>\*</sup> Panasonic's term of warranty is based on the warranty conditions provided by the tank supplier being met. Please ensure the maintenance programme is carried out as instructed in the tank manufacturer's manual.

## THE OPERATION LED BLINKS AND AN ERROR CODE APPEARS ON THE

TIMER 1 2 3 4 5 6

MON TVE WED THU FRI SAT SUN

ON OFF

**CONTROL PANEL DISPLAY.** 

- Turn the unit off and inform the authorised dealer of the error code.
- The timer operation is cancelled when an error code occurs.

## **FORCE HEATER MODE BUTTON**

• The backup heater also serves as backup in case of malfunctioning of the outdoor unit.

• Press of to stop the force heater operation.



- During Force Heater mode, all other operations are not allowed.

## **ERROR CODES TABLE**

Diagnosis display	Abnormality / Protection control	Abnormality Judgement	Primary location to verify
H00	No abnormality detected	_	_
H12	Indoor/Outdoor capacity unmatched	90s after power supply	Indoor/outdoor connection wire     Indoor/outdoor PCB
1145			Specification and combination table in catalogue
H15	Outdoor compressor temperature sensor abnormality	Continue for 5 sec.	Compressor temperature sensor (defective or disconnected)
H23	Indoor refrigerant liquid temperature sensor abnormality	Continue for 5 sec.	Refrigerant liquid temperature sensor (defective or disconnected)
H38	Indoor/Outdoor mismatch	_	• Indoor/Outdoor PCB
H42	Compressor low pressure abnormality	_	Outdoor pipe temperature sensor     Clogged expansion valve or strainer     Insufficient refrigerant     Outdoor PCB     Compressor
H62	Water flow switch abnormality	Continue for 1 min.	Water flow switch
H64	Refrigerant high pressure abnormality	Continue for 5 sec.	Outdoor high pressure sensor (defective or disconnected)
H70	Back-up heater OLP abnormality	Continue for 60 sec.	Back-up heater OLP (Disconnection or activated)
H72	Tank sensor abnormal	Continue for 5 sec.	• Tank sensor
H76	Indoor - control panel communication abnormality	_	Indoor - control panel (defective or disconnected)
H90	Indoor / outdoor abnormal communication	> 1 min after starting operation	Internal / external cable connections     Indoor / Outdoor PCB
H91	Tank heater OLP abnormality	Continue for 60 sec.	Tank heater OLP (Disconnection or activated)
H95	Indoor/Outdoor wrong connection	_	- Indoor/Outdoor supply voltage
H98	Outdoor high pressure overload protection	_	Outdoor high pressure sensor     Water pump or water leakage     Clogged expansion valve or strainer     Excess refrigerant     Outdoor PCB
Н99	Indoor heat exchanger freeze prevention	-	Indoor heat exchanger     Refrigerant shortage
F12	Pressure switch activate	4 times occurrence within 20 minutes	Pressure switch
F14	Outdoor compressor abnormal revolution	4 times occurrence within 20 minutes	Outdoor compressor
F15	Outdoor fan motor lock abnormality	2 times occurrence within 30 minutes	Outdoor PCB     Outdoor fan motor
F16	Total running current protection	3 times occurrence within 20 minutes	• Excess refrigerant • Outdoor PCB
F20	Outdoor compressor overheating protection	4 times occurrence within 30 minutes	Compressor tank temperature sensor     Clogged expansion valve or strainer     Insufficient refrigerant     Outdoor PCB     Compressor
F22	IPM (power transistor) overheating protection	3 times occurrence within 30 minutes	Improper heat exchange     IPM (Power transistor)
F23	Outdoor Direct Current (DC) peak detection	7 times occurrence continuously	• Outdoor PCB • Compressor
F24	Refrigeration cycle abnormality	2 times occurrence within 20 minutes	Insufficient refrigerant     Outdoor PCB     Compressor low compression
F25	Cooling / Heating cycle changeover abnormality	4 times occurrence within 30 minutes	- 4-way valve     - V-coil
F27	Pressure switch abnormality	Continue for 1 min.	Pressure switch
F36	Outdoor air temperature sensor abnormality	Continue for 5 sec.	Outdoor air temperature sensor (defective or disconnected)
F37	Indoor water inlet temperature sensor abnormality	Continue for 5 sec.	Water inlet temperature sensor (defective or disconnected)
F40	Outdoor discharge pipe temperature sensor abnormality	Continue for 5 sec.	Outdoor discharge pipe temperature sensor (defective or disconnected)
F41	PFC control	4 times occurrence within 10 minutes	Voltage at PFC
F42	Outdoor heat exchanger temperature sensor abnormality	Continue for 5 sec.	Outdoor heat exchanger temperature sensor (defective or disconnect
F43	Outdoor defrost sensor abnormality	Continue for 5 sec.	Outdoor defrost sensor (defective or disconnected)
F45	Indoor water outlet temperature sensor abnormality	Continue for 5 sec.	Water outlet temperature sensor (defective or disconnected)
F46	Outdoor Current Transformer open circuit	-	- Insufficient refrigerant - Outdoor PCB - Compressor low
F95	Cooling high pressure overload protection	-	Outdoor high pressure sensor     Water pump or water leakage     Clogged expansion valve or strainer     Excess refrigerant     Outdoor PCB
F48	Outdoor EVA outlet temperature sensor abnormality	Continue for 5 sec.	Outdoor EVA outlet temperature sensor (detective or disconnected)
F49	Out bypass outlet temperature sensor abnormality	Continue for 5 sec.	<ul> <li>Outdoor bypass outlet temperature sensor (detective or diconnected)</li> </ul>









# WELCOME TO NEW DOMESTIC RANGE

# MORE THAN EVER BEFORE, PANASONIC HAS DEVELOPED A RANGE OF PRODUCTS DESIGNED FOR YOU

With its innovative design, high efficiency and incomparable purification system, the Etherea range has been designed with your clients in mind. Above all, it is also a range for air conditioning professionals, such as yourself, thanks to its broad range of products which are capable of conditioning rooms of all sizes – always with optimal efficiency and incomparable ease of installation. The Etherea range guarantees that you are offering your clients the very best.



# **HEALTHY** AIR



Nanoe-G utilises nanotechnology fine particles to purify the air in the room. It works effectively on airborne and adhesive microorganisms such as bacteria, viruses and mould thus ensuring a cleaner living environment.



The Perfect Humidity Air controls the humidity level in the air to prevent overdryness.

# **ENERGY SAVING**



The A Inverter system provides energy savings of up to 50%. You win and nature wins.



Econavi features intelligent Human Activity Sensor and new Sunlight Sensor technologies that can detect and reduce waste by optimising air conditioner operation according to room conditions. With just one touch of a button, you can save energy efficiently with uninterrupted cooling,

comfort and convenience.



The Autocomfort system detects conditions in the room and switches to energy saving operation when nobody is on the room.



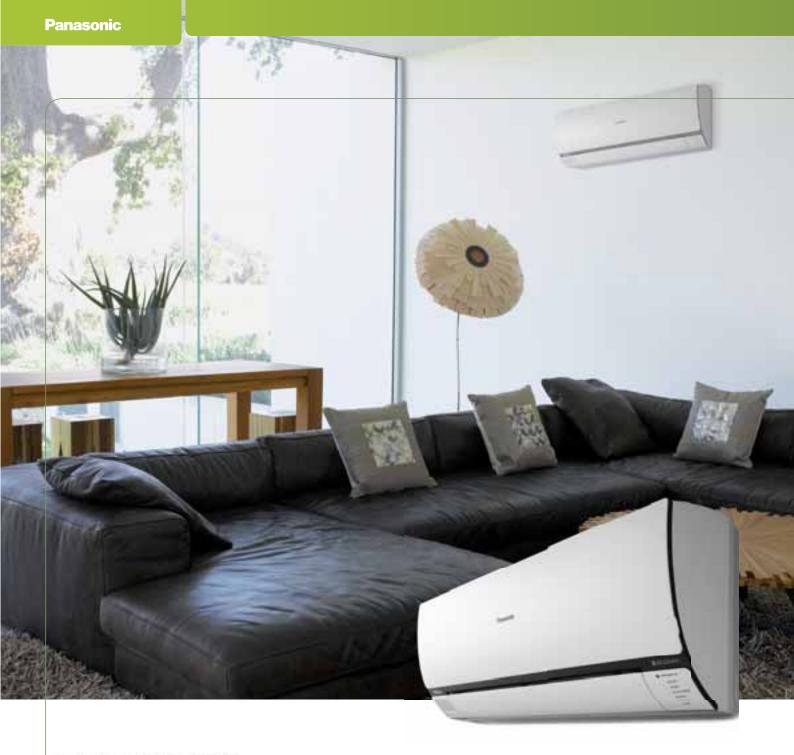
With Super Quiet technology our devices are as quiet as a library.



The communication port is integrated into the indoor unit and provides easy connection to, and control of, your Panasonic heat pump to your home or building management system.



5 YEARS Warranty on the compressor.







## THE NEW ETHEREA RANGE PURE EFFICIENCY WITH ECONAVI

Living an eco lifestyle doesn't mean you need to compromise on comfort. With inverter control, you can still enjoy refreshingly cool air while reducing energy consumption by half. To further detect and reduce waste, now there is Econavi to give you even more energy savings. And, for a cleaner living environment, the new Nanoe-G helps purify the air as well as our surroundings. Together, these breakthrough technologies define what Panasonic's Eco Clean Life Innovation is all about — innovations that improve our environment while making life as comfortable as possible.

<sup>\*</sup>¹Comparison of 1.5 HP Inverter model with ECONAVI dual sensor ON and OFF (Cooling) // ECONAVI dual sensor ON Outside temperature: 35 °C/24 °C // Remote setting temperature: 23 °C with Fan Speed (High)

Vertical Airflow direction: Auto, Horizontal Airflow direction: ECONAVI Mode // Setting temperature goes up 2°C in total, 1°C controlled by ECONAVI activity level detection and another 1°C controlled by ECONAVI light intensity detection.

ECONAVI dual sensor OFF Outside temperature: 35 °C/24 °C // Remote setting temperature: 23 °C with Fan Speed (High) // Vertical Airflow direction: Auto, Horizontal Airflow direction: Front

Total power consumption amount is measured for 1 hour in stable conditions. At Panasonic Amenity Room (size:16.6 m²) // This is the maximum energy savings value, and the effect differs according to conditions in installation and usage.

## **ECONAVI WITH INTELLIGENT ECO SENSORS**



ECONAVI Intelligent Sensors monitor sunlight intensity, human movements, activity levels and human absence in order to detect unconscious waste of energy. ECONAVI automatically adjusts cooling power to save energy efficiently, whilst still providing uninterrupted cooling comfort and convenience.

ECONAVI with intelligent eco sensors now has 4 settings to detect and reduce energy waste. You can now enjoy higher maximum energy savings of up to 35%\*1 on cooling mode and up to 45%\*2 on heating mode.



#### SUNLIGHT DETECTION

ECONAVI detects changes in sunlight intensity in the room and judges whether it is sunny or cloudy/night and reduces energy consumption by adjusting cooling requirements under less sunny conditions





SUNNY

CLOUDY/NIGHT

#### HUMAN ACTIVITY DETECTION

One-touch ECONAVI reduces waste in three simple steps:



AREA SEARCH ECONAVI detects human movements and reduces waste energy by not cooling unoccupied areas.



**ACTIVITY DETECTION** ECONAVI detects changes in activity levels and reduces energy wasted by cooling or heating when not needed.



ABSENCE DETECTION ECONAVI detects human absence in the room and reduces energy wasted by cooling an empty room.

Total power consumption amount is measured for 1 hour in stable conditions. At Panasonic Amenity Room (size: 16.6 m<sup>2</sup>)





## NEW SUNLIGHT DETECTION (ON COOLING MODE)

ECONAVI detects changes in sunlight intensity in the room and judges whether it is sunny or cloudy/night. It reduces waste energy by reducing cooling under less sunny conditions.

When weather changes from sunny to cloudy/night, ECONAVI detects less sunlight intensity and determines less cooling power is required. If cooling power remains the same, energy will be wasted. ECONAVI detects this waste and reduces cooling power by an amount equivalent to increasing the set temperature by 1 °C.

## SUNNY



ECONAVI is switched on when it is SUNNY.

## DETECT

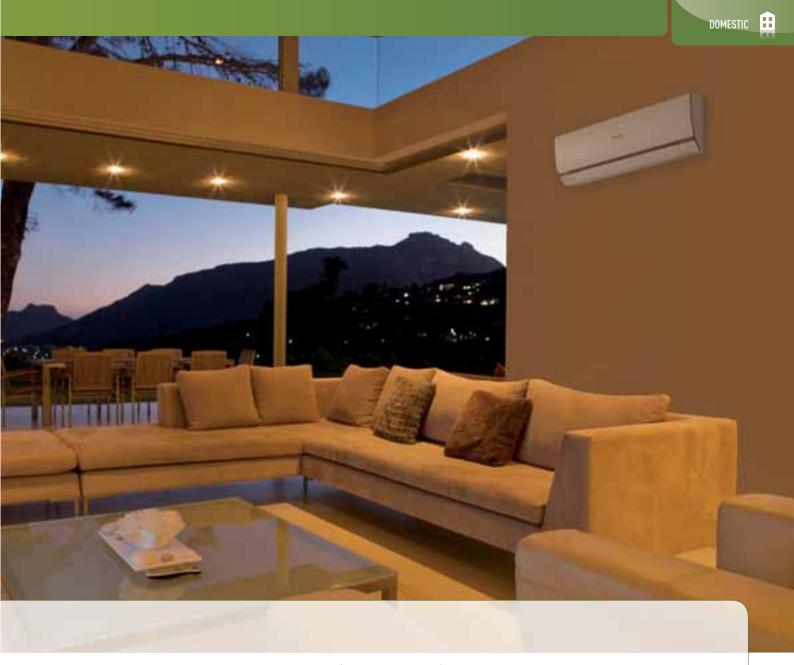


ECONAVI detects less cooling power is required.

## **REDUCE WASTE**



Reduces cooling power by an amount equivalent to increasing the set temperature by 1  $^{\rm o}{\rm C}.$ 



## NEW SUNLIGHT DETECTION (ON HEATING MODE)

ECONAVI detects changes in sunlight intensity in the room and judges whether it is sunny or cloudy/night. It reduces the waste of heating under more sunlight conditions.

When weather changes from cloudy/night to sunny, ECONAVI detects more sunlight intensity and determines less heating power is required. If heating power remains the same, energy will be wasted. ECONAVI detects this waste and reduces heating power by an amount equivalent to decreasing the set temperature by 1 °C.

## CLOUDY



ECONAVI is switched on when it is CLOUDY/NIGHT.

## DETECT



ECONAVI detects less heating power is required.

## REDUCE WASTE



Reduces heating power by an amount equivalent to decreasing the set temperature by 1 °C.





## **ECONAVI INTELLIGENT SENSORS**

ECONAVI Intelligent Sensors are able to monitor sunlight intensity, human movements, activity levels and human absence to detect unconscious waste of energy and automatically adjusts cooling power to save energy efficiently with uninterrupted cooling comfort and convenience.

## SUNLIGHT SENSOR

Detects changes in Sunlight Intensity

## HUMAN ACTIVITY SENSOR

Detects human movements, changes in activity levels and human absence.

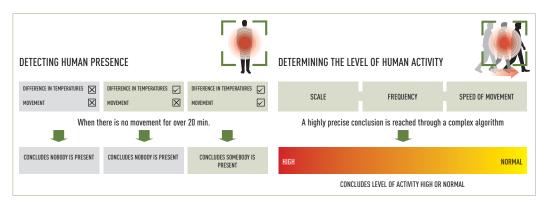






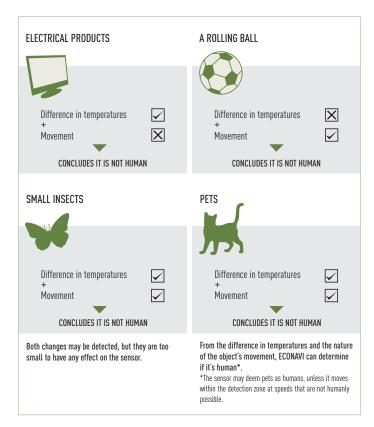
#### HIGH-PRECISION SENSING

All objects emit infrared rays which, although invisible, can be detected as heat by ECONAVI's Human Activity Sensor if it is within the detection zone. When an object moves within its detection zone, ECONAVI compares the object's temperature with the room temperature to determine if it is human, and level of activity based on its movement.



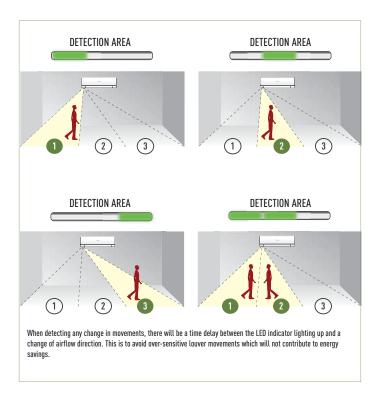
#### DIFFERENTIATING OBJECTS

ECONAVI's sensor technology uses factors such as speed, frequency and temperature of every object to determine if it is human.



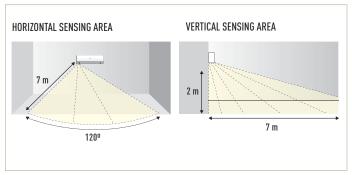
#### SENSOR DETECTION PRINCIPLE

Human Activity Sensor detects human activity level and directs airflow to occupied or high activity zone. Led indicators indicating ECONAVI is detecting and functioning.



#### **COVERAGE CAPABILITIES**

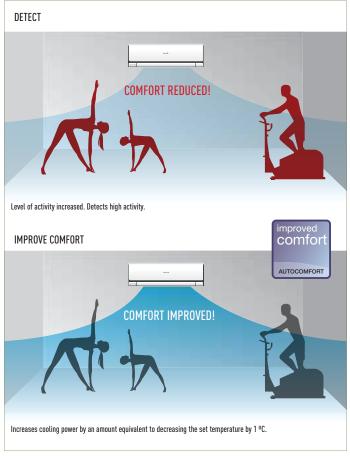
Human Activity Sensor covers a wider area due to its improved area detection function. The entire room is divided into 3 detection areas. Applicable for dual sensor.



# AUTOCOMFORT

## AUTOCOMFORT DUAL SENSOR PROVIDES COMFORT

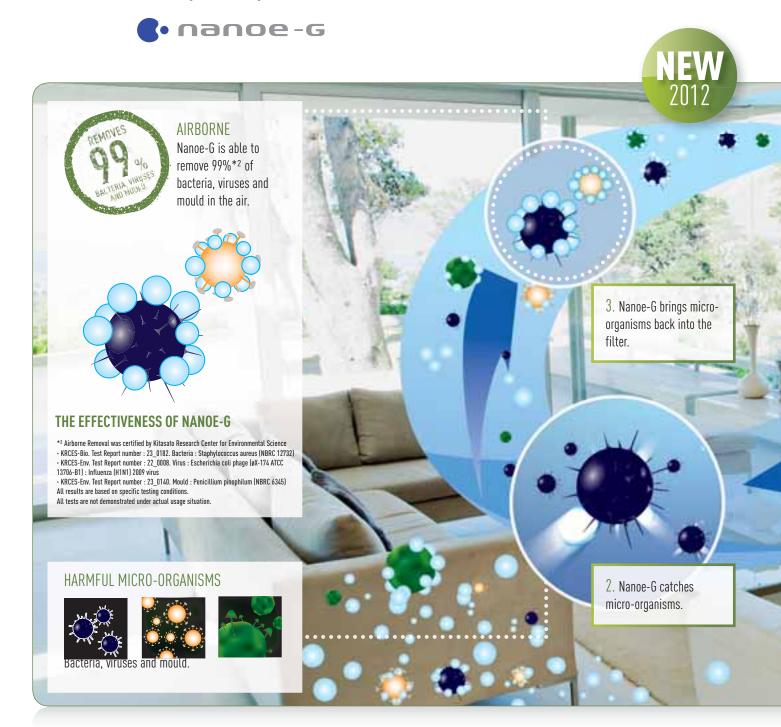
Autocomfort dual sensor is used to provide comfort. High Activity Detection detects when the level of activity increases, and automatically increases cooling power by an amount equivalent to decreasing the set temperature by 1 °C to improve comfort. This is explained in the following scenario: High Activity Detection: ECONAVI High Activity Detection can detect changes in activity levels to adjust cooling power to improve comfort.





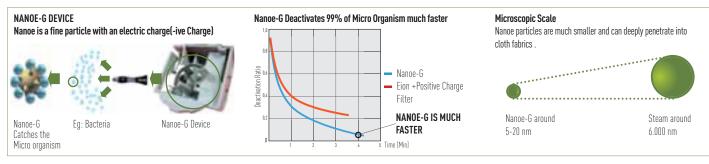
## NANOE-G AIR PURIFYING SYSTEM

Panasonic air conditioners now come with a new air purifying system called Nanoe-G which utilises nano technology consisting of ions and radicals to purify the air in the room. It works effectively on airborne and adhesive micro-organisms such as bacteria, viruses and mould thus ensuring a cleaner living environment.



#### TESTING INSTITUTE: KITASATO RESEARCH CENTER FOR ENVIRONMENTAL SCIENCE

CATEGORY	TARGET SUBSTANCE	SUBSTANCE NAME	EFFECTIVENESS	TEST REPORT NO	METHOD	RESULT
AIRBORNE			99% removal from the air after 150 minutes of operation			
		(NBRC 12732)		Test Report No. 23_0182	was calculated.	
	Virus	Escherichia coli phage	99%	KRCES-Env.	The AC with nanoe-G was operated in a test room (25m³) and airborne phages were collected and phage	99% removal from the air after 120 minutes of operation
		(øX-174 ATCC 13706-B1)		Test Report No. 22_0008	count of the collected air was calculated.	
			99%	KRCES-Env.	nanoe-G was operated in a test chamber (200 Litre) and the phages were collected and phage count of	99% removal from the air after 5 minutes of operation
				Test Report No. 22_0008	the collected air was calculated.	
		Influenza (H1N1)	99%	KRCES-Env.	nanoe-G was operated in a test chamber (200 Litre) and the influenza viruses were collected and the	99% removal from the air after 5 minutes of operation
		2009 virus		Test Report No. 22_0008	virus titers were calculated by the Reed and Muench method.	
					In view of health hazard associated with spatial distribution of Influenza (H1N1) 2009 virus, nanoe-G remo	val effectiveness cannot be tested in large test room (25 m³).
					When tested in 200 Litre chamber, nanoe-G was able to decrease Influenza (H1N1) 2009 virus (99%) when	it was operated for 5 minutes.
					Additionally when tested in larger test room (25 m³), nanoe-G can remove 99.5% of Coli phage virus wher	operated for 120 minutes. It was validated that evaluation on
					the influenza virus could be speculated from the results on the phage according to the test results in a 20	00 Litre test chamber. It appeared that the air-conditioners in a
					larger test room (25 m³) would be able to remove the influenza virus as effectively as the phage.	
	Mould	Penicillium pinophilum	99%	KRCES-Bio.	The AC with nanoe-G was operated in a test room (25 m³) and aerosol was collected and fungal spores	99% removal from the air after 90 minutes of operation
		(NBRC 6345)		Test Report No. 23_0140	count was calculated.	





#### TESTING INSTITUTE: JAPAN FOOD RESEARCH LABORATORIES

CATEGORY	TARGET SUBSTANCE	SUBSTANCE NAME	EFFECTIVENESS	TEST REPORT No	METHOD	RESULT
ADHESIVE	Bacteria	Staphylococcus aureus	99%	Test Report No.	The AC with nanoe-G was operated in a test space (10m³) and viable cells were counted by	99% inactivation after 24 hour operation of Nanoe-G (compared to
		(NBRC 12732)		11047933001-02	pour plate method.	the original condition/ ventilation mode).
	Virus	Bacteriophage	99%	Test Report No.	Nanoe-G was operated in a test box (90 Litre) and phage infectivity titer was determined by	99% inactivation after 120 minutes operation of Nanoe-G (compared
		(Phi X 174 NBRC 103405)		11073649001-02	plaque technique.	to non-operation)
	Mould	Cladosporium cladosporioides	Inhibit Mould	Test Report No.	Nanoe-G was operated in a test box (1m³) and colonies on the plate were counted.	The growth of the subject was inhibited. (>85% after 7 days)
		(NBRC 6348)	Growth	11047937001-02		

Remark: All results are based on specific testing conditions. All tests are not demonstrated under actual usage situation.

#### THE EFFECTIVENESS

Why Nanoe-G is better than e-ion? - Nanoe-G works on "Airborne" and "Adhesive"

• E-ion only works of "Airborne"

AIRBORNE	ADHESIVE
Removes 99%	Deactivates 99% VIRUSES
BACTERIA, VIRUSES AND MOULD	Deactivates 99% BACTERIA
	Restrain mould growth







**ELECTRICITY CONSUMPTION COMPARISON** 

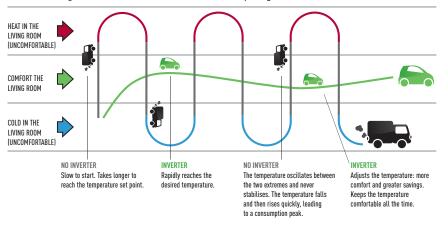
# INVERTER TECHNOLOGY EXCEPTIONAL ENERGY-SAVING PERFORMANCE

#### **Reduces Electricity Consumption**

Panasonic Inverter air conditioners are designed to give you exceptional energy savings and performance, whilst also ensuring you stay comfortable at all times. At the start up of an air conditioner's operation, powerful operation is required to reach the set temperature. After the set temperature is reached, less power is required to maintain it. A conventional non-Inverter air conditioner can only operate at a constant speed which is too powerful to maintain the set temperature. Thus, in attempting to achieve this, it switches the compressor ON and OFF repeatedly. This results in wider temperature fluctuations leading to wasteful consumption of energy. The Panasonic Inverter air conditioner varies the rotation speed of the compressor. This provides a highly precise method of maintaining the set temperature.

Unlike a conventional non-Inverter air conditioner which consumes a lot of energy, Panasonic Inverter air conditioner reduces wasteful operation - giving you energy savings of up to 50%\*1 on cooling mode.

**The advantages of inverter air conditioners.** Comparing Inverter and non-Inverter air conditioners.



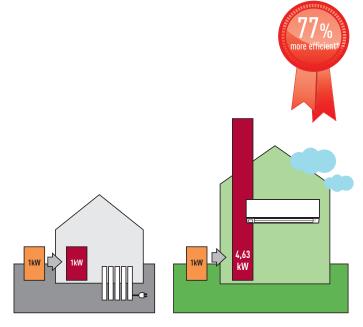
DURING COOLING UP TO 50 %\*1 ENERGY SAVINGS

\*\* Comparison of 1.5HP Inverter model and 1.5HP Non-Inverter model (Cooling) Outside temperature: 35°C/24°C, Remote setting temperature: 25°C with Fan speed (High) Vertical Airflow direction: Auto, Horizontal Airflow direction: Front.
Total power consumption amount are measured for 8 hours from starting. At Panasonic Amenity Room (size: 16.6m²) This is the maximum energy savings value, and the effect differs according to conditions in installation and usage.

## ECONOMICAL. ENVIRONMENT-FRIENDLY OPERATION HIGH COP (COFFFICIENCY OF PERFORMANCE)

Original Panasonic Inverter technology and a high-performance compressor provide top-class operating efficiency. This lets you enjoy lower electricity bills while contributing to environmental protection.





\* On heating mode, XE/E9-NKE compared with electrical heaters at +7 $^{\circ}$ C

#### **2012 ENERGY LABELING**

Our new models have obtained the highest energy performance classification. Class A, which puts them in the highest energy saving class. This means you can use these models every day, without having to worry about the electric bill.

#### **Energy efficiency classifications**

A European Community directive requiring energy labelling of domestic appliances came into effect in 2005. Since then, all manufacturers have been required to label each product with an efficiency level represented by a letter from A to G. This means that a class B domestic appliance consumes approximately 10% more than an A, a C 20% more than an A. etc.

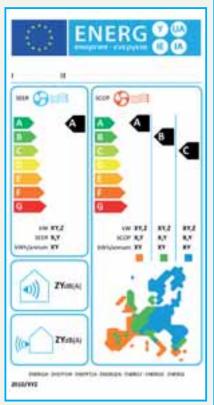
#### **NEW 2013 ENERGY LABELING. FOR MORE** TRANSPARENCY AND RELIABILITY.

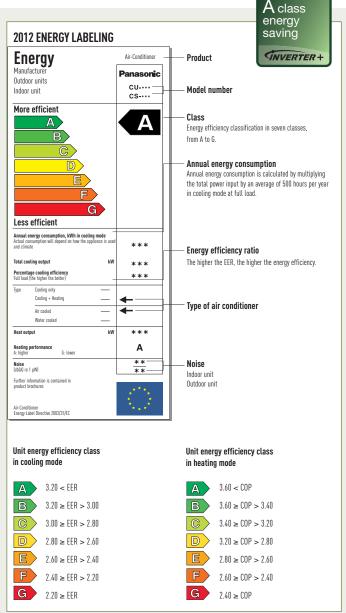
From 1 of January 2013, The energy performance calculation will change from COP to SCOP and EER to SEER.

The "S" integrates the seasonal performance of the heat pump. The new energy-related products directive (ErP) will integrate 4 points of measurement on cooling mode and 5 points of measurement on heating mode with different compressor load. This new Seasonal energy performance calculation will give a better understanding of the real efficiency of the heat pump, throughout the year and for its geographical location. Of course EER (COP) and SEER (SCOP) values are totally different and can not be compared.

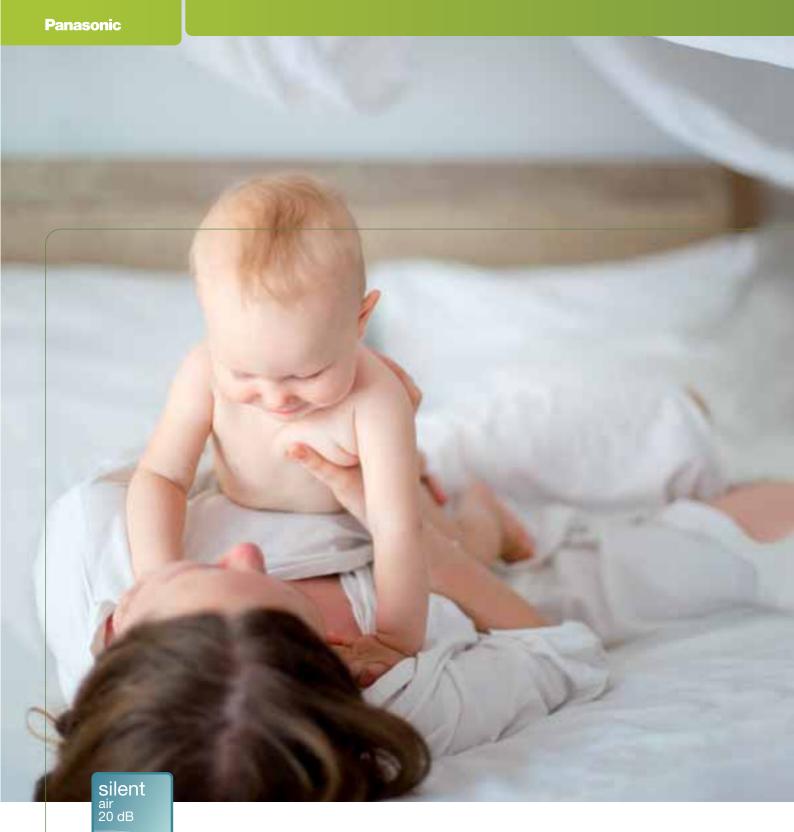
Also, SCOP and SEER must be calculated by the norm ErP lot10 effective from 1 of January 2013.

ENERGY EFFICIENCY	SEER	SCOP
CLASS	OFFD 7.00	SCOP > 5.10
A+++	SEER > 7.00	
A++	6.10 <u>·</u> SEER < 7.00	4.60 <u>SCOP</u> < 5.10
A+	5,60 <u>- SEER</u> < 6.10	4.00 <u>-</u> SCOP < 4.60
A	5.10 <u>SEER &lt; 5.60</u>	3.40 - SCOP < 4.00
В	4.60 <u>SEER &lt; 5.10</u>	3.10 - SCOP < 3.40
C	4.10 <u>SEER &lt; 4.60</u>	2.80 - SCOP < 3.10
D	3.60 <u>SEER &lt; 4.10</u>	2.50 - SCOP < 2.80
E	3.10 <u>·</u> SEER < 3.60	2.20 <u>-</u> SCOP < 2.50
F	2.60 <u>SEER</u> < 3.10	1.90 - SCOP < 2.20
G	SEER <u>-</u> 2.60	SCOP - 1.90





These classifications are for split and multi split air conditioning units



PANASONIC TECHNOLOGY FOR COMFORT

Extremely quiet. We have succeeded in making one of the most silent air conditioners on the market. The indoor unit runs silently with a slow fan speed. When you press the Quiet Mode button on the remote control, the operating sound level reduces even further, down to 20 dB. At 20 dB technology our devices are as quiet as a library! We produce discreet air conditioners which do not disturb you, even when the room is at its quietest.

SUPER QUIET



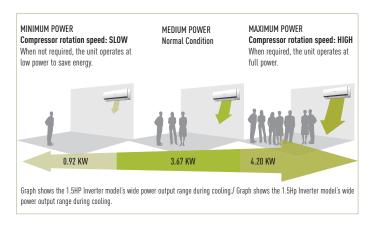




#### OTHER ADVANTAGES OF INVERTER AIR CONDITIONERS

#### **CONSTANT COMFORT**

Precise temperature control with a wide power output range enables an inverter air conditioner to meet different room occupancy levels – thus ensuring constant comfort.

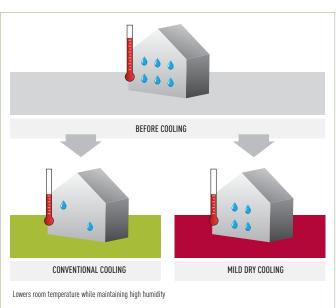


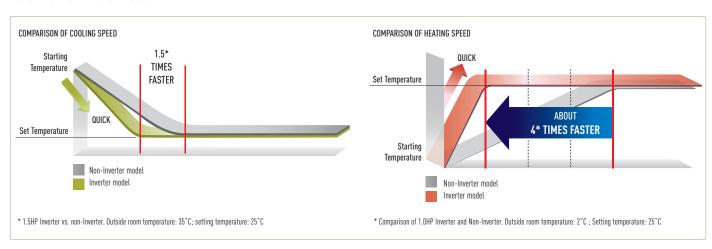
#### QUICK COMFORT

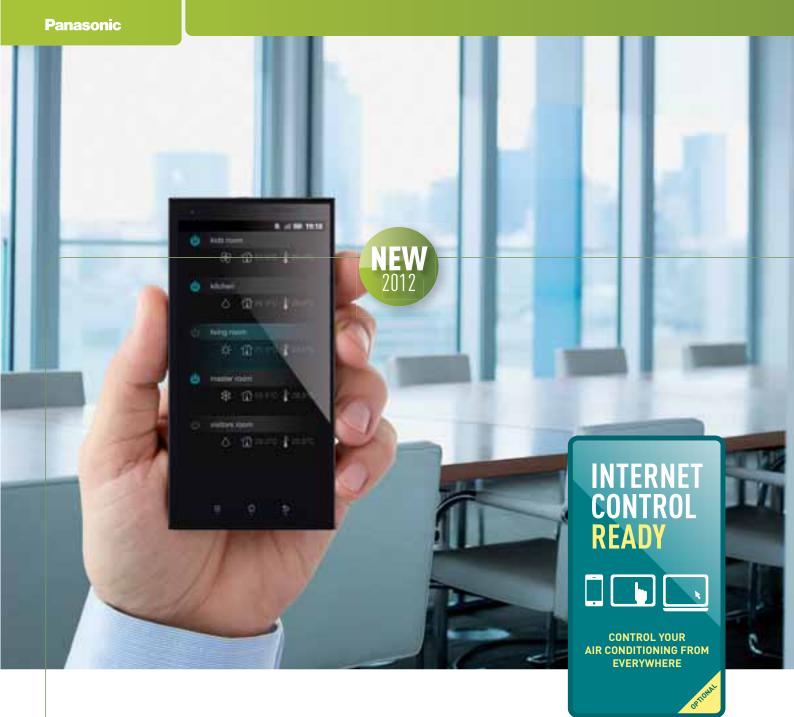
Panasonic Inverter air conditioners can operate with higher power during the start up period to cool the room 1.5 times faster and heat the room 4 times faster than non-Inverter models.

#### MILD DRY COOLING

Mild dry cooling maintains a higher level of relative humidity of up to 10% compared to regular cooling operation. This helps to reduce skin dryness - and a dry throat.







# CONTROL YOUR AIR CONDITIONER WITH YOUR SMART DEVICE -SMARTPHONE & INTERNET-

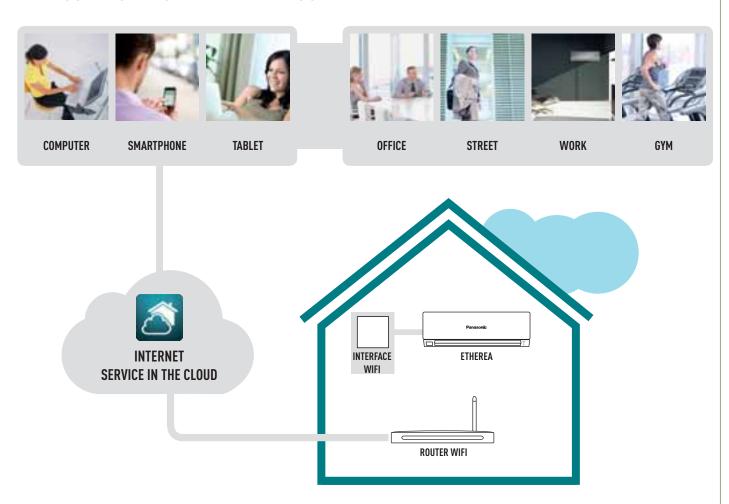
Panasonic has always offered its customers the most efficient Heat Pumps and Air Conditioners. Now it has taken a step forward and presents a control solution taking advantage of the latest Cloud Technology to enable you to manage your climate system from anywhere in the world.

Control your environment from your iPad, iPhone, any Android device or from a PC with Internet access using this add-on service. Offering the same functions as if you were at home: start/stop, Mode Operation, Set Temperature, Room Temperature etc. Experience the new, advanced functionality provided by Panasonic to achieve the best comfort and efficiency with the lowest energy consumption. For full details of this impressive control solution, contact your local Panasonic office.

The interface needs to have Wifi connection. Please check if Wifi is available in the area where the box is installed (normally near the indoor unit).

CONTROL YOUR
AIR CONDITIONING FROM
EVERYWHERE

## TAKE CONTROL FROM WHEREVER YOU ARE!



#### ADVANCED SERVICE HOSTED IN THE CLOUD THAT PROVIDES ACCESS FROM ANYWHERE TO YOUR AC SYSTEM.

#### **FUNCTIONALITY**

- Remote control: On/Off, Mode, Temp. Setting, etc.
- Scheduler calendar, Energy Saving functions, Preset configuration features
- Maintenance functions:
- Dirty Air Filter alerts
- Technical Service network
- Error list
- ECO advices.
- Multi-lingual application

#### INSTALLATION

- Easy installation.
- · Videos and Manuals from Panasonic
- Helpline (Phone & Internet).
- · Automatic updates.

## REFERENCE

PA-AC-WIFI-1









## **CONNECTIVITY**

GREAT FLEXIBILITY FOR INTEGRATION INTO YOUR KNX / ENOCEAN / MODBUS PROJECTS ALLOWS FULLY BI-DIRECTIONAL MONITORING AND CONTROL OF ALL THE FUNCTIONING PARAMETERS

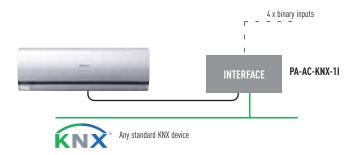
The interface has been designed specifically for Panasonic and provides complete monitoring, control and full functionality of the entire Aquarea line-up from KNX, EnOcean and Modbus installations.

This connectivity solution is made by a third party company, please contact Panasonic for more information.

#### Interface to connect Etherea to KNX

This new Etherea-KNX interface allows full bi-directional monitoring and control of all the functioning parameters of Etherea control from KNX installations. Small dimensions.

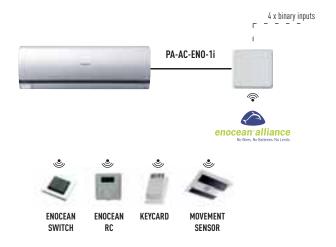
- Quick installation and possibility of hidden installation.
- External power not required.
- Direct connection to the AC indoor unit (split unit or Multi split unit)
- Fully KNX compatible. Control and monitoring, from sensors or gateways, of the internal variables of the indoor unit and error codes and indication.
- Use the air conditioner ambient temperature or the one measured by a KNX temperature sensor or Thermostat.
- AC unit can be controlled simultaneously by the remote control of the AC unit and by KNX EnOcean devices.
- Advanced control functions: use it as a room controller.
- 4 binary inputs. They work as standard KNX binary inputs as well as being used to control the AC directly.



#### Interface to connect ETHEREA to En-ocean

This new Etherea-EnOcean interface allows monitoring and control, fully bi-directionally, all the functioning parameters of the Etherea control from EnOcean installations. Small dimensions.

- Quick installation and possibility of hidden installation.
- External power not required.
- Direct connection to the AC indoor unit (split unit).
- Fully EnOcean compatible. Control and monitoring, from sensors or gateways, of the internal variables of the indoor unit and error codes and indication.
- Use the air conditioner ambient temperature or the one measured by an EnOcean temperature sensor or Thermostat.
- AC unit can be controlled simultaneously by the remote control of the AC unit and by EnOcean devices.
- Advanced control functions: use it as a room controller.
- 4 binary inputs. They work as standard EnOcean binary inputs as well as being used to control the AC directly.



# DOMESTIC AIR CONDITIONER RANGE

INDOOR UNITS	2.2 kW	2.8 kW	3.2 kW
WALL MOUNTED ETHEREA // INVERTER+ // SILVER	Z.Z NVV	Z.U NVV	J.L RVV
NEW 2012		_	_
	KIT-XE7-NKE	KIT-XE9-NKE	KIT-XE12-NKE
WALL MOUNTED ETHEREA // INVERTER+ // WHITE			
NEW 2012	KIT-E7-NKE	KIT-E9-NKE	KIT-E12-NKE
WALL MOUNTED ETHEREA // INVERTER+ // SILVER // WHITE	NITE/-NNE	NI-E7-WNE	NITE I Z-NNE
NEW 2012	_	_	-
	KIT-XE7-NKE-3	KIT-XE9-NKE-3	KIT-XE12-NKE-3
WALL MOUNTED RE TYPE // STANDARD INVERTER			
NEW 2012		VIT DED NIVE	VIT DE12 NVE
WALL MOUNTED TYPE // INVERTER+ // -15°C		KIT-RE9-NKE	KIT-RE12-NKE
		KIT-E9-HKEA	KIT-E12-HKEA
WALL-MOUNTED TYPE // STANDARD HEAT PUMP			
		WIT DIMO CHE	WIT DIMING CIVE
WALL-MOUNTED TYPE // STANDARD COOLING ONLY		KIT-PW9-GKE	KIT-PW12-GKE
,,			
	KIT-V7-DKE	KIT-V9-DKE	KIT-V12-DKE
FLOOR CONSOLE TYPE // INVERTER+		8	8
		KIT-E9-GFE-1	KIT-E12-GFE-1
SINGLE SPLIT FLOOR OR CEILING TYPE // INVERTER			
ETHEREA MULTI SPLIT 2X1 // INVERTER+			
NEW 2012			
ETHEREA MULTI SPLIT 3X1 // INVERTER+			
NEW 2012			
CTUEDEA MULTI COLIT 1/4 // INVEDTED			
ETHEREA MULTI SPLIT 4X1 // INVERTER+			
NEW 2012			
MILITI Ev.1 // INVEDTED.			
MULTI 5x1 // INVERTER+			
2012			

	5.0 kW	6.0 kW	6.5 kW	8.0 kW
KIT-XE15-NKE	KIT-XE18-NKE	KIT-XE21-NKE		
VIT F1E NIVE	VIT F10 NIVE	VIT F21 NIVE	WIT FOX NIVE	KIT-E28-NKE
KII-EI3-NKE	KII-EIÖ-NKE	KII-EZI-NKE	KII-EZ4-NKE	NII-EZ8-NNE
_				
KIT-XE15-NKE-3				
-	-			
KIT-RE15-NKE	KIT-RE18-NKE		KIT-RE24-NKE	
KIT-E15-HKEA	KIT-E18-HKEA	KIT-E21-HKEA		
	KIT-PW18-GKF		KIT-PW24- IKF	
	A TWO OKE		G S	
			KIT-V24-DKE	KIT-V28-EKE
	KIT-E18-GFE-1			
KIT-E15-DTE	KIT-E18-DTE	KIT-E21-DTE		
KIT-2XE/E77-NBE // KIT-2XE/E79-NBE //	KIT-2XE/E99-NKE // KIT-2XE/E912-NKE			
KII-ZAE/E/1Z-NDE // KII-ZAE/E99-NDE	// KII-ZAE/EIZIZ-NKE			
		KIT-3XE/E7712-NBE // KIT-3XE/E7715-NBE		
				Maria .
				KIT-4XE/E77712 / 4XE/E77715-NBF //
				KIT-4XE/E77712 / 4XE/E77715-NBE // KIT-4XE/E77712 / 4XE/E77715-NKE
				CU-5E34NBE
	KIT-E15-NKE  KIT-RE15-NKE  KIT-E15-NKE	KIT-E15-NKE  KIT-E15-NKE  KIT-E15-NKE  KIT-E18-NKE  KIT-E18-NKE  KIT-E18-NKE  KIT-E18-NKE  KIT-E18-NKE  KIT-E18-NKE  KIT-E18-NKE  KIT-E18-NKE  KIT-E18-NKE	KIT-E15-NKE  KIT-E15-NKE  KIT-E16-NKE  KIT-E16-NKE	KIT-E18-NKE  KIT-E18-NKE

## FEATURE EXPLANATIONS

## Healthy Air Quality



#### NANOE-G

Nanoe-G utilises nano-technology fine particles to purify the air in the room. It works

effectively on airborne and adhesive micro-organisms such as bacteria, viruses and mould thus ensuring a cleaner living environment.



#### MILD DRY COOLING

Fine control helps prevent a rapid decrease in room humidity while maintaining the set

temperature. Maintains an RH\* up to 10% higher than cooling operation (\*RH: Relative Humidity). Ideal when sleeping with the air conditioner on.



#### SOFT BREEZE MODE

The Soft Breeze mode eliminates excess humidity with a soft breeze and gives you the feeling of well-being without significant temperature changes.

#### ION BENEFIT

Negative ions, found in the air near waterfalls and forests, generally produce a great sense

of wellbeing. Panasonic brings all the benefits to your home, at the push of a button.



#### Anti Bacterial Filter

The Anti Bacterial Filter eliminates the allergens it captures. It combines three

functions in one (anti-allergen, anti-virus and antibacteria) to keep room air clean and healthy.



#### ONE-TOUCH ANTI-MOULD AIR FILTER



#### ODOUR-REMOVING FUNCTION

Allows the exchanger to be cleaned,

preventing possible odours. While this function is connected, the fan also remains off momentarily to avoid unpleasant odours while the exchanger is being cleaned.

#### REMOVABLE, WASHABLE PANEL

The front panel is easy to keep clean. It can be removed quickly in one single step and can be washed in water. A clean front panel ensures smoother, more efficient operation, which can save energy.

#### Comfort



#### INVERTER PLUS SYSTEM

Inverter plus products improve on the characteristics of standard Inverter air

conditioners by over 20%. This means 20% less consumption and 20% off your electric bill. A Inverter plus is also A class on cooling and heating mode.



## INVERTER SYSTEM

The Inverter range provides greater efficiency, more comfort. Provides more precise

temperature control, without highs and lows, and keeps the ambient temperature constant with lower energy consumption and a significant reduction in noise and vibration levels.



#### **ECONAVI**

The sensor determines the human activity level and the position in the room and adjust the air flow orientation for maximum comfort and maximum savings.



#### AUTOCOMFORT

The Autocomfort system detects conditions in the room and switches to energy saving operation when nobody is on the room. However, priority is given to comfort, so cooling power is increased when there's a lot of human activity.



#### SUPER QUIET MODE

Thanks to its latest generation compressor and its twin blade fan, our outdoor unit is one

of the most silent on the market. The indoor unit emits an almost imperceptible 20 dB.



DOWN TO -15°C IN COOLING ONLY MODE The air conditioner works in cooling only mode with an outdoor temperature of -15°C.



#### DOWN TO -15°C IN HEATING MODE

The air conditioner works in heat pump mode with an outdoor temperature as low as -15°C.



#### EASY CONTROL BY BMS

The communication port is integrated into the indoor unit and provides easy connection to,

and control of, your Panasonic heat pump to your home or building management system.



#### POWERFUL MODE

The rapid and effective powerful mode is ideal for when you come home on the hottest or coldest days. It works at maximum power to reach the desired temperature in 15 minutes.



#### SOFT DRY OPERATION MODE

The soft dry mode eliminates excess moisture with a soft breeze and provides a sense of wellbeing without much change in temperature.



## WIDE & LONG AIRFLOW VANE

This vane has been designed so that the air goes further. It sends air to every corner of the room to keep the whole room in the comfort zone.



# PERSONAL AIRFLOW CREATION

Permits the air direction to be adjusted vertically and horizontally. This feature can be conveniently selected by remote control.



## AUTOMATIC VERTICAL AIRFLOW CONTROL

The flap swings up and down automatically. The flow can also be set a fixed angle with the remote control.



#### MANUAL HORIZONTAL AIRFLOW CONTROL



#### AUTO MODE (INVERTER)

Automatically changes from cooling to heating depending on the set temperature for the room.



#### SIMPLE AUTO CHANGEOVER

When the difference between the measured temperature and the set temperature is 3 °C or more, it automatically switches over the current operation mode to heating or cooling mode necessary to keep the temperature at a constantly comfortable level.



HOT START MODE On the start of heating cycle and after defrost cycle, the indoor fan will start up once the indoor heat exchanger is warm.

#### Use



12-HOUR ON&OFF TIMER

(T)24

#### REAL TIME CLOCK WITH DUAL ON&OFF TIMER

This feature enables you to preset two different sets of start/stop operation timer (hour and minute) within a 24-hour time frame.



#### REAL TIME CLOCK WITH SINGLE ON&OFF TIMER

The exact operating time (hour and minute) can be set in advance. From here on, the unit will operate in accordance to these preset hours every day until the system is reset.



LCD WIRELESS REMOTE CONTROLLER

## Reliability

## AUTOMATIC RESTART

This function permits automatic restarting if safe mode operation has stopped for some unusual reason, such as after a power cut. As soon as the power is back, the unit restarts with the parameters selected before it stopped.



LONG PIPING
This is a figure which indicates the maximum length of pipe between the outdoor unit and the indoor unit(s). The distances permitted, demonstrate the installations possible.

#### TOP-PANEL MAINTENANCE ACCESS

Maintenance of an outdoor unit used to be quite a tedious task. Now, with the possibility of removing the top cover, maintenance is quick and easy.

#### SELF-DIAGNOSIS FUNCTION

With this function the unit carries out a process self-diagnosis when a particular function does not work correctly. This allows faster servicing.



#### 5 YEARS

Warranty on the compressor.

## **FEATURE COMPARISON**

	MODELS	KIT-XE7-NKE KIT-XE9-NKE KIT-XE12-NKE KIT-XE15-NKE KIT-XE18-NKE KIT-XE21-NKE	KIT-E7-NKE KIT-E9-NKE KIT-E12-NKE KIT-E15-NKE KIT-E18-NKE KIT-E21-NKE KIT-E24-NKE KIT-E28-NKE	KIT-XE/E7-NKE-3 KIT-XE/E9-NKE-3 KIT-XE/E12-NKE-3 KIT-XE/E15-NKE-3	KIT-RE12-NKE KIT-RE15-NKE	KIT-E9-HKEA KIT-E12-HKEA KIT-E15-HKEA KIT-E18-HKEA KIT-E21-HKEA	KIT-PW9-GKE KIT-PW12-GKE KIT-PW18-GKE KIT-PW24-JKE	KIT-V7-DKE KIT-V9-DKE KIT-V12-DKE KIT-V18-DKE KIT-V24-DKE KIT-V28-EKE	KIT-E9-GFE-1 KIT-E12-GFE-1 KIT-E18-GFE-1	KIT-E15-DTE KIT-E18-DTE KIT-E21-DTE	KIT-2MRE77-MBE KIT-2MRE79-MBE KIT-2MRE712-MBE KIT-2MRE912-MBE KIT-2MRE77-MKE KIT-2MRE79-MKE KIT-2MRE79-MKE KIT-2MRE912-MKE KIT-2MRE912-MKE KIT-2MRE912-MKE	KIT-2XE/E79-NBE KIT-2XE/E712-NBE KIT-2XE/E99-NBE KIT-2XE/E99-NKE KIT-2XE/E912-NKE	KIT-3XE/E7712-NBE KIT-3XE/E7715-NBE	KIT-4XE/E77712-NBE KIT-4XE/E77715-NBE KIT-4XE/E77712-NKE KIT-4XE/E77715-NKE	CU-5E34NBE
nano technology air cleaner	NanoE-G air purifying system	×	×	×								×	×	×	
perfect humidity control	Mild Dry Cooling	×	×	×											
relaxing breeze effect	Soft Breeze				For RE9, RE12 and RE15						×				
ion generator	Ion Benefit				allu NEIS	×		×							
prevention allergy filter	Anti Bacterial Filter				<b>X</b> 10 years	×	<b>≭</b> Optional	×		<b>X</b> Optional	×				
	One-Touch anti- mould air filter				x			x	×	x					
*>	Odour-removing function	×	×	×	×	×	×	x	×	x	×	×	×	×	
	Removable, washable panel	×	×	×	×	×	×	x	×		×	×	×	×	×
A class energy saving	Inverter+ system	×	×	x		×			×			x	×	×	×
A class energy saving	Inverter system				x					x	×				
35% savings	ECONAVI	×	×	×								×	×	x	
improved comfort	AUTOCOMFORT	×	×	×								×	×	x	
silent air 20 dB	Super Quiet mode	For XE7, XE9	<b>X</b> For E7, E9		For RE9, RE12	x		x	×	x					
down to -15°C in cooling mode	Down to -15°C in cooling only	and XE12	and E12	and XE/E12	and RE15	×									
down to -15°C in heating mode	Down to -15°C in heat mode			×		x			×			x	×	x	
(P <sub>2</sub>	Powerful mode	x	×	×	For RE9, RE12 and	x		x	×	x		x	×	x	×
2	Soft dry operation mode	x	×	×	RE15	x	×	x	×	x	×	x	×	x	×
7	Wide & long airflow vane	For XE7, XE9, XE12 and XE15	<b>★</b> For E7, E9, E12 and E15	×							×	x	×	x	
and.	Personal airflow creation	For XE18 and XE21	×		<b>✗</b> For RE18 and RE24	x		<b>X</b> For V18, V24 and V28							
-	Automatic vertical airflow control	x	X	×	For RE9, RE12 and RE15		×	For V7, V9 and V12	×	×	×	x	×	x	
二	Manual horizontal airflow control	For XE7, XE9, XE12 and XE15	<b>★</b> For E7, E9, E12 and E15	×	For RE9, RE12			X For V7, V9 and V12	×	x	×	x	x	x	
eo@	AUTO mode (Inverter)	X	×	×	X	x			×	x	×	x	×	x	
•	Simple Auto Changeover	x	×	×	x										
0	Hot start mode	x	×	×	x	x	×		×	×	×	x		x	
<b>O</b> 12	12-hour ON&OFF timer				For RE9, RE12 and RE15		For PW9 and PW12								
⊕24	Real time clock with dual ON&OFF timer	x	×	×	SHE ILL		5110 1 1112				×		x	x	x
<b>⊕</b> 24	Real time clock with single ON&OFF timer				<b>✗</b> For RE18 and RE24	×	For PW18 and PW24	×	×						
M	LCD Wireless remote controller	×	×	×	×	×	×	×	×	×	×	×	×	×	x
<b>-/</b> →	Automatic restart	×	×	×	×	×	×	×	×	×	×	×	×	×	x
=	Long piping	X 15 m (XE7/XE9/ XE12/XE15) 20 m (XE18/ XE21)	X 15 m (E7/E9/ E12/E15) 20 m (E18/E21) 30 m (E24/E28)	<b>X</b> 15 m	X 15 m (RE9/ RE12/RE15) 20 m (RE18) 30 m (RE24)	X 15 m 20 m (E18/E21)	X 10 m (PW9) 15 m (PW12) 25 m (PW18 /PW24)	X 10 m (V7, V9) 15 m (V12) 25 m (V18/V24) 30 m (V28)	<b>X</b> 15 m 20 m (E18)	<b>X</b> 20 m	<b>X</b> Max. 30 m	<b>X</b> Max. 30 m	<b>X</b> Max. 50 m	<b>X</b> Max. 70 m	<b>X</b> Max. 80 m
· []	Top-Panel maintenance access	×	×	x	×	x	×	×	×	×	×	x	x	x	×
	Self-diagnosis function	×	×	x	×	×			×	×	×	x	x	×	
5 year	Warranty on the compressor	×	×	×	×	×	×	x	×	×	×	×	×	x	×



## WALL MOUNTED ETHEREA // INVERTER+ // SILVER

ETHEREA WITH ENHANCED ECONAVI SENSOR AND NEW NANOE-G AIR-PURIFYING SYSTEM: OUTSTANDING EFFICIENCY, COMFORT AND HEALTHY AIR COMBINED WITH STATE-OF-THE-ART DESIGN

Econavi features an in-built Human Activity sensor and a new Sunlight Detection technology to adjust output thereby giving you the best comfort at anytime whilst saving energy. Econavi not only optimizes air flow orientation and volume according to human presence, it also reduces cooling power automatically by no/less sunshine. With Econavi, you will achieve up to 35% energy savings whilst increasing your comfort. Furthermore, the NANOE-G revolutionary air-purifying system utilises nano technology fine particles to remove and deactivate 99% of both airborne and adhesive micro-organisms like bacteria, viruses and mould. Etherea is more efficient than ever with 64% less consumption for the non Inverter model on heat pump mode, and can reach 71% total savings when used with Econavi. More efficiency for bigger savings!















Maintains a Relative Humidity up to 10% higher than cooling operation. Ideal when sleeping

FOR XE7, XE9 AND XE12

KIT			KIT-XE7-NKE	KIT-XE9-NKE	KIT-XE12-NKE	KIT-XE15-NKE
KIT WITH SMARTPHONE CO	NTROL		KIT-XE7-NKE-WIFI	KIT-XE9-NKE-WIFI	KIT-XE12-NKE-WIFI	KIT-XE15-NKE-WIFI
Indoor			CS-XE7NKEW	CS-XE9NKEW	CS-XE12NKEW	CS-XE15NKEW
Outdoor			CU-E7NKE	CU-E9NKE	CU-E12NKE	CU-E15NKE
Cooling capacity	Nominal (Min - Max)	kW	2.05 (0.75-2.40)	2.50 (0.85-3.00)	3.50 (0.85-4.00)	4.20 (0.85-5.00)
	Nominal (Min - Max)	kCal/h	1,760 (650-2,060)	2,150 (730-2,580)	3,010 (730-3,440)	3,610 (730-4,300)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	4.36 (3.13-4.14)	4.67 (3.47-4.11) <b>A</b>	4.09 (3,40-3.54) <b>A</b>	3.33 (3.27-3.18)
Power input Cooling	Nominal (Min - Max)	kW	0.47 (0.240-0.580)	0.535 (0.245-0.730)	0.855 (0.250-1.130)	1.26 (0.260-1.570)
Heating capacity	Nominal (Min - Max)	kW	2.80 (0.75-4.00)	3.40 (0.85-5.00)	4.00 (0.85-6.00)	5.30 (0.85-6.80)
	Nominal (Min - Max)	kCal/h	2,410 (650-3,440)	2,920 (730-4,300)	3,440 (730-5,160)	4,560 (730-5,850)
Heating capacity at -7°C	Nominal	kW	2.35	2.88	3.37	4.11
COP 1)	Nominal (Min - Max)	<b>Energy Saving</b>	4.41 (3.26-3.92) <b>A</b>	4.63 (3.54-3.85) 🔺	4.30 (3.47-3.51) <b>A</b>	3.68 (3.33-3.51) <b>A</b>
Power input Heating	Nominal (Min - Max)	kW	0.635 (0.230-1.020)	0.735 (0.240-1.300)	0.930 (0.245-1.710)	1.440 (0.255-1.940)
Annual Energy Consumption 2)		kWh	235	268	428	630
INDOOR UNIT			·			
Air Volume	Cooling / Heating	m³/h	654 / 684	678 / 702	750 / 768	750 / 804
Moisture removal volume	· · · · ·	l/h	1.3	1.5	2	2.4
Sound pressure Level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	37 / 24 / 20	39 / 25 / 20	42 / 28 / 20	43 / 31 / 25
•	Heating (Hi / Lo / S-Lo)	dB(A)	38 / 25 / 20	40 / 27 / 20	42 / 33 / 20	43 / 35 / 29
Sound power Level	Cooling (Hi)	dB	53	55	58	59
•	Heating (Hi)	dB	54	56	58	59
Dimensions	HxWxD	mm	290 x 870 x 214			
Net weight		Kg	9	9	9	9
Air purifier filter			NANOE-G	NANOE-G	NANOE-G	NANOE-G
OUTDOOR UNIT				·		
Power source		V	230	230	230	230
Connection		mm²	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Current (Nominal)	Cooling / Heating	Α	2.2 / 3.0	2.5 / 3.4	4.0 / 4.3	5.7 / 6.6
Max. current		Α	4.7	5.8	7.8	9
Air Volume	Cooling / Heating	m³/h	2,034 / 2,034	1,788 / 1,788	1,998 / 1,998	1,998 / 1,998
Sound pressure Level 3)	Cooling (Hi)	dB(A)	45	46	48	49
	Heating (Hi)	dB(A)	46	47	50	51
Sound power Level	Cooling (Hi)	dB	60	61	63	64
•	Heating (Hi)	dB	61	62	65	66
Dimensions <sup>4)</sup>	HxWxD	mm	542 x 780 x 289	542 x 780 x 289	619 x 824 x 299	619 x 824 x 299
Net weight	1	Kg	31	33	34	33
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)
Refrigerant Loading	R410A	Kg	0.830	0.950	1.01	1.01
Elevation difference (in/out) 5)	Max	m	15	15	15	15
Piping length	Min / Max	m	3-15	3-15	3-15	3-15
Piping length without refrigerant increase	Max	m	7.5	7.5	7.5	7.5
Additional gas	1	g/m	20	20	20	20
Operating range	Cooling Min / Max	°C	+5 / +43	+5 / +43	+5 / +43	+5 / +43
	Heating Min / Max	°C	-5 / +24	-5 / +24	-5 / +24	-5 / +24



#### **TECHNICAL FOCUS**

- NEW! MAXIMUM EFFICIENCY AND COMFORT WITH ECONAVI, NOW
  WITH SUNLIGHT DETECTION
- EXCLUSIVE SILVER DESIGN
- NEW! NANOE-G AIR PURIFYING SYSTEM, 99% EFFECTIVE ON BOTH AIRBORNE AND ADHESIVE MOULD, VIRUSES AND BACTERIA
- NEW! OPTIONAL SMARTPHONE CONTROL
- MILD DRY COOLING: PREVENT A RAPID DECREASE IN ROOM HUMIDITY
- SUPER QUIET! ONLY 20 dB, EQUIVALENT TO NIGHT-TIME IN THE COUNTRY (XE7, XE9 AND XE12)
- MORE POWERFUL AIRFLOW TO QUICKLY REACH THE DESIRED TEMPERATURE



eco ideas Energy-Efficiency Classification Most efficient level: A ( CS-XE9MKEW EER/COP: 4.67/4.63)

GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in roolling mode.
- year in cooling mode.

  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0,8 m below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

  4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-XE7-NKE // KIT-XE9-NKE // KIT-XE12-NKE // KIT-XE15-NKE

#### **HEALTHY AIR**

- NEW! NANOE-G air purifying system
- Mild Dry Cooling operation mode for increased comfort and prevention of skin moisture loss

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- Maximum efficiency Inverter system, for bigger savings
- NEW! -45% consumption with Econavi on heat pump, and -35% on cooling mode
- R410A refrigerant gas

#### COMFORT

- Super Quiet mode (from 20 dB)
- · Powerful mode
- Uniform dispersion of airflow
- Automatic vertical airflow control
- · Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- · Automatic restart after power cut

#### EASE OF USE

- · Real time clock with dual ON&OFF timer
- User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- **NEW!** Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- **NEW!** Optional Smartphone control

#### **EASY INSTALLATION AND MAINTENANCE**

- · Removable, washable panel
- 15 m maximum connection distance
- 15 m maximum elevation difference
- · Maintenance access through the top panel of the outdoor unit
- · Self-diagnosis function





CU-E7NKE CU-E9NKE

CU-E12NKE CU-E15NKE



## WALL MOUNTED ETHEREA // INVERTER+ // SILVER

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Maintains a Relative Humidity up to 10% higher than cooling operation. Ideal when sleeping

KIT			KIT-XE18-NKE	KIT-XE21-NKE
KIT WITH SMARTPHONE CO	ONTROL		KIT-XE18-NKE-WIFI	KIT-XE21-NKE-WIFI
Indoor			CS-XE18NKEW	CS-XE21NKEW
Outdoor			CU-E18NKE	CU-E21NKE
Cooling capacity	Nominal (Min - Max)	kW	5.00 (0.98-6.00)	6.30 (0.98-7.10)
J,	Nominal (Min - Max)	kCal/h	4,300 (840-5,160)	5,420 (840-6,110)
EER 1)	Nominal (Min - Max)	Energy Saving	3.40 (3.50-2.96)	2.85 (3.50-2.80)
Power input Cooling	Nominal (Min - Max)	kW	1.47 (0.28-2.03)	2.21 (0.28-2.54)
Heating capacity	Nominal (Min - Max)	kW	5.80 (0.98-8.00)	7.20 (0.98-8.50)
3 7	Nominal (Min - Max)	kCal/h	4,990 (840-6,880)	6.190 (840-7.310)
Heating capacity at -7°C	Nominal	kW	4.98	5.24
COP 1)	Nominal (Min - Max)	Energy Saving	3.77 (2.88-3.08)	3.43 (2.88-3.09) B
Power input Heating	Nominal (Min - Max)	kW	1.54 (0.34-2.60)	2.10 (0.34-2.75)
Annual Energy Consumption 2		kWh	735	1,105
INDOOR UNIT				
Air Volume	Cooling / Heating	m³/h	978 / 1,074	1,038 / 1,110
Moisture removal volume	0.	l/h	2.8	3.5
Sound pressure Level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	44 / 37 / 34	45 / 37 / 34
	Heating (Hi / Lo / S-Lo)	dB(A)	44 / 37 / 34	45 / 37 / 34
Sound power Level	Cooling (Hi)	dB	60	61
	Heating (Hi)	dB	60	61
Dimensions	H x W x D	mm	290 x 1,070 x 240	290 x 1,070 x 240
Net weight		Kg	12	12
Air purifier filter			NANOE-G	NANOE-G
OUTDOOR UNIT				
Power source		V	230	230
Connection		mm <sup>2</sup>	4 x 2.5	4 x 2.5
Current (Nominal)	Cooling / Heating	Α	6.6 / 6.9	9.9 / 9.4
Max. current		Α	11.4	12.1
Air Volume	Cooling / Heating	m³/h	2,352 / 2,274	2,502 / 2,424
Sound pressure Level 3)	Cooling (Hi)	dB(A)	47	48
	Heating (Hi)	dB(A)	47	49
Sound power Level	Cooling (Hi)	dB	61	62
	Heating (Hi)	dB	61	63
Dimensions 4)	H x W x D	mm	695 x 875 x 320	695 x 875 x 320
Net weight		Kg	46	47
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70)
Refrigerant Loading	R410A	Kg	1.22	1.28
Elevation difference (in/out) 5		m	15	15
Piping length	Min / Max	m	3-20	3-20
Piping length without refrigerant increase	Max	m	7.5	7.5
Additional gas	1	g/m	20	20
Operating range	Cooling Min / Max	°C	+5 / +43	+5 / +43
. • •	Heating Min / Max	°C	-5 / +24	-5 / +24



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GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outeido air tomporaturo	3E0C DD / 3/0C WD	70C DR / 40C M/R

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  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body
- and 0,8 m below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification. 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-XE18-NKE // KIT-XE21-NKE

#### **HEALTHY AIR**

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- Mild Dry Cooling operation mode for increased comfort and prevention of skin moisture loss

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- · Removable, washable panel
- 15 m maximum connection distance
- 15 m maximum elevation difference
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- Self-diagnosis function



CII-F18NKF CU-E21NKE



## WALL MOUNTED ETHEREA // INVERTER+ // WHITE

ETHEREA WITH ENHANCED ECONAVI SENSOR AND NEW NANOE-G AIR-PURIFYING SYSTEM: OUTSTANDING EFFICIENCY, COMFORT AND HEALTHY AIR COMBINED WITH STATE-OF-THE-ART DESIGN

Econavi features an in-built Human Activity sensor and a new Sunlight Detection technology to adjust output thereby giving you the best comfort at anytime whilst saving energy. Econavi not only optimizes air flow orientation and volume according to human presence, it also reduces cooling power automatically by no/less sunshine. With Econavi, you will achieve up to 35% energy savings whilst increasing your comfort. Furthermore, the NANOE-G revolutionary air-purifying system utilises nano technology fine particles to remove and deactivate 99% of both airborne and adhesive micro-organisms like bacteria, viruses and mould. Etherea is more efficient than ever with 64% less consumption for the non Inverter model on heat pump mode, and can reach 71% total savings when used with Econavi. More efficiency for bigger savings!















Maintains a Relative Humidity up to 10% higher than cooling operation. Ideal when sleeping FOR E7, E9 AND E12

KIT			KIT-E7-NKE	KIT-E9-NKE	KIT-E12-NKE	KIT-E15-NKE
KIT WITH SMARTPHONE CO	NTROL		KIT-E7-NKE-WIFI	KIT-E9-NKE-WIFI	KIT-E12-NKE-WIFI	KIT-E15-NKE-WIFI
Indoor			CS-E7NKEW	CS-E9NKEW	CS-E12NKEW	CS-E15NKEW
Outdoor			CU-E7NKE	CU-E9NKE	CU-E12NKE	CU-E15NKE
Cooling capacity	Nominal (Min - Max)	kW	2.05 (0.75-2.40)	2.50 (0.85-3.00)	3.50 (0.85-4.00)	4.20 (0.85-5.00)
	Nominal (Min - Max)	kCal/h	1,760 (650-2,060)	2,150 (730-2,580)	3,010 (730-3,440)	3,610 (730-4,300)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	4.36 (3.13-4.14) <b>A</b>	4.67 (3.47-4.11) <b>A</b>	4.09 (3,40-3.54) <b>A</b>	3.33 (3.27-3.18)
Power input Cooling	Nominal (Min - Max)	kW	0.47 (0.240-0.580)	0.535 (0.245-0.730)	0.855 (0.250-1.130)	1.26 (0.260-1.570)
Heating capacity	Nominal (Min - Max)	kW	2.80 (0.75-4.00)	3.40 (0.85-5.00)	4.00 (0.85-6.00)	5.30 (0.85-6.80)
	Nominal (Min - Max)	kCal/h	2,410 (650-3,440)	2,920 (730-4,300)	3,440 (730-5,160)	4,560 (730-5,850)
Heating capacity at -7°C	Nominal	kW	2.35	2.88	3.37	4.11
COP 1)	Nominal (Min - Max)	<b>Energy Saving</b>	4.41 (3.26-3.92) <b>A</b>	4.63 (3.54-3.85) <b>A</b>	4.30 (3.47-3.51) <b>A</b>	3.68 (3.33-3.51)
Power input Heating	Nominal (Min - Max)	kW	0.635 (0.23-1.02)	0.735 (0.24-1.30)	0.930 (0.245-1.71)	1.44 (0.255-1.94)
Annual Energy Consumption 2)		kWh	235	268	428	630
INDOOR UNIT	_		·			·
Air Volume	Cooling / Heating	m³/h	654 / 684	678 / 702	750 / 768	750 / 804
Moisture removal volume	· · · · ·	l/h	1.3	1.5	2	2.4
Sound pressure Level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	37 / 24 / 20	39 / 25 / 20	42 / 28 / 20	43 / 31 / 25
•		dB(A)	38 / 25 / 20	40 / 27 / 20	42 / 33 / 20	43 / 35 / 29
Sound power Level	Cooling (Hi)	dB	53	55	58	59
·	Heating (Hi)	dB	54	56	58	59
Dimensions	H x W x D	mm	290 x 870 x 214			
Net weight		Kg	9	9	9	9
Air purifier filter			NANOE-G	NANOE-G	NANOE-G	NANOE-G
OUTDOOR UNIT						
Power source		V	230	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Current (Nominal)	Cooling / Heating	Α	2.2 / 3.0	2.5 / 3.4	4.0 / 4.3	5.7 / 6.6
Max. current		Α	4.7	5.8	7.8	9
Air Volume	Cooling / Heating	m³/h	2,034 / 2,034	1,788 / 1,788	1,998 / 1,998	1,998 / 1,998
Sound pressure Level 3)	Cooling (Hi)	dB(A)	45	46	48	49
	Heating (Hi)	dB(A)	46	47	50	51
Sound power Level	Cooling (Hi)	dB	60	61	63	64
	Heating (Hi)	dB	61	62	65	66
Dimensions <sup>4)</sup>	H x W x D	mm	542 x 780 x 289	542 x 780 x 289	619 x 824 x 299	619 x 824 x 299
Net weight		Kg	31	33	34	33
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)
Refrigerant Loading	R410A	Kg	0.830	0.950	1.01	1.01
Elevation difference (in/out) 5)	Max	m	15	15	15	15
Piping length	Min / Max	m	3-15	3-15	3-15	3-15
Piping length without refrigerant increase	Max	m	7.5	7.5	7.5	7.5
Additional gas	1	g/m	20	20	20	20
Operating range	Cooling Min / Max	°C	+5 / +43	+5 / +43	+5 / +43	+5 / +43
1 3 3	Heating Min / Max	°C	-5 / +24	-5 / +24	-5 / +24	-5 / +24

Specifications subject to change without notice



#### **TECHNICAL FOCUS**

- NEW! MAXIMUM EFFICIENCY AND COMFORT WITH ECONAVI, NOW WITH SUNLIGHT DETECTION
- EXCLUSIVE WHITE DESIGN
- NEW! NANOE-G AIR PURIFYING SYSTEM, 99% EFFECTIVE ON BOTH AIRBORNE AND ADHESIVE MOULD, VIRUSES AND BACTERIA
- · NEW! OPTIONAL SMARTPHONE CONTROL
- MILD DRY COOLING: PREVENT A RAPID DECREASE IN ROOM HUMIDITY
- SUPER QUIET! ONLY 20 dB, EQUIVALENT TO NIGHT-TIME IN THE COUNTRY (E7, E9 AND E12)
- MORE POWERFUL AIRFLOW TO QUICKLY REACH THE DESIRED TEMPERATURE



GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outeido air tomporaturo	3E0C DD / 3/0C WD	70C DR / 40C M/R

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.

  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body
- and 0,8 m below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification. 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-E7-NKE // KIT-E9-NKE // KIT-E12-NKE // KIT-E15-NKE

#### **HEALTHY AIR**

- NEW! NANOE-G air purifying system
- Mild Dry Cooling operation mode for increased comfort and prevention of skin moisture loss

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system, for bigger savings
- NEW! -45% consumption with Econavi on heat pump, and -35% on cooling mode
- · R410A refrigerant gas

#### COMFORT

- Super Quiet mode (from 20 dB)
- Powerful mode
- Uniform dispersion of airflow
- · Automatic vertical airflow control
- Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- · Automatic restart after power cut

#### **EASE OF USE**

- · Real time clock with dual ON&OFF timer
- · User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- **NEW!** Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- · NEW! Optional Smartphone control

#### **EASY INSTALLATION AND MAINTENANCE**

- · Removable, washable panel
- 15 m maximum connection distance
- 15 m maximum elevation difference
- · Maintenance access through the top panel of the outdoor unit
- Self-diagnosis function





CII-F7NKF CU-E9NKE

CII-F12NKF CU-E15NKE



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Maintains a Relative Humidity up to 10% higher than cooling operation. Ideal when sleeping

KIT			KIT-E18-NKE	KIT-E21-NKE	KIT-E24-NKE	KIT-E28-NKE
KIT WITH SMARTPHONE CONTROL			KIT-E18-NKE-WIFI	KIT-E21-NKE-WIFI	KIT-E24-NKE-WIFI	KIT-E28-NKE-WIFI
Indoor			CS-E18NKEW	CS-E21NKEW	CS-E24NKES	CS-E28NKES
Outdoor			CU-E18NKE	CU-E21NKE	CU-E24NKE	CU-E28NKE
Cooling capacity	Nominal (Min - Max)	kW	5.00 (0.98-6.00)	6.30 (0.98-7.10)	6.80 (0.98-8.10)	7.65 (0.98-8.60)
	Nominal (Min - Max)	kCal/h	4,300 (840-5,160)	5,420 (840-6,110)	5,850 (840-6,970)	6,580 (840-7,400)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	3.40 (3.50-2.96)	2.85 (3.50-2.80)	3.21 (2.58-3.00)	3.01 (2.58-2.92)
Power input Cooling	Nominal (Min - Max)	kW	1.47 (0.28-2.03)	2.21 (0.28-2.54)	2.12 (0.38-2.7)	2.54 (0.38-2.95)
Heating capacity	Nominal (Min - Max)	kW	5.80 (0.98-8.00)	7.20 (0.98-8.50)	8.60 (0.98-9.90)	9.60 (0.98-11.00)
	Nominal (Min - Max)	kCal/h	4,990 (840-6,880)	6,190 (840-7,310)	7,400 (840-8,510)	8,260 (840-9,460)
Heating capacity at -7°C	Nominal	kW	4.98	5.24	6.13	6.77
COP 1)	Nominal (Min - Max)	<b>Energy Saving</b>	3.77 (2.88-3.08)	3.43 (2.88-3.09) B	3.23 (2.18-3.09)	2.91 (2.18-2.93)
Power input Heating	Nominal (Min - Max)	kW	1.54 (0.34-2.60)	2.10 (0.34-2.75)	2.66 (0.45-3.20)	3.30 (0.45-3.75)
Annual Energy Consumption 2 kWh		735	1,105	1,060	1,270	
INDOOR UNIT					•	
Air Volume	Cooling / Heating	m³/h	978 / 1,074	1,038 / 1,110	1,104 / 1,170	1,158 / 1,206
Moisture removal volume	J. V. J	l/h	2.8	3.5	3.9	4.5
Sound pressure Level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	44 / 37 / 34	45 / 37 / 34	47 / 38 / 35	49 / 38 / 35
	Heating (Hi / Lo / S-Lo)		44 / 37 / 34	45 / 37 / 34	47 / 38 / 35	48 / 38 / 35
Sound power Level	Cooling (Hi)	dB	60	61	63	65
	Heating (Hi)	dB	60	61	63	64
Dimensions	H x W x D	mm	290 x 1,070 x 240			
Net weight		Kg	12	12	12	12
Air purifier filter		J	NANOE-G	NANOE-G	NANOE-G	NANOE-G
OUTDOOR UNIT						
Power source		V	230	230	230	230
Connection		mm²	4 x 2.5	4 x 2.5	4 x 2.5	4 x 2.5
Current (Nominal)	Cooling / Heating	A	6.6 / 6.9	9.9 / 9.4	9.7 / 12.1	11.5 / 15.0
Max. current		A	11.4	12.1	14.6	15.6
Air Volume	Cooling / Heating	m³/h	2,352 / 2,274	2,502 / 2,424	3,012 / 3,012	3,270 / 3,270
Sound pressure Level 3)	Cooling (Hi)	dB(A)	47	48	52	53
	Heating (Hi)	dB(A)	47	49	52	53
Sound power Level	Cooling (Hi)	dB	61	62	66	67
	Heating (Hi)	dB	61	63	66	67
Dimensions 4)	H x W x D	mm	695 x 875 x 320	695 x 875 x 320	795 x 875 x 320	795 x 875 x 320
Net weight	1	Kg	46	47	65	67
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 5/8" (15.88)	1/4" (6.35) / 5/8" (15.88)
Refrigerant Loading	R410A	Kg	1.22	1.28	1.70	1.80
Elevation difference (in/out) 5)		m	15	15	20	20
Piping length	Min / Max	m	3-20	3-20	3-30	3-30
Piping length without refrigerant increase	Max	m	7.5	7.5	10	10
Additional gas	1	g/m	20	20	30	30
		ייי יכ ו''				
Operating range	Cooling Min / Max	°C	+5 / +43	+5 / +43	+16 / +43	+16 / +43

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- MORE POWERFUL AIRFLOW TO QUICKLY REACH THE DESIRED **TEMPERATURE**



GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outoido air tamparatura	SERC DD / S/RC IMD	70C DD / 40C M/D

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.

  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body
- and 0,8 m below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification. 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-E18-NKE // KIT-E21-NKE // KIT-E24-NKE // KIT-E28-NKE

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- · R410A refrigerant gas

#### COMFORT

- Super Quiet mode (from 20 dB)
- Powerful mode
- Uniform dispersion of airflow
- · Automatic vertical airflow control
- Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- · Automatic restart after power cut

#### **EASE OF USE**

- · Real time clock with dual ON&OFF timer
- · User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- **NEW!** Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- · NEW! Optional Smartphone control

- · Removable, washable panel
- 15 m maximum connection distance
- 15 m maximum elevation difference
- · Maintenance access through the top panel of the outdoor unit
- Self-diagnosis function





CII-F18NKF CU-E21NKE

CII-F24NKF CU-E28NKE



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easy CONNECTIVITY

OPTIONAL

SILVER KIT			KIT-XE7-NKE-3	KIT-XE9-NKE-3	KIT-XE12-NKE-3	KIT-XE15-NKE-3
SILVER KIT WITH SMARTPH	ONE CONTROL		KIT-XE7-NKE-3-WIFI	KIT-XE9-NKE-3-WIFI	KIT-XE12-NKE-3-WIFI	KIT-XE15-NKE-3-WIFI
Indoor			CS-XE7NKEW	CS-XE9NKEW	CS-XE12NKEW	CS-XE15NKE-3
Outdoor			CU-E7NKE-3	CU-E9NKE-3	CU-E12NKE-3	CU-E15NMKE-3
WHITE KIT			KIT-E7-NKE-3	KIT-E9-NKE-3	KIT-E12-NKE-3	KIT-E15-NKE-3
WHITE KIT WITH SMARTPH	ONE CONTROL		KIT-E7-NKE-3-WIFI	KIT-E9-NKE-3-WIFI	KIT-E12-NKE-3-WIFI	KIT-E15-NKE-3-WIFI
Indoor			CS-E7NKEW	CS-E9NKEW	CS-E12NKEW	CS-E15NKEW-3
Outdoor			CU-E7NKE-3	CU-E9NKE-3	CU-E12NKE-3	CU-E15NKE-3
Cooling capacity	Nominal (Min - Max)	kW	2.05 (0.75-2.40)	2.50 (0.85-3.00)	3.50 (0.85-4.00)	4.20 (0.98-5.00)
	Nominal (Min - Max)	kCal/h	1,760 (650-2,060)	2,150 (730-2,580)	3,010 (730-3,440)	3,610 (840-4,300)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	4.36 (3.13-4.14) A	4.67 (3.47-4.11) <b>A</b>	3.87 (3.40-3.39) <b>A</b>	3.44 (3.50-3.13) <b>A</b>
Power input Cooling	Nominal (Min - Max)	kW	0.47 (0.24-0.58)	0.535 (0.245-0.730)	0.905 (0.250-1.180)	1.22 (0.28-1.60)
Heating capacity	Nominal (Min - Max)	kW	2.80 (0.75-4.00)	3.40 (0.85-5.00)	4.40 (0.85-6.70)	5.40 (0.98-7.10)
	Nominal (Min - Max)	kCal/h	2,410 (650-3,440)	2,920 (730-4,300)	3,780 (730-5,760)	4,640 (840-6,110)
Heating capacity at -7°C	Nominal	kW	2.35	2.88	3.75	4.1
COP 1)	Nominal (Min - Max)	Energy Saving	4.41 (3.26-3.92) <b>A</b>	4.63 (3.54-3.85) <b>A</b>	4.04 (3.47-3.47) <b>A</b>	3.70 (2.88-3.21)
Power input Heating	Nominal (Min - Max)	kW	0.635 (0.23-1.02)	0.735 (0.240-1.30)	1.09 (0.245-1.93)	1.46 (0.340-2.210)
Annual Energy Consumption 2)		kWh	235	268	453	610
INDOOR UNIT						
Air Volume	Cooling / Heating	m³/h	654 / 684	678 / 702	750 / 768	750 / 804
Moisture removal volume	0. 0	l/h	1.3	1.5	2	2.4
Sound pressure Level 3)	Cool — Heat (Hi/Lo/S-Lo)		37 / 24 / 20 — 38 / 25 / 20	39 / 25 / 20 — 40 / 27 / 20	42 / 28 / 20 — 42 / 33 / 20	43 / 32 / 29 — 43 / 35 / 2
Sound power Level	Cooling / Heating (Hi)	dB	53 / 54	55 / 56	58 / 58	59 / 59
Dimensions	H x W x D	mm	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214
Net weight	1	Kg	9	9	9	9
Air purifier filter		,·· <b>J</b>	Nanoe-G	Nanoe-G	Nanoe-G	Nanoe-G
OUTDOOR UNIT						
Power source		V	230	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Current (Nominal)	Cooling / Heating	A	2.2 / 3.0	2.5 / 3.4	4.1 / 5.1	5.5 / 6.6
Max. current	occurry, recurry	A	4.7	5.8	8.9	9.7
Air Volume	Cooling / Heating	m³/h	2.034 / 2.034	1,788 / 1,788	1,860 / 1,860	2.052 / 1.980
Sound pressure Level 3)	Cooling / Heating (Hi)	dB(A)	45 / 46	46 / 47	48 / 50	46 / 46
Sound power Level	Cooling / Heating (Hi)	dB	60 / 61	61 / 62	63 / 65	61 / 61
Dimensions 4)	H x W x D	mm	542 x 780 x 289	542 x 780 x 289	542 x 780 x 289	695 x 875 x 320
Net weight		Kq	32	35	35	45
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)
Refrigerant Loading	R410A	Kg	0.830	0.950	0.970	1.040
<u> </u>	Max	m	15	15	15	15
Piping length	Min / Max	m	3-15	3-15	3-15	3-15
Piping length without refrigerant increase	Max	m	7.5	7.5	7.5	7.5
Additional gas		g/m	20	20	20	20
Operating range	Cooling Min / Max	°C	+5 / +43	+5 / +43	+5 / +43	+5 / +43



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CS-E7NKEW // CS-E9NKEW // CS-E12NKEW // CS-E15NKE-3

GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temperature	2E0C DD / 2/0C M/D	70C DD / 40C M/D

#### DB: Dry Bulb; WB: Wet Bulb

us: ury buw; wo: were buw
This model is not suitable to use in heating mode below -5 °C with continuous operation (24 h operation).
Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.
   The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body
- 3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0,8 m below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
  4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-XE7-NKE-3 // KIT-XE9-NKE-3 // KIT-XE12-NKE-3 // KIT-XE15-NKE-3 // KIT-E7-NKE-3 // KIT-E9-NKE-3 // KIT-E12-NKE-3 // KIT-E15-NKE-3

#### HEALTHY AIR

- NEW! NANOE-G air purifying system
- Mild Dry Cooling operation mode for increased comfort and prevention of skin moisture loss

#### **ENERGY. EFFICIENCY AND ECOLOGY**

- Maximum efficiency Inverter system, for bigger savings
- NEW! -45% consumption with Econavi on heat pump, and -35% on cooling mode
- · R410A refrigerant gas

#### **COMFORT**

- Super Quiet mode (from 20 dB)
- Powerful mode
- · Uniform dispersion of airflow
- · Automatic vertical airflow control
- Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- Automatic restart after power cut

#### EASE OF USE

- · Real time clock with dual ON&OFF timer
- User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- NEW! Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- **NEW!** Optional Smartphone control

- Removable, washable panel
- 15 m maximum connection distance / 15 m maximum elevation difference
- Maintenance access through the top panel of the outdoor unit
- · Self-diagnosis function





CU-E7MKE-3 CU-E12MKE-3 CU-E9MKE-3

CU-E15MKE-3



# WALL MOUNTED RE TYPE // STANDARD INVERTER

Inverter models are powerful and efficient and are always there when you need them. Furthermore, with the Anti Bacterial Filter, you can always enjoy the best quality air, without viruses, moulds and bacteria.

prevention allergy filter relaxing breeze effect

silent air 22 dB

FOR RE9 AND RE12

KIT			KIT-RE9-NKE	KIT-RE12-NKE	KIT-RE15-NKE	KIT-RE18-NKE	KIT-RE24-NKE
Indoor			CS-RE9NKE	CS-RE12NKE	CS-RE15NKE	CS-RE18NKE	CS-RE24NKE
Outdoor			CU-RE9NKE	CU-RE12NKE	CU-RE15NKE	CU-RE18NKE	CU-RE24NKE
Cooling capacity		kW	2.50 (0.90-3.00)	3.50 (0.90-3.90)	4.20 (1.00-4.60)	5.00 (0.98-6.00)	6.80 (0.98-8.10)
	Nominal (Min - Max)	kCal/h	2,150 (770-2,580)	3,010 (770-3,350)	3,610 (860-3960)	4,300 (840-5,160)	5,850 (840-6,970)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	3.57 (4.74-3.00)	3.47 (5.29-3.25)	3.33 (4.76-2.78)	3.40 (3.50-2.96)	3.21 (2.58-3.00)
Power input Cooling	Nominal (Min - Max)	kW	0.70 (0.19-1.00)	1.01 (0.17-1.2)	1.26 (0.21-1.65)	1.47 (0.28-2.03)	2.12 (0.38-2.70)
Heating capacity	Nominal (Min - Max)	kW	3.30 (0.90-4.10)	4.25 (0.90-5.10)	5.00 (0.90-6.80)	5.80 (0.98-8.00)	8.60 (0.98-9.90)
	Nominal (Min - Max)	kCal/h	2,840 (770-3,520)	3,660 (770-4,390)	4,300 (770-5848)	4,990 (840-6,880)	7,400 (840-8,510)
COP 1)		<b>Energy Saving</b>	4.02 (5.29-3.57)	3.79 (6.00-3.49)	3.61 (4.28-2.98)	3.77 (2.88-3.08)	3.23 (2.18-3.09)
Power input Heating	Nominal (Min - Max)	kW	0.82 (0.17-1.15)	1.12 (0.15-1.46)	1.385(0.21-2.280)	1.54 (0.34-2.60)	2.66 (0.45-3.20)
Annual Energy Consumption 2)		kWh	350	505	630	735	1,060
INDOOR UNIT							
Power source		V	230 (Via indoor)	230 (Via indoor)	230 (Via indoor)	230 (Via outdoor)	230 (Via outdoor)
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 2.5	4 x 2.5
Current	Nominal Cooling	Α	3.3	4.7	6	6.6	9.7
	Nominal Heating	Α	3.8	5.2	6.3	6.9	12.1
Max. current		Α	5.1	6.8	10.5	11.4	14.6
Air Volume	Cooling / Heating	m³/h	750 / 750	756 / 798	840 / 936	978 / 1,074	1,104 / 1,170
Moisture removal volume		l/h	1.4	2	2.4	2.8	3.9
Sound pressure Level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	42 / 27 / 22	42 / 30 / 22	46 / 31 / 29	44 / 37	47 / 38
	Heating (Hi / Lo / S-Lo)	dB(A)	42 / 27 / 25	42 / 33 / 25	46 / 34 / 28	44 / 37	47 / 38
Sound power Level	Cooling (Hi)	dB	58	58	62	60	63
	Heating (Hi)	dB	58	58	62	60	63
Dimensions	H x W x D	mm	290 x 848 x 204	290 x 848 x 204	290 x 848 x 204	290 x 1,070 x 240	290 x 1,070 x 240
Net weight		Kg	9	9	9	12	12
Air purifier filter			Anti Bacterial filter				
OUTDOOR UNIT							
Air Volume	Cooling / Heating	m³/h	1,734 / 1,734	1,830 / 1,830	1,872 / 1,794	2,352 / 2,274	3,012 / 3,012
Sound pressure Level 3)	Cooling (Hi)	dB(A)	47	48	50	47	52
•	Heating (Hi)	dB(A)	48	50	51	47	52
Sound power Level	Cooling (Hi)	dB	63	64	66	61	66
•		dB	64	66	67	61	66
Dimensions 4)	H x W x D	mm	529 x 720 x 273	537.7 x 779 x 288.6	537.7 x 779 x 288.6	695 x 875 x 320	795 x 875 x 320
Net weight		Kg	24	28	36	46	65
Piping connections	Liquid pipe	inch (mm)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
· ·	Gas pipe	inch (mm)	3/8" (9.52)	3/8" (9.52)	1/2" (12.70)	1/2" (12.70)	5/8" (15.88)
Refrigerant Loading	R410A	Kg	0.85	0.97	1	1.22	1.7
Elevation difference (in/out) 5)		m	5	5	5	15	20
Piping length	Min / Max	m	3-15	3-15	3-15	3-20	3-30
Piping length without refrigerant increase	Max	m	7.5	7.5	7.5	7.5	10
Additional gas		g/m	20	20	20	20	30
Operating range 3)	Cooling Min / Max	°C	16 / 43	16 / 43	16 / 43	5 / 43	16 / 43
	Heating Min / Max	°C	-5 / 24	-5 / 24	-5 / 24	-5 / 24	-5 / 24



- COMPLETE LINE-UP OF STANDARD INVERTER MODELS
- QUIETER INDOOR UNITS
- HIGH ENERGY SAVINGS
- REFRESHING AIRFLOW WITH RELAXING BREEZE EFFECT
- LONG CONNECTION DISTANCE (FROM 15 m UP TO 30 m)



CS-RE18NKE // CS-RE24NKE

GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temnerature	35°C DR / 24°C WR	70C DR / 60C WR

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in conlinn mode.
- cooling mode.

  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

# KIT-RE9-NKE // KIT-RE12-NKE // KIT-RE15-NKE // KIT-RE18-NKE // KIT-RE24-NKE

#### **HEALTHY AIR**

- · New generation Anti Bacterial Filter
- · Odour-removing function
- · Anti-mould filter

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- Inverter system
- R410A refrigerant gas

#### COMFORT

- Refreshing airflow with relaxing breeze effect (only for RE9, RE12 and RE15)
- Super Quiet mode (only for RE9, RE12 and RE15)
- Powerful mode (only for RE9 and RE12 and RE15)
- Automatic vertical airflow control
- · Hot start mode
- Automatic restart
- · Simple change over

#### EASE OF USE

- 12-hr timer (only for RE9, RE12 and RE15)
- 24-hr timer (only for RE18 and RE24)
- User friendly infrared remote control

- 15 m maximum connection distance (20 m for RE18 and 30 m for RE24)
- · Removable, washable panel
- Maintenance access through the top panel of the outdoor unit
- Self-diagnosis function









CU-RE9NKE

CU-RE12NKE CU-RE15NKE

CU-RE18NKE

CU-RE24NKE



# WALL MOUNTED TYPE // INVERTER+ // -15°C

Complete line-up of air purifying systems with high efficiency even at -15°C! This wall-mounted air conditioner is especially designed for professional applications such as computer rooms where cooling inside the room is necessary even when the outside temperature is low. Furthermore this air conditioner has an automatic changeover system, in order to maintain the inside temperature even when sharp outside temperature changes occur.











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KIT			KIT-E9-HKEA	KIT-E12-HKEA	KIT-E15-HKEA	KIT-E18-HKEA	KIT-E21-HKEA
Indoor			CS-E9HKEA	CS-E12HKEA	CS-E15HKEA	CS-E18HKEA	CS-E21HKEA
Outdoor			CU-E9HKEA	CU-E12HKEA	CU-E15HKEA	CU-E18HKEA	CU-E21HKEA
Cooling capacity	Nominal (Min - Max)	kW	2.60 (0.60-3.00)	3.50 (0.60-4.00)	4.40 (0.90-5.00)	5.30 (0.90-6.00)	6.30 (0.90-7.10)
	Nominal (Min - Max)	kCal/h	2,240 (690-2,580)	3,010 (690-3,440)	3,780 (690-4,300)	4,560 (770-5,160)	5,420 (770-6,110)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	4.41 (5.00-4.00) 🖪	3.80 (5.00-3.39)	3.21 (4.19-3.13)	3.21 (4.19-2.93) <b>A</b>	2.85 (4.19-2.8)
Power input Cooling	Nominal (Min - Max)	kW	0.59 (0.12-0.75)	0.92 (0.12-1.18)	1.37 (0.215-1.6)	1.65 (0.215-2.05)	2.21 (0.215-2.54)
Heating capacity	Nominal (Min - Max)	kW	3.60 (0.60-5.40)	4.80 (0.60-6.60)	5.50 (0.90-7.10)	6.60 (0.90-8.00)	7.20 (0.90-8.50)
	Nominal (Min - Max)	kCal/h	3,100 (520-4,640)	4,130 (520-5,680)	4,730 (770-6,110)	5,680 (770-6,880)	6,190 (770-7,310)
Heating capacity at -7°C	Nominal	kW	3.13	3.86	3.98	4.98	5.24
COP 1)	Nominal (Min - Max)	Energy Saving	4.26 (5.22-3.97) <b>A</b>	3.81 (5.22-3.57) <b>A</b>	3.50 (3.67-3.16) <b>B</b>	3.69 (3.67-3.02)	3.43 (3.67-3.09)
Power input Heating	Nominal (Min - Max)	kW	0.845 (0.115-1.36)	1.26 (0.115-1.85)	1.57 (0.245-2.25)	1.79 (0.245-2.65)	2.10 (0.245-2.75)
Annual Energy Consumption 2)		kWh	295	460	685	825	1,105
INDOOR UNIT							
Power source		٧	230	230	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 2.5	4 x 2.5
Current (Nominal)	Cooling / Heating	A	2.9 / 4.0	4.3 / 5.8	6.3 / 7.1	7.5 / 8.1	9.9 / 9.3
Max. current	J. 3.	A	6.4	8.4	10.2	11.9	12.6
Air Volume	Cooling / Heating	m³/h	576 / 630	642 / 672	660 / 708	912 / 1.002	972 / 1.038
Moisture removal volume	,	l/h	1.6	2.0	2.4	2.9	3.5
Sound pressure Level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	39 / 26 / 23	42 / 29 / 26	43 / 32 / 29	44 / 37 / 34	45 / 37 / 34
ooana proodaro zorot	Heating (Hi / Lo / S-Lo)		40 / 27 / 24	42 / 33 / 30	43 / 35 / 32	44 / 37 / 34	45 / 37 / 34
Sound power Level	Cooling (Hi)	dB	50	53	54	57	58
ocana ponor zoroc	Heating (Hi)	dB	51	53	54	57	58
Dimensions	H x W x D	mm	280 x 799 x 183	280 x 799 x 183	280 x 799 x 183	275 x 998 x 230	275 x 998 x 230
Net weight	11 X VV X D	Kg	9	9	9	11	11
Air purifier filter		''9	Alleru-buster filter + Ion	Alleru-buster filter + Ior			
OUTDOOR UNIT			Accord Busice Ticce - Ion	Attera baster fitter - for	Accord Busice Fictor - Ion	Accid busici licci - loli	Accid busici licer - loi
Air Volume	Cooling / Heating	m³/h	1,788 / 1,788	1,860 / 1,860	2,910 / 2,808	2,400 / 2,400	2,568/ 2,490
Sound pressure Level 3)	Cooling (Hi)	dB(A)	46	48	46	47	48
oodiid prossure Ecvet	Heating (Hi)	dB(A)	47	50	46	47	49
Sound power Level	Cooling (Hi)	dB dB	59	61	59	60	61
oodiid power Ecvet	Heating (Hi)	dB	60	63	59	60	62
Dimensions 4)	H x W x D	mm	540 x 780 x 289	540 x 780 x 289	750 x 875 x 345	750 x 875 x 345	750 x 875 x 345
Net weight	II A W A D	Kg	35	35	48	49	51
Piping connections	Liquid pipe	inch (mm)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
i iping connections	Gas pipe	inch (mm)	3/8" (9.52)	1/2" (12.70)	1/2" (12.70)	1/2" (12.70)	1/2" (12.70)
Refrigerant Loading	R410A	Kg	0.930	0.970	1.060	1.18	1,29
Elevation difference (in/out) 5)		m	5	5	5	15	15
Piping length	Min / Max	m	3-15	3-15	3-15	3-20	3-20
Piping length without	Max	m	7.5	7.5	7.5	10	3-20 10
refrigerant increase	MdX						
Additional gas	ı	g/m	20	20	20	20	20
Operating range	Cooling Min / Max	°C	-15 / +43	-15 / +43	-15 / +43	-15 / +43	-15 / +43
	Heating Min / Max	°C	-10 / +24	-10 / +24	-15 / +24	-15 / +24	-15 / +24

114 Specifications subject to change without notice





INCLUDED WITH

- HIGHLY EFFICIENT HEAT PUMP AND COOLING EVEN AT
- · SUPERSONIC AIR PURIFYING SYSTEM WITH ANTI **BACTERIAL FILTER**
- SUPER QUIET! ONLY 23DB (ONLY FOR E9)
- MORE POWERFUL AIRFLOW TO QUICKLY REACH THE DESIRED TEMPERATURE
- MAXIMUM CONNECTION DISTANCE 15 M (E9, 12, 15), 20M (E18, 21)



CS-E18HKEA // CS-E21HKEA

GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temnerature	35°C DR / 24°C WR	70C DR / 60C WR

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.

  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body
- and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97specification.
- 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-E9-HKEA // KIT-E12-HKEA // KIT-E15-HKEA // KIT-E18-HKEA // KIT-E21-HKEA

#### **HEALTHY AIR**

- · Refreshing ion generator boosts well-being
- · Anti Bacterial Filter
- · Soft dry operation mode

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system
- · R410A refrigerant gas

- Operates in cold/hot mode in temperatures as low as -15°C (E9, 12: -10 °C)
- Automatically changes from cold to hot depending on inside temperature
- Super Quiet mode
- · Powerful mode
- · Uniform dispersion of airflow
- · Automatic vertical and horizontal airflow control
- · Hot start mode
- Automatic restart

#### **EASE OF USE**

- 24-hr timer
- · User friendly infrared remote control

- Removable, washable panel
- Maximum connection distance 15 m (E9, 12, 15), 20m (E18, 21)
- Maintenance access through the top panel of the outdoor unit
- Self-diagnosis function
- · Soft dry operation mode



CII-F9HKFA CU-E12HKEA



CII-F15HKFA CU-E21HKEA CU-E18HKEA



# WALL-MOUNTED TYPE // STANDARD HEAT PUMP

Powerful heat pump non-Inverter air conditioning. A class efficiency for high savings.

KIT			KIT-PW9-GKE	KIT-PW12-GKE	KIT-PW18-GKE	KIT-PW24-JKE
Indoor			CS-PW9GKE	CS-PW12GKE	CS-PW18GKE	CS-PW24JKE
Outdoor			CU-PW9GKE	CU-PW12GKE	CU-PW18GKE	CU-PW24JKE
Cooling capacity	Nominal	kW	2.65	3.4	5.10	7.03
		kCal/h	2,280	2,920	4,386	6,046
EER 1)	Nominal	<b>Energy Saving</b>	3.21 <b>A</b>	3.22 <b>A</b>	2.91 €	2.53 €
Power input Cooling	Nominal	kW	0.825	1.055	1.75	2.78
Heating capacity	Nominal	kW	2.85	3.8	5.30	7.50
		kCal/h	2,450	3,260	4,560	6,450
COP 1)	Nominal	<b>Energy Saving</b>	3.63 <b>A</b>	3.61 <b>A</b>	3.35 €	2.87 ■
Power input Heating	Nominal	kW	0.785	1.05	1.58	2.61
Annual Energy Consumption 2)		kWh	413	528	875	1,390
INDOOR UNIT						
Power source		٧	230	230	230	230
Connection		mm²	4 x 1.5	4 x 1.5	4 x 1.5	4 x 2.5
Current Cooling	Nominal	Α	3.9	5.0	7.7	13.1
Current Heating	Nominal	A	3.7	4.9	6.9	12.5
Air Volume	Cooling / Heating	m³/h	618 / 618	540 / 552	972 / 984	1,044 / 1,092
Moisture removal volume	, ,	l/h	1.6	1.9	2.9	4.0
Sound pressure level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	39 / 31	39 / 32	45 / 38	47 / 41
		dB(A)	29 / 38	39 / 31	43 / 38	46 / 41
Sound power level	Cooling (Hi)	dB	50	50	58	59
•	Heating (Hi)	dB	50	50	56	57
Dimensions	HxWxD	mm	250 x 770 x 205	280 x 799 x 183	275 x 998 x 230	275 x 998 x 230
Net weight		Kg	7.5	9	11	11
Air purifier filter	Optional		CZ-SA14P Alleru-buster filter	CZ-SA14P Alleru-buster filter	CZ-SA14P Alleru-buster filter	CZ-SA14P Alleru-buster filt
OUTDOOR UNIT						
Air Volume	Cooling / Heating	m³/h	630	672	1,740	3,102
Sound pressure level 3)	Cooling (Hi)	dB(A)	48	49	55	54
ouna procouro torot	Heating (Hi)	dB(A)	49	50	55	55
Sound power level	Cooling (Hi)	dB	61	62	70	69
odana pomor torot	Heating (Hi)	dB	62	63	70	70
Dimensions 4)	H x W x D	mm	530 x 650 x 230	540 x 780 x 289	540 x 780 x 289	750 x 875 x 345
Net weight	II X VV X D	Kg	27	30	44	63
Piping connections	Liquid pipe	inch (mm)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
i iping connections	Gas pipe	inch (mm)	3/8" (9.52)	3/8" (9.52)	1/2" (12.70)	5/8" (15.88)
Refrigerant Loading	R410A	Kg	0.80	0.98	1.33	1.82
Elevation difference (in/out) 5)		m	5	5	20	20
Piping length	Min / Max	m	3 / 10	3 / 15	3 / 25	3 / 25
Piping length without refrigerant increase	Max	m	7.5	7.5	7.5	7.5
		-1	00	00	00	00
Additional gas		g/m	20	20	20	30
Operating range	Cooling Min / Max	0C	21 / 43	21 / 43	16 / 43	16 / 43
	Heating Min / Max	oC .	-5 / 24	-5 / 24	-5 / 24	-5 / 24





- QUIET MODE FOR IMPROVED COMFORT
- ODOUR REMOVING FUNCTION
- EASY TO INSTALL
- R410A REFRIGERANT GAS
- MANUAL AND AUTOMATIC AIRFLOW CONTROL



CS-PW18GKE // CS-PW24JKE

GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5 °C with continuous operation (24 h operation).

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
  2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per
- 3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97
- specification. 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-PW9-GKE // KIT-PW12-GKE // KIT-PW18-GKE // KIT-PW24-JKE

#### **HEALTHY AIR**

- · Soft dry operation mode
- · Odour-removing function
- · CZ-SA14P Anti Bacterial Filter (optional)

#### **ENERGY, EFFICIENCY AND ECOLOGY**

· R410A refrigerant gas

#### COMFORT

- · Manual horizontal airflow control
- · Automatic vertical airflow control
- Hot start mode
- Automatic restart

#### **EASE OF USE**

- 12-hr timer (For PW9 and PW12)
- 24-hr timer (For PW18 and PW24)
- User friendly infrared remote control

- · Removable, washable panel
- · Maintenance access through the top panel of the outdoor unit









CU-PW9GKE

CU-PW12GKE

CU-PW18GKE

CU-PW24JKE



# WALL-MOUNTED TYPE // STANDARD COOLING ONLY

Full line-up of cooling wall-mounted non-Inverter types. Super quiet and with high efficiency (A class from V7 to V18)



KIT			KIT-V7-DKE	KIT-V9-DKE	KIT-V12-DKE	KIT-V18-DKE	KIT-V24-DKE	KIT-V28-EKE
Indoor			CS-V7DKE	CS-V9DKE	CS-V12DKE	CS-V18DKE	CS-V24DKE	CS-V28EKE
Outdoor			CU-V7DKE	CU-V9DKE	CU-V12DKE	CU-V18DKE	CU-V24DKE	CU-V28EKE
Cooling capacity	Nominal	kW	2.40	3.00	3.68	5.30	7.03	7.91
		kCal/h	2,064	2,580	3,165	4,558	6,046	6,803
EER 1)	Nominal	<b>Energy Saving</b>	3.24 A	3.21 <b>A</b>	3.23 <b>A</b>	3.25 <b>A</b>	2.70 <b>D</b>	3.22 <b>A</b>
Power input Cooling	Nominal	kW	0.740	0.935	1.140	1.630	2.600	2.460
Annual Energy Consumption 2)		kWh	370	470	570	815	1,300	1,230
INDOOR UNIT								
Power source		٧	230	230	230	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 2.5	4 x 2.5	4 x 2.5
Current Cooling	Nominal	A	3.4	4.2	5.3	7.3	12.3	11.3
Air Volume		m³/h	468	510	570	888	1,014	1,206
Moisture removal volume		l/h	1.5	1.7	2.1	2.9	4.0	4.6
Sound pressure level 3)	Hi / Lo / S-Lo	dB(A)	33 / 26 / 24	35 / 26 / 24	39 / 29 / 27	42 / 37 / 35	46 / 40 / 38	49 / 44 / 42
Sound power level	Hi	dB	46	48	52	54	59	62
Dimensions	H x W x D	mm	280 x 799 x 183	280 x 799 x 183	280 x 799 x 183	275 x 998 x 230	275 x 998 x 230	340 x 1,150 x 26
Net weight	,	Kg	9	9	9	11	11	18
Air purifier filter			Alleru-buster	Alleru-buster	Alleru-buster	Alleru-buster	Alleru-buster	Alleru-buster
			filter + Ion	filter+ Ion				
OUTDOOR UNIT								
Air Volume		m³/h	1,560	1,980	1,848	1,520	2,790	3,180
	Hi	dB(A)	46	48	49	54	54	55
Sound power level	Hi	dB	61	63	64	69	69	70
Dimensions 4)	H x W x D	mm	510 x 650 x 230	540 x 780 x 289	540 x 780 x 289	750 x 875 x 345	750 x 875 x 345	750 x 875 x 345
Net weight		Kg	25	31	33	50	59	62
Piping connections	Liquid pipe	inch (mm)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
	Gas pipe	inch (mm)	3/8" (9.52)	3/8" (9.52)	1/2" (12.70)	1/2" (12.70)	5/8" (15.88)	5/8" (15.88)
Refrigerant Loading	R410A	Kg	0.89	0.93	1.05	1.34	1.47	1.9
Elevation difference (in/out) 5)	Max	m	5	5	5	20	20	20
Piping length	Min / Max	m	3 / 10	3 / 10	3 / 15	3 / 25	3 / 25	3 / 30
Piping length without	Max	m	7.5	7.5	7.5	7.5	7.5	7.5
refrigerant increase								
Additional gas		g/m	10	10	15	20	30	30
Operating range	Min / Max	oC	16 / 43	16 / 43	16 / 43	16 / 43	16 / 43	16 / 43

Specifications subject to change without notice



- SUPER QUIET MODE FOR INCREASED COMFORT
- POWERFUL MODE FOR QUICK TEMPERATURE SETTING
- EASY TO INSTALL
- R410A REFRIGERANT GAS
- MANUAL AND AUTOMATIC AIRFLOW CONTROL





#### GLOBAL REMARKS Rating conditions Inside air temperature Outside air temperature 27°C DB / 19°C WB 35°C DB / 24°C WB

DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5 °C with continuous operation (24 h operation)

- 1) EER classification is at 230 V in accordance with EU directive 2002/31/EC.
  2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per
- 3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97
- specification. 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-V7-DKE // KIT-V9-DKE // KIT-V12-DKE // KIT-V18-DKE // KIT-V24-DKE // KIT-V28-EKE

#### **HEALTHY AIR**

- CZ-SA14P Supersonic air purifying system with Anti Bacterial Filter

#### **ENERGY, EFFICIENCY AND ECOLOGY**

· R410A refrigerant gas

#### **COMFORT**

- · Super Quiet mode
- Powerful mode
- · Manual horizontal airflow control
- · Automatic vertical airflow control
- · Automatic restart

#### **EASE OF USE**

- 24-hr timer
- User friendly infrared remote control

- · Removable, washable panel
- Maintenance access through the top panel of the outdoor unit



CII-V7DKF CU-V12DKE CU-V9DKE



CII-V18DKF CU-V28EKE CU-V24DKE



# FLOOR CONSOLE TYPE // INVERTER+

Console for discreet integration on walls, and for high performances, specifically in heat mode even when the outside temperature is as low as  $-15^{\circ}$ C.

Double airflow for improved comfort and temperature dispersion: through the top for an efficient cooling mode, through the bottom for quick heating.





KIT			KIT-E9-GFE-1	KIT-E12-GFE-1	KIT-E18-GFE-1
Indoor			CS-E9GFEW	CS-E12GFEW	CS-E18GFEW
Outdoor			CU-E9GFE-1	CU-E12GFE-1	CU-E18GFE-1
Cooling capacity	Nominal (Min - Max)	kW	2.50 (0.80 - 3.00)	3.50 (0.80 - 3.80)	5.00 (0.90 - 5.60)
0 1 7		kCal/h	2,150 (690 - 2,580)	3,010 (690 - 3,270)	3,780 (770 - 4,300)
EER 1)	Nominal (Min - Max)	Energy Saving	4.39 (4.57 - 3.85) <b>A</b>	3.63 (4.32 - 3.33) <b>A</b>	3.23 (4.57 - 2.93)
Power input Cooling	Nominal (Min - Max)	kW	0.57 (0.17 - 0.78)	0.97 (0.18 - 1.14)	1.55 (0.25 - 1.91)
Heating capacity	Nominal (Min - Max)	kW	3.60 (0.80 - 5.00)	4.80 (0.80 - 6.10)	5.80 (0.90 - 7.10)
• • •		kCal/h	3,100 (690 - 4,300)	4,130 (690 - 5,250)	4,730 (770 - 6,110)
COP 1)	Nominal (Min - Max)	Energy Saving	4.16 (4.85 - 3.68)	3.64 (4,57 - 3.45)	3.63 (3.46 - 3.02) <b>A</b>
Power input Heating	Nominal (Min - Max)	kW	0.865 (0.16 - 1.36)	1.320 (0.17 - 1.77)	1.600 (0.26 - 2.35)
Annual Energy Consumption	2)	kWh	285	483	775
INDOOR UNIT					
Air Volume	Cooling / Heating	m³/h	558 / 576	570 / 600	660 / 780
Moisture removal volume		l/h	1.4	2.0	2.8
Sound pressure level 3)	Cooling (Hi / Lo / S-Lo)	dB(A)	38 / 27 / 23	39 / 28 / 24	44 / 36 / 32
·	Heating (Hi / Lo / S-Lo)	dB(A)	38 / 27 / 23	39 / 27 / 23	44 / 36 / 32
Sound power level	Cooling (Hi)	dB	54	55	60
	Heating (Hi)	dB	54	55	61
Dimensions	H x W x D	mm	600 x 700 x 210	600 x 700 x 210	600 x 700 x 210
Net weight		Kg	14	14	14
OUTDOOR UNIT					
Power source		V	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5
Current Cooling		Α	2.7	4.4	7.0
Current Heating		Α	4.05	6.00	7.1
Air Volume	Cooling / Heating	m³/h	1,788 / 1,788	1,860 / 1,860	2,400 / 2,400
Sound pressure level 3)	Cooling (Hi)	dB(A)	46	48	47
	Heating (Hi)	dB(A)	47	50	48
Sound power level	Cooling (Hi)	dB	59	61	60
	Heating (Hi)	dB	60	63	61
Dimensions 4)	H x W x D	mm	540 x 780 x 289	540 x 780 x 289	750 x 875 x 345
Net weight		Kg	34	34	49
Piping connections	Liquid pipe	inch (mm)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
	Gas pipe	inch (mm)	3/8" (9.52)	3/8" (9.52)	1/2" (12.70)
Refrigerant Loading	R410A	Kg	0.965	0.980	1.060
Elevation difference (in/out)	<sup>5)</sup> Max	m	5	5	15
Piping length	Min / Max	m	3 / 15	3 / 15	3 / 20
Piping length without refrigerant increase	Max	m	7.5	7.5	10
Additional gas		g/m	20	20	20
Additional gas Operating range	Cooling Min / Max	g/m °C	20 16 / 43		
	Cooling Min / Max Heating Min / Max	U.		20 16 / 43 -15 / 24	20 16 / 43 -15 / 24



- MORE EFFICIENT THAN EVER FOR LESS CONSUMPTION AND HIGHER SAVINGS
- HEATING MODE DOWN TO -15°C WITH HIGH EFFICIENCY
- DOUBLE AIRFLOW FOR BETTER EFFICIENCY
- POWERFUL MODE FOR QUICK TEMPERATURE SETTING
- R410A REFRIGERANT GAS

#### KIT-E9-GFE-1 // KIT-E12-GFE-1 // KIT-E18-GFE-1

#### **HEALTHY AIR**

- · Soft dry operation mode
- Odour-removing function

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system
- · R410A refrigerant gas

#### COMFORT

- · Super Quiet mode
- Powerful mode
- Automatic vertical airflow control
- Hot start mode
- · Automatic restart

#### **EASE OF USE**

- · 24-hr timer
- · User friendly infrared remote control

#### **EASY INSTALLATION AND MAINTENANCE**

- Removable, washable panel
- Maximum connection distance 15 m (E9, 12), 20m (E18)
- · Maintenance access through the top panel of the outdoor unit
- · Self-diagnosis function

GLOBAL REMARKS	Rating conditions	Cooling	Heating	
	Inside air temperature	27°C DB / 19°C WB	20°C DB	
	Outside air temnerature	35°C DR / 24°C WR	7°C DR / 6°C WR	

DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.

  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body
- and 1 m height in front of the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
  5) When installing the outdoor unit at a higher position than the indoor unit.





CU-E9GFE-1 CU-E12GFE-1

CU-E18GFE-1

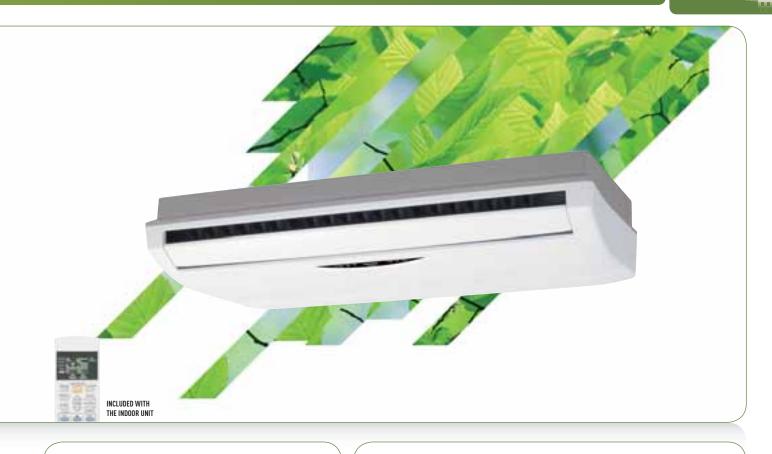


# SINGLE SPLIT FLOOR OR CEILING TYPE // INVERTER

Versatile Floor or Ceiling air conditioning Inverter type. Ideal for restaurants or offices where powerful and efficient air-conditioning is needed.



KIT			KIT-E15-DTE	KIT-E18-DTE	KIT-E21-DTE
Indoor			CS-E15DTEW	CS-E18DTEW	CS-E21DTES
Outdoor			CU-E15DBE	CU-E18DBE	CU-E21DBE
Cooling capacity	Nominal (Min - Max)	kW	4.15 (0.90 - 4.55)	5.00 (0.90 - 5.40)	5.80 (0.90 - 6.60)
		kCal/h	3,570 (770 - 3,910)	4,300 (770 - 4,640)	4,990 (770 - 5,680)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	3.22 A	3.01 B	3.01 B
Power input Cooling	Nominal (Min - Max)	kW	1.29 (0.255 - 1.550)	1.66 (0.255 - 1.890)	1.93 (0.255 - 2.240)
Heating capacity	Nominal (Min - Max)	kW	5.17 (0.90 - 6.30)	6.10 (0.90 - 7.60)	6.80 (0.90 - 8.10)
		kCal/h	4,450 (770 - 5,420)	5,250 (770 - 6,540)	5,850 (770 - 6,970)
COP 1)	Nominal (Min - Max)	<b>Energy Saving</b>	3.34 €	3.35	3.42 <b>B</b>
Power input Heating	Nominal (Min - Max)	kW	1.550 (0.260 - 2.050)	1.820 (0.260 - 2.380)	1.990 (0.260 - 2.650)
Annual Energy Consumption 2		kWh	645	830	965
INDOOR UNIT					
Air Volume	Cooling / Heating	m³/h	720 / 732	750 / 762	786 / 792
Moisture removal volume		l/h	2.4	2.8	3.2
Sound pressure level 3)	Cooling (Hi / Lo / S-Lo)		45 / 37 / 34	46 / 39 / 36	47 / 41 / 38
	Heating (Hi / Lo / S-Lo)	dB(A)	45 / 33 / 30	47 / 35 / 32	47 / 37 / 34
Sound power level	Cooling (Hi)	dB	58	59	60
	Heating (Hi)	dB	58	60	60
Dimensions	H x W x D	mm	540 x 1,028 x 200	540 x 1,028 x 200	540 x 1,028 x 200
Net weight		Kg	17	18	20
Air purifier filter	Optional		CZ-SA14P Alleru-buster filter	CZ-SA14P Alleru-buster filter	CZ-SA14P Alleru-buster filter
OUTDOOR UNIT					
Power source		V	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 2.5	4 x 2.5
Current Cooling	Nominal	Α	6.0	7.5	8.7
Current Heating	Nominal	Α	7.1	8.2	9.0
Air Volume	Cooling / Heating	m³/h	2,910 / 2,910	2,400 / 2,400	2,568 / 2,490
Sound pressure level 3)	Cooling (Hi)	dB(A)	46	47	48
	Heating (Hi)	dB(A)	47	48	49
Sound power level	Cooling (Hi)	dB	59	60	61
	Heating (Hi)	dB	60	61	62
Dimensions 4)	H x W x D	mm	750 x 875 x 345	750 x 875 x 345	750 x 875 x 345
Net weight		Kg	48	48	49
Piping connections	Liquid pipe	inch (mm)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
	Gas pipe	inch (mm)	1/2" (12.70)	1/2" (12.70)	1/2" (12.70)
Refrigerant Loading	R410A	Kg	1.23	1.06	1.15
Elevation difference (in/out) 5		m	15	15	15
Piping length	Min / Max	m	3 / 20	3 / 20	3 / 20
Piping length without refrigerant increase	Max	m	10	10	10
Additional gas		g/m	20	20	20
Operating range	Cooling Min / Max	oC .	16 / 43	16 / 43	16 / 43
	Heating Min / Max	oC O	-5 / 24	-5 / 24	-5 / 24



- A WIDTH OF ONLY 20CM FOR EASY INSTALLATION **FVFRYWHFRF**
- 2 INSTALLATION POSITIONS POSSIBLE: WALL OR CEILING MOUNTED
- POWERFUL LINE-UP, UP TO 5.8 KW!
- POWERFUL MODE FOR QUICK TEMPERATURE SETTING
- R410A REFRIGERANT GAS
- 20 M CONNECTION DISTANCE, 15 M HEIGHT DIFFERENCE ON THE WHOLE LINE-UP



GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outcide air temperature	3E0C DD / 3/0C WD	70C DR / 40C M/R

DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5 °C with continuous operation (24 h operation). Connectivity restriction: JKE units are not compatible with NKE units.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.
- The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body floor-mounted: 1 m in front of the unit at 1 m height from the floor; ceiling-mounted: 1 m infront and 80 cm below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
  5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-E15-DTE // KIT-E18-DTE // KIT-E21-DTE

#### **HEALTHY AIR**

- · Soft dry operation mode
- Odour-removing function
- CZ-SA14P Anti Bacterial Filter (optional)
- · Anti-mould filter

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- Inverter system
- R410A refrigerant gas

#### COMFORT

- Super Quiet mode
- Powerful mode
- Automatic vertical airflow control
- · Hot start mode
- Automatic restart

#### **EASE OF USE**

- · 24-hr timer
- · User friendly infrared remote control

- · Maximum connection distance 20m
- · Maintenance access through the top panel of the outdoor unit
- Self-diagnosis function



CII-F15DRF CU-E18DBE

CU-E21DBE



# 2x1 WALL MOUNTED MRE TYPE // STANDARD INVERTER

MRE MULTI INVERTER MODELS ARE POWERFUL AND EFFICIENT AND ARE ALWAYS THERE WHEN YOU NEED THEM. Furthermore, with the Anti Bacterial Filter, you can always enjoy the best quality air, without viruses, moulds and bacteria.

prevention allergy filter



#### **TECHNICAL FOCUS**

- LARGE COMBINATIONS OF 2x1
- HIGH ENERGY SAVINGS
- LARGE ELEVATION DISTANCE (10 m)
- LARGE PIPING LENGTH (30 m)

KIT			KIT-2MRE77-MBE	KIT-2MRE79-MBE	KIT-2MRE712-MBE	KIT-2MRE912-MBE	KIT-2MRE77-MKE	KIT-2MRE79-MKE
Indoor			CS-MRE7MKE	CS-MRE7MKE	CS-MRE7MKE	CS-MRE9MKE	CS-MRE7MKE	CS-MRE7MKE
			CS-MRE7MKE	CS-MRE9MKE	CS-MRE12MKE	CS-MRE12MKE	CS-MRE7MKE	CS-MRE9MKE
Outdoor			CU-2E15MBE	CU-2E15MBE	CU-2E15MBE	CU-2E15MBE	CU-2E18MBE	CU-2E18MBE
Cooling capacity	Nominal (Min - Max)	kW	4.00 (1.50 - 4.60)	4.40 (1.50 - 4.80)	4.40 (1.50 - 4.80)	4.40 (1.50 - 4.80)	4.40 (1.50 - 4.60)	4.50 (1.50 - 4.80)
	Nominal (Min - Max)	kCal/h	3,560 (1,290 - 4,094)	3,916 (1,290 - 4,272)	3,916 (1,290 - 4,272)	3,916 (1,290 - 4,272)	3,916 (1,290 - 4,094)	3,870 (1,290 - 4,272)
Cooling capacity room A	Nominal	kW	2.00	1.95	1.70	2.20	2.00	2.00
Cooling capacity room B	Nominal	kW	2.00	2.45	2.70	2.20	2.00	2.50
EER 1)	Nominal (Min - Max)		3.42 (5.55 - 3.43)	3.38 (5.55- 3.15) <b>A</b>	3.38 (5.55- 3.15) <b>A</b>	3.38 (5.55- 3.15) <b>A</b>	3.45 (5.55 - 3.43)	3.44 (5.55- 3.18) <b>A</b>
Power input Cooling	Nominal (Min - Max)	kW	1.17 (0.27 - 1.34)	1.30 (0.27 - 1.52)	1.30 (0.27 - 1.52)	1.30 (0.27 - 1.52)	1.16 (0.27 - 1.34)	1.40 (0.27 - 1.51)
Heating capacity	Nominal (Min - Max)	kW	5.80 (1.10 - 6.30)	5.80 (1.10 - 6.30)	5.80 (1.10 - 6.30)	5.80 (1.10 - 6.30)	5.20 (1.10 - 6.30)	5.20 (1.10 - 6.30)
	Nominal (Min - Max)	kCal/h	5,162 (950 - 5,607)	5,162 (950 - 5,607)	5,162 (950 - 5,607)	5,162 (950 - 5,607)	4,628 (979 - 5,607)	4,628 (979 - 5,607)
Heating capacity room A	Nominal	kW	2.40	2.15	1.85	2.40	2.60	2.60
Heating capacity room B	Nominal	kW	2.40	2.65	2.95	2.40	2.60	2.90
COP 1)	Nominal (Min - Max)		4.00 (4.58 - 3.91) <b>(A</b>	4.00 (4.58 - 3.91) <b>A</b>				
Power input Heating	Nominal (Min - Max)	kW	1.20 (0.24 - 1.61)	1.20 (0.24 - 1.61)	1.20 (0.24 - 1.61)	1.20 (0.24 - 1.61)	1.30 (0.24 - 1.61)	1.30 (0.24 - 1.61)
Annual Energy Consumption 2)		kWh	585	650	650	650	580	655
INDOOR UNIT								
Air Volume	Cooling	m³/h	606	606	606 (E7) / 654 (E12)	606 (E9) / 654 (E12)	606	606
Moisture removal volume	Cooling	l/h	1.3 (E7)	1.3 (E7) / 1.5 (E9)	1.1 (E7) / 1.6 (E12)	1.4 (E9) / 1.4 (E12)	1.3 (E7)	1.3 (E7) / 1.5 (E9)
Sound pressure Level 3)	Cooling & Heating (Lo)	dB(A)	29	29	29 (E7) / 32 (E12)	29 (E9) / 32 (E12)	29	29
Sound power Level	Cooling & Heating (Hi)	dB	56	56	56 (E7) / 60 (E12)	56 (E9) / 60 (E12)	56	56
Dimensions	H x W x D	mm	290 x 870 x 204	290 x 870 x 204	290 x 870 x 204	290 x 870 x 204	290 x 870 x 204	290 x 870 x 204
Net weight	1	Kg	9	9	9	9	9	9
Air purifier filter			Alleru-buster filter	Alleru-buster filter	Alleru-buster filter	Alleru-buster filter	Alleru-buster filter	Alleru-buster filter
OUTDOOR UNIT								
Power source		V	230	230	230	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Current	Cooling / Heating Nominal	Α	5.45 / 5.35	6.10 / 5.35	6.10 / 5.35	6.10 / 5.35	6.10 / 5.80	6.10 / 5.80
Air Volume		m³/h	1,998	1,998	1,998	1,998	1,998	1,998
Sound pressure Level 3)	Cooling / Heating (Hi)	dB(A)	47 / 49	47 / 49	47 / 49	47 / 49	47 / 49	47 / 49
Sound power Level	Cooling / Heating (Hi)	dB	62 / 64	62 / 64	62 / 64	62 / 64	62 / 64	62 / 64
Dimensions 4)	H x W x D	mm	540 x 780 (+70) x 289	540 x 780 (+70) x 289	540 x 780 (+70) x 289	540 x 780 (+70) x 289	540 x 780 (+70) x 289	540 x 780 (+70) x 289
Net weight		Kg	38	38	38	38	38	38
Piping connections	Liquid pipe	inch (mm)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
, -	Gas pipe	inch (mm)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)
Refrigerent Loading	R410A	Kg	1.45	1.45	1.45	1.45	1.45	1.45
Elevation difference (in/out) 5)	Max	m	10	10	10	10	10	10
Piping length (total)	Min / Max	m	30	30	30	30	30	30
Piping length (one unit)	Min / Max	m	3 / 20	3 / 20	3 / 20	3 / 20	3 / 20	3 / 20
Piping length without refrigerant increase	Max	m	20		20	20	20	20
Additional gas	*	g/m	20	20	20	20	20	20
Operating range	Cooling Min / Max	°C	16 / 43	16 / 43	16 / 43	16 / 43	16 / 43	16 / 43
	Heating Min / Max	°C	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24
	, ,	1						



KIT-2MRE712-MKE	KIT-2MRE99-MKE	KIT-2MRE912-MKE	KIT-2MRE1212-MKE
CS-MRE7MKE	CS-MRE9MKE	CS-MRE9MKE	CS-MRE12MKE
CS-MRE12MKE	CS-MRE9MKE	CS-MRE12MKE	CS-MRE12MKE
CU-2E18MBE	CU-2E18MBE	CU-2E18MBE	CU-2E18MBE
4.80 (1.50 - 4.90)	4.70 (1.50 - 4.80)	4.80 (1.50 - 5.00)	4.80 (1.50 - 5.00)
3,916 (1,290 - 4,272)	4,183 (1,290 - 4,272)	3,916 (1,290 - 4,450)	3,916 (1,290 - 4,450)
1,85	2.35	2.10	2.40
2,95	2.35	2.70	2.40
3.43 (5.55- 3.20)	3.43 (5.55 - 3.18) <b>A</b>	3.22 (5.55 - 3.20) <b>A</b>	3.22 (5.55 - 3.16) <b>A</b>
1.40 (0.27 - 1.53)	1.37 (0.27 - 1.51)	1.49 (0.27 - 1.56)	1.49 (0.27 - 1.58)
5.80 (1.10 - 6.70)	5.80 (1.10 - 6.70)	5.80 (1.10 - 6.70)	5.80 (1.10 - 6.70)
5,162 (950 - 5,963)	5,162 (950 - 5,963)	5,162 (950 - 5,963)	5,162 (950 - 5,963)
2.00	2.60	2.30	2.30
3.20	2.60	2.95	2.95
3.94 (4.58 - 3.90)	3.88 (4.58 - 3.85)	3.94 (4.58 - 3.80)	4.00 (4.58 - 3.90) <b>A</b>
1.32 (0.24 - 1.72)	1.34 (0.24 - 1.74)	1.32 (0.24 - 1.72)	1.30 (0.24 - 1.70)
700	685	745	745
606 (E7) / 654 (E12)	606	606 (E9) / 654 (E12)	654
1.2 (E7) / 1.5 (E12)	1.5	1.4 / 1.6	1.5
29 (E7) / 32 (E12)	29	26 (E9) / 29 (E12)	29
56 (E7) / 60 (E12)	56	56 (E9) / 60 (E12)	60
290 x 870 x 204	290 x 870 x 204	290 x 870 x 204	290 x 870 x 204
9	9	9	9
Alleru-buster filter	Alleru-buster filter	Alleru-buster filter	Alleru-buster filter
230	230	230	230
4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
6.50 / 5.85	6.40 / 5.95	6.95 / 5.85	6.95 / 5.75
1,998	1,998	1,998	1,998
47 / 49	47 / 49	47 / 49	47 / 49
62 / 64	62 / 64	62 / 64	62 / 64
540 x 780 (+70) x 289	540 x 780 (+70) x 289	540 x 780 (+70) x 289	540 x 780 (+70) x 289
38	38	38	38
1/4" (6.35)	1/4" (6.35)	1/4" (6.35)	1/4" (6.35)
3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)
1.45	1.45	1.45	1.45
10	10	10	10
30	30	30	30
3 / 20	3 / 20	3 / 20	3 / 20
20	20	20	20
20	20	20	20
16 / 43	16 / 43	16 / 43	16 / 43
-10 / 24	-10 / 24	-10 / 24	-10 / 24

KIT-2MRE77-MBE // KIT-2MRE79-MBE // KIT-2MRE712-MBE // KIT-2MRE912-MBE // KIT-2MRE77-MKE // KIT-2MRE79-MKE // KIT-2MRE712-MKE // KIT-2MRE99-MKE // KIT-2MRE912-MKE // KIT-2MRE1212-MKE

#### **HEALTHY AIR**

- · New generation Anti Bacterial Filter with 10-year warranty
- Odour-removing function
- Anti-mould filter

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- · Inverter system
- · R410A refrigerant gas

#### COMFORT

- Automatic vertical airflow control
- Hot start mode
- Automatic restart

#### **EASE OF USE**

- · 24-hrs timer
- User friendly infrared remote control

#### EASY INSTALLATION AND MAINTENANCE

- 30 m maximum connection distance
- · Removable, washable panel
- · Maintenance access through the top panel of the outdoor unit
- · Self-diagnosis function

GLOBAL REMARKS	Rating conditions	Cooling	Heating
Inside air temperature		27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

DB: Dry Bulb; WB: Wet Bulb

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per  $\,$
- year in cooling mode.

  3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
- 5) When installing the outdoor unit at a higher position than the indoor unit.



CU-2E15MBE CU-2E18MBE



### ETHEREA MULTI SPLIT 2x1 // INVERTER+

ETHEREA WITH ENHANCED ECONAVI SENSOR AND NEW NANOE-G AIR-PURIFYING SYSTEM: OUTSTANDING EFFICIENCY, COMFORT AND HEALTHY AIR COMBINED WITH STATE-OF-THE-ART DESIGN

Econavi features a Human Activity sensor and a new Sunlight Detection technology to adjust output ideally thereby giving you the best comfort at anytime whilst saving energy. Furthermore, the NANOE-G revolutionary air-purifying system utilises nano technology fine particles to remove and deactivate 99% of both airborne and adhesive microorganisms like bacteria, viruses and mould. Etherea is more efficient than ever with 64% less consumption for the non Inverter model on heat pump mode, and can reach 71% total savings when used with Econavi.

Using a Multi Split 2x1 Inverter+ system with the outdoor unit CU-2E15LBE instead of 2 individual mono split Inverter+ systems, you reduce consumption and thus save more! Up to 16%! Furthermore, using a Multi Split system, you save space on the outdoor unit, making it easier to install in small spaces.















SILVER KIT			KIT-2XE77-NBE	KIT-2XE79-NBE	KIT-2XE712-NBE	KIT-2XE99-NBE
SILVER KIT WITH SMARTPH	ONE CONTROL		KIT-2XE77-NBE-WIFI	KIT-2XE79-NBE-WIFI	KIT-2XE712-NBE-WIFI	KIT-2XE99-NBE-WIFI
Indoor			CS-XE7NKEW	CS-XE7NKEW	CS-XE7NKEW	CS-XE9NKEW
			CS-XE7NKEW	CS-XE9NKEW	CS-XE12NKEW	CS-XE9NKEW
WHITE KIT			KIT-2E77-NBE	KIT-2E79-NBE	KIT-2E712-NBE	KIT-2E99-NBE
WHITE KIT WITH SMARTPH	ONE CONTROL		KIT-2E77-NBE-WIFI	KIT-2E79-NBE-WIFI	KIT-2E712-NBE-WIFI	KIT-2E99-NBE-WIFI
Indoor			CS-E7NKEW	CS-E7NKEW	CS-E7NKEW	CS-E9NKEW
			CS-E7NKEW	CS-E9NKEW	CS-E12NKEW	CS-E9NKEW
Outdoor			CU-2E15LBE	CU-2E15LBE	CU-2E15LBE	CU-2E15LBE
Cooling capacity	Nominal (Min - Max)	kW	4.00 (1.50 - 5.00)	4.50 (1.50 - 5.20)	4.50 (1.50 - 5.20)	4.50 (1.50 - 5.20)
	Nominal (Min - Max)	kCal/h	3,440 (1,290 - 4,300)	3,870 (1,290 - 4,470)	3,870 (1,290 - 4,470)	3,870 (1,290 - 4,470)
EER 1)	Nominal (Min - Max)	Energy Saving	3.66 (6.00 - 3.70) 🔼	3.66 (6.00 - 3.70) 🔼	3.66 (6.00 - 3.42)	3.66 (6.00 - 3.42) 🔼
Power input Cooling	Nominal (Min - Max)	kW	1.09 (0.25 - 1.35)	1.23 (0.25 - 1.52)	1.23 (0.25 - 1.53)	1.23 (0.25 - 1.52)
Heating capacity	Nominal (Min - Max)	kW	5.40 (1.10 - 7.00)	5.40 (1.10 - 7.00)	5.40 (1.10 - 7.0)	5.40 (1.10 - 7.0)
	Nominal (Min - Max)	kCal/h	4,640 (950 - 6,020)	4,640 (950 - 6,020)	4,640 (950 - 6,020)	4,640 (950 - 6,020)
COP 1)	Nominal (Min - Max)	Energy Saving	4.62 (5.24 - 4.19) 🖪	4.62 (5.24 - 4.19) 🔼	4.62 (5.24 - 4.19) 🔼	4.62 (4.61 - 4.19) 🖪
Power input Heating	Nominal (Min - Max)	kW	1.17 (0.21 - 1.67)	1.17 (0.21 - 1.67)	1.17 (0.21 - 1.67)	1.17 (0.21 - 1.67)
Annual Energy Consumption 2)		kWh	545	615	615	615
INDOOR UNIT						
Air Volume	Cooling	m³/h	606	606 (E7) / 606 (E9)	606 (E7) / 654 (E12)	606
Moisture removal volume		l/h	1.3 / 1.3	1.3 (E7) / 1.5 (E12)	1.1 (E7) / 1.6 (E12)	1.5 / 1.5
Sound pressure Level 3)	Cooling & Heating (S-Lo)		26		26 (E7) / 29 (E12)	26
Sound power Level	Cooling & Heating (S-Lo)	dB	56	56	56 (E7) / 60 (E12)	56
Dimensions	H x W x D	mm	290 x 870 x 214			
Net weight		Kg	9	9	9	9
Air purifier filter			NANOE-G	NANOE-G	NANOE-G	NANOE-G
OUTDOOR UNIT						
Power source		V	230	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Current	Cooling / Heating Nominal		5.10 / 5.20	5.75 / 5.20	5.75 / 5.20	5.75 / 5.20
Air Volume	Cooling / Heating	m³/h	1,998 / 1,710	1,998 / 1,710	1,998 / 1,710	1,998 / 1,710
Sound pressure Level 3)	Cooling / Heating (Hi)	dB(A)	47 / 49	47 / 49	47 / 49	47 / 49
Sound power Level	Cooling / Heating (Hi)	dB	62 / 64	62 / 64	62 / 64	62 / 64
Dimensions 4)	H x W x D	mm	540 x 780 (+70) x 289			
Net weight		Kg	38	38	38	38
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)
Refrigerent Loading	R410A	Kg	1.45	1.45	1.45	1.45
Elevation difference (in/out) 5)		m	10	10	10	10
Piping length (total)	Min / Max	m	3-30	3-30	3-30	3-30
Piping length (one unit)	Min / Max	m	3-20	3-20	3-20	3-20
Piping length without refrigerant increase	Max	m	20	20	20	20
Additional gas	1	g/m	20	20	20	20
Operating range	Cooling Min / Max	°C	16 / 43	16 / 43	16 / 43	16 / 43
	Heating Min / Max	oC .	-10 / 24	-10 / 24	-10 / 24	-10 / 24



- NEW! MAXIMUM EFFICIENCY AND COMFORT WITH ECONAVI. NOW WITH SUNLIGHT DETECTION
- EXCLUSIVE SILVER DESIGN
- NEW! NANOE-G AIR PURIFYING SYSTEM, 99% EFFECTIVE ON BOTH AIRBORNE AND ADHESIVE MOULD, VIRUSES AND BACTERIA
- · NEW! OPTIONAL SMARTPHONE CONTROL
- MORE POWERFUL AIRFLOW TO QUICKLY REACH THE DESIRED TEMPERATURE



CS-E7NKEW // CS-E9NKEW

GLOBAL REMARKS	Rating conditions	Cooling	Heating
Inside air temperature		27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: CS-E/XE\_NKE units are only compatible with CU-2E15LBE, CU-2E18LBE, CU-3E18LBE, CU-4E23LBE and CU-4E27CBPG outdoor units. No other outdoor unit can be connected.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.
- 37 The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
  5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-2XE77-NBE // KIT-2XE79-NBE // KIT-2XE712-NBE // KIT-2XE99-NBE // KIT-2E77-NBE // KIT-2E79-NBE // **KIT-2E712-NBE // KIT-2E99-NBE**

#### **HEALTHY AIR**

• NEW! NANOE-G air purifying system

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system, for bigger savings
- NEW! -45% consumption with Econavi on heat pump, and -35% on cooling mode
- R410A refrigerant gas

#### COMFORT

- · Powerful mode
- · Uniform dispersion of airflow
- · Automatic vertical airflow control
- · Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- · Automatic restart after power cut

#### **EASE OF USE**

- · Real time clock with dual ON&OFF timer
- · User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- NEW! Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- · NEW! Optional Smartphone control

- Removable, washable panel
- 30 m maximum connection distance
- 10 m maximum elevation difference
- Maintenance access through the top panel of the outdoor unit
- · Self-diagnosis function



CU-2E15LBE



### ETHEREA MULTI SPLIT 2x1 // INVERTER+

ETHEREA WITH ENHANCED ECONAVI SENSOR AND NEW NANOE-G AIR-PURIFYING SYSTEM: OUTSTANDING EFFICIENCY, COMFORT AND HEALTHY AIR COMBINED WITH STATE-OF-THE-ART DESIGN

Econavi features a Human Activity sensor and a new Sunlight Detection technology to adjust output ideally thereby giving you the best comfort at anytime whilst saving energy. Furthermore, the NANOE-G revolutionary air-purifying system utilises nano technology fine particles to remove and deactivate 99% of both airborne and adhesive microorganisms like bacteria, viruses and mould. Etherea is more efficient than ever with 64% less consumption for the non Inverter model on heat pump mode, and can reach 71% total savings when used with Econavi.

Using a Multi Split 2x1 Inverter+ system with the outdoor unit CU-2E18LBE instead of 2 individual mono split Inverter+ systems, you reduce consumption and thus save more! Up to 16%! Furthermore, using a Multi Split system, you save space on the outdoor unit, making it easier to install in small spaces.













SILVER KIT			KIT-2XE99-NKE	KIT-2XE912-NKE	KIT-2XE1212-NKE
SILVER KIT WITH SMART	PHONE CONTROL		KIT-2XE99-NKE-WIFI	KIT-2XE912-NKE-WIFI	KIT-2XE1212-NKE-WIFI
Indoor			CS-XE9NKEW	CS-XE9NKEW	CS-XE12NKEW
			CS-XE9NKEW	CS-XE12NKEW	CS-XE12NKEW
WHITE KIT			KIT-2E99-NKE	KIT-2E912-NKE	KIT-2E1212-NKE
WHITE KIT WITH SMARTI	PHONE CONTROL		KIT-2E99-NKE-WIFI	KIT-2E912-NKE-WIFI	KIT-2E1212-NKE-WIFI
Indoor			CS-E9NKEW	CS-E9NKEW	CS-E12NKEW
			CS-E9NKEW	CS-E12NKEW	CS-E12NKEW
Outdoor			CU-2E18LBE	CU-2E18LBE	CU-2E18LBE
Cooling capacity	Nominal (Min - Max)	kW	4.80 (1.50 - 5.20)	5.00 (1.50 - 5.30)	5.20 (1.50 - 5.40)
	Nominal (Min - Max)	kCal/h	4,130 (1,290 - 4,470)	4,300 (1,290 - 4,560)	4,470 (1,290 - 4,640)
EER 1)	Nominal (Min - Max)	<b>Energy Saving</b>	3.66 (6.00 - 3.42) 🔼	3.36 (6.00 - 3.44) <b>A</b>	3.42 (6.00 - 3.42) 🗚
Power input Cooling	Nominal (Min - Max)	kW	1.31 (0.25 - 1.52)	1.49 (0.25 - 1.54)	1.52 (0.25 - 1.58)
Heating capacity	Nominal (Min - Max)	kW	5.60 (1.10 - 7.20)	5.60 (1.10 - 7.20)	5.60 (1.10 - 7.20)
	Nominal (Min - Max)	kCal/h	4,820 (950 - 6,190)	4,820 (950 - 6,190)	4,820 (950 - 6,190)
COP 1)	Nominal (Min - Max)	<b>Energy Saving</b>	4.48 (5.24 - 4.14) 🔺	4.55 (5.24 - 4.19) <b>A</b>	4.63 (5.24 - 4.24) 🔺
Power input Heating	Nominal (Min - Max)	kW	1.25 (0.21 - 1.74)	1.23 (0.21 - 1.72)	1.21 (0.21 - 1.70)
Annual Energy Consumptior	l <sup>2)</sup>	kWh	655	745	760
INDOOR UNIT					
Air Volume	Cooling	m³/h	606	606 (E9) / 654 (E12)	654
Moisture removal volume		l/h	1.5 / 1.5	1.4 (E9) / 1.6 (E12)	1.6 / 1.6
Sound pressure Level 3)	Cooling & Heating (S-Lo)	dB(A)	26	26 (E9) / 29 (E12)	29
Sound power Level	Cooling & Heating (S-Lo)	dB	56	56 (E9) / 60 (E12)	60
Dimensions	H x W x D	mm	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214
Net weight		Kg	9	9	9
Air purifier filter			NANOE-G	NANOE-G	NANOE-G
OUTDOOR UNIT					
Power source		V	230	230	230
Connection		mm²	4 x 1.5	4 x 1.5	4 x 1.5
Current	Cooling / Heating Nominal	A	6.10 / 5.55	6.95 / 5.45	7.10 / 5.35
Air Volume	Cooling / Heating	m³/h	2,070 / 1,860	2,070 / 1,860	2,070 / 1,860
Sound pressure Level 3)		dB(A)	49 / 51	49 / 51	49 / 51
Sound power Level	Cooling / Heating (Hi)	dB	64 / 66	64 / 66	64 / 66
Dimensions <sup>4)</sup>	H x W x D	mm	540 x 780 (+70) x 289	540 x 780 (+70) x 289	540 x 780 (+70) x 289
Net weight		Kg	38	38	38
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)
Refrigerent Loading	R410A	Kg	1.45	1.45	1.45
Elevation difference (in/out	) <sup>5)</sup> Max	m	10	10	10
Piping length (total)	Min / Max	m	30	30	30
			2 22	0.00	0.00

3-20

20

20

16 / 43

-10 / 24

3-20

20

20

16 / 43

-10 / 24

Piping length (one unit)

Piping length without

refrigerant increase

Additional gas

Operating range

Min / Max

Cooling Min / Max

Heating Min / Max

Max

3-20

20

20

16 / 43

-10 / 24

m

m

g/m

OC



- NEW! MAXIMUM EFFICIENCY AND COMFORT WITH ECONAVI. NOW WITH SUNLIGHT DETECTION
- EXCLUSIVE SILVER DESIGN
- NEW! NANOE-G AIR PURIFYING SYSTEM, 99% EFFECTIVE ON BOTH AIRBORNE AND ADHESIVE MOULD, VIRUSES AND BACTERIA
- NEW! OPTIONAL SMARTPHONE CONTROL
- MORE POWERFUL AIRFLOW TO QUICKLY REACH THE DESIRED TEMPERATURE



CS-E9NKEW // CS-E12NKEW

GLOBAL REMARKS	Rating conditions	Cooling	Heating
Inside air temperature		27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5 °C with continuous operation (24 h operation).

Connectivity restriction: CS-E/XE\_NKE units are only compatible with CU-2E15LBE, CU-2E18LBE, CU-3E18LBE, CU-4E23LBE and CU-4E27CBPG outdoor units. No other outdoor unit can be connected.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.
- 3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
  5) When installing the outdoor unit at a higher position than the indoor unit.

# KIT-2XE99-NKE // KIT-2XE912-NKE // KIT-2XE1212-NKE // KIT-2E99-NKE // KIT-2E912-NKE

#### **HEALTHY AIR**

• **NEW!** NANOE-G air purifying system

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system, for bigger savings
- $\ensuremath{\text{NEW!}}$  -45% consumption with Econavi on heat pump, and -35% on cooling mode
- R410A refrigerant gas

#### COMFORT

- Powerful mode
- Uniform dispersion of airflow
- Automatic vertical airflow control
- · Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- · Automatic restart after power cut

#### EASE OF USE

- · Real time clock with dual ON&OFF timer
- User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- NEW! Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- NEW! Optional Smartphone control

- Removable, washable panel
- 30 m maximum connection distance
- 10 m maximum elevation difference
- Maintenance access through the top panel of the outdoor unit
- · Self-diagnosis function



CU-2E18LBE



### ETHEREA MULTI SPLIT 3x1 // INVERTER+

ETHEREA WITH ENHANCED ECONAVI SENSOR AND NEW NANOE-G AIR-PURIFYING SYSTEM: OUTSTANDING EFFICIENCY, COMFORT AND HEALTHY AIR COMBINED WITH STATE-OF-THE-ART DESIGN

Econavi features a Human Activity sensor and a new Sunlight Detection technology to adjust output ideally thereby giving you the best comfort at anytime whilst saving energy. Furthermore, the NANOE-G revolutionary air-purifying system utilises nano technology fine particles to remove and deactivate 99% of both airborne and adhesive microorganisms like bacteria, viruses and mould. Etherea is more efficient than ever with 64% less consumption for the non Inverter model on heat pump mode, and can reach 71% total savings when used with Econavi.

Etherea has an advanced air purifying system with the new Patrol Sensor to detect and eliminate contaminants. Using a Multi Split 3X1 Inverter+ system with the outdoor unit CU-3E18LBE instead of 3 individual mono split Inverter+ systems, you reduce consumption and thus save more! Up to 34%! Furthermore, using a Multi Split system, you save space on the outdoor unit, making it easier to install in small spaces.













SILVER KIT		KIT-3XE7712-NBE	KIT-3XE7715-NBE	
SILVER KIT WITH SMARTPI	HONE CONTROL		KIT-3XE7712-NBE-WIFI	KIT-3XE7715-NBE-WIFI
Indoor			CS-XE7NKEW (x2)	CS-XE7NKEW (x2)
			CS-XE12NKEW (x1)	CS-XE15NKEW (x1)
WHITE KIT			KIT-3E7712-NBE	KIT-3E7715-NBE
WHITE KIT WITH SMARTPH	HONE CONTROL		KIT-3E7712-NBE-WIFI	KIT-3E7715-NBE-WIFI
Indoor			CS-E7NKEW (x2)	CS-E7NKEW (x2)
			CS-E12NKEW (x1)	CS-E15NKEW (x1)
Outdoor			CU-3E18LBE	CU-3E18LBE
Cooling capacity	Nominal (Min - Max)	kW	5.20 (1.90-7.20)	5.20 (1.80-7.30)
	Nominal (Min - Max)	kCal/h	4,470 (1,630-6,190)	4,470 (1,550-6,280)
EER 1)	Nominal (Min - Max)	Energy Saving	4.30 (5.28 - 3.30) <b>A</b>	4.30 (5.00 - 3.35) <b>A</b>
Power input Cooling	Nominal (Min - Max)	kW	1,21 (0,36-2,18)	1,21 (0,36-2,18)
Heating capacity	Nominal (Min - Max)	kW	6.80 (1.40-8.30)	6.80 (1.60-8.30)
	Nominal (Min - Max)	kCal/h	5,850 (1,200-7,140)	5,850 (1,380-7,140)
COP 1)	Nominal (Min - Max)	Energy Saving	4.63 (4.38 - 3.94) <b>A</b>	4.72 (5.00 - 3.93) <b>A</b>
Power input Heating	Nominal (Min - Max)	kW	1.47 (0.32-2.11)	1.44 (0.32-2.11)
Annual Energy Consumption 2	)	kWh	745	720
INDOOR UNIT				
Air Volume	Cooling	m³/h	606 (E7) / 654 (E12)	606 (E7) / 672 (E15)
Moisture removal volume		l/h	1.3 (E7) / 1.8 (E12)	0.8 (E7) / 1.6 (E15)
Sound pressure Level 3)	Cooling — Heating (S-Lo)	dB(A)	26 (E7) / 29 (E12) — 26 (E7) / 29 (E12)	26 (E7) / 29 (E15) — 26 (E7) / 30 (E15)
Sound power Level	Cooling & Heating (Hi)	dB	56 (E7) / 60 (E12)	56 (E7) / 60 (E15)
Dimensions	H x W x D	mm	290 x 870 x 214	290 x 870 x 214
Net weight		Kg	9	9
Air purifier filter			NANOE-G	NANOE-G
OUTDOOR UNIT				
Power source		V		230
Connection		mm²	4 x 1.5	4 x 1.5
Current	Cooling / Heating Nominal		5.3 / 8.2	5.3 / 7.9
Air Volume	Cooling / Heating	m³/h	2,502	2,502
Sound pressure Level 3)		dB(A)	46 / 47	46 / 47
Sound power Level	Cooling / Heating (Hi)	dB	60 / 61	60 / 61
Dimensions 4)	H x W x D	mm	795 x 875 (+95) x 320	795 x 875 (+95) x 320
Net weight		Kg	71	71
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)
Refrigerent Loading	R410A	Kg	2.64	2.64
Elevation difference (in/out) 5		m	15	15
Piping length (total)	Min / Max	m	3-50	3-50
Piping length (one unit)	Min / Max	m	3-25	3-25
Piping length without refrigerant increase	Max	m	30	30
Additional gas	-1	g/m	20	20
Operating range	Cooling Min / Max	°C	-10 / 46	-10 / 46
	Heating Min / Max	oC	-15 / 24	-15 / 24
-				



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- EXCLUSIVE SILVER DESIGN
- NEW! NANOE-G AIR PURIFYING SYSTEM, 99% EFFECTIVE ON BOTH AIRBORNE AND ADHESIVE MOULD, VIRUSES AND BACTERIA
- · NEW! OPTIONAL SMARTPHONE CONTROL
- MORE POWERFUL AIRFLOW TO QUICKLY REACH THE DESIRED TEMPERATURE



CS-E7NKEW // CS-E12NKEW // CS-E15NKEW

GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5  $^{\circ}$ C with continuous operation (24 h operation). Connectivity restriction: CS-E/XE\_NKE units are only compatible with CU-2E15LBE, CU-2E18LBE, CU-3E18LBE, CU-4E23LBE and CU-4E27CBPG outdoor units. No other outdoor unit can be connected.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours peryear in cooling mode.
- 37 The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
  5) When installing the outdoor unit at a higher position than the indoor unit.

#### KIT-3XE7712-NBE // KIT-3XE7715-NBE // KIT-3E7712-NBE // KIT-3E7715-NBE

#### **HEALTHY AIR**

• NEW! NANOE-G air purifying system

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system, for bigger savings
- NEW! -45% consumption with Econavi on heat pump, and -35% on cooling mode
- · R410A refrigerant gas

#### **COMFORT**

- Powerful mode
- Uniform dispersion of airflow
- · Automatic vertical airflow control
- Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- · Automatic restart after power cut

#### **EASE OF USE**

- · Real time clock with dual ON&OFF timer
- · User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- NEW! Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- · NEW! Optional Smartphone control

- Removable, washable panel
- 50 m maximum connection distance
- 15 m maximum elevation difference
- · Maintenance access through the top panel of the outdoor unit
- · Self-diagnosis function



CU-3E18LBE



### ETHEREA MULTI SPLIT 4x1 // INVERTER+

ETHEREA WITH ENHANCED ECONAVI SENSOR AND NEW NANOE-G AIR-PURIFYING SYSTEM: OUTSTANDING EFFICIENCY, COMFORT AND HEALTHY AIR COMBINED WITH STATE-OF-THE-ART DESIGN

Econavi features a Human Activity sensor and a new Sunlight Detection technology to adjust output ideally thereby giving you the best comfort at anytime whilst saving energy. Furthermore, the NANOE-G revolutionary air-purifying system utilises nano technology fine particles to remove and deactivate 99% of both airborne and adhesive microorganisms like bacteria, viruses and mould. Etherea is more efficient than ever with 64% less consumption for the non Inverter model on heat pump mode, and can reach 71% total savings when used with Econavi.

Using a Multi Split 4X1 Inverter+ system with the outdoor unit CU-4E23LBE instead of 4 individual mono split Inverter+ systems, you reduce consumption and thus save more! Up to 36%! Furthermore, using a Multi Split system, you save space on the outdoor unit, making it easier to install in small spaces.



SILVER KIT











nano technolo air clean
<b>6</b> · nano

SILVER RII			KII-4KL///IZ-NDL	KII-4AL///IJ-NDL	MII-4AL///IZ-NKL	KII-4KL///IJ-NKL
SILVER KIT WITH SMARTPH	ONE CONTROL		KIT-4XE77712-NBE-WIFI	KIT-4XE77715-NBE-WIFI	KIT-4XE77712-NKE-WIFI	KIT-4XE77715-NKE-WIFI
Indoor			CS-XE7NKEW (x3)	CS-XE7NKEW (x3)	CS-XE7NKEW (x3)	CS-XE7NKEW (x3)
			CS-XE12NKEW (x1)	CS-XE15NKEW (x1)	CS-XE12NKEW (x1)	CS-XE15NKEW (x1)
WHITE KIT			KIT-4E77712-NBE	KIT-4E77715-NBE	KIT-4E77712-NKE	KIT-4E77715-NKE
WHITE KIT WITH SMARTPH	ONE CONTROL		KIT-4E77712-NBE-WIFI	KIT-4E77715-NBE-WIFI	KIT-4E77712-NKE-WIFI	KIT-4E77715-NKE-WIFI
Indoor			CS-E7NKEW (x3)	CS-E7NKEW (x3)	CS-E7NKEW (x3)	CS-E7NKEW (x3)
			CS-E12NKEW (x1)	CS-E15NKEW (x1)	CS-E12NKEW (x1)	CS-E15NKEW (x1)
Outdoor			CU-4E23LBE	CU-4E23LBE	CU-4E27CBPG	CU-4E27CBPG
Cooling capacity	Nominal (Min - Max)	kW	6.80 (1.90 - 8.80)	6.80 (1.90 - 8.80)	8.00 (2.80 - 8.90)	8.00 (2.80 - 8.90)
. ,	Nominal (Min - Max)	kCal/h	5,850 (1,630 - 7,570)	5,850 (1,630 - 7,650)	6,880 (2,410 - 7,650)	6,880 (2,410 - 7,650)
EER 1)	Nominal (Min - Max)	Energy Saving	4.12 (5.59 - 3.56) <b>A</b>	4.12 (5.59 - 3.56) <b>A</b>	3.76 (5.71 - 3.09) <b>A</b>	3.76 (5.71 - 3.20) <b>A</b>
Power input Cooling	Nominal (Min - Max)	kW	1,65 (0,34 - 2,47)	1,65 (0,34 - 2,47)	2.13 (0.49 - 2.88)	2.10 (0.49 - 2.87)
Heating capacity	Nominal (Min - Max)	kW	8.60 (3.00 - 10.60)	8.60 (3.00 - 10.60)		9.40 (3.80 - 10.50)
3 - 1 - 7	Nominal (Min - Max)	kCal/h	7,400 (2,580 - 9,120)	7,400 (2,580 - 9,120)	8,080 (2,920 - 9,030)	8,080 (3,270 - 9,030)
COP 1)	Nominal (Min - Max)	Energy Saving	4.65 (5.17 - 4.08) 🔼	4.67 (5.09 - 4.09) <b>A</b>	4.43 (5.76 - 3.30) <b>A</b>	4.50 (5.31 - 3.34) <b>A</b>
Power input Heating	Nominal (Min - Max)	kW	1.85 (0.58 - 2.60)	1.84 (0.59 - 2.59)	2.12 (0.59 - 3.18)	2.09 (0.64 - 3.14)
Annual Energy Consumption 2)		kWh	825	825	1,065	1,055
INDOOR UNIT					,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Air Volume	Cooling	m³/h	606 (E7) / 654 (E12)	606 (E7) / 672 (E15)	654 (E7) / 750 (E12)	654 (E7) / 750 (E15)
Moisture removal volume	<b>y</b>	l/h	0.9 (E7) / 1.5 (E12)	0.9 (E7) / 1.6 (E15)	1.1 (E7) / 1.6 (E12)	1.0 (E7) / 1.8 (E15)
Sound pressure level 3)	Cooling — Heating (S-Lo)	-4		26 (E7) / 29 (E15) — 26 (E7) / 30 (E15)		
Sound power level	Cooling & Heating (Hi)		56 (E7) / 60 (E12)	56 (E7) / 60 (E15)		56 (E7) / 60 (E15)
Dimensions	H x W x D	mm	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214
Net weight		Kg	9	9	9	9
Air purifier filter		''9	NANOE-G	NANOE-G	NANOE-G	NANOE-G
OUTDOOR UNIT				101102		131102 0
Power source		V	230	230	230	230
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Current	Cooling / Heating Nominal	A	7.40 / 8.60	7.40 / 8.50	9.40 / 9.30	9.30 / 9.20
Air Volume	Cooling / Heating	m³/h	2,550	2.550	2,910	2,910
Sound pressure Level 3)		dB(A)	48 / 49	48 / 49	48 / 49	48 / 49
Sound power Level	Cooling / Heating (Hi)	dB	62 / 63	62 / 63	61 / 62	61 / 62
Dimensions 4)	H x W x D	mm	795 x 875 (+95) x 320	795 x 875 (+95) x 320	908 x 900 x 320	908 x 900 x 320
Net weight		Kg	72	72	73	73
Piping connections	Liquid pipe / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)
Refrigerent Loading	R410A	Kg	2.64	2.64	3.1	3.1
Elevation difference (in/out) 5)	-	m	15	15	15	15
Piping length (total)	Min / Max	m	60	60	70	70
Piping length (one unit)	Min / Max	m	3-25	3-25	3-25	3-25
Piping length without refrigerant increase	Max	m	30	30	40	40
Additional gas	<u> </u>	g/m	20	20	20	20
Operating range	Cooling Min / Max	°C	-10 / 46	-10 / 46	16 / 43	16 / 43
operacing range	Heating Min / Max	°C	-15 / 24	-15 / 24	-20 / 24	-20 / 24
	neading mill / Max	U	-1J / Z4	-10 / 44	-20 / 24	-20/24



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CS-E7NKEW // CS-E12NKEW // CS-E15NKEW

GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

#### DB: Dry Bulb; WB: Wet Bulb

This model is not suitable to use in heating mode below -5 °C with continuous operation (24 h operation).

Connectivity restriction: CS-E/XE\_NKE units are only compatible with CU-2E15LBE, CU-2E18LBE, CU-3E18LBE, CU-4E23LBE and CU-4E27CBPG outdoor units. No other outdoor unit can be connected.

- 1) EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.
- 2) The annual consumption is calculated by multiplying the input power at 230 V by an avarage of 500 hours per year in cooling mode.
- 3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 0.8 meters below the unit. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 4) Add 70 mm for piping port.
  5) When installing the outdoor unit at a higher position than the indoor unit.

# KIT-4XE77712-NBE // KIT-4XE77715-NBE // KIT-4XE77712-NKE // KIT-4XE77715-NKE // KIT-4E77715-NBE // KIT-4E77712-NKE // KIT-4E77712-NKE

#### **HEALTHY AIR**

• NEW! NANOE-G air purifying system

#### **ENERGY, EFFICIENCY AND ECOLOGY**

- Maximum efficiency Inverter system, for bigger savings
- NEW! -45% consumption with Econavi on heat pump, and -35% on cooling mode
- · R410A refrigerant gas

#### COMFORT

- · Powerful mode
- · Uniform dispersion of airflow
- · Automatic vertical airflow control
- · Hot start mode, increased comfort on heat pump mode, no cool airflow when process starts
- · Automatic restart after power cut

#### **EASE OF USE**

- Real time clock with dual ON&OFF timer
- · User friendly infrared remote control
- NEW! Optional wired weekly timer with 6 settings per day and 42 settings per week
- NEW! Connectivity function (indoor unit equipped with PCB port which can be connected to outside network)
- NEW! Optional Smartphone control

- · Removable, washable panel
- 70 m maximum connection distance
- 15 m maximum elevation difference
- Maintenance access through the top panel of the outdoor unit
- Self-diagnosis function





CU-4E23LBE

CU-4E27CBPG



### FREE MULTI SYSTEM

#### UP TO 5 INDOOR UNITS WITH A SINGLE OUTDOOR UNIT

Connect up to five different rooms with a single outdoor unit using the Free Multi system.

With Free Multi you can take care of 2, 3, 4 or 5 rooms with a single outdoor unit.

With the Free Multi range, your clients will be able to save space at the time of installing the outdoor unit, and they will have more energy efficiency than with various 1x1 systems. They will be able to save up to 30% of energy.

Choose the outdoor units according to the individual requirements of each of your client's rooms, and calculate which outdoor unit best adapts itself to the combinations of indoor units.

The combination table will help you to select the best option.





OPTIONAL ONLY FOR ETHEREA

INDOOR UNIT	T CAPACITIES							
CAPACITY	7 - 2.0 kW	9/10 - 2.5 kW	9/10 - 2.8 kW	12 - 3.2 kW	15 - 4 kW	18 - 5 kW	21 - 6 kW	24 - 7.1 kW
SPLIT ETHEREA	Mill Land	Marie Company		Mill .				
NEW 2012	CS-XE7NKEW	CS-XE9NKEW		CS-XE12NKEW	CS-XE15NKEW <sup>1</sup>	CS-XE18NKEW <sup>1</sup>	CS-XE21NKEW <sup>1</sup>	
	CS-E7NKEW	CS-E9NKEW		CS-E12NKEW	CS-E15NKEW 1	CS-E18NKEW 1	CS-E21NKEW 1	
SPLIT FOR 5x1								
_								-
NEW								
2012	CS-ME7NKE	CS-ME9NKE		CS-ME12NKE		CS-ME18NKE		CS-ME24NKE
1-WAY CASSETTE								
CASSETTE								
	CS-ME7KB1E		CS-ME10EB1E	CS-ME12EB1E	CS-ME14EB1E			
LOW STATIC PRESSURE								
HIDE AWAY								
		CS-E10KD3EA			CS-E15JD3EA <sup>1</sup>	CS-E18JD3EA <sup>1</sup>		
FLOOR		OG ETONBOEN	12		OG E103BOEN	OG E 103BOEN		
CONSOLE								
			CS-E9GFEW	CS-E12GFEW		CS-E18GFEW 1		
FLOOR/			C3-E70FEW	C3-E1ZUFEW		C3-E100FEW 1		
CEILING CONSOLE								
4 WAY 60X60			CS-ME10DTEG		CS-E15DTEW <sup>1</sup>	CS-E18DTEW <sup>1</sup>		
CASSETTE		100						
					The state of	The state of the s	The state of the s	
		CS-E10KB4EA			CS-E15HB4EA 1	CS-E18HB4EA 1	CS-E21JB4EA 1	



			NIT COMBINATIONS																	
Mode	els		Possible indoor unit	Capacity		ant pipe di		Pipe len		1						unit co				
			combinations	kŴ¹	Indoor unit	Liquid	Gas	Max. pipe length (1 room)	Max. pipe length (total)	Max. pipe without additional gas refills	Additional gas	Max. level difference	Capacity	Split Etherea	Split for 5x1	1-way Cassette	Low Static Pressure Hide Away	Floor console	Floor / ceiling console	4 -way Cassetti
2	-	CU-2E15LBE	A <sup>2</sup> : 7, 9/10 or 12	4.0-5.6	Room A	1/4"	3/8"	20 m	30 m	20 m	20 g/m	10 m	7	×						
		<b>6</b>	B <sup>2</sup> : 7, 9/10 or 12	4.0-0.0	Room B		3/8"	ZU III	30 111	20 111	20 y/111	10 111	1	^						
													9/10	×			X	×		X
													12	×				×		
		CU-2E18LBE	13 T 0/10 10	, , , ,		41111	0.1011	00	00	00	00 /	40		.,						
		<b>6</b>	A <sup>2</sup> : 7, 9/10 or 12 B <sup>2</sup> : 7, 9/10 or 12	4.0-6.4	Room A Room B	1/4" 1/4"	3/8" 3/8"	20 m	30 m	20 m	20 g/m	10 m	7	X						
			, , , ,			,							9/10	×			X	X	X	X
													12	×				×		
3	}	CU-3E18LBE				41111	0.1011				00 /	4-								
		47004 -	A <sup>3</sup> : 7, 9/10, 12, 15 or 18 B <sup>3</sup> : 7, 9/10, 12, 15 or 18	4.5-9.0	Room A Room B	1/4" 1/4"	3/8" 3/8"	25 m	50 m	30 m	20 g/m	15 m	7 9/10	X		X	X	X	X	X
		200	C <sup>3</sup> : 7, 9/10, 12, 15 or 18		Room C		3/8"						12	X		X	^	×	^	^
			0 . 7, 7/10, 12, 10 01 10		Nooiii o	., 4	0,0						14/15	X		X	X		X	X
<u>S</u>													18	X				×	×	X
ROOMS		CU-4E23LBE	A <sup>3</sup> : 7, 9/10, 12, 15, 18 or 21	4.5-11.0	Poom A	1/4"	3/8"	25 m	60 m	30 m	20 g/m	15 m	7	×		×				
		4500	B <sup>3</sup> : 7, 9/10, 12, 15, 18 or 21	4.0 11.0	Room B	1/4"	3/8"	23 111	00 111	JU 111	20 9/111	10 111	9/10	X		X	X	X	X	X
		(2000)	C <sup>3</sup> : 7, 9/10, 12, 15, 18 or 21		Room C	1/4"	3/8"						12	X		X		X		
			D <sup>3</sup> : 7, 9/10, 12, 15, 18 or 21		Room D	1/4"	3/8"						14/15	X		X	X		X	X
													18	X			X	X	X	X
													21	X						X
		CU-4E27CBPG	A3. 7. 0/10. 12. 15 or 10	/ E 10 /	Doom A	1/4"	3/8"	25 m	70 m	40 m	20 a/m	1E m	7	×		×				
			A <sup>3</sup> : 7, 9/10, 12, 15 or 18 B <sup>3</sup> : 7, 9/10, 12, 15 or 18	4.5-13.6	Room B	1/4"	3/8"	20 111	/U III	40 111	20 g/m	15 m	9/10	X		×	X	×	×	×
		00	C <sup>3</sup> : 7, 9/10, 12, 15 or 18		Room C	1/4"	3/8"						12	×		X	^	X	^	^
			D <sup>3</sup> : 7, 9/10, 12, 15 or 18		Room D	1	3/8"						14/15	X		X	X		X	×
		-	, , , , , , , ,			,							18	X			X	X	X	X
5	)	CU-5E34NBE	A <sup>3</sup> : 7, 9, 12, 18 or 24		Room A	1/4"	3/8"	30 m	80 m	45 m	20 g/m	15 m	7		×					
		A-	B <sup>3</sup> : 7, 9, 12, 18 or 24		Room B		3/8"	JU III	OU III	40 III	zu y/III	III UI	9		×					
			C <sup>3</sup> : 7, 9, 12, 18 or 24		Room C	1	3/8"						12		X					
			D <sup>3</sup> : 7, 9, 12, 18 or 24		Room D	1/4"	1/2"						18		X					
			E <sup>3</sup> : 7, 9, 12, 18 or 24		Room E		1/2"						24		X					

# INDOOR UNITS FOR FREE MULTI COMBINATIONS











OPTIONAL ONLY FOR ETHEREA





ETHEREA // SILVER OR V	WHITE		2.0 KW	2.5 KW	3.2 KW	4 KW	5 KW	6 KW
Silver Indoor			CS-XE7NKEW	CS-XE9NKEW	CS-XE12NKEW	CS-XE15NKEW <sup>1</sup>	CS-XE18NKEW <sup>1</sup>	CS-XE21NKEW <sup>1</sup>
White Indoor			CS-E7NKEW	CS-E9NKEW	CS-E12NKEW	CS-E15NKEW <sup>1</sup>	CS-E18NKEW <sup>1</sup>	CS-E21NKEW <sup>1</sup>
Cooling capacity	Nominal	kW / kCal/h	2.00 / 1,720	2.50 / 2,150	3.20 / 2,750	4.00 / 3,440	5.00 / 4,300	6.00 / 5,160
Heating capacity	Nominal	kW / kCal/h	3.20 / 2,750	3.60 / 3,010	4.50 / 3,870	5.60 / 4,820	6.80 / 5,850	8.50 / 7,310
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Sound pressure level <sup>2</sup>	Cooling (Hi / Lo / S-Lo)	dB(A)	40 / 26 / 23	40 / 26 / 23	44 / 32 / 26	44 / 32 / 26	46 / 33 / 30	46 / 33 / 30
•	Heating (Hi / Lo / S-Lo)	dB(A)	40 / 26 / 23	40 / 26 / 23	44 / 32 / 26	44 / 33 / 32	46 / 35 / 32	46 / 35 / 32
Sound power level	Cooling / Heating (Hi)	dB	54 / 56	56 / 56	60 / 60	60 / 60	62 / 62	62 / 62
Dimensions	H x W x D	mm	290 x 870 x 204	290 x 1,070 x 235	290 x 1,070 x 235			
Net weight		Kg	9	9	9	9	12	12
Air purifier filter			NANOE-G	NANOE-G	NANOE-G	NANOE-G	NANOE-G	NANOE-G
Piping connections	Liquid / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70



SPLIT (ONLY WITH CU-	E34NBE)		2.0 KW	2.5 KW	3.2 KW	5 KW	7.1 KW
Indoor unit			CS-ME7NKE	CS-ME9NKE	CS-ME12NKE	CS-ME18NKE	CS-ME24NKE
Cooling capacity		kW	2.20	2.65	3.50	5.15	7.10
Heating capacity		kW	2.50	3.60	4.20	6.00	8.50
Sound pressure level	Cooling (Qt/L/M/H)	dB(A)	22/27/30/33	22/28/31/34	25/29/33/36	28/34/38/41	30/38/41/44
	Heating (Qt/L/M/H)	dB(A)	22/27/30/33	22/28/31/34	25/29/31/34	28/34/37/40	30/37/40/43
Dimensions	HxWxD	mm	285 x 825 x 213	285 x 825 x 213	285 x 825 x 213	298 x 1,065 x 234	298 x 1,065 x 234
Net weight		Kg	10	10	10	12	12





CZ-RD52CP INCLUDE

LOW STATIC PRESSURE	HIDE AWAY		2.5 KW	4 KW	5 KW
Indoor hide away			CS-E10KD3EA	CS-E15JD3EA1	CS-E18JD3EA <sup>1</sup>
Wired remote control	Include on the indoor unit		CZ-RD52CP	CZ-RD52CP	CZ-RD52CP
Cooling capacity	Nominal	kW / kCal/h	2.50 / 2,150	4.00 / 3,440	5.00 / 4,300
Heating capacity	Nominal	kW / kCal/h	3.60 / 3,100	5.60 / 4,820	6.80 / 5,850
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5
External static pressure	Hi / Lo	Pa (mm)	34 / 64 (3.47 / 6.53)	34 / 69 (3.47 / 7.04)	34 / 78 (3.47 / 7.95)
Air Volume	Hi / Med / Lo	m³/h	414 / 402 / 330	474 / 402 / 330	624 / 528 / 444
Sound pressure level <sup>2</sup>	Cooling (Quiet / Lo / Hi)	dB(A)	24 / 27 / 31	24 / 27 / 33	27 / 30 / 41
	Heating (Quiet / Lo / Hi)	dB(A)	24 / 27 / 35	24 / 27 / 33	29 / 32 / 41
Sound power level	Cooling / Heating (Hi)	dB	49 / 51	49 / 51	57 / 57
Dimensions	H x W x D	mm	235 x 750 (+65) x 370	235 x 750 (+65) x 370	285 x 750 (+65) x 370
Net weight		Kg	17	18	18
Piping connections	Liquid / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70)







OPTIONAL WIRED REMOTE CONTROL CZ-RD52CP



CZ-BT20E SOLD SEPARATELY





4 WAY 60X60 CASSETTE			2.5 KW	4 KW	5 KW	6 KW
Indoor			CS-E10KB4EA	CS-E15HB4EA1	CS-E18HB4EA1	CS-E21JB4EA1
Panel	Sold separatel		CZ-BT20E	CZ-BT20E	CZ-BT20E	CZ-BT20E
Wireless control	Include on the indoor uni	t				
Cooling capacity	Nominal	kW / kCal/h	2.50 / 2,150	4.00 / 3,440	5.00 / 4,300	6.00 / 5,160
Heating capacity	Nominal	kW / kCal/h	3.60 / 3,100	5.60 / 4,820	6.80 / 5,850	8.50 / 7,310
Connection		mm <sup>2</sup>	4 x 1.5	4 x 1.5	4 x 1.5	4 x 1.5
Sound pressure level <sup>2</sup>	Cooling (Hi / Lo / S-Lo)	dB(A)	34 / 26 / 23	34 / 26 / 23	36 / 28 / 25	41 / 33 / 30
	Heating (Hi / Lo / S-Lo)	dB(A)	35 / 28 / 25	35 / 28 / 25	37 / 29 / 26	42 / 34 / 31
Sound power level	Cooling / Heating (Hi)	dB	47 / 58	47 / 48	49 / 50	54 / 55
Dimensions	Indoor (H x W x D)	mm	260 x 575 x 575	260 x 575 x 575	260 x 575 x 575	260 x 575 x 575
	Panel (H x W x D)	mm	51 x 700 x 700	51 x 700 x 700	51 x 700 x 700	51 x 700 x 700
Net weight	Indoor (Panel)	Kg	18 (2.5)	18 (2.5)	18 (2.5)	18 (2.5)
Air purifier filter	Optional		CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P
Piping connections	Liquid / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70)

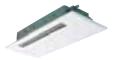
GLOBAL REMARKS	Rating conditions	Cooling	Heating
	Inside air temperature	27°C DB / 19°C WB	20°C DB
	Outside air temperature	35°C DR / 24°C WR	7°C DR / 6°C WR

DB: Dry Bulb; WB: Wet Bulb. Connectivity restriction: CS-E/XE\_NKE units are only compatible with CU-2E15LBE, CU-2E18LBE, CU-3E18LBE, CU-4E23LBE and CU-4E27CBPG outdoor units. No other outdoor unit can be connected.

A CZ-MA1P pipe reducer is needed on the E15 and E18, a CZ-MA2P pipe expander is needed on the E21.
 The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
 EER and COP classification is at 230 V in accordance with EU directive 2002/31/EC.

<sup>4)</sup> Add 70 or 95 mm for piping port.

<sup>5)</sup> When installing the outdoor unit at a higher position than the indoor unit.









1-WAY CASSETTE			2.0 KW	2.8 KW	3.2 KW	4 KW
Indoor			CS-ME7KB1E	CS-ME10EB1E	CS-ME12EB1E	CS-ME14EB1E
Panel	Sold separately		CZ-BT20P			CZ-BT20P
Cooling capacity	Nominal	kW / kCal/h	2.00 / 1,720	2.80 / 2,410	3.20 / 2,750	4.00 / 3,440
Heating capacity	Nominal	kW / kCal/h	3.20 / 2,750	4.00 / 3,440	4.50 / 3,870	5.60 / 4,820
Connection		mm <sup>2</sup>	4 x 1.5			4 x 1.5
Sound pressure level <sup>2</sup>	Cool — Heat (Hi/Lo/S-Lo)	dB(A)	40 / 32 / 29 — 42 / 32 / 29		41 / 32 / 29 — 43 / 32 / 29	43 / 32 / 29 — 44 / 34 / 31
Sound power leve	Cooling / Heating (Hi)	dB	53 / 55	53 / 55	54 / 56	56 / 57
Dimensions	Indoor (H x W x D)	mm	185 x 770 x 360	185 x 770 x 360	185 x 770 x 360	185 x 770 x 360
	Panel (H x W x D)	mm	55 x 1,070 x 460	55 x 1,070 x 460	55 x 1,070 x 460	55 x 1,070 x 460
Net weight		Kg	9.8	9.8	9.8	9.8
Piping connections	Liquid / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)







FLOOR CONSOLE			2.8 KW	3.2 KW	5 KW
Indoor			CS-E9GFEW	CS-E12GFEW	CS-E18GFEW <sup>1</sup>
Cooling capacity	Nominal	kW / kCal/h	2.80 / 2,410	3.20 / 2,750	5.00 / 4,300
Heating capacity	Nominal	kW / kCal/h	4.00 / 3,440	4.50 / 3,870	6.80 / 5,850
Connection			4 x 1.5	4 x 1.5	4 x 1.5
Sound pressure level <sup>2</sup>	Cool — Heat (Hi/Lo/S-Lo)	dB(A)	38 / 27 / 23 — 38 / 27 / 23	39 / 28 / 24 — 39 / 27 / 23	44 / 36 / 32 — 46 / 36 / 32
Sound power level	Cooling / Heating (Hi)	dB	54 / 54	55 / 55	60 / 62
Dimensions	H x W x D	mm	600 x 700 x 210	600 x 700 x 210	600 x 700 x 210
Net weight		Kg	14	14	14
Piping connections	Liquid / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)







FLOOR/CEILING CONSOLE			2.8 kW	4 kW	5 kW
Indoor			CS-ME10DTEG	CS-E15DTEW <sup>1</sup>	CS-E18DTEW <sup>1</sup>
Cooling capacity	Nominal	kW / kCal/h	2.80 / 2.408	4.15 / 3,570	5.00 / 4,300
Heating capacity	Nominal	kW / kCal/h	4.00 / 3.440	5.17 / 4,450	6.80 / 5,850
Sound pressure level <sup>2</sup>	Cool — Heat (Hi/Lo/S-Lo)	dB(A)	39 / 31 / 28 — 40 / 31 / 28	45 / 37 / 34 — 45 / 33 / 30	46 / 39 / 36 — 47 / 35 / 32
Dimensions / Net weight	H x W x D	mm	540 x 1,028 x 200 / 17	540 x 1,028 x 200 / 17	540 x 1,028 x 200 / 18
Piping connections	Liquid / Gas pipe	inch (mm)	1/4" (6.35) / 3/8" (9.52)	1/4" (6.35) / 1/2" (12.70)	1/4" (6.35) / 1/2" (12.70)

# OUTDOOR UNITS FOR FREE MULTI COMBINATIONS

















CU-2E15LBE CU-2E18	LBE CU-3E18L	LBE CU-4E23LBE	CU-4E27CBF	PG CU-5E34NB	E			TEMPERATURE
OUTDOOR UNIT //INVERTER	\ <del>+</del>		4.0 to 5.6 kW	4.0 to 6.4 kW	4.5 to 9.0 kW	4.5 to 11.0 kW	4.5 to 13.6 kW	1.6 to 14.5 kW
Unit			CU-2E15LBE	CU-2E18LBE	CU-3E18LBE	CU-4E23LBE	CU-4E27CBPG	CU-5E34NBE*
Cooling capacity	Nominal (Min - Max	) kW	4.50 (1.50-5.20)	5.20 (1.50-5.40)	5.20 (1.80-7.30)	6.80 (1,90-8.80)	8.00 (3.00-9.20)	10.00 (1.6 - 11.5)
EER	Nominal	Energy Saving	3.66 <b>A</b>	3.42 <b>A</b>	4.33 <b>A</b>	4.05 <b>A</b>	4.04 A	3.50 <b>A</b>
Power input Cooling	Nominal (Min - Max	) kW	1.23 (0.25-1.52)	1.52 (0.25-1.58)	1.21 (0.36-2.18)	1.68 (0.34-2.47)	1.98 (0.53-2.87)	2.86
Heating capacity	Nominal (Min - Max	) kW	5.40 (1.10-7.00)	5.60 (1.10-7.20)	6.80 (1.60-8.30)		9.40 (4.20-10.60)	12.00 (1.6 - 14.5)
COP	Nominal	Energy Saving	4.62 <b>A</b>	4.63 <b>A</b>	4.86 <b>A</b>	4.65 A	4.52 A	4.20 A
Power input Heating	Nominal (Min - Max)	) kW	1.17 (0.21-1.67)	1.21 (0.21-1.70)	1.44 (0.32-2.11)	1.85 (0.58-2.60)	2.08 (0.70-3.06)	2.86
Current	Cooling / Heating No	ominal A	5.75 / 5.20	7.10 / 5.35	5.30 / 6,50	7.50 / 8.60	8.70 / 9.10	12.6
Power source		V	230	230	230	230	230	220 - 240
Sound pressure level <sup>2</sup>	Cooling / Heating (H		47 / 49	49 / 51	46 / 47	48 / 49	48 / 49	47 / 47 (Quiet mode)
Sound power level	Cooling / Heating (H	li) dB	62 / 64	64 / 66	60 / 61		61 / 62	50 / 53
Dimensions	H x W x D	mm	540 x 780 (+70) x 289	540 x 780 (+70) x 289	795 x 875 (+95) x 320	795 x 875 (+95) x 320	908 x 900 x 320	910 x 940 x 340
Net weight		Kg	38	38	71	72	73	82
Piping connections	Liquid pipe	inch (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)
	Gas pipe	inch (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52) x3 + 1/2 (12.7) x2
Refrigerant Loading	R410A	Kg	1.45	1.45	2.64	2.64	3.10	4.10
Elevation difference (in/out)		m	10	10	15	15	15	15
Piping length total	Max	m	30	30	50	60	70	80
Piping length to one unit	Min / Max	m	3-20	3-20	3-25	3-25	3-25	3-30
Piping length without refrig	erant increase	m (Max)	20	20	30	30	30	45
Additional gas		g/m	20	20	20	20	20	
Operating range	Cooling — Heating M	in / Max  °C	16 / 43 — -10 / 24	16 / 43 — -10 / 24	-10 / 46 — -15 / 24	-10 / 46 — -15 / 24	16 / 43 — -10 / 24	-10 / 43 — -15 / 18

# FREE MULTI COMBINATIONS

FREE MULTI	2X1 // OI	JTDOOR	UNIT CU-2E15LBE												
Indoor unit	Cooling C	apacity (k	W)	Input Power (W)	EER	A.C.E.	Current	Moisture Removal	Heating (	Capacity (k	(W)	Input Power (W)	COP	A.C.E.	Current
capacity	Room A	Room B	Total (MinMax.)	Rating	W/W	kWh	230 V (A)	Volume (l/h)	Room A	Room B	Total (MinMax.)	Rating	W/W	kWh	230 V (A)
1 Room															
7	2.00		2.00 (1.10-2.90)	520 (220 -750)	3.85 A	260	2.45	1.3	3.20		3.20 (0.70-4.80)	850 (170-1410)	3.76 A	425	3.75
91	2.50		2.50 (1.10-3.50)	670 (220 -1000)	3.73 A	335	3.15	1.5	3.60		3.60 (0.70-5.50)	1030 (170-1700)	3.50 B	515	4.55
_10 <sup>2</sup>	2.80		2.80 (1.10-3.50)	750 (220 -1000)	3.73 A	375	3.50	1.6	4.00		4.00 (0.70-5.50)	1150 (170-1700)	3.48 B	575	5.10
_12	3.20		3.20 (1.10-4.00)	920 (220 -1220)	3.48 A	460	4.30	1.8	4.50		4.50 (0.70-6.20)	1250 (170-1810)	3.60 B	625	5.55
2 Room															
7 + 7	2.00	2.00	4.00 (1.50-5.00)	1090 (250 -1350)	3.66 A	545	5.10	1.3 + 1.3	2.70	2.70	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
7 + 91	2.00	2.50	4.50 (1.50-5.20)	1230 (250 -1520)	3.66 A	615	5.75	1.3 + 1.5	2.40	3.00	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
7 + 10 <sup>2</sup>	1.85	2.65	4.50 (1.50-5.20)	1230 (250 -1520)	3.66 A	615	5.75	1.2 + 1.6	2.25	3.15	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
7 + 12	1.75	2.75	4.50 (1.50-5.20)	1230 (250 -1520)	3.66 A	615	5.75	1.1 + 1.6	2.10	3.30	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
91 + 91	2.25	2.25	4.50 (1.50-5.20)	1230 (250 -1520)	3.66 A	615	5.75	1.5 + 1.5	2.70	2.70	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
91 + 102	2.10	2.40	4.50 (1.50-5.20)	1230 (250 -1520)	3.66 A	615	5.75	1.4 + 1.5	2.55	2.85	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
102 + 102	2.25	2.25	4.50 (1.50-5.20)	1230 (250 -1520)	3.66 A	615	5.75	1.5 + 1.5	2.70	2.70	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20

FREE MULTI	2X1 // 0	UTDOOR	UNIT CU-2E18LBI	E											
Indoor unit	Cooling (	Capacity (k	:W)	Input Power (W)	EER	A.C.E.	Current	Moisture Removal	Heating (	Capacity (I	(W)	Input Power (W)	COP	A.C.E.	Current
capacity	Room A	Room B	Total (MinMax.)	Rating	W/W	kWh	230 V (A)	Volume (l/h)	Room A	Room B	Total (MinMax.)	Rating	W/W	kWh	230 V (A)
1 Room															
7	2.00		2.00 (1.10-2.90)	520 (220-750)	3.85 A	260	2.45	1.3	3.20		3.20 (0.70-4.80)	850 (170-1410)	3.76 A	425	3.75
91	2.50		2.50 (1.10-3.50)	670 (220-1000)	3.73 A	335	3.15	1.5	3.60		3.60 (0.70-5.50)	1030 (170-1700)	3.50 B	515	4.55
10 <sup>2</sup>	2.80		2.80 (1.10-3.50)	750 (220-1000)	3.73 A	375	3.50	1.6	4.00		4.00 (0.70-5.50)	1150 (170-1700)	3.48 B	575	5.10
12	3.20		3.20 (1.10-4.00)	920 (220-1220)	3.48 A	460	4.30	1.8	4.50		4.50 (0.70-6.20)	1250 (170-1810)	3.60 B	625	5.55
2 Rooms															
7 + 7	2.00	2.00	4.00 (1.50-5.00)	1090 (250-1350)	3.66 A	545	5.10	1.3 + 1.3	2.70	2.70	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
7 + 91	2.00	2.50	4.50 (1.50-5.20)	1230 (250-1520)	3.66 A	615	5.75	1.3 + 1.5	2.40	3.00	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
7 + 102	1.85	2.65	4.50 (1.50-5.20)	1230 (250-1520)	3.66 A	615	5.75	1.2 + 1.6	2.25	3.15	5.40 (1.10-7.00)	1170 (210-1670)	4.62 A	585	5.20
7 + 12	1.85	2.95	4.80 (1.50-5.30)	1310 (250-1540)	3.66 A	655	6.10	1.2 + 1.7	2.15	3.45	5.60 (1.10-7.20)	1230 (210-1720)	4.55 A	615	5.45
91 + 91	2.40	2.40	4.80 (1.50-5.20)	1310 (250-1520)	3.66 A	655	6.10	1.5 + 1.5	2.80	2.80	5.60 (1.10-7.20)	1250 (210-1740)	4.48 A	625	5.55
91 + 102	2.25	2.55	4.80 (1.50-5.20)	1310 (250-1520)	3.66 A	655	6.10	1.5 + 1.6	2.65	2.95	5.60 (1.10-7.20)	1250 (210-1740)	4.48 A	625	5.55
91 + 12	2.20	2.80	5.00 (1.50-5.30)	1490 (250-1540)	3.36 A	745	6.95	1.4 + 1.6	2.45	3.15	5.60 (1.10-7.20)	1230 (210-1720)	4.55 A	615	5.45
10 <sup>2</sup> + 10 <sup>2</sup>	2.40	2.40	4.80 (1.50-5.20)	1310 (250-1520)	3.66 A	655	6.10	1.5 + 1.5	2.80	2.80	5.60 (1.10-7.20)	1250 (210-1740)	4.48 A	625	5.55
10 <sup>2</sup> + 12	2.35	2.65	5.00 (1.50-5.30)	1490 (250-1540)	3.36 A	745	6.95	1.5 + 1.6	2.60	3.00	5.60 (1.10-7.20)	1230 (210-1720)	4.55 A	615	5.45
12 + 12	2.60	2.60	5.20 (1.50-5.40)	1520 (250-1580)	3.42 A	760	7.10	1.6 + 1.6	2.80	2.80	5.60 (1.10-7.20)	1210 (210-1700)	4.63 A	605	5.35

Indoor unit	Cooling C	apacity (k	W)		Input Power (W)	EER	A.C.E.	Current	Moisture Removal	Heating (	Capacity (k	W)		Input Power (W)	COP	A.C.E.	Current
capacity				Total (MinMax.)	Rating	W/W	kWh		Volume (l/h)				Total (MinMax.)	Rating	W/W	kWh	230 V (/
l Room	NUUIII A	KOUIII D	NOUIII C	TOTAL (MIIIMAX.)	nating	VV/ VV	KVVII	230 V (M)	votuine (t/ii)	KUUIII A	KOOIII D	NOUIII C	IUlal (Milli-Max.)	Ivacing	VV/ VV	KAAII	230 V (
,	2.00			2.00 (1.80-2.90)	500 (340-810)	4.00 A	250	2.5	1.3	3.20			3.20 (1.20-4.10)	740 (300-1230)	4.32 A	370	3.7
)1	2.50			2.50 (1.80-2.90)	630 (340-810)	4.00 A	315	3.0	1.5	3.60			3.60 (1.20-4.30)	940 (300-1230)	3.83 A	470	4.5
O <sup>2</sup>	2.80			2.80 (1.80-2.90)	700 (340-810)	4.00 A	350	3.3	1.6	4.00			4.00 (1.20-4.30)	1050 (300-1230)	3.81 A	525	5.0
2	3.20			3.20 (1.80-3.80)	800 (340-1360)	4.00 A	400	3.7	1.8	4.50			4.50 (1.20-5.80)	1230 (300-2100)	3.66 A	615	5.8
5	4.00			4.00 (1.80-4.30)	1240 (340-1990)	3.23 A	620	5.6	2.3	5.60			5.60 (1.20-6.80)	1720 (300-2100)	3.26 C	860	7.7
18	5.00			5.00 (1.90-5.70)	1550 (340-2130)	3.23 A	775	6.8	2.7	6.80			6.80 (1.20-6.90)	2100 (300-2520)	3.24 C	1050	9.2
2 Rooms	3.00			3.00 (1.70-3.70)	1330 (340-2130)	J.23 A	113	0.0	L.1	0.00			0.00 [1.20-0.70]	2100 (300-2320)	J.24 C	1030	1.2
7 + 7	2.00	2.00		4.00 (1.90-6.20)	1010 (350-2100)	3.96 A	505	4.5	1.3 + 1.3	2.90	2.90		5.80 (1.40-7.00)	1450 (310-2550)	4.00 A	725	6.4
1 + 91	2.00	2.50		4.50 (1.90-6.20)	1270 (350-2100)	3.55 A	635	5.6	1.3 + 1.5	2.84	3.56		6.40 (1.40-7.00)	1720 (310-2550)	3.72 A	860	7.6
7 + 102	2.00	2.80		4.80 (1.90-6.20)	1350 (350-2100)	3.55 A	675	6.0	1.3 + 1.6	2.67	3.73		6.40 (1.40-7.00)	1720 (310-2550)	3.72 A	860	7.6
' + 12	2.00	3.20		5.20 (1.90-6.30)	1490 (350-2110)	3.49 A	745	6.6	1.3 + 1.8	2.62	4.18		6.80 (1.40-7.30)	1840 (310-2520)	3.70 A	920	8.2
' + 15	1.73	3.47		5.20 (1.70-6.40)	1450 (350-2110)	3.59 A	725	6.4	1.1 + 2.0	2.27	4.53		6.80 (1.40-7.30)	1800 (310-2510)	3.78 A	900	7.9
7 + 18	1.49	3.71		5.20 (1.70-6.40)	1290 (360-2150)	4.03 A	645	5.7	0.9 + 2.2	1.94	4.86		6.80 (1.40-8.00)	1520 (310-2200)	4.47 A	760	6.7
91 + 91	2.50	2.50		5.00 (1.90-6.20)	1540 (350-2100)	3.25 A	770	6.8	1.5 + 1.5	3.40	3.40		6.80 (1.40-7.00)	1930 (310-2550)	3.52 B	965	8.5
91 + 10 <sup>2</sup>	2.45	2.75		5.20 (1.90-6.20)	1540 (350-2100)	3.38 A	770	6.8	1.5 + 1.6	3.21	3.59		6.80 (1.40-7.00)	1930 (310-2550)	3.52 B	965	8.5
91 + 102	2.43	2.73		5.20 (1.90-6.30)	1480 (350-2110)	3.51 A	740	6.5	1.5 + 1.7	2.98	3.82		6.80 (1.40-7.30)	1840 (310-2520)	3.70 A	920	8.1
7' + 12 7' + 15	2.20	3.20		5.20 (1.90-6.40)	1440 (350-2110)	3.61 A	720	6.4	1.3 + 1.8					1800 (310-2520)	3.78 A	900	8.0
7· + 13 7 <sup>1</sup> + 18	1.73									2.62	4.18		6.80 (1.40-7.30)	1520 (310-2200)		760	6.7
7' + 18 10 <sup>2</sup> + 10 <sup>2</sup>	2.60	3.47		5.20 (1.90-6.80)	1290 (360-2150)	4.03 A	645	5.7 6.8	1.1 + 2.0 1.6 + 1.6	3.40	4.53 3.40		6.80 (1.40-8.00)	1930 (310-2550)	4.47 A		8.5
102 + 102 102 + 12	2.43	2.60		5.20 (1.90-6.20)	1540 (350-2100)	3.38 A	770		1.5 + 1.6	3.17			6.80 (1.40-7.00)		3.52 B 3.70 A	965	8.1
		2.77		5.20 (1.90-6.30)	1480 (350-2110)	3.51 A	740 720	6.5			3.63		6.80 (1.40-7.30)	1840 (310-2520)		920	
02 + 15	2.14	3.06		5.20 (1.90-6.40)	1440 (350-2110)	3.61 A		6.4	1.4 + 1.7	2.80	4.00		6.80 (1.40-7.30)	1800 (310-2510)	3.78 A	900	8.0
02 + 18	1.87	3.33		5.20 (1.90-6.80)	1290 (360-2150)	4.03 A	645	5.7	1.2 + 1.9	2.44	4.36		6.80 (1.40-8.00)	1520 (310-2200)	4.47 A	760	6.7
12 + 12	2.60	2.60		5.20 (1.90-6.40)	1450 (350-2120)	3.59 A	725	6.4	1.6 + 1.6	3.40	3.40		6.80 (1.40-7.50)	1750 (310-2490)	3.89 A	875	7.7
12 + 15	2.31	2.89		5.20 (1.90-6.50)	1410 (350-2120)	3.69 A	705	6.3	1.5 + 1.7	3.02	3.78		6.80 (1.40-7.50)	1750 (310-2470)	3.89 A	875	7.8
12 + 18	2.03	3.17		5.20 (1.90-6.90)	1250 (360-2150)	4.16 A	625	5.5	1.3 + 1.8	2.65	4.15		6.80 (1.40-8.00)	1500 (310-2180)	4.53 A	750	6.6
15 + 15	2.60	2.60		5.20 (1.90-6.50)	1410 (350-2120)	3.69 A	705	6.2	1.6 + 1.6	3.40	3.40		6.80 (1.40-7.60)	1710 (310-2470)	3.98 A	855	7.5
15 + 18	2.31	2.89		5.20 (1.90-6.90)	1250 (360-2160)	4.16 A	625	5.5	1.5 + 1.7	3.02	3.78		6.80 (1.40-8.00)	1500 (310-2170)	4.53 A	750	6.6
3 Rooms								l								l	
7 + 7 + 7	1.73	1.73	1.73	5.19 (1.90-7.20)	1220 (360-2170)	4.25 A	610	5.3	1.1 + 1.1 + 1.1	2.26	2.26	2.26	6.78 (1.50-8.10)	1510 (320-2120)	4.49 A	755	6.7
7 + 7 + 91	1.60	1.60	2.00	5.20 (1.90-7.20)	1220 (360-2170)	4.26 A	610	5.3	1.0 + 1.0 + 1.3	2.09	2.09	2.62	6.80 (1.50-8.10)	1510 (320-2120)	4.50 A	755	6.7
7 + 7 + 102	1.53	1.53	2.14	5.20 (1.90-7.20)	1220 (360-2170)	4.26 A	610	5.3	1.0 + 1.0 + 1.4	2.00	2.00	2.80	6.80 (1.50-8.10)	1510 (320-2120)	4.50 A	755	6.7
7 + 7 + 12	1.44	1.44	2.32	5.20 (1.90-7.20)	1210 (360-2180)	4.30 A	605	5.3	0.9 + 0.9 + 1.5	1.89	1.89	3.02	6.80 (1.40-8.30)	1470 (320-2110)	4.63 A	735	6.5
7 + 7 + 15	1.30	1.30	2.60	5.20 (1.80-7.30)	1210 (360-2180)	4.30 A	605	5.3	0.8 + 0.8 + 1.6	1.70	1.70	3.40	6.80 (1.60-8.30)	1440 (320-2110)	4.72 A	720	6.4
7 + 7 + 18	1.16	1.16	2.88	5.20 (1.80-7.30)	1200 (360-2180)	4.33 A	600	5.3	0.7 + 0.7 + 1.7	1.51	1.51	3.78	6.80 (1.60-8.30)	1400 (320-2110)	4.86 A	700	6.5
7 + 91 + 91	1.48	1.86	1.86	5.20 (1.90-7.20)	1220 (360-2170)	4.26 A	610	5.3	0.9 + 1.2 + 1.2	1.94	2.43	2.43	6.80 (1.50-8.10)	1510 (320-2120)	4.50 A	755	6.7
7 + 91 + 102	1.42	1.78	2.00	5.20 (1.90-7.20)	1220 (360-2170)	4.26 A	610	5.3	0.9 + 1.1 + 1.3	1.86	2.33	2.61	6.80 (1.50-8.10)	1510 (320-2120)	4.50 A	755	6.7
7 + 91 + 12	1.35	1.69	2.16	5.20 (1.90-7.20)	1210 (360-2180)	4.30 A	605	5.3	0.9 + 1.1 + 1.4	1.76	2.21	2.83	6.80 (1.40-8.30)	1470 (320-2110)	4.63 A	735	6.5
' + 9 <sup>1</sup> + 15	1.22	1.53	2.45	5.20 (1.80-7.30)	1200 (360-2180)	4.33 A	600	5.3	0.8 + 1.0 + 1.5	1.60	2.00	3.20	6.80 (1.60-8.30)	1400 (320-2110)	4.86 A	700	6.5
7 + 10 <sup>2</sup> + 10 <sup>2</sup>	1.36	1.92	1.92	5.20 (1.90-7.20)	1220 (360-2170)	4.26 A	610	5.3	0.9 + 1.2 + 1.2	1.78	2.51	2.51	6.80 (1.50-8.10)	1510 (320-2120)	4.50 A	755	6.7
7 + 102 + 12	1.30	1.82	2.08	5.20 (1.90-7.20)	1210 (360-2180)	4.30 A	605	5.3	0.8 + 1.2 + 1.3	1.70	2.38	2.72	6.80 (1.40-8.30)	1470 (320-2110)	4.63 A	735	6.5
' + 10 <sup>2</sup> + 15	1.18	1.65	2.37	5.20 (1.80-7.30)	1200 (360-2180)	4.33 A	600	5.3	0.7 + 1.1 + 1.5	1.55	2.16	3.09	6.80 (1.60-8.30)	1400 (320-2110)	4.86 A	700	6.5
+ 12 + 12	1.24	1.98	1.98	5.20 (1.80-7.30)	1200 (360-2180)	4.33 A	600	5.3	0.8 + 1.3 + 1.3	1.62	2.59	2.59	6.80 (1.60-8.30)	1410 (320-2100)	4.82 A	705	6.3
1 + 91 + 91	1.73	1.73	1.73	5.19 (1.90-7.20)	1220 (360-2170)	4.25 A	610	5.3	1.1 + 1.1 + 1.1	2.26	2.26	2.26	6.78 (1.50-8.10)	1510 (320-2120)	4.49 A	755	6.7
1 + 91 + 10 <sup>2</sup>	1.67	1.67	1.86	5.20 (1.90-7.20)	1220 (360-2170)	4.26 A	610	5.3	1.1 + 1.1 + 1.2	2.18	2.18	2.44	6.80 (1.50-8.10)	1510 (320-2120)	4.50 A	755	6.7
11 + 91 + 12	1.59	1.59	2.02	5.20 (1.90-7.20)	1210 (360-2180)	4.30 A	605	5.3	1.0 + 1.0 + 1.3	2.07	2.07	2.66	6.80 (1.40-8.30)	1470 (320-2110)	4.63 A	735	6.5
1 + 91 + 15	1.44	1.44	2.32	5.20 (1.80-7.30)	1200 (360-2180)	4.33 A	600	5.3	0.9 + 0.9 + 1.5	1.89	1.89	3.02	6.80 (1.60-8.30)	1400 (320-2110)	4.86 A	700	6.5
$0^1 + 10^2 + 10^2$	1.60	1.80	1.80	5.20 (1.90-7.20)	1220 (360-2170)	4.26 A	610	5.3	1.0 + 1.2 + 1.2	2.10	2.35	2.35	6.80 (1.50-8.10)	1510 (320-2120)	4.50 A	755	6.7
1 + 10 <sup>2</sup> + 12	1.53	1.71	1.96	5.20 (1.90-7.20)	1210 (360-2170)	4.30 A	605	5.3	1.0 + 1.1 + 1.3	2.00	2.24	2.56	6.80 (1.40-8.30)	1470 (320-2110)	4.63 A	735	6.5
01 + 12 + 12	1.46	1.87	1.87	5.20 (1.80-7.30)	1200 (360-2180)	4.33 A	600	5.3	0.9 + 1.2 + 1.2	1.92	2.44	2.44	6.80 (1.60-8.30)	1410 (320-2110)	4.82 A	705	6.3
02 + 102 + 102		1.73	1.73	5.19 (1.90-7.20)	1220 (360-2170)	4.25 A	610	5.3	1.1 + 1.1 + 1.1	2.26	2.26	2.26	6.78 (1.50-8.10)	1510 (320-2120)	4.62 A	755	6.7
10 <sup>2</sup> + 10 <sup>2</sup> + 10 <sup>2</sup>	1.65	1.75	1.73	5.20 (1.90-7.2)	1210 (360-2170)	4.23 A 4.30 A	605	5.3	1.1 + 1.1 + 1.2	2.16	2.16	2.48	6.80 (1.40-8.30)	1470 (320-2110)	4.49 A	735	6.5

door unit		Capacity								Moisture Removal					Input Power (W)		
pacity Room				Room D	Total (MinMax.)					Volume (l/h)				Room D Total (MinMax.	Rating	W/W kWh	
Nooni	2.00 2.50				2.00 (1.80-2.90) 2.50 (1.80-2.90)	500 (340-810) 630 (340-810)	4.00 A 4.00 A	250 315	2.5 3.2	1.3 1.5	3.20 3.60			3.20 (1.20-4.10) 3.60 (1.20-4.30)	740 (300-1230) 940 (300-1230)	4.32 A 370 3.83 A 470	3.7
2	2.80				2.80 (1.80-2.90) 3.20 (1.80-3.80)	700 (340-810)	4.00 A 4.00 A	350	3.5 3.9	1.6 1.8	4.00			4 101 11 20-4 301	1050 (300-1730)	3 81 A 525	5.2
	3.20 4.00				4.00 (1.80-4.30)	1240 (340-1300) 1250 (340-1990) 1550 (340-2130)	3.23 A 3.23 A	620	5.8	2.3	4.50 5.60			5.60 (1.20-6.80)	1230 (300-2100) 1720 (300-2930) 2100 (300-2520)	3.26 C 860	8.0
	5.00 6.00				6.00 (1.90-5.70) 6.00 (1.90-6.20)	2030 (340-2130) 2030 (340-2330)	3.23 A 2.96 C	1015	7.2 9.2	2.7 3.3	6.80 8.50			6.80 (1.20-6.90) 8.50 (1.30-9.00)	2100 (300-2520) 2400 (620-2530)	3.24 C 1050 3.54 B 1200	11.1
Room + 7	2.00	2.00			4.00 (1.90-6.40)	1010 (340-2150)	3.96 A	505	4.5	1.3 + 1.3	2.90	2.90		5.80 (2.70-9.80)	1450 (610-2800)	4.00 A 725	6.7
+ 9 <sup>1</sup> + 10 <sup>2</sup>	2.00	2.50 2.80			4.50 (1.90-6.40) 4.80 (1.90-6.40)	1010 (340-2150) 1270 (340-2150) 1350 (340-2150)	3.55 A	635 675	5.7 6.1	1.3 + 1.5 1.3 + 1.6	2.71 2.67	3.39 3.73		6.10 (2.70-9.80)	1640 (610-2800)	3.72 A 820	7.6
+ 12 + 15	2.00	3.20 4.00			E 30 (1 00-Y 00)	1510 (3/0-2/10)	3 /./. 1	755	6.8	1.3 + 1.8 1.3 + 2.3	2.69	4.31 5.47		7.00 (2.70-9.90)	1840 (590-2800) 2210 (590-2800) 2140 (530-2760)	3.80 A 920	8.5
+ 18	1.94	4.86			6.80 (2.00-7.50)	1810 (340-2410) 1810 (330-2410) 1800 (320-2440) 1800 (320-2440) 1380 (340-2400)	3.78 A	900	8.1	1.3 + 2.6	2.46	6.14		8.60 (2.80-10.20)	2140 (530-2760)	4.02 A 1070	9.9
+ 21 + 9 <sup>1</sup>	1.70 2.50	5.10 2.50			5.00 (1.90-6.80)	1800 (320-2440)	3.78 A 3.61 A	900 690	8.1 6.2	1.1 + 2.8 1.5 + 1.5	2.15 3.20	6.45 3.20		0.00 (2.00-10.20) 4 (0 (2.70_0 gn)	1700 (410-2800)	3.70 A 1143	7 0
+ 10 <sup>2</sup> + 12	2.50 2.50	2.80 3.20			5.30 (1.90-6.80) 5.70 (1.90-6.90)	1470 (340-2400) 1660 (340-2410) 2070 (330-2410)	3.61 A 3.43 A	735 830	6.6 7.4	1.5 + 1.6 1.5 + 1.8	3.30 3.55	3.70 4.55		7.00 (2.70-9.80) 8.10 (2.70-9.90)	1860 (610-2800) 2170 (590-2800) 2320 (590-2800) 2140 (530-2760) 2140 (530-2760) 2140 (530-2760)	3.77 A 930 3.73 A 1085	8.6 10.0
+ 15 + 18	2.50 2.27	4.00 4.53			6.50 (1.90-6.90) 6.80 (1.90-7.50)	2070 (330-2410) 1970 (320-2440)	3.13 B	1035 985	9.2 8.8	1.5 + 2.3 1.5 + 2.5	3.31 2.87	5.29 5.73		8.60 (2.70-9.90) 8.60 (2.80-10.20)	2320 (590-2800) 2140 (530-2760)	3.71 A 1160	10.7
+ 21 ! + 10 <sup>2</sup>	2.00	4.80			/ 00 (1 00 7 50)	1070 (110 17/10)	9 /F A	OOF	8.8	1.3 + 2.6	2.53	6.07		8.60 (2.80-10.20)	2140 (530-2760)	4.02 A 1070	9.9
+ 12	2.80	2.80 3.20			6.00 (1.90-6.90)	1970 (320-2440) 1550 (340-2400) 1750 (340-2410) 2170 (330-2410) 1970 (320-2440)	3.43 A	875	6.9 7.8	1.6 + 1.6 1.6 + 1.8	4.00 3.97	4.00 4.53		8.50 (2.70-9.90)	2120 (610-2800) 2280 (590-2800)	3.73 A 1140	10.5
+ 15 + 18	2.80	4.00 4.36			6.80 (1.90-6.90) 6.80 (1.90-7.50)	2170 (330-2410) 1970 (320-2440)	3.13 B 3.45 A	1085 985	9.7 8.8	1.6 + 2.3 1.5 + 2.4	3.54 3.09	5.06 5.51		0 40 (2 00 10 20)	2320 (590-2800) 2140 (530-2760)	/ N2 A 1070	0.0
+ 21 + 12	2.16 3.20	4.64 3.20			6.80 (1.90-7.50) 6.40 (1.90-7.00)	1970 (320-2440) 1960 (330-2420)	3.45 A 3.27 A	985 980	8.8 8.8	1.4 + 2.5 1.8 + 1.8	2.74 4.30	5.86 4.30		8.60 (2.80-10.20) 8.60 (2.80-10.00)	2140 (530-2760) 2270 (580-2800)	4.02 A 1070 3.79 A 1135	9.9
+ 15 + 18	1 3 02	3.78 4.15			6.80 (1.90-7.10) 6.80 (2.00-7.40)	1970   320-2440   1970   320-2440   1960   330-2420   2070   330-2420   1890   320-2450   1890   320-2450   2270   330-2420   1990   230-2450   1990   1	3.29 A 3 An A	1035	9.3 8.5	1.7 + 2.2 1.6 + 2.4	3.82	4.78 5.24		8.60 (2.80-10.00) 8 60 (2.80-10.00)	2140 (530-2760) 2140 (530-2760) 2270 (580-2800) 2270 (570-2800) 2090 (520-2740) 2090 (520-2740)	3.79 A 1135	10.5
+ 21	2.65 2.37 3.40	4.43			6.80 (2.00-7.60)	1890 (320-2450)	3.60 A	945	8.5	1.5 + 2.5	2.99	5.61		8.60 (2.80-10.30)	2090 (520-2740)	4.11 A 1045	9.7
+ 15 + 18	3.02	3.40			0.00 (2.00-7.00)	1070 [320-2430]	J.00 A	740	10.2 8.5	1.9 + 1.9 1.7 + 2.2	4.30 3.82	4.78		8.60 (2.80-10.30)	2080 (510-2740)	4.13 A 1040	9.6
+ 21 + 18	2.72 3.40 3.09	4.08 3.40			6.80 (2.10-7.60) 6.80 (2.10-8.10)	1890 (320-2450) 1780 (310-2460) 1780 (310-2460)	3.60 A 3.82 A	945 890	8.5 8.0	1.6 + 2.3 1.9 + 1.9	3.44 4.30	5.16 4.30		8.60 (2.80-10.30) 8.60 (2.80-10.50)	2080 (510-2740) 1960 (480-2650) 1960 (480-2650)	4.13 A 1040 4.39 A 980	9.6 9.1
+ 21 com	3.09	3.71							8.0	1.7 + 2.2	3.91	4.69					9.1
7 + 7 7 + 9 <sup>1</sup>	2.00	2.00 2.00	2.00 2.50		6.00 (1.90-8.00) 6.50 (1.90-8.00)	1650 (340-2460) 1830 (340-2460) 1910 (340-2460)	3.63 A 3.56 A	825 915	7.4 8.2	1.3 + 1.3 + 1.3 1.3 + 1.3 + 1.5	2.86 2.65	2.86 2.65	2.86 3.30	8.58 (3.30-10.40) 8 60 (3.30-10.40)	2090 (600-2840) 2090 (600-2840)	4.11 A 1045 4.11 A 1045	9.7
7 + 10 <sup>2</sup> 7 + 12	2.00	2.00 2.00 1.89	2.80		6.80 (1.90-8.00)	1910 (340-2460)	3.56 A	955	8.6 8.6	1.3 + 1.3 + 1.6 1.2 + 1.2 + 1.7	2.53	2.53	3.54 3.82	8.60 (3.30-10.40)	2070 (600-2840) 2070 (590-2820)	4.11 A 1045	9.7
7 + 15	1.70	1.70	3.40		6.80 (1.90-8.10)	970 340-2460 1860 340-2460 1730 340-2460 1730 340-2460 1730 340-2460 1910 340-2460 1910 340-2460 1910 340-2460 1730 340-2460 1730 340-2460 1730 340-2460 1730 340-2460	3.66 A	930	8.3	11+11+19	2.15	2.15	4.30	0 /0 (0 00 10 00)	20/0 (FOO 2010)	/ 17 A 1000	0.5
7 + 18 7 + 21	1.51	1.51 1.36 2.43 2.33 2.21 2.00	3.78 4.08		6.80 (2.00-8.50) 6.80 (2.00-8.50)	1730 (340-2460) 1730 (340-2460)	3.93 A 3.93 A	865 865	7.8 7.8	1.0 + 1.0 + 2.2 0.9 + 0.9 + 2.3 1.3 + 1.5 + 1.5 1.2 + 1.5 + 1.6	1.91 1.72	1.91 1.72	4.78 5.16 3.07 3.30 3.58 4.05	8.60 (3.20-10.60) 8.60 (3.20-10.60)	2000 1570-2810 1930 1570-2710 1930 1570-2710 2090 (600-2840) 2070 1590-2820 2060 1590-2810 1930 1570-2710 1930 1570-2710	4.46 A 965 4.46 A 965	8.9
91 + 91 91 + 102	1.94	2.43	2.43		6.80 (1.90-8.00) 6.80 (1.90-8.00)	1910 (340-2460) 1910 (340-2460)	3.56 A 3.56 A	955 955	8.6	1.3 + 1.5 + 1.5 1.2 + 1.5 + 1.6	2.46 2.35 2.23 2.02	3.07	3.07	8.60 (3.30-10.40) 8.60 (3.30-10.40)	2090 (600-2840) 2090 (600-2840)	4.11 A 1045 4.11 A 1045	9.7
9 <sup>1</sup> + 12 9 <sup>1</sup> + 15	1.76 1.60	2.21	2.61 2.83 3.20		6.80 (1.90-8.00) 6.80 (1.90-8.10)	1910 (340-2460) 1860 (340-2460)	3.56 A	955 930	8.6 8.3	1.1 + 1.4 + 1.7 1.0 + 1.3 + 1.8	2.23	2.95 2.79 2.53 2.26	3.58	8.60 (3.30-10.40) 8 60 (3.30-10.50)	2070 (590-2820) 2060 (590-2810)	4.15 A 1035 4.17 Δ 1030	9.6
9 <sup>1</sup> + 18 9 <sup>1</sup> + 21	1.43	1.79	3.58		6.80 (2.00-8.50)	1730 (340-2460)	3.93 A	865	7.8 7.8	0.9 + 1.2 + 2.1	1.81	2.26	4.53 4.91	8.60 (3.20-10.60)	1930 (570-2710)	4.46 A 965	8.9
10 <sup>2</sup> + 10 <sup>2</sup>	1.29	2.51	3.89 2.51		6.80 (1.90-8.00)	1910 (340-2460)	3.56 A	955	8.6	0.8 + 1.0 + 2.3 1.1 + 1.5 + 1.5	1.64 2.26	3.17	3.17	8.60 (3.30-10.40)	2090 600-2840 2070 650-2820 2060 590-2820 2060 590-2810 1930 570-2710 1930 570-2710 2050 590-2800 2040 580-2790	4.40 A 703 4.11 A 1045	9.7
10 <sup>2</sup> + 12 10 <sup>2</sup> + 15	1.70	2.38 2.16	2.72 3.09		6.80 (1.90-8.00) 6.80 (1.90-8.10)	1910 (340-2460) 1860 (340-2460)	3.56 A 3.66 A	955 930	8.6 8.3	1.1 + 1.5 + 1.5 1.1 + 1.5 + 1.6 1.0 + 1.4 + 1.7	1.95	3.01 2.74	3.44	8.60 (3.30-10.40) 8.60 (3.30-10.50)	2070 [590-2820] 2060 (590-2810)	4.15 A 1035 4.17 A 1030	9.6
10 <sup>2</sup> + 18 10 <sup>2</sup> + 21	1.39	1.76	3.47 3.78		6.80 (1.90-8.00) 6.80 (1.90-8.10) 6.80 (2.00-8.50) 6.80 (2.00-8.50) 6.80 (1.90-8.10)	1730 (340-2460) 1730 (340-2460)	3.93 A 3.93 A	865 865	78	119 + 13 + 711	2.15 1.95 1.75 1.59	2.46 2.23 3.28	4.39	8.60 (3.20-10.60) 8.60 (3.20-10.60)	1930 (570-2710) 1930 (570-2710)	4.46 A 965 4.46 A 965	8.9
12 + 12 12 + 15	1.62	2.16 1.94 1.76 2.59 2.37	3.78 2.59 2.96		6.80 (1.90-8.10) 6.80 (1.90-8.20)	1910 [340-2460] 1910 [340-2460] 1860 [340-2460] 1730 [340-2460] 1730 [340-2460] 1860 [340-2460] 1860 [340-2460]	3.66 A	930	8.3	0.8 + 1.1 + 2.2 1.0 + 1.6 + 1.6 0.9 + 1.5 + 1.7	2.04	3.28	3.44 3.91 4.39 4.78 3.28 3.74	8.60 (3.30-10.50) 8.60 (3.30-10.50)	2050 (590-2800)	4.20 A 1025	9.5
12 + 18	1.33	2.13 2.72	3.34						7.8 8.2	0.8 + 1.4 + 1.9	1.68	2.70	4.22	0.00 (3.20-10.00)	1910 (570-2680) 2030 (580-2780)	4.50 A 955 4.24 A 1015	
15 + 15 15 + 18	1.36 1.24 2.26	2.47	3.09		6.80 (2.00-8.50)	1820 (340-2460) 1730 (340-2460) 1910 (340-2460) 1910 (340-2460)	3.74 A 3.93 A	865	7.8	0.9 + 1.6 + 1.6 0.8 + 1.5 + 1.7 1.5 + 1.5 + 1.5	1.72 1.56 2.86	3.44	3.44 3.91 2.86	8.60 (3.20-10.60)	1910 (570-2680)	/, h     A     Yhh	I X X
+ 9 <sup>1</sup> + 9 <sup>1</sup> + 9 <sup>1</sup> + 10 <sup>2</sup>	2.18	2.26 2.18	2.26		6.78 (1.90-8.00) 6.80 (1.90-8.00)	1910 (340-2460) 1910 (340-2460)	3.55 A 3.56 A	955 955	8.6	1.4 + 1.4 + 1.5	2.76	2.86	3.08	8.60 (3.30-10.40)	2090 (600-2840)	4.11 A 1045 4.11 A 1045 4.15 A 1035	9.7
+ 9¹ + 12 + 9¹ + 15	2.07 1.89	2.07 1.89	2.66 3.02		6.80 (1.90-8.00) 6.80 (1.90-8.10)	1910 (340-2460) 1860 (340-2460)	3.56 A	955	8.6 8.3	1.3 + 1.3 + 1.6 1.2 + 1.2 + 1.7	2.62	2.62	3.36 3.82	8.60 (3.30-10.40)	2070 (590-2820) 2060 (590-2810)	4.15 A 1035 4.17 A 1030	9.6
+ 9 <sup>1</sup> + 18 + 9 <sup>1</sup> + 21	1.70	1.70 1.55	3.40 3.70		6.80 (2.00-8.50) 6.80 (2.00-8.50)	1730 (340-2460) 1730 (340-2460)	3.93 A	865	7.8 7.8	1.1 + 1.1 + 1.9 1.0 + 1.0 + 2.2	2.15 1.95	2.15 1.95	4.30 4.70	8.60 (3.20-10.60)	1930 (570-2710) 1930 (570-2710)	4.46 A 965 4.46 A 965	8.9
+ 10 <sup>2</sup> + 10 <sup>2</sup>	2.10	2.35	2.35		6.80 (1.90-8.00)	1910 (340-2460)	3.56 A	955	8.6	1.4 + 1.5 + 1.5	2.66	2.97	2.97	8.60 (3.30-10.40)	2090 (600-2840)	4.11 A 1045	9.7
+ 10 <sup>2</sup> + 12 + 10 <sup>2</sup> + 15	2.00 1.83	2.24 2.05	2.56 2.92		6.80 (1.90-8.00) 6.80 (1.90-8.10)	1910 (340-2460) 1860 (340-2460) 1730 (340-2460)	3.56 A 3.66 A	955 930	8.6 8.3	1.3 + 1.5 + 1.6 1.2 + 1.3 + 1.7	2.53 2.31	2.83 2.59	3.24 3.70	8.60 (3.30-10.40) 8.60 (3.30-10.50)	2070 (590-2820) 2060 (590-2810) 1930 (570-2710)	4.15 A 1035 4.17 A 1030	9.5
+ 10 <sup>2</sup> + 18 + 12 + 12	1.65 1.92	1.85 2.44	3.30 2.44		6.80 (1.90-8.10)	1730 (340-2460) 1860 (340-2460)	3.93 A 3.66 A	865 930	7.8 8.3	1.1 + 1.2 + 1.9	2.09	3.09	4.17 3.09			4.20 A 1025	9.5
· 12 + 15 · 12 + 18	1.75	2.24	2.81 3.18		6.80 (1.90-8.20) 6.80 (2.00-8.50)	1860 (340-2460) 1730 (340-2460)	3.66 A 3.66 A 3.93 A	930 865	8.3 7.8	1.2 + 1.5 + 1.5 1.1 + 1.5 + 1.6 1.0 + 1.3 + 1.8	2.21	2.84	3.55 4.02	8.60 (3.30-10.50) 8.60 (3.30-10.50)	2050 (590-2800) 2040 (580-2790) 1910 (570-2680)	4.22 A 1020 4.50 A 955	9.4
+ 15 + 15 + 10 <sup>2</sup> + 10 <sup>2</sup>	1.62	2.59	2.59		6.80 (1.90-8.20) 6.78 (1.90-8.00)	1820 (340-2460)	3.74 A 3.55 A	910	8.2 8.6	1.0 + 1.6 + 1.6 1.5 + 1.5 + 1.5	2.04	3.28	3.28	8.60 (3.30-10.50)	2030 (580-2780) 2090 (600-2840)	4.24 A 1015 4.11 A 1045	9.4
+ 10 <sup>2</sup> + 12	2.16	2.16	2.48		6.80 (1.90-8.00)	1910 (340-2460)	3.56 A	955	8.6	1.4 + 1.4 + 1.5	2.74	2.74	3.12	8.60 (3.30-10.40)	2070 (590-2820)	4.15 A 1035	9.6
+ 10 <sup>2</sup> + 15 + 10 <sup>2</sup> + 18	1.98 1.80	1.98 1.80	2.84 3.20		6.80 (1.90-8.10) 6.80 (2.00-8.50)	1860 (340-2460) 1730 (340-2460) 1860 (340-2460)	3.66 A 3.93 A	93U 865	8.3 7.8	1.3 + 1.3 + 1.7 1.2 + 1.2 + 1.8	2.51	2.51	3.58 4.06 2.99	8.60 (3.20-10.60)	2060 (590-2810) 1930 (570-2710)	4.17 A 1030 4.46 A 965	8.9
+ 12 + 12 + 12 + 15	2.06 1.90	2.37 2.18	2.37		6.80 (1.90-8.10) 6.80 (1.90-8.20)	1860 [340-2460]	3.66 A 3.66 A	930 930	8.3 8.3	1.3 + 1.5 + 1.5 1.2 + 1.4 + 1.6	2.62 2.41	2.99	3.44	8.60 (3.30-10.50)	2050 (590-2800) 2040 (580-2790)	4.20 A 1025 4.22 A 1020	9.5 9.4
+ 12 + 18 + 15 + 15	1.73	1.98	3.09 2.52		6.80 (2.00-8.50) 6.80 (1.90-8.20)	1730 (340-2460) 1820 (340-2460)	3.93 A	865	7.8 8.2	1.1 + 1.3 + 1.7 1.1 + 1.5 + 1.5	2.19	2.50 3.19	3.91 3.19	8.60 (3.20-10.60) 8.60 (3.30-10.50)	1910 (570-2680) 2030 (580-2780)	4.50 A 955 4.24 A 1015	8.8
+ 12 + 12 + 12 + 15	2.26	2.26	2.26		6.78 (1.90-8.20) 6.80 (1.90-8.20)	1820 (340-2460) 1820 (340-2460)	3.73 A	910	8.2 8.2	1.5 + 1.5 + 1.5 1.4 + 1.4 + 1.6	2.86	2.86 2.65	2.86	8.58 (3.30-10.50)	1990 (580-2770) 1980 (580-2760)	4.31 A 995 4.34 A 990	9.2
oom			2.62										3.30				0,4
7 + 7 + 7 7 + 7 + 9 <sup>1</sup>	1.70	1.70 1.60	1.70 1.60		6.80 (1.90-8.70) 6.80 (1.90-8.70)	1690 (340-2460) 1690 (340-2460)		845	7.6 7.6	1.1 + 1.1 + 1.1 + 1.1 1.0 + 1.0 + 1.0 + 1.3	2.02	2.15	2.15	2.54 8.60 (3.10-10.60)	1870 (580-2620) 1870 (580-2620)	4.60 A 935 4.60 A 935	8.6
7 + 7 + 10 <sup>2</sup> 7 + 7 + 12	1.55 1.48	1.55 1.48	1.55 1.48	2.36	6.80 (1.90-8.70) 6.80 (1.90-8.80)	1690 (340-2460) 1650 (340-2470)	4.12 A	825	7.6 7.4	1.0 + 1.0 + 1.0 + 1.4 0.9 + 0.9 + 0.9 + 1.5	1.87	1.95 1.87	1.95 1.87	2.99 8.60 (3.00-10.60)	1870 (580-2620) 1850 (580-2600)	4.60 A 935 4.65 A 925	8.6
7 + 7 + 15 7 + 7 + 18	1.36 1.24	1.36 1.24	1.36 1.24	2.72 3.08	6.80 (1.90-8.80) 6.80 (1.90-8.80)	1650 (340-2470) 1680 (340-2470)	4.12 A 4.05 A	825 840	7.4 7.5	0.9 + 0.9 + 0.9 + 1.6 0.8 + 0.8 + 0.8 + 1.7	1.72	1.72 1.56	1.72 1.56	3.44 8.60 (3.00-10.60)	1840 (590-2590) 1850 (580-2600)	4.67 A 920 4.65 A 925	8.5 8.6
7 + 9 <sup>1</sup> + 9 <sup>1</sup> 7 + 9 <sup>1</sup> + 10 <sup>2</sup>	1.51	1.51	1.89	1.89	6.80 (1.90-8.70) 6.80 (1.90-8.70)	1690 (340-2460) 1690 (340-2460)	4.02 A	845	7.6 7.6	1.0 + 1.0 + 1.2 + 1.2 0.9 + 0.9 + 1.2 + 1.3	1.91	1.91	2.39	2.39 8.60 (3.10-10.60)	1870 (580-2620) 1870 (580-2620)	4.60 A 935 4.60 A 935	8.6 8.6
7 + 9 <sup>1</sup> + 10 <sup>2</sup> 7 + 9 <sup>1</sup> + 12 7 + 9 <sup>1</sup> + 15	1.40	1.40	1.75	2.25	6.80 (1.90-8.80)	1650 [340-2470] 1650 [340-2470]	4.12 A 4.12 A	825	7.4	0.9 + 0.9 + 1.1 + 1.5 0.8 + 0.8 + 1.0 + 1.6	1.77	1.77	2.22	2.84 8.60 (3.00-10.60)	1850 (580-2600)	4.65 A 925	8.6
7 + 10 <sup>2</sup> + 10 <sup>2</sup>	1.30	1.30	1.61	1.98	6.80 (1.90-8.80) 6.80 (1.90-8.70)	1690 (340-2460)	4.02 A	845	7.6	0.9 + 0.9 + 1.3 + 1.3 0.9 + 0.9 + 1.2 + 1.4	1.79	1.64	2.04	2.51 8.60 (3.10-10.60)	1840 (590-2590) 1870 (580-2620)	4.67 A 920 4.60 A 935	8.5
7 + 10 <sup>2</sup> + 12 7 + 10 <sup>2</sup> + 15	1.36	1.36 1.26	1.90 1.76	2.52	6.80 (1.90-8.80) 6.80 (1.90-8.80)	1650 (340-2470)	4.12 A 4.12 A	825	7.4 7.4	0.8 + 0.8 + 1.1 + 1.5	1.59	1.72 1.59	2.41 2.23	3.19 8.60 (3.00-10.60)	1850 (580-2600) 1840 (590-2590)	4.65 A 925 4.67 A 920	8.6 8.5
7 + 12 + 12 91 + 91 + 91	1.31 1.43	1.31 1.79	2.09 1.79	2.09 1.79	6.80 (1.90-8.80) 6.80 (1.90-8.70)	1650 (340-2430) 1690 (340-2460)	4.12 A	825	7.4 7.6	0.8 + 0.8 + 1.4 + 1.4 0.9 + 1.2 + 1.2 + 1.2	1.65	1.65 2.26	2.65 2.26	2.65 8.60 (3.00-10.60)	1830 (590-2570) 1870 (580-2620)	4.70 A 915 4.60 A 935	8.5 8.6
91 + 91 + 102	1.39	1.73	1.73	1.95	6.80 (1.90-8.70)	1690 (340-2460)	4.02 A 4.12 A	845	7 4	00.11.11.12	1 74	2.19	2.19	2.46 8.60 (3.10-10.60)	1870 (580-2620) 1850 (580-2600)	4.60 A 935 4.65 A 925	8.6 8.6
91 + 91 + 12 91 + 91 + 15	1.33	1.67	1.67	2.13 2.47 1.89	6.80 (1.90-8.80) 6.80 (1.90-8.80)	1680 (340-2470)	4.05 A	840	7.4 7.5	0.8 + 1.0 + 1.0 + 1.5	1.56	2.11 1.95	1.95	3.14   8.60 (3.00-10.60)	1850 (590-2600)	4.65 A 925 4.60 A 935	8.6
$\frac{9^1 + 10^2 + 10^2}{9^1 + 10^2 + 12}$	1.34 1.30	1.68	1.89 1.81	2.07	6.80 (1.90-8.70) 6.80 (1.90-8.80)	1650 (340-2470)	4.02 A 4.12 A	825	7.6 7.4	0.8 + 1.0 + 1.2 + 1.3 0.8 + 1.0 + 1.2 + 1.3	1.64	2.14	2.38	2.62 8.60 (3.00-10.60)	1870 (580-2620) 1850 (580-2600)	4.65 <b>A</b> 925	8.6
9 <sup>1</sup> + 12 + 12 10 <sup>2</sup> + 10 <sup>2</sup> + 10 <sup>2</sup>	1.24 1.31	1.56 1.83	2.00 1.83	2.00 1.83	6.80 (1.90-8.80) 6.80 (1.90-8.70)	1650 (340-2430)	4.12 A 4.02 A	825	7.4 7.6	0.8 + 1.1 + 1.1 + 1.4 0.8 + 1.0 + 1.0 + 1.0 + 1.5 0.8 + 1.1 + 1.2 + 1.2 0.8 + 1.1 + 1.2 + 1.2 0.8 + 1.0 + 1.3 + 1.3 0.8 + 1.2 + 1.2 + 1.2 0.8 + 1.2 + 1.2 + 1.2	1.58	1.98 2.32	2.52	2.52   8.60 (3.00-10.60)	1830 (590-2570) 1870 (580-2620)	4.70 A 915 4.60 A 935	8.5 8.6
10 <sup>2</sup> + 10 <sup>2</sup> + 12 + 9 <sup>1</sup> + 9 <sup>1</sup> + 9 <sup>1</sup>	1.26	1.76	1.76	2.02	6.80 (1.90-8.80) 6.80 (1.90-8.70)	1680 (340-2470)	4.05 A 4.02 A	840	7.5 7.6	0.8 + 1.1 + 1.1 + 1.3 1.1 + 1.1 + 1.1 + 1.1	1.0/	2.23	2.11 1.95 2.38 2.29 2.52 2.32 2.23 2.15 2.09 2.01 2.27 2.19 2.21	2.55 8.60 (3.00-10.60) 2.15 8.60 (3.10-10.60)	1850 (580-2600) 1870 (580-2620)	4.65 A 925 4.60 A 935	8.6 8.6
+ 91 + 91 + 102	1.65	1.65	1.65	1 85	4 8N (1 9N-8 7N)	1690 (360-2660)	4 N2 A	845	7.6	11+11+11+12	2 09	2.09	2.09	2 33   8 60 [3 10-10 60]	1870 [580-2620]	4 60 A 935	8.6
+ 9 <sup>1</sup> + 9 <sup>1</sup> + 12 + 9 <sup>1</sup> + 10 <sup>2</sup> + 10 <sup>2</sup> + 9 <sup>1</sup> + 10 <sup>2</sup> + 12	1.59 1.60	1.59 1.60	1.59 1.80 1.72	2.03 1.80 1.98	6.80 (1.90-8.80)	1650 (340-2470) 1690 (340-2460) 1680 (340-2470) 1690 (340-2160)	4.12 A 4.02 A	845	7.4 7.6 7.5 7.6	1.0 + 1.0 + 1.0 + 1.3 1.0 + 1.0 + 1.2 + 1.2 1.0 + 1.0 + 1.1 + 1.3	2.03	2.01 2.03	2.27	2.57         8.60 [3.00-10.60]           2.27         8.60 [3.10-10.60]           2.51         8.60 [3.00-10.60]           2.21         8.60 [3.10-10.60]	1850 (580-2600) 1870 (580-2620) 1850 (580-2600) 1870 (580-2620	4.60 A 935	8.6 8.6
$9^{1} + 10^{2} + 12$	1.55 1.55	1.55 1.75	1.72 1.75	1.98 1.75	6.80 (1.90-8.80)	1680 (340-2470)	4.U5 A	840	7.5	1.0 + 1.0 + 1.1 + 1.3 1.0 + 1.1 + 1.1 + 1.1	1.95	1.95 2.21	2.19	Z.51   8.6U (3.00-10.60)	1850 (580-2600)	4.65 A 925	8.6

				4E27CE	PU	Innut Daws - (140)	EED	ACE	Curront	Majotura Dament	Uest'	Corosit-	(14741)		Innut Dourse (144)	COD	ACE	Current
ndoor unit capacity		Capacity Room B		Room D	Total (MinMax.)	Input Power (W) Rating				Moisture Removal Volume (l/h)				Room D Total (MinMax.)	Input Power (W) Rating	W/W		230 V (A)
Room	1.0071			NOOM D	Total (Time Tiaxi)	riu.i.g	,		200 1 (1.)	10141110 (411)				Total (Time Time	- Industry	,		200 1 (1.1)
	2.00					440 (380-620)	4.52 A		2.10	1.3	3.20			3.20 (1.70-4.70)	840 (370-1830)	3.81 A		3.85
02	2.50					550 (380-900)	4.52 A		2.60	1.6	3.60			3.60 (1.70-4.80)	1090 (370-1900) 1210 (370-1900)	3.31 C		4.85
0 <sup>2</sup> 2	2.80 3.20				2.80 (2.00-3.40) 3.20 (2.00-3.90)	620 (380-900) 720 (380-1090)	4.52 A 4.44 A		2.95 3.40	1.8	4.00			4.00 (1.70-4.80) 4.50 (1.70-5.80)	1310 (370-1900)			5.40 5.85
<u>z</u> 5	4.00				4.00 (2.00-4.40)	1030 (380-1390)	3.88 A			2.3	5.60			5.60 (1.80-7.20)		2.95 D		8.35
8	5.00						3.11 B			2.7	7.10			7.10 (2.10-7.30)	2840 (430-3560)			12.40
Room																		
+ 7	2.00	2.00				890 (400-1260)	4.49 A		3.95	1.3 + 1.3	3.20	3.20		6.40 (1.80-9.40)	1480 (400-3550)			6.50
+ 91	2.00	2.50					4.07 A		4.90	1.3 + 1.5	3.15	3.95		7.10 (2.10-9.40)	1700 (420-3510)			7.55
' + 10 <sup>2</sup>	2.00	2.80				1180 (400-1880) 1320 (400-2790)	4.07 A		5.20	1.3 + 1.6		4.15		7.10 (2.10-9.40)	1700 (420-3510)			7.55
+ 12 + 15	2.00	3.20 4.00			5.20 (2.20-7.00) 6.00 (2.20-7.10)		3.94 A 3.41 A		5.80 7.75	1.3 + 1.8 1.3 + 2.3	2.90	4.60 5.55		7.50 (2.20-9.80) 8.30 (2.40-9.80)	1740 (420-3490) 2060 (440-3440)			7.65 9.05
+ 18	2.00	5.00			7.00 (2.50-7.20)		2.80 D			1.3 + 2.7		6.30		8.80 (3.20-9.90)	2260 (530-3400)			9.90
1 + 91	2.50	2.50			5.00 (2.20-6.90)		3.61 A			1.5 + 1.5	3.55	3.55		7.10 (2.30-9.40)	1860 (440-3480)			8.15
1 + 10 <sup>2</sup>	2.50	2.80			5.30 (2.20-6.90)		3.61 A		6.50	1.5 + 1.6	3.55	3.95		7.50 (2.30-9.40)	1970 (440-3480)			8.65
1 + 12	2.50	3.20			5.70 (2.20-7.00)	1620 (400-2790)	3.53 A			1.5 + 1.8	3.55	4.55		8.10 (2.40-9.80)		4.09 A		8.70
1 + 15 1 + 18	2.50	4.00					2.98 C			1.5 + 2.3	3.30	5.30		8.60 (2.10-9.80)	2175 (530-3390)			9.65 10.50
0 <sup>2</sup> + 10 <sup>2</sup>	2.35	4.75 2.80			7.10 (2.50-7.20) 5.60 (2.20-6.90)		2.72 D 3.61 A		6.85	1.5 + 2.6 1.6 + 1.6	3.85	6.00 3.85		9.00 (3.20-9.90) 7.70 (2.30-9.40)	2390 (530-3370) 2020 (440-3480)			8.85
D <sup>2</sup> + 12	2.80	3.20			6.00 (2.20-7.00)		3.53 A		7.55	1.6 + 1.8	3.80	4.30		8.10 (2.40-9.80)	1980 (440-3460)			8.70
) <sup>2</sup> + 15	2.80	4.00			6.80 (2.20-7.10)		2.98 C		10.00	1.6 + 2.3	3.55	5.05		8.60 (2.10-9.80)	2175 (530-3390)			9.65
D <sup>2</sup> + 18	2.55	4.55			7.10 (2.50-7.20)	2610 (460-2800)	2.72 D	1305	11.50	1.6 + 2.5	3.25	5.75		9.00 (3.20-9.90)	2390 (530-3370)	3.77 A	1195	10.50
2 + 12	3.20	3.20					3.44 A		8.15	1.8 + 1.8	4.25	4.25			2110 (470-3390)			9.30
2 + 15	3.10	3.90			7.00 (2.50-7.30)		2.90 C 2.62 D		10.60	1.7 + 2.3	3.90	4.90			2230 (530-3340)			9.85
2 + 18 5 + 15	2.90 3.60	4.50 3.60			7.40 (2.60-7.40) 7.20 (2.50-7.30)		2.62 D		12.30	1.7 + 2.5 2.1 + 2.1	3.60 4.55	5.60 4.55			2390 (530-3300) 2360 (530-3320)			10.50
5 + 18	3.25	4.05			7.30 (2.70-7.40)		2.73 D			1.8 + 2.3		5.20				3.79 A		10.30
8 + 18	3.75	3.75				2860 (480-2870)				2.2 + 2.2		4.70			2470 (590-3290)			10.90
Room																		
+7+7	2.00	2.00	2.00		6.00 (2.20-7.80)		3.98 A		6.65	1.3 + 1.3 + 1.3	2.87		2.87		1990 (500-3250)			8.80
7 + 7 + 91	2.00	2.00	2.50				3.70 A		7.75	1.3 + 1.3 + 1.5			3.40		2010 (510-3220)			8.85
+ 7 + 10 <sup>2</sup> + 7 + 12	2.00	2.00	3.20		6.80 (2.50-8.10) 7.30 (2.50-8.20)		3.70 A 3.69 A		8.10 8.70	1.3 + 1.3 + 1.6 1.3 + 1.3 + 1.8			3.60 4.00		2010 (510-3220) 2030 (510-3220)			8.85 8.95
+7+12	1.95	1.95	3.90				3.35 A			1.3 + 1.3 + 2.3			4.60		2150 (510-3180)			9.50
+7+18	1.80	1.80	4.40				3.25 A		10.80	1.2 + 1.2 + 2.4	2.10		5.20		2120 (510-3180)			9.30
+ 91 + 91	2.10	2.65	2.65				3.46 A		9.40	1.4 + 1.6 + 1.6			3.20		2090 (510-3190)			9.20
+ 91 + 102	2.00	2.55	2.85				3.46 A		9.40	1.3 + 1.6 + 1.7	2.45		3.45		2090 (510-3190)			9.20
+ 91 + 12	1.95	2.45	3.20		7.60 (2.60-8.20)	2240 (460-2840)	3.39 A		9.85	1.3 + 1.5 + 1.8	2.40		3.80			4.36 A		9.30
+ 9 <sup>1</sup> + 15 + 9 <sup>1</sup> + 18	1.90	2.35	3.75 4.20				3.19 B 3.25 A		11.00	1.2 + 1.5 + 2.2 1.1 + 1.4 + 2.4			4.45 4.95		2160 (510-3140) 2080 (560-3150)	4.52 A		9.50 9.15
+ 10 <sup>2</sup> + 10 <sup>2</sup>	1.70	2.75	2.75		7.40 (2.50-8.10)		3.46 A		9.40	1.2 + 1.6 + 1.6	2.40		3.30		2090 (510-3190)			9.10
' + 10 <sup>2</sup> + 12	1.90	2.65	3.05				3.39 A		9.85	1.2 + 1.6 + 1.7	2.30		3.70		2110 (510-3180)			9.30
' + 10 <sup>2</sup> + 15	1.80	2.55	3.65		8.00 (2.70-8.20)		3.19 B		11.00	1.2 + 1.6 + 2.1	2.15		4.25	9.40 (3.20-10.40)	2160 (510-3140)	4.35 A	1080	9.50
' + 10 <sup>2</sup> + 18	1.60	2.30	4.10		8.00 (2.80-8.30)		3.25 A		10.80	1.0 + 1.5 + 2.3	1.90		4.80		2080 (560-3150)			9.15
+ 12 + 12	1.90	3.00	3.00				3.45 A		10.10	1.2 + 1.7 + 1.7	2.20		3.55		2130 (500-3180)			9.40
+ 12 + 15	1.70	2.80	3.50				3.36 A		10.40	1.1 + 1.6 + 2.0	2.05 1.85		4.10 4.60		2150 (500-3140) 2170 (620-3140)			9.50 9.55
+ 12 + 18 + 15 + 15	1.55	3.20	3.20		8.00 (2.80-8.30) 8.00 (2.80-8.40)		3.24 A 3.36 A		10.90	1.0 + 1.5 + 2.3 1.0 + 1.8 + 1.8	1.90		3.75		2110 (620-3140)			9.30
' + 15 + 18	1.45	2.90	3.65		8.00 (2.80-8.30)		3.24 A			0.9 + 1.7 + 2.1			4.30		2120 (660-3110)	4.43 A		9.30
+ 18 + 18	1.30	3.35	3.35				3.29 A			0.8 + 1.9 + 1.9	1.60		3.90		2170 (700-3120)			9.55
1 + 91 + 91	2.60	2.60	2.60		7.80 (2.60-8.10)		3.18 B	1225	10.80	1.6 + 1.6 + 1.6	3.08		3.08			4.26 A		9.55
1 + 91 + 102	2.50	2.50	2.80		7.80 (2.60-8.10)		3.18 B		10.80	1.5 + 1.5 + 1.6	2.96		3.32		2170 (510-3160)			9.55
11 + 91 + 12	2.45	2.45	3.10		8.00 (2.70-8.20)		3.19 B		11.00	1.5 + 1.5 + 1.7	2.85		3.70		2190 (510-3150)			9.65
1 + 91 + 15 1 + 91 + 18	2.20	2.20	3.60 4.00		8.00 (2.80-8.20) 8.00 (2.80-8.30)		3.19 B 3.25 A		11.00	1.4 + 1.4 + 2.1 1.3 + 1.3 + 2.3	2.60		4.20 4.70		2140 (530-3130) 2100 (640-3120)			9.40
11 + 10 <sup>2</sup> + 10 <sup>2</sup>	2.40	2.70	2.70				3.18 B			1.5 + 1.6 + 1.6			3.20		2170 (510-3160)			9.55
1 + 10 <sup>2</sup> + 12	2.35	2.65	3.00			2510 (490-2810)		1255	11.00	1.5 + 1.6 + 1.7			3.55		2190 (510-3150)			9.65
1 + 10 <sup>2</sup> + 15	2.15	2.40	3.45		8.00 (2.80-8.20)	2510 (490-2790)	3.19 B	1255		1.4 + 1.5 + 2.0		2.85	4.05	9.40 (3.30-10.40)	2140 (530-3130)	4.39 A	1070	9.40
1 + 10 <sup>2</sup> + 18	1.95	2.15	3.90			2460 (490-2790)				1.3 + 1.4 + 2.3			4.55		2100 (640-3120)			9.20
1 + 12 + 12	2.20	2.90	2.90				3.36 A			1.4 + 1.7 + 1.7			3.40		2170 (500-3150)			9.55
1 + 12 + 15 1 + 12 + 18	2.05 1.85	2.65	3.30				3.36 A 3.42 A		10.40	1.3 + 1.6 + 1.9 1.2 + 1.5 + 2.2	2.40		3.90 4.40		2130 (560-3120) 2150 (660-3120)			9.40
1 + 12 + 18 1 + 15 + 15	1.80	3.05	3.05		8.00 (2.80-8.40)		3.42 A		10.40	1.2 + 1.5 + 2.2			3.60		2060 (640-3080)			9.05
+ 15 + 18	1.70	2.80	3.50				3.42 A		10.40	1.1 + 1.6 + 2.0	2.05		4.10		2100 (680-3080)			9.20
+ 18 + 18	1.60	3.20	3.20		8.00 (2.90-8.50)	2340 (520-2800)	3.42 A	1170	10.30	1.0 + 1.8 + 1.8	1.90	3.75	3.75		2140 (700-3080)		1070	9.40
1 <sup>2</sup> + 10 <sup>2</sup> + 10 <sup>2</sup>	2.60	2.60	2.60		7.80 (2.60-8.10)	2450 (460-2820)	3.18 B	1225	10.80	1.6 + 1.6 + 1.6	3.08	3.08	3.08	9.24 (3.20-10.40)	2170 (510-3160)	4.26 A	1085	9.55
12 + 102 + 12	2.55	2.55	2.90				3.19 B		11.00	1.6 + 1.6 + 1.7	3.00		3.40		2190 (510-3150)			9.65
2 + 102 + 15	2.35	2.35	3.30				3.19 B		11.00	1.5 + 1.5 + 1.9			3.90		2140 (530-3130)			9.40
2 + 10 <sup>2</sup> + 18 2 + 12 + 12	2.10	2.10	3.80 2.80		8.00 (2.80-8.30) 8.00 (2.70-8.40)		3.25 A 3.36 A		10.80	1.4 + 1.4 + 2.2 1.5 + 1.6 + 1.6	2.50		4.40 3.25		2100 (640-3120) 2170 (500-3150)			9.20 9.55
<sup>2</sup> + 12 + 12 <sup>2</sup> + 12 + 15	2.40	2.80	3.20		8.00 (2.80-8.40)	2380 (490-2850)	3.36 A			1.5 + 1.6 + 1.6	2.65		3.75		2170 (500-3150)			9.40
<sup>2</sup> + 12 + 18	2.00	2.35	3.65				3.42 A			1.3 + 1.5 + 2.1			4.25		2150 (660-3120)			9.50
1 <sup>2</sup> + 15 + 15	2.10	2.95	2.95			2380 (490-2800)	3.36 A		10.40	1.4 + 1.7 + 1.7	2.40		3.50		2060 (640-3080)			9.05
l <sup>2</sup> + 15 + 18	1.90	2.70	3.40		8.00 (2.80-8.40)	2340 (490-2800)	3.42 A	1170	10.30	1.2 + 1.6 + 1.9	2.20	3.20	4.00	9.40 (4.00-10.50)	2100 (680-3080)	4.48 A	1050	9.20
D <sup>2</sup> + 18 + 18	1.70	3.15	3.15		8.00 (2.90-8.50)	2340 (520-2800)	3.42 A	1170	10.30	1.1 + 1.8 + 1.8	2.10	3.65	3.65	9.40 (4.20-10.50)	2140 (700-3080)	4.39 A	1070	9.40
2 + 12 + 12	2.66	2.66	2.66				3.47 A		10.10	1.6 + 1.6 + 1.6			3.13		2160 (520-3180)			9.50
2 + 12 + 15	2.45	2.45	3.10		8.00 (2.80-8.40)		3.35 A		10.50	1.5 + 1.5 + 1.7	2.90		3.60		2140 (620-3150)			9.40
2 + 12 + 18	2.25	2.25	3.50				3.35 A			1.5 + 1.5 + 2.0			3.35		2130 (680-3120)			9.40
2 + 15 + 15 2 + 15 + 18	2.30	2.85	2.85 3.30				3.35 A 3.40 A		10.50	1.5 + 1.7 + 1.7 1.4 + 1.6 + 1.9			3.35 3.85		2120 (660-3120) 2100 (700-3100)			9.30 9.20
2 + 13 + 16	1.90	3.05	3.05				3.40 A		10.30	1.2 + 1.7 + 1.7			3.55		2060 (700-3100)			9.05
5 + 15 + 15	2.66	2.66	2.66				3.34 A			1.6 + 1.6 + 1.6			3.13		2100 (680-3080)			9.20
5 + 15 + 18	2.45		3.10			2390 (520-2810)				1.5 + 1.5 + 1.7			3.60		2080 (700-3080)			9.15

REE MULTI 4X1				4E27CB		) [[[]	105	0 N	H	0	(1.14)		land D. free	005	1.6.5	0
ndoor unit apacity		Capacity   Room B		Room D	Total (MinMax.) Rating	J EER W/W		Current Moisture Removal 230 V (A) Volume (I/h)				D Total (MinMax.)	Input Power (W) Rating			Current 230 V (A)
Room					· ·											
' + 7 + 7 + 7 ' + 7 + 7 + 9 <sup>1</sup>	2.00	2.00 1.90	2.00 1.90		8.00 (2.70-8.80) 2150 (490-2840) 8.00 (2.80-8.80) 2140 (490-2880)			9.50			2.35 2.35 2.20 2.80		2080 (550-3140) 2060 (550-3120)	4.52 A 4.56 A		9.15 9.05
+7+7+7+102	1.80		1.80		8.00 (2.80-8.80) 2140 (490-2880)			9.40 1.2 + 1.2 + 1.2 + 1.6			2.15 2.95		2060 (550-3120)	4.56 A		9.05
+ 7 + 7 + 12	1.75	1.75	1.75	2.75	8.00 (2.80-8.90) 2130 (490-2880)	3.76 A	1065	9.40 1.1 + 1.1 + 1.1 + 1.6	2.05	2.05	2.05 3.25	9.40 (3.40-10.50)	2120 (590-3180)	4.43 A		9.30
+7+7+15	1.60	1.60	1.60		8.00 (2.80-8.90) 2110 (490-2870)			9.30 1.0 + 1.0 + 1.0 + 1.8		1.90	1.90 3.70			4.50 A		9.20
+ 7 + 7 + 18 + 7 + 9 <sup>1</sup> + 9 <sup>1</sup>	1.45	1.45	1.45 2.20		8.00 (2.80-8.90) 2110 (490-2840) 8.00 (2.80-8.80) 2130 (490-2870)			9.30 0.9 + 0.9 + 0.9 + 2.1 9.40 1.2 + 1.2 + 1.4 + 1.4			1.70 4.30 2.60 2.60		2120 (680-3110) 2050 (610-3110)	4.43 A 4.59 A		9.30 9.05
+7+91+102	1.70	1.70	2.15	2.45	8.00 (2.80-8.80) 2130 (490-2870)	3.76 A	1065	9.40 1.1 + 1.1 + 1.4 + 1.5	2.00	2.00	2.55 2.85	9.40 (3.50-10.50)	2050 (610-3110)	4.59 A	1025	9.05
+ 7 + 91 + 12	1.65		2.05		8.00 (2.80-8.90) 2120 (490-2870) 8.00 (2.80-8.90) 2090 (490-2840)			9.30			2.40 3.10			4.48 A		9.20
+ 7 + 9 <sup>1</sup> + 15 + 7 + 9 <sup>1</sup> + 18	1.50	1.50	1.90 1.70		8.00 (2.80-8.90) 2090 (490-2840) 8.00 (2.90-8.90) 2110 (520-2880)			9.20			2.20 3.60 2.00 4.10		2070 (660-3110) 2090 (700-3100)	4.54 A		9.10 9.20
+ 7 + 102 + 102	1.65	1.65	2.35	2.35	8.00 (2.80-8.80) 2130 (490-2870)	3.76 A	1065	9.40 1.1 + 1.1 + 1.5 + 1.5	1.95	1.95	2.75 2.75	9.40 (3.50-10.50)	2050 (610-3110)	4.59 A	1025	9.05
+ 7 + 10 <sup>2</sup> + 12 + 7 + 10 <sup>2</sup> + 15	1.60		2.25		8.00 (2.80-8.90) 2120 (490-2870)			9.30 1.0 + 1.0 + 1.5 + 1.6 9.20 1.0 + 1.0 + 1.3 + 1.7			2.60 3.00 2.40 3.50		2100 (620-3160)			9.20 9.10
+ 7 + 10 <sup>2</sup> + 18	1.50		1.90		8.00 (2.80-8.90) 2090 (490-2840) 8.00 (2.90-8.90) 2110 (520-2880)			9.30 0.9 + 0.9 + 1.2 + 1.9			2.40 3.50 2.20 4.00			4.54 A 4.50 A		9.20
+ 7 + 12 + 12	1.55		2.45	2.45	8.00 (2.80-8.90) 2090 (500-2870)	3.83 A	1045	9.20 1.0 + 1.0 + 1.5 + 1.5	1.80	1.80	2.90 2.90	9.40 (3.80-10.50)	2110 (640-3190)	4.45 A	1055	9.30
+ 7 + 12 + 15 + 7 + 12 + 18	1.45		2.25		8.00 (2.80-8.90) 2080 (500-2840) 8.00 (2.90-9.00) 2040 (520-2860)			9.15 0.9 + 0.9 + 1.5 + 1.7 8.95 0.8 + 0.8 + 1.4 + 1.9			2.65 3.35 2.45 3.85		2080 (680-3150) 2110 (700-3080)	4.52 A 4.45 A		9.15 9.30
+ 7 + 15 + 15	1.35		2.65		8.00 (2.90-9.00) 2060 (520-2850)	3.88 A		9.05 0.9 + 0.9 + 1.6 + 1.6			3.15 3.15		2050 (700-3110)	4.43 A		9.05
+ 7 + 15 + 18	1.25	1.25	2.40	3.10	8.00 (2.90-9.00) 2020 (520-2880)	3.96 A	1010	8.85 0.8 + 0.8 + 1.5 + 1.7	1.45	1.45	2.90 3.60	9.40 (4.20-10.50)	2080 (700-3060)	4.52 A	1040	9.15
+ 9 <sup>1</sup> + 9 <sup>1</sup> + 9 <sup>1</sup> + 9 <sup>1</sup> + 9 <sup>1</sup> + 10 <sup>2</sup>	1.70		2.10		8.00 (2.80-8.80) 2120 (490-2850) 8.00 (2.80-8.80) 2120 (490-2850)	3.77 A 3.77 A		9.30			2.45 2.45 2.40 2.70		2040 (640-3080) 2040 (640-3080)	4.61 A 4.61 A		8.95 8.95
+ 91 + 91 + 12	1.55	1.95	1.95		8.00 (2.80-8.90) 2100 (490-2850)			9.20 1.0 + 1.3 + 1.3 + 1.6			2.40 2.70		2080 (660-3130)	4.52 A		9.15
+ 91 + 91 + 15	1.45	1.80	1.80	2.95	8.00 (2.80-8.90) 2130 (490-2860)	3.76 A	1065	9.40 0.9 + 1.2 + 1.2 + 1.7	1.70	2.15	2.15 3.40	9.40 (4.00-10.50)	2050 (680-3080)	4.59 A	1025	9.05
+ 9 <sup>1</sup> + 9 <sup>1</sup> + 18 + 9 <sup>1</sup> + 10 <sup>2</sup> + 10 <sup>2</sup>	1.35		1.65 2.20		8.00 (2.90-8.90) 2110 (520-2860) 8.00 (2.80-8.80) 2120 (490-2850)			9.30 0.9 + 1.1 + 1.1 + 1.9 9.30 1.0 + 1.3 + 1.4 + 1.4			1.95 3.95 2.60 2.60		2080 (700-3080) 2040 (640-3080)	4.52 A 4.61 A		9.15 8.95
+ 91 + 102 + 102 + 91 + 102 + 12	1.50		2.15		8.00 (2.80-8.90) 2100 (490-2850)			9.20 1.0 + 1.2 + 1.4 + 1.5			2.50 2.85		2080 (660-3130)	4.52 A		9.15
+ 91 + 102 + 15	1.40	1.75	2.00	2.85	8.00 (2.80-8.90) 2130 (490-2860)	3.76 A	1065	9.40 0.9 + 1.1 + 1.3 + 1.7	1.60	2.10	2.35 3.35	9.40 (4.00-10.50)	2050 (680-3080)	4.59 A	1025	9.05
+ 9 <sup>1</sup> + 10 <sup>2</sup> + 18 + 9 <sup>1</sup> + 12 + 12	1.30	1.65	1.80 2.35		8.00 (2.90-8.90) 2110 (520-2860) 8.00 (2.80-8.90) 2130 (500-2850)	3.79 A 3.76 A		9.30 0.8 + 1.1 + 1.2 + 1.8 9.40 0.9 + 1.2 + 1.5 + 1.5			2.15 3.80 2.75 2.75		2080 (700-3080) 2090 (680-3180)	4.52 A 4.50 A		9.15 9.20
+ 91 + 12 + 15	1.35		2.20		8.00 (2.90-9.00) 2070 (520-2860)			9.15 0.9 + 1.1 + 1.4 + 1.6			2.55 3.25			4.56 A		9.05
+ 91 + 12 + 18	1.25		2.00		8.00 (2.90-9.00) 2030 (520-2840)			8.95 0.8 + 1.0 + 1.3 + 1.8			2.35 3.70			4.50 A		9.20
+ 9 <sup>1</sup> + 15 + 15 + 9 <sup>1</sup> + 15 + 18	1.30		2.55		8.00 (2.90-9.00) 2040 (520-2870) 8.00 (2.90-9.00) 2020 (520-2880)			8.95			3.00 3.00 2.80 3.50		2030 (700-3080) 2080 (700-3060)	4.63 A 4.52 A		8.95 9.15
+ 10 <sup>2</sup> + 10 <sup>2</sup> + 10 <sup>2</sup>	1.55		2.15		8.00 (2.80-8.80) 2120 (490-2850)	3.77 A		9.30 1.0 + 1.4 + 1.4 + 1.4			2.55 2.55		2040 (640-3080)	4.61 A		8.95
+ 102 + 102 + 12	1.50		2.05	2.40	8.00 (2.80-8.90) 2100 (490-2850)			9.20 1.0 + 1.3 + 1.3 + 1.5			2.45 2.80		2080 (660-3130)	4.52 A		9.15
+ 10 <sup>2</sup> + 10 <sup>2</sup> + 15 + 10 <sup>2</sup> + 10 <sup>2</sup> + 18	1.35	1.95	1.95 1.80		8.00 (2.80-8.90) 2130 (490-2860) 8.00 (2.90-8.90) 2110 (520-2860)	3.76 A 3.79 A		9.40 0.9 + 1.3 + 1.3 + 1.6 9.30 0.8 + 1.2 + 1.2 + 1.8			2.25 3.30 2.10 3.75		2050 (680-3080) 2080 (700-3080)	4.59 A 4.52 A		9.05 9.15
+ 10 <sup>2</sup> + 12 + 12	1.40		2.30		8.00 (2.80-8.90) 2130 (500-2850)	3.76 A		9.40 0.9 + 1.3 + 1.5 + 1.5			2.70 2.70		2090 (680-3180)	4.50 A		9.20
+ 102 + 12 + 15	1.35		2.15		8.00 (2.90-9.00) 2070 (520-2860)			9.15 0.9 + 1.2 + 1.4 + 1.6			2.50 3.15		2060 (700-3120)	4.56 A		9.05
+ 10 <sup>2</sup> + 12 + 18 + 10 <sup>2</sup> + 15 + 15	1.25	1.70 1.75	1.95 2.50		8.00 (2.90-9.00) 2030 (520-2840) 8.00 (2.90-9.00) 2040 (520-2870)			8.95			2.30 3.65 2.95 2.95		2090 (700-3080) 2030 (700-3080)	4.50 A 4.63 A		9.20 8.95
+ 12 + 12 + 12	1.40		2.20		8.00 (2.80-9.10) 2040 (500-2870)			8.95 0.9 + 1.4 + 1.4 + 1.4			2.60 2.60			4.45 A		9.30
+ 12 + 12 + 15	1.30		2.05		8.00 (2.90-9.10) 2020 (520-2840)			8.85 0.8 + 1.3 + 1.3 + 1.6			2.45 3.05		2080 (700-3080)	4.52 A		9.15
+ 12 + 12 + 18 + 12 + 15 + 15	1.20	1.90 2.00	1.90 2.40		8.00 (3.00-9.20) 2000 (530-2870) 8.00 (2.90-9.10) 2090 (520-2860)			8.80 0.7 + 1.2 + 1.2 + 1.7 9.20 0.7 + 1.3 + 1.5 + 1.5			2.25 3.50 2.85 2.85		2110 (700-3060) 2060 (700-3060)	4.45 A 4.56 A		9.30 9.05
1 + 91 + 91 + 91	2.00		2.00		8.00 (2.80-8.80) 2110 (490-2840)			9.30 1.3 + 1.3 + 1.3 + 1.3			2.35 2.35		2030 (660-3080)	4.63 A		8.95
+ 91 + 91 + 102	1.95		1.95		8.00 (2.80-8.80) 2110 (490-2840)			9.30 1.3 + 1.3 + 1.3 + 1.4			2.30 2.50			4.63 A		8.95
+ 9 <sup>1</sup> + 9 <sup>1</sup> + 12 + 9 <sup>1</sup> + 9 <sup>1</sup> + 15	1.85	1.85	1.85 1.75		8.00 (2.80-8.90) 2090 (490-2870) 8.00 (2.90-8.90) 2120 (520-2850)	3.83 A 3.77 A		9.20 1.2 + 1.2 + 1.2 + 1.5 9.30 1.1 + 1.1 + 1.1 + 1.6			2.20 2.80 2.05 3.25		2060 (680-3100) 2040 (700-3070)	4.56 A 4.61 A		9.05 8.95
+ 91 + 91 + 18	1.60	1.60	1.60		8.00 (2.90-8.90) 2110 (520-2850)			9.30 1.0 + 1.0 + 1.0 + 1.8			1.90 3.70		2070 (700-3070)	4.54 A		9.15
+ 91 + 102 + 102	1.90		2.10		8.00 (2.80-8.80) 2110 (490-2840)			9.30			2.50 2.50		2030 (660-3080)	4.63 A		8.95
+ 9 <sup>1</sup> + 10 <sup>2</sup> + 12 + 9 <sup>1</sup> + 10 <sup>2</sup> + 15	1.80	1.80	2.05 1.90		8.00 (2.80-8.90) 2090 (490-2870) 8.00 (2.90-8.90) 2120 (520-2850)			9.20 1.2 + 1.2 + 1.3 + 1.5 9.30 1.1 + 1.1 + 1.2 + 1.6			2.35 2.75 2.20 3.20		2060 (680-3100) 2040 (700-3070)	4.56 A 4.61 A		9.05 8.95
+ 91 + 102 + 18	1.55	1.55	1.75	3.15	8.00 (2.90-8.90) 2110 (520-2850)	3.79 A	1055	9.30 1.0 + 1.0 + 1.1 + 1.8	1.85	1.85	2.05 3.65	9.40 (4.20-10.50)	2070 (700-3070)	4.54 A	1035	9.15
+ 9 <sup>1</sup> + 12 + 12 + 9 <sup>1</sup> + 12 + 15	1.75		2.25		8.00 (2.90-9.00) 2080 (500-2870)			9.15 1.1 + 1.1 + 1.5 + 1.5			2.65 2.65		2070 (680-3140) 2040 (700-3080)	4.54 A		9.15
+ 91 + 12 + 15	1.65 1.50	1.65 1.50	2.10 1.95		8.00 (2.90-9.00) 2050 (520-2880) 8.00 (2.90-9.00) 2030 (520-2840)			9.05			2.40 3.10 2.25 3.55		2090 (700-3080)	_		8.95 9.20
+ 91 + 15 + 15	1.55	1.55	2.45	2.45	8.00 (3.00-9.00) 2040 (520-2860)	3.92 A	1020	8.95 1.0 + 1.0 + 1.5 + 1.5	1.80	1.80	2.90 2.90	9.40 (4.20-10.50)	2020 (700-3070)	4.65 A	1010	8.85
+ 102 + 102 + 102	1.85		2.05		8.00 (2.80-8.80) 2110 (490-2840)			9.30 1.2 + 1.3 + 1.3 + 1.3			2.40 2.40 2.35 2.65		2030 (660-3080) 2060 (680-3100)			8.95
$+ 10^2 + 10^2 + 12$ $+ 10^2 + 10^2 + 15$	1.75	2.00 1.85	2.00 1.85		8.00 (2.80-8.90) 2090 (490-2870) 8.00 (2.90-8.90) 2120 (520-2850)			9.20 1.1 + 1.3 + 1.3 + 1.5 9.30 1.1 + 1.2 + 1.2 + 1.6			2.35 2.65 2.20 3.10			4.56 A 4.61 A		9.05 8.95
+ 102 + 102 + 18	1.55	1.70	1.70	3.05	8.00 (2.90-8.90) 2110 (520-2850)	3.79 A	1055	9.30 1.0 + 1.1 + 1.1 + 1.7	1.80	2.00	2.00 3.60	9.40 (4.20-10.50)	2070 (700-3070)	4.54 A	1035	9.15
+ 10 <sup>2</sup> + 12 + 12 + 10 <sup>2</sup> + 12 + 15	1.70		2.20		8.00 (2.80-8.90) 2130 (500-2850) 8.00 (2.90-9.00) 2070 (520-2860)	3.76 A 3.86 A		9.40			2.55 2.55 2.40 3.00		2090 (680-3180) 2060 (700-3120)			
+ 10 <sup>2</sup> + 12 + 15 + 10 <sup>2</sup> + 12 + 18	1.50	1.65	1.90		8.00 (2.90-9.00) 2030 (520-2840)			8.95 1.0 + 1.1 + 1.2 + 1.7			2.40 3.00		2090 (700-3120)			
+ 10 <sup>2</sup> + 15 + 15	1.50	1.70	2.40	2.40	8.00 (2.90-9.00) 2040 (520-2870)	3.92 A	1020	8.95 1.0 + 1.1 + 1.5 + 1.5	1.70	2.00	2.85 2.85	9.40 (4.20-10.50)	2030 (700-3080)	4.63 A	1015	8.95
+ 12 + 12 + 12	1.70	2.10	2.10		8.00 (2.90-9.10) 2030 (520-2860)			8.95 1.1 + 1.4 + 1.4 + 1.4			2.50 2.50		2090 (700-3100)			
+ 12 + 12 + 15 + 10 <sup>2</sup> + 10 <sup>2</sup> + 10 <sup>2</sup>	1.50 2.00	2.00	2.00		8.00 (2.90-9.10) 2020 (520-2840) 8.00 (2.80-8.80) 2110 (490-2840)			8.85 1.0 + 1.3 + 1.3 + 1.5 9.30 1.3 + 1.3 + 1.3 + 1.3			2.35 2.90 2.35 2.35		2080 (700-3080) 2030 (660-3080)	4.52 A 4.63 A		
+ 102 + 102 + 12	1.95	1.95	1.95	2.15	8.00 (2.80-8.90) 2090 (490-2870)	3.83 A	1045	9.20 1.3 + 1.3 + 1.3 + 1.4	2.25	2.25	2.25 2.65	9.40 (4.00-10.50)	2060 (680-3100)	4.56 A	1030	9.05
2 + 10 <sup>2</sup> + 10 <sup>2</sup> + 15	1.80	1.80	1.80		8.00 (2.90-8.90) 2120 (520-2850)	3.77 A		9.30 1.2 + 1.2 + 1.2 + 1.6			2.10 3.10	9.40 (4.10-10.50)	2040 (700-3070)	4.61 A	1020	8.95
$+ 10^2 + 10^2 + 18$ $+ 10^2 + 12 + 12$	1.65	1.65	1.65 2.15		8.00 (2.90-8.90) 2110 (520-2850) 8.00 (2.90-9.00) 2080 (500-2870)			9.30 1.1 + 1.1 + 1.1 + 1.7 9.15 1.2 + 1.2 + 1.4 + 1.4			1.95 3.55 2.50 2.50		2070 (700-3070) 2070 (680-3140)			9.15
2 + 10 <sup>2</sup> + 12 + 15	1.75	1.75	2.00	2.50	8.00 (2.90-9.00) 2050 (520-2880)	3.90 A	1025	9.05 1.1 + 1.1 + 1.3 + 1.5		2.05	2.35 2.95		2040 (700-3080)			
<sup>2</sup> + 10 <sup>2</sup> + 15 + 15	1.65		2.35	2.35	8.00 (3.00-9.00) 2040 (520-2860)	3.92 A	1020	8.95 1.1 + 1.1 + 1.5 + 1.5	1.95	1.95	2.75 2.75	9.40 (4.20-10.50)	2020 (700-3070)	4.65 A	1010	8.85
2 + 12 + 12 + 12 2 + 12 + 12 + 15	1.85	2.05 1.95	2.05 1.95		8.00 (2.90-9.10) 2030 (520-2860) 8.00 (2.90-9.10) 2010 (520-2880)			8.95			2.45 2.45 2.30 2.85		2090 (700-3100) 2070 (700-3080)			9.20 9.15
± + 12 + 12 + 13 ± + 12 + 12 + 12	2.00		2.00		8.00 (2.90-9.20) 2000 (530-2850)			8.80 1.3 + 1.3 + 1.3 + 1.3			2.35 2.35		2110 (700-3080)			
+ 12 + 12 + 15	1.90		1.90		8.00 (3.00-9.20) 1980 (530-2870)			8.70 1.2 + 1.2 + 1.2 + 1.5			2.20 2.80		2080 (700-3060)			

ndoor unit capacity	Cooling						Heating					
	Capacity (N	1inMax.) (kV	N)				Capacity (	MinMax.) (k\	N)			
	Room A	Room B	Room C	Room D	Room E	Total	Room A	Room B	Room C	Room D	Room E	Total
Room												
	2.20	-	-	-	-	2.20 (1.5-2.6)	2.50	-	-	-	-	2.50 (1.8-
	2.65	-	-	-	-	2.65 (1.5-3.2)	3.60	-	-	-	-	3.60 (1.8-
2	3.50	-	-	-	-	3.50 (1.6-3.6)	4.20	-	-	-	-	4.20 (1.9
8	5.15	-	-	-	-	5.15 (1.7-5.8)	6.00	-	-	-	-	6.00 (2.0-
4	7.10	-	-	-	-	7.10 (1.8-7.4)	8.50	-	-	-	-	8.50 (2.0-
Rooms												
+7	2.20	2.20	-	-	-	4.40 (2.0-5.1)	2.50	2.50	-	-	-	5.00 (2.0
+9	2.20	2.65	-	-	-	4.85 (2.0-5.8)	2.50	3.60	-	-	-	6.10 (2.1
+12	2.20	3.50	-	-	-	5.70 (2.0-6.7)	2.50	4.20	-	-	-	6.70 (2.3
+18	2.14	5.01	-	-	-	7.15 (2.2-7.7)	2.50	6.00	-	-	-	8.50 (3.0
+24	1.81	5.84	-	-	-	7.65 (2.3-8.8)	2.01	6.84	-	-	-	8.85 (3.0-
+9	2.65	2.65	-	-	-	5.30 (2.0-6.5)	3.60	3.60	-	-	-	7.20 (2.4
+12	2.54	3.36	-	-	-	5.90 (2.0-7.4)	3.51	4.09	-	-	-	7.60 (2.6
+18	2.46	4.79	-	-	-	7.25 (2.3-8.5)	3.24	5.41	-	-	-	8.65 (3.3
+24	2.11	5.64	-	-	-	7.75 (2.3-8.8)	2.68	6.32	-	-	-	9.00 (3.3
2+12	3.40	3.40	-	-	-	6.80 (2.2-8.4)	4.00	4.00	-	-	-	8.00 (2.9
2+18	3.03	4.47	-	-	-	7.50 (2.6-8.8)	3.60	5.15	-	-	-	8.75 (3.4
2+24	2.61	5.29	-	-	-	7.90 (2.6-9.5)	3.01	6.09	-	-	-	9.10 (3.4
8+18	3.95	3.95	1-	-	-	7.90 (2.6-9.5)	4.50	4.50		-	-	9.00 (3.4
8+24	3.70	5.10	1-	-	-	8.80 (2.7-9.5)	3.89	5.51	-	-	-	9.40 (3.4
4+24	4.40	4.40	1-	-	-	8.80 (2.7-9.5)	4.70	4.70	1-	-	-	9.40 (3.4
Rooms	4.40	7.70				0.00 (2.7 7.0)	7.70	4.70			_	7.40 (0.4
+7+7	2.20	2.20	2.20	-	-	6.60 (2.0-7.7)	2.50	2.50	2.50	1-	-	7.50 (2.7
+7+9	2.20	2.20	2.65	-		7.05 (2.2-8.4)	2.47	2.47	3.56	-	-	8.50 (3.0
+7+12	2.03	2.03	3.23			7.30 (2.4-8.6)	2.34	2.34	3.93			8.60 (3.2
+7+12	1.77	1.77	4.15			7.70 (2.7-9.0)	2.01	2.01	4.83			8.85 (3.4
+7+10	1.65	1.65	5.31			8.60 (2.9-10.0)		1.71	5.82			9.25 (3.4
+9+9	2.11	2.54	2.54			7.20 (2.3-8.6)	2.23	3.21	3.21		-	8.65 (3.3
+9+12	1.95	2.34	3.10	-	-	7.40 (2.6-9.0)	2.23	3.06	3.57	-	-	8.75 (3.4
+9+12 +9+18	1.72	2.35	4.02	-	-		1.86		4.46	-	-	9.00 (3.4
+9+24		1.93		-	-	7.80 (2.9-9.0)		2.68	5.71	-	-	
	1.60		5.17	-	-	8.70 (2.9-10.0)		2.42		-	-	9.80 (3.4
+12+12	1.82	2.89	2.89	-	-	7.60 (2.7-9.0)	2.03	3.41	3.41	-	-	8.85 (3.4
+12+18	1.60	2.55	3.75	-	-	7.90 (2.9-9.0)	1.79	3.01	4.30	-	-	9.10 (3.4
+12+24	1.55	2.46	4.99	-	-	9.00 (2.9-10.0)		2.71	5.48	-	-	9.80 (3.4
+18+18	1.58	3.71	3.71	-	-	9.00 (2.9-9.0)	1.69	4.06	4.06	-	-	9.80 (3.4
+18+24	1.37	3.21	4.42	-	-	9.00 (2.9-10.0)		3.46	4.90	-	-	9.80 (3.4
+9+9	2.43	2.43	2.43	-	-	7.30 (2.5-8.6)	2.95	2.95	2.95	-	-	8.85 (3.4
+9+12	2.26	2.26	2.98	-	-	7.50 (2.7-9.0)	2.81	2.81	3.28	-	-	8.90 (3.4
+9+18	2.00	2.00	3.89	-	-	7.90 (2.9-9.0)	2.51	2.51	4.18	-	-	9.20 (3.4
+9+24	1.92	1.92	5.15	-	-	9.00 (2.9-10.0)		2.25	5.31	-	-	9.80 (3.4
+12+12	2.13	2.81	2.81	-	-	7.75 (2.7-9.0)	2.70	3.15	3.15	-	-	9.00 (3.4
+12+18	1.99	2.63	3.87	-	-	8.50 (2.9-9.0)	2.43	2.83	4.04	-	-	9.30 (3.4
+12+24	1.80	2.38	4.82	-	-	9.00 (2.9-10.0)		2.53	5.11	-	-	9.80 (3.4
+18+18	1.84	3.58	3.58	-	-	9.00 (2.9-9.0)	2.26	3.77	3.77	-	-	9.80 (3.4
+18+24	1.60	3.11	4.29	-	-	9.00 (2.9-10.0)		3.25	4.60	-	-	9.80 (3.4
2+12+12	2.65	2.65	2.65	-	-	7.95 (2.9-9.0)	3.03	3.03	3.03	-	-	9.10 (3.4
2+12+18	2.59	2.59	3.81	-	-	9.00 (2.9-9.0)	2.86	2.86	4.08	-	-	9.80 (3.4
2+12+24	2.23	2.23	4.53	-	-	9.00 (2.9-10.0)	2.44	2.44	4.93	-	-	9.80 (3.4
2+18+18	2.28	3.36	3.36	-	-	9.00 (2.9-10.0)		3.63	3.63	-	-	9.80 (3.4
2+18+24	2.00	2.94	4.06	-	-	9.00 (2.9-10.0)		3.14	4.45	-	-	9.80 (3.4
8+18+18	3.00	3.00	3.00	-	-	9.00 (2.9-10.0)		3.27	3.27	-	-	9.80 (3.4-
8+18+24	2.66	2.66	3.67	1-	1-	9.00 (2.9-10.0)		2.87	4.06	1-	1_	9.80 (3.4-

The table lists the wall-mounted type of indoor units as representative models. For details on the connection of indoor units other than the wall mounted type, refer to the technical data. Specifications subject to change without notice.

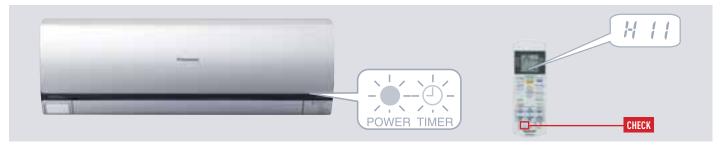
door unit capacity	Cooling						Heating					
,	Capacity (	MinMax.) (k						MinMax.) (k\				
D	Room A	Room B	Room C	Room D	Room E	Total	Room A	Room B	Room C	Room D	Room E	Total
100ms 7+7+7	1.88	1.88	1.88	1.88		7.50 (2.9-10.5)	2 10	2.18	2.18	2.18		8.70 (3.4-
7+7+9	1.82	1.82	1.82	2.19	-	7.65 (2.9-10.5)		1.99	1.99	2.87	-	8.85 (3.4-
7+7+12	1.71	1.71	1.71	2.72	-			1.91	1.91	3.21	-	8.95 (3.4-
7+7+18	1.59	1.59	1.59	3.73	-	8.50 (2.9-10.5)	1.71	1.71	1.71	4.11	-	9.25 (3.4-
7+7+24	1.48	1.48	1.48	4.77	-	9.20 (2.9-10.5)		1.53	1.53	5.21	-	9.80 (3.4-
7+9+9	1.76	1.76	2.12	2.12	-	7.75 (2.9-10.5)		1.85	2.67	2.67	-	9.05 (3.4-
7+9+12 7+9+18	1.66	1.66	2.00 1.85	2.64 3.59	-	7.95 (2.9-10.5)		1.79	2.57 2.42	3.00	-	9.15 (3.4- 9.80 (3.4-
7+9+10 7+9+24	1.43	1.53	1.72	4.62	-	8.50 (2.9-10.5) 9.20 (2.9-10.5)		1.43	2.42	4.03	-	9.80 (3.4-
7+12+12	1.64	1.64	2.61	2.61	-	8.50 (2.9-10.5)		1.72	2.88	2.88	-	9.20 (3.4-
7+12+18	1.55	1.55	2.47	3.63	-	9.20 (2.9-10.5)		1.61	2.71	3.87	-	9.80 (3.4-
7+12+24	1.35	1.35	2.15	4.35	-	9.20 (2.9-10.5)	1.38	1.38	2.33	4.71	-	9.80 (3.4-
7+18+18	1.38	1.38	3.22	3.22	-	9.20 (2.9-10.5)		1.44	3.46	3.46	-	9.80 (3.4-
7+18+24	1.22	1.22	2.85	3.92	-	9.20 (2.9-10.5)		1.26	3.02	4.27	-	9.80 (3.4-
9+9+9 9+9+12	1.70 1.66	2.05	2.05	2.05	-	7.85 (2.9-10.5) 8.30 (2.9-10.5)	1.73	2.49	2.49 2.41	2.49	-	9.20 (3.4- 9.30 (3.4-
9+9+18	1.53	1.84	1.84	3.58	-	8.80 (2.9-10.5)		2.25	2.25	3.75	-	9.80 (3.4-
9+9+24	1.36	1.63	1.63	4.38	-	9.00 (2.9-10.5)		1.94	1.94	4.58	-	9.80 (3.4-
9+12+12	1.60	1.92	2.54	2.54	-	8.60 (2.9-10.5)	1.69	2.43	2.84	2.84	-	9.80 (3.4-
9+12+18	1.47	1.77	2.33	3.43	-	9.00 (2.9-10.5)		2.16	2.53	3.61	-	9.80 (3.4-
9+12+24	1.31	1.58	2.08	4.23	-	9.20 (2.9-10.5)		1.88	2.19	4.43	-	9.80 (3.4-
9+18+18	1.34	1.61	3.13	3.13	-	9.20 (2.9-10.5)		1.95	3.25	3.25	-	9.80 (3.4-
9+18+24 12+12+12	1.18 1.59	1.43 2.54	2.77	3.82 2.54	-	9.20 (2.9-10.5) 9.20 (2.9-10.5)		2.73	2.85 2.73	4.04 2.73	-	9.80 (3.4- 9.80 (3.4-
12+12+12 12+12+18	1.59	2.24	2.24	3.30	-	9.20 (2.9-10.5)		2.73	2.73	3.48	-	9.80 (3.4-
12+12+10	1.24	1.98	1.98	4.01	-	9.20 (2.9-10.5)		2.12	2.44	4.29	-	9.80 (3.4-
12+18+18	1.27	2.01	2.96	2.96	<u> </u>	9.20 (2.9-10.5)	1.31	2.20	3.14	3.14	<u> </u>	9.80 (3.4-
9+9+9	2.00	2.00	2.00	2.00	-	8.00 (2.9-10.5)	2.45	2.45	2.45	2.45	-	9.80 (3.4-
9+9+12	1.94	1.94	1.94	2.57	-	8.40 (2.9-10.5)		2.35	2.35	2.74	-	9.80 (3.4-
9+9+18	1.82	1.82	1.82	3.54	-	9.00 (2.9-10.5)		2.10	2.10	3.50	-	9.80 (3.4-
9+9+24	1.62	1.62	1.62	4.34	-	9.20 (2.9-10.5)		1.83	1.83	4.32	-	9.80 (3.4-
9+12+12 9+12+18	1.90 1.75	1.90 1.75	2.50	2.50 3.40	-	8.80 (2.9-10.5) 9.20 (2.9-10.5)		2.26	2.64	3.38	-	9.80 (3.4- 9.80 (3.4-
9+12+24	1.53	1.53	2.03	4.11	-	9.20 (2.9-10.5)		1.77	2.07	4.19	-	9.80 (3.4-
9+18+18	1.56	1.56	3.04	3.04	-	9.20 (2.9-10.5)		1.84	3.06	3.06	-	9.80 (3.4-
9+18+24	1.39	1.39	2.70	3.72	-	9.20 (2.9-10.5)		1.63	2.71	3.84	-	9.80 (3.4-
12+12+12	1.81	2.40	2.40	2.40	-	9.00 (2.9-10.5)		2.54	2.54	2.54	-	9.80 (3.4-
12+12+18	1.65	2.18	2.18	3.20	-	9.20 (2.9-10.5)		2.29	2.29	3.27	-	9.80 (3.4-
-12+12+24 +12+12+12	1.46	1.92	1.92	3.90	-	9.20 (2.9-10.5)		2.01	2.01	4.06	-	9.80 (3.4- 9.80 (3.4-
+12+12+12 +12+12+18	2.30	2.30	2.30	2.30 3.03	-	9.20 (2.9-10.5) 9.20 (2.9-10.5)		2.45	2.45	2.45 3.16	-	9.80 (3.4-
Rooms	2.00	2.00	2.00	0.00		7.20 (2.7-10.3)	L.L I	L.L1	L.L1	J.10		7.00 (3.4
7+7+7+7	2.00	2.00	2.00	2.00	2.00	10.00 (3.5-11.5	2.40	2.40	2.40	2.40	2.40	12.00 (4.0
7+7+7+9	1.92	1.92	1.92	1.92	2.31	10.00 (3.5-11.5)	2.21	2.21	2.21	2.21	3.18	12.00 (4.0
7+7+7+12	1.79	1.79	1.79	1.79	2.85	10.00 (3.5-11.5		2.11	2.11	2.11	3.55	12.00 (4.0
7+7+7+18	1.58	1.58	1.58	1.58	3.69	10.00 (3.5-11.5		1.88	1.88	1.88	4.50	12.00 (4.0
7+7+7+24 7+7+9+9	1.38 1.85	1.38	1.38	1.38 2.23	4.47 2.23	10.00 (3.5-11.5 10.00 (3.5-11.5		1.62 2.04	1.62 2.04	1.62 2.94	5.51	12.00 (4.0
7+7+9+9 7+7+9+12	1.85	1.85	1.85	2.23	2.23	10.00 (3.5-11.5		1.96	1.96	2.94	3.29	12.00 (4.1 12.00 (4.1
7+7+9+18	1.53	1.53	1.53	1.84	3.58	10.00 (3.5-11.5		1.75	1.75	2.53	4.21	12.00 (4.0
7+7+9+24	1.35	1.35	1.35	1.62	4.34	10.00 (3.5-11.5		1.53	1.53	2.20	5.20	12.00 (4.0
7+7+12+12	1.62	1.62	1.62	2.57	2.57	10.00 (3.5-11.5)	1.89	1.89	1.89	3.17	3.17	12.00 (4.0
7+7+12+18	1.44	1.44	1.44	2.30	3.38	10.00 (3.5-11.5		1.69	1.69	2.85	4.07	12.00 (4.0
7+7+12+24	1.28	1.28	1.28	2.03	4.13	10.00 (3.5-11.5		1.49	1.49	2.50	5.05	12.00 (4.1
7+9+9+9 7+9+9+12	1.78	1.78	2.15	2.15	2.15	10.00 (3.5-11.5) 10.00 (3.5-11.5)		1.90	2.73	2.73	2.73	12.00 (4.0
7+9+9+12 7+9+9+18	1.67 1.48	1.67	2.01 1.78	2.01 1.78	2.65 3.47	10.00 (3.5-11.5		1.83	2.63	2.63	3.07 3.96	12.00 (4.1 12.00 (4.1
7+9+9+24	1.40	1.31	1.78	1.76	4.23	10.00 (3.5-11.5		1.45	2.09	2.09	4.93	12.00 (4.)
7+9+12+12	1.57	1.57	1.89	2.49	2.49	10.00 (3.5-11.5		1.76	2.54	2.96	2.96	12.00 (4.0
7+9+12+18	1.40	1.40	1.69	2.23	3.28	10.00 (3.5-11.5)	1.60	1.60	2.30	2.68	3.83	12.00 (4.
7+12+12+12	1.48	1.48	2.35	2.35	2.35	10.00 (3.5-11.5	1.70	1.70	2.86	2.86	2.86	12.00 (4.
9+9+9+9	1.72	2.07	2.07	2.07	2.07	10.00 (3.5-11.5		2.56	2.56	2.56	2.56	12.00 (4.
9+9+9+12	1.61	1.94	1.94	1.94	2.56	10.00 (3.5-11.5		2.47	2.47	2.47	2.88	12.00 (4.0
9+9+9+18 9+9+9+24	1.44	1.73	1.73	1.73 1.54	3.37 4.12	10.00 (3.5-11.5 10.00 (3.5-11.5		1.98	2.24 1.98	1.98	3.73 4.68	12.00 (4.0 12.00 (4.0
9+9+9+24 9+9+12+12	1.52	1.83	1.83	2.41	2.41	10.00 (3.5-11.5		2.39	2.39	2.78	2.78	12.00 (4.0
9+9+12+18	1.36	1.64	1.64	2.41	3.19	10.00 (3.5-11.5		2.17	2.17	2.53	3.62	12.00 (4.0
9+9+12+19	1.43	1.73	2.28	2.28	2.28	10.00 (3.5-11.5		2.31	2.70	2.70	2.70	12.00 (4.1
9+9+9+9	2.00	2.00	2.00	2.00	2.00	10.00 (3.5-11.5)	2.40	2.40	2.40	2.40	2.40	12.00 (4.0
9+9+9+12	1.88	1.88	1.88	1.88	2.48	10.00 (3.5-11.5)	2.32	2.32	2.32	2.32	2.71	12.00 (4.0
9+9+9+18	1.68	1.68	1.68	1.68	3.27	10.00 (3.5-11.5)	2.12	2.12	2.12	2.12	3.53	12.00 (4.0
9+9+9+24	1.50	1.50	1.50	1.50	4.01	10.00 (3.5-11.5		1.89	1.89	1.89	4.45	12.00 (4.0
9+9+12+12	1.77	1.77	1.77	2.34	2.34	10.00 (3.5-11.5		2.25	2.25	2.63	2.63	12.00 (4.0
9+12+12+12 9+12+12+18	1.68	1.68	2.22	2.22	2.22	10.00 (3.5-11.5)	J Z. 10	2.18	2.55	2.55	2.55	12.00 (4.0 12.00 (4.0

# SELF DIAGNOSIS DESCRIPTION AND CHECK POINT TABLE\*

In the event of breakdown, proceed as follows to detect the error code.

- 1. Press "CHECK" button at the remote control continuously for more than five seconds to turn on diagnosis mode. "\_\_" will be displayed at the remote control LCD.
- 2. By pressing the TIMER "A" button once, the next error code (if any) will be displayed; press "V" button once, previous error code will be displayed.
- 3. If error code displayed matches the error code saved in unit memory (abnormality detected) Indoor PCB will buzzer for 4 seconds to indicate the correct error code.
- 4. If "CHECK" button is pressed again or without any operation for 30 seconds, the diagnosis mode will turn off.
- 5. Turn ON the unit and reset the error code by pressing the AC reset.

<sup>\*</sup> Not for CU-5E34NBE



#### **ERROR CODES TABLE**

Warning: Electrical power must be disconnected when terminal protective cover is not in place to protect against electrocution.

Diagnosis Display	Abnormality / Protection Control	Diagnosis Method	Diagnosis Checkpoint
H11	Indoor/Outdoor abnormal communication	This trouble display appears when indoor/outdoor unit communication fails to be established after 30 or more seconds.	Measure the voltages of the indoor/outdoor unit communication cables, and check whether the voltage is being supplied properly to the outdoor unit or whether it is being returned from the outdoor unit to the indoor units.
H12	Indoor unit capacity unmatched	This trouble display appears when wrong in the total connection capacity and wrong connection in each capacity.  The trouble is determined within 2 minutes after the power is turned on.	Check the total capacity of the units connected and check that the models are compatible for connection.
H14	Intake air temp. sensor	This trouble display appears when the intake air temperature has exceeded above 46°C continuously for 2 minutes or dropped below -54°C continuously for 5 seconds during operation.	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting $[0L \text{ or } \infty]$ or short-circuit is not found, defective contact of the connector is to blame.
H15	Outdoor compressor temperature sensor abnormality	-	Check the sensor, and if open-circuit (more than 500 k) or (short-circuit) (less than 6.5 k) is not found, defective contact of the connector is to blame.
H16	Outdoor Current Transformer	CU-2E: When a value of under 1.5A has been detected for the total current during operation beyond the set capacity, the compressor operates with its operating frequency controlled to a maximum of 38Hz for 3 minutes, and if it continues to operate at a total current of under 1.5A for another 3 minutes, its operation stops. CU-3E/4E: When the total current has dropped below the set current level continuously for 20 seconds during operation beyond the set capacity, operation is stopped. Three minutes later, operation is started up again, and when the trouble occurs on 4 successive occasions, the trouble display appears (the timer lamp blinks).	Check the refrigerant cycle: Gas may be leaking (the amount of refrigerant is extremely low).     Check the control PCB: Check for a broken wire (open circuit) in the current transformer. (If an open circuit is found, replace the control PCB) In the case of a scroll compressor (DC motor), H16 is detected only when the regular compressor is operating.
H19	Indoor fan motor mechanism lock	High-voltage PWM: When a state in which the far motor speed is not synchronized with the control signal has been detected on 7 successive occasions.     Low-voltage PAH: When the fan lock detection signal has been detected on 7 successive occasions or it has been detected continuously for 25 seconds or when a state in which the fan motor speed is not synchronized with the control signal has been detected on 7 successive occasions. The trouble display appears (the timer lamp blinks).	Check the nature of the fan lockup trouble.     Check for disconnections of the fan motor connectors and for defects in contact, in the fan motor and in the control PCB.
H23	Indoor heat exchanger temp. sensor	This trouble display appears when a temperature of under approximately -40°C or above approximately 80°C has been detected by the heat exchanger temperature sensor continuously for 5 seconds. (This trouble is not detected during de-icing.)	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if [open-circuit] (DL or $\infty$ ) or short-circuit is not found, defective contact of the connector or a defective control PCB is to blame.
H26	Ionizer Abnormality	_	Measure the voltages of the indoor unit communication cables, and check whether the voltage is being supplied properly. 2. Check the ionizer needle and grounding plate is dust free.
H27	Outdoor air temp. sensor	This trouble display appears when a temperature of under approximately -40°C or above approximately 150°C has been detected by the outside air temperature sensor for 2 to 5 seconds. (This trouble is not detected during de-icing.)	Supplied property. 2. Cleak the foliate interest and grounding places: substitute. This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting ( $0L$ or $\infty$ ) or short-circuit isnot found, defective contact of the connector or a defective control PCB is to blame.
H28	Outdoor heat exchanger temp. sensor 1	This trouble display appears when a temperature of under approximately -60°C or above approximately 110°C has been detected by the heat exchanger temperature sensor for 2 to 5 seconds. (This trouble is not detected during de-icing.)	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting [OL or \infty] or short-circuit is not found, defective contact of the connector or a defective control PCB is to blame.
H30	Outdoor discharge pipe temp. sensor	CU-2E: This trouble display appears when a temperature of under approximately -16°C or above approximately 200°C has been detected by the outlet temperature sensor for 2 to 5 seconds. CU-3E/4E: Disconnected discharge sensor · When the condensation temperature is higher than the discharge temperature + [plus] 6°C, a sensor disconnection is detected, operation stops, and the trouble display appears (the timer tamp blinks).	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting (OL or $\infty$ ) or short-circuit is not found, defective contact of the connector or a defective control PCB is to blame.
H32	Outdoor heat exchanger temp. sensor 2 (discharge pipe temp.)	This trouble display appears when a temperature of under approximately -60°C or over approximately 110°C has been detected continuously for 2 to 5 seconds by the outlet temperature sensor of the heat exchanger.	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting (OL or $\infty$ ) or short-circuit is not found, defective contact of the connector or a defective control PCB is to blame.
H33	Indoor / Outdoor wrong connection	Indoor / Outdoor different model junction, 100V charge into 200V outdoor unit.	Check whether the voltage is being supplied properly to the outdoor unit or whether it is being returned from the outdoor unit to the indoor units.
H34	Outdoor heat sink temp. sensor	This trouble display appears when a temperature of under -43°C or above 80°C has been detected by the outdoor unit radiator fin sensor continuously for 2 seconds.	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting [0L or ∞] or short-circuit is not found, defective contact of the connector or a defective control PCB is to blame.
H36	Abnormal gas pipe temp. sensor	This trouble display appears when a temperature of under approximately -45°C or above approximately 149°C has been detected by the outdoor unit gas side pipe temperature sensor continuously for 2 to 5 seconds.	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting $(0L or \infty)$ or short-circuit is not found, defective contact of the connector or a defective control PCB is to blame.
H37	Outdoor liquid pipe temp. sensor	This trouble display appears when a temperature of under -45°C or above 149°C has been detected by the outdoor unit liquid side pipe temperature sensor continuously for 2 seconds.	This trouble display appears when a temperature which is impossibly high or low from a normal standpoint has been detected. Check the sensor, and if open-circuiting $(01 \text{ cm} \circ 1)$ or short-circuit is not found, defective contact of the connector or a defective control PCB is to blame.
H38	Indoor / Outdoor mismatch (brand code)	-	- Contract of the confliction of a defective contract for is to braine.
H39	Abnormal indoor operating unit or	This display appears in rooms other than one in which indoor freezing trouble has occurred when the pipes have been connected incorrectly, when an outdoor expansion valve is defective or when an expansion valve connector has become disconnected.	-
H41	standBy units Abnormal wiring or piping connection	CU-2E only This display appears when this kind of trouble is detected 3 minutes after a forced cooling operation was conducted for one room during the initial operation after the power was turned on. It appears when:  • The indoor unit pipe temperature in a room without the capacity supply available at an outside air temperature	-
		above 5°C has dropped by more than 20°C to 5°C or lower 3 minutes after the compressor started up The outdoor unit gas pipe temperature in a room without the capacity supply available has dropped by more than 5°C to 5°C or lower 3 minutes after the compressor started up.	
H50	Ventilation failure	This display appears when ventilation motor is lock.	Check the voltage drop at pin 1 & 2 of CNVENT to have 14Vdc. 2. Check the ventilation hose condition from ventilation opening until tip cover. 3. Check air fl ow from tip cover by hand.

H51	Vacuum Nozzle Failure	This display appears when the vacuum nozzle stop.	This trouble display appears when suction nozzle stop at centre of the Filter Cleaning device: 1. Check the filter setting position. 2. Check the nozzle drive stepper motor running condition.  This trouble display appears when suction nozzle stop at left side of Filter Cleaning device: 1. Check vacuum nozzle position. 2. Check the left limit switch switching function by multitester.  This trouble display appears when suction nozzle stop at left side of Filter Cleaning Device: 1. Check the Right
H52	Limit Switch Failure	This display appears when both Limit Switch (left & right) detected short circuit.	Limit Switch switching function by multitester.  1. Unplug the CNSIDESW connector and check Pin 1-2 and Pin 3-4 condition on PCB.  2. Check wiring condition at Limit switch (left & right).  3. Check switching function of Limit switch (left & right).
Н97	Outdoor fan motor mechanism lock	CU-ZE: When trouble, which is defi ned as a state in which the fan motor speed is not synchronized with the control signal has been detected on 5 successive occasions, has occurred for the third time in a 60-minute period and twice during a 30-minute period, the trouble display appears, and operation stops. CU-3E/AE: When the fan motor speed detected when its maximum output is demanded is below 30 rpm continuously for 15 seconds, the fan motor stops for 3 minutes and then restarted. When this happens on 16 occasions (the trouble display is cleared when the value is normal for 5 minutes), the H97 diagnostic symbol is stored in the memory, and the fan motor stops.	Check the nature of the fan lockup trouble.     Check for disconnections of the fan motor connectors and for defects in contact, in the fan motor and in the control PCB.
H98	Indoor high pressure protection	The restriction on the compressor frequency is started when the temperature of the indoor unit heat exchanger source is between 50°C and 52°C, the compressor stops at a temperature from 62°C to 65°C, it is restarted 3 minutes later at below 62°C to 65°C, and the restriction on the compressor frequency is released at a temperature between 48°C and 50°C. (No trouble display appears.)	Check the indoor unit heat exchanger temperature sensor (check for changes in its characteristics and check its resistance): Symptoms include no hot start when operation is started, a failure of the thermostat to turn on (no outdoor unit operation). And frequent repetition of stopping and startup.      Check also for short circuits indoors and clogging of the air fi tters.
H99	Indoor operating unit freezing	The restriction on the compressor frequency is started when the indoor unit heat exchanger temperature is between 8°C and 12°C. Operation stops if a temperature below 0°C continues for 6 minutes. Three minutes later, operation is started up at a temperature from 3°C to 8°C. The restriction on the compressor frequency is released at a temperature between 13°C and 14°C.	A cooling or dry mode operation conducted at a low outside air temperature is mainly to blame: this is not indicative of any malfunctioning. If the outside air temperature rises during automatic operation in the winter months, the dry mode operation is selected. The H99 diagnostic display also appears at such a time.      Check the refrigerating cycle: Gas may be leaking (the amount of refrigerant is low) or a pipe may be broken, etc.
F11	4-way valve switching failure	CU-2E: When the indoor unit heat exchanger temperature is under -5°C during a warming operation or above 45°C during a cooling or dry mode operation four minutes after the compressor has started up, the F11 diagnostic symbol is stored in the memory, and operation stops. 3 minutes later, operation is restarted. This trouble display appears when this happens on 4 occasions in a 30 minutes period.  CU-3E/4E: When a difference of 0°C to 5°C has been detected between the outdoor unit heat exchanger temperature and liquid side pipe temperature on 5 occasions, the trouble display appears.	Check also for short circuits indoors and clogging of the air filters.     Check the 4-way valve coil: Check that no power is supplied to the coil during cooling and dry mode operations, and that power is supplied during heating operations. Inspect the coil for broken wires (open circuits).     If the coil is troublefree, the switching action of the 4-way valve may be defective.
F17	Indoor standBy units freezing	CU-2E: After the operation of one indoor unit stops continuously for 5 minutes. The hole operation stops when the stopping indoor unit pipe temperature is under -5°C continuously for 1 minute or under 0°C continuously for 5 minutes, and operation restarts after 3 minutes. This trouble display appears if that trouble happens on 3 occasions in a 30 minutes period.  CU-3E/4E: When the difference of an intake temperature (room temperature sensor) and the indoor unit heat exchanger temperature [piping sensor] is higher than 10°C or an indoor unit heat exchanger temperature of below -1°C has been detected continuously for 5 minutes, operation stops. Three minutes later, it is started up, and the trouble display appears when this has occurred on 3 consecutive occasions.	Check the refrigerating cycle: Expansion valve leakage.     Check the indoor unit pipe temperature sensor (check for changes in its characteristics and check its resistance).
F90	PFC circuit protection (CU-2E)	CU-2E: When the reputation of the compressor is not synchronized with the control signal, the F93 diagnostic display is stored in the memory, and operation stops. 3 minutes later, operation is restarted. This trouble display appears when this happens on 4 occasions in a 20 minutes period. CU-3E/4E: When a state in which the rotation	To check whether the 2-way or 3-way valve has been left open by mistake, operation is performed for one to several minutes after the compressor has started up, F93 is stopped in the memory as the symptom, and operation stops.
	Main circuit low voltage (CU-3E/4E)	of the compressor is not synchronized with the control signal has been detected on 8 successive occasions, operation stops, and the trouble display appears.	2. Check the Inverter circuit (for open circuits) in the control PCB: Check the IPM base current (6 locations) within 3 minutes after the power has been turned back on. As the symptom, F93 is stored in the memory 30 seconds after the compressor has started up, and operation stops. The trouble display appears after 4 restarts. 3. Check for broken wires (open circuits) in the compressor winding: Approximately 1 ohm under normal conditions for each phase (same symptom as in 2.)
F91	Refrigeration cycle abnormality	CU-2E: When the rotation speed of the compressor exceeds the setting frequency and the total current is 1.5A or higher to 1.9A or lower continuously for 5 minutes, operation stops if the indoor unit heat exchanger temperature is higher than 20°C during cooling or dry operation or if it is under 25°C during heating. Three minutes later, it is restarted, and if the trouble occurs on 2 consecutive occasions in a 20 minutes period, the trouble display appears. CU-3E/4E: When the compressor frequency is above 55 Hz and the current drops below the prescribed level continuously for 7 minutes, operation stops, and it is restarted 3 minutes later. When the compressor discharge temperature has exceeded the setting and the expansion valve has remained fully open for 80 seconds, operation stops, and it is restarted 3 minutes later. When the stopping described above has occurred on 4 occasions, operation stops, and the trouble display appear.	Check the refrigerating cycle: Gas may be leaking (more than onehalf of the volume of the gas has gone). The diagnostic displays resulting from a gas leak generally change in the following sequence depending on the extent of the gas leak: $H99 \rightarrow F97 \rightarrow F91 \rightarrow H16$ . The range of this trouble (F91) is limited. (Compressor protection at the start of the season).
F93	Compressor abnormal revolution	CU-2E: When the reputation of the compressor is not synchronized with the control signal, the F93 diagnostic display is stored in the memory, and operation stops. 3 minutes later, operation is restarted. This trouble display appears when this happens on 4 occasions in a 20 minutes period. CU-3E/4E: When a state in which the rotation of the compressor is not synchronized with the control signal has been detected on 8 successive occasions, operation stops, and the trouble display appears.	To check whether the 2-way or 3-way valve has been left open by mistake, operation is performed for one to several minutes after the compressor has started up, F93 is stopped in the memory as the symptom, and operation stops.  2. Check the Inverter circuit [for open circuits] in the control PCB: Check the IPM base current [6 locations] within 3 minutes after the power has been turned back on. As the symptom, F93 is stored in the memory 30 seconds after the compressor has started up, and operation stops. The trouble display appears after 4 restarts.  3. Check for broken wires [open circuits] in the compressor winding: Approximately 1 ohm under normal conditions for each phase [same symptom as in 2.]
F95	Outdoor high pressure protection	CU-2E only: When the temperature of the outdoor unit heat exchanger temperature sensor exceeds 63°C, the F95 diagnostic symbol is stored in the memory, and operation stops. 3 minutes later, operation is restarted at a temperature below 56°C. This trouble display appears when this happens on 4 occasions in a 20-minutes period.	Check the outdoor unit heat exchanger temperature sensor (check for changes in its characteristics and check its resistance).     Check whether something is interfering with the dissipation of the heat outdoors.
F96	Power transistor module or compressor overheating (CU-2E) Compressor high discharge temperature (CU-3E/4E)	CU-2E: Heating is detected inside the IPM which shuts itself off, the F96 diagnostic symbol is stored in the memory, and operation stops. 3 minutes later, operation is restarted. The trouble display appears when this happens on 4 occasions in a 30-minutes period.  CU-3E/4E: When this trouble is detected from the electrical parts radiation fin temperature sensor and OLP output during operation, operation stops, and it is restarted 3 minutes later. If the trouble occurs on 4 occasions, operation stops, and the trouble display appears.	Something may be interfering with the dissipation of the heat outdoors or the outdoor unit fan may be defective. (The outdoor unit fan is not running.).     Defective IPM (outdoor unit control PCB).     Gas leaks. 2-way or 3-way valve is not opened.
F97	Compressor high discharge temperature	When the temperature of the compressor temperature sensor exceeds 112 to 120°C, the F97 diagnostic symbol is stored in the memory, and operation steps. Two minutes later, operation is restarted at a temperature below 107 to 110°C.  CU-2E: The trouble display appears and operation stops when this happens on 4 occasions in a 20 minutes period.  CU-3E/4E: This trouble display appears and operation stops when this happens on 6 occasions (it is cleared when the operation is normal for 20 minutes).	Check the refrigerating cycle: Gas may be leaking (the amount of refrigerant is low). The stopping of the outdoor unit from time to time is a symptom of this trouble.     When operation steps with this trouble display appearing, check the compressor temperature sensor (check for changes in its characteristics and check its resistance).     Something may be interfering with the dissipation of the heat outdoors or the outdoor unit fan may be defective. (The fan will not run because of an open circuit.) (The protection function may be activated by an overload, and the F97 trouble (siplay will remain stored in the memory.).
F98	Total running current protection	CU-ZE: When the total current exceeds the setting, the F98 diagnostic display is stored in the memory, and operation stops. 3 minutes later, operation is restarted. The trouble display appears and operation stops when this happens on 3 occasions in a 2D-minutes period.  CU-3E/EE: When the total current exceeds the setting [17A to 20A], frequency control is started, and if it then exceeds the setting, operation stops, and the trouble display appears.	overtoad, and the FYT trouble display will remain stored in the memory.)  1. Check the AC voltage at the outdoor unit terminal board during operation: The voltage drop must be within 5% of the voltage when operation has stopped (± 110% of rated voltage even during operation). If the voltage drop exceeds 5% or if the voltage changes suddenly, inspect whether the power supply cord and indoor/outdoor unit connection cables are too long or too small in diameter, etc.  2. Check whether something is interfering with the dissipation of the heat outdoors (during cooling operations): Normally, the capacity is limited by the current so that the outdoor unit don't stop, and the diagnostic display does not appear.
F99	DC peak detection	CU-2E: If the current level exceeds 22.5A after startup, the compressor stops, and it is restarted 3 minutes later. When this occurs on 7 consecutive occasions, operation stops, and the trouble display appears. CU-3E/4E: When "Output current trouble", which occurs when the prescribed current level is exceeded, has occurred on 16 consecutive occasions, operation stops, and the trouble display appears.	1. Check whether the compressor is defective (locked up or shorted winding). Check the outdoor unit control PCB.

## OPTIONAL ACCESSORIES

#### REPLACEMENT ANTI-ALLERGEN FILTER









#### PIPE REDUCER (FOR MULTI)



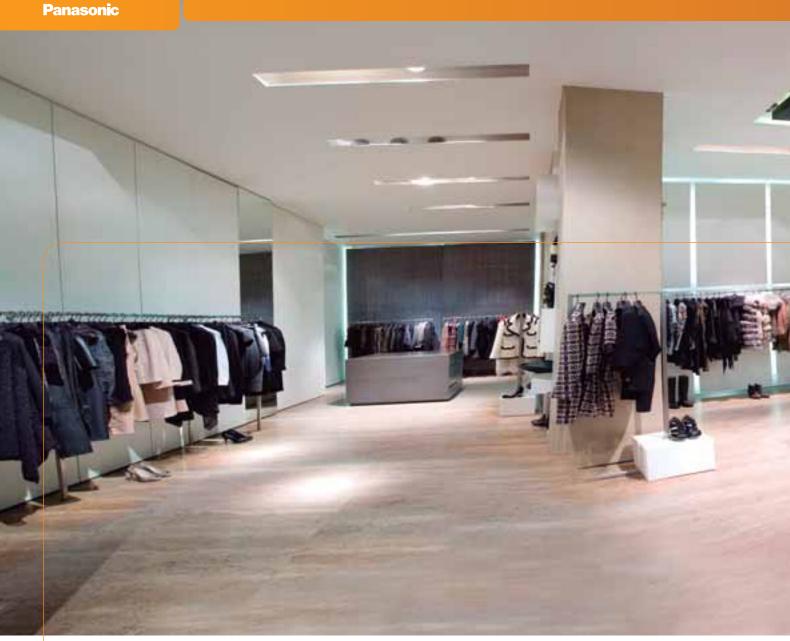
CZ-MAIP is to be used to reduce the connection size on the indoor unit to 3/8". CS-E15/18/MKEW, CS-E15/18DTEW, CS-E15/18HB4EA, CS-E15/18JD3EA, CS-E18GFEW, CS-E18GFEW, CS-XE15/18MKEW

#### PIPE EXPANDER (FOR MULTI)



CZ-MA2P is to be used to increase the connection size on the outdoor unit to 1/2". CS-E21MKEW, CS-XE21MKEW, CS-E21JB4EA



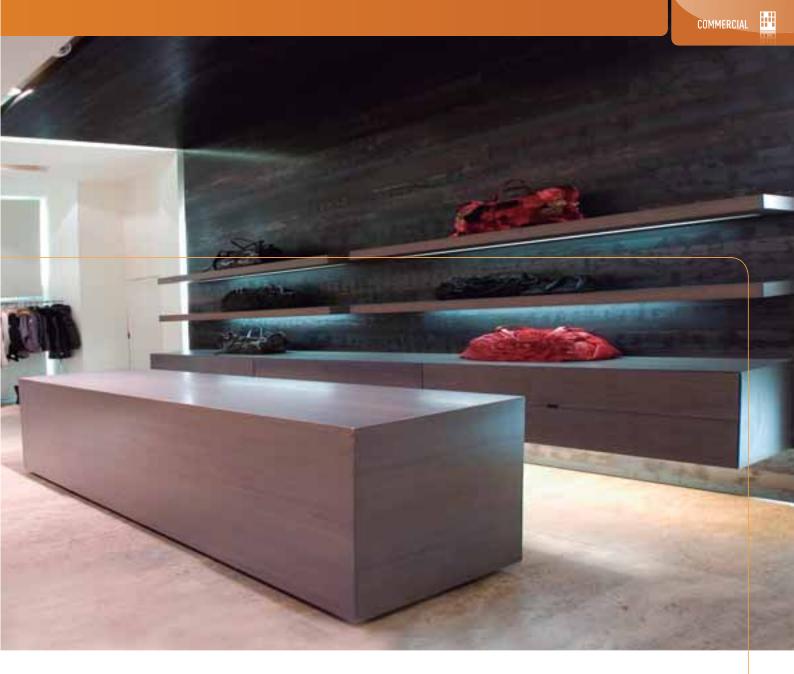






# WELCOME TO THE COMMERCIAL RANGE

HERE ARE SOME OF YOUR NEW AIR CONDITIONER'S MAJOR FEATURES.



## **COMMERCIAL RANGE**

Panasonic has developed an impressive range of highly efficient Commercial Air Conditioners. This range confirms our commitment to the environment. Our Inverter compressors optimise performance and thus reduce energy costs.



Inverter plus products improve on the characteristics of standard Inverter range by over 20%. This means 20% less consumption and 20% off your electric bill. A Inverter plus is also A class on cooling and heating mode.



Inverter range provides greater efficiency, more comfort and less noise than classic non inverter units. The Inverter system provides more precise temperature control, without highs and lows, and keeps the ambient temperature constant with lower energy consumption and a significant reduction in noise and vibration levels.



Anti Bacterial Filter. The Anti Bacterial Filter eliminates the allergens it captures. It combines three functions in one (anti-allergen, anti-virus and anti-bacteria) to keep room air clean and healthy.



The air conditioner works in heat pump mode with an outdoor temperature as low as -20 °C or -15 °C.



The air conditioner works in cooling only mode with an outdoor temperature of -15°C.



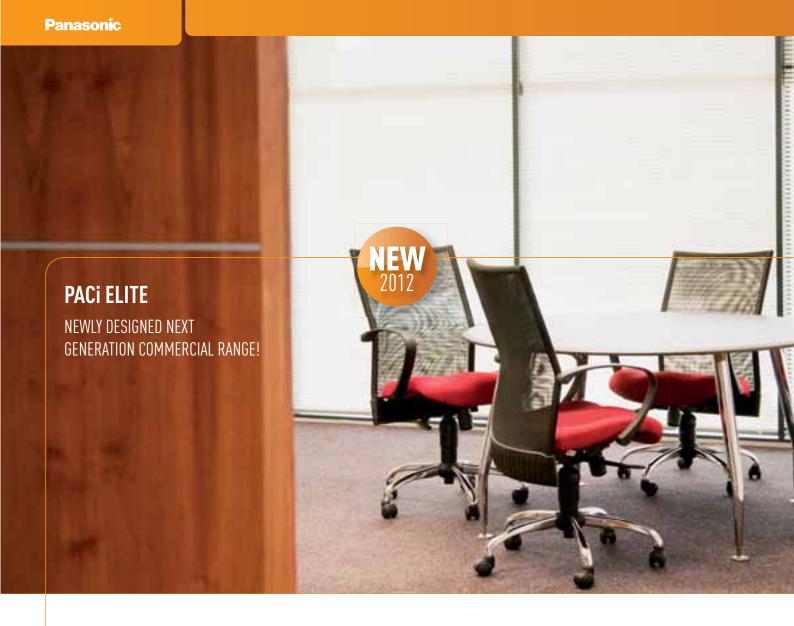
The communication port is integrated into the indoor unit and provides easy connection to, and control of, your Panasonic heat pump to your home or building management system.



R410A. Environmentally friendly refrigerant.



5 years warranty on





## **OUTDOOR UNIT PACI ELITE**

DC Inverter can attain both comfort and energy-saving operation

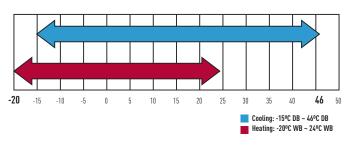
- Obtaining all necessary safety approvals to ensure quality and safety
- Top-class EER: 4.20 / COP: 4.31 (In case of 4 HP)
- Cooling operation is possible when outdoor temperature as high as 46  $^{\circ}\mathrm{C}$
- DC inverter technology combined with R410A for excellent efficiency
- Cooling operation is possible when outdoor temperature as low as -15  $^{
  m oC}$
- Heating operation is possible when outdoor temperature as low as -20  $^{
  m oC}$
- Compact outdoor unit 1,416 x 940 x 340 mm
- Auto restart from outdoor unit





#### Wide operating range

- Cooling operation is possible when outdoor temperature as low as -15  $^{
  m oC}$
- Cooling operation is possible when outdoor temperature as high as 46  $^{
  m oC}$
- Heating operation is possible when outdoor temperature as low as -20  $^{
  m oC}$ The remote control temperature setting offers a range from 16 °C to 30 °C.

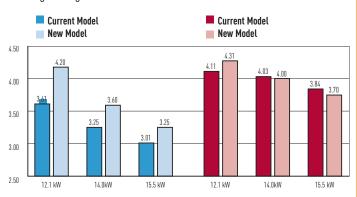


### **Product Quality and Safety**

All Panasonic air conditioners undergo strict quality and safety tests before sale. This rigorous process includes obtaining all necessary safety approvals, to ensure that all air conditioners we sell are not only built to the highest market standards, but are also completely safe.

#### Improved energy saving

Operating efficiency has been improved using highly efficient R410A refrigerant, new DC inverter compressor, new DC motor and a new heat exchanger design.



 $12.1 / 14.0 / 15.5 \text{ kW} \rightarrow 4 / 5 / 6 \text{ HP}$ 



# NEW 360° AIR FLOW 4 WAY 90x90 CASSETTE PACI ELITE



#### 4 Way 90x90 Cassette

#### Wide & Comfortable Airflow

This proprietary design provides a wide and very comfortable airflow. The cassette's wide-angle discharge outlets and flaps are larger in the middle, featuring a shape that was selected based on geometrics and testing of actual prototype units. Air coming out of the center of the discharge outlets travels farther. From the sides of each outlet, where the openings are larger, airflow spreads out to reach the corners of the room. Air is discharged across a wide area from the four sides of the unit. The curves on the room temperature distribution graph expand gently out through 360° in a circle centered on the indoor unit.

#### HIGHER EFFICIENCY SPLIT FIN.

Improved heat-transfer coefficient due to adoption of high efficiently grooved heat exchanger tube.

#### HIGH-EFFICIENT & SILENT TURBO FAN.

It is realized more air volume and more silent due to new development of a bigger fan chassis than previous one and optimization design of airflow path.

#### NEW DC-FAN MOTOR.

It is realized more optimum air-flow by a new DC-fan motor with independent control.

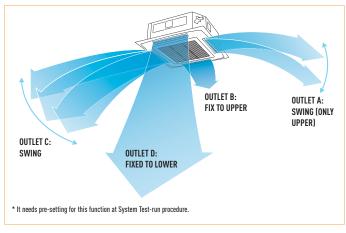
#### INDIVIDUAL FLAP CONTROL.

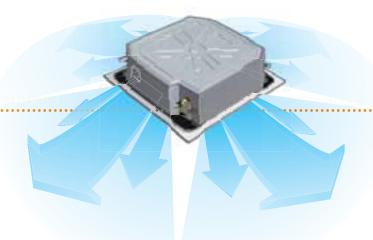
Flexible Air flow direction control by individual flap control is possible. A Flaps can be controlled individually by setting on wired timer remote controller. It can make more flexible Air-flow control to be matched to several demands in a room.

#### Flexible 3D air-flow control

Comfort air flow control & proper energy use. Flexible Air flow direction control by individual flap control:

- 4 Flaps can be controlled individually (by standard wired remote controller\*).
- Versatile air flow control to cover a wide variety of demands.



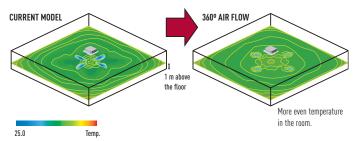


#### Ample airflow: 34-36 m³/min

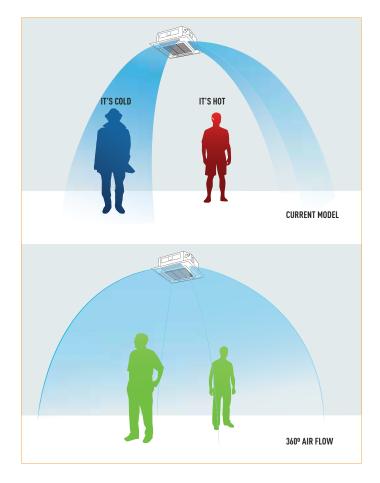
Industry's highest in the 140 PU class.

#### New 360° Air Flow for improved comfort

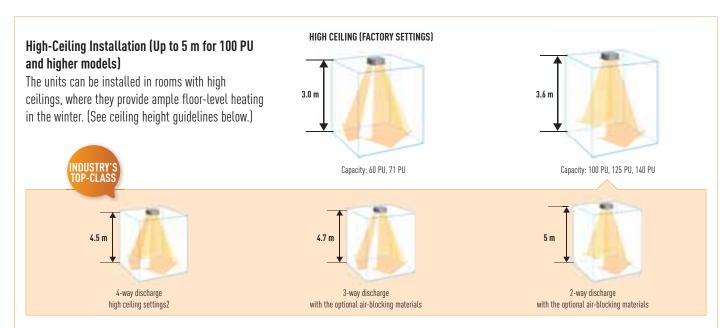
The new air-outlet and flap design creates a soft and gentle air flow which circulates throughout the whole space and provides an even temperature distribution in the room.



Simulated condition: Floor area: 225 m². Ceiling height: 3 m, Unit 5 HP type. Air-volume: 1,200 m³/h in cooling.







#### Ceiling height guidelines

Settings <sup>1</sup>	4-way discharge		3-way discharge (optional air-	2-way discharge (optional air-		
	Factory settings 1	High ceiling setting 1			blocking materials) <sup>2</sup>	
Indoor unit: 60PU-71PU	3.0	3.3	3.6	3.8	4.2	
Indoor unit: 100PU, 125PU, 140PU	3.6	3.9	4.5	4.7	5.0	

1 When using the unit in a configuration other than the factory settings, it is necessary to make settings on site to increase airflow.

2 Use air-blocking materials (CZ-CFU2) to completely block two discharge outlets for 2-way airflow.

#### **Easy Maintenance and Cleaning**

The flap can be removed easily for washing with water.

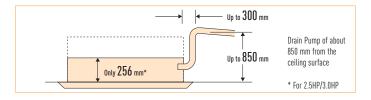


#### Lighter and Slimmer, Easier Installation

A lightweight unit at 24 Kg, the unit is also very slim with a height of only 256 mm, making installation possible even in narrow ceiling voids.

#### A Drain Height of Approx. 850 mm from the Ceiling Surface

The drain height can be increased by approximately 350 mm over the conventional value by using a high-lift drain pump, and long horizontal piping is possible.



#### Low-Profile 33.5 mm Panel

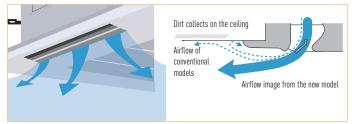
The square panel integrates seamlessly with the ceiling. Discharge outlets close when the unit is stopped.



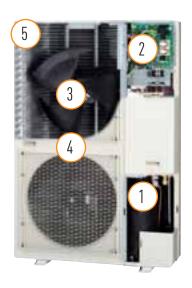
#### New design

Wide direction air discharge by outlet design.

The Circle Flow Flap and new designed air-outlet eliminate the airflow along the recessed parts on the ceiling reduce the contamination of the ceiling. If air flows only along the recessed parts of the ceiling, they will quickly become dirty. The new, improved air outlet design therefore greatly reduces dirt accumulation.



#### PACI ELITE: OUTDOOR UNIT



#### Energy saving concept

The use of energy saving design for the structure of fans, fan motors, compressors and heat exchangers resulted in high COP value which ranked as one the top class in the industry. In addition, use of highly efficient R410A refrigerant reduces CO<sub>2</sub> emission and lowers operating costs.

#### 1. Compact & Highly Efficient Compressor

Large-capacity inverter compressor has been adopted. The inverter compressor is superior in performance with improved partial-load capacity.

#### 2. Printed Circuit Board (P-LINK)

To improve maintenance, the number of PCBs have been reduced to two.

#### 3. DC fan motor

Checking load and outside temperature, the DC motor is controlled for optimum air volume.

#### 4. New Large Diagonal (520 mm) Air Flow Fan

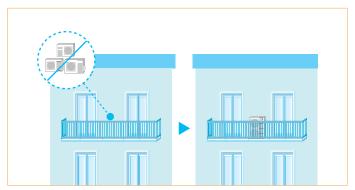
The fan has been designed to reduce air turbulence and increase efficiency. As fan diameter has been increased to 520 mm, the air volume has been increased by 12% whilst maintaining a low sound level.

#### 5. High-Efficiency Heat Exchanger

The heat exchanger size and the copper tube sizes in the heat exchanger have been redesigned to increase efficiency.

#### Compact & Flexible-design

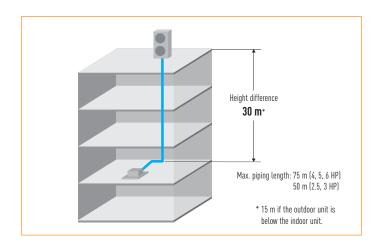
The slim and lightweight design means the PACi outdoor unit can be installed in a number of situations.



#### **Increased Piping Length for Greater Design Flexibility**

Adaptable to various building types and sizes.

Max. piping length: 75m (4HP, 5HP, 6HP). 50m (2.5HP, 3HP).



#### **Compact and Lightweight**

As the unit only weighs 98kg, it is easy to carry and easy to install.

#### Quiet mode

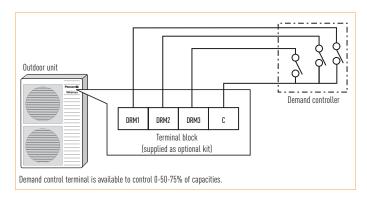
5 dB can be reduced by setting. External input signal is also available.



#### Demand Response Compliant (CZ-CAPDC3)

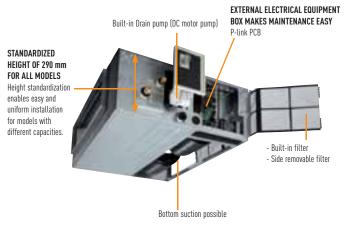
This optional part allows demand control of the outdoor unit. Several level of settings are available:

- Level-1. 2. 3:75 / 50 / 0 %
- Level-1, 2 can be set in 40 100% (40, 45, 50...95, 100: each 5%)



#### **PACI ELITE: INDOOR UNIT**

#### HIGH STATIC PRESSURE HIDE AWAY



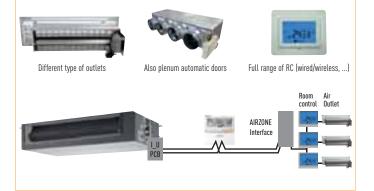


#### Control of the FS and PACi Hide Aways by Airzone

Airzone has developed interfaces to easily connect to Panasonic PACi and FS Hide Away units. Ensuring optimum performance, comfort and energy savings, the new system is efficient and easy to install. Interface dimensions: 120 x 25 x 65 cm (W x H x D). Interfaces must be purchased direct from Airzone.



AIRZONE FULL RANGE OF ACCESORIES FOR ANY DUCT PROJECT



#### Low Static Pressure Hide Away

Ultra-slim profile: 250 mm height for all models



#### 4-Way 60x60 Cassette

#### Lighter and slimmer, easier installation

Lightweight and very slim which makes installation possible even in narrow ceilings.

#### A drain height of approx. 850 mm from the ceiling surface

The drain height can be increased by approx. 350 mm over the conventional value by using a high-lift drain pump, and long horizontal piping is possible.

Significant reduction of power consumption by using highly developed DC fan motors with variable speed, special heat exchangers, etc.

Convenient cleaning. The flap can be removed easily for washing.



#### Wall Mounted

The unit's compact design and flat face ensure discreet installation, even in a small space.



#### Washable front panel.

The indoor unit's front panel can be easily removed and washed for trouble-free cleaning.



## **RANGE OF INDOOR UNITS PACI**

	1.5 HP	1.75 HP	2.0 HP	2.5 HP
WALL PACI ELITE // INVERTER+				
	S-36PK1E5	S-45PK1E5	S-50PK1E5	S-60PK1E5
4-WAY 60x60 CASSETTE PACI ELITE // INVERTER+ (FOR TWIN COMBINATIONS)	S-36PY1E5	S-45PY1E5	S-50PY1E5	
4 WAY 90x90 CASSETTE PACI ELITE // INVERTER+	S-36PU1E5	S-45PU1E5	S-50PU1E5	S-60PU1E5
LOW STATIC PRESSURE HIDE AWAY PACI ELITE // Inverter+	S-36PN1E5	S-45PN1E5	S-50PN1E5	S-60PN1E5
HIGH STATIC PRESSURE HIDE AWAY PACI ELITE // INVERTER+	S-36PF1E5	S-45PF1E5	S-50PF1E5	S-60PF1E5
CEILING PACI ELITE // INVERTER+	S-36PT1E5	S-45PT1E5	S-50PT1E5	S-60PT1E5
HIGH STATIC PRESSURE HIDE AWAY 8-10 HP PACI // 3 PHASE INVERTER+	O GOT TIED	V 401 11E0	O GOLLIEU	0 001 1120

<sup>\*</sup> The indoor units from 1.5 to 2.0 HP are only available only for Twin, Triple and Quadriple combinations.

## RANGE OF OUTDOOR UNITS PACI

			2.5 HP
INVERTER+			
	SINGLE-PHASE		U-60PE1E5
	THREE-PHASE		

## **RANGE OF AHU KIT PACI**

				1
AHU Kit				
				1
				1
				1



3.0 HP	4.0 HP	5.0 HP	6.0 HP	8.0 HP	10.0 HP
S-71PK1E5					
1		1	1		
 S-71PU1E5	S-100PU1E5	S-125PU1E5	S-140PU1E5		
S-71PN1E5	S-100PN1E5	S-125PN1E5	S-140PN1E5		
S-71PF1E5	S-100PF1E5	S-125PF1E5	S-140PF1E5		
S-71PT1E5	S-100PT1E5	S-125PT1E5	S-140PT1E5		
				S-200PE1E8	S-250PE1E8



3.0 HP	4.0 HP	5.0 HP	6.0 HP	8.0 HP	10.0 HP
				0	0
U-71PE1E5	U-100PE1E5	U-125PE1E5	U-140PE1E5		
U-71PE1E8 (Available in September'12)	U-100PE1E8	U-125PE1E8	U-140PE1E8	U-200PE1E8	U-250PE1E8



4.0 HP	5.0 HP	6.0 HP	8.0 HP	10.0 HP
CZ-280PAH1	CZ-280PAH1	CZ-280PAH1	CZ-280PAH1	CZ-280PAH1



## WALL PACI ELITE // INVERTER+

NEW FOR 2012 THIS WALL MOUNTED UNIT COMES COMPLETE WITH FLAT PANEL DESIGN AND AN EXTENDED RANGE TO OFFER A SLEEK NEW LOOK WHILST EXTENDING THE CAPACITY CHOICE. The extension of the range to include a 7.1 kW unit allows for many more applications such as studios, gyms, high ceiling areas and even computer server rooms can be conditioned.









			2.5 HP	3.0 HP	3.0 HP
KIT			KIT-60PK1E5	KIT-71PK1E5	KIT-71PK1E8
Indoor			S-60PK1E5	S-71PK1E5	S-71PK1E5
Outdoor			U-60PE1E5	U-71PE1E5	U-71PE1E8
Wireless control	Included on the kit		CZ-RTC2	CZ-RTC2	CZ-RTC2
Cooling capacity	Nominal (Min - Max)	kW	6.0 (2.5 - 7.1)	7.1 (2.5 - 8.0)	7.1
EER1)	Nominal (Min - Max)	kW	3.85 (5.56 - 3.55) A	3.40 (5.56 - 3.02) A	
Power input Cooling	Nominal (Min - Max)	kW	1.56 (0.45 - 2.0)	2.09 (0.45 - 2.65)	
Heating capacity	Nominal (Min - Max)	kW	7.0 (2.0 - 8.0)	8.0 (2.0 - 9.0)	8.0
COP <sup>1)</sup>	Nominal (Min - Max)	kW	3.85 (5.00 - 3.23) A	3.76 (5.00-3.10) A	
Power input Heating	Nominal (Min - Max)	kW	1.82 (0.40 - 2.48)	2.13 (0.40 - 2.90)	
Annual Energy Consump	tion <sup>2)</sup>	kWh	780	1045	
INDOOR UNIT					
Air Volume	Cooling / Heating r	m³/h	1080 / 1080	1080 / 1080	1080 / 1080
Moisture removal volum	e l	l/h	3.4	4.2	
Sound pressure Level	Cooling (Hi / Me / Lo)	dB(A)	47 / 44 / 40	47 / 44 / 40	47 / 44 / 40
·		dB(A)	47 / 44 / 40	47 / 44 / 40	47 / 44 / 40
Sound power Level	Cooling (Hi)	dB	64	64	64
·	Heating (Hi)	dB	64	64	64
Dimensions	H x W x D	mm	300 x 1065 x 230	300 x 1065 x 230	300 x 1065 x 230
Net weight		Kg	14.5	14.5	14.5
OUTDOOR UNIT		•			
וואט אטטעוטט					
Power source	١	V	220 - 240	220 - 240	380-415
		V mm <sup>2</sup>		220 - 240 2 x 1.5 or 2.5	380-415
Power source		mm <sup>2</sup>	220 - 240 2 x 1.5 or 2.5 7.15		380-415
Power source Connection	1	mm² A	2 x 1.5 or 2.5	2 x 1.5 or 2.5	
Power source Connection Current Cooling	Nominal (Min / Max) // Nominal (Min / Max) //	mm² A	2 x 1.5 or 2.5 7.15	2 x 1.5 or 2.5 9.4 9.5	
Power source Connection Current Cooling Current Heating	Nominal (Min / Max) / Nominal (Min / Max) / Cooling / Heating	mm² A	2 x 1.5 or 2.5 7.15 8.15	2 x 1.5 or 2.5 9.4	
Power source Connection Current Cooling Current Heating Air Volume	Nominal (Min / Max) Nominal (Min / Max) Cooling / Heating Cooling (Hi)	mm² A A m³/h	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600	  3600 / 3600
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3</sup>	Nominal (Min / Max) / Nominal (Min / Max) / Cooling / Heating r Cooling (Hi) (Heating (Hi))	mm² A A m³/h dB(A)	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48	  3600 / 3600 48
Power source Connection Current Cooling Current Heating Air Volume	Nominal (Min / Max) / Nominal (Min / Max) / Cooling / Heating (Cooling (Hi) (Heating (Hi) (Cooling (Hi)) (Cooling (Hi)) (Cooling (Hi)) (Cooling (Hi))	mm² A A M³/h dB(A) dB(A)	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48 50	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50	  3600 / 3600 48 50
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3</sup>	Nominat (Min / Max) / Nominat (Min / Max) / Cooling / Heating   Cooling (Hi)   Co	mm² A A A m³/h dB(A) dB(A)	2 x 1.5 or 2.5 7.15 8.15 8.10 3600 / 3600 48 50 65	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65	  3600 / 3600 48 50 65
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3</sup> Sound power Level	Nominat (Min / Max) / Nominat (Min / Max) / Cooling / Heating / Cooling (Hi) / Cooling (Hi) / Cooling (Hi) / Heating (Hi) / Heating (Hi) / Hax W x D	mm² A A A m³/h dB(A) dB(A) dB B dB	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48 50 65 67	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67	  3600 / 3600 48 50 65 67
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>2)</sup> Sound power Level	Nominal (Min / Max) / Nominal (Min / Max) / Cooling / Heating Cooling (Hi) (Heating (Hi) (Cooling (Hi) (Heating (Hi) (Hating (Hi) (Hx W x D) (Hating (Hx W x D) (Hx W x D) (Hx W x D) (Hx W x D)	mm² A A A m³/h dB(A) dB(A) dB dB mm Kg	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48 50 65 67 996 x 940 x 340	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67 996 x 940 x 340	3600 / 3600 48 50 65 67 996 x 940 x 340
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level® Sound power Level Dimensions Net weight	Nominal (Min / Max) / Nominal (Min / Max) / Cooling / Heating   Cooling (Hi)   Co	mm² A A M³/h dB(A) dB(A) dB dB mm Kg Inch (mm)	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48 50 65 67 996 x 940 x 340 68	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67 996 x 940 x 340 69	 3600 / 3600 48 50 65 67 996 x 940 x 340 69
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level® Sound power Level Dimensions Net weight	Nominal (Min / Max) / Nominal (Min / Max) / Cooling / Heating Cooling (Hi) (Heating (Hi) (Cooling (Hi) (Heating (Hi) (Hi) (Heating (Heating (Hi) (Heating (Heating (Hi) (Heating (Heating (Hi) (Heatin	mm² A A M³/h dB(A) dB(A) dB mm Kg Inch (mm)	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48 50 65 67 996 x 940 x 340 68 3/8 (9.52)	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52)	3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52)
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3)</sup> Sound power Level Dimensions Net weight Piping connections	Nominal (Min / Max) / Nominal (Min / Max) / Cooling / Heating Cooling (Hi) + Heating (Hi) Cooling (Hi) + Cooling (Hi) + Cooling (Hi) + X W x D	mm² A A M³/h dB(A) dB(A) dB dB mm Kg Inch (mm)	2 x 1.5 or 2.5 7.15 8.15 8.16 3600 / 3600 48 50 65 67 996 x 940 x 340 68 3/8 (9.52) 5/8 (15.88)	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 (15.88)	
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3)</sup> Sound power Level Dimensions Net weight Piping connections Refrigerant Loading	Nominat (Min / Max) / Nominat (Min / Max) / Nominat (Min / Max) / Cooling / Heating   Cooling (Hi)   Cooling (H	mm² A A A m³/h dB(A) dB(A) dB B mm Kg Inch (mm) Kg	2 x 1.5 or 2.5 7.15 8.15 8.16 3600 / 3600 48 50 65 67 996 x 940 x 340 68 3/8 (9.52) 5/8 (15.88) 2	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 [15.88] 2.35	3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 (15.88) 2.35
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3)</sup> Sound power Level Dimensions Net weight Piping connections Refrigerant Loading Elevation dif. [in/out] <sup>4</sup>	Nominat (Min / Max) Nominat (Min / Max) Cooling / Heating Cooling (Hi) Heating (Hi) Cooling (Hi) Heating (Hi) Coling (Hi) H x W x D Liquid pipe Gas pipe R410A Max IMin / Max	mm² A A A M³/h dB(A) dB(A) dB B B B B B B B B B B B B B B B B B B	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48 50 65 67 996 x 940 x 340 68 3/8 (9.52) 5/8 (15.88) 2	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 (15.88) 2.35 30	3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 (15.88) 2.35
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3)</sup> Sound power Level Dimensions Net weight Piping connections Refrigerant Loading Elevation dif. (in/out) <sup>4</sup> Piping length Piping length	Nominat (Min / Max) Nominat (Min / Max) Nominat (Min / Max) Cooling (Hi) Heating (Hi) Cooling (Hi) Heating (Hi) Cooling (Hi) Hatay (Hi) Liquid pipe Gas pipe R410A Max Min / Max I Max	mm² A A A m³/h dB(A) dB(A) dB dB mm Kg Inch (mm) Inch (mm) Kg m	2 x 1.5 or 2.5 7.15 8.15 3600 / 3600 48 50 65 67 996 x 940 x 340 68 3/8 (9.52) 5/8 (15.88) 2 30 5 - 50	2 x 1.5 or 2.5  9.4  9.5  3600 / 3600  48  50  65  67  996 x 940 x 340  69  3/8 (9.52)  5/8 (15.88)  2.35  30  5 - 50	3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 (15.88) 2.35 30 5 - 50
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3)</sup> Sound power Level Dimensions Net weight Piping connections Refrigerant Loading Elevation dif. (in/out) <sup>4</sup> Piping length Piping length without refrigerant increase	Nominal (Min / Max) Nominal (Min / Max) Cooling / Heating Cooling (Hi) Heating (Hi) Cooling (Hi) Heating (Hi) Hating (Hi) Liquid pipe Gas pipe R410A Max Min / Max Max Max I	mm² A A A m³/h dB(A) dB(A) dB B Mm Kg Inch (mm) Kg m m m	2 x 1.5 or 2.5 7.15 8.15 8.15 8.600 / 3600 48 50 65 67 996 x 940 x 340 68 3/8 (9.52) 5/8 (15.88) 2 30 5 - 50	2 x 1.5 or 2.5 9.4 9.5 3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 (15.88) 2.35 30 5 - 50 30	
Power source Connection Current Cooling Current Heating Air Volume Sound pressure Level <sup>3)</sup> Sound power Level Dimensions Net weight Piping connections Refrigerant Loading Elevation dif. [in/out] <sup>4)</sup> Piping length Piping length without refrigerant increase Additional gas	Nominat (Min / Max) Nominat (Min / Max) Cooling / Heating Cooling (Hi) Heating (Hi) Cooling (Hi) Heating (Hi) H x W x D  Liquid pipe Gas pipe R410A Max Min / Max Max Max Cooling Min / Max	mm² A A A M³/h dB(A) dB(A) dB B mm Kg Inch (mm) Kg m m m Kg	2 x 1.5 or 2.5 7.15 8.15 8.15 3600 / 3600 48 50 65 67 996 x 940 x 340 68 83/8 (9.52) 5/8 (15.88) 2 30 5 - 50 30	2 x 1.5 or 2.5  9.4  9.5  3600 / 3600  48  50  65  67  996 x 940 x 340  69  3/8 (9.52)  5/8 (15.88)  2.35  30  5 - 50	3600 / 3600 48 50 65 67 996 x 940 x 340 69 3/8 (9.52) 5/8 (15.88) 2.35 30 5 - 50 30

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

DB: Dry bulb, WB: Wet bulb. Specifications subject to change without notice.

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>4)</sup> When installing the outdoor unit at a higher position than the indoor unit. Recommended fuse for the indoor 3A.





INCLUDED ON THE KIT Timer remote controller CZ-RTC2



OPTIONAL CONTROLLERS Wireless control CZ-RWSK2







#### **TECHNICAL ZOOM**

- NEW 7.1 kW CAPACITY UNIT
- NEW FLAT FACE DESIGN FOR MODERN APPEARANCE
- NEW COMPACT DESIGN OFFERS OVER 15% REDUCTION IN **OVERALL SIZE**
- WASHABLE FRONT PANEL
- THREE DIRECTIONAL PIPING OUTLET
- DC FAN FOR BETTER EFFICIENCY AND CONTROL



Compatible with all ECOi connectivity solutions

#### Closed discharge port

When the unit is turned off, the flap closes completely to prevent dust getting into the unit and to keep the equipment clean.

#### **Quiet operation**

These units are among the quietest in the industry, making them ideal for hotels and hospitals.

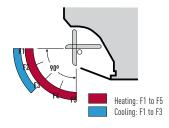
#### Smooth and durable design

The sleek, compact design ensures a discreet installation - even where space is limited.

#### Piping outlet in three directions

With three options for pipe outlets - rear, right and left - installation is made easy.

#### Air distribution is altered depending on the operational mode of the unit



#### Washable front panel.

The indoor unit's front panel can be easily removed and washed for trouble-free cleaning.



ANTI-MOLD FILTERS ARE STANDARD EQUIPMENT.



U-60PE1E5 U-71PE1E5

U-71PE1E8



## 4-WAY 60x60 CASSETTE PACI ELITE // INVERTER+

SMALL AND POWERFUL, IDEAL FOR OFFICES AND RESTAURANTS. Only for Twin, Triple and Double-twin combinations.





			1.5 H.P.	1.75 H.P.	2.0 H.P.
Indoor	Indoor		S-36PY1E5	S-45PY1E5	S-50PY1E5
Panel			CZ-KPY21	CZ-KPY21	CZ-KPY21
Wired remote control			CZ-RTC2	CZ-RTC2	CZ-RTC2
Cooling capacity	Nominal (Min - Max)	kW	3.6	4.5	5.0
Heating capacity	Nominal (Min - Max)	kW	4.2	5.2	5.6
Air Volume	Cooling / Heating	m³/h	540 / 540	636 / 636	750 / 750
Moisture removal volum	е	l/h	2.1	2.5	2.8
Sound pressure Level	Cooling (Hi/Me/Lo)	dB(A)	32 / 29 / 26	36 / 32 / 28	41 / 37 / 33
	Heating (Hi/Me/Lo)	dB(A)	32 / 29 / 26	36 / 32 / 28	41 / 37 / 33
Sound power Level	Cooling (Hi)	dB	49	53	58
	Heating (Hi)	dB	49	53	58
Dimensions indoor	H x W x D	mm	283 x 575 x 575	283 x 575 x 575	283 x 575 x 575
Dimensions panel	H x W x D	mm	30 x 625 x 625	30 x 625 x 625	30 x 625 x 625
Net weight	Indoor (Panel)	Kg	16 (2.4)	16 (2.4)	16 (2.4)

GLOBAL REMARKS

Rated conditions: Cooling Heating
Indoor air temperature 27 °C DB / 19 °C WB 20 °C DB
Outdoor air temperature 35 °C DB / 24 °C WB 7 °C DB / 6 °C WB

DB: Dry bulb, WB: Wet bulb. Specifications subject to change without notice.







#### INCLUDED IN THE KIT Timer remote controller CZ-RTC2



#### OPTIONAL Wireless remote controller

CZ-RWSY2 CZ-RWSC2





CZ-RE2C2





#### **TECHNICAL ZOOM**

- FRESH AIR KNOCK OUT
- MULTIDIRECTIONAL AIR FLOW
- INTEGRATED DRAIN PUMP GIVES 850 mm LIFT
- 3 SPEED CENTRIFUGAL FAN
- ANTI-MOULD AND ANTI-BACTERIA WASHABLE FILTERS
- DC FAN FOR BETTER EFFICIENCY AND CONTROL



Compatible with all ECOi connectivity solutions

#### Lighter and slimmer, easier installation

Lightweight and very slim which makes installation possible even in a narrow ceiling void.

#### A drain height of approx. 850 mm from the ceiling surface

The drain height can be increased by approx. 350 mm over the conventional value by using a high-lift drain pump, and long horizontal piping is possible.

Significant reduction of power consumption by using highly developed DC fan motors with variable speed, special heat exchangers, etc.

Convenient cleaning.

The flap can be removed easily for washing.





## 4 WAY 90x90 CASSETTE PACI ELITE // INVERTER+

THE NEW SEMI CONCEALED 4 WAY BLOW TYPE CASSETTE INCORPORATES MANY NEW BENEFITS DUE TO ADVANCEMENTS IN DESIGN AND TECHNOLOGY.

Airflow has been improved including circulation, height and volume control and the product offers improved efficiencies and better COPs due to the new coil design.









			2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	5.0 HP	6.0 HP	6.0 HP
KIT				KIT-71PU1E5		KIT-100PU1E5	KIT-100PU1E8	KIT-125PU1E5	KIT-125PU1E8	KIT-140PU1E5	KIT-140PU1E8
Indoor				S-71PU1E5	S-71PU1E5	S-100PU1E5	S-100PU1E5	S-125PU1E5	S-125PU1E5	S-140PU1E5	S-140PU1E5
Outdoor			U-60PE1E5	U-71PE1E5	U-71PE1E8	U-100PE1E5	U-100PE1E8	U-125PE1E5	U-125PE1E8	U-140PE1E5	U-140PE1E8
Panel			CZ-KPU2								
Wired remote control			CZ-RTC2								
Cooling capacity	Nominal (Min - Max)	kW	6.0 (2.5 - 7.1)	7.1 (2.5 - 8.0)	7.1 (2.5 - 8.0)	10.0 (3.3 - 12.5)	10.0 (3.3 - 12.5)	12.5 (3.3 - 14.0)	12.5 (3.3 - 14.0)	14.0 (3.3 - 15.5)	14.0 (3.3 - 15.5)
EER <sup>1)</sup>	Nominal (Min - Max)	kW	4.05 (5.56 - 3.55) A	3.94 (5.56 - 3.02) A	3.94 (5.56 - 3.02) A	4.20 (3.93 - 3.38) A	4.20 (3.93 - 3.38) A	3.60 (3.93 - 3.04) A	3.60 (3.93 - 3.04) A	3.25 (3.93 - 2.58) A	3.25 (3.93 - 2.58) A
Power input Cooling	Nominal (Min - Max)	kW					2.38 (0.84 - 3.70)				
Heating capacity	Nominal (Min - Max)	kW	7.0 (2.0 - 8.0)	8.0 (2.0 - 9.0)	8.0 (2.0 - 9.0)	11.2 (4.1 - 14.0)	11.2 (4.1 - 14.0)	14.0 (4.1 - 16.0)	14.0 (4.1 - 16.0)	16.0 (4.1 - 18.0)	16.0 (4.1 - 18.0)
COP <sup>1)</sup>	Nominal (Min - Max)	kW	3.87 (5.0 - 3.23) A	4.00 (5.0 0- 3.10) A	4.00 (5.0 0- 3.10) A	4.31 (4.56 - 3.18) A	4.31 (4.56 - 3.18) A	4.00 (4.56 - 3.08) A	4.00 (4.56 - 3.08) A	3.70 (4.56 - 3.05) A	3.70 (4.56 - 3.05) A
Power input Heating	Nominal (Min - Max)	kW	1.81 (0.40 - 2.48)	2.00 (0.40 - 2.90)	2.00 (0.40 - 2.90)	2.60 (0.90 - 4.40)	2.60 (0.90 - 4.40)	3.50 (0.90 - 5.20)	3.50 (0.90 - 5.20)	4.33 (0.90 - 5.90)	4.33 (0.90 - 5.90)
Annual Energy Consump	tion <sup>2)</sup>	kWh	740	900	900	1190	1190	1735	1735	2155	2155
INDOOR UNIT											
Air Volume	Cooling / Heating	m³/h	1260 / 1260	1320 / 1320	1320 / 1320	1980 / 1980	1980 / 1980	2100 / 2100	2100 / 2100	2160 / 2160	2160 / 2160
Moisture removal volume	, and the second	l/h	3.4	4.2	4.2	6.0	6.0	7.9	7.9	9.0	9.0
Sound pressure Level	Cooling (Hi / Me / Lo)	dB(A)	36 / 31 / 28	37 / 31 / 28	37 / 31 / 28	44 / 38 / 32	44 / 38 / 32	45 / 39 / 33	45 / 39 / 33	46 / 40 / 34	46 / 40 / 34
	Heating (Hi / Me / Lo)	dB(A)	36 / 31 / 28	37 / 31 / 28	37 / 31 / 28	44 / 38 / 32	44 / 38 / 32	45 / 39 / 33	45 / 39 / 33	46 / 40 / 34	46 / 40 / 34
Sound power Level	Cooling (Hi / Me / Lo)	dB	53 / 48 / 45	54 / 48 / 45	54 / 48 / 45	62 / 55 / 49	62 / 55 / 49	63 / 56 / 50	63 / 56 / 50	64 / 57 / 51	64 / 57 / 51
	Cooling (Hi / Me / Lo)	dB	53 / 48 / 45	54 / 48 / 45	54 / 48 / 45	62 / 55 / 49	62 / 55 / 49	63 / 56 / 50	63 / 56 / 50	64 / 57 / 51	64 / 57 / 51
Dimensions H x W x D	Indoor	mm	256 x 840 x 840	256 x 840 x 840	256 x 840 x 840	319 x 840 x 840					
	Panel	mm	33.5 x 950 x 950								
Net weight	Indoor (Panel)	Kg	24 (4)	24 (4)	24 (4)	27 (4)	27 (4)	27 (4)	27 (4)	27 (4)	27 (4)
OUTDOOR UNIT											
Power source		V	220 - 240	220 - 240	380-415	220 - 240	380 - 415	220 - 240	380 - 415	220 - 240	380 - 415
Connection		mm <sup>2</sup>	2 x 1.5 or 2.5								
Current Cooling	Nominal (Min / Max)	A	6.9	8.1		10.3	3.50	15.3	5.15	19.0	6.45
Current Heating	Nominal (Min / Max)	A	8.2	9.0		11.4	3.85	15.4	5.20	19.2	6.50
Air Volume	Cooling / Heating	m³/h	3600 / 3600	3600 / 3600	3600 / 3600	6600 / 5700	6600 / 5700	7800 / 6600	7800 / 6600	8100 / 7200	8100 / 7200
Sound pressure Level <sup>3</sup>	Cooling (Hi)	dB(A)	48	48	48	52	52	53	53	54	54
	Heating (Hi)	dB(A)	50	50	50	52	52	53	53	55	55
Sound power Level	Cooling (Hi)	dB	65	65	65	69	69	70	70	71	71
	Heating (Hi)	dB	67	67	67	69	69	70	70	71	71
Dimensions	H x W x D	mm	996 x 940 x 340	996 x 940 x 340	996 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340
Net weight		Kg	68	69	69	98	98	98	98	98	98
Piping connections	Liquid pipe	Inch (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	2	2.35	2.35	3.4	3.4	3.4	3.4	3.4	3.4
Elevation dif. (in/out) 4)	Max	m	30	30	30	30	30	30	30	30	30
Piping length	Min / Max	m	5 - 50	5 - 50	5 - 50	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75
Piping length without refrigerant increase	Max	m	30	30	30	30	30	30	30	30	30
Additional gas		g/m	50	50	50	50	50	50	50	50	50
Operating range outdoor	Cooling Min / Max	0C	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46
. • •	Heating Min / Max	°C	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24
			I	I	1	1	1	1	1	1	

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

DB: Dry bulb, WB: Wet bulb. Specifications subject to change without notice.

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>4)</sup> When installing the outdoor unit at a higher position than the indoor unit. Recommended fuse for the indoor 3A.



PANEL CZ-KPU2



#### AIR INTAKE CHAMBER

- 1. Air intake box CZ-BCU2 for main unit.
- 2. Air intake box CZ-ATU2\* for Air intake plenum.
- \* When using Air intake box (CZ-ATU2), Air intake plenum (CZ-FDU2) is required.

#### OPTIONAL CONTROLLERS

Timer remote controller CZ-RTC2



Wireless remote controller CZ-RWSU2 CZ-RWSC2



Simplified remote controller CZ-RE2C2







#### **TECHNICAL ZOOM**

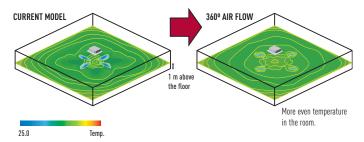
- NEW CIRCLE FLOW FLAP FOR MORE EVEN TEMP. DISTRIBUTION
- HIGHER EFFICIENCY SPLIT FIN
- NEW DC FAN MOTOR
- HIGHLY EFFICIENT AND SILENT TURBO FAN
- INDIVIDUAL FLAP CONTROL FOR FLEXIBLE AIR FLOW DIRECTION
- EASY TO CLEAN SUCTION GRILL & FLAP
- SPECIAL ADJUSTMENT FOR HIGH CEILING APPLICATION
- DC FAN FOR BETTER EFFICIENCY AND CONTROL



Compatible with all ECOi connectivity solutions

#### New 360° Air Flow for better comfort

The new air-outlet and flap design creates a soft and gentle air flow which circulates throughout the whole space and provides an even temperature distribution in the room.



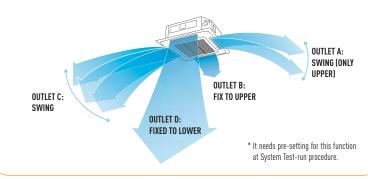
 $Simulated\ condition:\ Floor\ area:\ 225\ m^2.\ Ceiling\ height:\ 3\ m,\ Unit\ 5\ HP\ type.\ Air-volume:\ 1,200\ m^3/h\ in\ cooling.$ 



#### Flexible 3D air-flow control

Comfort air flow control & proper energy use. Flexible Air flow direction control by individual flap control:

- 4 Flaps can be controlled individually (by standard wired remote controller\*.
- Versatile air flow control to cover a wide variety of demands.





U-60PE1E5 U-71PE1E8 U-71PE1E5



U-100PE1E5 U-125PE1E8 U-100PE1E8 U-140PE1E5 U-125PE1E5 U-140PE1E8



## LOW STATIC PRESSURE HIDE AWAY PACI ELITE // INVERTER+

THE DEPTH OF ONLY 250 mm PROVIDES GREATER FLEXIBILITY AND CAN BE USED IN FAR MORE APPLICATIONS.

Ideal for applications with limited false ceiling space.









			2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	5.0 HP	6.0 HP	6.0 HP
KIT			KIT-60PN1E5	KIT-71PN1E5	KIT-71PN1E8	KIT-100PN1E5	KIT-100PN1E8	KIT-125PN1E5	KIT-125PN1E8	KIT-140PN1E5	KIT-140PN1E8
Indoor			S-60PN1E5	S-71PN1E5	S-71PN1E5	S-100PN1E5	S-100PN1E5	S-125PN1E5	S-125PN1E5	S-140PN1E5	S-140PN1E5
Outdoor			U-60PE1E5	U-71PE1E5	U-71PE1E8	U-100PE1E5	U-100PE1E8	U-125PE1E5	U-125PE1E8	U-140PE1E5	U-140PE1E8
Wired remote control			CZ-RTC2								
Cooling capacity	Nominal (Min - Max)	kW	6.0 (2.5 - 7.1)	7.1 (2.5 - 8.0)	7.1 (2.5 - 8.0)	10.0 (3.3 - 12.5)	10.0 (3.3 - 12.5)	12.5 (3.3 - 14.0)	12.5 (3.3 - 14.0)	14.0 (3.3 - 15.5)	14.0 (3.3 - 15.5)
EER1)	Nominal (Min - Max)	kW	3.24 (4.55 - 3.37) A	3.30 (4.55 - 2.91) A	3.30 (4.55 - 2.91) A	3.75 (3.79 - 3.29) A	3.75 (3.79 - 3.29) A	3.16 (3.90 - 2.96) A	3.21 (3.30 - 2.92) A	3.01 (3.30 - 2.50) B	3.01 (3.30 - 2.50) B
Power input Cooling	Nominal (Min - Max)	kW	1.85 (0.55 - 2.10)	2.15 (0.55 - 2.15)	2.15 (0.55 - 2.15)	2.67 (0.87 - 3.80)	2.67 (0.87 - 3.80)	3.89 (1.00 - 4.80)	3.89 (1.00 - 4.80)	4.65 (1.00 - 6.20)	4.65 (1.00 - 6.20)
Heating capacity	Nominal (Min - Max)	kW	7.0 (2.0 - 8.0)	8.0 (2.0 - 9.0)	8.0 (2.0 - 9.0)	11.2 (4.1 - 14.0)	11.2 (4.1 - 14.0)	14.0 (4.1 - 16.0)	14.0 (4.1 - 16.0)	16.0 (4.1 - 18.0)	16.0 (4.1 - 18.0)
COP <sup>1)</sup>	Nominal (Min - Max)	kW	3.61 (4.00 - 3.09) A	3.54 (4.00 - 3.08) B	3.54 (4.00 - 3.08) B	3.80 (4.18 - 3.11) A	3.80 (4.18 - 3.11) A	3.61 (3.90 - 2.96) A	3.61 (3.90 - 2.96) A	3.41 (3.90 - 2.95) B	3.41 (3.90 - 2.95) B
Power input Heating	Nominal (Min - Max)	kW	1.94 (0.50 - 2.58)	2.26 (0.50 - 2.82)	2.26 (0.50 - 2.82)	2.95 (0.98 - 4.50)	2.95 (0.98 - 4.50)	3.88 (1.05 - 5.40)	3.88 (1.05 - 5.40)	4.69 (1.05 - 6.10)	4.69 (1.05 - 6.10)
Annual Energy Consumpt	tion <sup>2)</sup>	kWh	925	1075	1075	1335	1335	1945	1945	2325	2325
INDOOR UNIT											
External static pressure3)	High / Medium / Low	Pa	80 / 50 / 10	80 / 50 / 10	80 / 50 / 10	80 / 50 / 10	80 / 50 / 10	80 / 50 / 10	80 / 50 / 10	80 / 50 / 10	80 / 50 / 10
Air Volume	Cooling / Heating	m³/h	1320 / 1320	1320 / 1320	1320	2160 / 2160	2160 / 2160	2280 / 2280	2280 / 2280	2400 / 2400	2400 / 2400
Moisture removal volum	е	l/h	3.4	4.2	4.2	6.0	6.0	7.9	7.9	9.0	9.0
Sound pressure Level	Cooling (Hi / Me / Lo)	dB(A)	43 / 41 / 36	43 / 41 / 36	43 / 41 / 36	44 / 42 / 37	44 / 42 / 37	45 / 43 / 38	45 / 43 / 38	46 / 44 / 39	46 / 44 / 39
•	Heating (Hi / Me / Lo)	dB(A)	43 / 41 / 36	43 / 41 / 36	43 / 41 / 36	44 / 42 / 37	44 / 42 / 37	45 / 43 / 38	45 / 43 / 38	46 / 44 / 39	46 / 44 / 39
Sound power Level	Cooling (Hi / Me / Lo)	dB	60 / 58 / 53	60 / 58 / 53	60 / 58 / 53	65 / 63 / 58	65 / 63 / 58	66 / 64 / 59	66 / 64 / 59	67 / 65 / 60	67 / 65 / 60
•	Heating (Hi / Me / Lo)	dB	60 / 58 / 53	60 / 58 / 53	60 / 58 / 53	65 / 63 / 58	65 / 63 / 58	66 / 64 / 59	66 / 64 / 59	67 / 65 / 60	67 / 65 / 60
Dimensions	H x W x D	mm	250x1000+100x650	250x1000+100x650	250x1000+100x650	250x1200+100x650	250x1200+100x650	250x1200+100x650	250x1200+100x650	250x1200+100x650	250x1200+100x650
Net weight		Kg	32	32	32	41	41	41	41	41	41
OUTDOOR UNIT											
Power source		٧	220 - 240	220 - 240	380 - 415	220 - 240	380 - 415	220 - 240	380 - 415	220 - 240	380 - 415
Connection		mm <sup>2</sup>	2 x 1.5 or 2.5	2 x 1.5 or 2.5		2 x 1.5 or 2.5					
Current Cooling	Nominal (Min / Max)	Α	8.0	9.4		11.2	3.75	16.9	5.50	20.1	6.60
Current Heating	Nominal (Min / Max)	Α	8.4	9.9		12.5	4.15	16.8	5.50	20.2	6.65
Air Volume	Cooling / Heating	m³/h	3600/3600	3600/3600	3600 / 3600	6600 / 5700	6600 / 5700	7800 / 6600	7800 / 6600	8100 / 7200	8100 / 7200
Sound pressure Level <sup>4)</sup>	Cooling (Hi)	dB(A)	48	48	48	52	52	53	53	54	54
	Heating (Hi)	dB(A)	50	50	50	52	52	53	53	55	55
Sound power Level	Cooling (Hi)	dB	65	65	65	69	69	70	70	71	71
	Heating (Hi)	dB	67	67	67	69	69	70	70	71	71
Dimensions	H x W x D	mm	996 x 940 x 340	996 x 940 x 340	996 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340
Net weight		Kg	68	69	69	98	98	98	98	98	98
Piping connections	Liquid pipe	Inch (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
-	Gas pipe		5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	2	2.35	2.35	3.4	3.4	3.4	3.4	3.4	3.4
Elevation dif. (in/out)5)	Max	m	30	30	30	30	30	30	30	30	30
Piping length	Min / Max	m	5 - 50	5 - 50	5 - 50	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75
Piping length without refrigerant increase	Max	m	30	30	30	30	30	30	30	30	30
Additional gas		g/m	50	50	50	50	50	50	50	50	50
Operating range outdoor	Cooling Min / Max	0C	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46
,	Heating Min / Max	oC .	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-20 / 24
		1 - 5			.,	. ,					

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

DB: Dry bulb, WB: Wet bulb. Specifications subject to change without notice.

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> Medium External static pressure setting from factory. The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting.

<sup>4)</sup> The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
5) Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port.

<sup>6)</sup> When installing the outdoor unit at a higher position than the indoor unit. Recommended fuse for the indoor 3A.





#### OPTIONAL CONTROLLERS

Timer remote controller CZ-RTC2





Wireless remote controller

Simplified remote controller CZ-RE2C2



#### **TECHNICAL ZOOM**

- COMPACT INDOOR UNITS WITHOUT LOOSING STATIC PRESSURE (ONLY 250 mm HIGH)
- 50 Pa STATIC PRESSURE
- EASY MAINTENANCE AND SERVICE BY AN EXTERNAL ELECTRICAL BOX
- 3 SPEED CENTRIFUGAL FAN THROUGH WIRED OR WIRELESS REMOTE CONTROL
- DC FAN FOR BETTER EFFICIENCY AND CONTROL



Compatible with all ECOi connectivity solutions

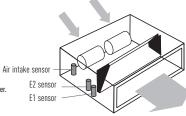
#### Discharge air temperature control

- Control discharge air temperature for accurate room temperature control.
- Possible to reduce cold drafts at heating operation.

#### **Cold Drafts Reduction at Heating**

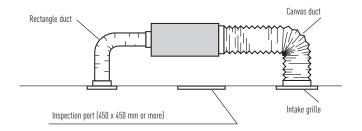
- Accurate temperature measurement by E1/E2 sensor to reduce cold drafts at heating.

Before spec-in, please consult with an authorized Panasonic dealer



#### System Example

An inspection port (450 mm x 450 mm or more) is required at the control-box side of the indoor unit body.





U-60PE1E5 U-71PE1E5 U-71PE1E8



II-100PF1F5 U-100PE1E8 U-125PE1E5

U-125PE1E8 U-140PE1E5



## HIGH STATIC PRESSURE HIDE AWAY PACI ELITE // INVERTER+

THE DUCTED SYSTEMS ARE THE IDEAL SOLUTION FOR FLEXIBLE, CONCEALED AIR CONDITIONING AND THE OPTIONAL 200 mm SPIGOTS ENSURE SIMPLE, HASSLE-FREE CONNECTION TO SPIRAL DUCTWORK.









KIT         KIT-60PF1E5         KIT-71PF1E5         KIT-71PF1E8         KIT-100PF1E5         KIT-100PF1E5         KIT-125PF1E5         KIT-125PF1E5         KIT-125PF1E5         KIT-140PF1           Indoor         S-60PF1E5         S-71PF1E5         S-71PF1E5         S-100PF1E5         S-100PF1E5         S-125PF1E5         S-125PF1E5         S-140PF1E5           Outdoor         U-60PE1E5         U-71PE1E5         U-100PE1E5         U-100PE1E8         U-125PE1E8         U-125PE1E8         U-140PE1E5           Wired remote control         CZ-RTC2         CZ-	S-140PF1E5
Outdoor         U-60PE1E5         U-71PE1E5         U-10PE1E8         U-100PE1E8         U-100PE1E8         U-125PE1E8         U-125PE1ES         U-140PE1E5           Wired remote control         CZ-RTC2	
Wired remote control         CZ-RTC2         CZ-RTC2 <td>II-140PF1F8</td>	II-140PF1F8
Cooling capacity Nominal (Min - Max) kW 6.0 (2.5 - 7.1) 7.1 (2.5 - 8.0) 7.1 (2.5 - 8.0) 10.0 (3.3 - 12.5) 10.0 (3.3 - 12.5) 12.5 (3.3 - 14.0) 12.5 (3.3 - 14.0) 14.0 (3.3 - 12.5) 14.0 (3.3 - 12.5) 12.5 (3.3 - 14.0) 12.5 (3.3 - 14.0) 14.0 (3.3 - 12.5) 12.5 (3.3 - 14.0) 12.5 (3.3 - 14.0) 14.0 (3.3 - 12.5) 12.5 (3.3 - 14.0) 12.5 (3.3 - 14.0) 14.0 (3.3 - 12.5) 12.5 (3.3 - 14.0) 12.5 (3.3 - 14.0) 14.0 (3.3 - 12.5) 12.5 (3.3 - 14.0) 12.5 (3.3 - 14	0 1401 5150
	CZ-RTC2
FERNI N. L. LOW, M. D. LOW	5.5) 14.0 (3.3 - 15.5)
EER11 Nominal (Min - Max) kW 3.90 (4.72 - 3.55) 🐔 3.84 (4.72 - 3.02) 🐔 4.40 (3.93 - 3.38) 🐔 4.10 (3.93 - 3.38) 🐔 3.50 (3.93 - 3.04) 🐔 3.50 (3.93 - 3.04) 🐔 3.50 (3.93 - 3.04) 🐔	B) A 3.25 (3.93-2.58) A
Power input Cooling Nominal (Min - Max) kW 1.54 (0.53 - 2.00) 1.85 (0.53 - 2.65) 1.85 (0.53 - 2.65) 2.44 (0.84 - 3.70) 2.44 (0.84 - 3.70) 3.57 (0.84 - 4.60) 3.57 (0.84 - 4.60) 4.31 (0.84 -	5.00) 4.31 (0.84-6.00)
Heating capacity Nominal (Min - Max) kW 7.0 (2.0 - 8.0) 8.0 (2.0 - 9.0) 8.0 (2.0 - 9.0) 11.2 (4.1 - 14.0) 11.2 (4.1 - 14.0) 14.0 (4.1 - 16.0) 14.0 (4.1 - 16.0) 16.0 (4.1 - 16	3.0) 16.0 (4.1-18.0)
COP1 Nominal (Min - Max) kW 3.87 (4.17 - 3.23) 🐔 3.85 (4.17 - 3.10) 🐔 3.85 (4.17 - 3.10) 🐔 4.31 (4.56 - 3.18) 🐔 4.31 (4.56 - 3.18) 🐔 4.02 (4.56 - 3.08) 🐔 4.02 (4.56 - 3.08) 🐔	5) <b>A</b> 3.60 (4.56-3.05) <b>A</b>
Power input Heating Nominal (Min - Max) kW 1.81 (0.48 - 2.48) 2.08 (0.48 - 2.90) 2.08 (0.48 - 2.90) 2.60 (0.90-4.40) 3.48 (0.90 - 5.20) 3.48 (0.90 - 5.20) 4.44 (0.90 -	5.90) 4.44 (0.90-5.90)
Annual Energy Consumption <sup>21</sup> kWh 770 925 925 1220 1220 1785 1785 2155	2155
INDOOR UNIT	
External static pressure <sup>3</sup> High / Medium / Low Pa   150 / 70 / 10   150 / 70 / 10   150 / 70 / 10   150 / 100 / 10   150 / 1	0 150 / 100 / 10
Air Volume Cooling / Heating m³/h 1260 / 1260 1260 / 1260 1260 1260 1920 / 1920 1920 1920 2040 / 2040 2040 2040 2040 2040 2040	2160 / 2160
Moisture removal volume	9.0
Sound pressure Level   Cooling (Hi / Me / Lo)   dB(A)   35/32/26   35/32/26   35/32/26   38/34/31   38/34/31   39/35/32   39/35/32   40/36/33	40 / 36 / 33
Heating (Hi / Me / Lo) dB(A) 35/32/26 35/32/26 35/32/26 38/34/31 38/34/31 39/35/32 39/35/32 40/36/33	40 / 36 / 33
Sound power Level Cooling (Hi / Me / Lo) dB 57/54/48 57/54/48 57/54/48 60/56/53 60/56/53 61/57/54 61/57/54 62/58/55	62 / 58 / 55
Heating (Hi / Me / Lo) dB 57/54/48 57/54/48 57/54/48 60/56/53 60/56/53 61/57/54 61/57/54 62/58/55	62 / 58 / 55
Dimensions   H x W x D   mm   290 x 1000 x 700   290 x 1400 x 700   29	
Net weight Kg 33 33 31 45 45 45 45 45	45
OUTDOOR UNIT	
Power source V 220 - 240 220 - 240 380 - 415 220 - 240 380 - 415 220 - 240 380 - 415 220 - 240	380 - 415
Connection         mm²         2 x 1.5 or 2.5	
Current Cooling         Nominal (Min / Max)         A         7.4         8.6          10.6         3.53         15.9         5.29         19.3	6.42
Current Heating         Nominal (Min / Max)         A         8.4         9.5          11.2         3.70         15.8         5.26         19.1	6.35
Air Volume         Cooling / Heating         m³/h         3600 / 3600         3600 / 3600         3600 / 3600         6600 / 5700         6600 / 5700         7800 / 6600         8100 / 7200	8100 / 7200
Sound pressure Level <sup>4</sup>   Cooling (Hi)   dB(A)   48   48   48   52   52   53   53   54	54
Heating (Hi) dB(A) 50 50 50 50 52 52 53 53 55	55
Sound power Level         Cooling (Hi)         dB         65         65         65         69         69         70         70         71	71
Heating (Hi) dB 67 67 67 69 69 70 70 71	71
Dimensions   H x W x D   mm   996 x 940 x 340   996 x 940 x 340   996 x 940 x 340   1416	340 1416 x 940 x 340
Net weight Kg 68 69 69 98 98 98 98 98 98	98
Piping connections Liquid pipe Inch (mm) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52) 3/8 (9.52)	3/8 (9.52)
Gas pipe   Inch (mm)   5/8 (15.88)   5/8 (15	5/8 (15.88)
Refrigerant Loading R410A Kg 2 2.35 2.35 3.4 3.4 3.4 3.4 3.4 3.4	3.4
Elevation dif. (in/out)         Max         m         30         30         30         30         30         30         30         30	30
Piping length Min / Max m 5 - 50 5 - 50 5 - 50 5 - 75 5 - 75 5 - 75 5 - 75 5 - 75	5 - 75
Piping length without refrigerant increase Max m 30 30 30 30 30 30 30 30 30 30 30	30
Additional gas g/m 50 50 50 50 50 50 50 50	50
Operating range outdoor   Cooling Min / Max   C   -15 / 46   -15 /	-15 / 46
Heating Min / Max	-20 / 24

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
		27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

DB: Dry bulb, WB: Wet bulb. Specifications subject to change without notice.

When installing the outdoor unit at a higher position than the indoor unit.

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> Medium External static pressure setting from factory.
4) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.





S-100PF1E5 // S-125PF1E5 // S-140PF1E5



S-60PF1E5 // S-71PF1E5

#### OPTIONAL CONTROLLERS

Timer remote controller









CZ-RE2C2

Simplified remote controller

#### **TECHNICAL ZOOM**

- EXTREMELY QUIET OPERATION FROM 25 dB(A)
- AUTO RESTART AFTER POWER FAILURE
- AUTO CHANGEOVER
- TWIN, TRIPLE AND DOUBLE-TWIN SPLIT OPTIONS
- DC FAN FOR BETTER EFFICIENCY AND CONTROL
- BUILT IN DRAIN PUMP



Compatible with all ECOi connectivity solutions

#### The static pressure outside the unit can be increased up to 150 Pa.

TYPE	60	71	100	125	140
Standard	70 Pa	70 Pa	100 Pa	100 Pa	100 Pa
Max. available setting	150 Pa				

#### More powerful drain pump

Using a high-lift drain pump, drain piping can be elevated up to 785 mm from the base of the unit.

#### Circle duct flange (option)

CZ-160DAF2 (4 SA outlet), CZ-90DAF2 (3 SA outlet), CZ-56DAF2 (2 SA outlet).

#### Air outlet side

Rectangle duct flange is attached as standard. Round type outlet flange kit is prepared as optional accessory kit.



Round flange : CZ-160DAF2  $\varphi$ 200 outlet frange x 4 ports

#### Air inlet side

Filter can be pull out from the side of the unit. Filter can be folded to be compact. It's easy to handle the filter part for the maintenance through maintenance opening.



When air inlet duct (field supplied) is connected on suction side, remove the filter, frame and insulation materials on both sides of the unit. Connect the duct on the suction side of the unit by using prepared holes on the unit.



U-71PE1E8

U-60PE1E5 U-71PE1E5



II-100PF1F5 U-100PE1E8 U-125PE1E5

U-140PE1E5



## CEILING PACI ELITE // INVERTER+

THE RANGE OF CEILING MOUNTED UNITS FEATURE A DC FAN MOTOR FOR INCREASED EFFICIENCY AND REDUCED OPERATING SOUND LEVELS.

All the units are the same height and depth for a uniform appearance in mixed installations and feature a fresh air knockout for improved air quality.









			0 F HD	0.0.110	0.0.110	/ O UD	/ 0 UD	FAUR	E O UD	/ 0 UD	/ O UD
1/17			2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	5.0 HP	6.0 HP	6.0 HP
KIT				KIT-71PT1E5	KIT-71PT1E8	KIT-100PT1E5	KIT-100PT1E8	KIT-125PT1E5	KIT-125PT1E8	KIT-140PT1E5	KIT-140PT1E8
Indoor				S-71PT1E5	S-71PT1E5	S-100PT1E5	S-100PT1E5	S-125PT1E5	S-125PT1E5	S-140PT1E5	S-140PT1E5
Outdoor			U-60PE1E5	U-71PE1E5	U-71PE1E8	U-100PE1E5	U-100PE1E8	U-125PE1E5	U-125PE1E8	U-140PE1E5	U-140PE1E8
Wired remote control				CZ-RTC2	CZ-RTC2	CZ-RTC2	CZ-RTC2	CZ-RTC2	CZ-RTC2	CZ-RTC2	CZ-RTC2
Cooling capacity	Nominal (Min - Max)			7.1 (2.5 - 8.0)	7.1 (2.5 - 8.0)	10.0 (3.3 - 12.5)		12.5 (3.3 - 14.0)	12.5 (3.3 - 14.0)	14.0 (3.3 - 15.5)	14.0 (3.3 - 15.5)
EER <sup>1)</sup>	Nominal (Min - Max)						3.70 (3.93 - 3.38) <b>A</b>				
Power input Cooling		kW					2.70 (0.84 - 3.70)				4.80 (0.84 - 6.0)
Heating capacity		kW	7.0 (2.0 - 8.0)	8.0 (2.0- 9.0)	8.0 (2.0- 9.0)	11.2 (4.1 - 14.0)				16.0 (4.1 - 18.0)	16.0 (4.1 - 18.0)
COP <sup>1)</sup>		kW	3.80 (5.00 - 3.23) A	3.45 (5.00 - 3.10) B	3.45 (5.00 - 3.10) B	4.18 (4.56 - 3.18) A	4.18 (4.56 - 3.18) A	3.83 (4.56 - 3.08) A	3.83 (4.56 - 3.08) A	3.45 (4.56 - 3.05) B	3.45 (4.56 - 3.05) B
Power input Heating		kW					2.68 (0.90 - 4.40)			4.64 (0.90 - 5.90)	4.64 (0.90 - 5.90)
Annual Energy Consump	tion <sup>2)</sup>	kWh	800	1095	1095	1350	1350	1930	1930	2400	2400
INDOOR UNIT											
Air Volume	Cooling / Heating	m³/h	1140 / 1140	1140 / 1140	1140 / 1140	1980 / 1980	1980 / 1980	2100 / 2100	2100 / 2100	2160 / 2160	2160 / 2160
Moisture removal volum	е	l/h	3.4	4.2	4.2	6.0	6.0	7.9	7.9	9.0	9.0
Sound pressure Level	Cooling (Hi / Lo)	dB(A)	39 / 36 / 33	39 / 36 / 33	39 / 36 / 33	42 / 38 / 35	42 / 38 / 35	45 / 40 / 37	45 / 40 / 37	46 / 41 / 38	46 / 41 / 38
	Heating (Hi / Lo)	dB(A)	40 / 36 / 33	40 / 36 / 33	40 / 36 / 33	44 / 39 / 36	44 / 39 / 36	46 / 41 / 38	46 / 41 / 38	47 / 43 / 39	47 / 43 / 39
Sound power Level	Cooling (Hi)	dB	58	58	58	61	61	63	63	64	64
	Heating (Hi)	dB	58	58	58	62	62	64	64	65	65
Dimensions	HxWxD	mm	210 x 1180 x 680	210 x 1180 x 680	210 x 1180 x 680	210 x 1595 x 680	210 x 1595 x 680	210 x 1595 x 680	210 x 1595 x 680	210 x 1595 x 680	210 x 1595 x 680
Net weight Kg		Kg	25	25	25	33	33	33	33	33	33
OUTDOOR UNIT											
Power source		V	220 - 240	220 - 240	380 - 415	220 - 240	380 - 415	220 - 240	380 - 415	220 - 240	380 - 415
Connection		mm <sup>2</sup>	2 x 1.5 or 2.5	2 x 1.5 or 2.5		2 x 1.5 or 2.5	2 x 1.5 or 2.5	2 x 1.5 or 2.5	2 x 1.5 or 2.5	2 x 1.5 or 2.5	2 x 1.5 or 2.5
Current Cooling	Nominal (Min / Max)	Α	7.4	9.9		11.9	4.05	17.1	5.8	21.3	7.25
Current Heating	Nominal (Min / Max)	Α	8.3	10.4		11.8	4.00	16.2	5.5	20.6	7
Air Volume	Cooling / Heating	m³/h	3600 / 3600	3600 / 3600	3600 / 3600	6600 / 5700	6600 / 5700	7800 / 6600	7800 / 6600	8100 / 7200	8100 / 7200
Sound pressure Level <sup>4)</sup>	Cooling (Hi)	dB(A)	48	48	48	52	52	53	53	54	54
	Heating (Hi)	dB(A)	50	50	50	52	52	53	53	55	55
Sound power Level	Cooling (Hi)	dB	65	65	65	69	69	70	70	71	71
	Heating (Hi)	dB	67	67	67	69	69	70	70	71	71
Dimensions	H x W x D	mm	996 x 940 x 340	996 x 940 x 340	996 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340	1416 x 940 x 340
Net weight		Kg	68	69	69	98	98	98	98	98	98
Piping connections	Liquid pipe	Inch (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	2	2.35	2.35	3.4	3.4	3.4	3.4	3.4	3.4
Elevation dif. (in/out)	Max	m		30	30	30	30	30	30	30	30
Piping length	Min / Max	m		5 - 50	5 - 50	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75
Piping length without refrigerant increase	Max	m	30	30	30	30	30	30	30	30	30
Additional gas		g/m	50	50	50	50	50	50	50	50	50
Operating range	Cooling Min / Max	oC	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46	-15 / 46
operating range		°C	-20 / 24	-20 / 24	-20 / 24	-20 / 24	-10 / 40	-20 / 24	-20 / 24	-20 / 24	-20 / 24
<u></u>	Heating Min / Max	~L	-ZU / Z4	-ZU / Z4	-ZU / Z4	-ZU / Z4	-ZU / Z4				

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

DB: Dry bulb, WB: Wet bulb. Specifications subject to change without notice.

When installing the outdoor unit at a higher position than the indoor unit. Recommended fuse for the indoor 3A.

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500 hours per year in cooling mode.

<sup>4)</sup> The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.





#### OPTIONAL CONTROLLERS

Timer remote controller CZ-RTC2



Wireless remote controller CZ-RWSC2 CZ-RWST2



Simplified remote controller CZ-RE2C2



#### **TECHNICAL ZOOM**

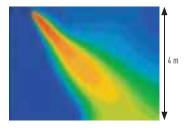
- ALL UNITS JUST 210 MM HIGH
- TWIN ROTARY COMPRESSOR DRAMATICALLY REDUCES VIBRATION AND NOISE DURING OPERATION
- DC INVERTER CONTROL
- LARGE AND WIDE AIR DISTRIBUTION
- INDUSTRY-LEADING LOW SOUND LEVELS
- TWIN, TRIPLE AND DOUBLE-TWIN SPLIT OPTIONS



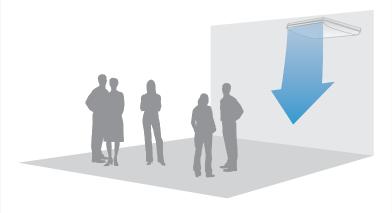
Compatible with all ECOi connectivity solutions

#### Further comfort improvement

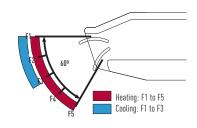
The wide air discharge opening expands the air flow to the left and the right. The unpleasant feeling caused when the air flow directly hits the human body is prevented by the "Draft prevention position", which changes the swing width, so that the degree of comfort is increased.



#### Further comfort improvement with airflow distribution



#### Air distribution is altered depending on the operational mode of the unit





U-60PE1E5 U-71PE1E5 U-71PE1E8



U-125PE1E8 U-140PE1E5 II-100PF1F5 U-100PE1E8



## HIGH STATIC PRESSURE HIDE AWAY 8-10 HP PACI // 3 PHASE INVERTER+

Panasonic breaks new ground in offering high-performance and power in a small space. The 8-10 HP from Panasonic is ideally suited for large retail applications and other large areas not needing the higher capacities of VRF systems. The lightweight and compact design enables easier installation in any commercial space. The twin fan system saves valuable footprint compared to traditional 8-10 HP systems which have a larger footprint design.









			8.0 HP	10.0 HP
KIT				KIT-250PE1E8
Indoor				S-250PE1E8
Outdoor				U-250PE1E8
Remote control (option	nal)			CZ-RTC2
Cooling capacity	Nominal (Min - Max)	kW		25.0 (6.0 - 28.0)
EER 1)	Nominal	W		2.62 ■□
Power input Cooling	Nominal	W	7.12	9.55
Running amperes		Α	11.0	14.8
Heating capacity	Nominal (Min - Max)	kW	22.4 (6.0 - 25.0)	28.0 (6.0 - 31.5)
COP 1)	Nominal	W		3.41 B
Power input Heating	Nominal	W		8.20
Running amperes		A		12.6
Annual Energy Consump	ntion 2)	kWh	3115	4290
INDOOR UNIT				
Power source		V / ph / Hz	220-240 / 1 / 50/60	220-240 / 1 / 50/60
External static pressure <sup>3</sup>	With booster cable	Pa		216 (235)
Air volume	Cooling/Heating	m³/h		4320
Moisture removal volume		Vh.		13.9
Sound pressure level 4)		dB(A)		51 / 50 / 49
Sound power Level	(-1-1-2	dB(A)		82
Dimensions	H x W x D	mm	467 x 1428 x 1230	467 x 1428 x 1230
Net weight	Indoor	Kg		120
OUTDOOR UNIT		5		
Power source		V / ph / Hz	380-415 / 3+N / 50/60	380-415 / 3+N / 50/60
Air Volume	Cooling / Heating	m³/h		7080
Sound pressure level 4)	Cooling (Hi)	dB(A)		57
	Heating (Hi)	dB(A)	57	58
Sound power Level	(Hi)	dB	71	72
Dimensions	H x W x D	mm	1526 x 940 x 340	1526 x 940 x 340
Net weight	1	Kg	118	128
REFRIGERANT CIRCUI	T	J		
Tube diameter Narrow/V		mm (in)	9.52 (3/8) / 25.4 (1)	12.7 (1/2) / 25.4 (1)
Max piping length		m	100	100
Max elevation difference	e - O.U. above/below I.U.	m	30	30
Chargeless piping lengt	h	m	30	30
Amount of additional ref	frigerant	g/m	40	80
Piping connections	Liquid pipe		9.52 (3/8)	12.7 (1/2)
	Gas pipe	mm (Inch)	25.4 (1)	25.4 (1)
Refrigerant Loading			R410A	R410A
Elevation dif. (in/out) 5)	Max	m	30	30
Piping length	Min - Max	m		5 - 100
Piping length without	Max	m	30	30
			30	30
Piping length without refrigerant increase		m		
Piping length without refrigerant increase Additional gas	Max	m g/m	40	80
Piping length without refrigerant increase		m	40 -15 / 43	

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

DB: Dry bulb, WB: Wet bulb.

Specifications subject to change without notice.

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220 - 240 V (380 - 415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220 - 240 V (380 - 415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting. Change connector on fan motor from Hi to Shi to have 7.0 mmAq.

<sup>4)</sup> The sound pressure Level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>5)</sup> Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port.

When installing the outdoor unit at a higher position than the indoor unit.



#### OPTIONAL CONTROLLERS

Timer remote controller



Wireless remote controller CZ-RWSC2



Simplified remote controller CZ-RE2C2



#### **TECHNICAL ZOOM**

- HIGH EFFICIENCY INVERTER SYSTEM
- COOLING WITH LOW OUTDOOR TEMPERATURES (DOWN TO -15 °C)
- MAXIMUM PIPE LENGTH 100 m (MORE THAN 40% LONGER THAN OTHER SPLIT SYSTEMS)
- MULTIFUNCTIONAL WIRELESS REMOTE CONTROL WITH BUILT-IN TEMPERATURE CONTROL
- · FRESH AIR KNOCKOUT FOR IMPROVED AIR QUALITY



Compatible with all ECOi connectivity solutions

#### KIT-200PE1E8 // KIT-250PE1E8

#### **ENERGY EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system
- R410A environmentally friendly refrigerant gas

#### COMFORT

- Cooling with low outdoor temperatures (down to -15 °C)
- Selection of temperature sensor at indoor unit or wired remote control

#### **EASE OF USE**

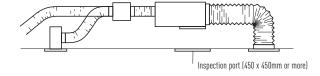
- Weekly On/Off timer (6 settings per day and 42 per week)
- Selection of wired / Wireless and simplified wired remote controller

#### **EASY INSTALLATION AND MAINTENANCE**

- High static pressure units ideal for shops and offices

#### System example

An inspection port (450 x 450 mm or more) is required at the lower side of the indoor unit body. Distributor (field supply).



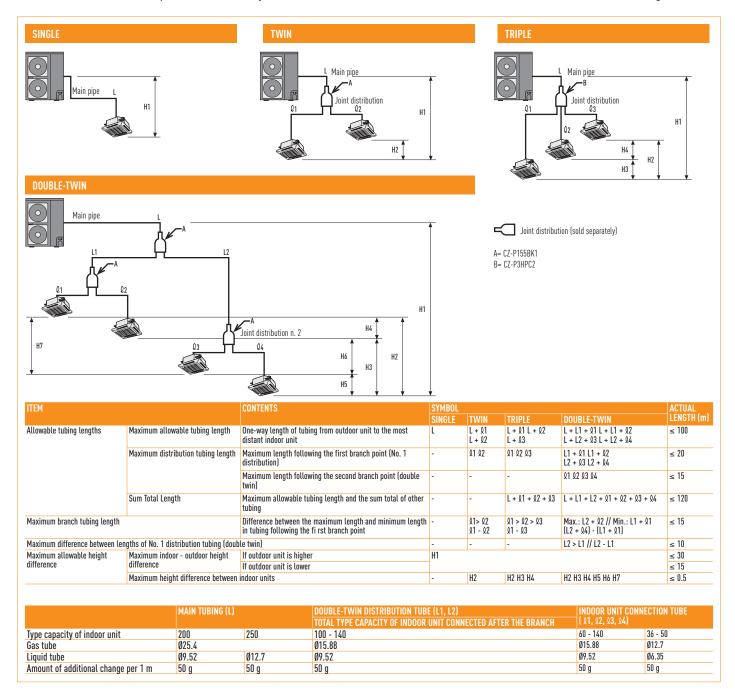


U-200PE1E8 U-250PE1E8

## TWIN, TRIPLE AND DOUBLE TWIN SYSTEM

#### UP TO 4 INDOOR UNITS CONNECTABLE ON THE SAME OUTDOOR.

Panasonic's PACi units can be installed as twin, triple and double-twin systems. The indoor units can be combined following the selection table. The operation will always be simultaneous. All the indoor units will work with the same settings.



#### Single/Simultaneous operation system combinations

	OUTDOOR SIZE	2.5 HP	3.0 HP	4.0 HP	5.0 HP	6.0 HP	8.0 HP	10.0 HP
INDOOR SIZE		6.0 kW	7.1 kW	10.0 kW	12.5 kW	14.0 kW	20.0 kW	25.0 kW
1.50 HP	3.6 kW		Twin	ĺ	Double-twin	Double-twin		
1.75 HP	4.5 kW				Triple			
2.00 HP	5.0 kW			Twin		Triple	Double-twin	
2.50 HP	6.0 kW	Single			Twin			Double-twin
3.00 HP	7.1 kW		Single			Twin	Triple	
4.00 HP	10.0 kW			Single			Twin	
5.00 HP	12.5 kW				Single			Twin
6.00 HP	14.0 kW					Single		
8.00 HP	20.0 kW						Single	
10.00 HP	25.0 kW							Single







## Compatible Indoor Units

			1.0 HP	1.75 HP	2.0 HP	2.5 HP	3.0 HP	4.0 HP	5.0 HP
WALL			S-36PK1E5	S-45PK1E5	S-50PK1E5	S-60PK1E5	S-71PK1E5		
Capacity	Cooling	kW		4.5	5.0	6.0	7.1		
	Heating	kW	4.2	5.2	5.6	7.0	8.0		
Dimensions	H x W x D	mm	300 x 1065 x 230	300 x 1065 x 230	300 x 1065 x 230		300 x 1065 x 230		
Sound pressure level	Cooling (Hi / Me / Lo)	dB(A)	35 / 31 / 27	38 / 34 / 30	40 / 36 / 32	47 / 44 / 40	47 / 44 / 40		
	Heating (Hi / Me / Lo)	dB(A)		38 / 34 / 30	40 / 36 / 32		47 / 44 / 40		
Air Volume	Cooling / Heating	m³/h	660 / 660	720 / 720	840 / 840	1080 / 1080	1080 / 1080		
4 WAY 60x60 CASSETTE				S-45PY1E5	S-50PY1E5				
Capacity	Cooling	kW		4.5	5.0	_			
	Heating	kW		5.2	5.6	_			
Dimensions	Indoor H x W x D	mm		283 x 575 x 575	283 x 575 x 575	_			
	Panel H x W x D	mm		30 x 625 x 625	30 x 625 x 625	_			
Sound pressure level	Cooling (Hi / Me / Lo)	dB(A)		36 / 32 / 28	41 / 37 / 33	_			
	Heating (Hi / Me / Lo)	dB(A)		36 / 32 / 28	41 / 37 / 33	_			
Air Volume	Cooling / Heating	m³/h		636 / 636	750 / 750				
4 WAY 90x90 CASSETTE				S-45PU1E5	S-50PU1E5				S-125PU1E5
Capacity	Cooling	kW		4.5	5.0		7.1	10.0	12.5
	Heating	kW		5.2	5.6	1		11.2	14.0
Dimensions	Indoor H x W x D	mm		256 x 840 x 840	256 x 840 x 840		256 x 840 x 840	319 x 840 x 840	319 x 840 x 840
	Panel H x W x D	mm		33.5 x 950 x 950	33.5 x 950 x 950		33.5 x 950 x 950	33.5 x 950 x 950	33.5 x 950 x 950
Sound pressure level	Cooling (Hi / Me / Lo)	dB(A)		31 / 28 / 27	32 / 29 / 27		37 / 31 / 28		45 / 39 / 33
	Heating (Hi / Me / Lo)	dB(A)		31 / 28 / 27	32 / 29 / 27		37 / 31 / 28	44 / 38 / 32	45 / 39 / 33
Air Volume	Cooling / Heating	m³/h		900 / 900	960 / 960				2.100 / 2.100
<b>LOW STATIC PRESSURE</b>				S-45PN1E5	S-50PN1E5				S-125PN1E5
Capacity	Cooling	kW		4.5	5.0				12.5
	Heating	kW		5.2	5.6		8.0	11.2	14.0
Dimensions	H x W x D	mm	250 x 780(+100) x 650			250 x 1000(+100) x 650			
Sound pressure level	Cool - Heat (Hi / Me / Lo)			41 / 35 - 41 / 35	41 / 35 - 41 / 35	43 / 41 / 36 - 43 / 41 / 36			
External static pressure	High / Medium / Low	Pa		80 / 50 / 10	80 / 50 / 10		80 / 50 / 10	80 / 50 / 10	80 / 50 / 10
Air Volume	Cooling / Heating	m³/h		960 / 960	960 / 960				2400 / 2400
HIDE AWAY HIGH STRAT				S-45PF1E5	S-50PF1E5	Y			S-125PF1E5
Capacity	Cooling	kW		4.5	5.0		7.1	10.0	12.5
	Heating	kW		5.2	5.6			11.2	14.0
Dimensions	H x W x D	mm		290 x 800 x 700	290 x 800 x 700		290 x 1000 x 700	290 x 1400 x 700	290 x 1400 x 700
Sound pressure level	Cool - Heat (Hi / Me / Lo)					35 / 32 / 26 - 35 / 32 / 26			39 / 35 / 32 - 3 9 / 35 / 32
External static pressure	High / Medium / Low	Pa	150 / 70 / 10	150 / 70 / 10	150 / 70 / 10		150 / 70 / 10	150 / 100 / 10	150 / 100 / 10
Air Volume	Cooling / Heating	m³/h		840 / 840	960 / 960		1260 / 1260	1920 / 1920	2040 / 2040
CEILING				S-45PT1E5	S-50PT1E5				S-125PT1E5
Capacity	Cooling	kW		4.5	5.0				12.5
	Heating	kW		5.2	5.6	1		11.2	14.0
Dimensions	HxWxD	mm		210 x 910 x 680	210 x 910 x 680		210 x 1180 x 680	210 x 1180 x 680	210 x 1595 x 680
Sound pressure level	Cooling (Hi / Me / Lo)	dB(A)		38 / 33 / 30	38 / 33 / 30		39 / 36 / 33		45 / 40 / 37
	<b>V</b> · · · · ·	dB(A)		39 / 34 / 30	39 / 34 / 30		40 / 36 / 33	42 / 38 / 35	46 / 41 / 38
Air Volume	Cooling / Heating	m³/h	720 / 720	840 / 840	840 / 840	1140 / 1140	1140 / 1140	1980 / 1980	2100 / 2100

## Compatible Outdoor Units

INVERTER+		U-60PE1E5	U-71PE1E5 // U-71PE1E8	U-100PE1E5//U-100PE1E8	U-125PE1E5 // U-125PE1E8	U-140PE1E5//U-140PE1E8	U-200PE1E8	U-250PE1E8
Power source	V	220 - 240	220 - 240 / 380-415	220 - 240 / 380-415	220 - 240 / 380-415	220 - 240 / 380-415	380-415	380-415
Dimensions H x W x D	mm	996 x 940 x 340	996 x 940 x 340	1.416 x 940 x 340	1.416 x 940 x 340	1.416 x 940 x 340	1526 x 940 x 340	1526 x 940 x 340
Sound pressure level	dB(A)	48 / 50	48 / 50	52 / 52	53 / 53	54 / 55	57 / 57	57 / 58



OPERATION SYSTEM	INDIVIDUAL CONTROL SYSTEMS					TIMER OPERATION
Requirements	Normal operation	Operation fro	om each seat	Quick and easy	operation	Daily and weekly program
External appearance	西灣議			<b>加藤</b>	NEV 2012	ACCEPTED TO
Type, model name	Timer Remote Controller (Wired)	Wireless Remot	te Controller	Simplified Remote Controller	Backlight remote controller	Schedule Timer
	CZ-RTC2	CZ-RWSU2 CZ-RWSY2 CZ-RWSL2	CZ-RWSC2 CZ-RWST2 CZ-RWSK2	CZ-RE2C2	CZ-RELC2	CZ-ESWC2
Built-in Thermostat	×	X		×		
N. of I_O which can be controlled	1 group, 8 units	1 group, 8 units		1 group, 8 units		64 groups, max. 64 units
Use limitations	- Up to 2 controllers can be connected per group.	<ul> <li>Up to 2 controllers can be connected per group.</li> </ul>		CZ-RE2C2: up to 2 controllers can be connected per group.     CZ-RELC2: can not operate other (SUB) remo-con.		Required power supply from the system controller     When there is no system controller, connection is possible to the T10 terminal of an indoor unit.
Function ON/OFF	×	×		×		_
Mode setting	×	X		×		_
Fan speed setting	×	X		×		_
Temperature setting	×	X		×		_
Air flow direction	×	<b>X</b> 1		<b>X</b> 1		_
Permit/Prohibit switching	_	_		_		_
Weekly program	X	_		_		×

<sup>1.</sup> Setting is not possible when a remote control unit is present. (Use the remote control for setting.) All specifications subject to change without notice.

## **CONTROL SYSTEMS FOR PACI**

A WIDE VARIETY OF CONTROL OPTIONS TO MEET THE REQUIREMENTS OF DIFFERENT APPLICATIONS.

MORE INFORMATION P.340.

CENTRALIZED CONTROL SYSTE	EMS			
Operation with various function from center station	Only ON/OFF operation from center station	Simplified load distribution ratio (LDR) for each tenant	BMS System. PC Base	Connection with 3rd Party Controller
100 / 100 mm			P-AIMS  P-AIMS	Seri-Para I/O unit for outdoor unit CZ-CSWKC2
System Controller	ON/OFF Controller	Intelligent Controller (Touch screen panel)	CZ-CSWKC2	
CZ-64ESMC2	CZ-ANC2	CZ-256ESMC2 (CZ-CFUNC2)	Optional software	Local adaptor for ON/OFF control CZ-CAPC2
_	_	_		
64 groups, max. 64 units	16 groups, max. 64 units	64 units x 4 systems, max. 256 units		MINI Seri-Para I/O Unit
Up to 10 controllers, can be connected to one system.     Main unit/sub unit (1 main unit + 1 sub unit) connection is possible.     Use without remote controller is possible.	Up to 8 controllers (4 main units + 4 sub units) can be connected to one system.     Use without remote controller is impossible.	A communication adaptor (CZ-CFUNC2) must be installed for three or more systems.	CZ-CSWAC2 for Load distribution. CZ-CSWWC2 for Web application. CZ-CSWGC2 for Object layout display. CZ-CSWBC2 for BAC net software interface. *PC required (field supply)	CZ-CAPBC2  Communication Adaptor CZ-CFUNC2
X	×	×	Web Interface Systems	OZ CI ONCZ
X	_	X	ČZ-CWEBC2 *PC required (field supply)	
X	_	×	0.00	
X	_	×		LonWorks Interface
<b>X</b> 1	_	<b>X</b> 1	· which	CZ-CLNC2
X	×	X	II II	
_	_	X		







## **Modbus**<sup>®</sup>

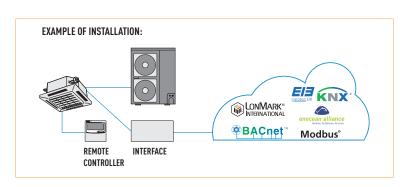




Panasonic Partners have designed solutions specifically for Panasonic air conditioners, and provide complete monitoring, control and full functionality of the entire Commercial line-up from KNX / EnOcean / Modbus / LonWorks / BACnet installations.

Great flexibility for integration into your KNX / EnOcean / Modbus / LonWorks / BACnet projects allows fully bi-directional monitoring and control of all the functioning parameters

For more information, contact Panasonic.



		MAXIMUM NUMBER OF INDOOR UNITS CONNECTED	POSSIBLE TO CONNECT MORE THAN 1 INDOOR UNIT (GROUP OF INDOORS)	COMMUNICATION INTERFACE CZ-CFUNC2
PACi / ECOi	KNX	1 (1 Group of Indoor Units)	No	No
	En-Ocean	1 (1 Group of Indoor Units)	No	No
	Modbus*	1 (1 Group of Indoor Units)	No	No
	Airzone	1	No	No
	Intesishome	1 (1 Group of Indoor Units)	No	No

<sup>\*</sup> Interface Modbus RTU/TCP is needed

## Control your Air conditioning system with your smart device -smartphone & internet for PACi

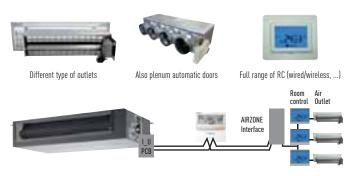
Panasonic has always offered its customers the most efficient Heat Pumps and Air Conditioners. Now it has taken a step forward and presents the most advanced service taking advantage of the latest Cloud Technology to manage your climate system from anywhere in the world. Control your environment from your iPad, iPhone, any Android device or from a PC with Internet access. Offering the same functions as if you were at home: start/stop, Mode Operation, Set Temperature, Room Temperature etc. Experience the new, advanced functionality to achieve the best comfort and efficiency with the lowest energy consumption.



#### Control of the PACi Hide Aways by Airzone

Airzone has developed interfaces to easily connect to Panasonic PACi Hide Away units. Ensuring optimum performance, comfort and energy savings, the new system is efficient and easy to install. Interface dimensions: 120 x 25 x 65 cm (W x H x D). Interfaces must be purchased direct from Airzone.

#### AIRZONE FULL RANGE OF ACCESSORIES FOR ANY DUCT PROJECT







#### PACI CONNECTIVITY INDOOR UNITS

#### T10 connector (CN015)

CZ-T10: Panasonic has developed an optional accessory (consisting of plug + wires) called CZ-T10 to enable an easy connection to this T10 connector.



Connecting an PACi indoor unit to an external device is easy. The T10 terminal featured in the electronic circuit board of all indoor units enables digital connection to external devices.

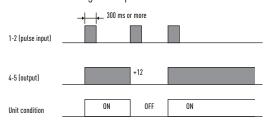
#### **EXAMPLE OF APPLICATIONS**





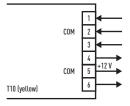
#### T10 terminal Specification (T10: CN015 at indoor unit PCB)

- Control items: 1. Start/stop input
  - 2. Remote controller prohibit input
  - 3. Start signal output
  - 4. Alarm signal output



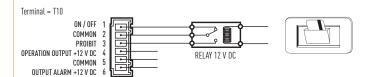
NOTE: The wire length from indoor unit to the Relay must be within 2.0 m. Pulse signal changeable to static with JP cutting. (Refer to JP001)

- Condition
- 1. 1-2 (Pulse input): Unit ON/OFF condition switching with a pulse signal. (1 pulse signal: shortage status more than 300 msec. or more)
- 2. 2-3 (Static input): Open / Operation with Remote is permitted.(Normal condition) Close / Remote controller is prohibited.
- 3. 4-5 (Static output): 12 V output during the unit ON. / No output at OFF.
- 4. 5-6 (Static output): 12 V output when some errors occur / No output at normal.
- · Example of wiring



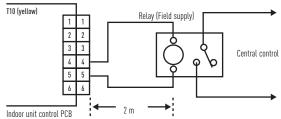
#### Usage Example Forced OFF control

- Term 1 & 2: Free contact for ON/OFF signal (cut \*JP1\* for static signal) when the hotel card is it connected the contact must be close (the unit can be used).
- Term 2 & 3: Free contact to proibit all function in the remote controller install in the room when the hotel card is it removed the contact must be closed (the unit can not work).



#### Operation ON/OFF signal output

- Condition:
- 4-5 (Static output): 12 V output during the unit ON / No output at OFF
- Example of wiring



NOTE: The wire length from indoor unit to the Relay must be within 2.0 m. Pulse signal changeable to static with JP cutting. (Refer to JP001)

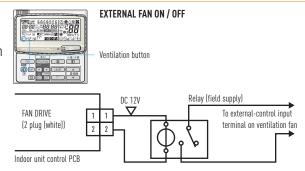
#### Fan Drive Connector (CN017)

PAW-FDC: Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-FDC to enable an easy connection to this Fan Drive Connector (CN017).



## Operating the ventilation fan from the remote controller

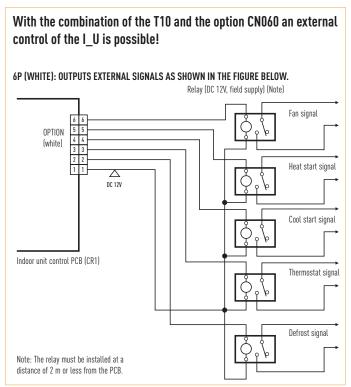
- Start / stop of external ventilation and total heat exchanger fans
- Works even if indoor unit is stopped
- In case of group control → all fans will operate; no individual control

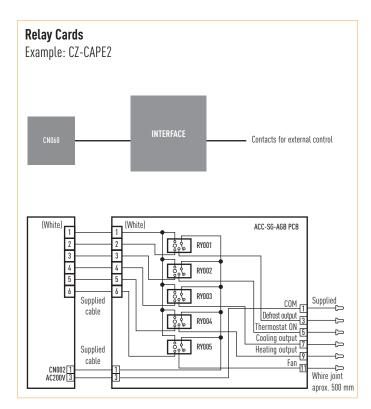


#### Option Connector (CN060) Output external signals



PAW-OCT: Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-OCT to enable an easy connection to this Option Connector (CNO60).





#### EXCT Connector (CN009)

PAW-EXCT: Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-EXCT to enable an easy connection to this EXCT Connector (CN009).

#### A) With static input

#### → STATIC INPUT → THERMO OFF → ENERGY SAVING

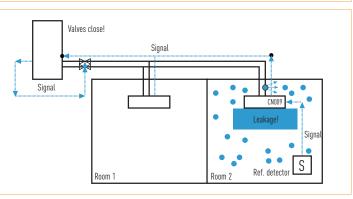
2P plug (red): Can be used for demand control. When input is present, forces the unit to operate with the thermostat OFF.

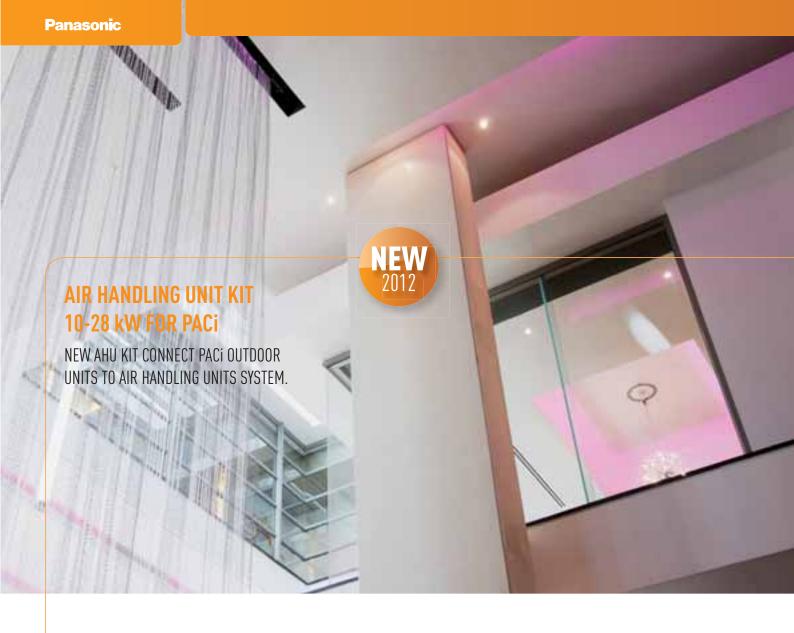
Note: The length of the wiring from the indoor unit control PCB to the relay must be 2m or less. \* Lead wire with 2P plug (special—order part: WIRE K/854 05280 75300)

# - Examples of wiring: Relay (field supply) Relay coil signal Indoor unit control PCB

#### B) Example: In connection with a refrigerant sensor

- Signal from leakage detector: non voltage, static.
- Indoor unit setting: Code 0b → 1
- Connector for leak detector: EXCT
- Outdoor unit setting:
- Code C1  $\rightarrow$  1 power output if alarm from O2 connector 230 V
- Code C1  $\rightarrow$  2 power output if alarm from O2 connector O V
- Displayed alarm message P14







Panasonic AHU kit have large connectivity possibilities in order to be easily integrated.

Application: Hotels, offices, server rooms or all large buildings where air quality control such as humidity control and fresh air and is needed.

#### AHU CONNECTION KIT



PCB, Power trans, Terminal block



Remote control can be easily installed on the AHU box. Remote control must be purchase separately.



Thermistor x2 (Refrigerant: E1, E3)



Thermistor x2 (Air: Tf, Tb)

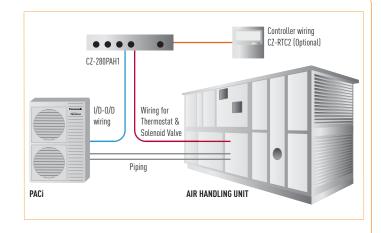
#### REMOTE CONTROLLER



Standard wired remote controller. Optional

#### Panasonic AHU Kit, 10-28 kW connected to PACi outdoor unit

PCB, Transformer, Thermostat x 4 pcs, Terminal Base and Electrical Component Box.



# Optional parts: Following functions are available by using different type of control accessories:

## CZ-RTC2 Wired remote controller

- Operation-ON/OFF
- Mode select
- · Temperature setting
- \* Fan operation signal can be taken from the PCB.

#### CZ-T10 terminal

- Input signal= Operation ON/OFF
- Remote controller prohibition
- Output signal= Operating-ON status
- Alarm output (by DC12 V)

#### PAW-OCT, DC12 V outlet. OPTION terminal

- Output signal= Cooling/Heating/Fan status
- Defrost
- Thermostat-ON

#### CZ-CAPBC2 Mini seri-para I/O unit

- Temperature setting by 0-10 V or 0-140  $\Omega$  input signal
- Room (inlet air) temp outlet by 4-20 mA
- Mode select or/and ON/OFF control
- Fan operation control
- Operation status output/ Alarm output

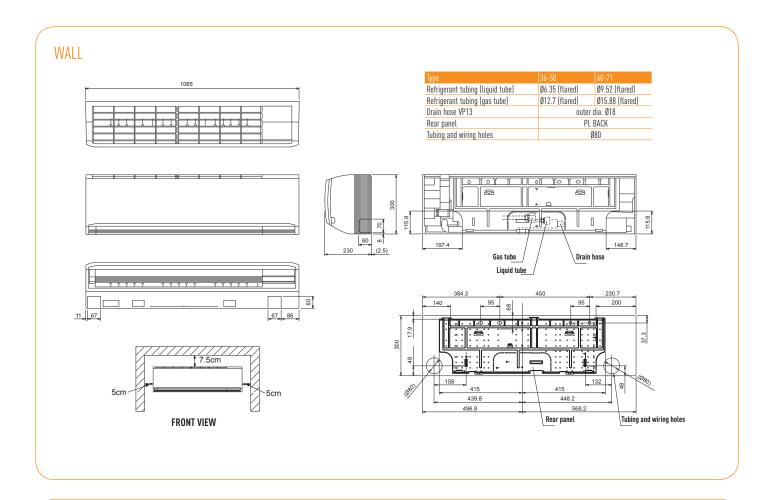
#### COMBINATION TABLE FOR PACI SINGLE OUTDOOR UNIT

Combination shown in below table is available for PACi single system

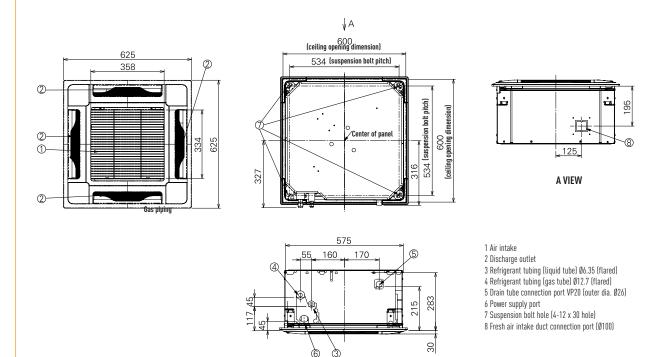
Power	Size	Outdoor unit	AHU kit	
Single phase	4 HP / 10 kW	U-100PE1E5	CZ-280PAH1	
	5 HP / 12.5 kW	U-125PE1E5	(Common use for all outdoor units. Only 1 by	
	6 HP / 14 kW	U-140PE1E5	connection is allowed.)	
Three phase	4 HP / 10 kW	U-100PE1E8		
	5 HP / 12.5 kW	U-125PE1E8		
	6 HP / 14 kW	U-140PE1E8		
	8 HP / 25 kW	U-200PE1E8		
	10 HP / 20 kW	U-250PE1E8		

<sup>\*</sup> Additional notice/instruction for system design, installation work will be defined for PAC-i connection.

## PACI ELITE INDOOR UNITS DIMENSIONS



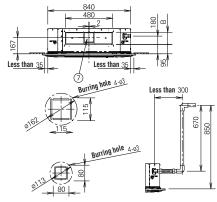
#### 4-WAY 60x60 CASSETTE

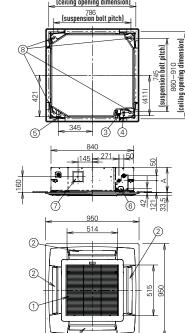


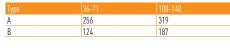
# 4 WAY 90x90 CASSETTE

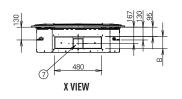
	36-50							
1 Air intake grill								
2 Air discharge outlet								
3 Refrigerant piping (liquid pipes)	Ø6.35 (flared)	Ø9.52 (flared)						
4 Refrigerant piping (gas pipes)	Ø12.7 (flared)	Ø15.88 (flared)						
5 Drain outlet VP50	out	er Ø32						
6 Power supply port								
7 Discharge duct	Q	1150						
8 Suspension bolt hole	4-12x30 slot							
9 Fresh air intake duct connection port	Ø	100¹						

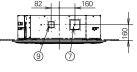
1 Air inlet kit is necessary. Flter size: 520 x 520 x 16









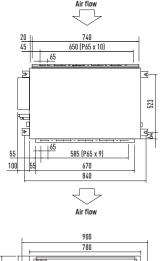


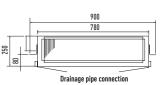


Adjust the suspension bolt length so that the gap from the lower ceiling surface becomes 30 mm or more (18 mm or more from the lower surface of the body) as shown in the figure. When the suspension bolt length is long, it hits the ceiling panel and installation is not possible.

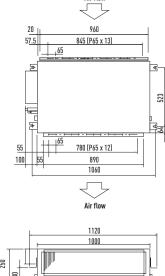
# LOW STATIC PRESSURE HIDE AWAY

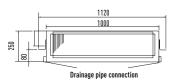
#### S-36PN1E5 // S-45PN1E5 // S-50PN1E5



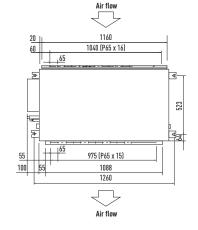


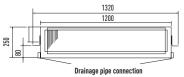
# S-60PN1E5 // S-71PN1E5

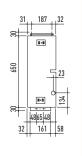




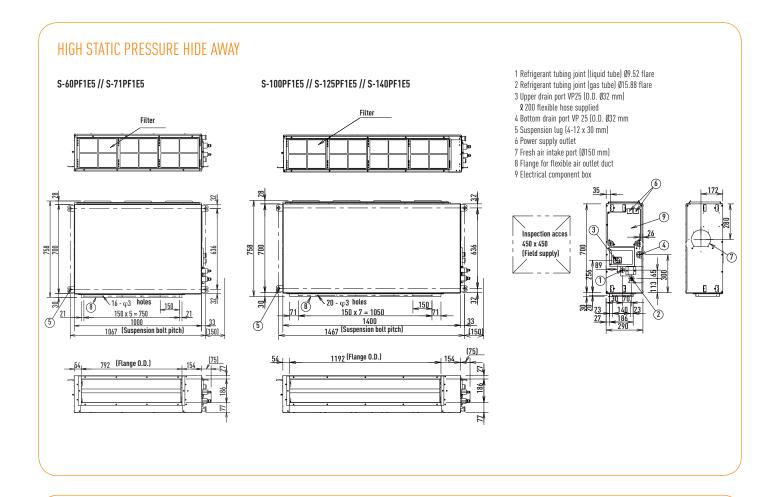
#### S-100PN1E5 // S-125PN1E5 // S-140PN1E5







# PACI ELITE INDOOR UNITS DIMENSIONS





- 1 Drain port VP20 (inner Ø26, hose accessory)

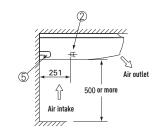
- 1 Drain port VP20 (Inner W26, hose accessory)
  2 Drain for left piping
  3 Upper piping outlet port (knock-out hole)
  4 Right piping outlet port (knock-out hole)
  5 Drain left piping outlet port (knock-out hole)
  6 Power supply entry port (knock-out hole 040)
  7 Remote controller wiring inlet port

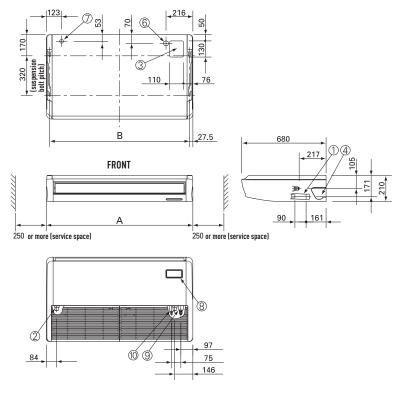
- 8 Wireless remote control receiver mounting part

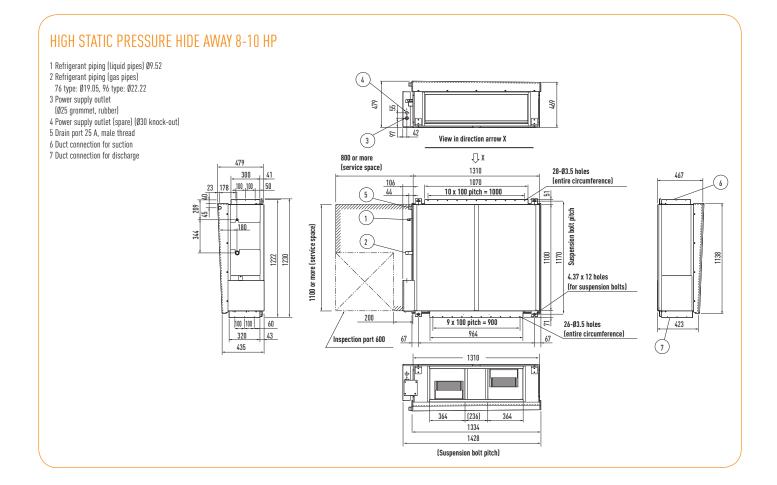
Туре	36-50	60-71	100-140
A (body)	910	1,180	1,595
B (suspension bolt pitch)	855	1,125	1,540

9 Refrigerant gas piping Type 36 to 50: Ø12.7 Type 60 to 140: Ø15.88 10 Refrigerant liquid piping Type 36 to 50: Ø6.35

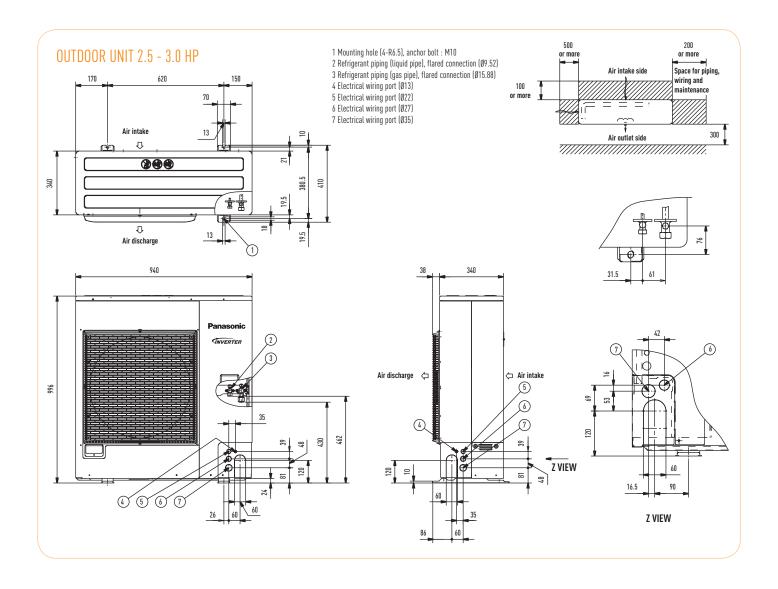
Type 60 to 140: Ø9.52

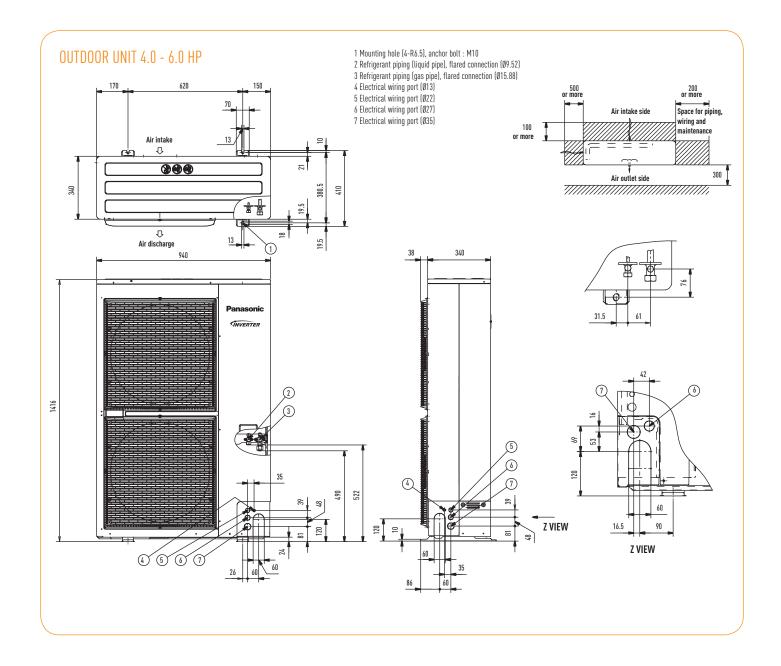


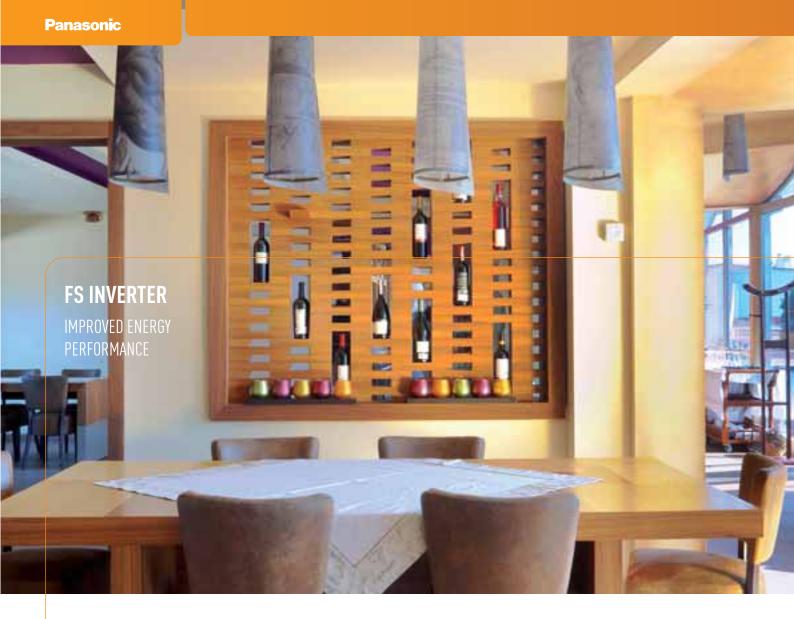




# PACI ELITE OUTDOOR UNITS DIMENSIONS









All Panasonic's FS Inverter series models are equipped with DC Inverters to give operation with improved energy efficiency. Their new quiet, highly efficient design also reduces operating costs.

# **Energy saving**

# 1. Hyper Wave Inverter

The FS series quickly warms the room up to the set temperature and maintains it within the comfort zone while ensuring energy efficiency and savings.

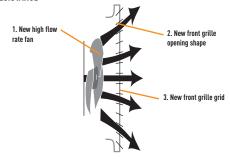
# 2. High efficiency compressor

A powerful neodymium magnet helps make the motor more compact.

# 3. New diagonal fan

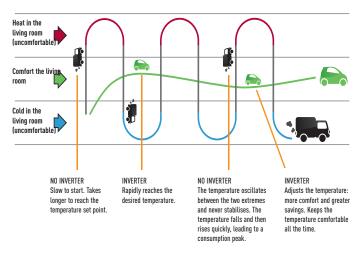
The following improvements minimise air resistance:

## REDUCING AIR RESISTANCE



# Inverter Technology

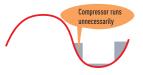
Quickly reaches the comfort zone, sets the accelerator, runs more economically and maintains a pleasant temperature at all times.



# High efficiency compressor

# Compressor Operation Inverter / Heat Pump.

#### INVERTER / HEAT PUMP



The heat pump waveform deviates from the motor waveform, so power is wasted.

#### HYPER WAVE INVERTER



The compressor speed pattern perfectly fits the thermal needs at all times.

#### COMPARE THIS TO A CAR ROUNDING A CORNER



Power is lost when the car swings off course.



When the car stays on course, there is no power loss

# **Energy saving operation**

The new design provides quiet, highly efficient operation and reduces running costs.

# High efficiency compressor

The new electric motor achieves lower distortion of the magnetic field to give greater efficiency.



# **FS INVERTER OUTDOOR UNITS**

More compact outdoor units, increased pipe length and installation using existing pipes.

# New outdoor units Inverter YL

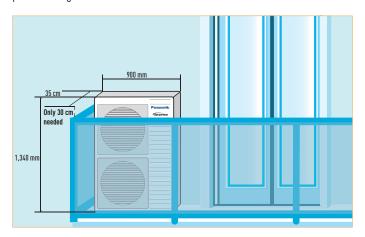
The new commercial YL Inverter range: more compact, easier to install and with improved performance.

All these outdoor units are perfectly compatible with indoor units of the low silhouette hide-away, high pressure hide-away, cassette and ceiling types.



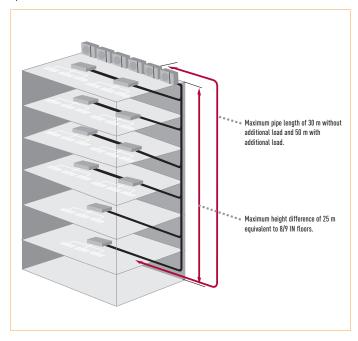
# New more compact units

The new outdoor units are up to 40% smaller (model CU-YL34HBE5) than the previous range.



# Easy installation YL Inverter

Thanks to the improvements in the new FS series Inverter you save both space and installation time.



# Operating range

The units can be used for cooling even when the outdoor temperature is extremely low. This is ideal for spaces which need cooling even in winter.

Normal cooling conditions	-15 °C to 43 °C (outside temperature)
Normal heating conditions	-20 °C to 24 °C (outside temperature)

# Flexible retrofitting to existing installations

# Compatibility of FS Inverter systems with various pipe diameters.

Panasonic provides this new tool for retrofitting its equipment to any existing air conditioning installation. By using this simple compatibility

table you will be able to check how the equipment works with different pipe diameters. Pipes should be cleaned correctly in all cases, taking special care to fully remove the remains of R22 refrigerating gas from the cooling circuit in systems that use that refrigerant.

	ØLiquid pipe	1/4" (0.8mm)			3/8" (0.8mm)	3/8" (0.8mm)			1/2" (0.8mm)		
	ØGas pipe	3/8" (0.8mm)	1/2" (0.8mm)	5/8" (1.0mm)	1/2" (0.8mm)	5/8" (1.0mm)	3/4" (1.0mm)	5/8" (1.0mm)	3/4" (1.0mm)		
2.5 HP	Max. pipe length	No	No	10m	No	50m 1) - 30m 2)	No	25m	No		
	Max. height			10m		30m 1) - 25m 2)		15m			
	Additional load			-		50g/m		80g/m			
3.0 HP	Max. pipe length	No	No	10m	No	50m 1) - 30m 2)	No	25m	No		
	Max. height			10m		30m 1) - 25m 2)		15m			
	Additional load			-		50g/m		80g/m			
4-6 HP	Max. pipe length	No	No	10m	No	50m 1) - 30m 2)	25m	25m	25m		
	Max. height			10m		30m 1) - 25m 2)	15m	15m	15m		
	Additional load			-		80g/m	80g/m	100g/m	100g/m		

1) Inverter+ range (CU-L) 2) Inverter range (CU-YL)

■ Correct ■ Possible ■ Not recommended □ Installation not possible Minimum piping lengh= 7.5m for all systems.

# **FS INVERTER INDOOR UNITS**

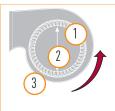
# Hide-away range

Environmentally friendly, efficient and easy to install.

- Save 26% of space.
- Easy installation in false ceilings with limited height.
- Dimensions: 120 x 25 x 65 cm (W x H x D).

#### New sirocco fan

High-performance, large diameter fan. Designed precisely for airflow trajectory. The key to saving space.



- Its aerodynamic shape increases static pressure (new flow rate and air distribution).
- 2. The large diameter, highly efficient fan has been achieved by reducing the scroll and the number of fans.
- 3. High-performance casing results in the maximum air efficiency. The height has been reduced by expanding the bottom part.





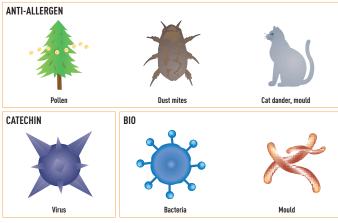




# For Cassette and Ceiling models Anti Bacterial Filter

Anti Bacterial Filter uses three types of functional materials that make it possible to deactivate various harmful airborne elements including allergens, viruses and bacteria. This filter is available as an option.





CZ-SA11P (For cassette type) // CZ-SA12P (For ceiling type)

# Cassette range

Advanced unit design: First-in-class indoor unit

- Selectable airflow rate and direction
- Silent operation
- · Customised programming

The indoor cassette unit is equipped with a hi-tech turbo fan. Its innovative blade design produces higher air speed and flow rate. The DC fan motor offers complete control. It is almost twice as efficient as a conventional motor and enables comfortable operation and energy savings.

Likewise, the possibility of connecting two indoor units to one outdoor unit means considerable savings across the board.

#### Improved air inlet and outlet

The new three-dimensional blade shape stabilises airflow.

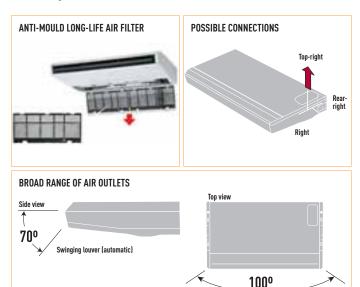
Optimising layout of the indoor heat exchanger and the fan allows an increase in fan diameter.



# Ceiling range

Trouble-free installation.

- Easy setup
- · Multi-way connection
- · Wide range of air outlets.



Manual Inuver

# RANGE OF INDOOR UNITS FS

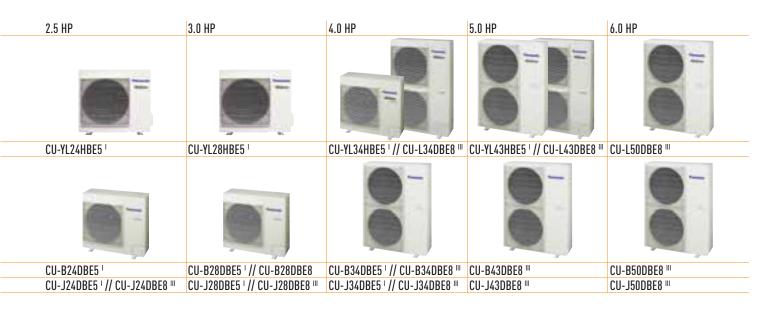
		1.0 HP	1.5 HP	2.0 HP	2.25 HP
4 WAY 60x60 CASSETTE INVERTER					
	INVERTER	CS-E10KB4EA	CS-E15HB4EA	CS-E18HB4EA	CS-E21JB4EA
4-WAY 90x90 CASSETTE			T	1	
	INVERTER				
	Heat pump		CS-F14DB4E5	CS-F18DB4E5	
	Cooling only		CS-F14DB4E5	CS-F18DB4E5	
LOW STATIC PRESSURE HIDE-AWAY					
	INVERTER	CS-E10KD3EA	CS-E15JD3EA	CS-E18JD3EA	
	Heat pump		CS-F14DD3E5	CS-F18DD3E5	
	Cooling only		CS-F14DD3E5	CS-F18DD3E5	
HIGH STATIC PRESSURE HIDE-AWAY					
	INVERTER				
	Heat pump				
	Cooling only				
CEILING					
	INVERTER				
	Heat pump			CS-F18DTE5	
	Cooling only			CS-F18DTE5	

# **RANGE OF OUTDOOR UNITS FS**

		1.0 HP	1.5 HP	2.0 HP	2.25 HP
INVERTER		O.F.	O.F	O.E.	● E
		CU-E10HBEA	CU-E15HBEA	CU-E18HBEA	CU-E21HBEA
NO INVERTER					
	HEAT PUMP		CU-B14DBE5 <sup>1</sup>	CU-B18DBE5 <sup>1</sup>	
	COOLING ONLY		CU-J14DBE5 <sup>1</sup>	CU-J18DBE5 <sup>1</sup>	

¹ Single-phase <sup>III</sup> Three-phase







# 4-WAY 60x60 CASSETTE // INVERTER

SMALL AND POWERFUL, IDEAL FOR OFFICES AND RESTAURANTS.

# prevention ANTI BACTERIAL FILTER





OPTIONAL

# **TECHNICAL ZOOM**

- EASY INSTALLATION ON THE DETACHABLE EUROPEAN 60x60 CEILING GRID
- OPERATION DOWN TO -10 °C IN COOLING AND HEATING MODES
- PIPING LENGTH UP TO 30 m
- MAXIMUM ELEVATION DIFFERENCE UP TO 20 m
- ULTRA COMPACT OUTDOOR UNITS FOR EASY INSTALLATION
- 24 HOUR ON/OFF TIMER

2 HP

			I HP	1.5 HP	Z HP	Z.25 HP
KIT			KIT-E10-KB4EA	KIT-E15-HB4EA	KIT-E18-HB4EA	KIT-E21-JB4EA
Indoor			CS-E10KB4EA	CS-E15HB4EA	CS-E18HB4EA	CS-E21JB4EA
Outdoor			CU-E10HBEA	CU-E15HBEA	CU-E18HBEA	CU-E21HBEA
Panel			CZ-BT20E	CZ-BT20E	CZ-BT20E	CZ-BT20E
Wireless control	Included with kit		Included with indoor unit	Included with indoor unit	Included with indoor unit	Included with indoor unit
Cooling capacity	Nominal (Min - Max)	kW	2.50 (0.60 - 3.20)	4.10 (0.9 - 4.8)	4.8 (0.9 - 5.70)	5.9 (0.9 - 6.3)
3.4	Nominal (Min - Max)		2150 (516 - 2752)	3530 (770 - 4130)	4130 (770 - 4900)	5070 (770 - 5420)
EER 1)	Nominal (Min - Max)		4.03 (4.14 - 3.68) A	3.15 (3.48 - 3.27) B	3.14 (3.53 - 2.95) B	2.88 (3.52 - 2.86) C
Power input Cooling	Nominal (Min - Max)		0.620 [0.145 - 0.870]	1.300 [0.255 - 1.170]	1.539 [0.255 - 1.930]	2.050 (0.255 - 2.200)
	Nominal (Min - Max)		3.20 (0.60 - 5.10)	5.10 (0.9 - 6.20)	5.60 (0.90 - 7.10)	7 (0.9 - 8.0)
	Nominal (Min - Max)		2752 (516 - 4300)	4390 (770 - 5330)	4820 (770 - 6110)	6020 (770 - 6880)
COP 1)	Nominal (Min - Max)		3.90 (4.80 - 3.51) A	2.88 (3.46 - 2.84) D	2.95 (3.46 - 2.90) D	2.86 [3.46 - 2.84] D
	Nominal (Min - Max)		0.820 (0.125 - 1.450)	1.770 (0.260 - 2.180)	1.900 (0.260 - 2.450)	2.450 (0.260 - 2.820)
Annual Energy Consump		kWh	310	650	765	1025
INDOOR UNIT			0.0	000	7.00	1025
	Cooling / Heating	m³/h	630 / 648	630 / 648	660 / 690	768 / 840
Moisture removal volum			1.5	2.3	2.6	3.3
			34 / 26 / 23	34 / 26 / 23	36 / 28 / 25	41 / 33 / 30
ouna procouro torot	Heating (Hi/Lo/S-Lo)		35 / 28 / 25	35 / 28 / 25	37 / 29 / 26	42 / 34 / 31
Sound power Level		dB	47	47	49	54
504.114 portor 20101			48	48	50	55
Dimensions		mm	260 x 575 x 575	260 x 575 x 575	260 x 575 x 575	260 x 575 x 575
Jillionolono			51 x 700 x 700	51 x 700 x 700	51 x 700 x 700	51 x 700 x 700
Net weight		Kg	18	18	18	18
not weight		Kg	2.5	2.5	2.5	2.5
Dust filter	1 dilot	ng .	Yes	Yes	Yes	Yes
	Optional		CZ-SA13P	CZ-SA13P	CZ-SA13P	CZ-SA13P
OUTDOOR UNIT	optionat		CE ONTO	CE SATSI	CE SATSI	CE ONTO
Power source	l l	V	220-240	220-240	220-240	220-240
Connection		mm²	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5
	Nominal (Min / Max)		2.9	6.0	7.0	9.2
Current Heating	Nominal (Min / Max)		3.8	8.0	8.5	10.9
Air Volume			1728	2808	2400	2568
			45	45	47	49
Journa pressure tevet			46	47	48	49
Sound power Level			58	58	60	62
Journa Power Lever		dB	59	60	61	62
Dimensions			540 x 780+70 <sup>4)</sup> x 289	750 x 875+70 <sup>4)</sup> x 345	750 x 875+70 <sup>4</sup> x 345	750 x 875+70 <sup>4)</sup> x 345
Net weight		mm Kg	35	48	48	50
			1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)
riping connections		Inch (mm)		1/2 (12.70)	1/2 (12.70)	1/2 (12.70)
Refrigerant Loading			1.15	1,2 (12.70)	1.06	1.15
		J	15		20	20
		m 		15		
Piping length			3 - 20	3 - 20	3 - 30	3 - 30
Piping length without refrigerant increase	Max	m	10	10	10	10
Additional gas		g/m	20	20	20	20
		0C	- 10 / 43	- 10 / 43	- 10 / 43	- 10 / 43
Operating range 3)	Cooling (Min / Max)	°L	- 10 / 43	- 10 / 43	- 10 / 43	- 10 / 24

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500-hr per year in cooling mode.
3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>4) 70</sup> mm for piping port.

5) When installing the outdoor unit at a higher position than the indoor unit.





INCLUDED ON THE KIT

OPTIONAL Wired control CZ-RD52CP





# KIT-E10-KB4EA // KIT-E15-HB4EA // KIT-E18-HB4EA // KIT-E21-JB4EA

# **HEALTHY AIR**

- CZ-SA13P Anti Bacterial Filter (optional)
- Odour-removing function

## **ENERGY EFFICIENCY AND ECOLOGY**

- Maximum efficiency Inverter system

## COMFORT

- Super Quiet mode
- · Powerful mode
- · Automatic vertical airflow control ambient temperature
- · Hot start mode
- 24 hour On/Off timer
- · Automatic restart after power cut

• Ergonomic infrared remote control

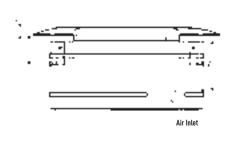
# EASY INSTALLATION AND MAINTENANCE

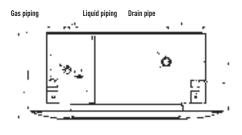
- · Removable, washable panel of the indoor unit
- Top panel maintenance access for the outdoor unit

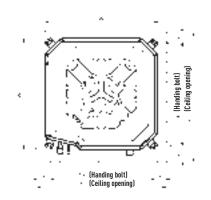


CU-E10HBEA CU-E15HBEA

CU-E21HBEA











# 4-WAY 90x90 CASSETTE FS // INVERTER

For the most demanding customers, this is a complete range of compact, efficient and powerful 90x90 cassettes. Quieter than ever before, the FS Inverter range is available from 2.5 HP to 6.0 HP in single-phase and three-phase versions.

# prevention ANTI BACTERIAL FILTER

OPTIONAL







CU-L MODELS

CU-L MODELS

# **TECHNICAL ZOOM**

- HIGHER ENERGY CLASS FOR HIGH SAVINGS, EVEN AT -20°C
- ECO MODE FOR 20% ENERGY SAVING
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- 3 OPENING ANGLES FOR THE PRE-PROGRAMMED GRILLES
- 30 m MAXIMUM ELEVATION DIFFERENCE
- EASY CHECK MODE FOR FAILURE DETECTION

			2.5 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	5.0 HP	6.0 HP
KIT			KIT-YH24DB4E5-P	KIT-YH28DB4E5-P	KIT-YH34DB4E5-P	KIT-F34DB4E8-P	KIT-YH43DB4E5-P	KIT-F43DB4E8-P	KIT-F50DB4E8-P
Indoor			CS-F24DB4E5	CS-F28DB4E5	CS-F34DB4E5	CS-F34DB4E5	CS-F43DB4E5	CS-F43DB4E5	CS-F50DB4E5
Outdoor			CU-YL24HBE5	CU-YL28HBE5	CU-YL34HBE5	CU-L34DBE8	CU-YL43HBE5	CU-L43DBE8	CU-L50DBE8
Panel			CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity		kW	5.60 (2 - 6.30)	7.10 (2.10 - 7.70)	10.00 (3.8 - 11.00)	10.00 (4.00-12.00)	12.50 (3.80 - 13.00)	12.50 (4.00-14.00)	14.00 (4.00-16.00)
<u>3</u> ,		kCal/h		6106 (1806 - 6622)	8600 (3268 - 9460)	8600 (3440-10320)	10750 (3268 - 11180)	10750 (3440-12040)	12040 (3440-13760)
EER 1)	Nominal (Min - Max)				3.01 (3.04 - 2.78) B		3.01 (3.04 - 2.92) B		
Power input Cooling	Nominal (Min - Max)	kW	1.86 (0.55 - 2.20)	2.36 (0.65 - 2.60)	3.32 (1.25 - 3.95)	2.59 (1.15-3.20)	4.15 (1.25 - 4.45)	3.64 (1.20-3.80)	4.65 (1.20-4.95)
Heating capacity	Nominal (Min - Max)	kW	7.00 (2.10 - 7.60)	8.00 (2.20 - 8.30)	11.20 (3.80 - 13.00)	11.20 (4.00-14.00)	14.00 (3.80 - 15.00)	14.00 (4.00-16.00)	16.00 (4.00-18.00)
nouning oupcorty	Nominal (Min - Max)		6020 (1806 - 6536)	6880 (1892 - 7138)	9632 (3268 - 11180)	9632 (3440-12040)	12040 (3268 - 12900)	12040 (3440-13760)	13760 (3440-15480)
COP 1)	Nominal (Min - Max)	noug ii				3.86 (3.64 - 3.41) A	3.41 (3.45 - 3.06) B	3.61 (3.48 - 3.27) A	3.41 (3.48 - 3.05) B
Power input Heating	Nominal (Min - Max)	kW	2.05 (0.50 - 2.80)	2.34 (0.60 - 3.20)	3.28 (1.10 - 4.10)	2.90 (1.10-4.10)	4.15 (1.10 - 4.90)	3.88 (1.15-4.90)	4.69 (1.15-5.90)
Annual Energy Consump		kWh	930	1180	1660	1295	2075	1820	2325
INDOOR UNIT			7.00		1000	1270	2070	1020	2020
Air Volume	Cooling / Heating	m³/h	1080 / 1080	1200 / 1200	1620 / 1620	1620 / 1620	1860 / 1860	1860 / 1860	1920 / 1920
Moisture removal volum		l/h	3.6	4.2	6.0	6.0	7.9	7.9	9.0
Sound pressure level 3	Cooling (Hi / Lo)	dB(A)	36 / 32	38 / 33	42 / 37	42 / 37	46 / 41	46 / 41	47 / 42
procoure 10100	Heating (Hi / Lo)	dB(A)	36 / 32	38 / 33	42 / 37	42 / 37	46 / 41	46 / 41	47 / 42
Sound power Level	Cooling (Hi)	dB	51	53	57	57	61	61	62
odana pomor Ediot	Heating (Hi)	dB	51	53	57	57	61	61	62
Dimensions indoor	H x W x D	mm	246 x 840 x 840	246 x 840 x 840	288 x 840 x 840	288 x 840 x 840	288 x 840 x 840	288 x 840 x 840	288 x 840 x 840
Dimensions panel	H x W x D	mm	950 x 950 x 45	950 x 950 x 45	950 x 950 x 45	45 x 950 x 950	950 x 950 x 45	45 x 950 x 950	45 x 950 x 950
Net weight	Indoor (Panel)	Kg	26 (4.5)	26 (4.5)	28.5 (4.5)	28.5 (4.5)	28.5 (4.5)	28.5 (4.5)	28.5 (4.5)
Dust filter	macor (rance)	119	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Antialergic filter	Optional		CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P
OUTDOOR UNIT	optionat		OL OMITI	OE ONT II	OL ONTH	OE OM III	OE ONT II	OE OITH	OL ONTH
Power source		٧	220 - 240	220 - 240	220 - 240	380 - 415	220 - 240	380 - 415	380 - 415
Connection		mm <sup>2</sup>	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal (Min / Max)	A	8.30	10.60	15.20	4.1	19.00	5.8	7.6
Current Heating		A	9.20	10.50	15.00	4.6	18.80	6.1	7.4
Air Volume	Cooling / Heating	m³/h	3180	3480	3720	5880 / 5880	5640	5880 / 5880	5880 / 5880
Sound pressure level 3)	Cooling (Hi)	dB(A)	49	50	53	52	54	53	54
oouna procouro torot	Heating (Hi)	dB(A)	51	52	56	54	56	55	56
Sound power Level	Cooling (Hi)	dB	67	68	71	66	72	67	68
oouna ponor zorot	Heating (Hi)	dB	68	69	73	68	73	69	70
Dimensions	H x W x D	mm	795 x 875+70 <sup>4)</sup> x 320	795 x 875+70 <sup>4</sup> x 320	795 x 900 x 320	1340 x 900 x 320	1170 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Net weight		Kg	1/4 (635)	65	66	110	94	105	105
Piping connections	Liquid pipe		3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
L9 cococ.	Gas pipe	Inch (mm)		5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	163	205	28	33	28	33	35
Elevation dif. (in/out) 5)	Max	m	25	25	30	30	30	30	30
Piping length	Min / Max	m	75 - 30	75 - 30	75 - 50	75-50	75 - 50	75-50	75-50
Piping length without	Max	m	30	30	30	30	30	30	30
refrigerant increase									
Additional gas	1	a/m	50	50	50	50	50	50	50
Area control accessory		9/111	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Recommended Fuse		Α	20	20	30	15	30	15	16
Operating range 3)	Cooling Min / Max	°C	-5 / 43	-5 / 43	-5 / 43	-15 / 43	-5 / 43	-15 / 43	-15 / 43
operating range "	Heating Min / Max	٥C	-15 / 24	-15 / 24	-15 / 24	-20 / 24	-15 / 24	-20 / 24	-10 / 43
	neading Mill / MdX	·	-10 / 24	-13 / 44	-10 / L4	-20 / 24	-10 / 44	-20 / 24	-40 / 44

GLOBAL REMARKS	Rated conditions:	Cooling	Heating		
	Indoor air temperature	27 °C DB / 19 °C WB			
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB		

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC 2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500 hours per year in cooling mode

<sup>3)</sup> The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification

<sup>4)</sup> Add 70 mm for piping port

<sup>5)</sup> When installing the outdoor unit at a higher position than the indoor unit





INCLUDED ON THE KIT Wired remote control CZ-RL513C

OPTIONAL CONTROLLER Wireless control CZ-RD513B







CU-YL24HBE5

0=

CU-YL34HBE5



CU-YL43HBE5



CU-L34DBE8 CU-L50DBE8 CU-L43DBE8

# KIT-YH24DB4E5 // KIT-YH28DB4E5 // KIT-YH34DB4E5 // KIT-F34DB4E8 // KIT-YH43DB4E5 // KIT-F43DB4E8 // KIT-F50DB4E8

#### **HEALTHY AIR**

• CZ-SA11P Anti Bacterial Filter (optional)

# **ENERGY EFFICIENCY AND ECOLOGY**

- Maximum efficiency Inverter system
- R410A environmentally friendly refrigerant gas

#### COMFORT

- Cooling with low outdoor temperatures (down to -20 °C)
- 3 types of air emission (3 opening angles for the pre-programmed grilles)
- Automatic deflectors
- · Automatic start after a power cut
- · Automatic fan operation mode

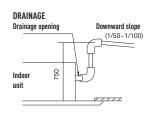
#### **EASE OF USE**

- Weekly On/Off timer
   (6 settings per day and 42 per week)
- · Infrared remote control
- · Optional wired remote control

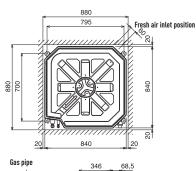
# EASY INSTALLATION AND MAINTENANCE

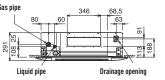
- Installation using existing pipesDrain pump (up to 750 mm)
- Self-diagnostic function
- Sett-diagnostic function
- · Condensation control
- Removable, washable indoor unit panel

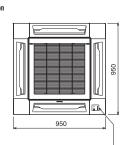
# SPACE NEEDED FOR INSTALLATION Space 1 500 7 500 more more



# INDOOR UNIT DIMENSIONS // CS-F24DB4E5 // CS-F28DB4E5

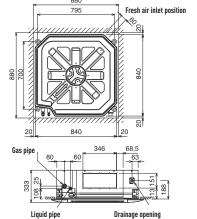


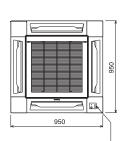




Remote control photoreceiver position

#### INDOOR UNIT DIMENSIONS // CS-F34DB4E5 // CS-F43DB4E5 // CS-F50DB4E5





Remote control photoreceiver position



# 4-WAY 90x90 CASSETTE FS // HEAT PUMP

Full line up of heat pump non-inverter cassette, from 1.5 HP to 6.0 HP, single-phase and three-phase.









# **TECHNICAL ZOOM**

- ECO MODE FOR 20% ENERGY SAVING
- 3 OPENING ANGLES FOR THE PRE-PROGRAMMED GRILLES
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- 30 m MAXIMUM ELEVATION DIFFERENCE
- EASY CHECK MODE FOR FAILURE DETECTION

			1.5 HP	2.0 HP	2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT				KIT-F18DB4E5-C	KIT-F24DB4E5-C	KIT-F28DB4E5-C	KIT-F28DB4E8-C	KIT-F34DB4E5-C			KIT-F50DB4E8-C
Indoor			CS-F14DB4E5	CS-F18DB4E5	CS-F24DB4E5	CS-F28DB4E5	CS-F28DB4E5	CS-F34DB4E5	CS-F34DB4E5	CS-F43DB4E5	CS-F50DB4E5
Outdoor			CU-B14DBE5	CU-B18DBE5	CU-B24DBE5	CU-B28DBE5	CU-B28DBE8	CU-B34DBE5	CU-B34DBE8	CU-B43DBE8	CU-B50DBE8
Panel			CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min-Max)	kW	3.80	5.00	6.60	7.3	7.3	10	10	12.5	13.5
	Nominal (Min-Max)	kCal/h	3268	4300	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min-Max)	noug ii	3.09 B	2.91 C	2.63 D	2.61 D	2.61 D	2.62 D	2.72 D	2.69 D	2.67 D
Power input Cooling	Nominal (Min-Max)	kW	1.23 (1.2-1.6)	1.72 (1.69-1.75)	2.51(2.46-2.57)	2.80 (2.74-2.85)	2.80 (2.74-2.85)	3.81 (3.76-3.86)	3.68 (3.63-3.73)	4.65 (4.6-4.7)	5.06 (5.01-5.15)
Heating capacity	Nominal (Min-Max)	kW	4.30	5.60	7.1	8.0	8.0	11.2	11.2	14.0	15.0
	Nominal (Min-Max)	kCal/h	3698	4816	6106	6880	6880	9632	9632	12040	12900
COP 1)	Nominal (Min-Max)	noug ii	3.52 B	3.46 B	3.01 D	3.08 D	3.08 D	2.90 D	2.96 D	3.05 D	3.04 D
Power input Heating	Nominal (Min-Max)	kW	1.22 (1.19-1.25)	1.62 (1.59-1.65)	2.36 (2.31-2.41)	2.60 (2.55-2.65)	2.60 (2.55-2.65)	3.86 (3.81-3.91)	3.78 (3.73-3.83)	4.59 (4.54-4.64)	4.93 (4.88-4.98)
Annual Energy Consumpt		kWh	615	860	1255	1400	1400	1905	1840	2325	2530
INDOOR UNIT			0.0	000	1200			1700	1010	2020	2000
Air Volume	Cooling / Heating	m³/h	900 / 900	1200 / 1200	1080 / 1080	1200 / 1200	1200 / 1200	1620 / 1620	1620 / 1620	1860 / 1860	1920 / 1920
Moisture removal volume		Uh	2.2	2.8	3.8	4.3	4.3	6.0	6.0	7.9	8.6
Sound pressure level 3)	Cooling (Hi / Lo)	dB(A)	34 / 31	35 / 32	36 / 32	38 / 33	38 / 33	42 / 37	42 / 37	46 / 41	47 / 42
	Heating (Hi / Lo)	dB(A)	34 / 31	34 / 31	36 / 32	38 / 33	38 / 33	42 / 37	42 / 37	46 / 41	47 / 42
Sound power Level	Cooling (Hi)	dB	49	50	51	53	53	57	57	61	62
oouna pontoi corot	Heating (Hi)	dB	49	49	51	53	53	57	57	61	62
Dimensions	Indoor (H x W x D)	mm	246 x 840 x 840	246 x 840 x 840	288 x 840 x 840						
Dilliciisiolis	Panel (H x W x D)	mm	45 x 950 x 950	45 x 950 x 950	45 x 950 x 950	45 x 950 x 950	45 x 950 x 950	45 x 950 x 950			
Net weight	Indoor	Kg	25	26	26	26	26	28.5	28.5	28.5	28.5
not weight	Panel	Kg	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Dust filter	1 dilot	ING .	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Antiallergic filter	Optional		CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P
OUTDOOR UNIT	optionat		CE ONTH	CE OATH	CL ONTIT	CL SATTI	OL SATTI	CL SATTI	CZ SATTI	CL SKITI	UL UNITI
Power source		٧	220-240	220-240	220-240	220-240	380-415	220-240	380-415	380-415	380-415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5			
Current Cooling	Nominal (Min / Max)	A	5.5	7.7	12.4	12.8	4.85	18.1	6.1	7.9	8.5
Current Heating		A	5.45	7.2	11.2	11.8	4.3	17.7		7.7	8.0
Air Volume	Cooling / Heating	m³/h	3240	3420	3600	3780	3780	5640	5640	5640	5760
Sound pressure level 3)	Cooling (Hi)	dB(A)	49	49	50	52	52	55	55	56	56
Jouna pressure tevet	Heating (Hi)	dB(A)	50	50	51	53	53	56	56	57	57
Sound power Level	Cooling (Hi)	dB	65	65	66	67	67	69	69	70	70
oodiid howei react	Heating (Hi)	dB	66	66	67	68	68	70	70	71	71
Dimensions	H x W x D	mm	795 x 900 x 320	795 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320			
Net weight	11 7 17 7 D	Kg	55	57	69	69	69	102	100	102	102
Piping connections	Liquid pipe		1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
i ihiiid coilliections	Gas pipe		1/2 (12.70)	1/2 (12.70)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.10	1.35	1.70	2.05	2.05	2.70	2.70	3.10	3.40
Elevation dif. (in/out) 4)	Max	m Ny	20	20	30	30	30	30	30	30	30
Piping length	Min - Max	m	7.5 - 30	7.5 - 30	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50
Piping length without	Max	m	20	20	30	30	30	30	30	30	30
refrigerant increase	rida	III	20	20	JU	JU	JU	JU	JU	JU	JU
		1	F0	F0	F0	F0	F0	F0	F0	F0	F0
Additional gas		g/m	50	50	50	50	50	50	50	50	50
Area control accessory	0 11 111 111	00	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Operating range 3)	Cooling Min / Max Heating Min / Max	°C	-10 / 43	5 / 43	5 / 43	5 / 43 -10 / 24	5 / 43				
			-10 / 24	-10 / 24	-10 / 24						-10 / 24

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air tomporaturo	3E OF DR / 3/, OF M/R	7 0 C DD / 4 0 C W/D

<sup>1)</sup> EER and COP classification is at 220-240 V in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V by an avarage of 500-hr per year in cooling mode.

<sup>3)</sup> The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.





INCLUDED ON THE KIT Wired remote control CZ-RL513C OPTIONAL CONTROLLER Wireless control CZ-RD513B





KIT-F14DB4E5-C // KIT-F18DB4E5-C // KIT-F24DB4E5-C // KIT-F28DB4E5-C // KIT-F34DB4E5-C // KIT-F34DB4E5-C // KIT-F34DB4E8-C // KIT-F50DB4E8-C

## **HEALTHY AIR**

• CZ-SA11P Anti Bacterial Filter (optional)

## **ENERGY EFFICIENCY AND ECOLOGY**

• R410A environmentally friendly refrigerant gas

#### COMFORT

- 3 types of air emission (3 opening angles for the preprogrammed grilles)
- Automatic deflectors
- · Automatic start after a power cut
- · Automatic fan operation mode

# EASE OF USE

- Weekly On/Off timer
   (6 settings per day and 42 per week)
- Infrared remote control
- Optional wired remote control

## **EASY INSTALLATION AND MAINTENANCE**

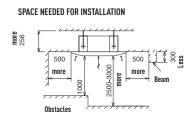
- Self-diagnostic function
- Drain pump (up to 750 mm)
- Condensation control
- Removable, washable indoor unit panel



CU-B14DBE5 CU-B28DBE5 CU-B18DBE5 CU-B28DBE8 CU-B24DBE5



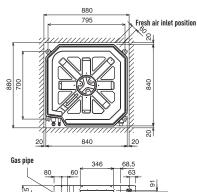
CU-B34DBE5 CU-B43DBE8 CU-B34DBE8



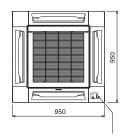
DRAINAGE
Drainage opening

Downward slope
(1/50-1/100)

INDOOR UNIT DIMENSIONS // CS-F24DB4E5 // CS-F28DB4E5

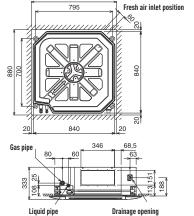


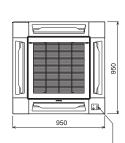
Liquid pipe



Remote control photoreceiver position

# INDOOR UNIT DIMENSIONS // CS-F34DB4E5 // CS-F43DB4E5 // CS-F50DB4E5





Remote control photoreceiver position



# 4-WAY 90x90 CASSETTE FS // COOLING ONLY

Full line up of cooling only non-inverter cassette, from 1.5 HP to 6.0 HP, Single-phase and three-phase







# **TECHNICAL ZOOM**

- ECO MODE FOR 20% ENERGY SAVING
- 3 OPENING ANGLES FOR THE PRE-PROGRAMMED GRILLES
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- 30 m MAXIMUM ELEVATION DIFFERENCE
- EASY CHECK MODE FOR FAILURE DETECTION

			1.5 HP	2.0 HP	2.5 HP	2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT			KIT-F14DB4E5-F	KIT-F18DB4E5-F	KIT-F24DB4E5-F	KIT-F24DB4E8-F	KIT-F28DB4E5-F	KIT-F28DB4E8-F	KIT-F34DB4E5-F	KIT-F34DB4E8-F	KIT-F43DB4E8-F	KIT-F50DB4E8-F
Indoor			CS-F14DB4E5	CS-F18DB4E5	CS-F24DB4E5	CS-F24DB4E5	CS-F28DB4E5	CS-F28DB4E5	CS-F34DB4E5	CS-F34DB4E5	CS-F43DB4E5	CS-F50DB4E5
Outdoor			CU-J14DBE5	CU-J18DBE5	CU-J24DBE5	CU-J24DBE8	CU-J28DBE5	CU-J28DBE8	CU-J34DBE5	CU-J34DBE8	CU-J43DBE8	CU-J50DBE8
Panel			CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min-Max)	kW	3.80	5.00	6.60	6.60	7.3	7.3	10	10	12.5	13.5
	Nominal (Min-Max)	kCal/h	3268	4300	5676	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min-Max)		3.09 B	2.91 C	2.63 E	2.56 E	2.61 D	2.61 D	2.54 E	2.63 D	2.61 D	2.61 D
Power input Cooling	Nominal (Min-Max)	kW	1.26 (1.2-1.29)	1.72 (1.69-1.75)	2.58(2.53-2.63)	2.58(2.53-2.63)	2.80 (2.74-2.85)	2.80 (2.74-2.85)			4.79 (4.74-4.84)	5.18 (5.13-5.23)
Annual Energy Consump	tion <sup>2)</sup>	kWh	615	860	1255	1290	1400	1400	1905	1840	2325	2530
INDOOR UNIT												
Air Volume		m³/h	900	1200	1080	1080	1200	1200	1620	1620	1860	1920
Moisture removal volum	е	l/h	2.2	2.8	3.8	3.8	4.3	4.3	6.0	6.0	7.9	8.6
Sound pressure level 3)	Hi / Lo	dB(A)	34 / 31	35 / 32	36 / 32	36 / 32	38 / 33	38 / 33	42 / 37	42 / 37	46 / 41	47 / 42
Sound power Level	Hi	dB	49	50	51	51	53	53	57	57	61	62
Dimensions	Indoor (H x W x D)	mm	246x840x840	246x840x840	246x840x840	246x840x840	246x840x840	246x840x840	288x840x840	288x840x840	288x840x840	288x840x840
	Panel (H x W x D)	mm	45x950x950	45x950x950	45x950x950	45x950x950	45x950x950	45x950x950	45x950x950	45x950x950	45x950x950	45x950x950
Net weight	Indoor	Kg	25	26	26	26	26	26	28.5	28.5	28.5	28.5
	Panel	Kg	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Dust filter			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Antiallergic filter	Optional		CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P	CZ-SA11P
OUTDOOR UNIT												
Power source		V	220-240	220-240	220-240	380-415	220-240	380-415	220-240	380-415	380-415	380-415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal (Min / Max)	Α	5.7	7.7	13.2	4.55	12.9	4.9		6.2	8	8.5
Air Volume		m³/h	3240	3420	3600	3600	3780	3780		5640	5640	5760
Sound pressure level 3)	Hi	dB(A)	49	49	50	50	52	52		55	56	56
Sound power Level	Hi	dB	65	65	66	66	67	67		69	70	70
Dimensions	H x W x D	mm	795x900x320	795x900x320	795x900x320	795x900x320	795x900x320	795x900x320		1170x900x320	1170x900x320	1170x900x320
Net weight		Kg	54	57	69	69	69	69	102	100	102	102
Piping connections	Liquid pipe		1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	1/2 (12.70)	1/2 (12.70)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)		5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.1	1.35	1.7	1.7	2.05	2.05	2.7	2.7	3.1	3.4
Elevation dif. (in/out) 4)	Max	m	20	20	30	30	30	30	30	30	30	30
Piping length	Min - Max	m	7.5 - 30	7.5 - 30	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50		7.5 - 50	7.5 - 50	7.5 - 50
Piping length without refrigerant increase	Max	m	20	20	20	20	20	20	20	20	20	20
Additional gas	•	g/m	20	20	50	50	50	50	50	50	50	50
Area control accessory			EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Operating range 3)	Min / Max	OC	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43

Rated conditions: Indoor air temperature Outdoor air temperatur GLOBAL REMARKS

<sup>1)</sup> EER, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500-hr per year in cooling mode.
3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>4)</sup> When installing the outdoor unit at a higher position than the indoor unit.





INCLUDED ON THE KIT Wired remote control CZ-RL513C OPTIONAL CONTROLLER Wireless control CZ-RD513B





KIT-F14DB4E5-F // KIT-F18DB4E5-F // KIT-F24DB4E5-F // KIT-F24DB4E8-F // KIT-F28DB4E5-F // KIT-F28DB4E8-F // KIT-F34DB4E5-F // KIT-F34DB4E8-F // KIT-F43DB4E8-F // KIT-F43DB4E8

## **HEALTHY AIR**

• CZ-SA11P Anti Bacterial Filter (optional)

## **ENERGY EFFICIENCY AND ECOLOGY**

• R410A environmentally friendly refrigerant gas

#### COMFORT

- 3 types of air emission (3 opening angles for the preprogrammed grilles)
- Automatic deflectors
- · Automatic start after a power cut
- · Automatic fan operation mode

# EASE OF USE

- Weekly On/Off timer
   (6 settings per day and 42 per week)
- Infrared remote control
- · Optional wired remote control

## **EASY INSTALLATION AND MAINTENANCE**

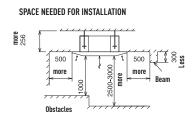
- Self-diagnostic function
- Drain pump (up to 750 mm)
- · Condensation control
- · Removable, washable indoor unit panel

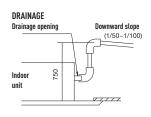


CU-J14DBE5 CU-J24DBE8 CU-J18DBE5 CU-J28DBE5 CU-J24DBE5 CU-J28DBE8

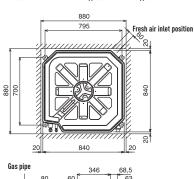


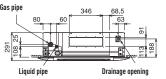
CU-J34DBE5 CU-J43DBE8 CU-J34DBE8

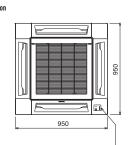




# INDOOR UNIT DIMENSIONS // CS-F24DB4E5 // CS-F28DB4E5

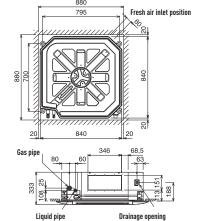


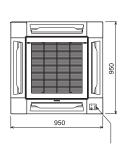




Remote control photoreceiver position

#### INDOOR UNIT DIMENSIONS // CS-F34DB4E5 // CS-F43DB4E5 // CS-F50DB4E5





Remote control photoreceiver position



# LOW STATIC PRESSURE HIDE AWAY FS // INVERTER

Compact line up of inverter Hide away, from 1.0 HP to 5.0 HP, Single-phase









**CU-L MODELS** 

CU-L MODELS

# **TECHNICAL ZOOM**

- ULTRA COMPACT O\_U (-40% REDUCED SIZE FOR THE CU-YL34HBE5)
- ECO MODE FOR 20% ENERGY SAVING
- EXTREMELY COMPACT INDOOR UNITS WITHOUT LOSING STATIC PRESSURE (ONLY 250 mm HIGH)
- COOLING WITH LOW OUTDOOR TEMPERATURES (DOWN TO -20 °C)
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- EASY CHECK MODE FOR FAILURE DETECTION

			1.0 HP	1.5 HP	2.0 HP	2.5 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	5.0 HP	6.0 HP
KIT			KIT-E10-KD3EA	KIT-E15-JD3EA	KIT-E18-JD3EA	KIT-YH24DD3E5	KIT-YH28DD3E5	KIT-YH34DD3E5	KIT-F34DD3E8	KIT-YH43DD3E5	KIT-F43DD3E8	KIT-F50DD3E8
Indoor			CS-E10KD3EA	CS-E15JD3EA	CS-E18JD3EA	CS-F24DD3E5	CS-F28DD3E5	CS-F34DD3E5	CS-F34DD3E5	CS-F43DD3E5	CS-F43DD3E5	CS-F50DD3E5
Outdoor			CU-E10HBEA	CU-E15HBEA	CU-E18HBEA	CU-YL24HBE5	CU-YL28HBE5	CU-YL34HBE5	CU-L34DBE8	CU-YL43HBE5	CU-L43DBE8	CU-L50DBE8
Wired remote control	Included in the I	kit	CZ-RD52CP	CZ-RD52CP	CZ-RD52CP	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min-Max)	kW	2.50 (0.80-3.00)	4.10 (0.90-4.70)	5.10 (0.90-5.70)	5.60 (2-6.30)	7.10 (2.10-7.50)	10.00 (3.8-10.50)	10.00 (4.00-12.00)	12.50 (3.80-13.00)	12.50 (4.00-13.50)	14.00 (4.00-16.00)
	Nominal (Min-Max)	kCal/h	2150 (690-2580)	3530 (770-4040)	4390 (770-4900)	4816 (1720-5418)	6106 (1806-6450)	8600 (3268-9030)	8.600 (3440-10.320)	10750 (3268-11180)	10750 (3440-11610)	12040 (3440-13.760)
EER 1)	Nominal (Min-Max)		3.68 (3.87-3.53) A	3.31 (3.53-3.13) A	3.15 (3.53-3.10) B	2.81 (3.64-2.86) C	2.81 (3.23-2.88) C	2.61 (2.92-2.56) D	3.61 (3.08-3.48) A	3.81 (2.92-2.77) C	3.01 (2.86-3.07) B	2.81 (2.76-3.08) C
Power input Cooling	Nominal (Min-Max)	kW	0.68 (0.155-0.85)	1.24 (0.255-1.50)	1.62 (0.25-1.84)	1.99 (0.55-2.20)	2.53 (0.65-2.60)	3.56 (1.30-4.10)	2.77 (1.3-3.45)	4.45 (1.30-4.70)	4.15 (1.40-4.40)	4.98 (1.45-5.20)
Heating capacity	Nominal (Min-Max)	kW	3.20 (0.60-5.00)	4.80 (0.90-55.0)	6.10 (0.90-7.10)	7.00 (2.10-7.50)	8.00 (2.20-8.30)	11.20 (3.80-12.50)	11.20 (4.00-13.50)	14.00 (3.80-14.50)	14.00 (4.00-15.50)	16.00 (4.00-18.00)
	Nominal (Min-Max)	kCal/h	2752 (516-4300)	4130 (770-4730)	5250 (770-6110)	6020 (1806-6450)	6880 (1892-7138)	9632 (3268-10750)	9632 (3440-11.610)	12040 (3268-12470)	12040 (3440-13.330)	13760 (3440-15.480)
COP 1)	Nominal (Min-Max)		3.64 [4.44-3.27] A	2.64 (3.46-2.63) E	3.30 (3.46-3.23) C	2.81 (4.20-2.68) D	2.81 (3.67-2.59) D	3.01 (3.17-2.94) C	3.41 (3.08-3.18) B	3.01 (3.17-2.90) C	3.41 (2.86-3.04) B	3.21 (2.86-2.95) C
Power input Heating	Nominal (Min-Max)	kW	0.88 (0.135-1.53)	1.82 (0.26-2.09)	1.85 (0.26-2.20)	2.49 (0.50-2.80)	2.85 (0.60-3.20)	3.72 (1.20-4.25)	3.28 (1.30-4.25)	4.65 (1.20-5.00)	4.11 (1.40-5.10)	4.98 (1.40-6.10)
Annual Energy Consumpt	tion <sup>2)</sup>	kWh	340	620	810	995	1265	1780	1385	2225	2075	2490
INDOOR UNIT												
External static pressure 3	S-Hi / Hi / Me / Lo	Pa	54 / 24 / 15 / 10	54 / 24 / 15 / 10	54 / 24 / 15 / 10	69 / 50 / 35 / 26	69 / 50 / 35 / 26	69 / 50 / 37 / 28	69 / 50 / 37 / 28	69 / 50 / 37 / 28	69 / 50 / 37 / 28	69 / 50 / 37 / 28
Air Volume	Cooling / Heating		660 / 660	660 / 660	750 / 750	1320 / 1320	1320 / 1320	2160 / 2160	2160 / 2160	2160 / 2160	2400 / 2400	2640 / 2640
Moisture removal volume	0. 0	l/h	1.50	2.30	2.80	3.20	4.20	6.00	6.00	7.90	7.9	9.0
Sound pressure level 4)	Cooling (Hi / Lo)		33 / 24	33 / 24	41 / 27	43 / 39	43 / 39	45 / 41	45 / 41	45 / 41	45 / 41	46 / 42
	Heating (Hi / Lo)		35 / 25	35 / 25	41 / 29	43 / 39	43 / 39	44 / 40	44 / 40	44 / 40	44 / 40	45 / 41
Sound power Level	Cooling (Hi)	dB	49	49	57	59	59	60	60	60	60	61
oodiid poiloi 2010t	Heating (Hi)	dB		51	57	59	59	60	59	60	59	60
Dimensions	HxWxD	mm	235 x 750+65 <sup>4</sup> ) x 3			250 x 1000+100 <sup>4)</sup>		250 x 1200+100 <sup>4)</sup>			0,	-
Net weight		Kg	17	18	18	41	41	47	47	47	47	47
Dust filter		J	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OUTDOOR UNIT												
Power source		٧	220-240	220-240	220-240	220-240	220-240	220-240	380-415	220-240	380-415	380-415
Connection		mm <sup>2</sup>	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal	Α	3.10	5.7	7.3	9.00	11.40	16.30	4.4	20.30	6.5	7.6
Current Heating	Nominal	Α	4.10	8.2	8.3	11.30	12.20	17.00	5.2	21.20	6.5	7.6
Air Volume	Cooling/Heating	m³/h	1728	2808	2380 / 415	3180	3480	3720	5880 / 5880	5640	5880 / 5880	5880 / 5880
Sound pressure level 4)	Cooling (Hi)	dB(A)	45	46	47	49	50	53	52	54	53	54
•	Heating (Hi)	dB(A)	46	47	48	51	52	56	54	56	55	56
Sound power Level	Cooling (Hi)	dB	58	59	60	67	68	71	66	72	67	68
	Heating (Hi)	dB	59	60	61	68	69	73	68	73	69	70
Dimensions	HxWxD	mm	540x780+70 <sup>4</sup> )x289	750x875+70 <sup>43</sup> x34	5	795x875+70 <sup>4</sup> )x32	0	795x900x320	1340x900x320	1170x900x320	1340x900x320	1340x900x320
Net weight		Kg	35	48	48	65	65	66	105	94	105	105
Piping connections	Liquid pipe	Inch (mm)		1/4	1/4	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
, , ,	Gas pipe	Inch (mm)		1/2	1/2	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.15	1.23	1.06	1.63	2.05	2.8	3.3	2.8	3.3	3.5
Elevation dif. (in/out) 5)	Max	m	15	15	20	25	25	30	30	30	30	30
Piping length	Min-Max	m	3-20	3-20	3-30	7.5-30	7.5-30	7.5-50	7.5-50	7.5-50	7.5-50	7.5-50
Piping length without refrigerant increase	Max	m	10	10	10	30	30	30	30	30	30	30
Additional gas		g/m	20	20	20	50	50	50	50	50	50	50
Area control accessory		9/111	_	_	_	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Recommended Fuse		Δ	_	_	L	20	20	30	15	30	15	16
Operating range 3)	Cooling Min/Max	**	-10 / 43	-10 / 43	-10 / 43	-5 / 43	-5 / 43	-5 / 43	-15 / 43	-5 / 43	-15 / 43	-15 / 43
operating range	Heating Min/Max		-10 / 43	-10 / 43	-10 / 43	-15 / 24	-15 / 24	-15 / 24	-10 / 45	-15 / 24	-10 / 45	-10 / 45
	ricaully Mill/Max	U	-10 / 24	-10 / 44	-10 / 24	-10 / 24	-10 / 24	-10 / 44	-40 / 44	-10 / L4	-LU / L4	-LU / L4

GLOBAL REMARKS

Rated conditions:

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220 - 240 V (380 - 415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220 - 240 V (380 - 415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting. Change connector on fan motor from Hi to Shi to have 7.0 mmAq.

<sup>4)</sup> The sound pressure Level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>5)</sup> Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port. 6) When installing the outdoor unit at a higher position than the indoor unit.





Wired remote control CZ-RD513C CZ-RD52CP





CU-E10HBEA CU-E18HBEA CU-E15HBEA CU-E21HBEA



CU-YL43HBE5



CU-YL24HBE5



CU-L34DBE8 CU-L50DBE8



CU-YL34HBE5

# KIT-E10-KD3EA // KIT-E15-JD3EA // KIT-E18-JD3EA // KIT-E21-JD3EA // KIT-YH24DD3E5 // KIT-YH28DD3E5 // KIT-YH34DD3E5 // KIT-F34DD3E8 // KIT-YH43DD3E5 // KIT-F43DD3E8 // KIT-F50DD3E8

## **ENERGY EFFICIENCY AND ECOLOGY**

- · Maximum efficiency Inverter system
- R410A environmentally friendly refrigerant gas

#### COMFORT

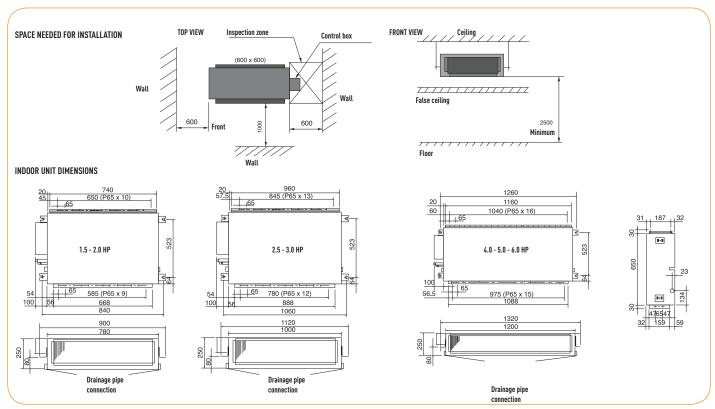
- Cooling with low outdoor temperatures (down to -15  $^{\mathrm{o}}\mathrm{C}$ )
- · Automatic start after a power cut
- · Automatic fan operation mode
- · Soft dry operation mode
- · Hot start mode
- · Selection of temperature sensor at indoor unit or wired remote control

## EASE OF USE

- Weekly On/Off timer (6 settings per day and 42 per week)
- · Wired remote control

# **EASY INSTALLATION AND MAINTENANCE**

- · Installation using existing pipes
- Selectable static pressure up to 7 mmAq
- · Self-diagnostic function
- · Condensation control
- · Ultra compact indoor unit





# LOW STATIC PRESSURE HIDE AWAY FS // HEAT PUMP

Full line up of heat pump non-inverter Hide away, from 1.5 HP to 6.0 HP, Single-phase and three-phase







# **TECHNICAL ZOOM**

- EXTREMELY COMPACT INDOOR UNITS WITHOUT LOSING STATIC PRESSURE (ONLY 250 mm HIGH)
- ECO MODE FOR 20% ENERGY SAVING
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- EASY CHECK MODE FOR FAILURE DETECTION

			1.5 HP	2.0 HP	2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT			KIT-F14DD3E5-C	KIT-F18DD3E5-C	KIT-F24DD3E5-C	KIT-F28DD3E5-C	KIT-F28DD3E8-C	KIT-F34DD3E5-C		KIT-F43DD3E8-C	KIT-F50DD3E8-C
Indoor			CS-F14DD3E5	CS-F18DD3E5	CS-F24DD3E5	CS-F28DD3E5	CS-F28DD3E5	CS-F34DD3E5	CS-F34DD3E5	CS-F43DD3E5	CS-F50DD3E5
Outdoor			CU-B14DBE5	CU-B18DBE5	CU-B24DBE5	CU-B28DBE5	CU-B28DBE8	CU-B34DBE5	CU-B34DBE8	CU-B43DBE8	CU-B50DBE8
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min-Max)	kW	3.80	5.00	6.60	7.30	7.30	10.00	10.00	12.50	13.50
	Nominal (Min-Max)	kCal/h	3268	4300	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min-Max)		2.81 C	2.66 D	2.55 E	2.57 E	2.57 E	2.58 €	2.67 €	2.60 <b>E</b>	2.54 E
Power input Cooling	Nominal (Min-Max)	kW	1.35 (1.32-1.38)	1.89 (1.86-1.92)	2.59 (2.56-2.64)	2.84 (2.78-2.89)	2.84 (2.78-2.89)	3.88 (3.83-4.05)	3.75 (3.7-3.8)	4.80 (4.75-4.87)	5.31 (5.26-5.46)
Heating capacity	Nominal (Min-Max)	kW	4.30	5.60	7.10	8.00		11.20	11.20	14.00	15.00
* ' '	Nominal (Min-Max)	kCal/h	3698	4816	6106	6880	6880	9632	9632	12040	12900
COP 1)	Nominal (Min-Max)		3.55 C	3.29 C	2.87 D	2.97 D		2.84 D		2.99 D	2.95 D
Power input Heating	Nominal (Min-Max)	kW	1.21 (1.18-1.24)	1.70 (1.67-1.73)	2.47 (2.4-2.56)	2.69 (2.61-2.78)	2.69 (2.61-2.78)	3.94 (3.86-4.0)	3.58 (3.54-3.64)	4.68 (4.61-4.78)	5.08 (5.03-5.13)
Annual Energy Consump	tion <sup>2)</sup>	kWh	675	945	1295	1420	1420	1940	1875	2400	2655
INDOOR UNIT											
External static pressure 3		Pa		69 / 50 / 25 / 17		69 / 50 / 35 / 26		69 / 50 / 37 / 28		69 / 50 / 37 / 28	69 / 50 / 37 / 28
Air Volume	Cooling / Heating	m³/h	1020 / 1020	1020 / 1020	1320 / 1320	1320 / 1320		2160 / 2160	2160 / 2160	2400 / 2400	2640 / 2640
Moisture removal volum		l/h	2.2	2.8	3.8	4.3	4.3	6.0	6.0	7.9	8.6
Sound pressure level 4)	Cooling (Hi / Lo)	dB(A)	42 / 38	42 / 38	43 / 39	43 / 39		45 / 41		45 / 41	46 / 42
	Heating (Hi / Lo)	dB(A)	40 / 36	40 / 36	43 / 39	43 / 39	43 / 39	44 / 40		44 / 40	45 / 41
Sound power Level	Cooling (Hi)	dB	58	58	59	59	59	60	60	60	61
	Heating (Hi)	dB	56	56	59	59	59	59	59	59	60
Dimensions	H x W x D	mm			250x1000+1005)x650					250x1200+1005)x650	
Net weight	Indoor	Kg	34	34	41	41	41	47	47	47	47
Dust filter			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OUTDOOR UNIT											
Power source		V	220-240	220-240	220-240	220-240		220-240		380-415	380-415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5		4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling		Α		8.53	12.9	13.5	4.9	18.6		8.1	8.8
Current Heating		Α		7.63	11.8	12.6		18.6		7.9	8.4
Air Volume	Cooling / Heating	m³/h	3240 / 3240	3420 / 3429	3600 / 3600	3780 / 3780		5640 / 5640		5640 / 5640	5760 / 5760
Sound pressure level 4)	Cooling (Hi)	dB(A)	49	49	50	52	52	55	55	56	56
	Heating (Hi)	dB(A)	50	50	51	53	53	56	56	57	57
Sound power Level	Cooling (Hi)	dB	65	65	66	67	67	69	69	70	70
	Heating (Hi)	dB	66	66	67	68	68	70	70	71	71
Dimensions	HxWxD	mm	795x900x320	795x900x320	795x900x320	795x900x320		1170x900x320	1170x900x320	1170x900x320	1170x900x320
Net weight		Kg		57	69	69	69	102	100	102	102
Piping connections	Liquid pipe		1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)		3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
D (1 11 11	Gas pipe		1/2 (12.70)	1/2 (12.70)	5/8 (15.88)	5/8 (15.88)		5/8 (15.88)		5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.1	1.35	1.7	2.05				3.1	3.4
Elevation dif. (in/out) 6	Max	m	20	20	30	30	30	30	30	30	30
Piping length	Min - Max	m	7.5 - 30	7.5 - 30	7.5 - 50	7.5 - 50		7.5 - 50		7.5 - 50	7.5 - 50
Piping length without refrigerant increase	Max	m	20	20	30	30	30	30	30	30	30
Additional gas		g/m	20	20	50	50	50	50	50	50	50
Area control accessory			EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Operating range 3)	Cooling Min / Max	oC	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43
	Heating Min / Max	oC	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24

GLOBAL REMARKS Rated conditions:

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220 - 240 V (380 - 415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220 - 240 V (380 - 415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting. Change connector on fan motor from Hi to Shi to have 7.0 mmAq.

<sup>4)</sup> The sound pressure Level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>5)</sup> Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port. 6) When installing the outdoor unit at a higher position than the indoor unit.





Wired remote control CZ-RD513C



KIT-F14DD3E5-C // KIT-F18DD3E5-C // KIT-F24DD3E5-C // KIT-F28DD3E5-C // KIT-F28DD3E8-C // KIT-F34DD3E5-C // KIT-F34DD3E8-C // KIT-F43DD3E8-C // KIT-F50DD3E8-C

## **ENERGY EFFICIENCY AND ECOLOGY**

- R410A environmentally friendly refrigerant gas

#### COMFORT

- · Automatic start after a power cut
- · Automatic fan operation mode
- · Soft dry operation mode
- · Hot start mode
- Selection of temperature sensor at the indoor unit or the wired remote control

# **EASE OF USE**

- Weekly On/Off timer (6 settings per day and 42 per week)
- · Wired remote control

# **EASY INSTALLATION AND MAINTENANCE**

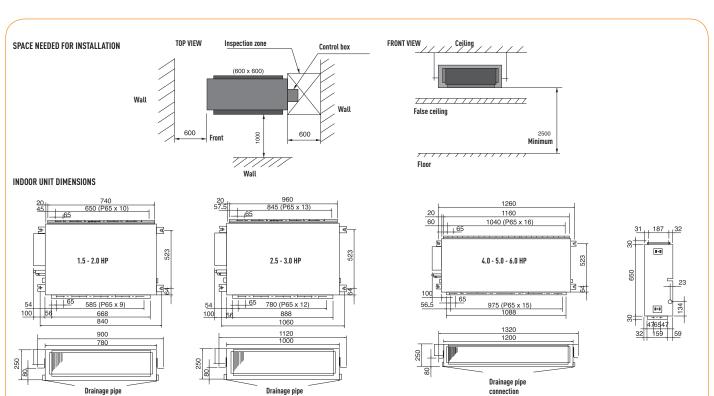
- · Selectable static pressure up to 7 mmAq
- · Self-diagnostic function
- · Condensation control
- · Ultra compact indoor unit



CU-B14DBE5 CU-B28DBE5 CU-B18DBE5 CU-B28DBE8 CU-B24DBE5



CU-B34DBE5 CU-B43DBE8 CU-B34DBE8 CU-B50DBE8





# LOW STATIC PRESSURE HIDE AWAY FS // COOLING ONLY

Full line up of cooling only non-inverter Hide away, from 1.5 HP to 6.0 HP, Single-phase and three-phase





# **TECHNICAL ZOOM**

- EXTREMELY COMPACT INDOOR UNITS WITHOUT LOSING STATIC PRESSURE (ONLY 250 mm HIGH)
- ECO MODE FOR 20% ENERGY SAVING
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- EASY CHECK MODE FOR FAILURE DETECTION

			1.5 HP	2.0 HP	2.5 HP	2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT			KIT-F14DD3E5-F	KIT-F18DD3E5-F	KIT-F24DD3E5-F	KIT-F24DD3E8-F	KIT-F28DD3E5-F	KIT-F28DD3E8-F	KIT-F34DD3E5-F	KIT-F34DD3E8-F	KIT-F43DD3E8-F	KIT-F50DD3E8-F
Indoor			CS-F14DD3E5	CS-F18DD3E5	CS-F24DD3E5	CS-F24DD3E5	CS-F28DD3E5	CS-F28DD3E5	CS-F34DD3E5	CS-F34DD3E5	CS-F43DD3E5	CS-F50DD3E5
Outdoor			CU-J14DBE5	CU-J18DBE5	CU-J24DBE5	CU-J24DBE8	CU-J28DBE5	CU-J28DBE8	CU-J34DBE5	CU-J34DBE8	CU-J43DBE8	CU-J50DBE8
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min - Max)	kW	3.80	5.00	6.60	6.60	7.30	7.30	10.00	10.00	12.50	13.50
	Nominal (Min - Max)	kCal/h	3268	4300	5676	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min - Max)		2.81 C	2.69 D	2.48 <b>E</b>	2.48 E	2.53 E	2.53 E	2.48 E	2.63 D	2.58 €	2.50 E
Power input Cooling	Nominal (Min - Max)	kW	1.35 (1.32-1.38)	1.86 (1.83-1.89)	2.66 (2.62-2.70)	2.66 (2.62-2.70)	2.89 (2.83-2.94)	2.89 (2.83-2.94)	4.04 (3.95-4.12)	3.80 (3.75-3.85)	4.84 (4.80-4.95)	5.41 (5.36-5.51)
Annual Energy Consumpt	tion <sup>2)</sup>	kWh	675	930	1330	1330	1445	1445	2020	1900	2420	2655
INDOOR UNIT												
External static pressure 3)	S-Hi / Hi / Me / Lo	Pa	69 / 50 / 25 / 17	69 / 50 / 25 / 17	69 / 50 / 35 / 26	69 / 50 / 35 / 26	69 / 50 / 35 / 26	69 / 50 / 35 / 26	69 / 50 / 37 / 28	69 / 50 / 37 / 28	69 / 50 / 37 / 28	69 / 50 / 37 / 28
Air Volume		m³/h	1020	1020	1320	1320	1320	1320	2160	2160	2400	2640
Moisture removal volume	е	l/h	2.2	2.8	3.8	3.8	4.3	4.3		6.0	7.9	8.6
Sound pressure level 4)	Hi / Lo	dB(A)	42 / 38	42 / 38	43 / 39	43 / 39	43 / 39	43 / 39	45 / 41	45 / 41	45 / 41	46 / 42
Sound power Level	Hi	dB	58	58	59	59	59	59		60	60	61
Dimensions	H x W x D	mm	250x1000+100 <sup>6</sup> x650	250x1000+100 <sup>51</sup> x650	250x1000+100 <sup>6)</sup> x650	250x1000+100 <sup>51</sup> x650	250x1000+100 <sup>6)</sup> x650	250x1000+100 <sup>61</sup> x650	250x1200+100 <sup>51</sup> x650	250x1200+100 <sup>6)</sup> x650	250x1200+100 <sup>5)</sup> x650	250x1200+100 <sup>5</sup> x650
Net weight	Indoor	Kg	34	34	41	41	41	41	47	47	47	47
Dust filter			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OUTDOOR UNIT												
Power source		V	220-240	220-240	220-240	380-415	220-240	380-415	220-240	380-415	380-415	380-415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal (Min / Max)	Α	6.21	8.53	12.9	4.54	13.5	4.9	18.6	6.45	8.1	8.8
Air Volume	Cooling	m³/h	3240	3420	3600	3600	3780	3780	5640	5640	5640	5760
Sound pressure level 4)	Hi	dB(A)	49	49	50	50	52	52		55	56	56
Sound power Level	Hi	dB	65	65	66	66	67	67		69	70	70
Dimensions	H x W x D	mm	795 x 900 x 320	795 x 900 x 320	795 x 900 x 320	795 x 900 x 320	795 x 900 x 320	795 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320
Net weight		Kg	54	56	61	61	61	61		90	97	97
Piping connections	Liquid pipe		1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)		3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	1/2 (12.70)	1/2 (12.70)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	0.90	1.10	1.35	1.35	1.45	1.45		1.7	3.1	3.25
Elevation dif. (in/out) 5)	Max	m	30	20	30	30	30	30		30	30	30
Piping length	Min - Max	m	7.5 - 30	7.5 - 30	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50
Piping length without refrigerant increase	Max	m	20	20	30	30	30	30	30	30	30	30
Additional gas	1	g/m	20	20	50	50	50	50	50	50	50	50
Area control accessory			EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Operating range 3)	Min / Max	oC	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43

GLOBAL REMARKS Rated conditions:

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220 - 240 V (380 - 415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220 - 240 V (380 - 415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting. Change connector on fan motor from Hi to Shi to have 7.0 mmAq.

<sup>4)</sup> The sound pressure Level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>5)</sup> Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port. 6) When installing the outdoor unit at a higher position than the indoor unit.





Wired remote control CZ-RD513C



KIT-F14DD3E5-F // KIT-F18DD3E5-F // KIT-F24DD3E5-F // KIT-F24DD3E8-F // KIT-F28DD3E5-F // KIT-F28DD3E8-F // KIT-F34DD3E5-F // KIT-F34DD3E8-F // KIT-F43DD3E8-F // KIT-F50DD3E8-F

## **ENERGY EFFICIENCY AND ECOLOGY**

- R410A environmentally friendly refrigerant gas

#### COMFORT

- · Automatic start after a power cut
- · Automatic fan operation mode
- · Soft dry operation mode
- · Hot start mode
- Selection of temperature sensor at the indoor unit or the wired remote control

# **EASE OF USE**

- Weekly On/Off timer (6 settings per day and 42 per week)
- · Wired remote control

# **EASY INSTALLATION AND MAINTENANCE**

- · Selectable static pressure up to 7 mmAq
- · Self-diagnostic function
- · Condensation control

connection

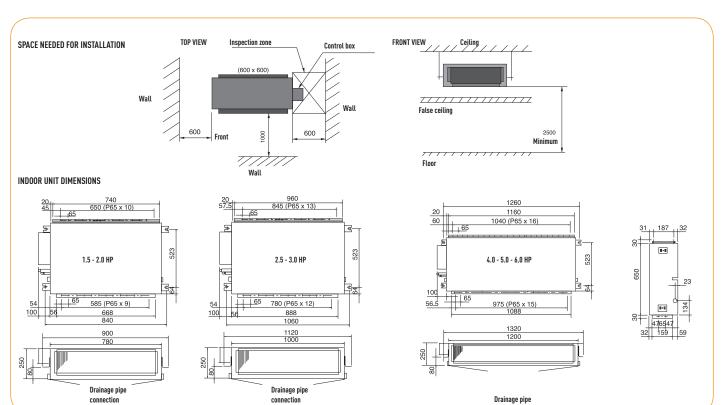
· Ultra compact indoor unit



CU-J14DBE5 CU-J24DBE8 CU-J18DBE5 CU-J28DBE5 CU-J24DBE5 CII- 128DRF8



CU-J34DBE5 CU-J43DBE8 CU-J34DBE8 CU-J50DBE8





# HIGH STATIC PRESSURE HIDE AWAY FS // INVERTER

Compact line up of inverter High static Hide away, from 2.5 HP to 5.0 HP, Single-phase









**CU-L MODELS** 

ELS CU-L MODELS

# **TECHNICAL ZOOM**

- ULTRA COMPACT OUTDOOR UNITS (-40% REDUCED SIZE FOR THE CU-YL34HBE5)
- ECO MODE FOR 20% ENERGY SAVING
- COOLING WITH LOW OUTDOOR TEMPERATURES (DOWN TO -20 °C)
- STATIC PRESSURE UP TO 10 mmAq
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- EASY CHECK MODE FOR FAILURE DETECTION

			2.5 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	5.0 HP	6.0 HP
KIT			KIT-YH24DD2E5	KIT-YH28DD2E5	KIT-YH34DD2E5	KIT-F34DD2E8	KIT-YH43DD2E5	KIT-F43DD2E8	KIT-F50DD2E8
Indoor			CS-F24DD2E5	CS-F28DD2E5	CS-F34DD2E5	CS-F34DD2E5	CS-F43DD2E5	CS-F43DD2E5	CS-F50DD2E5
Outdoor			CU-YL24HBE5	CU-YL28HBE5	CU-YL34HBE5	CU-L34DBE8	CU-YL43HBE5	CU-L43DBE8	CU-L50DBE8
	In almost death a list			CZ-RD513C				CZ-RD513C	CZ-RD513C
Wired remote control	Included in the kit	LAM	CZ-RD513C		CZ-RD513C	CZ-RD513C	CZ-RD513C		
Cooling capacity	Nominal (Min - Max)		5.60 (2-6.30)	7.10 (2.10-7.70)	10.00 (3.8-10.50)	10.00 (4.00-12.00)	12.50 (3.80-13.00)	12.50 (4.00-13.50)	14.00 (4.00-16.00)
()		kCal/h	4816 (1720-5418)	6106 (1806-6622)	8600 (3268-9030)	8600 (3440-10320)	10750 (3268-11180)	10750 (3440-11610)	12040 (3440-13760)
EER 1)	Nominal (Min - Max)		2.81 (3.64-2.86)	2.81 (3.23-2.96)	2.81 (2.92-2.56) <b>D</b>	3.27 (2.96-3.43) <b>A</b>	2.81 (2.92-2.77) C	3.01 (2.86-3.00) B	2.77 (2.76-2.96)
Power input Cooling	Nominal (Min - Max)		1.99 (0.55-2.20)	2.53 (0.65-2.60)	3.56 (1.30-4.10)	3.06 (1.35-3.5)	4.45 (1.30-4.70)	4.15 (1.4-4.5)	5.06 (1.45-5.4)
Heating capacity	Nominal (Min - Max)		7.00 (2.10-7.60)	8.00 (2.20-8.30)	11.20 (3.80-12.50)	11.20 (4.00-13.50)	14.00 (3.80-14.50)	14.00 (4.00-15.50)	16.00 (4.00-18.00)
	Nominal (Min - Max)	kCal/h	6020 (1806-6450)	6880 (1892-7138)	9632 (3268-10750)	9632 (3440-11610)	12040 (3268-12470)	12040 (3440-13330)	13760 (3440-15480)
COP 1)	Nominal (Min - Max)		2.81 (4.20-2.68)	2.81 (3.67-2.59)	3.01 (3.17-2.94) <b>C</b>	3.41 (2.96-3.14) <b>B</b>	3.01 (3.17-2.90)	3.21 (2.86-3.04) <b>C</b>	3.30 (2.86-2.95) <b>C</b>
Power input Heating	Nominal (Min - Max)	kW	2.49 (0.50-2.80)	2.85 (0.60-3.20)	3.72 (1.20-4.25)	3.28 (1.35-4.3)	4.65 (1.20-5.00)	4.36 (1.4-5.1)	4.85 (1.4-6.1)
Annual Energy Consump	tion <sup>2)</sup>	kWh	995	1265	1780	1530	2225	2075	2530
INDOOR UNIT									
External static pressure 3	S-Hi / Hi / Me / Lo	Pa	69 / 56 / 49 / 40	69 / 56 / 49 / 40	98 / 80 / 65 / 50	98 / 80 / 65 / 50	98 / 80 / 65 / 50	98 / 80 / 65 / 50	98 / 80 / 65 / 50
Air Volume	Cooling / Heating	m³/h	1320 / 1320	1320 / 1320	2280 / 2280	2280 / 2280	2400 / 2400	2400 / 2400	2700 / 2700
Moisture removal volum	е	<b>V</b> h	3.20	4.20	6.00	6.0	7.90	7.9	9.0
Sound pressure level 4)	Cooling (Hi / Lo)	dB(A)	45 / 41	45 / 41	49 / 45	49 / 45	49 / 45	49 / 45	49 / 45
	Heating (Hi / Lo)	dB(A)	43 / 39	43 / 39	47 / 44	47 / 44	47 / 44	47 / 44	47 / 44
Sound power Level	Cooling (Hi)	dB	67	68	71	64	72	64	64
odana pomor Edvot	Heating (Hi)	dB	68	69	73	62	73	62	62
Dimensions	H x W x D	mm	290x1000+100 <sup>4</sup> x500	290x1000+100 <sup>4</sup> )x500	390x1000+100 <sup>4</sup> )x650	360x1000+100 <sup>4</sup> x650	390x1000+100 <sup>4</sup> )x650	360x1000+100 <sup>4)</sup> x650	360x1000+100 <sup>4</sup> x650
Net weight	II A W A D	Kg	35	35	48	48	48	48	48
Dust filter		Ny	No	No	No	No	No	No	No
OUTDOOR UNIT			110	110	140	110	110	110	110
Power source		V	220 - 240	220 - 240	220 - 240	380 - 415	220 - 240	380 - 415	380 - 415
Connection		mm <sup>2</sup>	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal (Min / Max)	A	9.00	11.50	16.30	4.8	20.30	6.5	7.7
Current Heating	Nominal (Min / Max)	A	11.30	12.80	17.00	5.2	21.20	6.8	7.4
Air Volume	Cooling / Heating	m³/h	2880	2880	5880	5880 / 5880	5880	5880 / 5880	5880 / 5880
Sound pressure level 4	Cooling (Hi)	dB(A)	49	50	53	52	54	53	54
Sound pressure level*	0		51	52	56	54	56	55	56
0 1 1 1	Heating (Hi)	dB(A)			1.1		1 1 1		
Sound power Level	Cooling (Hi)	dB	67	68	71	66	72	67	68
					TO.	/0			
Di i	Heating (Hi)	dB	68	69	73	68	73	69	70
Dimensions	H x W x D	mm	795 x 875+70 <sup>4)</sup> x 320	795 x 875+70 <sup>4</sup> x 320	795 x 900 x 320	1340 x 900 x 320	1170 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Net weight	HxWxD	mm Kg	795 x 875+70 <sup>4)</sup> x 320 65	795 x 875+70 <sup>4</sup> x 320 65	795 x 900 x 320 66	1340 x 900 x 320 105	1170 x 900 x 320 94	1340 x 900 x 320 105	1340 x 900 x 320 105
	H x W x D  Liquid pipe	mm Kg Inch (mm)	795 x 875+70 <sup>4)</sup> x 320 65 3/8 (9.52)	795 x 875+70 <sup>4</sup> x 320 65 3/8 (9.52)	795 x 900 x 320 66 3/8 (9.52)	1340 x 900 x 320 105 3/8 (9.52)	1170 x 900 x 320 94 3/8 (9.52)	1340 x 900 x 320 105 3/8 (9.52)	1340 x 900 x 320 105 3/8 (9.52)
Net weight Piping connections	H x W x D  Liquid pipe Gas pipe	mm Kg Inch (mm) Inch (mm)	795 x 875+70 <sup>4</sup> ) x 320 65 3/8 (9.52) 5/8 (15.88)	795 x 875+70 <sup>4</sup> x 320 65 3/8 (9.52) 5/8 (15.88)	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88)	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88)	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88)	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88)	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88)
Net weight Piping connections  Refrigerant Loading	H x W x D  Liquid pipe Gas pipe R410A	mm Kg Inch (mm) Inch (mm) Kg	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 1.63	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5
Net weight Piping connections  Refrigerant Loading Elevation dif. (in/out) <sup>5)</sup>	H x W x D  Liquid pipe Gas pipe R410A Max	mm Kg Inch (mm) Inch (mm) Kg	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 25	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5
Net weight Piping connections Refrigerant Loading	H x W x D  Liquid pipe Gas pipe R410A	mm Kg Inch (mm) Inch (mm) Kg	795 x 875+70 <sup>4</sup> ) x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25 7.5 - 30	795 x 875+70 <sup>4</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 25 7.5 - 30	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5 30 7.5-50
Net weight Piping connections  Refrigerant Loading Elevation dif. (in/out) <sup>5)</sup>	H x W x D  Liquid pipe Gas pipe R410A Max	mm Kg Inch (mm) Inch (mm) Kg	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 25	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5
Net weight Piping connections  Refrigerant Loading Elevation dif. (in/out) 51 Piping length Piping length without	H x W x D  Liquid pipe Gas pipe R410A Max Min / Max	mm Kg Inch (mm) Inch (mm) Kg m	795 x 875+70 <sup>4</sup> ) x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25 7.5 - 30	795 x 875+70 <sup>4</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 25 7.5 - 30	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5 30 7.5-50
Net weight Piping connections  Refrigerant Loading Elevation dif. (in/out) 51 Piping length Piping length without refrigerant increase	H x W x D  Liquid pipe Gas pipe R410A Max Min / Max	mm Kg Inch (mm) Inch (mm) Kg m	795 x 875+70 <sup>4</sup> ) x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25 7.5 - 30 30	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 2.5 7.5 - 30	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50 30	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5 30 7.5-50 30
Net weight Piping connections  Refrigerant Loading Elevation dif. (in/out) 51 Piping length Piping length without refrigerant increase Additional gas	H x W x D  Liquid pipe Gas pipe R410A Max Min / Max	mm Kg Inch (mm) Inch (mm) Kg m	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25 7.5 - 30 30	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 25 7.5 - 30 30	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50 30	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30	1340 x 900 x 320 105 3/8 (9.52) 5/6 (15.88) 3.5 30 7.5-50 30
Net weight Piping connections  Refrigerant Loading Elevation dif. (in/out) <sup>51</sup> Piping length Piping length without refrigerant increase  Additional gas Area control accessory Recommended Fuse	H x W x D  Liquid pipe Gas pipe R410A Max Min / Max Max	mm Kg Inch (mm) Inch (mm) Kg m m	795 x 875+70 <sup>4</sup> ) x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25 7.5 - 30 30 50 EKRORO wire	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 25 7.5 - 30 30 50 EKRORO wire 20	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50 30 50 EKRORO wire	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30 50 EKRORO wire	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50 30 50 EKRORO wire	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30 50 EKRORO wire	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5 30 7.5-50 30 50 EKRORO wire
Net weight Piping connections  Refrigerant Loading Elevation dif. (in/out) 51 Piping length Piping length without refrigerant increase Additional gas Area control accessory	H x W x D  Liquid pipe Gas pipe R410A Max Min / Max	mm Kg Inch (mm) Inch (mm) Kg m m g/m	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 1.63 25 7.5 - 30 30 50 EKRORO wire	795 x 875+70 <sup>41</sup> x 320 65 3/8 (9.52) 5/8 (15.88) 2.05 25 7.5 - 30 30 50 EKRORO wire	795 x 900 x 320 66 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50 30 50 EKRORO wire	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30 50 EKRORO wire	1170 x 900 x 320 94 3/8 (9.52) 5/8 (15.88) 2.8 30 7.5 - 50 30 50 EKRORO wire 30	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.3 30 7.5-50 30 50 EKRORO wire	1340 x 900 x 320 105 3/8 (9.52) 5/8 (15.88) 3.5 30 7.5-50 30 50 EKRORO wire

GLOBAL REMARKS

Rated conditions: Cooling Heating
Indoor air temperature 27 °C DB / 19 °C WB 20 °C DB
Outdoor air temperature 35 °C DB / 24 °C WB 7 °C DB / 6 °C WB

- 1) EER and COP, Energy Saving Classification, is at 220 240 V (380 415 V) only in accordance with EU directive 2002/31/EC.
  2) The annual consumption is calculated by multiplying the input power at 220 240 V (380 415 V) by an average of 500 hours per year in cooling mode.
- 3) The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting. Change connector on fan motor from Hi to Shi to have 7.0 mmAq.
- 4) The sound pressure Level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.
- 5) Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port.
  6) When installing the outdoor unit at a higher position than the indoor unit.





#### Wired remote control CZ-RD513C





CU-YL24HBE5 CU-YL28HBE5



CU-YL43HBE5

CU-YL34HBE5



CU-L34DBE8 CU-L50DBE8 CU-L43DBE8

# KIT-YH24DD2E5 // KIT-YH28DD2E5 // KIT-YH34DD2E5 // KIT-F34DD2E8 // KIT-YH43DD2E5 // KIT-F43DD2E8 // KIT-F50DD2E8

# **ENERGY EFFICIENCY AND ECOLOGY**

- Inverter system
- R410A environmentally friendly refrigerant gas

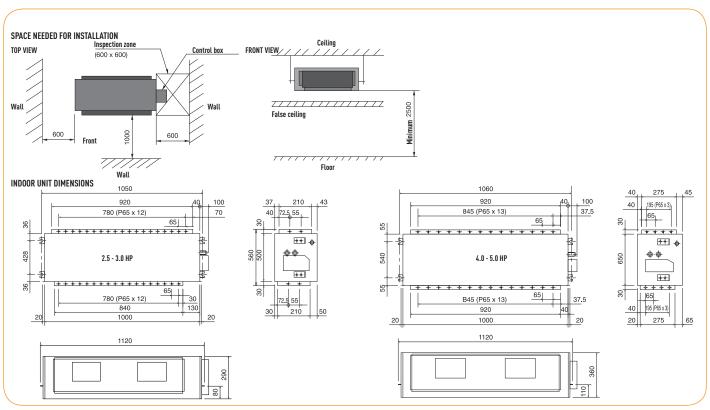
- Cooling with low outdoor temperatures (down to -15 °C)
- Automatic start after a power cut
- · Automatic fan operation mode
- · Soft dry operation mode
- Hot start mode
- Selection of temperature sensor at indoor unit or wired remote control

## EASE OF USE

- · Weekly On/Off timer (6 settings per day and 42 per week)
- · Wired remote control

#### **EASY INSTALLATION AND MAINTENANCE**

- Installation using existing pipes
- Selectable static pressure up to 10 mmAg
- · Self-diagnostic function
- · Condensation control
- · Ultra compact indoor unit





# HIGH STATIC PRESSURE HIDE AWAY FS // HEAT PUMP

Full line up of heat pump non-inverter High static pressure Hide away, from 2.5 HP to 6.0 HP, Single-phase and three-phase







# **TECHNICAL ZOOM**

- STATIC PRESSURE UP TO 10 mmAq
- ECO MODE FOR 20% ENERGY SAVING
- MAX ELEVATION DIFFERENCE 30 m
- EASY CHECK MODE FOR FAILURE DETECTION

			2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT			KIT-F24DD2E5-C	KIT-F28DD2E5-C	KIT-F28DD2E8-C	KIT-F34DD2E5-C	KIT-F34DD2E8-C	KIT-F43DD2E8-C	KIT-F50DD2E8-C
Indoor			CS-F24DD2E5	CS-F28DD2E5	CS-F28DD2E5	CS-F34DD2E5	CS-F34DD2E5	CS-F43DD2E5	CS-F50DD2E5
Outdoor			CU-B24DBE5	CU-B28DBE5	CU-B28DBE8	CU-B34DBE5	CU-B34DBE8	CU-B43DBE8	CU-B50DBE8
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min - Max)	kW	6.60	7.30	7.30	1000	1000	12.50	13.50
, ,	Nominal (Min - Max)	kCal/h	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min - Max)		2.50 E	2.55 E	2.55 €	2.52 E	2.61 D	2.54 E	2.52 E
Power input Cooling	Nominal (Min - Max)	kW	2.64 (2.61-6.7)	2.86 (2.81-2.91)	2.86 (2.81-2.91)	3.97 (3.89-4.08)	3.83 (3.79-3.92)	4.92 (4.85-5.04)	5.36 (5.31-5.46)
Heating capacity	Nominal (Min - Max)	kW	7.10	8.00	8.00	11.20	11.20	14.00	15.00
0 , ,	Nominal (Min - Max)	kCal/h	6106	6880	6880	9632	9632	12040	12900
COP 1)	Nominal (Min - Max)		2.81 D	2.95 D	2.95 D	2.81 D	3.04 D	3.00 D	2.92 D
Power input Heating	Nominal (Min - Max)	kW	2.53 (2.45-2.62)	2.71 (2.62-2.8)	2.71 (2.62-2.8)	3.98 (3.9-4.05)	3.68 (3.63-3.75)	4.66 (4.56-4.78)	5.13 (5.08-5.18)
Annual Energy Consumpt	tion <sup>2)</sup>	kWh	1320	1430	1430	1985	1915	2460	2680
INDOOR UNIT									
External static pressure 3)	S-Hi / Hi / Me / Lo	Pa	69 / 56 / 49 / 40	69 / 56 / 49 / 40	69 / 56 / 49 / 40	98 / 80 / 65 / 50	98 / 80 / 65 / 50	98 / 80 / 65 / 50	98 / 80 / 65 / 50
	Cooling / Heating	m³/h	1320 / 1320	1320 / 1320	1320 / 1320	2280 / 2280	2280 / 2280	2400 / 2400	2700 / 2700
Moisture removal volume	0. 0	l/h	3.8	4.3	4.3	6.0	6.0	7.9	8.6
Sound pressure level 4)	Cooling (Hi / Lo)	dB(A)	45 / 41	45 / 41	45 / 41	49 / 45	49 / 45	49 / 45	49 / 45
	Heating (Hi / Lo)	dB(A)	43 / 39	43 / 39	43 / 39	47 / 44	47 / 44	47 / 44	47   44
Sound power Level	Cooling (Hi)	dB	61	61	61	64	64	64	64
	Heating (Hi)	dB	59	59	59	62	62	62	62
	H x W x D	mm	290 x 1000+100 <sup>5)</sup> x 500	290 x 1000+100 x 500	290 x 1000+100 x 500	360 x 1000+100 <sup>5)</sup> x 650			
Net weight	Indoor	Kg	35	35	35	48	48	48	48
Dust filter			No	No	No	No	No	No	No
OUTDOOR UNIT									
Power source		٧	220-240	220-240	380-415	220-240	380-415	380-415	380-415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal (Min / Max)	A	13.1	13.7	4.9	18.8	6.5	8.2	8.9
Current Heating	Nominal (Min / Max)	Α	11.9	12.6	4.7	18.7	6.4	8.0	8.5
Air Volume	Cooling / Heating	m³/h	3600 / 3600	3780 / 3780	3780 / 3780	5640 / 5640	5640 / 5640	5640 / 5640	5760 / 5760
Sound pressure level 4)	Cooling (Hi)	dB(A)	50	52	52	55	55	56	56
·	Heating (Hi)	dB(A)	51	53	53	56	56	57	57
Sound power Level	Cooling (Hi)	dB	66	67	67	69	69	70	70
·	Heating (Hi)	dB	67	68	68	70	70	71	71
Dimensions	H x W x D	mm	795 x 900 x 320	795 x 900 x 320	795 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320
Net weight		Kg	69	69	69	102	100	102	102
Piping connections	Liquid pipe		3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.7	2.05	2.05	2.7	2.7	3.1	3.4
Elevation dif. (in/out) 6)	Max	m	30	30	30	30	30	30	30
Piping length	Min - Max	m	7.5-50	7.5-50	7.5-50	7.5-50	7.5-50	7.5-50	7.5-50
Piping length without refrigerant increase	Мах	m	30	30	30	30	30	30	30
Additional gas		g/m	50	50	50	50	50	50	50
Area control accessory		0.	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
	Cooling Min / Max	oC O	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43
Operating range 3)	COULING MIII / Max	~L	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 40

Rated conditions: Indoor air temperature Outdoor air temperature GLOBAL REMARKS

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220 - 240 V (380 - 415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220 - 240 V (380 - 415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting. Change connector on fan motor from Hi to Shi to have 7.0 mmAq.

<sup>4)</sup> The sound pressure Level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>5)</sup> Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port. 6) When installing the outdoor unit at a higher position than the indoor unit.





#### Wired remote control CZ-RD513C



# KIT-F24DD2E5-C // KIT-F28DD2E5-C // KIT-F28DD2E8-C // KIT-F34DD2E5-C // KIT-F34DD2E8-C // KIT-F43DD2E8-C // KIT-F50DD2E8-C

## **ENERGY EFFICIENCY AND ECOLOGY**

• R410A environmentally friendly refrigerant gas

#### COMFORT

- Automatic start after a power cut
- · Automatic fan operation mode
- Soft dry operation mode
- · Hot start mode
- Selection of temperature sensor at the indoor unit or the wired remote control

## EASE OF USE

- Weekly On/Off timer (6 settings per day and 42 per week)
- · Wired remote control

#### **EASY INSTALLATION AND MAINTENANCE**

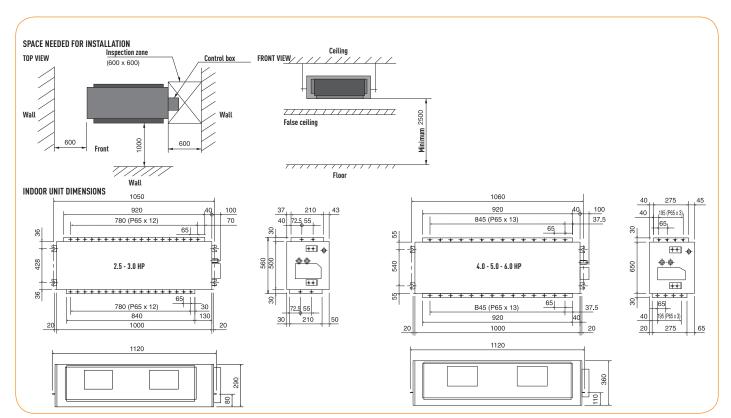
- High static pressure units ideal for shops and offices
- Selectable static pressure up to 10 mmAq
- · Self-diagnostic function
- · Ultra compact indoor unit



CU-B24DBE5 CU-B28DBE8 CU-B28DBE5



CU-B34DBE5 CU-B43DBE8 CU-B34DBE8 CU-B50DBE8





# HIGH STATIC PRESSURE HIDE AWAY FS // COOLING ONLY

Full line up of cooling only non-inverter High static pressure Hide Away, from 2.5 HP to 6.0 HP, Single-phase and three-phase



# **TECHNICAL ZOOM**

- STATIC PRESSURE UP TO 10 mmAq
- ECO MODE FOR 20% ENERGY SAVING
- MAX ELEVATION DIFFERENCE 30 m
- EASY CHECK MODE FOR FAILURE DETECTION

			2.5 HP	2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT			KIT-F24DD2E5-F	KIT-F24DD2E8-F	KIT-F28DD2E5-F	KIT-F28DD2E8-F	KIT-F34DD2E5-F	KIT-F34DD2E8-F	KIT-F43DD2E8-F	KIT-F50DD2E8-F
Indoor			CS-F24DD2E5	CS-F24DD2E5	CS-F28DD2E5	CS-F28DD2E5	CS-F34DD2E5	CS-F34DD2E5	CS-F43DD2E5	CS-F50DD2E5
Outdoor			CU-J24DBE5	CU-J24DBE8	CU-J28DBE5	CU-J28DBE8	CU-J34DBE5	CU-J34DBE8	CU-J43DBE8	CU-J50DBE8
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min - Max)	kW	6.60	6.60	7.30	7.30	10.00	10.00	12.50	13.50
* ' '	Nominal (Min - Max)	kCal/h	5676	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min - Max)		2.44 €	2.44 E	2.51 €	2.51 E	2.44 E	2.55 E	2.51 E	2.47 <b>E</b>
Power input Cooling	Nominal (Min - Max)	kW	2.70 (2.66-2.74)	2.70 (2.66-2.74)	2.91 (2.86-2.96)	2.91 (2.86-2.96)	4.10 (4.03-4.15)	3.92 (3.86-3.96)	4.96 (4.90-5.12)	5.46 (5.41-5.51)
Annual Energy Consump	tion <sup>2)</sup>	kWh	1350	1350	1455	1455	2050	1960	2490	2680
INDOOR UNIT										
External static pressure 3	S-Hi / Hi / Me / Lo	Pa	69 / 56 / 49 / 40	69 / 56 / 49 / 40	69 / 56 / 49 / 40	69 / 56 / 49 / 40	98 / 80 / 65 / 50	98 / 80 / 65 / 50	98 / 80 / 65 / 50	98 / 80 / 65 / 50
Air Volume		m³/h	1320 / 1320	1320 / 1320	1320 / 1320	1320 / 1320	2280 / 2280	2280 / 2280	2400 / 2400	2700 / 2700
Moisture removal volum	e	l/h	3.8	4.3	4.3	4.3	6.0	6.0	7.9	8.6
Sound pressure level 4)	Hi / Lo	dB(A)	45 / 41	45 / 41	45 / 41	45 / 41	49 / 45	49 / 45	49 / 45	49 / 45
Sound power Level	Hi	dB	61	61	61	61	64	64	64	64
Dimensions	H x W x D	mm	290x1000+100 <sup>5)</sup> x500	290x1000+1005)x500	290x1000+100 <sup>5)</sup> x500	290x1000+100 <sup>5)</sup> x500	360x1000+100 <sup>5)</sup> x650	360x1000+100 <sup>5)</sup> x650	360x1000+100 <sup>5)</sup> x650	360x1000+100 <sup>5)</sup> x650
Net weight	Indoor	Kg	35	35	35	35	48	48	48	48
Dust filter			No	No	No	No	No	No	No	No
OUTDOOR UNIT										
Power source		V	220 - 240	220 - 240	220 - 240	380 - 415	220 - 240	380 - 415	380 - 415	380 - 415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal (Min / Max)	Α	13.1	4.63	13.7	4.9	18.8	6.5	8.2	9.0
Air Volume		m³/h	3600	3600	3780	3780	5640	5640	5640	5760
Sound pressure level 4)	Hi	dB(A)	50	50	52	52	55	55	56	56
Sound power Level	Hi	dB	66	66	67	67	69	69	70	70
Dimensions	H x W x D	mm	795 x 900 x 320	795 x 900 x 320	795 x 900 x 320	795 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320
Net weight		Kg	61	61	61	61	92	90	97	97
Piping connections	Liquid pipe	Inch (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.35	1.35	1.45	1.45	1.7	1.7	3.1	3.25
Elevation dif. (in/out) 63	Max	m	30	30	30	30	30	30	30	30
Piping length	Min - Max	m	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50
Piping length without refrigerant increase	Max	m	30	30	30	30	30	30	30	30
Additional gas	1	g/m	50	50	50	50	50	50	50	50
Area control accessory		-	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Operating range 3)	Min / Max	°C	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
		27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220 - 240 V (380 - 415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220 - 240 V (380 - 415 V) by an average of 500 hours per year in cooling mode.

<sup>3)</sup> The specification listed on the table indicates values under the condition of 50 Pa (5.1 mmAq) which are applied for factory default setting. Change connector on fan motor from Hi to Shi to have 7.0 mmAq.

<sup>4)</sup> The sound pressure Level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>5)</sup> Add 100 mm for indoor unit or 70 mm for outdoor unit for piping port. 6) When installing the outdoor unit at a higher position than the indoor unit.





#### Wired remote control CZ-RD513C



# KIT-F24DD2E5-F // KIT-F24DD2E8-F // KIT-F28DD2E5-F // KIT-F28DD2E8-F // KIT-F32DD2E5-F // KIT-F34DD2E8-F // KIT-F43DD2E8-F // KIT-F50DD2E8-F

## **ENERGY EFFICIENCY AND ECOLOGY**

· R410A environmentally friendly refrigerant gas

#### COMFORT

- · Automatic start after a power cut
- · Automatic fan operation mode
- · Soft dry operation mode
- · Hot start mode
- Selection of temperature sensor at the indoor unit or the wired remote control

## EASE OF USE

- · Weekly On/Off timer (6 settings per day and 42 per week)
- · Wired remote control

#### **EASY INSTALLATION AND MAINTENANCE**

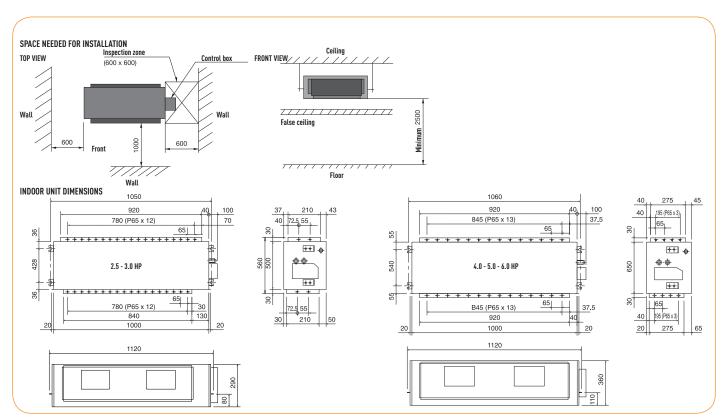
- · High static pressure units ideal for shops and offices
- · Selectable static pressure up to 10 mmAq
- · Self-diagnostic function
- · Ultra compact indoor unit



CU-J24DBE5 CU-J28DBE5 CU-J24DBE8 CU-J28DBE8



CU-J34DBE5 CU-J43DBE8 CU-J34DBE8 CU-J50DBE8





# CEILING FS // INVERTER

Compact line up of inverter Ceiling, from 2.5 HP to 5.0 HP, Single-phase











OPTIONAL

CU-L MODELS

CU-L MODELS

# **TECHNICAL ZOOM**

- ULTRA COMPACT OUTDOOR UNITS (-40% REDUCED SIZE FOR THE CU-YL34HBE5)
- ECO MODE FOR 20% ENERGY SAVING
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- 25 m MAXIMUM ELEVATION DIFFERENCE
- COOLING WITH LOW OUTDOOR TEMPERATURES (DOWN TO -20 °C)
- EASY CHECK MODE FOR FAILURE DETECTION

			2.5 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	5.0 HP	6.0 HP
KIT			KIT-YH24DTE5-P	KIT-YH28DTE5-P	KIT-YH34DTE5-P	KIT-F34DTE8-P	KIT-YH43DTE5-P	KIT-F43DTE8-P	KIT-F50DTE8-P
Indoor			CS-F24DTE5	CS-F28DTE5	CS-F34DTE5	CS-F34DTE5	CS-F43DTE5	CS-F43DTE5	CS-F50DTE5
Outdoor			CU-YL24HBE5	CU-YL28HBE5	CU-YL34HBE5	CU-L34DBE8	CU-YL43HBE5	CU-L43DBE8	CU-L50DBE8
Wired remote control	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min - Max)	kW	5.60 (2-6.30)	7.10 (2.10-7.50)	10.00 (3.8-10.50)	10.00 (4.00-12.00)	12.50 (3.80-13.00)	12.50 (4.00-13.50)	14.00 (4.00-16.00)
• • •	Nominal (Min - Max)	kCal/h	4816 (1720-5418)	6106 (1806-6450)	8600 (3268-9030)	8600 (3440-10320)	10750 (3268-11180)	10750 (3440-11610)	12040 (3440-13760)
EER 1)	Nominal (Min - Max)		2.81 (3.03-2.68)	2.81 (3.00-2.78) C	2.61 (2.92-2.56) D	3.33 (3.20-3.53) A	3.81 (2.92-2.77) C	3.01 (3.08-3.14) B	2.91 (2.96-3.14)
Power input Cooling	Nominal (Min - Max)	kW	1.99 (0.66-2.35)	2.53 (0.70-2.70)	3.83 (1.30-4.10)	3.00 (1.25-3.40)	4.45 (1.30-4.70)	4.15 (1.3-4.30)	4.81 (1.35-5.10)
Heating capacity	Nominal (Min - Max)		7.00 (2.10-7.50)	8.00 (2.20-8.30)	11.20 (3.80-12.50)	11.20 (4.00-13.50)	14.00 (3.80-14.50)	14.00 (4.00-15.50)	16.0 (4.00-18.00)
	Nominal (Min - Max)		6020 (1806-6450)	6880 (1892-7138)	9632 (3268-10750)	9632 (3440-11610)	12040 (3268-12470)	12040 (3440-13330)	13760 (3440-15480)
COP 1)	Nominal (Min - Max)	nough	2.81 (3.82-2.54) <b>D</b>	2.81 (3.38-2.55)	3.21 (3.30-2.98)		3.31 (3.39-2.90)	3.50 (3.20-3.10) B	3.41 (3.08-3.00)
Power input Heating	Nominal (Min - Max)	kW	2.49 (0.55-2.95)	2.855 (0.65-3.25)	3.49 (1.15-4.20)	3.28 (1.25-4.20)	4.23 (1.12-5.00)	4.00 (1.25-5.00)	4.69 (1.30-6.00)
Annual Energy Consumpt		kWh	995	1265	1915	1500	2225	2075	2405
INDOOR UNIT	don	KTTII	770	1200	1710	1000	LLLO	2070	2400
Air Volume	Cooling / Heating	m³/h	1020 / 1020	1080 / 1080	1740 / 1740	1740 / 1740	1860 / 1860	1860 / 1860	1920 / 1920
Moisture removal volum	0. 0	l/h	3.20	4.20	6.00	6.0	7.90	7.9	9.0
	Cooling (Hi / Lo)	dB(A)	43 / 39	45 / 41	47 / 43	47 / 43	49 / 45	49 / 45	50 / 46
oodiid picoodic tevet	Heating (Hi / Lo)	dB(A)	43 / 39	45 / 41	47 / 43	47 / 43	49 / 45	49 / 45	50 / 46
Sound power Level	Cooling (Hi)	dB(A)	60	62	64	64	66	66	67
Journa power Levet	Heating (Hi)	dB	60	62	64	64	66	66	67
Dimensions	H x W x D	mm	210 x 1245 x 700	210 x 1245 x 700	210 x 1600 x 700	250 x 1600 x 700	210 x 1600 x 700	250 x 1600 x 700	250 x 1600 x 700
Net weight	Indoor		33	33	43	43	47	47	47
Dust filter	IIIuuui	Kg	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Antialergic filter	Optional		CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P
OUTDOOR UNIT	орионас		CL-SAIZF	CZ-SATZP	CZ-SATZF	CZ-SATZP	CZ-SATZP	CZ-SATZP	CZ-SATZF
Power source		V	220 - 240	220 - 240	220 - 240	380 - 415	220 - 240	380 - 415	380 - 415
		mm <sup>2</sup>	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1.5 to 2.5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Connection	Nominal (Min / Max)		8.9	4 X 1.5 to 2.5	4 X 1.5 to 2.5	4.7	20.3	6.5	7.4
Current Cooling		A	-					1 1 1	
Current Heating		Α	11.2	12.8	16	5.2	19.4	6.3	7.2
Air Volume	Cooling / Heating	m³/h	3180	3480	3720	5880 / 5880	5640	5880 / 5880	5880 / 5880
Sound pressure level 3)	Cooling (Hi)	dB(A)	49	50	53	52	54	53	54
	Heating (Hi)	dB(A)	51	52	56	54	56	55	56
Sound power Level	Cooling (Hi)	dB	60	62	64	66	66	67	68
	Heating (Hi)	dB	60	62	64	68	66	69	70
Dimensions	H x W x D	mm	795 x 875+70 <sup>4)</sup> x 320	795 x 875+70 <sup>4)</sup> x 320	795 x 900 x 320	1340 x 900 x 320	1170 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Net weight		Kg	65	65	66	105	94	105	105
Piping connections	Liquid pipe		3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.63	2.05	2.8	3.3	2.8	3.3	3.5
	Max	m	25	25	30	30	30	30	30
Piping length	Min / Max	m	7.5 - 30	7.5 - 30	7.5 - 50	7.5-50	7.5 - 50	7.5-50	7.5-50
Piping length without refrigerant increase	Max	m	30	30	30	30	30	30	30
	l.	g/m	50	50	50	50	50	50	50
Additional gas				1.7.7		EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
		J.	EKRORO wire	EKRORO wire	EKRORO wire	EKKUKU WIFE	EVLOVO MILE	EKKUKU WITE	EKKUKU WIFE
Additional gas Area control accessory Recommended Fuse		Į.							
	Cooling Min / Max	A °C	EKRORO wire 20 -5 / 43	EKRORO wire 20 -5 / 43	30 -5 / 43	15 -15 / 43	30 -5 / 43	15 -15 / 43	16 -15 / 43

GLOBAL REMARKS

Rated conditions: Indoor air temperature Outdoor air temperature

<sup>1)</sup> EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500-hr per year in cooling mode.
3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>4)</sup> Add 70 mm for piping port.

<sup>5)</sup> When installing the outdoor unit at a higher position than the indoor unit.





#### INCLUDED ON THE KIT Wired remote control CZ-RL513C

OPTIONAL CONTROLLER Wireless control CZ-RD513T







CU-YL34HBE5

CU-YL24HBE5 CU-YL28HBE5

0=



CU-YL43HBE5

CU-L34DBE8 CU-L50DBE8 CU-L43DBE8

# KIT-YH24DTE5 // KIT-YH28DTE5 // KIT-YH34DTE5 // KIT-F34DTE8 // KIT-YH43DTE5 // KIT-F43DTE8 // KIT-F50DTE8

#### **HEALTHY AIR**

- · Anti-Mould long life air filter
- CZ-SA12P Anti Bacterial Filter (optional)

#### **ENERGY EFFICIENCY AND ECOLOGY**

- Inverter system
- R410A environmentally friendly refrigerant gas

# COMFORT

- Cooling with low outdoor temperatures (down to -15 °C)
- Automatic start after a power cut
- · Automatic fan operation mode
- · Soft dry operation mode
- Automatic air deflector system

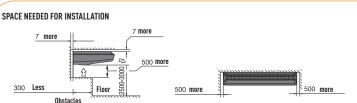
- · Hot start mode
- Super wide air outlet (100 degrees horizontally)

## **EASE OF USE**

- Weekly On/Off timer
   (6 settings per day and 42 per week)
- · Infrared remote control
- Optional wired remote control

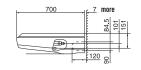
# EASY INSTALLATION AND MAINTENANCE

- Installation using existing pipes (only for YL\_HBE5 units)
- Self-diagnostic function
- Condensation control

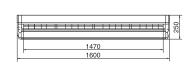


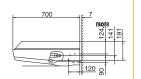
## INDOOR UNIT DIMENSIONS CS-F24DTE5 // CS-F28DTE5

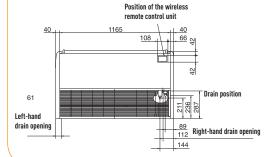


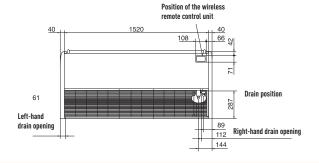


# INDOOR UNIT DIMENSIONS CS-F34DTE5 // CS-F43DTE5











# CEILING FS // HEAT PUMP

Full line up of heat pump non-inverter Ceiling, from 2 HP to 6.0 HP, Single-phase and three-phase.









# **TECHNICAL ZOOM**

- ECO MODE FOR 20% ENERGY SAVING
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- 30 m MAXIMUM ELEVATION DIFFERENCE
- EASY CHECK MODE FOR FAILURE DETECTION

			2.0 HP	2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT			KIT-F18DTE5-C	KIT-F24DTE5-C	KIT-F28DTE5-C	KIT-F28DTE8-C	KIT-F34DTE5-C	KIT-F34DTE8-C	KIT-F43DTE8-C	KIT-F50DTE8-C
Indoor			CS-F18DTE5	CS-F24DTE5	CS-F28DTE5	CS-F28DTE5	CS-F34DTE5	CS-F34DTE5	CS-F43DTE5	CS-F50DTE5
Outdoor			CU-B18DBE5	CU-B24DBE5	CU-B28DBE5	CU-B28DBE8	CU-B34DBE5	CU-B34DBE8	CU-B43DBE8	CU-B50DBE8
Wired remote control	Included in the kit		CZ-RD513C							
Cooling capacity	Nominal (Min-Max)	kW	5.00	6.60	7.30	7.30	10.00	10.00	12.50	13.50
0 1 7	Nominal (Min-Max)	kCal/h	4300	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min-Max)		2.76 D	2.57 €	2.56 €	2.56 E	2.56 D	2.65 D	2.63 D	2.62 E
Power input Cooling	Nominal (Min-Max)	kW	1.81 (1.75-1.84)	2.57 (2.51-2.63)	2.85 (2.8-2.9)	2.85 (2.8-2.9)	3.66 (3.85-3.95)	3.77 (3.72-3.82)	4.75 (4.7-4.8)	5.16 (5.11-5.28)
Heating capacity	Nominal (Min-Max)	kW	5.60	7.10	7.80	7.80	11.20	11.20	14.00	15.00
• • •	Nominal (Min-Max)	kCal/h	4816	6106	6708	6708	9632	9632	12040	12900
COP 1)	Nominal (Min-Max)		3.22 C	2.85 D	2.84 D	2.84 D	2.81 €	2.86 E	2.99 D	2.98 D
Power input Heating	Nominal (Min-Max)	kW	1.74 (1.71-1.77)	2.49 (2.44-2.62)	2.75 (2.7-2.8)	2.75 (2.7-2.8)	3.99 (3.94-4.04)	3.91 (3.86-3.96)	4.69 (4.64-4.74)	5.03 (4.98-5.08)
Annual Energy Consump	tion <sup>2)</sup>	kWh	905	1285	1425	1425	1950	1885	2375	2580
INDOOR UNIT										
Air Volume	Cooling / Heating	m³/h	840 / 840	1020 / 1020	1080 / 1080	1080 / 1080	1740 / 1740	1740 / 1740	1860 / 1860	1920 / 1920
Moisture removal volum	e	l/h	2.8	3.8	4.3	4.3	6.0	6.0	7.9	8.6
Sound pressure level 3)	Cooling (Hi / Lo)	dB(A)	41 / 37	43 / 39	45 / 41	45 / 41	47 / 43	47 / 43	49 / 45	50 / 46
•	Heating (Hi / Lo)	dB(A)	41 / 37	43 / 39	45 / 41	45 / 41	47 / 43	47 / 43	49 / 45	50 / 46
Sound power Level	Cooling (Hi)	dB	58	60	62	62	64	64	66	67
	Heating (Hi)	dB	58	60	62	62	64	64	66	67
Dimensions	Indoor (H x W x D)	mm	210 x 1245 x 700	250 x 1600 x 700						
Net weight	Indoor	Kg	33	33	33	33	43	43	47	47
Dust filter	•		Yes							
Antiallergic filter	Optional		CZ-SA12P							
OUTDOOR UNIT										
Power source		V	220 - 240	220 - 240	220 - 240	380 - 415	220 - 240	380 - 415	380 - 415	380 - 415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5							
Current Cooling	Nominal (Min / Max)	Α	8.1	12.6	12.9	4.9	18.2	6.1	8.0	8.6
Current Heating	Nominal (Min / Max)	Α	7.75	12.6	13.0	4.7	18.2	6.4	7.8	8.0
Air Volume	Cooling / Heating	m³/h	3420	3600	3780	3780	5640	5640	5640	5760
Sound pressure level 3)	Cooling (Hi)	dB(A)	49	50	52	52	55	55	56	56
	Heating (Hi)	dB(A)	50	51	53	53	56	56	57	57
Sound power Level	Cooling (Hi)	dB	65	66	67	67	69	69	70	70
·	Heating (Hi)	dB	66	67	68	68	70	70	71	71
Dimensions	H x W x D	mm	795 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320			
Net weight	•	Kg	57	69	69	69	102	100	102	102
Piping connections	Liquid pipe	Inch (mm)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
-	Gas pipe	Inch (mm)	1/2 (12.70)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.35	1.7	2.05	2.05	2.7	2.7	3.1	3.4
Elevation dif. (in/out) 4)	Max	m	20	30	30	30	30	30	30	30
Piping length	Min - Max	m	7.5 - 30	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50
Piping length without refrigerant increase	Max	m	20	30	30	30	30	30	30	30
Additional gas	1	g/m	20	50	50	50	50	50	50	50
Area control accessory			EKRORO wire							
Operating range 3)	Cooling Min / Max	oC.	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43	-10 / 43
, , , , , ,	Heating Min / Max	°C	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24	-10 / 24

Rated conditions: Indoor air temperature Outdoor air temperature GLOBAL REMARKS

DB: Dry bulb, WB: Wet bulb. Specifications subject to change without notice.

1) EER and COP, Energy Saving Classification, is at 220-240 V (380-415 V) in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500-hr per year in cooling mode.
3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

4) When installing the outdoor unit at a higher position than the indoor unit.





INCLUDED ON THE KIT Wired remote control CZ-RL513C

OPTIONAL CONTROLLER Wireless control CZ-RD513T





# KIT-F18DTE5-C // KIT-F24DTE5-C // KIT-F28DTE5-C // KIT-F28DTE8-C // KIT-F34DTE5-C // KIT-F34DTE8-C // KIT-F34DTE8-C

#### **HEALTHY AIR**

- · Anti-Mould long life air filter
- CZ-SA12P Anti Bacterial Filter (optional)

#### **ENERGY EFFICIENCY AND ECOLOGY**

• R410A environmentally friendly refrigerant gas

#### COMFORT

- · Automatic start after a power cut
- · Automatic fan operation mode
- Soft dry operation mode
- Automatic air deflector system
- · Hot start mode
- Super wide air outlet (100 degrees horizontally)

# EASE OF USE

- Weekly On/Off timer
   (6 settings per day and 42 per week)
- · Infrared remote control
- · Optional wired remote control

# **EASY INSTALLATION AND MAINTENANCE**

- · Self-diagnostic function
- · Condensation control



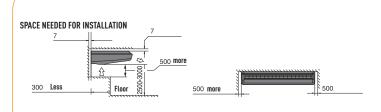
CU-B14DBE5 CU-B28DBE5 CU-B18DBE5 CU-B28DBE8 CU-B24DBE5

Left-hand

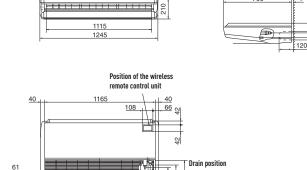
drain opening



CU-B34DBE5 CU-B43DBE8 CU-B34DBE8



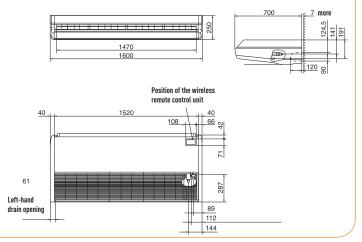
#### INDOOR UNIT DIMENSIONS CS-F18DTE5 // CS-F24DTE5 // CS-F28DTE5



144

89 112 Right-hand drain opening

# INDOOR UNIT DIMENSIONS CS-F34DTE5 // CS-F43DTE5 // CS-F50DTE5





# CEILING FS // COOLING ONLY

Full line up of cooling only non-inverter Ceiling, from 2 HP to 6.0 HP, Single-phase and three-phase.







# **TECHNICAL ZOOM**

- ECO MODE FOR 20% ENERGY SAVING
- WEEKLY TIMER, 42 SETTINGS PER WEEK
- 30 m MAXIMUM ELEVATION DIFFERENCE
- EASY CHECK MODE FOR FAILURE DETECTION

			2.0 HP	2.5 HP	2.5 HP	3.0 HP	3.0 HP	4.0 HP	4.0 HP	5.0 HP	6.0 HP
KIT			KIT-F18DTE5-F	KIT-F24DTE5-F	KIT-F24DTE8-F	KIT-F28DTE5-F	KIT-F28DTE8-F	KIT-F34DTE5-F	KIT-F34DTE8-F	KIT-F43DTE8-F	KIT-F50DTE8-F
Indoor			CS-F18DTE5	CS-F24DTE5	CS-F24DTE5	CS-F28DTE5	CS-F28DTE5	CS-F34DTE5	CS-F34DTE5	CS-F43DTE5	CS-F50DTE5
Outdoor			CU-J18DBE5	CU-J24DBE5	CU-J24DBE8	CU-J28DBE5	CU-J28DBE8	CU-J34DBE5	CU-J34DBE8	CU-J43DBE8	CU-J50DBE8
	Included in the kit		CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C	CZ-RD513C
Cooling capacity	Nominal (Min-Max)	kW	5.00	6.60	6.60	7.30	7.30	10.00	10.00	12.50	13.50
3, ,	Nominal (Min-Max)	kCal/h	4300	5676	5676	6278	6278	8600	8600	10750	11610
EER 1)	Nominal (Min-Max)		2.76 D	2.51 €	2.51 <b>€</b>	2.56 E	2.56 E	2.49 E	2.57 E	2.56 €	2.56 E
Power input Cooling	Nominal (Min-Max)	kW	1.81 (1.75-1.84)	2.63 (2.58-2.68)	2.63 (2.58-2.68)	2.85 (2.8-2.9)	2.85 (2.8-2.9)	4.02 (3.97-4.07)	3.99 (3.84-3.94)	3.99 (3.84-3.94)	5.28 (5.23-5.33)
Annual Energy Consump	tion <sup>2)</sup>	kWh	905	1315	1315	1425	1425	2010	1945	2445	2640
INDOOR UNIT											
Air Volume		m³/h	840	1020	1020	1080	1080	1740	1740	1860	1920
Moisture removal volum	е	l/h	2.8	3.8	3.8	4.3	4.3	6.0	6.0	7.9	8.6
Sound pressure level 3)	Hi / Lo	dB(A)	41 / 37	43 / 39	43 / 39	45 / 41	45 / 41	47 / 43	47 / 43	49 / 45	50 / 46
Sound power Level	Hi	dB	58	60	60	62	62	64	64	66	67
Dimensions	Indoor (H x W x D)	mm	210x1245x700	210x1245x700	210x1245x700	210x1245x700	210x1245x700	250x1600x700	250x1600x700	250x1600x700	250x1600x700
Net weight	Indoor	Kg	33	33	33	33	33	43	43	47	47
Dust filter			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Antiallergic filter	Optional		CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P	CZ-SA12P
OUTDOOR UNIT											
Power source		V	220-240	220-240	380-415	220-240	380-415	220-240	380-415	380-415	380-415
Connection		mm <sup>2</sup>	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5	4 x 1'5 to 2'5
Current Cooling	Nominal (Min / Max)	Α	8.1	13.3	4.6	13	4.95	18.5	6.1	8.2	8.6
Air Volume		m³/h	3420	3600	3600	3780	3780	5640	5640	5640	5760
Sound pressure level 3)	Hi	dB(A)	49	50	50	52	52	55	55	56	56
Sound power Level	Hi	dB	65	66	66	67	67	69	69	70	70
Dimensions	H x W x D	mm	795x900x320	795x900x320	795x900x320	795x900x320	795x900x320	1170x900x320	1170x900x320	1170x900x320	1170x900x320
Net weight		Kg	57	61	61	61	61	92	90	97	97
Piping connections	Liquid pipe	Inch (mm)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas pipe	Inch (mm)	1/2 (12.70)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Refrigerant Loading	R410A	Kg	1.10	1.35	1.35	1.45	1.45	1.7	1.7	3.1	3.25
Elevation dif. (in/out) 4	Max	m	20	30	30	30	30	30	30	30	30
Piping length	Min - Max	m	7.5 - 30	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50	7.5 - 50
Piping length without refrigerant increase	Max	m	20	30	30	30	30	30	30	30	30
Additional gas	1	g/m	50	50	50	50	50	50	50	50	50
Area control accessory			EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire	EKRORO wire
Operating range 3)	Min / Max	oC	-10 / 43	-10 / 43	5 / 43	5 / 43	5 / 43	5 / 43	5 / 43	5 / 43	5 / 43

Rated conditions: Indoor air temperature Outdoor air temperature GLOBAL REMARKS

<sup>1)</sup> EER, Energy Saving Classification, is at 220-240 V (380-415 V) only in accordance with EU directive 2002/31/EC.
2) The annual consumption is calculated by multiplying the input power at 220-240 V (380-415 V) by an average of 500-hr per year in cooling mode.
3) The Sound pressure level of the units shows the value measured of a position 1 meter in front of the main body and 1.5 from the ground. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification.

<sup>4)</sup> When installing the outdoor unit at a higher position than the indoor unit.





### INCLUDED ON THE KIT Wired remote control CZ-RL013T

OPTIONAL CONTROLLER Wireless control CZ-RD513C





# KIT-F18DTE5-F // KIT-F24DTE5-F // KIT-F28DTE8-F // KIT-F28DTE5-F // KIT-F28DTE8-F // KIT-F34DTE5-F // KIT-F34DTE8-F // KIT-F34DTE8-F // KIT-F34DTE8-F

### **HEALTHY AIR**

- · Anti-Mould long life air filter
- CZ-SA12P Anti Bacterial Filter (optional)

### **ENERGY EFFICIENCY AND ECOLOGY**

• R410A environmentally friendly refrigerant gas

### COMFORT

- · Automatic start after a power cut
- · Automatic fan operation mode
- Soft dry operation mode
- Automatic air deflector system
- · Hot start mode
- Super wide air outlet (100 degrees horizontally)

Left-hand drain opening

### EASE OF USE

- Weekly On/Off timer
   (6 settings per day and 42 per week)
- · Infrared remote control
- · Optional wired remote control

### **EASY INSTALLATION AND MAINTENANCE**

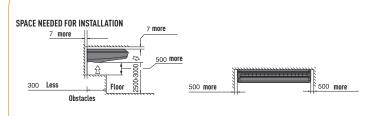
- · Self-diagnostic function
- · Condensation control



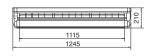
CU-J18DBE5 CU-J28DBE5 CU-J24DBE5 CU-J28DBE8 CU-J24DBE8

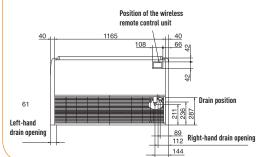


CU-J34DBE5 CU-J43DBE8 CU-J50DBE8

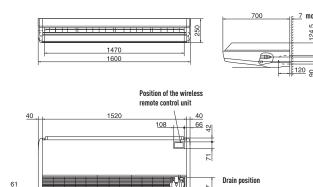


### INDOOR UNIT DIMENSIONS CS-F18DTE5 // CS-F24DTE5 // CS-F28DTE5





### INDOOR UNIT DIMENSIONS CS-F34DTE5 // CS-F43DTE5 // CS-F50DTE5



Right-hand drain opening

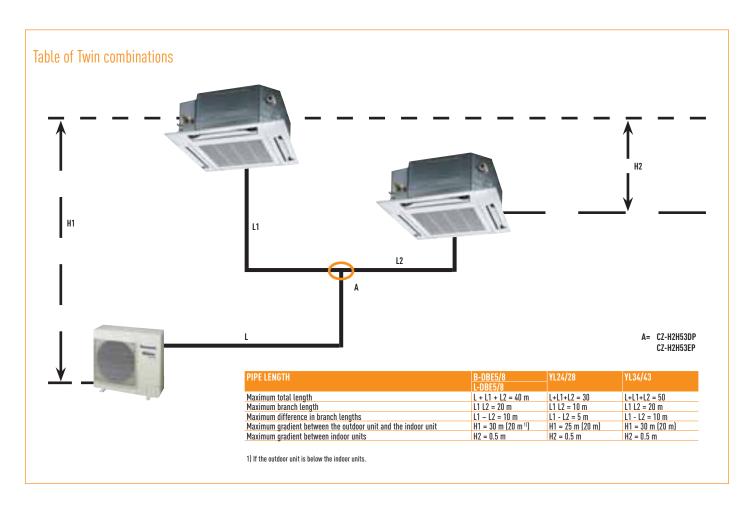
144

# TWIN FLEXI SYSTEM FS // INVERTER // HEAT PUMP // COOLING ONLY

Panasonic's FS units can be installed as Twin systems (two indoor units of the same type with one outdoor unit). The indoor units can be combined in any of the different available ratings (1.5 HP, 2 HP, 2.5 HP and 3 HP).

The total power of indoor units will coincide with the power of the outdoor unit in all cases so that their operation will always be simultaneous<sup>3</sup>. The outdoor units are available in ratings of 3 HP, 4 HP, 5 HP and 6 HP

1) Simultaneous operation of indoor units in all cases.



### TABLE OF COMBINATIONS FOR FS HEAT PUMP // FS INVERTER+

OUTDOOR UNIT	STANDARD TWIN	DIVERTER	OUTDOOR UNIT	STANDARD TWIN	DIVERTER
3.0 HP (CU-28)	3.0 HP (CU-28) - 1.5 HP (CS-14)	CZ-H2H53DP	5.0 HP (CU-43)	5.0 HP (CU-43) = 2.5 HP (CS-24) = 2.5 HP (CS-24)	CZ-H2H53EP
4.0 HP (CU-34)	4.0 HP (CU-34) 2.0 HP (CS-18) 2.0 HP (CS-18)	CZ-H2H53DP	6.0 HP (CU-50)	6.0 HP (CU-50) - 3.0 HP (CS-28) 3.0 HP (CS-28)	CZ-H2H53EP







### Compatible Indoor Units

			(14) 1.5 HP	(18) 2.0 HP	(24) 2.5 HP	(28) 3.0 HP	(34) 4.0 HP
SPLIT CASSETTE TYPE			CS-F14DB4E5	CS-F18DB4E5	CS-F24DB4E5	CS-F28DB4E5	CS-F34DB4E5
Panel	<u>"</u>		CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P
Power input	Cooling	kW - kCal/h	3.8 - 3268	5.0 - 4300	6.6 - 5676	7.3 - 6278	10.0 - 8600
	Heating	kW - kCal/h	4.3 - 3698	5.6 - 4816	7.1 - 6106	8.0 - 6880	11.20 - 9632
Dimensions	Indoor	H x W x D (mm)	246 x 840 x 840	246 x 840 x 840	246 x 840 x 840	246 x 840 x 840	246 x 840 x 840
	Panel	H x W x D (mm)	30 x 950 x 950	30 x 950 x 950	30 x 950 x 950	30 x 950 x 950	30 x 950 x 950
Sound pressure level		dB(A)	31	32	32	36	37
Air Volume		m³/h	900	960	1080	1200	1620
SPLIT CEILING TYPE				CS-F18DTE5	CS-F24DTE5	CS-F28DTE5	CS-F34DTE5
Power input	Cooling	kW - kCal/h	_	5.0 - 4300	6.6 - 5676	7.3 - 6278	10.0 - 8600
,	Heating	kW - kCal/h	_	5.6 - 4816	7.1 - 6106	7.8 - 6708	11.20 - 9632
Dimensions	HxWxD	mm	_	210 x 1245 x 700	210 x 1245 x 700	210 x 1245 x 700	210 x 1245 x 700
Sound pressure level		dB(A)	_	34	39	41	43
Air Volume		m³/h	_	840	1020	1080	1740
LOW STATIC PRESSURE I	HIDE-AWAY TYPE		CS-F14DD3E5	CS-F18DD3E5	CS-F24DD3E5	CS-F28DD3E5	CS-F34DD3E5
Power input	Cooling	kW - kCal/h	3.8 - 3268	5.0 - 4300	6.6 - 5676	7.3 - 6278	10.0 - 8600
•	Heating	kW - kCal/h	4.3 - 3698	5.6 - 4816	7.1 - 6106	8.0 - 6880	11.20 - 9632
Dimensions	HxWxD	mm	270 x 780+100 x 650	270 x 780+100 x 650	270 x 1000+100 x 650	270 x 1000+100 x 650	270 x 1000+100 x 650
Sound pressure level		dB(A)	35	38	43	43	41
Air Volume		m³/h	900	1020	1320	1320	2160
HIGH PRESSURE HIDE-AV	WAY TYPE				CS-F24DD2E5	CS-F28DD2E5	CS-F34DD2E5
Power input	Cooling	kW - kCal/h	_	_	6.6 - 5676	7.10 - 6106	10.0 - 8600
	Heating	kW - kCal/h	_	_	7.1 - 6106	8.00 - 6880	11.20 - 9632
Dimensions	HxWxD	mm	_	_	290 x 1000+100 x 500	290 x 1000+100 x 500	290 x 1000+100 x 500
Sound pressure level		dB(A)	_	_	41	44	45
Air Volume		m³/h	_	_	1320	1320	2280

### Compatible Outdoor Units

			(28) 3.0 HP	(34) 4.0 HP	(43) 5.0 HP	(50) 6.0 HP
INVERTER+ FS			CU-L28DBE5 <sup>1</sup>	CU-L34DBE5 1 // CU-L34DBE8 III	CU-L43DBE5   // CU-L43DBE8	CU-L50DBE8 III
Power input		kW - kCal/h	7.10 - 6106	10.00 - 8600	12.50 - 10750	14.00 - 12040
	H x W x D	mm	795 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Sound pressure level	Cooling / Heating	dB(A)	48 / 50	52 / 54	53 / 55	54 / 56
Power source		V	220	220 // 380 - 415	220 // 380 - 415	380 - 415
INVERTER FS			CU-YL28HBE5 <sup>1</sup>	CU-YL34HBE5 <sup>1</sup>	CU-YL43HBE5 <sup>1</sup>	
Power input		kW - kCal/h	7.10 - 6106	10.00 - 8600	12.50 - 10750	
Dimensions		mm	795 x 875 x 320	795 x 900 x 320	1170 x 900 x 320	
Sound pressure level		dB(A)	50	54	55	_
Power source		V	220	220	220	
HEAT PUMP FS			CU-B28DBE5 1 / CU-B28DBE8 III	CU-B34DBE5   // CU-B34DBE8	CU-B43DBE8 III	CU-B50DBE8 III
Power input		kW - kCal/h	7.3 - 6275	10.45 - 9000	13.0 - 11200	14.5 - 12100
Dimensions	H x W x D	mm	795 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320
Sound pressure level		dB(A)	52	55	56	56
Power source		V	220-240 // 380	220-240 // 380	380	380
COOLING ONLY FS			CU-J28DBE5   // CU-J28DBE8	CU-J34DBE5 1 // CU-J34DBE8 III	CU-J43DBE8 III	CU-J50DBE8 III
Power input		kW - kCal/h	7.3 - 6275	10.45 - 9000	13.0 - 11200	14.5 - 12100
Dimensions	H x W x D	mm	795 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320	1170 x 900 x 320
Sound pressure level		dB(A)	52	55	56	56
Power source		V	220-240 // 380	220-240 // 380	380	380







# **Modbus**<sup>®</sup>

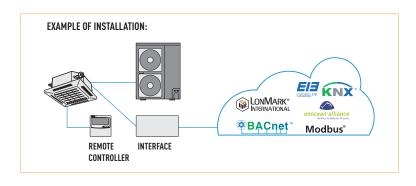




Panasonic Partners have designed solutions specifically for Panasonic air conditioners, and provide complete monitoring, control and full functionality of the entire Commercial line-up from KNX / EnOcean / Modbus / LonWorks / BACnet installations.

Great flexibility for integration into your KNX / EnOcean / Modbus / LonWorks / BACnet projects allows fully bi-directional monitoring and control of all the functioning parameters

For more information, contact Panasonic.



		MAXIMUM NUMBER OF INDOOR UNITS CONNECTED	POSSIBLE TO CONNECT MORE THAN 1 INDOOR UNIT (GROUP OF INDOORS)	COMMUNICATION INTERFACE CZ-CFUNC2
FS / FS Multi	KNX	1 (1 Group of Indoor Units)	No	No
	En-Ocean	1 (1 Group of Indoor Units)	No	No
	Modbus*	1 (1 Group of Indoor Units)	No	No
	Airzone	1	No	No
	Intesishome	1 (1 Group of Indoor Units)	No	No

<sup>\*</sup> Interface Modbus RTU/TCP is needed

# Control your Air conditioning system with your smart device -smartphone & internet for FS

Panasonic has always offered its customers the most efficient Heat Pumps and Air Conditioners. Now it has taken a step forward and presents the most advanced service taking advantage of the latest Cloud Technology to manage your climate system from anywhere in the world. Control your environment from your iPad, iPhone, any Android device or from a PC with Internet access. Offering the same functions as if you were at home: start/stop, Mode Operation, Set Temperature, Room Temperature etc. Experience the new, advanced functionality to achieve the best comfort and efficiency with the lowest energy consumption.



### Control of the FS Hide Aways by Airzone

Airzone has developed interfaces to easily connect to Panasonic FS Hide Away units. Ensuring optimum performance, comfort and energy savings, the new system is efficient and easy to install. Interface dimensions: 120 x 25 x 65 cm (W x H x D). Interfaces must be purchased direct from Airzone.

### AIRZONE FULL RANGE OF ACCESSORIES FOR ANY DUCT PROJECT







### **CONTROL SYSTEMS FOR FS**

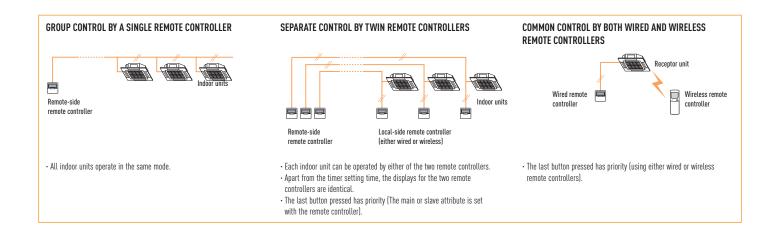
### Control System

Panasonic's Twin systems can be controlled from a wired remote control or an infrared remote

Multi Mix systems also have various control options.

Group control: It is possible to control up to 16 systems at the same time using a single wired or infrared control. The operating settings will be the same for all the connected systems, but the compressors will start in sequence.

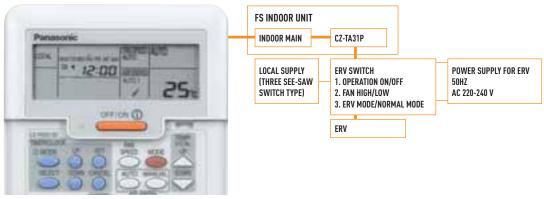




### CZ-TA31P Operation mode with CZ-RD513C (Remote Controller)

CZ-RD513C	VENTILATION	INTERLINK WI	TH FS SYSTEM	VENTILATION BUTTON OPERATION AND INTERLINK	REMARKS
Mode <sup>1)</sup>	Button (On/Off)	FS operation from Off to On	FS operation from On to Off	Operation	
000	No function	No function	No function	No operation happened even push ventilation button	Factory default setting
001	On/Off possible	No function	No function	ERV individual On/Off possible	No interlink with FS side, ERV can select operate On/Off
002	On/Off possible	No function	Forced ventilation Off	<ul> <li>"ERV ventilation On" can be selected by Ventilation button</li> <li>In case FS system switched Off, also "Forced ventilation Off"</li> </ul>	In case required ventilation continually even at FS system operation is Off mode, ventilation button must be switch On.
003	On/Off possible	Forced ventilation On	Forced ventilation Off	<ul> <li>FS system operation On same time ERV ventilation On.</li> <li>FS system operation Off on same time ERV ventilation Off</li> </ul>	<ul> <li>Manual On/Off possible at FS operation keep On</li> <li>Manual On/Off possible at FS operation at Off mode</li> <li>In case continually required ventilation On, ventilation button must be switch On.</li> </ul>

1) Be sure to select either 001, 002, or 003. ERV: Energy Recovery Ventilators



### CZ-TA31P



### Adapter for external signals

- A fan outside the indoor unit can be controlled
- External remote controller for switching the indoor unit ON/OFF
- Indoor unit status outputs (operating mode, fault)

### CZ-20GWAP



### Connection interface for Urban Net and Um Net

- Indoor units controllable: 64
- Control functions: ON/OFF, Operating mode, Temperature adjustment, Fan speed, Air direction, Fault information, Suction temperature, Filter status information.

### CZ-TA40P



### Adapter for Urban Net

- Connecting board for Urban Net for centralised control of FS range indoor units

### CZ-01FULAP



### Serial interface unit

- Indoor units controllable: 64
- External connection: RS232C

### CZ-TA50P



### Adapter for addressing

 Board for manual adjustment of indoor unit addresses for centralised control. Use for setting addresses before connecting the indoor unit to the power and when there is no remote control



# THE NEW PANASONIC INDUSTRIAL VRF SYSTEMS

### PROFESSIONAL SOLUTIONS FOR ALL TYPES OF PROJECTS

The new Panasonic VRF system is specifically designed for energy saving, easy installation and high efficiency performance, with a wide choice of outdoor and indoor unit models and unique features which are designed for the most demanding offices and big buildings.



Inverter+ products improve on the characteristics of standard Inverter range by over 20%. A Inverter plus is also A class on cooling and heating mode.



The Inverter range provides greater efficiency, more comfort. Provides more precise temperature control, without highs and lows, and keeps the ambient temperature constant with lower energy consumption and a significant reduction in noise and vibration levels.



GHP technology offer the best preliminary efficiency.



VRF. The Inverter plus range provides greater



The ECOi system works in heating mode at outdoor temperatures down to -25 °C (2-Pipe series) or -20 °C (3-Pipe series and Mini ECOi).



The communication port is integrated into the indoor unit and provides easy connection to, and control of, your Panasonic heat pump to your home or building management system.



R410A. Environmentally friendly refrigerant.



5 YEARS Warranty on the compressor.





### FS Multi VRF

The FS Multi VRF lineup is a full Electrical VRF line up specially designed for small to medium installations.

### Benefits:

- Easy to install units
- No additional gas needed (for 4, 5 and 6 HP)
- Indoor units match Etherea wall mounted designs
- Self diagnostic function with 7-digit code for easy set up and repair

### Example applications:

- 1. Apartments
- 2. Bungalows
- 3. Offices
- 4. Shop & Boutiques

# ECOL

### Mini ECOi

The Mini ECOi VRF lineup is a high efficiency electrical VRF.

### Benefits:

- · High efficiency outdoor units
- Compatible with all ECOi indoors units
- Compatible with all remote controls/interfaces from ECOi
- Flexible connection to ECOi projects

### Example of ECOi and MiniECOi applications:

- 1. Complexes // 2. High Rise Buildings //
- 3. Commercial Buildings // 4. Hotels

### FCU

ECOi electrical VRF is specifically designed for the most demanding offices and big buildings.

### Benefits:

- · High efficiency system
- From 8 to 20 HP in only one chassis
- Extended operating range to provide heating at outdoor temperature as low as -25  $^{\rm o}{\rm C}$
- · Suitable for renewal projects



### ECO G

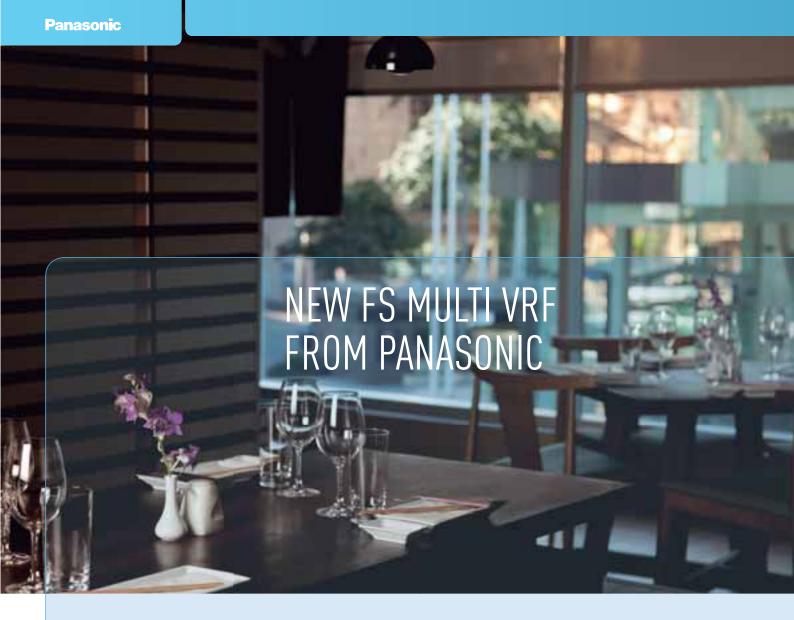
ECO G gas VRF is specially designed for buildings where the electricity is restricted or  ${\rm CO_2}$  emissions must be reduced.

### Benefits:

- Very high preliminary efficiency ratio
- · Very low electrical consumption
- Compatible with all ECOi indoor units and remote controls
- Sanitary hot water is produced freely in summer time

### **Example applications:**

- 1. Complexes
- 2. High Rise Buildings
- 3. Commercial Buildings
- 4. Hotels





New easy to install VRF, specially designed for homes and small commercial buildings: large lineup of indoor units, Etherea wall mounted design, 4-5-6-8-10 HP outdoor units, single phase and three phase.

FS Multi VRF's cutting edge VRF technology is perfectly suited to medium-sized or small areas, with single-phase power sources, together with advanced Inverter technology, opening up previously unimagined possibilities in the world of air conditioning.

Air conditioning spaces can now take on a new dimension. If you have bought a new property, home, office or commercial place which is still in the construction phase, or if you are refurbishing, Panasonic offers you the chance to enjoy FS Multi VRF air conditioning.



### U-4LA1E5 // U-5LA1E5 // U-6LA1E5

For homes and multi-storey apartments.

Enabling air conditioning in multiple rooms with a single outdoor unit.



### U-8EA1E8 // U-10EA1E8

Offices, shops and boutiques.
As well as being ideal for new buildings.



### New FS Multi VRF from Panasonic

- Total freedom of choice. Up to 30 different indoor unit models. Allows you to choose the best option depending on architectural needs and interior decor criteria.
- Three single-phase outdoor unit ratings: 4, 5 and 6 HP
- Two three-phase outdoor unit ratings: 8 and 10 HP
- Inverter technology with R410A refrigerant, "greater comfort and economy with lower consumption".
- Greatest space reduction. A single outdoor unit feeds up to 16 indoor units (at 10 HP).
- Ease of installation. Thanks to the reduced dimensions of the outdoor unit it can be taken to the roof of the building in the lift.

### **Energy Saving Inverter**

All the models of Panasonic FS Multi VRF series are equipped with DC inverter compressor for the higher EER operation. The new design, not only helps to achieve improved quiet and high-efficiency operation, but also reduces running costs.

### Panasonic's Original High-Performance Compressor

It's the compressor at the heart of an air conditioner that determines reliability and efficiency. The FS Multi VRF features Panasonic's original high-performance compressor to assure outstanding performance and quality.

### High-Efficiency Compressor

Panasonic has achieved a more compact motor by using a powerful neodymium (rare-metal) magnet. Higher efficiencies are possible thanks to the smaller magnetic field distortion of the winding rotor motor.

### Pump-Down Mode (4, 5 and 6 HP)

The exterior 4, 5 and 6 HP FSM units have a pump-down mode incorporated, making it possible to drain all of the refrigerant from the installation (not just from the external machine). This facilitates changing the installation and maintenance.

### Refrigerant Charge-free System On the 4, 5 and 6 HP

The FS Multi VRF is a refrigerant charge-free system that does not require a charge of additional refrigerant even when using a full pipe length of up to 90 m. This dramatically shortens the installation time required for charging with additional refrigerant, weight measurement and pressure judgment. It also eliminates charge amount calculation and there's less chance of a cooling capacity shortage due to an incorrect amount of refrigerant being used or other errors.

### System advantages. Installation and maintenance flexibility

The FS Multi VRF system solves the air conditioning design and construction problems that arise due to pipes at different heights and the location of the installation site. Exceptional installation flexibility makes installation easy and maintains the attractive appearance of buildings.

### **OUTDOOR UNITS**

U-4LA1E5 // U-5LA1E5 // U-6LA1E5

### up to 15 metres, thus covering 4 or 5 floors in the same system. Maximum height difference between outdoor unit and Maximum total pipe length indoor unit 30 m 90 m Farthest pipe length (from outdoor unit to farthest indoor unit) 55 m (equivalent length) a) Maximum length from outdoor unit to farthest indoor unit (equivalent length): 55 m b) Maximum length from first branch pipe to Maximum height difference farthest indoor unit (equivalent length): 30 m c) Maximum length of all main pipes: 40 m between indoor units d) Maximum length of all branch pipes: 50 m 15 m

Pipes of up to 90 m

The total length of the pipe between a system's indoor and outdoor units can

be extended up to 90 metres, with a height difference of up to 30 metres. These ample limits make it possible to place the outdoor unit on the roof. The maximum height difference between indoor units in the same system may be



### Residences

Since a layout using long piping is possible, a single outdoor unit can be used even for multi-storey residences. And there's a range of indoor unit designs to choose from to complement different interiors.

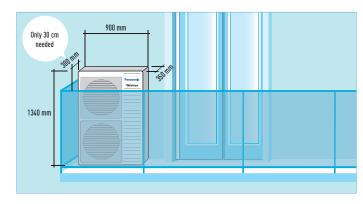


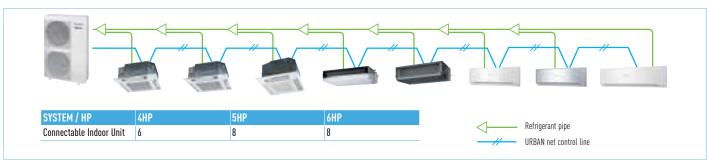
### Multi-storey Apartments

Enabling air conditioning in multiple rooms with a single outdoor unit, the FS Multi VRF system offers an effective solution to today's demand for aesthetically pleasing buildings. The indoor units are also available in designs providing an ideal match for modern living environments.

### Space-Saving Design

Improvement of the outdoor units fan has reduced the size of the unit to enable installation in a smaller space. Without sacrificing quietness, higher efficiency is also attained. Easy piping facilitates freedom in installation, and reduction in installation costs. It will lead to a reduction in installation costs.





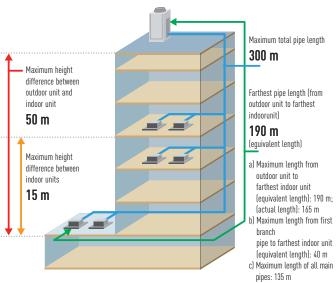
### **OUTDOOR UNITS**

U-8EA1E8 // U-10EA1E8



### Pipes of up to 300 m

The total length of the pipe between a system's indoor and outdoor units can be extended up to 300 metres, with a height difference of up to 50 metres. These ample limits make it possible to place the outdoor unit on the roof. The maximum height difference between indoor units in the same system may be up to 15 metres, thus covering 4 or 5 floors in the same system.





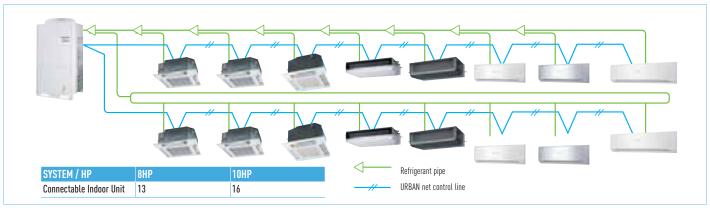
### Offices, Shops and Boutiques

As well as being ideal for new buildings, the FS Multi VRF system offers space-saving benefits when refurbishing and renovating existing spaces. What's more, independent air conditioning reduces energy wasted in unused offices, and much neater pipe layout is possible than with a single split system. Using the Weekly Timer also enables setting for the optimum Energy saving operation in offices and commercial facilities. And there are options enabling demand control and digital connection compatibility to meet the needs of business applications.



### High External Static Pressure Mode

8 and 10 HP outdoor unit features a high external static pressure mode (up to 60 Pa). Select via the outdoor unit's local setting mode.



### **Energy saving**

### 1. Hyper Wave Inverter

The series quickly warms the room up to the set temperature and maintains it within the comfort zone while ensuring energy efficiency and savings.

### 2. DC Inverter Compressor

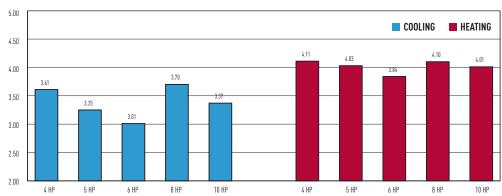
A powerful neodymium magnet helps make the motor more compact.

3. Large Diagonal Air Flow Fan



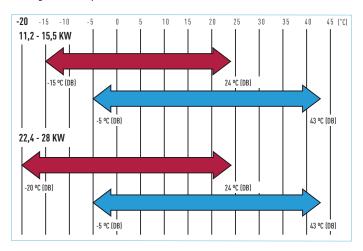
### **Energy Saving**

Quality features translate into energy savings thanks to greater energy efficiency. This efficiency is due to the fact that each room is individually controlled and only the rooms that require airconditioning are heated or cooled. Moreover, thanks to Inverter technology, the level of air conditioning can be adjusted precisely depending on each room's condition.



### **Broad Operating Range**

The heating function will remain stable indoors even when the temperature out-side drops to -15  $^{\circ}$ C, thus meeting users different needs. Moreover, the cooling function operates from -5  $^{\circ}$ C to 43  $^{\circ}$ C.



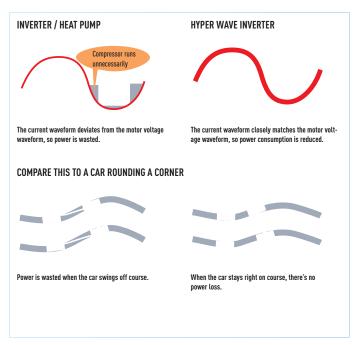
### **Quiet Operation**

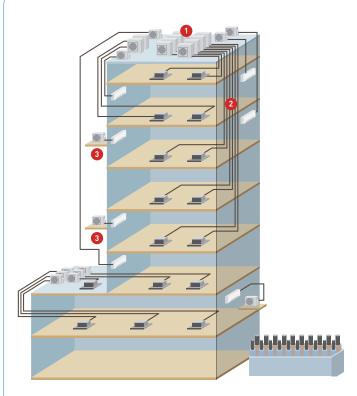
A host of silencing technologies achieve superquiet operation. We've also improved operating efficiency and reduced energy consumption.

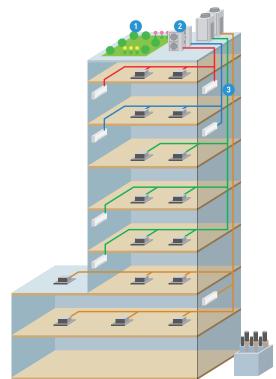


### Hyper Wave Inverter

Panasonic's expertise from inverter development is realised in the Hyper Wave Inverter. The control of the inverter demonstrates optimum compressor torque. The FS Multi VRF series quickly heats up the room to the set temperature and maintains a comfortable condition, whilst ensuring energy efficiency and savings.







### Frequent Single Split System Problems

- Requires many outdoor units and large installation space.
   Thus, spoiling the building's appearance, and the building's strength must be assessed.
- 2. Requires many pipe shafts.
- 3. Pipes are short so outdoor units have to be installed on wall surfaces.
  - Insufficient pipe length makes installation impossible.

### FS Multi VRF System Solution

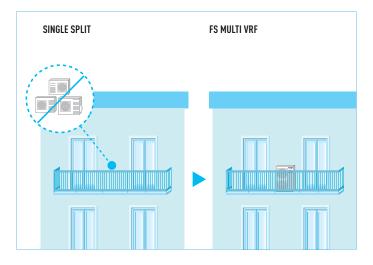
- 1. Minimized number of outdoor units thanks to multi system. Rooftop space can be used more effectively and the unit load on the roof is considerably reduced.
- 2. Outdoor units can be installed close to each other, maintaining the building's appearance and enhancing the installation flexibility.
- 3. The number of pipings is reduced, thus minimising the space required in pipe shafts.

### Easy maintenance

When there is a breakdown in an indoor unit, the system continues to work without this indoor unit. The outdoor unit does not stop, and the rest of the indoor units continue to operate.

### When installation space is limited

A single compact FS Multi VRF system outdoor unit enables air conditioning in multiple rooms, solving the problems of narrow or limited installation space.



### Innovative and perfect control of loading for the 4, 5 and 6 HP

The outdoor unit controls and optimises the loading of refrigerant in the system by asking each indoor unit its requirements. With this very innovative loading control, the system is highly efficient and the indoor unit responds very quickly to demands.

### Cooling Only Model Setting

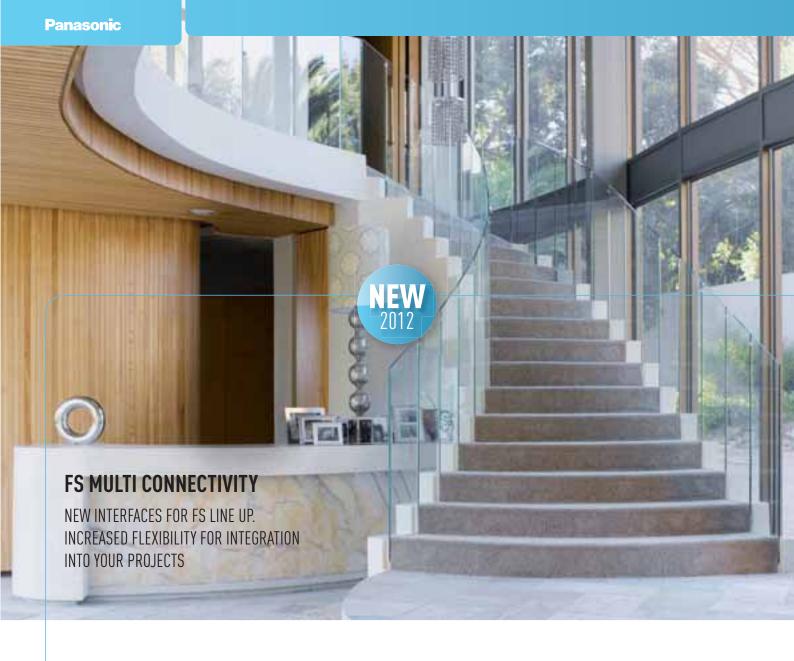
- The unit designed for cooling only can be set by the JP wire on the outdoor unit PC board.
- After setting this mode, the FS Multi VRF system cools only.

### Outdoor Unit Silent Operation Mode

The Silent Operation mode of the outdoor unit can be selected by remote control. There are three mode settings that reduce the noise level by up to 6 dB(A). (When the Silent Operation mode is selected, cooling and heating capacity are reduced.)

EXAMPLE AT 4HP MODEL AT COOLING OPERATION							
Reference	Capacity index*	Sound pressure dB(A)					
Normal mode	100	52					
LV1	80	50					
LV2	72	48					
LV3	62	46					

<sup>\*</sup> The indexes are nominal capacity operation reference values







# **Modbus**<sup>®</sup>

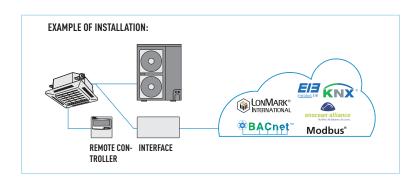




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# Control your Air conditioning system with your smart device -smartphone & internet for FS Multi

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### AIRZONE FULL RANGE OF ACCESSORIES FOR ANY DUCT PROJECT







Full range of RC (wired/wireless, ...)







### INDIVIDUAL CONTROL SYSTEMS

Unlike conventional air conditioning systems, the VRF system is applied separately to each room. So, this system is ideal for areas with fluctuation in traffic. Moreover, you can have precise control over each of the rooms to achieve exact conditions. Individual control makes this system more cost-effective and efficient.

### Wired Remote Controller

### CZ-RT1

- Remote controller with LCD and selfdiagnosis
- Constant monitoring of the system with fault detection
- Weekly timer function
- Maintenance time and cost reduction

### **OPERATING BUTTONS**

- · Real time daily timer · Weekly timer: 6 actions per day (total 42 actions per week), including temperature setting.
- · Temperature adjustment
- · Adjusting air direction
- · Selection of operating mode
- · Fan speed control
- · Restart filter
- Ventilation interlink

### **MONITOR**

- · Operating mode
- Centralised control indicator
- · Demand control indicator
- · Operation priority indicator
- · Selected temperature · Air direction
- Clock
- · Day of the week indicator
- · Inspection/operating test
- · Fan speed
- · Filter maintenance
- · Defrost/hot start indicator
- · Error mode display





### 1. Weekly Timer

Weekly timer setting (each day of the week) is available to control the air conditioner. Max. 6 settings/day and 42 settings/week can be executed. The setting temperature can also be programmed for optimal comfort.

### **EXAMPLES OF SETTING WEEKLY TIMER**

### SHOP WITH REGULAR HOLIDAYS

Example: Closed Saturday afternoon and all day Sunday.

Mon-Fri On 9:00. Off 18:00 Sat On 9:00 Off 12:00 Sun Not set

The timer can have different settings for every day of the

### THE NUMBER OF PERSONS VARIES DEPENDING ON TIME 70NES.

Example: Set a lower temperature at lunch time when many people may visit.

### Everyday

On 12:00 23 °C On 14:00 28 °C

In this case, the temperature can be set at the same time.

### NOT TO FORGET TO SWITCH OFF

Example: To prevent forgetting to switch OFF weekdays

### Mon-Fri Off 20-00

The timer can be set for simple shut-off operation

# THE DAY

**ENTER** 

THE TIME

\*Simple Timer Mode

HOW TO SET

TIMER 1 MONTUE WED THU FRI SAT SUN 00:00



### 2. Ventilation Interlink

When the external device such as a ventilator is connected to the indoor unit, switch ON/OFF of the ventilator can be controlled by the wired remote control. Either link-ventilation or independent-ventilation is selectable.

Energy recovery ventilators are also offered by Panasonic Optional printed circuit board (Interface Adapter for External Signals: CZ-TA31P\*) is needed

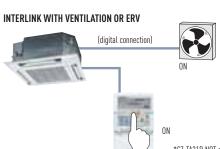
# (digital connection)

### Interface Adapter for External Signals

- By connecting to the indoor unit, a separately sold ventilator can be controlled.
- Remote control operation of the indoor unit is enabled (ON/OFF control).
- The operating condition of the indoor unit (malfunctions, operating status) can be externally output.
- Control in linkage with a Energy Recovery Ventilators (ERV) or similar is possible.

### **CONNECTION WITH EXTERNAL CENTRAL SYSTEM** (digital connection) CZ-TA31P

- Remote ON/OFF
- · Remote /Local Selection · Fan Operation Signal
- · ON/OFF Monitor Signal
- Malfunction Signal Central control system (local supply)



\*CZ-TA31P NOT applicable for wall-mounted indoor unit

### Wireless Remote Controller

CZ-RWS1. Heat Pump Models

### CZ-RWC1. Cooling Only Models

- Remote controller with LCD and self-diagnosis
- Error code recognition
- Maintenance time and cost reduction
- · Real time daily timer

### **OPERATING BUTTONS**

- ON/OFF
- · Activate/deactivate programmer
- · Real time daily timer
- · Temperature adjustment
- Air direction
- Operating mode
   For another and control
- Fan speed controlRestart filter
- Inspection of error code

### MONITOR

- Operating mode • Temperature selected
- Air direction
- Time programming • Error code display
- Fan speed
- Clock



### Wireless Controller Receiver

# For Cassette Type CZ-RWRU1



For Duct Type CZ-RWRM1



Wireless receivers for wall-mounted and 60x60 Cassette types are equipped as standard.

# Cooling/Heating Controller for the Outdoor Unit

### CZ-RD1

Enables the cooling, heating and ventilating operating mode for each outdoor unit. Allows the operating mode to be changed for several outdoor units at the same time by means of a single remote control.

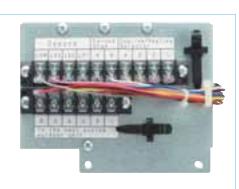


### Terminal Module (Equipped as Standard on the Outdoor Unit)

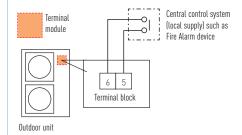
### CZ-CAP1

Control terminal to be connected with outside devices or CZ-RD1 controller.

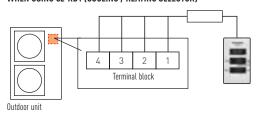
- Used to receive forced stop digital signal from local procured central control system.
- Used to receive demand control signal from local procured central control system. (Demand control for energy saving with 3-level selection)
- Required to connect with CZ-RD1 cooling/heating controller.
- Group control of several FS Multi VRF systems for forced stop and CZ-RD1 cooling/heating controller.



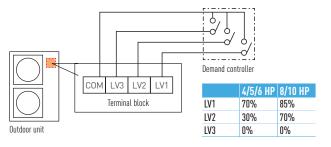
### WHEN CONNECTING FORCED STOP INPUT



### WHEN USING CZ-RD1 (COOLING / HEATING SELECTOR)



### WHEN CONNECTING DEMAND CONTROLLER

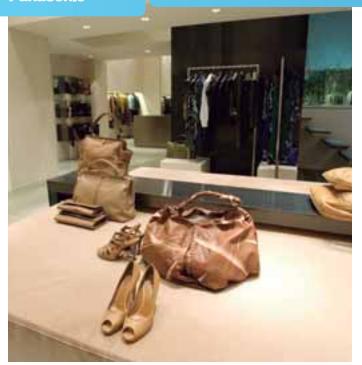




Outdoor unit Outdoor unit Outdoor unit

\*Not applicable for demand controller

### **Panasonic**



### **COMBINATION TABLE**

The FS Multi VRF system attains maximum indoor unit connection capacity of up to 130% in the units connection range, depending on the outdoor and indoor models selected. In the case of a 6 HP outdoor unit (15.5 kW / 53,000 Btu/h), connection is possible with a maximum indoor unit range of 20.15 kW. So for a reasonable investment, the FS Multi VRF system provides an ideal air conditioning solution for locations where full cooling/heating is not always required.

### **COMBINATION TABLE**

Reference	Outdoor unit System cooling capacity	Maximum indoor unit	Standard combination capacity*	Maximum combination capacity	Minimum combination capacity
U-4LA1E5	4.0HP/ 11.2 kW/ 38,200 Btu/h	6	11.2 kW	14.56 kW	5.6 kW
U-5LA1E5	5.0HP/ 14.0 kW/ 47,800 Btu/h	8	14.0 kW	18.20 kW	7.0 kW
U-6LA1E5	6.0HP/ 15.5 kW/ 52,900 Btu/h	8	15.5 kW	20.15 kW	7.75 kW
			100%	130%	50%

<sup>\*</sup>Standard combination capacity is the system's maximum cooling capacity.

### **COMBINATION EXAMPLE**

### Correct

	Reference	Quantity	Capacity	Minimum combination capacity	Maximum combination capacity
Outdoor	U-6LA1E5	1	15.5 kW*	7.75 kW	20.15 kW
Indoor	S-22KA1E5	1	2.2 kW	-	-
	S-36KA1E5	2	(3.6x2)7.2 kW	-	-
	S-22NA1E5	1	2.2 kW	-	-
	S-28NA1E5	3	(2.8x3)8.4 kW	-	-
Total indoor capacity		7	20.0 kW(129%)		

### Incorrect

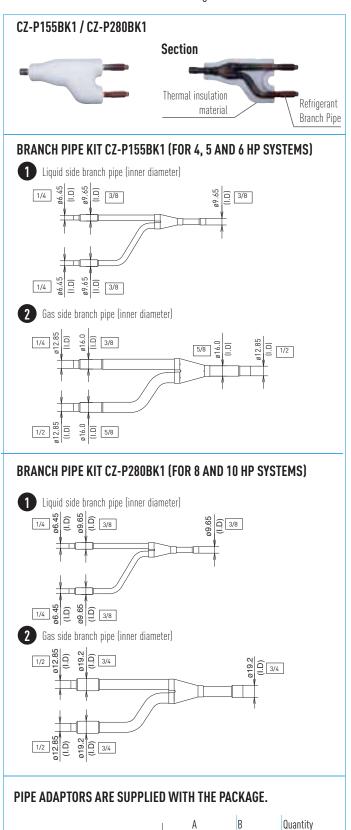
	Reference	Quantity	Capacity	Minimum combination capacity	Maximum combination capacity
Outdoor	U-6LA1E5	1	15.5 kW*	7.75 kW	20.15 kW
Indoor	S-22KA1E5	1	2.2 kW	-	-
	S-36KA1E5	2	(3.6x2)7.2 kW	-	-
	S-45KA1E5	1	4.5 kW	-	-
	S-22NA1E5	1	2.2 kW	-	-
	S-28NA1E5	3	(2.8x3)8.4 kW		
Total indoor capacity		8	24.5 kW(158%)		

<sup>\*</sup>Standard combination capacity is the system's maximum cooling capacity.

### **BRANCH PIPES**

### R410A Branch pipe kits

The use of branch piping combined with expansion valves mounted in VRF indoor unit considerably reduces the imbalance of the refrigerant liquid flow between indoor units despite the smaller piping diameter. The joints for these pipes have been designed to reduce installation time, as they are easy to fit. Finally, the branch pipes optimise refrigerant flow.



*1*019.05

*I*0 12.70

*1*0 19.05

*1*0 19.05

Ø 9.52

a

Pipe Adaptor

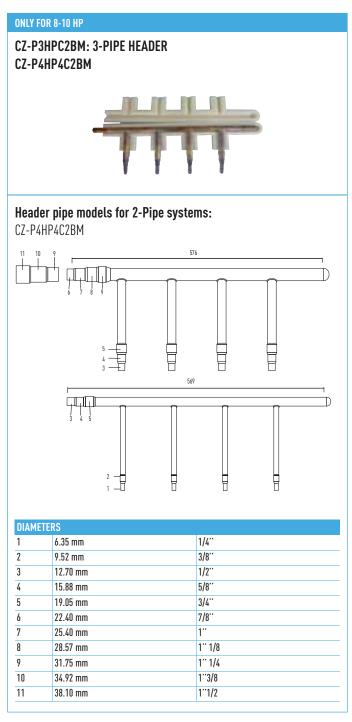
0 15.88

0 15.88

0 25.40

22.2

12.7



# **INDOOR UNITS RANGE**

	0.8 HP	1.0 HP	1.25 HP	1.5 HP	1.75 HP
COOLING CAPACITY	2.2kW / 7,500 Btu/h	2.8kW / 9,600 Btu/h	3.2kW / 10,900 Btu/h	3.6kW / 12,300 Btu/h	4.5kW / 15,400 Btu/h
HEATING CAPACITY	2.5kW / 8,500 Btu/h	3.2kW / 10,900 Btu/h	3.6kW / 12,300 Btu/h	4.2kW / 14,300 Btu/h	5.1kW / 17,400 Btu/h
WALL-MOUNTED TYPE					
	-			-	-
	S-22KA1E5	S-28KA1E5		S-36KA1E5	S-45KA1E5
				-	
	S-22KA1E5S	S-28KA1E5S		S-36KA1E5S	S-45KA1E5S
CASSETTE TYPE					
60x60 CASSETTE TYPE					
	S-22YA1E5	S-28YA1E5		S-36YA1E5	S-45YA1E5
LOW-SILHOUETTE DUCT TYPE (LOW STATIC PRESSURE TYPE)					
	S-22NA1E5	S-28NA1E5	S-32NA1E5	S-36NA1E5	S-45NA1E5
LOW-SILHOUETTE DUCT TYPE (MID STATIC PRESSURE TYPE)					
					S-45MA1E5

# **OUTDOOR UNITS RANGE**

	4.0 HP	5.0 HP	6.0 HP
COOLING CAPACITY	11.2 kW / 38,200 Btu/h	14.0 kW / 47,800 Btu/h	15.5 kW / 52,900 Btu/h
HEATING CAPACITY	12.5 kW / 42,700 Btu/h	16.0 kW / 54,600 Btu/h	18.0 kW / 61,400 Btu/h
OUTDOOR UNIT	U-4LA1E5	U-5LA1E5	U-6LA1E5

2.0 HP	2.5 HP	3.0 HP	3.5 HP	4 HP	4.5 HP
5.6kW / 19,100 Btu/h	6.3kW / 21,500 Btu/h	7.1kW / 24,200 Btu/h	9.0kW / 30,700 Btu/h	10.0kW	12.5kW
6.4kW / 21,800 Btu/h	7.1kW / 24,200 Btu/h	8.0kW / 27,300 Btu/h	10.0kW / 34,100 Btu/h	11.2kW	14.0kW
S-56KA1E5	S-63KA1E5	S-71KA1E5			
J-JUNATES	J-UJKATEJ	J-7 IRAILS			
	S-63UA1E5	S-71UA1E5	S-90UA1E5	S-100UA1E5	S-125UA1E5
S-56YA1E5					
S-56NA1E5					
J-DUNATED					
S-56MA1E5	S-63MA1E5	S-71MA1E5	S-90MA1E5	S-100MA1E5	S-125MA1E5

8.0 HP		10.0 HP
22.4 kW / 76,000 Btu	ı/h	28.0 kW / 95,000 Btu/h
25.0kW		31.5kW
U-8EA1E8		U-10EA1E8

# **FEATURE COMPARISON**

INDOOR UNIT		WALL MOUNTED		60X60 CASSETTE		
FEATURE	Remote controller	Wired remote controller	Infrared remote controller	Wired remote controller	Infrared remote controller	
CONTROL	24 h ON/OFF Real setting timer	×	X	×	X	
FLEXIBILITY	Weekly timer (6-Pattern/Max. 42-Pattern with temp setting)	X		X		
	Group control by single remote controller	×	X	×	X	
	O_U Silent operation mode (3-Level)	X	X	X	X	
	I_U Thermistor switching (I_U or RC)	X		X		
	Ventilation unit control	X		X		
	Digital input / Output contact			with CZ-TA31P	with CZ-TA31P	
COMFORTABILITY	Filter sign	X	X	X	X	
	Hot start control	X	X	X	X	
	Filter	X	X	X	×	
	Anti Bacterial Filter (optional)	CZ-SA16P (10 years)	CZ-SA16P (10 years)	CZ-SA13P (3 years)	CZ-SA13P (3 years)	
FIELD SERVICE	Indoor unit address setting	X	X	X	X	
& MAINTENANCE	Outdoor unit address setting	X	X	X	X	
	Indoor unit test run mode	X	X	X	×	
	Emergency operation		X		×	
	Self diagnosis function	X	X	X	X	
	Self diagnosis records	X		X		

OUTDOOR UNIT		4-6 HP	8-10 HP	
CONTROL	"Cooling Only" model setting (Locked)	X	×	
FLEXIBILITY	Power save mode	X	×	
	O_U Silent operation Mode (3-Level)	×	×	
	Auto restart	×	×	
FIELD SERVICE	Pump down operation	×		
& MAINTENANCE	Cooling operation TESTRUN	×	×	
	Heating operation TESTRUN	X	×	
	Automatic address resetting	X	×	
	Self diagnosis function	<b>✗</b> (LED display)	<b>✗</b> (LED display)	
DIGITAL INPUT/	Cooling / Heating selector (optional)	X	×	
OUTPUT	Demand control input (3 Levels demand control input)	X	X	
	Forced stop input	×	×	

CASSETTE		DUCT (LOW STATIC PRESSURE)  DUCT (MID STATIC PRESSURE)				
			4			
Wired remote controller	Infrared remote controller	Wired remote controller	Infrared remote controller	Wired remote controller	Infrared remote controller	
X	X	X	X	X	X	
×		×		×		
×	×	×	×	×	×	
X	×	X	X	X	X	
X		X		X		
X		X		X		
with CZ-TA31P	with CZ-TA31P	with CZ-TA31P	with CZ-TA31P	with CZ-TA31P	with CZ-TA31P	
X	×	X	×	X	X	
X	×	X	×	X	X	
×	×	X	X			
X	×	×	×	X	X	
×	X	X	X	X	X	
×	×	X	X	X	X	
	X		X		X	

X

X

X

X

X

X

X

X



# 4, 5 AND 6 HP, OUTDOOR UNITS

THE MONOPHASE 4, 5 AND 6 HP OUTDOOR UNITS ARE IDEAL FOR INSTALLATIONS IN RESTAURANTS, OFFICES AND HOMES.

All the models of Panasonic FS Multi VRF series are equipped with DC inverter compressor for the higher energy saving operation. The new design attains the quiet and high-efficient operation and reduces the running cost.









### **TECHNICAL ZOOM**

 REFRIGERANT CHARGE-FREE SYSTEM (NO ADDITIONAL REFRIGERANT IS REQUIRED)

1 These values are at 230V only. For 220V and 240V specifications, please refer to the technical data book.

2 Add 40mm for discharge grille.

- . VERY QUIET OUTDOOR UNITS
- FLEXIBLE INSTALLATION AND EASY SETUP
- . EASY TROUBLE CHECK FUNCTION
- SPACE-SAVING DESIGN

						1
HP				4HP	5HP	6НР
				U-4LA1E5	U-5LA1E5	U-6LA1E5
Power Source			phase	10	10	10
			V	220-230-240	220-230-240	220-230-240
			Hz	50Hz	50Hz	50Hz
Cooling	Capacity		kW (Btu/h)	11.20 (38,200)	14.00 (47,800)	15.50 (52,900)
	Power Input			3,100	4,310	5,150
	EER		W/W (Btu/h)	3.61 (12.32)	3.25 (11.09)	3.01 (10.27)
	Current <sup>1</sup>		Α	14.20	19.80	23.50
	Air Volume		m³/min (ft³/min)	92.0 (3,247)	95.0 (3,353)	98.0 (3,459)
	Sound Pressure Level	Hi/Lo	dB (A)	52/-	53/-	55/-
	Sound Power Level	Hi/Lo	dB	70/-	71/-	73/-
	Operating Range	Min Max.	oC .	-5 - 43	-5 - 43	-5 - 43
Heating	Capacity		kW (Btu/h)	12.50 (42,700)	16.00 (54,600)	18.00 (61,400)
	Power Input		W	3,040	3,970	4,690
	COP		W/W (Btu/h)	4.11 (14.04)	4.03 (13.75)	3.84 (13.09)
	Current <sup>1</sup>		Α	13.90	18.10	21.40
	Air Volume	Air Volume		92.0 (3,247)	95.0 (3,353)	98.0 (3,459)
	Sound Pressure Level	Hi/Lo	dB (A)	54/-	55/-	57/-
	Sound Power Level	Hi/Lo	dB	71/-	72/-	74/-
	Operating Range	Min Max.	oC .	-15 - 24	-15 - 24	-15 - 24
Connectable Indoor Unit	Total Capacity		,	50~130% of Outdoor Unit Capacity		
	Model/Qty		unit	S-22 ~ S-90 /2 - 6	S-22 ~ S-90 /2 - 8	S-22 ~ S-90 /2 - 8
Moisture Removal Volume			L/h (Pt/h)	6.8 (14.3)	9.0 (18.9)	10.3 (21.6)
Dimensions	H x W x D		mm	1,340 x 900 x 350(+40) <sup>2</sup>	1,340 x 900 x 350(+40) <sup>2</sup>	1,340 x 900 x 350(+40) <sup>2</sup>
			inch	52-3/4 x 35-7/16 x 13-25/32(+1-9/16)	52-3/4 x 35-7/16 x 13-25/32(+1-9/16)	52-3/4 x 35-7/16 x 13-25/32(+1-9/16)
Net Weight			Kg (lb)	115 (253)	123 (271)	123 (271)
Piping Connection	Liquid Side		mm (inch)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)
	Gas Side		mm (inch)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)
Maximum Total Piping Leng	jth	Min Max.	m (ft)	20 - 90 (65.6 - 295.2)	20 - 90 (65.6 - 295.2)	20 - 90 (65.6 - 295.2)
Height Difference (Maximus	m)	Max	m (ft)	30 (98.4)	30 (98.4)	30 (98.4)
Max Charge less Length		Max	m (ft)	90 (295.2)	90 (295.2)	90 (295.2)
Refrigerant		1	1	R410A / 7 Kg	R410A / 8 Kg	R410A / 8 Kg

GLOBAL REMARKS

DB: Dry Bulb; WB: Wet Bulb

Rated conditions:	Cooling	Heating
Indoor air temperature	27 °C DB / 19 °C V	
Outdoor air temperature	35 °C DB / 24 °C V	VB 7 °C DB / 6 °C WB

POWER	4HP	5HP	6HP
REFERENCE	U-4LA1E5	U-5LA1E5	U-6LA1E5
Maximum combination of indoor unit	6	8	8
Power rates (kW)	5.6 - 11.2 - 14.6	7.0 - 14.0 - 18.2	7.8 - 15.5 - 20.2
Power supply (V/Hz)	220-240 / 50	220-240 / 50	220-240 / 50



### **U-4LA1E5 // U-5LA1E5 // U-6LA1E5**

### Control Flexibility

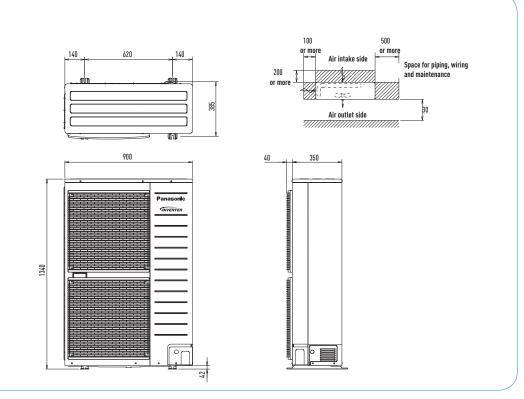
- Cooling Only Model Setting (by jumper line cut)Power Save Mode
- Outdoor Unit Silent Operation Mode
- Auto Restart

### Field Service & Maintenance

- Pump Down Operation
- Cooling Operation TESTRUNHeating Operation TESTRUN
- Automatic Address Resetting
- Self Diagnosis Function (LED display)

### Digital Input/Output

- Cooling/Heating SelectorDemand Control Input (LV1/LV2/LV3)
- Forced STOP Input





# 8 AND 10 HP, OUTDOOR UNITS

NEW TRIPHASE 8 AND 10 HP OUTDOOR UNITS. EASY TO INSTALL, HIGH PERFORMANCES! All the models of Panasonic FS Multi VRF series are equipped with DC inverter compressor for the higher energy saving operation. The new design attains the quiet and high-efficient operation and reduces the running cost.









### **TECHNICAL ZOOM**

- . VERY QUIET OUTDOOR UNITS
- · FLEXIBLE INSTALLATION AND EASY SETUP
- . EASY TROUBLE CHECK FUNCTION
- SPACE-SAVING DESIGN

HP				8HP	10HP
MODEL NUMBER				U-8EA1E8	U-10EA1E8
Power Source			phase	30	3Ø
			V	380-400-415	380-400-415
			Hz	50Hz	50Hz
Cooling	Capacity		kW (Btu/h)	22.40 (76,500)	28.00 (95,600)
	Power Input		W	6,050	8,310
	EER		W/W (Btu/h)	3.70 (12.64)	3.37
	Current <sup>1</sup>		Α	9.40	12.80
	Air Volume		m³/min (ft³/min)	150 (5,297)	154 (5,438)
	Sound Pressure Level	Hi/Lo	dB (A)	58/-	59/-
	Sound Power Level	Hi/Lo	dB	78/-	79/-
	Operating Range	Min Max.	oC.	-5 - 43	-5 - 43
Heating	Capacity		kW (Btu/h)	25.00 (85,300)	31.50 (107,500)
	Power Input	Power Input		6,100	7,860
	COP	COP		4.10 (13.98)	4.01
	Current <sup>1</sup>		Α	9.40	12.10
	Air Volume		m³/min (ft³/min)	150 (5,297)	154 (5,438)
	Sound Pressure Level	Hi/Lo	dB (A)	59/-	60/-
	Sound Power Level	Hi/Lo	dB	79/-	80/-
	Operating Range	Min Max.	oC.	-20 - 24	-20 - 24
Connectable Indoor Unit	Total Capacity			50~130% of Outdoor Unit Capacity	50~130% of Outdoor Unit Capacity
	Model/Qty		unit	S-22 ~ S-125 /2 - 13	S-22 ~ S-125 /2 - 16
Dimensions	H x W x D		mm	1,745 x 920 x 760	1,745 x 920 x 760
			inch	68-11/16 x 36-7/32 x 29-29/32	68-11/16 x 36-7/32 x 29-29/32
Net Weight			Kg (lb)	195 (430)	210 (463)
Piping Connection	Liquid Side		mm (inch)	9.52 (3/8)	9.52 (3/8)
	Gas Side		mm (inch)	19.05 (4/3)	22.22 (7/8)
Maximum Total Piping Ler		Min Max.	m (ft)	15 - 300 (49.2 - 984.2)	15 - 300 (49.2 - 984.2)
Height Difference (Maxim	um)	Max	m (ft)	50 (164.0)	50 (164.0)
Refrigerant				R410A / 8.5 Kg	R410A / 11.0 Kg

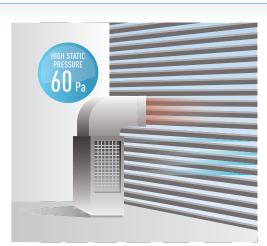
 $1\,\text{These}$  values are at 400 V only. For 380 V and 415 V specifications, please refer to the technical data book. 2 Add 40 mm for discharge grille.

| GLOBAL REMARKS | Rated conditions: | Cooling | Heating | Indoor air temperature | 27 °C DB / 19 °C WB | 20 °C DB | 20 °

DB: Dry Bulb; WB: Wet Bulb

POWER	8HP	10HP
REFERENCE	U-8EA1E8	U-10EA1E8
Maximum combination of indoor unit	13	16
Power rates (kW)	11.2 - 22.4 - 29.1	14.0 - 28.0 - 36.4
Power supply (V/Hz)	380 - 415 / 50	380 - 415 / 50





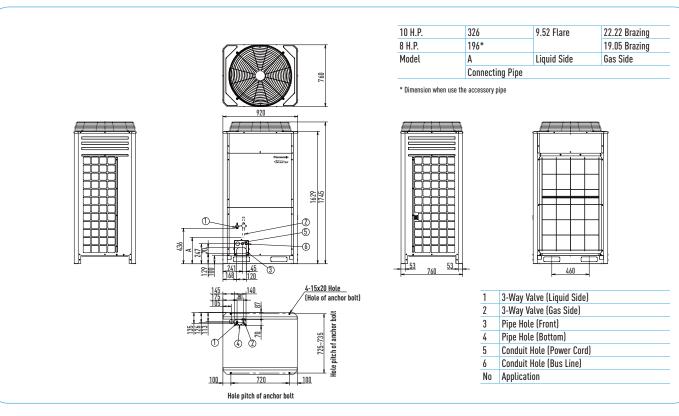
### U-8EA1E8 // U-10EA1E8

### Control Flexibility

- . Cooling/Heating Selector
- Demand Control Input (LV1/LV2/LV3)
- Forced STOP Input
- Cooling Only Model Setting (by jumper line cut)
- Power Save Mode
- Outdoor Unit Silent Operation Mode
- Auto Restart

### Field Service & Maintenance

- . Cooling Operation TESTRUN
- . Heating Operation TESTRUN
- . Automatic Adress Resetting
- . Self Diagnosis Function (LED display)





# WALL-MOUNTED TYPE // SILVER COLOUR

FS MULTI VRF WALL-MOUNTED TYPE AIR CONDITIONERS HAVE BEEN DESIGNED IN A BEAUTIFUL AND STYLISH WAY. The fresh new horizontal curved form characterizes the air conditioner's new design. The gentle curve at the centre stylishly conceals the complex high-performance mechanisms inside, while thin ends emphasize the air conditioner's slim style. This allows it to blend into the wall in an attractive manner, and to add harmony to virtually any room interior.









### **TECHNICAL ZOOM**

- FLEXIBLE INSTALLATION
- EFFECTIVE LONG-LIFE FILTER
- SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY

				0.8HP	1.0HP	1.5HP	1.75HP
INDOOR				S-22KA1E5S	S-28KA1E5S	S-36KA1E5S	S-45KA1E5S
Power Source	Power Source pha		phase	10	10	10	10
			V	220-230-240	220-230-240	220-230-240	220-230-240
			Hz	50 Hz	50 Hz	50 Hz	50 Hz
Cooling	Capacity		kW (Btu/h)	2.20 (7,500)	2.80 (9,600)	3.60 (12,300)	4.50 (15,400)
	Power Input		W	25	27	30	35
	Current		Α	0.25	0.30	0.35	0.40
	Air Volume	Hi	m³/min (ft³/min)	9.5 (335)	9.7 (342)	10.9 (385)	11.3 (399)
	Sound Pressure Level	Hi/Lo	dB (A)	38/33	39/33	42/34	43/35
	Sound Power Level	Hi/Lo	dB	53/48	54/48	57/49	58/50
Heating	Capacity kW (Btu		kW (Btu/h)	2.50 (8,500)	3.20 (10,900)	4.20 (14,300)	5.10 (17,400)
	Power Input		W	25	27	30	35
	Current		Α	0.25	0.30	0.35	0.40
	Air Volume	Hi	m³/min (ft³/min)	10.3 (364)	10.9 (385)	11.6 (409)	12.1 (427)
	Sound Pressure Level	Hi/Lo	dB (A)	38/33	39/33	42/34	43/35
	Sound Power Level	Hi/Lo	dB	53/48	54/48	57/49	58/50
Moisture Removal Volume			L/h (Pt/h)	1.3 (2.7)	1.6 (3.4)	2.1 (4.4)	2.5 (5.3)
Dimensions	H x W x D		mm	290 x 870 x 204			
			inch	11-7/16 x 34-9/32 x 8-1/16			
Net Weight			Kg (lb)	9 (20)	9 (20)	9 (20)	9 (20)
Piping Connection	Liquid Side		mm (inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas Side		mm (inch)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 12.7 (1/2)

Before installing in quiet room such as a bedroom, please consult with an authorized distributor.

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	20 °C DB
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

DB: Dry Bulb; WB: Wet Bulb

### **FLEXIBLE INSTALLATION**

Thanks to its compact and stylish design, Panasonic's wall mounted air conditioner can be installed in very limited spaces, without detracting from your room's interior design.

### **EFFECTIVE LONG-LIFE FILTER**

This long-life filter can trap dust mites, tobacco smoke and other common pollutants effectively. When it catches certain airborne particles, the clean-indicator will remind you to clean. You can remove the filter quickly with a simple one step operation, after cleaning, it can be replaced back.



### OPTIONAL ACCESSORIES

Anti Bacterial Filter - 10 - year filter life

CZ-SA16P Replacement: every 10 years

# SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY

When the air conditioner has trouble the indicator and 7-seg code displays on the panel making it easier for service technicians to diagnose problems.





### S-22KA1E5S // S-28KA1E5S // S-36KA1E5S // S-45KA1E5S

### **Control Flexibility**

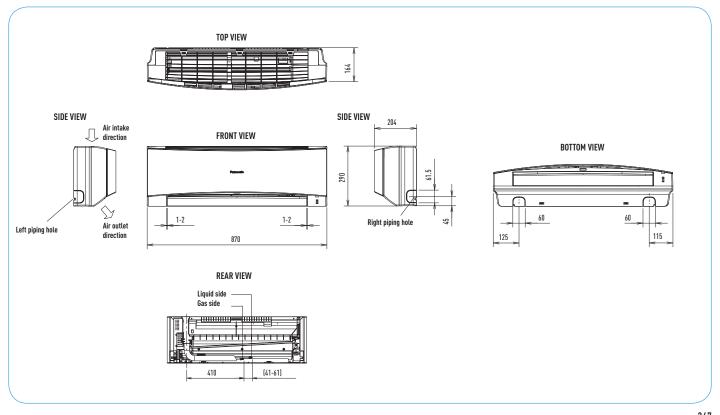
- 24-Hours ON/OFF Real Setting Timer
- Weekly Timer (Wired Only)
- Group Control by Single Remote Controller
- Outdoor Unit Silent Operation Mode
- · Indoor Unit Thermistor Switching (Wired Only)
- Ventilation Unit Control (Wired Only)

### Comfortability

- · Filter Sign
- · Hot Start Control
- Filter
- · Anti Bacterial Filter (optional/10-year lifetime)

### Field Service & Maintenance

- · Indoor Unit Address Setting
- · Outdoor Unit Address Setting
- · Automatic Address Resetting for Group Control (Wired Only)
- Indoor Unit Test Run Mode
- Emergency Operation (Infrared Only)
- Self Diagnosis Function
- · Self Diagnosis Records (Wired Only)
- \* Wired: Wired Remote Controller / Infrared: Infrared Remote Controller.





## WALL-MOUNTED TYPE // WHITE COLOUR // WHITE COLOUR WIDE TYPE

FS MULTI VRF WALL-MOUNTED TYPE AIR CONDITIONERS HAVE BEEN DESIGNED IN A BEAUTIFUL AND STYLISH WAY. The fresh new horizontal curved form characterizes the air conditioner's new design. The gentle curve at the centre stylishly conceals the complex high-performance mechanisms inside, while thin ends emphasize the air conditioner's slim style. This allows it to blend into the wall in an attractive manner, and to add harmony to virtually any room interior.









### **TECHNICAL ZOOM**

- FLEXIBLE INSTALLATION
- EFFECTIVE LONG-LIFE FILTER
- SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY

				0.8HP	1.0HP	1.5HP	1.75HP	2.0HP	2.5HP	3.0HP
INDOOR				S-22KA1E5	S-28KA1E5	S-36KA1E5	S-45KA1E5	S-56KA1E5	S-63KA1E5	S-71KA1E5
Power Source			phase	10	10	10	10	10	10	10
			V	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240
			Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Cooling	Capacity		kW (Btu/h)	2.20 (7,500)	2.80 (9,600)	3.60 (12,300)	4.50 (15,400)	5.60 (19,100)	6.30 (21,500)	7.10 (24,200)
	Power Input		W	25	27	30	35	45	50	55
	Current		A	0.25	0.30	0.35	0.40	0.40	0.45	0.50
	Air Volume	Hi	m³/min (ft³/min)	9.5 (335)	9.7 (342)	10.9 (385)	11.3 (399)	15.3 (540)	16.0 (565)	17.4 (614)
	Sound Pressure Level	Hi/Lo	dB (A)	38/33	39/33	42/34	43/35	44/38	46/39	48/40
	Sound Power Level	Hi/Lo	dB	53/48	54/48	57/49	58/50	59/53	61/54	63/55
Heating	Capacity		kW (Btu/h)	2.50 (8,500)	3.20 (10,900)	4.20 (14,300)	5.10 (17,400)	6.40 (21,800)	7.10 (24,200)	8.00 (27,300)
	Power Input		W	25	27	30	35	45	50	55
	Current		A	0.25	0.30	0.35	0.40	0.40	0.45	0.50
	Air Volume	Hi	m³/min (ft³/min)	10.3 (364)	10.9 (385)	11.6 (409)	12.1 (427)	16.7 (590)	17.1 (604)	18.3 (648)
	Sound Pressure Level	Hi/Lo	dB (A)	38/33	39/33	42/34	43/35	44/38	46/39	48/40
	Sound Power Level	Hi/Lo	dB	53/48	54/48	57/49	58/50	59/53	61/54	63/55
Moisture Removal Volume			L/h (Pt/h)	1.3 (2.7)	1.6 (3.4)	2.1 (4.4)	2.5 (5.3)	3.2 (6.7)	3.6 (7.6)	4.2 (8.8)
Dimensions	H x W x D		mm	290 x 870 x 204	290 x 1,070 x 235	290 x 1,070 x 235	290 x 1,070 x 235			
			inch	11-7/16 x 34-9/32 x 8-1/16	11-7/16 x 42-5/32 x 9-9/32	11-7/16 x 42-5/32 x 9-9/32	11-7/16 x 42-5/32 x 9-9/32			
Net Weight			Kg (lb)	9 (20)	9 (20)	9 (20)	9 (20)	11 (24)	12 (26)	12 (26)
Piping Connection	Liquid Side		mm (inch)	Ø 6.35 (1/4)	Ø 9.52 (3/8)					
	Gas Side		mm (inch)	Ø 12.7 (1/2)	Ø 15.88 (5/8)					

Before installing in quiet room such as a bedroom, please consult with an authorized distributor.

GLOBAL REMARKS Rated conditions: Cooling Heating Indoor air temperature 27 °C 08 179 °C WB 20 °C 08 °C 09 179 °C WB 20 °C 08 °C 09 179 °C WB 20 °C 08 °C 09 °C 09

DB: Dry Bulb; WB: Wet Bulb

### **FLEXIBLE INSTALLATION**

Thanks to its compact and stylish design, Panasonic's wall mounted air conditioner can be installed in very limited spaces, without detracting from your room's interior design.

### **EFFECTIVE LONG-LIFE FILTER**

This long-life filter can trap dust mites, tobacco smoke and other common pollutants effectively. When it catches certain airborne particles, the clean-indicator will remind you to clean. You can remove the filter quickly with a simple one step operation, after cleaning, it can be replaced back.



### **OPTIONAL ACCESSORIES**

Anti Bacterial Filter - 10 - year filter life

CZ-SA16P Replacement: every 10 years

# SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY

When the air conditioner has trouble the indicator and 7-seg code displays on the panel making it easier for service technicians to diagnose problems.





WHITE COLOUR -WIDE TYPE-



WHITE COLOUR

# S-22KA1E5 // S-28KA1E5 // S-36KA1E5 // S-45KA1E5 // S-56KA1E5 // S-63KA1E5 // S-71KA1E5

### **Control Flexibility**

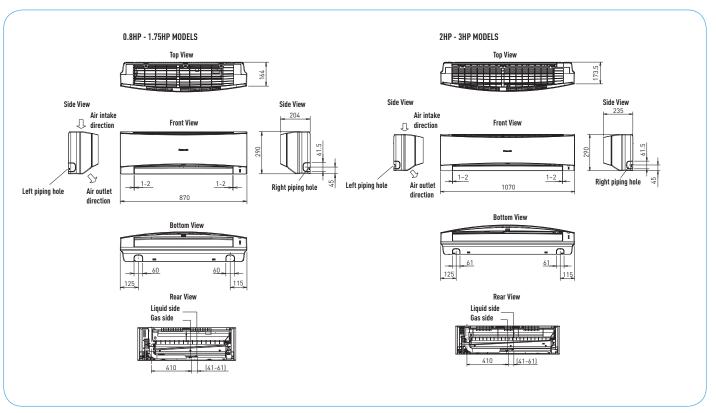
- 24-Hours ON/OFF Real Setting Timer
- · Weekly Timer (Wired Only)
- Group Control by Single Remote Controller
- · Outdoor Unit Silent Operation Mode
- Indoor Unit Thermistor Switching (Wired Only)
- Ventilation Unit Control (Wired Only)

### Comfortability

- Filter Sign
- Hot Start Control
- Filter
- Anti Bacterial Filter (optional/10-year lifetime)

### Field Service & Maintenance

- · Indoor Unit Address Setting
- · Outdoor Unit Address Setting
- Automatic Address Resetting for Group Control (Wired Only)
- · Indoor Unit Test Run Mode
- Emergency Operation (Infrared Only)
- Self Diagnosis Function
- Self Diagnosis Records (Wired Only)
- \* Wired: Wired Remote Controller / Infrared: Infrared Remote Controller.





# CASSETTE TYPE (60x60)

4-WAY AIRFLOW COMFORT WITH ELEGANT, COMPACT PANEL









### **TECHNICAL ZOOM**

- COMPACT DESIGN ALLOWS SPACE SAVING!
- SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY
- ONLY 260 mm THIN
- 750 mm DRAIN-UP MECHANISM
- ANTI-MOULD LONG-LIFE AIR FILTER

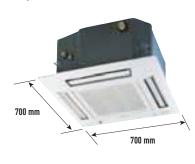
				0.8HP	1.0HP	1.5HP	1.75HP	2.0HP
INDOOR				S-22YA1E5	S-28YA1E5	S-36YA1E5	S-45YA1E5	S-56YA1E5
Panel				CZ-KPY1	CZ-KPY1	CZ-KPY1	CZ-KPY1	CZ-KPY1
Power Source			phase	10	10	10	10	10
			V	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240
			Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Cooling	Capacity		kW (Btu/h)	2.20 (7,500)	2.80 (9,600)	3.60 (12,300)	4.50 (15,400)	5.60 (19,100)
	Power Input		W	35	35	40	40	45
	Current		Α	0.30	0.30	0.35	0.35	0.35
	Air Volume	Hi	m³/min (ft³/min)	8.3 (293)	8.6 (304)	9.0 (318)	9.3 (328)	9.9 (349)
	Sound Pressure Level	Hi/Lo	dB (A)	36/33	37/33	38/34	39/35	40/36
	Sound Power Level	Hi/Lo	dB	51/48	52/48	53/49	54/50	55/51
Heating	Capacity		kW (Btu/h)	2.50 (8,500)	3.20 (10,900)	4.20 (14,300)	5.10 (17,400)	6.40 (21,800)
	Power Input		W	35	35	40	40	45
	Current		Α	0.30	0.30	0.35	0.35	0.35
	Air Volume	Hi	m³/min (ft³/min)	9.3 (328)	9.6 (339)	9.9 (349)	10.3 (364)	10.6 (374)
	Sound Pressure Level	Hi/Lo	dB (A)	36/33	37/33	38/34	39/35	40/36
	Sound Power Level	Hi/Lo	dB	51/48	52/48	53/49	54/50	55/51
Moisture Removal Volume			L/h (Pt/h)	1.3 (2.7)	1.6 (3.4)	2.1 (4.4)	2.5 (5.3)	3.2 (6.7)
Dimensions (H x W x D)	Indoor unit		mm	260 x 575 x 575	260 x 575 x 575			
			inch	10-1/4 x 22-21/32 x 22-21/32	101/4 x 22-21/32 x 22-21/32			
	Panel		mm	51 x 700 x 700	51 x 700 x 700			
Net Weight	'		Kg (lb)	18 (40)	18 (40)	18 (40)	18 (40)	18 (40)
Piping Connection	Liquid Side		mm (inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas Side		mm (inch)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 12.7 (1/2)

GLOBAL REMARKS

DB: Dry Bulb; WB: Wet Bulb

# COMPACT DESIGN ALLOWS SPACE SAVING!

The panel is a compact 70x70 cm so it can be installed even in a small room where space is limited. The ceiling space required is 65x65 cm.

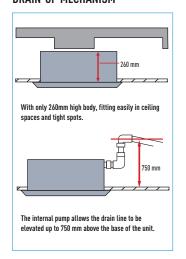


# SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY

When the air conditioner has trouble the indicator and 7-seg code displays on the panel making it easier for service technicians to diagnose problems.



# ONLY 260 mm THIN AND 750 mm DRAIN-UP MECHANISM



### ANTI-MOULD LONG-LIFE AIR FILTER





\* For optimum comfort, we recommend cleaning the air filter every 1.5 months.

### OPTIONAL ACCESSORIES



Anti Bacterial Filter cz-sa13P Replacement: every 3 years



### S-22YA1E5 // S-28YA1E5 // S-36YA1E5 // S-45YA1E5 // S-56YA1E5

- Control Flexibility

  · 24-Hours ON/OFF Real Setting Timer
- Weekly Timer (Wired Only)
- Group Control by Single Remote Controller
- Outdoor Unit Silent Operation Mode
- Indoor Unit Thermistor Switching (Wired Only)
- Ventilation Unit Control (Wired Only)
- Digital Input/Output Contact with CZ-TA31P (Optional)

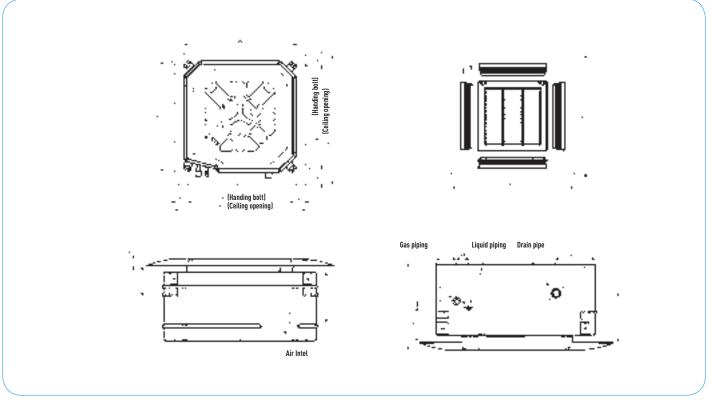
### Comfortability

- Filter Sign
- Mildew-Proofing Drain pan
- Hot Start Control
- Filter
- Anti Bacterial Filter (optional/3-year lifetime)

### Field Service & Maintenance

- · Indoor Unit Address Setting
- · Outdoor Unit Address Setting
- Automatic Address Resetting for Group Control (Wired Only)
- Indoor Unit Test Run Mode
- Emergency Operation (Infrared Only)
- Self Diagnosis Function
- Self Diagnosis Records (Wired Only)

\* Wired: Wired Remote Controller / Infrared: Infrared Remote Controller.





# CASSETTE TYPE (90x90)

4-WAY AIRFLOW, POWERFUL, AND COMPACT (ONLY 246 cm HIGH)









### **TECHNICAL ZOOM**

- SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY
- ONLY 246 mm THIN
- 750 mm DRAIN-UP MECHANISM
- ELEGANT PANEL, 4-DIRECTION BLOW
- THREE AIRFLOW PATTERNS FOR EXTRA COMFORT
- FLEXIBLE PIPING LAYOUT
- INNOVATIVE DESIGN CREATES EXTRA QUIET OPERATION

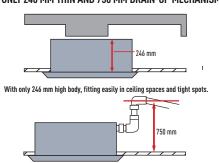
				2.5HP	3.0HP	3.5HP	4.0HP	4.5HP
INDOOR				S-63UA1E5	S-71UA1E5	S-90UA1E5	S-100UA1E5	S-125UA1E5
Panel				CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P	CZ-BT03P
Power Source			phase	10	10	10	10	10
			V	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240
			Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Cooling	Capacity		kW (Btu/h)	6.30 (21,500)	7.10 (24,200)	9.00 (30,700)	10.00 (34,100)	12.50 (42,700)
	Power Input 1		W	110	115	115	205	205
	Current <sup>1</sup>		Α	0.50	0.55	0.55	1.05	1.05
	Air Volume	Hi	m³/min (ft³/min)	21 (741)	22 (777)	22 (777)	30 (1,059)	30 (1,059)
	Sound Pressure Level 1	Hi/Lo	dB (A)	41/35	42/36	42/36	48/43	48/43
	Sound Power Level <sup>1</sup>	Hi/Lo	dB	56/50	57/51	57/51	63/58	63/58
Heating	Capacity		kW (Btu/h)	7.10 (24,200)	8.00 (27,300)	10.00 (34,100)	11.20 (38,200)	14.00 (47,800)
	Power Input 1		W	110	115	115	205	205
	Current 1		A	0.50	0.55	0.55	1.05	1.05
	Air Volume	Hi	m³/min (ft³/min)	21 (741)	22 (777)	22 (777)	30 (1,059)	30 (1,059)
	Sound Pressure Level 1	Hi/Lo	dB (A)	41/35	42/36	42/36	48/43	48/43
	Sound Power Level 1	Hi/Lo	dB	56/50	57/51	57/51	63/58	63/58
Moisture Removal Volume	1		L/h (Pt/h)	3.6 (7.6)	4.2 (8.8)	5.4 (11.3)	6.0 (12.6)	7.9 (16.6)
Dimensions (H x W x D)	Indoor unit		mm	246 x 840 x 840	246 x 840 x 840	246 x 840 x 840	288 x 840 x 840	288 x 840 x 840
			inch	9-11/16 x 33-1/16 x 33/1/16	9-11/16 x 33-1/16 x 33/1/16	9-11/16 x 33-1/16 x 33/1/16	11-11/32x33-1/16x33-1/16	11-11/32x33-1/16x33-1/16
	Panel		mm	45x950x950	45x950x950	45x950x950		
Net Weight			Kg (lb)	26 (57)	26 (57)	26 (57)	30 (66)	30 (66)
Piping Connection	Liquid Side		mm (inch)	Ø 6.35 (1/4)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas Side		mm (inch)	Ø 12.7 (1/2)	Ø 15.88 (5/8)	Ø 15.88 (5/8)	Ø 15.88 (5/8)	Ø 15.88 (5/8)

GLOBAL REMARKS Rated conditions: Cooling Heating Indoor air temperature 27 °C DB / 19 °C WB 20 °C DB / 10 °C WB 20 °C DB / 10

DB: Dry Bulb; WB: Wet Bulb

 $1\ These\ values\ are\ at\ 230V\ only.\ For\ 220V\ and\ 240V\ specifications,\ please\ refer\ to\ the\ technical\ data\ book.$ 

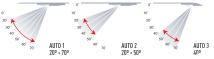
### ONLY 246 MM THIN AND 750 MM DRAIN-UP MECHANISM



The internal pump allows the drain line to be elevated up to 750 mm above the base of the unit.

### THREE AIRFLOW PATTERNS FOR EXTRA COMFORT

· Multi-Comfort Air Control



### **ELEGANT PANEL, 4-DIRECTION BLOW**

The thin and delicate body can be totally hidden in the ceiling, only leaving its elegant panel outside to decorate your room. The 4-direction blow can deliver airflows evenly throughout the room, eliminating the temperature difference.



# SELF DIAGNOSIS FUNCTION WITH 7-SEG CODE DISPLAY

When the air conditioner has trouble the indicator and 7-seg code displays on the panel making it easier for service technicians to diagnose problems.



### **FLEXIBLE PIPING LAYOUT**

Drainpipe and refrigerant pipe distributed on the different sides of the unit, giving more flexibility of piping layout. Its excellent inside heat-protection material effectively avoids frost and water-leakage, and reduces the damage possibility in the transportation.



### INNOVATIVE DESIGN CREATES EXTRA QUIET OPERATION



More Denoising Material Adopting denoising material inside, improving the seal quality to isolate and reduce the operation noises.



# S-63UA1E5 // S-71UA1E5 // S-90UA1E5 // S-100UA1E5 // S-125UA1E5

#### **Control Flexibility**

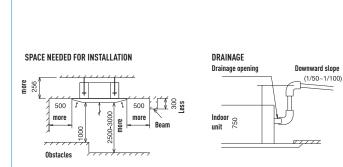
- 24-Hours ON/OFF Real Setting Timer
- Weekly Timer (Wired Only)
- Group Control by Single Remote Controller
- · Outdoor Unit Silent Operation Mode
- Indoor Unit Thermistor Switching (Wired Only)
- Ventilation Unit Control (Wired Only)
- Digital Input/Output Contact with CZ-TA31P (Optional)

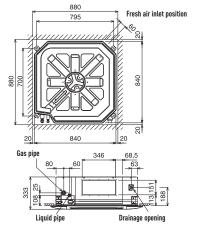
#### Comfortability

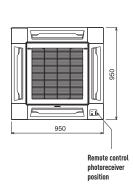
- Filter Sign
- Mildew-Proofing Drain pan
- Hot Start Control
- Filter

#### Field Service & Maintenance

- · Indoor Unit Address Setting
- Outdoor Unit Address Setting
- Automatic Address Resetting for Group Control (Wired Only)
- · Indoor Unit Test Run Mode
- Emergency Operation (Infrared Only)
- · Self Diagnosis Function
- Self Diagnosis Records (Wired Only)
- \* Wired: Wired Remote Controller / Infrared: Infrared Remote Controller.









# LOW-SILHOUETTE // DUCT TYPE // LOW STATIC PRESSURE

OFFERS MAXIMUM INSTALLATION FLEXIBILITY WITH SLIM, LIGHTWEIGHT DESIGN With only 200 mm high! Ideal for hotels and offices.









#### **TECHNICAL ZOOM**

- ULTRA-THIN, DUCT-TYPE INDOOR UNIT
- ULTRA-THIN 20 cm DESIGN: FITS IN EVEN WHERE CEILING HEIGHT IS LIMITED
- BUILT-IN SELECTABLE STATIC PRESSURE SETTINGS
- THOROUGHLY CONSIDERED CONNECTING FLANGE DESIGN

				0.8HP	1.0HP	1.25HP	1.5HP	1.75HP	2.0HP
INDOOR				S-22NA1E5	S-28NA1E5	S-32NA1E5	S-36NA1E5	S-45NA1E5	S-56NA1E5
Power Source			phase	10	10	10	10	10	10
			V	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240
			Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Cooling	Capacity		kW (Btu/h)	2.20 (7,500)	2.80 (9,600)	3.20 (10,900)	3.60 (12,300)	4.50 (15,400)	5.60 (19,100)
	Power Input 1		W	75	80	85	85	95	105
	Current 1		Α	0.40	0.45	0.45	0.45	0.50	0.50
	Air Volume	Hi	m³/min (ft³/min)	10 (353)	11 (388)	11 (388)	11 (388)	12 (424)	12.5 (441)
	Sound Pressure Level <sup>1</sup>	Hi/Lo	dB (A)	36/30	37/30	38/31	38/31	39/32	39/32
	Sound Power Level <sup>1</sup> Hi/Lo		dB	51/45	52/45	53/46	53/46	54/47	54/47
leating	Capacity		kW(Btu/h)	2.50 (8,500)	3.20 (10,900)	3.60 (12,300)	4.20 (14,300)	5.10 (17,400)	6.40 (21,800)
	Power Input <sup>1</sup>		W	75	80	85	85	95	105
	Current 1		Α	0.40	0.45	0.45	0.45	0.50	0.50
	Air Volume	Hi	m³/min (ft³/min)	10 (353)	11 (388)	11 (388)	11 (388)	12 (424)	12.5 (441)
	Sound Pressure Level <sup>1</sup>	Hi/Lo	dB (A)	36/30	37/30	38/31	38/31	39/32	39/32
	Sound Power Level 1	Hi/Lo	dB	51/45	52/45	53/46	53/46	54/47	54/47
Moisture Removal Volume			L/h (Pt/h)	1.3 (2.7)	1.6 (3.4)	1.8 (3.8)	2.1 (4.4)	2.5 (5.3)	3.2 (6.7)
External Static Pressure <sup>2</sup>			Pa (mmAq)	0/29 (0/3)	0/29 (0/3)	0/29 (0/3)	0/29 (0/3)	0/29 (0/3)	0/29 (0/3)
Dimensions	H x W x D		mm	200 x 900 x 550					
			inch	7-7/8 x 35-7/16 x 21-21/32					
Net Weight			Kg(lb)	21 (46)	21 (46)	22 (48)	22 (48)	22 (48)	22 (48)
Piping Connection	Liquid Side		mm (inch)	Ø 6.35 (1/4)					
	Gas Side		mm (inch)	12.7 (1/2)	12.7 (1/2)	12.7 (1/2)	12.7 (1/2)	12.7 (1/2)	12.7 (1/2)

GLOBAL REMARKS Rated conditions: Cooling Heating Indoor air temperature 27 °C DB / 19 °C WB 20 °C DB

DB: Dry Bulb; WB: Wet Bulb

# ULTRA-THIN, DUCT-TYPE INDOOR UNIT

The slim design of this ultra-thin, duct-type indoor unit is especially suited for rooms with partially or minimally dropped ceilings. Its space-saving design contributes to a brighter and more spacious living environment.

#### ULTRA-THIN 20 CM DESIGN: FITS IN EVEN WHERE CEILING HEIGHT IS LIMITED

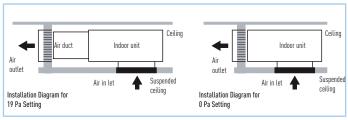
Even where ceiling height is limited, the indoor units effectively fit in and provide a more spacious feel in most suspended ceiling situations. Occupying only 20 cm of vertical space and projecting only 55 cm, the unit can be installed in semi-dropped ceiling situations, thus helping to create spacious and comfortable surroundings.



#### **BUILT-IN SELECTABLE STATIC PRESSURE SETTINGS**

Our ultra thin duct-type indoor units have two static pressure settings: 0 Pa and 29 Pa. In situations without ducting, the 0 Pa\* static pressure setting is applicable. Where ducting is present, set the unit to 29 Pa\* static pressure.

\*0 Pa is the default setting: 29 Pa must be selected if required.



#### THOROUGHLY CONSIDERED CONNECTING FLANGE DESIGN

The addition of air duct connecting flanges on the indoor unit enables easy connection to short air ducts. Thus flange design both greatly simplifies installation and makes it easy to effectively seal the air duct.

<sup>1</sup> These values are at 230 V only. For 220 V and 240 V specifications, please refer to the technical data book. 2 The external static pressure is set to Opa at factory default setting.



# S-22NA1E5 // S-28NA1E5 // S-32NA1E5 // S-36NA1E5 // S-45NA1E5 // S-56NA1E5

#### **Control Flexibility**

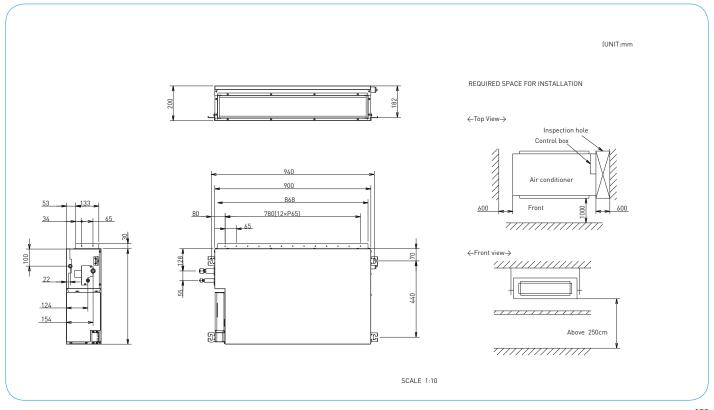
- 24-Hours ON/OFF Real Setting Timer
- Weekly Timer (Wired Only)
- Group Control by Single Remote Controller
- Outdoor Unit Silent Operation Mode
- Indoor Unit Thermistor Switching (Wired Only)
- Ventilation Unit Control (Wired Only)
- Digital Input/Output Contact with CZ-TA31P (Optional)

#### Comfortability

- Filter Sign
- Hot Start Control

#### Field Service & Maintenance

- · Indoor Unit Address Setting
- Outdoor Unit Address Setting
- Automatic Address Resetting for Group Control (Wired Only)
- Indoor Unit Test Run Mode
- Emergency Operation (Infrared Only)
- · Self Diagnosis Function
- Self Diagnosis Records (Wired Only)
- \* Wired: Wired Remote Controller / Infrared: Infrared Remote Controller.





# LOW-SILHOUETTE // DUCT TYPE // MID STATIC PRESSURE

DUCT TYPE WITH A MAXIMUM OF 7 mmAq OF STATIC PRESSURE WITH A HIGH OF 250 mm. COMPACT AND POWERFUL!









#### **TECHNICAL ZOOM**

- COMPACT, LIGHTWEIGHT DESIGN FOR EASY INSTALLATION
- 3-WAY REMOVABLE AIR FILTER
- VERSATILE AIR INLET AND DRAIN INSTALLATION
- STATIC PRESSURE SELECTION

				4 7F HD	0.0110	O E UD	0.0110	0 F HD	/ OUD	/ FUD		
				1.75 HP		2.5 HP	3.0 HP		4.0HP	4.5HP		
INDOOR				S-45MA1E5		S-63MA1E5	S-71MA1E5			S-125MA1E5		
Power Source			phase	10	10	10	10	10	10	10		
			V	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240	220-230-240		
			Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz		
Cooling	Capacity		kW (Btu/h)	4.50 (15,400)	5.60 (19,100)	6.30 (21,500)	7.10 (24,200)	9.00 (30,700)	10.00 (34,100)	12.50 (42,700)		
	Power Input 1		W	135	135	135	135	175	300	300		
	Current 1		Α	0.60	0.60	0.60	0.60	0.80	1.35	1.35		
	Air Volume	Hi	m³/min (ft³/min)	15 (530)	15 (530)	17 (600)	17 (600)	19 (671)	34 (1,201)	34 (1,201)		
	Sound Pressure Level 1	1 Hi/Lo	dB (A)	42/35	42/35	43/36	43/36	44/37	47/43	47/43		
	Sound Power Level 1	Hi/Lo	dB	57/50	57/50	58/51	58/51	59/52	62/58	62/58		
Heating			kW(Btu/h)	5.10 (17,400)	6.40 (21,800)	7.10 (24,200)	8.00 (27,300)	10.00 (34,100)	11.20 (38,200)	14.00 (47,800)		
			Power Input <sup>1</sup> W		W	135	135	135	135	175	300	300
			Α	0.60	0.60	0.60	0.60	0.80	1.35	1.35		
			m³/min (ft³/min)	15 (530)	15 (530)	17 (600)	17 (600)	19 (671)	34 (1,201)	34 (1,201)		
Sound Pressure Level <sup>1</sup> Hi/Lo		dB (A)	42/35	42/35	43/36	43/36	44/37	47/43	47/43			
		Hi/Lo	dB	57/50	57/50	58/51	58/51	59/52	62/58	62/58		
Moisture Removal \	/olume		L/h (Pt/h)	2.5 (5.3)	3.2 (6.7)	3.6 (7.6)	4.2 (8.8)	5.4 (11.3)	6.0 (12.6)	7.9 (16.6)		
External Static Pres	ssure <sup>2</sup>		Pa (mmAq)	49/69 (5/7)	49/69 (5/7)	49/69 (5/7)	49/69 (5/7)	49/69 (5/7)	49/69 (5/7)	49/69 (5/7)		
Dimensions	H x W x D		mm	250x780(+100)3x650	250x780(+100)3x650	250x1,000(+100)3x650	250x1,000(+100)3x650	250x1,000(+100)3x650	250x1,200(+100)3x650	250x1,200(+100)3x650		
			inch	9-27/32x30-23/32(+3- 15/16) x25-19/32	9-27/32x30-23/32(+3- 15/16) x25-19/32	9-27/32x39-3/8(+3- 15/16) x25-19/32	9-27/32x39-3/8(+3- 15/16) x25-19/32	9-27/32x39-3/8(+3- 15/16) x25-19/32	9-27/32 x47-1/4(+3- 15/16) x25-19/32	9-27/32 x47-1/4(+3- 15/16) x25-19/32		
Net Weight	I.		Kg(lb)	28 (62)	28 (62)	32 (71)	32 (71)	32 (71)	41 (90)	41 (90)		
Piping Connection	Liquid Side		mm (inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)		
. •	Gas Side		mm (inch)	12.7 (1/2)	12.7 (1/2)	12.7 (1/2)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)		

<sup>1</sup> These values are at 230 V only. For 220 V and 240 V specifications, please refer to the technical data book.

Outdoor air tem

DB: Dry Bulb; WB: Wet Bulb

Rated conditions:

GLOBAL REMARKS

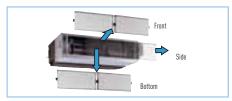
#### COMPACT, LIGHTWEIGHT DESIGN FOR EASY INSTALLATION

Thin and only 250 mm high, with a slim width. This compact unit fits easily in limited spaces. The lightweight and small size also make it easier to transport and install.



#### 3-WAY REMOVABLE AIR FILTER

The air filter can be slide in-out in three directions even after duct installation for easier maintenance.

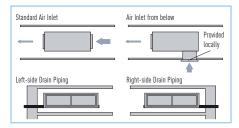


#### VERSATILE AIR INLET AND DRAIN INSTALLATION

The mounting locations for the air inlet and drain outlet can be changed as desired for easy, flexible system layout and installation.

## STATIC PRESSURE SELECTION

The static pressure is selectable from 5 or 7 mmAq according to the condition of the duct. For short ducts, the lower pressure of 5 mmAq provides efficient operation.



#### **PLENUMS**

MA1 E5 MED	JUM PRESSURE DUCTED									
	Air Outlet Plenum (without regulation adap									
SMA1E5	N. of exits with diameters	Model								
45 & 56	3 x Ø 160	CZ-DUMPA45MAS3								
63,71 & 90	4 x Ø 160	CZ-DUMPA63MAS4								
100 & 125	5 x Ø 200	CZ-DUMPA100MAS5								

#### 



Air Intlet Plenum

Air Outlet Plenum

256

<sup>2</sup> The external static pressure is set to 49 Pa at factory default setting.

<sup>3</sup> Add 100 mm for piping port.



# S-45MA1E5 // S-56MA1E5 // S-63MA1E5 // S-71MA1E5 // S-90MA1E5 S-100MA1E5 // S-125MA1E5

#### **Control Flexibility**

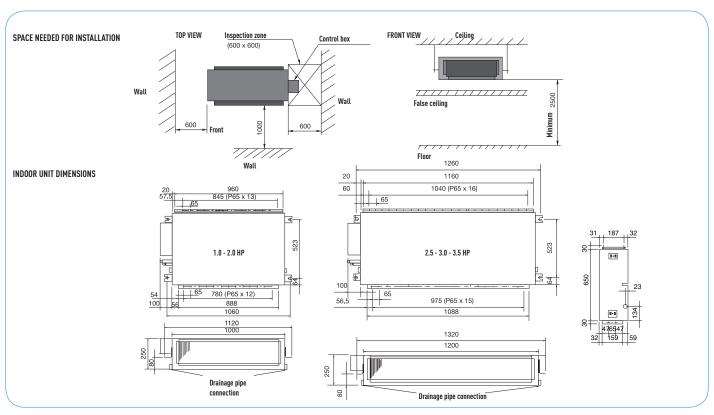
- 24-Hours ON/OFF Real Setting Timer
- Weekly Timer (Wired Only)
- Group Control by Single Remote Controller
- Outdoor Unit Silent Operation Mode
- Indoor Unit Thermistor Switching (Wired Only)
- Ventilation Unit Control (Wired Only)
- Digital Input/Output Contact with CZ-TA31P (Optional)

## Comfortability

- Filter Sign
- Hot Start Control
- Filter

#### Field Service & Maintenance

- · Indoor Unit Address Setting
- · Outdoor Unit Address Setting
- Automatic Address Resetting for Group Control (Wired Only)
- · Indoor Unit Test Run Mode
- Emergency Operation (Infrared Only)
- · Self Diagnosis Function
- Self Diagnosis Records (Wired Only)
- $\hbox{* Wired: Wired Remote Controller / Infrared: Infrared Remote Controller.}$





# **ECOi SERIES**

DC-inverter control technology for rapid and powerful cooling & heating.

### The ever-evolving Panasonic ECOi 6N series

The ECOi 6N series is designed for energy savings, easy installation, and high efficiency. Always continuing to evolve, Panasonic uses advanced technologies to meet the requirements of diverse situations and contribute to the creation of comfortable living spaces.

#### Lower running and life cycle costs

Panasonic ECOi 6N systems are amongst the most efficient VRF systems on the market, offering COPs in excess of 4.0 at full load conditions. The system is also designed to make sure that we reduce the running cost of each system by using our unique road map control routine to ensure that the most efficient combination of compressors are running at any

one time. Improved defrost sequencing also reduces running cost by defrosting each outdoor coil in turn when conditions allow.

The range of outdoor unit modules consists of 7 models from 8 HP to 20 HP. The module sizes from 10 HP to 20 HP can be configured for HI-COP. Standard mode offers the highest capacity while still delivering excellent efficiency, while HI-COP mode delivers exceptional efficiency and low running costs with a slight reduction in capacity. Up to 64 indoor units can be connected up to a capacity of 200% indexed indoor unit loads, enabling the system to be used effectively on highly diversified building loads: this large connectability feature makes it an easy-to-design solution for schools, hotels, hospitals and other large buildings. Up to 1,000 m in pipe length enables the New VRF ECOi 6N series to be used in very large buildings, with maximum design flexibility.

The ECOi 6N system is also easy to control. It has more than 8 types of control from standard wired remote controls to touch screen panels or web access interface.



#### MINI ECOi

Panasonic's policy of product development continues with the expansion of the Mini ECOi 6N, the 2-Pipe heat pump small VRF system specifically designed for the European market.

#### 2-PIPE ECOi 6N SERIES

The 2-Pipe ECOi 6N series is specifically designed for energy saving, easy installation and high efficiency performance as its main focus.

#### **3-PIPE ECOI MF1 SERIES**

ECOi 3-Pipe is one of the most advanced VRF systems available. Not only offering high-efficiency and performance for simultaneous heating and cooling, its sophisticated design makes installation and maintenance much easier.







#### **ECOi 6N SERIES BENEFITS**

#### Ease of installation

R410A has a higher operating pressure with a lower pressure loss than previous refrigerants. This enables smaller pipe sizes to be used and allows reduced refrigerant charges.

#### Simple to design

Panasonic recognise that designing, selecting and preparing a professional VRF quotation can be a time consuming and costly process, especially as it is often also a speculative exercise. So we have designed proprietary software which is quick and easy to use and produces a full schematic layout of pipework and controls, as well as a full materials list and performance data.

# NEW ECOI 6N 2-PIPE WITH WATER HEAT EXCHANGER FOR CHILLED AND HOT WATER PRODUCTION



#### Easy to control

A wide variety of control options are available to ensure that the ECOi 6N system provides the user with the degree of control that they desire, from simple room controllers through to state of the art BMS controls.

#### Simple to commission

Simple set-up procedure including automatic addressing of connected indoor units. Configuration settings can be made from an outdoor unit or via a remote controller.

#### Accurate capacity control

To ensure that the compressor capacity is matched to building load as accurately and efficiently as possible, Panasonic has designed its range of 2 and 3-Pipe ECOi systems to operate with DC inverter and high-efficiency fixed speed compressors. The system selects the most efficient compressor to operate by dynamically monitoring the building load and choosing the best compressor combination to run.

### Easy to position

The compact design of the ECOi 6N outdoor units means that sizes 8 HP to 12 HP fit into a standard lift and are easy to handle and position when on site. The small footprint and modular appearance of the units ensure a cohesive appearance to an installation.

#### Off-coil temperature control

Panasonic ducted units offer the unique advantage of being able to offer off-coil temperature control as standard. This allows designers to select units using an off coil temperature between 7 °C and 22 °C. This allows room environments to be cooled without subjecting its occupants to cold drafts or uncomfortable conditions. This is achieved without any extra controls or wiring to each unit.

#### Wide selection and connectability

With 11 indoor model styles available, ECOi 6N systems are the ideal choice for multiple small capacity indoor unit installations, with the ability to connect up to 40 indoor units to systems of 24 HP or greater for 3-Pipe ECOi MF1 series.

#### Easy to maintain

Each system allows the use of prognostic and diagnostic controls routines, from refrigerant charge control through to complex fault code diagnostics, all designed to reduce the speed of maintenance calls and unit down time.

#### Lower running and life cycle costs

Panasonic ECOi 6N systems are amongst the most efficient VRF systems on the market. The system is also designed to make sure that we reduce the running cost of each system by using our unique road map control routine to ensure that the most efficient combination of compressors are running at any one time. Improved defrost sequencing also reduces running cost by defrosting each outdoor coil in turn when conditions allow.

# **ECOI OUTDOOR UNITS RANGE**



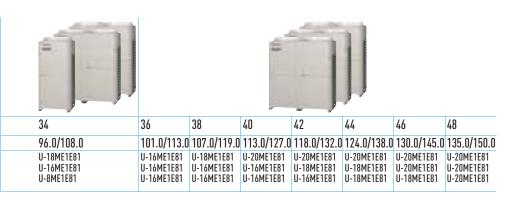
HP		4	5	6
CAPACITY (COOL/HEAT)	kW	12.1/12.5	14.0/16.0	15.5/18.0
MINI ECOI HIGH EFFICIENCY		U-4LE1E5 U-4LE1E8	U-5LE1E5 U-5LE1E8	U-6LE1E5 U-6LE1E8





HP	8	10	12	14	16	18	20	22	24	26	28	30	32
CAPACITY (COOL/HEAT) KW	22.4/25.0	28.0/31.5	33.5/37.5	40.0/45.0	45.0/50.0	50.4/56.5	56.0/63.0	61.5/69.0	68.0/76.5	73.0/81.5	78.5/87.5	85.0/95.0	90.0/100.0
3-PIPE ECOi MF1 SERIES	U-8MF1E8	U-10MF1E8	U-12MF1E8	U-14MF1E8	U-16MF1E8	U-8MF1E8 U-10MF1E8		U-10MF1E8 U-12MF1E8			U-12MF1E8 U-16MF1E8	U-14MF1E8 U-16MF1E8	U-16MF1E8 U-16MF1E8







34	36	38	40	42	44	46	48
96.0/108.0	101.0/113.0	107.0/119.0	113.0/127.0	118.0/132.0	124.0/138.0	130.0/145.0	135.0/150.0
U-10MF1E8 U-10MF1E8 U-14MF1E8	U-10MF1E8	U-12MF1E8	U-14MF1E8	U-16MF1E8	U-16MF1E8	U-16MF1E8	U-16MF1E8 U-16MF1E8 U-16MF1E8











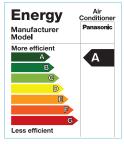


Panasonic 2-Pipe Mini ECOi, the 2-pipe heat pump is specifically designed for the most demanding applications. Mini ECOi is available in 3 sizes with cooling capacities ranging from 12.1 kW to 15.5 kW and connectable up to 9 indoor units (applicable for 15.5 kW).

An expansion from the Panasonic VRF line up, the Mini ECOi is compatible with the same indoor units and controls as the rest of the ECOi range.

# Energy saving concept

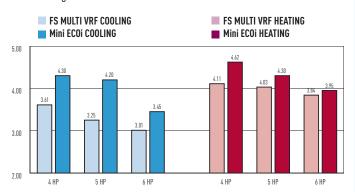
The use of energy saving design for the structure of fans, fan motors, compressors and heat exchangers resulted in high COP value which ranked as one the top class in the industry. In addition, use of highly efficient R410A refrigerant reduces  $\mathrm{CO}_2$  emission and lowers operating costs.



All Mini ECOi VRF systems are rated as EEL Category A, which confirms that they are amongst the most energy efficient systems available. Power consumption during operation is substantially less than that of lower rated units and consequently both the day to day running costs and full life cycle costs are significantly reduced.

# Improved energy saving

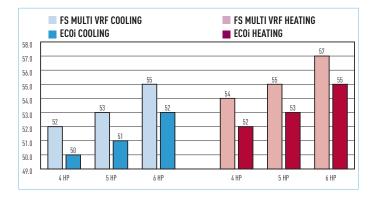
The operation efficiency has been improved using highly efficient R410A refrigerant, new DC inverter compressor, new DC motor and new design of heat exchanger.





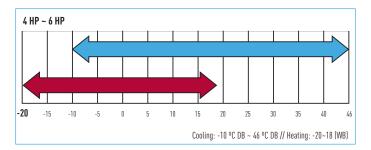
#### Drastically reduced sound level

The pressure sound level has been reduced drastically according to adopting new DC Inverter compressor, newly designed heat exchanger and Fan.



# Wide operating range

The operating range for heating operation is to -20  $^{\circ}$ C, the cooling range is to -10  $^{\circ}$ C. The remote controller temperature setting offers a range from 16  $^{\circ}$ C to 30  $^{\circ}$ C.



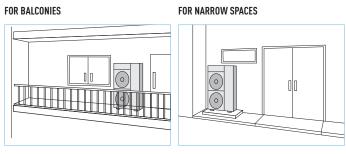
#### Liahtweiaht

In case of 5/6 HP, the weight has been reduced from 123 Kg into 104 Kg.



# Compact & Flexibility-design

The slim and lightweight design can be installed on various places.

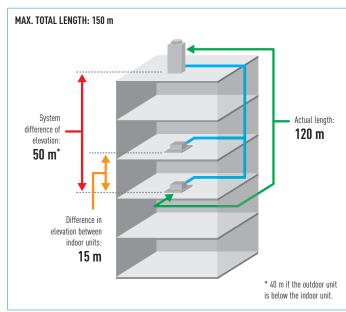


# Increased piping length for Greater design flexibility

Adaptable to various building types and sizes.

Actual piping length: 120 m (equivalent piping length 140 m).

Max. piping length: 150 m.

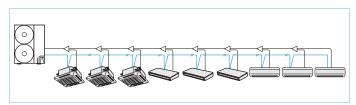


#### Silent mode

3 dB can be reduced by setting. External input signal is also available.

# Up to 9 indoor units per system

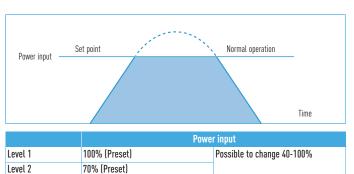
SYSTEM /HP	4 HP	5 HP	6 HP
Connectable Indoor Unit	6	8	9



# Power suppression control for energy saving (Demand control)\*

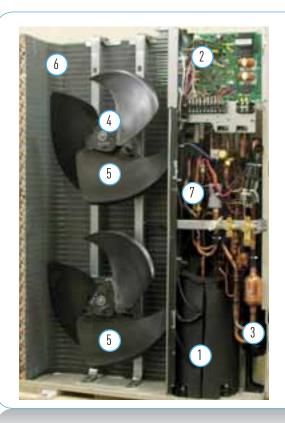
ECOi systems have a demand control utilising inverter technology. With this control, power consumption can be set in three steps to deliver optimum performance. This helps to reduce annual power consumption and electricity costs while maintaining comfort.

\* Demand control kit outdoor unit (CZ-CAPDC3) is required to input the signal. Setting is possible as 0% or in the range from 40 to 100% (in steps of 5%). At the time of shipping, setting has been done to the three steps of 0%, 70% and 100%.



0% (Always in stop condition)

Level 3



#### Mini ECOi

- 1 Inverter compressor. Large-capacity inverter compressor has been adopted. The inverter compressor is superior in performance with improved partial-load capacity.
- 2 Printed Circuit Board. The number of PCB was reduced from 3 into 2 pieces to improve maintenance work.
- 3 Accumulator. Bigger accumulator has been adopted to maintain compressor reliability and because of the increased refrigerant quantity, extended max piping length can be achieved. Furthermore, the refrigerant pressure loss was reduced, which contributes to an improved operating efficiency.
- 4 DC Fan motor. Checking load and outside temperature, the DC motor is controlled for optimum air volume.
- 5 Newly designed Big Edgy Fan. The newly designed Fan edge has been realized to inhibit air turbulent and to increase efficiency. As Fan diameter has been sized up to 490 mm, the air volume has been increased by 12% keeping low sound level.
- 6 Heat exchanger & copper tubes. The heat exchanger size and the copper tube sizes in the heat exchanger has been redesigned to increase efficiency.
- 7 Oil separator. New centrifugal separator has been adopted to improves oil separation efficiency and reduce refrigerant pressure loss.

## Demand control Kit information

		PACi	MINI ECOi	ECOi 6N
CZ-CAPDC2	Seri-Para I/O unit for outdoor unit	Yes	Yes	Yes
CZ-CAPDC3	Demand Control Kit	Yes	Yes	-
CZ-CAPDC4	Demand Control Kit	-	-	Yes

#### **Function of Demand control**

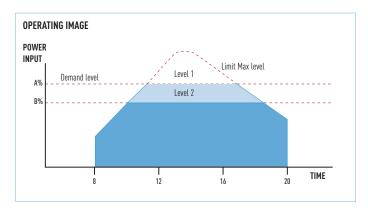
This function limits the maximum operating input at peak time.

3 levels as 100%/70%/0% is set at the factory<sup>1</sup>.

The limit value setting for level 1 & 2 can be changed from 40%  $\sim$  100% by 5% at the system committioning.

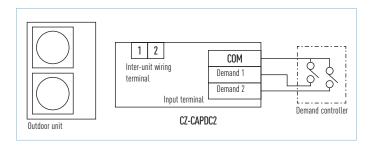
1. The 3rd level is available only for CZ-CAPDC3 & CZ-CAPDC4.)

	POWER INPUT LEVEL (VS. RATED CONDITION								
Level 1	100% (at ship)	From 40%-100% setting can be							
Level 2	70% (at ship)	changed (by 5% step)							
Level 3	0% (Forcible thermo-OFF)								



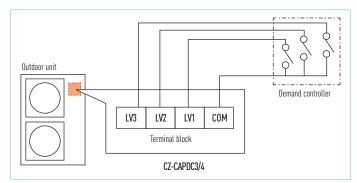
#### CZ-CAPDC2

Demand control input signals sent to this outdoor interface will be transferred to the system via inter-unit control wiring. Other controls (ex. Operation ON/OFF, Mode switch Cool/Heat) are also available. Demand level 1 & 2 are available.



# CZ-CAPDC3 for PACi and Mini ECOi // CZ-CAPDC4 for ECOi 6N 2way

Optional terminal block kit for demand control to be mounted in the outdoor unit. Via this interface, the demand control signals go directly to the outdoor unit control PCB. 3 control levels are available.



<sup>\*</sup> Only for 6N series ECO-i outdoor unit, "Regular Demand control" setting is available.
(The system will be limited the maximum input level for all the time without any signal input.)
(The setting to be done at the time of system start-up or service by maintenance remote controller.)



# MINI ECOI HIGH EFFICIENCY

#### FOR LIGHT COMMERCIAL USE

Panasonic's Mini ECOi, the 2-Pipe heat pump small VRF system, is specifically designed for the most demanding applications. Offering between 11 kW and 16 kW cooling capacity in 3 sizes and up to 9 indoor units connected, the Mini ECOi sets standards of performance and flexibility. Utilising R410A and DC inverter technology, Panasonic offers VRF to a new and growing market. Forming a new key part of the Panasonic VRF line up, the Mini ECOi is compatible with the same indoor units and controls as the rest of the ECOi range.







#### **TECHNICAL FOCUS**

- SINGLE PHASE OR THREE PHASE POWER SUPPLY
- ONE AMP START CURRENT
- DC INVERTER TECHNOLOGY COMBINED WITH R410A
- DIVERSITY RATIO 50-130%
- COOLING OPERATION TO -10 °C
- COMPACT OUTDOOR UNIT 1,330 x 940 x 410 mm

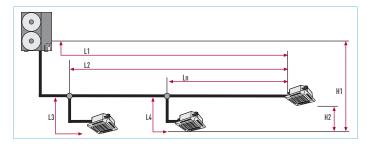
HP			4.0 HP		5.0 HP		6.0 HP				
Model name			U-4LE1E5	U-4LE1E8	U-5LE1E5	U-5LE1E8	U-6LE1E5	U-6LE1E8			
Power supply			220/230/240 V, 50 Hz	380/400/415 V, 50 Hz	220/230/240 V, 50 Hz	380/400/415 V, 50 Hz	220/230/240 V, 50 Hz	380/400/415 V, 50 Hz			
Cooling capacity kW			12.1	12.1	14.0	14.0	15.5	15.5			
BTU			41,300	41,300	47,800	47,800	52,900	52,900			
EER		W/W	4.30	4.30	4.20	4.20	3.45	3.45			
Heating capacity		kW	12.5	12.5	16.0	16.0	18.0	18.0			
		BTU/h	42,700	42,700	54,600	54,600	61,400	61,500			
COP		W/W	4.62	4.62	4.30	4.30	3.95	3.95			
Dimensions	H x W x D	mm	1,330 x 940 x 340 (410)								
Piping connection	Gas	mm	15.88	15.88	15.88	15.88	19.05	19.05			
	Liquid	mm	9.52	9.52	9.52	9.52	9.52	9.52			
Sound pressure level Cooling		dB(A)	50	50	51	51	52	52			
	Heating		52	52	53	53	55	55			
Maximum number of indoor units			6	6	8	8	9	9			

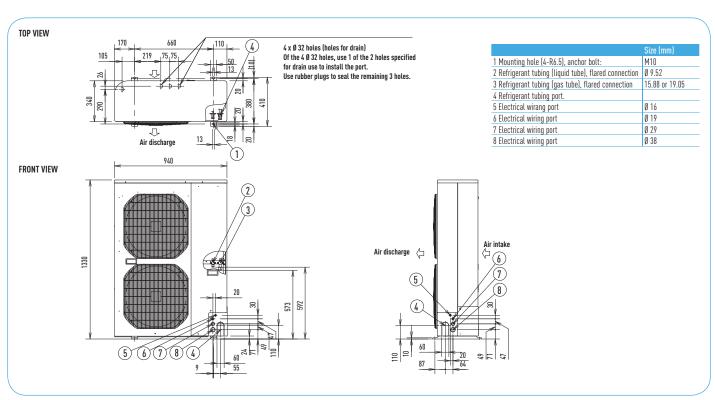
Preliminary specifiactions, subject to change without notice.



# Flexible pipework

CATEGORY	ITEM	DESCRIPTION		MAX LENGTH (m)				
Allowable	L1	Maximum pipe run	120					
pipework length			Equivalent length	140				
tengtii	L2-L3	Difference between maximum leng length from the first distribution jo		40				
	L3 L4 Ln	Maximum length of each distribution	30					
	L1+L3+L4	Maximum total pipe run length	150					
Allowable	H1	When outdoor unit installed higher		50				
height difference		When outdoor unit installer lower	40					
uniciciico	H2	15						















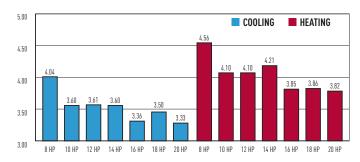
Large-capacity VRF systems with use of R410A with advanced technology.

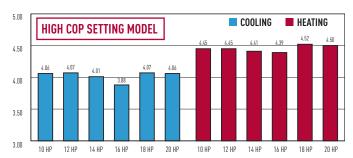
Newly designed next generation VRF!



# **Energy savings**

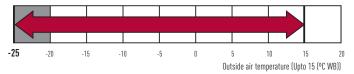
The operation efficiency has been improved using highly efficient R410A refrigerant, new DC inverter compressor, new DC motor and new design of heat exchanger.

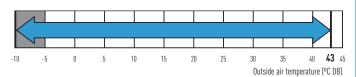




# Extended operating range

Heating operation range: Extended heating operation range enables heating even when outdoor temperature as low as -25 °C. Using a wired remote control, indoor heating temperature range can be set from 16 °C to 30 °C.





Wide temperature setting range.

Cooling operation range: -10 °C DB to +43 °C DB.



#### Connectable indoor/outdoor unit capacity ratio up to 200%

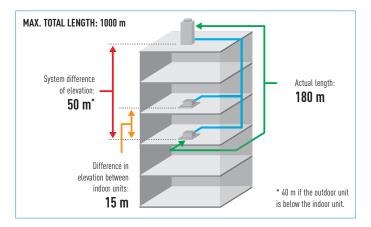
VRF systems attain maximum indoor unit connection capacity of up to 200 % of the unit's connection range, depending on the outdoor and indoor models selected. So for a reasonable investment, VRF systems provide an ideal air conditioning solution for locations where full cooling/heating are not always required.

SYSTEM (HP)	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
CONNECTABLE INDOOR UNITS: 130%	13	16	19	23	26	29	33	36	40	43	47	50	53	56	59							64					
CONNECTABLE INDOOR UNITS: 200%	20	25	30	35	40	45	50	55	60	64																	

If more than 100% indoor units are operated with a high load, the units may not perform at the rated capacity. For the details, please consult with an authorized Panasonic dealer

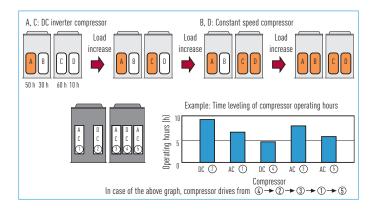
### Increased piping lengths and design flexibility

Adaptable to various building types and sizes. Actual piping length: 180 m. Maximum piping length: 1000 m.



# Extended compressor life by uniform compressor operation times

Total run-time of compressors are monitored by a built-in microcomputer, which ensures that operation times of all compressors within the same refrigerant circuit are balanced. Compressors with histories showing shorter run times are selected first, ensuring equal wear and tear across all units and extended working life for the system.



#### Newly designed fan

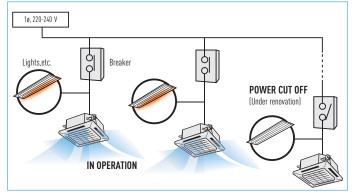
#### Optimized air flow and noise reduction

Newly designed fan and bell-mouth reduces stress to fan by dispersing fast wind speed. Thus, lower air resistance results in lower energy consumption. The turbulent flow (blue part) can be suppressed and the noise can be reduced. Even though the high speed circulation is utilized, the noise level is at same level as usual.



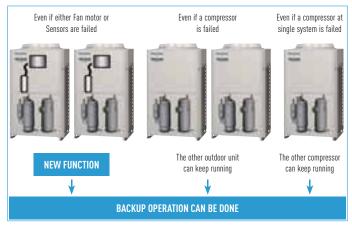
#### Non-stop operation during maintenance

In the event of an indoor unit malfunctioning, other indoor units can be set to continue operation even during maintenance.



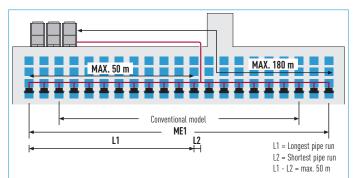
# Automatic backup operation in the case of compressor and outdoor units malfunction

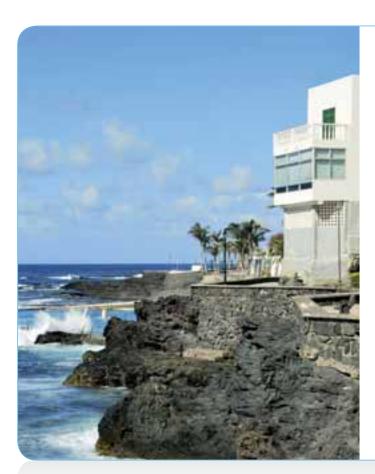
Backup operation is adopted for emergency case. If error message is displayed, please contact your local service office. (Except for 8 HP single unit installation)



# Easy to design solutions for schools, hotels, hospitals and other large buildings

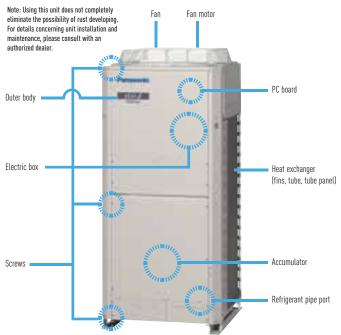
Difference between Max. and Min. length after first branch can be a maximum of 50 m; larger pipe runs can be up to 180 m.





#### Anti-corrosion model available

On demand project. For use in coastal areas and other locations where sea air can easily cause salt damage to units. As well as the heat exchanger, various other parts are specially treated to provide exceptional durability.



#### Demand control Kit information

		PACi	MINI ECOi	ECOi 6N
CZ-CAPDC2	Seri-Para I/O unit for outdoor unit	Yes	Yes	Yes
CZ-CAPDC3	Demand Control Kit	Yes	Yes	-
CZ-CAPDC4	Demand Control Kit	-	-	Yes

#### **Function of Demand control**

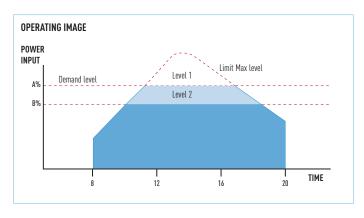
This function limits the maximum operating input at peak time.

3 levels as 100%/70%/0% is set at the factory<sup>1</sup>.

The limit value setting for level 1 & 2 can be changed from 40%  $\sim$  100% by 5% at the system committoning.

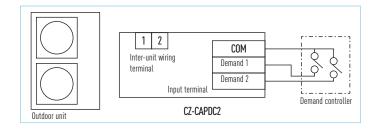
1. The 3rd level is available only for CZ-CAPDC3 & CZ-CAPDC4.)

	POWER INPUT LEVEL (VS. RATED CONDITION						
Level 1		From 40%-100% setting can be					
Level 2	70% (at ship)	changed (by 5% step)					
Level 3	0% (Forcible thermo-OFF)						



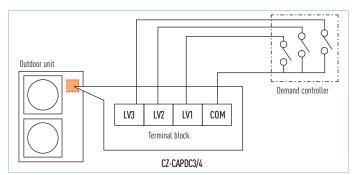
#### CZ-CAPDC2

Demand control input signals sent to this outdoor interface will be transferred to the system via inter-unit control wiring. Other controls (ex. Operation ON/OFF, Mode switch Cool/Heat) are also available. Demand level 1 & 2 are available.



#### CZ-CAPDC3 for PACi and Mini ECOi // CZ-CAPDC4 for ECOi 6N 2way

Optional terminal block kit for demand control to be mounted in the outdoor unit. Via this interface, the demand control signals go directly to the outdoor unit control PCB. 3 control levels are available.



<sup>\*</sup> Only for 6N series ECO-i outdoor unit, "Regular Demand control" setting is available.

[The system will be limited the maximum input level for all the time without any signal input.]

[The setting to be done at the time of system start-up or service by maintenance remote controller.]



# 8-12 HP // 2-PIPE ECOi 6N SERIES

# NEXT GENERATION VRF NEWLY-REDESIGNED!

At start up stage a unit can have Hi COP function selected - this lowers the capacity and increases the COP. You have the choice.

- Top class COP= 4.56 (In case of 8 HP heating).
- Heating operation at outdoor temperatures down to -25 °C.
- Extended pipe runs of up to 180 m.







#### **TECHNICAL FOCUS**

- COMPACT CASING
- LONGER MAX PIPING LENGTH UP TO 1,000 m
- EXTENDED OPERATING RANGE TO PROVIDE HEATING AT OUTDOOR TEMPERATURE AS LOW AS -25 °C
- SUITABLE FOR RENEWAL PROJECTS (REFER TO TECHNICAL DATA BOOK)

HP			8.0 HP	10.0 HP	12.0 HP			
STANDARD MODEL			U-8ME1E81	U-10ME1E81	U-12ME1E81			
Power supply			400 V / 3 phase / 50 Hz					
Cooling capacity		kW	22.4	28.0	33.5			
EER		W/W	4.04	3.60	3.61			
Electrical ratings	Operating current	Α	8.5	12.2	14.6			
	Power input	kW	5.54	7.78	9.29			
Heating capacity		kW	25.0	31.5	37.5			
COP		W/W	4.56	4.10	4.10			
Electrical ratings	Operating current	Α	8.4	12.1	14.4			
	Power input	kW	5.48	7.68	9.15			
Dimensions	H x W x D	mm	1,758 x 770 x 930	1,758 x 770 x 930	1,758 x 770 x 930			
Net weight		Kg	234	234	281			
Starting current		Α	1	1	81			
Air flow rate		m³/h	8,820	9,180	11,400			
Refrigerant amount at shipment		Kg	6.5	6.8	6.8			
Demand control			13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)			
External static pressure		Pa	80	80	80			
Piping connections	Gas pipe	mm	19.05	22.22	25.4			
	Liquid pipe	mm	9.52	9.52	12.7			
	Balance pipe	mm	6.35	6.35	6.35			
Ambient temperature operating range			Cooling:	-10 °C DB $\sim$ +43 °C DB, Heating: -25 °C WB $\sim$	+15 °C WB			
Sound pressure level	Normal mode	dB(A)	56.5	59.0	61.0			
	Silent mode	dB(A)	53.5	56.0	58.0			
Sound power level	Normal mode	dB	71.0	73.5	75.5			

LOBAL REMARKS	Heating
	B / 19 °C WB 20 °C DB
	B / 24 °C WB 7 °C DB / 6 °C WB
	B / 24 °C WB 7 °C DB / 6 °



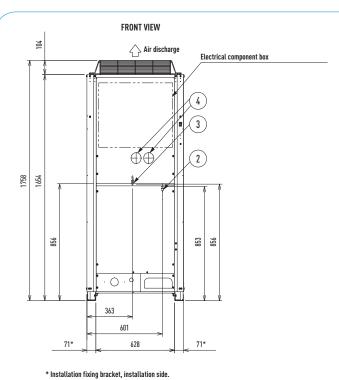


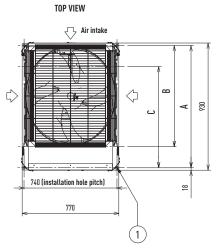
# **Compact design**

8-12 HP are able to put inside a lift for easy handling at site.









- A 894 (installation hole pitch). The tubing is routed out frpm the front B 730 (installation hole pitch). The tubing is routed out frpm the front C 730 (installation hole pitch).
- 1 Installation holes (8-15x21 elongated holes) anchor bolts M12 or larger.
  2 Pressure outlet port (for high pressure: Ø 7.94 Scrader-type connection).
  3 Pressure outlet port (for low pressure: Ø 7.94 Scrader-type connection).
  4 Knock-out hole for connecting pressure gauge (optional).
  5 Terminal board.
  6 Terminal board (for inter-outdoor-unit control wiring).



# 14-16 HP // 2-PIPE ECOi 6N SERIES

# NEXT GENERATION VRF NEWLY-REDESIGNED!

At start up stage a unit can have Hi COP function selected - this lowers the capacity and increases the COP. You have the choice.

- Heating operation at outdoor temperatures down to -25 °C.
- Extended pipe runs of up to 180 m.







## **TECHNICAL FOCUS**

- LONGER MAX PIPING LENGTH UP TO 1,000 m
- EXTENDED OPERATING RANGE TO PROVIDE HEATING AT OUTDOOR TEMPERATURE AS LOW AS -25  $^{\circ}\text{C}$
- SUITABLE FOR RENEWAL PROJECTS (REFER TO TECHNICAL DATA BOOK)

HP			14.0 HP	16.0 HP			
STANDARD MODEL			U-14ME1E81	U-16ME1E81			
Power supply			400 V / 3 phase / 50 Hz				
Cooling capacity		kW	40.0	45.0			
EER		W/W	3.60	3.36			
Electrical ratings	Operating current	Α	17.1	20.7			
	Power input	kW	11.1	13.4			
Heating capacity		kW	45.0	50.0			
COP		W/W	4.21	3.85			
Electrical ratings	Operating current	Α	16.5	20.1			
	Power input	kW	10.7	13.0			
Dimensions	H x W x D	mm	1,758 x 1,000 x 930	1,758 x 1,000 x 930			
Net weight		Kg	309	309			
Starting current		Α	77	81			
Air flow rate		m³/h	12,720	12,720			
Refrigerant amount at shipment		Kg	8.5	8.5			
Demand control			13 steps (0 - 100 %)	13 steps (0 - 100 %)			
External static pressure		Pa	80	80			
Piping connections	Gas pipe	mm	25.4	28.58			
	Liquid pipe	mm	12.7	12.7			
	Balance pipe	mm	6.35	6.35			
Ambient temperature operating ra	ange		Cooling: -10 °C DB ~ +43 °C DB,	Heating: -25 °C WB ~ +15 °C WB			
Sound pressure level	Normal mode	dB(A)	62.0	62.0			
	Silent mode	dB(A)	59.0	59.0			
Sound power level	Normal mode	dB	76.5	76.5			

GLOBAL REMARKS

Rated conditions:
Indoor air temperature
Outdoor air temperature



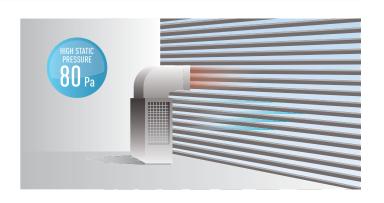


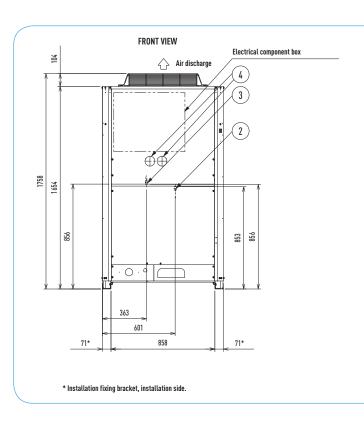
# High external static pressure

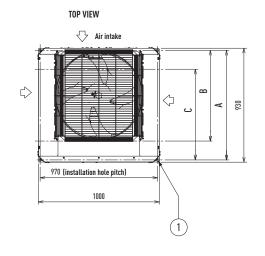
Special setting at site allows all models to provide up to 80 Pa due to newly designed fan, fan motor and casing.

The flexible design requires an air discharge duct to avoid a reduction in performance due to shortcut of air circulation.

The new feature allows the outdoor unit to be installed inside plant rooms on any floor of the building.







- A 894 (installation hole pitch). The tubing is routed out frpm the front B 730 (installation hole pitch). The tubing is routed out frpm the front C 730 (installation hole pitch).
- 1 Installation holes (8-15x21 elongated holes) anchor bolts M12 or larger. 2 Pressure outlet port (for high pressure: Ø 7.94 Scrader-type connection). 3 Pressure outlet port (for low pressure: Ø 7.94 Scrader-type connection).
- 4 Knock-out hole for connecting pressure gauge (optional).
- 5 Terminal board.
  6 Terminal board (for inter-outdoor-unit control wiring).



# 18-20 HP // 2-PIPE ECOi 6N SERIES

# NEXT GENERATION VRF NEWLY-REDESIGNED!

At start up stage a unit can have Hi COP function selected - this lowers the capacity and increases the COP. You have the choice.

- Heating operation at outdoor temperatures down to -25 °C.
- Extended pipe runs of up to 180 m.







#### **TECHNICAL FOCUS**

- BIGGER CAPACITY IN ONE CASING
- LONGER MAX PIPING LENGTH UP TO 1,000 m
- EXTENDED OPERATING RANGE TO PROVIDE HEATING AT OUTDOOR TEMPERATURE AS LOW AS -25 °C
- SUITABLE FOR RENEWAL PROJECTS (REFER TO TECHNICAL DATA BOOK)

HP			18.0 HP	20.0 HP			
STANDARD MODEL			U-18ME1E81	U-20ME1E81			
Power supply			400 V / 3 phase / 50 Hz				
Cooling capacity		kW	50.0	56.0			
EER		W/W	3.50	3.33			
Electrical ratings	Operating current	Α	22.8	26.8			
	Power input	kW	14.3	16.8			
Heating capacity		kW	56.0	63.0			
COP		W/W	3.86	3.82			
Electrical ratings	Operating current	Α	23.1	26.3			
	Power input	kW	14.5	16.5			
Dimensions	H x W x D	mm	1,758 x 1,540 x 930	1,758 x 1,540 x 930			
Net weight		Kg	421	421			
Starting current		Α	93	101			
Air flow rate		m³/h	14,640	16,980			
Refrigerant amount at shipment		Kg	9.0	9.0			
Demand control			13 steps (0 - 100 %)	13 steps (0 - 100 %)			
External static pressure		Pa	80	80			
Piping connections	Gas pipe	mm	28.58	28.58			
	Liquid pipe	mm	15.88	15.88			
	Balance pipe	mm	6.35	6.35			
Ambient temperature operating ra	ange		Cooling: -10 °C DB ~ +43 °C DB,	Heating: -25 °C WB ~ +15 °C WB			
Sound pressure level	Normal mode	dB(A)	60.0	63.0			
	Silent mode	dB(A)	57.0	60.0			
Sound power level	Normal mode	dB	74.5	77.5			

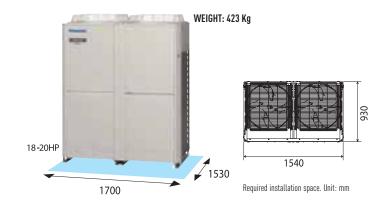
GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27 °C DB / 19 °C WB	
	Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB

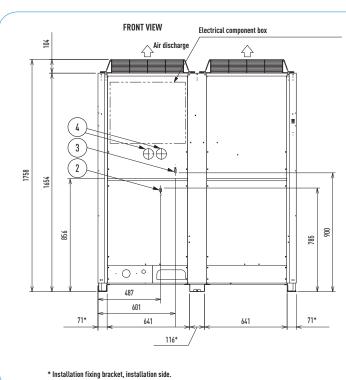




# **Compact design**

2-Pipe ECOi 6N series has reduced the installation space required by 1 chassis for sizes up to 20 HP.





1 Installation holes (8-15x21 elongated holes) anchor bolts M12 or larger. 2 Pressure outlet port (for high pressure: Ø 7.94 Scrader-type connection). 3 Pressure outlet port (for low pressure: Ø 7.94 Scrader-type connection).

1540

A 894 (installation hole pitch). The tubing is routed out frpm the front B 730 (installation hole pitch). The tubing is routed out frpm the front C 730 (installation hole pitch).

TOP VIEW

Air intake

4 Knock-out hole for connecting pressure gauge (optional).

1510 (installation hole pitch)

Knock-out note for connecting pressure gauge top-sense
 Terminal board.
 Terminal board (for inter-outdoor-unit control wiring).

930

9



# 2-PIPE ECOi 6N SERIES // COMBINATION FROM 22 TO 60 HP

# NEXT GENERATION VRF NEWLY-REDESIGNED!

At start up stage a unit can have Hi COP function selected - this lowers the capacity and increases the COP. You have the choice.

- Wide range of system up to 60 HP.
- Heating operation at outdoor temperatures down to -25 °C.
- Extended pipe runs of up to 180 m.







#### **TECHNICAL FOCUS**

- INCREASED CONNECTABLE I\_U/O\_U CAP. RATIO UP TO 200%
- INCREASED MAX NO. OF CONNECTABLE I\_U UP TO 64 UNITS
- · INCREASED HIGH EXTERNAL STATIC PRESSURE UP TO 80 Pa
- EXTENDED OPERATING RANGE TO PROVIDE HEATING AT OUTDOOR TEMPERATURE AS LOW AS -25 °C

HP			22	24	26	28	30	32	34	36
STANDARD MODEL	U-14ME1E81 U-8ME1E81	U-14ME1E81 U-10ME1E81	U-14ME1E81 U-12ME1E81	U-16ME1E81 U-12ME1E81	U-16ME1E81 U-14ME1E81	U-16ME1E81 U-16ME1E81	U-18ME1E81 U-16ME1E81	U-20ME1E81 U-16ME1E81		
Power supply						400	V / 3 phase / 50 H	Z		
Cooling capacity		kW	61.5	68.0	73.0	78.5	85.0	90.0	96.0	101.0
EER		W/W	3.75	3.60	3.60	3.47	3.47	3.35	3.43	3.34
Electrical ratings	Operating current	Α	25.2	29.4	31.6	35.2	37.8	41.5	44.0	47.5
	Power input	kW	16.4	18.9	20.3	22.6	24.5	26.9	28.0	30.2
Heating capacity		kW	69.0	76.5	81.5	87.5	95.0	100.0	108.0	113.0
COP		W/W	4.34	4.09	4.12	3.96	4.03	3.86	3.86	3.83
Electrical ratings	Operating current	Α	24.5	29.1	30.8	34.4	36.4	40.0	44.0	46.4
	Power input	kW	15.9	18.7	19.8	22.1	23.6	25.9	28.0	29.5
Dimensions	H x W x D	mm	1,758 x 1,830 x 930	1,758 x 2,060 x 930	1,758 x 2,060 x 930	1,758 x 2,600 x 930	1,758 x 2,600 x 930			
Net weight		Kg	543	543	590	590	618	618	730	730
Starting current		Α	86	94	98	102	98	102	114	122
Air flow rate		m³/h	21,540	21,900	24,120	24,120	25,440	25,440	27,360	29,700
Refrigerant amount at shipme	ent	Kg	15.0	15.3	15.3	15.3	17.0	17.0	17.5	17.5
Demand control			13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)					
External static pressure		Pa	80	80	80	80	80	80	80	80
Piping connections	Gas pipe	mm	28.58	28.58	31.75	31.75	31.75	31.75	31.75	38.10
	Liquid pipe	mm	15.88	15.88	19.05	19.05	19.05	19.05	19.05	19.05
	Balance pipe	mm	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
Ambient temperature operatir				Cooling	: -10 °C DB ~ +43	°C DB, Heating: -2	25 °C WB ~ +15 °C	CWB		
Sound pressure level	Normal mode	dB(A)	63.0	63.5	64.5	64.5	65.0	65.0	64.0	65.5
	Silent mode	dB(A)	60.0	60.5	61.5	61.5	62.0	62.0	61.0	62.5
Sound power level	Normal mode	dB	77.5	78.0	79.0	79.0	79.5	79.5	78.5	80.0

GLOBAL REMARKS
Rated conditions:
Indoor air temperature
Outdoor air temperature



38	40	42	44	46	48	50	52	54	56	58	60
U-20ME1E81 U-18ME1E81	U-20ME1E81 U-20ME1E81		U-16ME1E81 U-16ME1E81 U-12ME1E81	U-16ME1E81 U-16ME1E81 U-14ME1E81	U-16ME1E81 U-16ME1E81 U-16ME1E81	U-18ME1E81 U-16ME1E81 U-16ME1E81	U-20ME1E81 U-16ME1E81 U-16ME1E81	U-20ME1E81 U-18ME1E81 U-16ME1E81	U-20ME1E81 U-18ME1E81 U-18ME1E81	U-20ME1E81 U-20ME1E81 U-18ME1E81	U-20ME1E81 U-20ME1E81 U-20ME1E81
					400 V / 3 p	hase / 50 Hz					
107.0	113.0	118.0	124.0	130.0	135.0	140.0	145.0	151.0	156.0	162.0	168.0
3.44	3.36	3.51	3.43	3.43	3.35	3.41	3.35	3.39	3.44	3.38	3.33
49.6	53.6	52.1	56.2	58.5	62.2	64.2	67.7	70.3	72.4	76.4	80.4
31.1	33.6	33.6	36.2	37.9	40.3	41.1	43.3	44.5	45.4	47.9	50.4
119.0	127.0	132.0	138.0	145.0	150.0	155.0	160.0	169.0	175.0	182.0	189.0
3.84	3.85	4.04	3.92	3.96	3.86	3.86	3.84	3.85	3.85	3.83	3.81
49.4	52.6	50.8	54.6	56.5	60.1	62.8	65.2	69.3	72.4	75.8	79.1
31.0	33.0	32.7	35.2	36.6	38.9	40.2	41.7	43.9	45.4	47.5	49.6
1,758 x 3,140 x 930	1,758 x 3,140 x 930	1,758 x 2,890 x 930	1,758 x 2,890 x 930	1,758 x 3,120 x 930	1,758 x 3,120 x 930	1,758 x 3,660 x 930	1,758 x 3,660 x 930	1,758 x 4,200 x 930	1,758 x 4,740 x 930	1,758 x 4,740 x 930	1,758 x 4,740 x 930
842	842	899	899	927	927	1,039	1,039	1,151	1,263	1,263	1,263
123	127	119	122	119	122	134	142	144	146	149	153
31,620	33,960	36,840	36,840	38,160	38,160	40,080	42,420	44,340	46,260	48,600	50,940
18.0	18.0	23.8	23.8	25.5	25.5	26.0	26.0	26.5	27.0	27.0	27.0
13 steps (0 – 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)
80	80	80	80	80	80	80	80	80	80	80	80
38.10	38.10	38.10	38.10	38.10	38.10	38.10	38.10	38.10	38.10	38.10	38.10
19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
				Cooling: -10 °C	C DB ~ +43 °C DB,	Heating: -25 °C V	VB ~ +15 °C WB				
65.0	66.0	66.5	66.5	67.0	67.0	66.0	67.0	66.5	66.0	67.0	68.0
62.0	63.0	63.5	63.5	64.0	64.0	63.0	64.0	63.5	63.0	64.0	65.0
79.5	80.5	81.0	81.0	81.5	81.5	80.5	81.5	81.0	80.5	81.5	82.5



# 10-12 HP // 2-PIPE ECOi 6N SERIES // HIGH COP SETTING MODEL

# NEXT GENERATION VRF NEWLY-REDESIGNED!

- Heating operation at outdoor temperatures down to -25 °C.
- Extended pipe runs of up to 180 m.







# **TECHNICAL FOCUS**

- LONGER MAX PIPING LENGTH UP TO 1,000 m
- EXTENDED OPERATING RANGE TO PROVIDE HEATING AT OUTDOOR TEMPERATURE AS LOW AS -25  $^{\circ}\text{C}$
- SUITABLE FOR RENEWAL PROJECTS (REFER TO TECHNICAL DATA BOOK)

HP			10.0 HP	12.0 HP			
HIGH COP SETTING MODEL			U-14ME1E81	U-16ME1E81			
Power supply			400 V / 3 phase / 50 Hz				
Cooling capacity		kW	28.0	33.5			
EER		W/W	4.06	4.07			
Electrical ratings	Operating current	A	10.7	12.7			
	Power input	kW	6.90	8.23			
Heating capacity		kW	31.5	37.5			
COP		W/W	4.45	4.45			
Electrical ratings	Operating current	A	10.9	13.0			
	Power input	kW	7.08	8.43			
Dimensions	H x W x D	mm	1,758 x 1,000 x 930	1,758 x 1,000 x 930			
Net weight		Kg	307	307			
Starting current		A	77	81			
Air flow rate		m³/h	12,720	12,720			
Demand control			13 steps (0 - 100 %)	13 steps (0 - 100 %)			
External static pressure		Pa	80	80			
Refrigerant amount at shipment		Kg	8.5	8.5			
Piping connections	Gas pipe	mm	22.22	25.40			
	Liquid pipe	mm	9.52	12.70			
	Balance pipe	mm	6.35	6.35			
Ambient temperature operating i	ange		Cooling: -10 °C DB ~ +43 °C DB,	Heating: -25 °C WB ~ +15 °C WB			
Sound pressure level	Normal mode	dB(A)	62.0	62.0			
	Silent mode	dB(A)	59.0	59.0			
Sound power level	Normal mode	dB	76.5	76.5			

GLOBAL REMARKS
Rated conditions:
Indoor air temperature
Outdoor air temperature





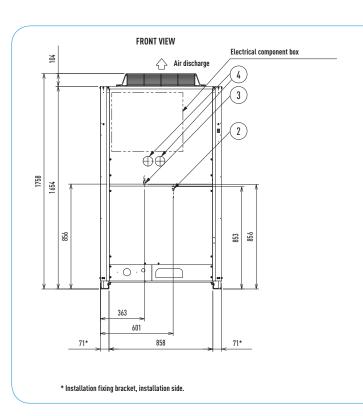
# High external static pressure

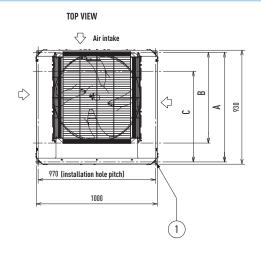
Special setting at site allows all models to provide up to 80 Pa due to newly designed fan, fan motor and casing.

The flexible design requires an air discharge duct to avoid a reduction in performance due to shortcut of air circulation.

The new feature allows the outdoor unit to be installed inside plant rooms on any floor of the building.







- A 894 (installation hole pitch). The tubing is routed out frpm the front B 730 (installation hole pitch). The tubing is routed out frpm the front C 730 (installation hole pitch).
- 1 Installation holes (8-15x21 elongated holes) anchor bolts M12 or larger. 2 Pressure outlet port (for high pressure: Ø 7.94 Scrader-type connection). 3 Pressure outlet port (for low pressure: Ø 7.94 Scrader-type connection).
- 4 Knock-out hole for connecting pressure gauge (optional).
- 5 Terminal board.
  6 Terminal board (for inter-outdoor-unit control wiring).



# 14-16 HP // 2-PIPE ECOi 6N SERIES // HIGH COP SETTING MODEL

# NEXT GENERATION VRF NEWLY-REDESIGNED!

- Heating operation at outdoor temperatures down to -25 °C.
- Extended pipe runs of up to 180 m.







#### **TECHNICAL FOCUS**

- BIGGER CAPACITY IN ONE CASING
- LONGER MAX PIPING LENGTH UP TO 1,000 m
- EXTENDED OPERATING RANGE TO PROVIDE HEATING AT OUTDOOR TEMPERATURE AS LOW AS -25 °C
- SUITABLE FOR RENEWAL PROJECTS (REFER TO TECHNICAL DATA BOOK)

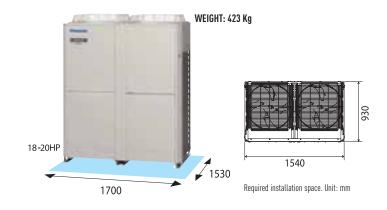
HP			14.0 HP	16.0 HP			
HIGH COP SETTING MODEL			U-18ME1E81	U-20ME1E81			
Power supply			400 V / 3 phase / 50 Hz				
Cooling capacity		kW	40.0	45.0			
EER		W/W	4.01	3.88			
Electrical ratings	Operating current	A	15.4	17.9			
	Power input	kW	9.98	11.6			
Heating capacity		kW	45.0	50.0			
COP		W/W	4.41	4.39			
Electrical ratings	Operating current	A	15.8	17.6			
	Power input	kW	10.2	11.4			
Dimensions	H x W x D	mm	1,758 x 1,540 x 930	1,758 x 1,540 x 930			
Net weight		Kg	423	423			
Starting current		A	92	98			
Air flow rate		m³/h	14,640	16,980			
Demand control			13 steps (0 - 100 %)	13 steps (0 - 100 %)			
External static pressure		Pa	80	80			
Refrigerant amount at shipment		Kg	9.0	9.0			
Piping connections	Gas pipe	mm	25.40	28.58			
	Liquid pipe	mm	12.70	12.70			
	Balance pipe	mm	6.35	6.35			
Ambient temperature operating r	ange		Cooling: -10 °C DB ~ +43 °C DB,	Heating: -25 °C WB ~ +20 °C WB			
Sound pressure level	Normal mode	dB(A)	60.0	63.0			
	Silent mode	dB(A)	57.0	60.0			
Sound power level	Normal mode	dB	74.5	77.5			

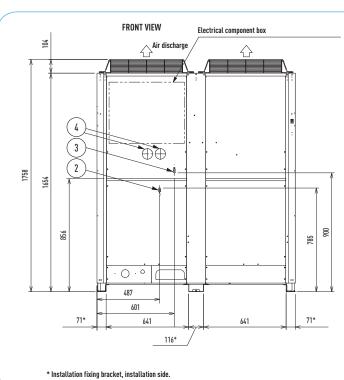
GLOBAL REMARKS
Rated conditions:
Indoor air temperature
Outdoor air temperature



# **Compact design**

2-Pipe ECOi 6N series has reduced the installation space required by 1 chassis for sizes up to 20 HP.





- 1 Installation holes (8-15x21 elongated holes) anchor bolts M12 or larger. 2 Pressure outlet port (for high pressure: Ø 7.94 Scrader-type connection). 3 Pressure outlet port (for low pressure: Ø 7.94 Scrader-type connection).

A 894 (installation hole pitch). The tubing is routed out frpm the front B 730 (installation hole pitch). The tubing is routed out frpm the front C 730 (installation hole pitch).

1540

TOP VIEW

Air intake

- 4 Knock-out hole for connecting pressure gauge (optional).
- Knock-out note for connecting pressure gauge top-sense
   Terminal board.
   Terminal board (for inter-outdoor-unit control wiring).

1510 (installation hole pitch)

930

9



# 2-PIPE ECOi 6N SERIES // HIGH COP SETTING MODEL // COMBINATION FROM 18 TO 48 HP

NEXT GENERATION VRF NEWLY-REDESIGNED!

- Wide range of system up to 48 HP.
- Heating operation at outdoor temperatures down to -25 °C.
- Extended pipe runs of up to 180 m.







#### **TECHNICAL FOCUS**

- INCREASED CONNECTABLE I\_U/O\_U CAP. RATIO UP TO 200%
- INCREASED MAX NO. OF CONNECTABLE I\_U UP TO 64 UNITS
- INCREASED HIGH EXTERNAL STATIC PRESSURE UP TO 80 Pa
- EXTENDED OPERATING RANGE TO PROVIDE HEATING AT OUTDOOR TEMPERATURE AS LOW AS -25 °C

HP			18	20	22	24	26	28	30
HIGH COP SETTING MODEL			U-14ME1E81 U-8ME1E81		U-18ME1E81 U-8ME1E81			U-20ME1E81 U-16ME1E81	U-20ME1E81 U-18ME1E81
Power supply				400 V / 3 phas	e / 50 Hz				
Cooling capacity		kW	50.0	56.0	61.5	68.0	73.0	78.5	85.0
EER		W/W	4.07	4.06	3.97	4.07	4.01	3.96	3.94
Electrical ratings	Operating current	A	18.9	21.2	23.9	25.8	28.1	30.6	33.4
	Power input	kW	12.3	13.8	15.5	16.7	18.2	19.8	21.6
Heating capacity		kW	56.0	63.0	69.0	76.5	81.5	87.5	95.0
COP		W/W	4.52	4.50	4.39	4.45	4.38	4.42	4.40
Electrical ratings	Operating current	Α	19.1	21.5	24.2	26.6	28.7	30.6	33.4
	Power input	kW	12.4	14.0	15.7	17.2	18.6	19.8	21.6
Dimensions	H x W x D	mm	1,758 x 1,830 x 930	1,758 x 1,830 x 930	1,758 x 2,370 x 930	1,758 x 2,060 x 930	1,780 x 2,600 x 930	1,780 x 2,600 x 930	1,758 x 3,140 x 930
Net weight		Kg	537	537	653	614	730	730	846
Starting current		Α	86	90	101	94	105	111	114
Air flow rate		m³/h	21,540	21,540	23,460	25,440	27,360	29,700	31,620
Demand control			13 steps (0 – 100 %)	13 steps (0 – 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 - 100 %)	13 steps (0 – 100 %)	13 steps (0 – 100 %)
External static pressure		Pa	80	80	80	80	80	80	80
Refrigerant amount at shipme	nt	Kg	15.0	15.0	15,5	17.0	17.5	17.5	18.0
Piping connections	Gas pipe	mm	28.58	28.58	28.58	28.58	31.75	31.75	31.75
	Liquid pipe	mm	15.88	15.88	15.88	15.88	19.05	19.05	19.05
	Balance pipe	mm	6.35	6.35	6.35	6.35	6.35	6.35	6.35
Ambient temperature operating range					Cooling: -10 °C	DB ~ +43 °C DB, He	ating: -25 °C WB ~ +	-20 °C WB	
Sound pressure level	Normal mode	dB(A)	63.0	63.0	61.5	65.0	64.0	65.5	65.0
	Silent mode	dB(A)	60.0	60.0	58.5	62.0	61.0	62.5	62.0
Sound power level	Normal mode	dB	77.5	77.5	76.0	79.5	78.5	80.0	79.5

GLOBAL REMARKS

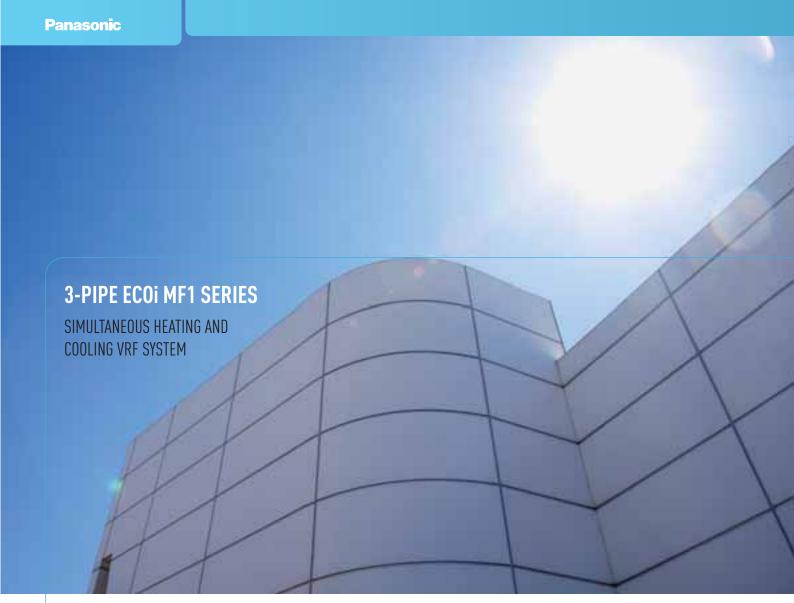
 Rated conditions:
 Cooling
 Heating

 Indoor air temperature
 27 °C DB / 19 °C WB
 20 °C DB

 Outdoor air temperature
 35 °C DB / 24 °C WB
 7 °C DB / 6 °C WB



22	27	27	20	/0	/2	11	11	/0
	34 36		38	40	42	44	46	48
		U-16ME1E81 U-16ME1E81	U-18ME1E81 U-16ME1E81	U-20ME1E81 U-16ME1E81	U-20ME1E81 U-18ME1E81	U-20ME1E81 U-18ME1E81	U-20ME1E81 U-20ME1E81	U-20ME1E81 U-20ME1E81
	U-8ME1E81	U-16ME1E81	U-16ME1E81	U-16ME1E81	U-16ME1E81	U-18ME1E81	U-18ME1E81	U-20ME1E81
			I	400 V / 3 phase / 50	Hz	I		
90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
3.88	4.09	4.07	4.08	4.04	3.96	3.97	3.92	3.88
35.9	36.2	38.3	40.5	43.3	46.1	48.3	51.4	53.8
23.2	23.5	24.8	26.2	28.0	29.8	31.2	33.2	34.8
100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
4.41	4.54	4.45	4.44	4.47	4.40	4.42	4.41	4.40
35.1	36.7	39.2	41.4	43.9	46.4	48.3	50.9	52.8
22.7	23.8	25.4	26.8	28.4	30.0	31.2	32.9	34.1
1,758 x 3,140 x 930	1,758 x 3,430 x 930	1,758 x 3,120 x 930	1,758 x 3,660 x 930	1,758 x 3,660 x 930	1,758 x 4,200 x 930	1,758 x 4,740 x 930	1,758 x 4,740 x 930	1,758 x 4,740 x 930
846	960	921	1,037	1,037	1,153	1,269	1,269	1,269
116	113	107	118	124	127	130	131	134
33,960	36,180	38,160	40,080	42,420	44,340	46,260	48,600	50,940
13 steps (0 – 100 %)	13 steps (0 - 100 %)	13 steps (0 – 100 %)	13 steps (0 - 100 %)					
80	80	80	80	80	80	80	80	80
18.0	24.0	25.5	26.0	26.0	26.5	27.0	27.0	27.0
31.75	31.75	38.10	38.10	38.10	38.10	38.10	38.10	38.10
19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
			Cooling: -10 °C D	B ~ +43 °C DB, Heating:	-25 °C WB ~ +20 °C WB			
66.0	64.5	66.5	66.0	67.0	66.5	66.0	67.0	67.5
63.0	61.5	63.5	63.0	64.0	63.5	63.0	64.0	64.5
80.5	79.0	81.0	80.5	81.5	81.0	80.5	81.5	82.0











New 3-Pipe ECOi MF1 series enables simultaneous heating and cooling operation



# Increased max. number of connectable indoor units

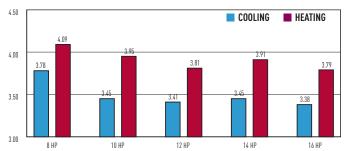
The 3-Pipe MF1 series has five DC inverter outdoor units from 8 HP to 16 HP as the basic models, and by combination of up to three units, an air-conditioning capacity of 8 HP to 48 HP can be set according to the user needs.

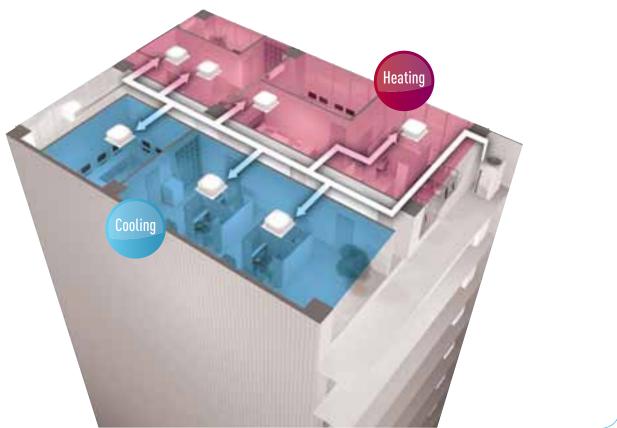
SYSTEM (HP)	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
OUTDOOR UNITS	8	10	12	14	16	10	10	12	14	16	16	16	16	10	10	10	10	10	12	14	16
						8	10	10	10	10	12	14	16	10	10	12	14	16	16	16	16
														14	16	16	16	16	16	16	16
CONNECTABLE INDOOR UNITS	13	16	19	23	26	29	33	36	40	40	40	40	40	40	40	40	40	40	40	40	40

If more than 100% indoor units are operated with a high load, the units may not perform at the rated capacity. For the details, please consult with an authorized Panasonic dealer.

# Excellent energy saving

The operation efficiency has been improved using highly efficient R410A refrigerant, new DC inverter compressor, new DC motor and new fan guard with low-loss wire guard. In addition, heat exchanger has been redesigned from 3-direction suction to 4-direction suction to efficiently distribute air speed.





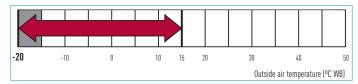
# Connectable indoor/outdoor unit capacity ratio up to 130%

#### Extended operating range

Cooling operation range: The cooling operation range has been extended to -10 °C by changing the outdoor fan to an inverter type.



Heating operation range: Stable heating operation even with an outside air temperature of -20 °C. The heating operation range has been extended to -20 °C by use of a compressor with a high-pressure vessel.

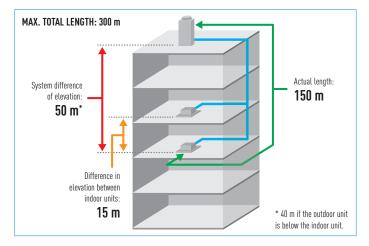


#### Wide temperature setting range

Wired remote control heating temperature setting range is 16 to 30 °C.

# Long piping design

Adaptable to various building types and sizes. Actual piping length: 150 m. Maximum piping length: 300 m



## Non-stop operation during maintenance

Even when an indoor unit needs maintenance, the other indoor units can be kept operating by setting. (Not applicable for all situations)

### Power suppression control for energy saving (Demand control)<sup>1</sup>

The 3-Pipe ECOi MF1 series has a built-in demand function which uses the inverter characteristics. With this demand function, the power consumption can be set in three steps, and operation<sup>2</sup> at optimum performance is performed according to the setting and the power consumption. This function is useful to reduce the annual power consumption and to save electricity fees while maintaining comfort.

- 1 An outdoor Seri-Para I/O unit is required for demand input.
- 2 Setting is possible as 0% or in the range from 40 to 100% (in steps of 5%). At the time of shipping, setting has been done to the three steps of 0%, 70%, and 100%.

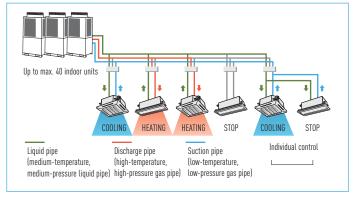
# Fully-automatic simultaneous cooling/heating operation and heat recovery

3-Pipe ECOi MF1 Series enables simultaneous heating and cooling operation by each solenoid valve kit.



#### Individual control of multiple indoor units with solenoid valve kits

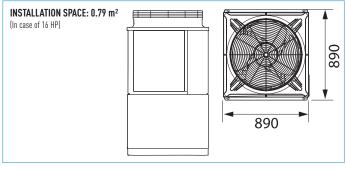
- Any design and layout can be used in a single system.
- Cooling operation is possible up to an outdoor temperature of -10 °C.

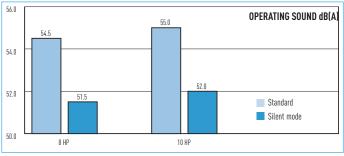


# Compactness for superb space saving and low noise level

5 types of outdoor units with different capacities have been standardized to one compact casing size.

Uniquely constructed with two-part compartments, the upper room contains heat exchanger while the lower two-part stores compressors. The benefits are two-fold - superb space saving and low noise level.

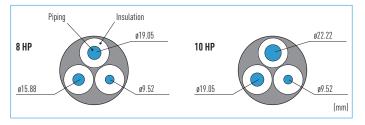




#### Excellent cost saving and realization of smaller piping size

By adoption of R410A with low pressure loss, it became possible to reduce the pipe sizes for discharge, suction and liquid pipes.

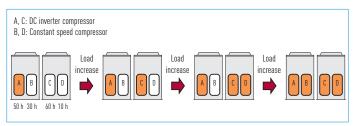
This makes it possible to aim for reduced piping space, improved workability at the site, and reduction of the piping material costs.



3-PIPE ECOi MF1								
HP	SUCTION PIPE	DISCHARGE PIPE	LIQUID PIPE					
8	Ø 19.05	Ø 15.88	Ø 9.52					
10	Ø 22.22	Ø 19.05	Ø 9.52					

#### Extended compressor life

The total operation time of the compressors is monitored by a microcomputer, so that there is no imbalance for the operation times of all compressors in the same refrigerant system, and compressors with a shorter operation time are operated with preference.



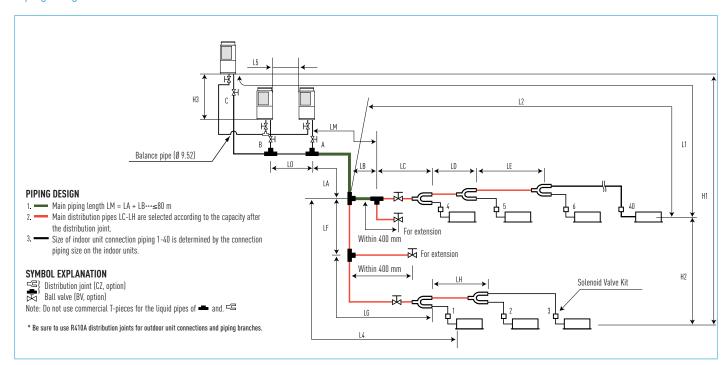
Items	Marks	Contents	Length (m)	
Allowable piping length	L1	Max. piping length	Actual piping length	≤150
				≤175
	Δ L (L2–L4)	Difference between the max. length and the min. length from the No. 1 distribution		≤40
	LM	Max. length of main piping (at max. diameter)		≤80
	1, 2~40	Max. length of each distribution		≤30
	L1+1+2+~40+A+B+LF+LG+LH	Total max. piping length including length of each distribution (only liquid tubing)		≤300
	L5	Distance between outdoor units		≤10
Allowable elevation difference	H1	When outdoor unit is installed higher than indoor unit		≤50
		When outdoor unit is installed lower than indoor unit		≤40
	H2	Max. difference between indoor units		≤15
	H3	Max. difference between outdoor units		≤4

Note 1: The outdoor connection main piping (LO part) depends on the total capacity of the outdoor units connected to the end.

Note 2: When the main piping length (L1) (equivatent length) exceeds 90 m, increase the size of both the gas and liquid main piping (LM) by 1 step.

Note 2: when the main piping length (LT) (equivalent length) exceeds 90 m, increase the size of both the gas and uquid main piping (LM) by 1 step. Specifications subject to change without notice.

#### Piping design





# 8-16 HP // 3-PIPE ECOi MF1 SERIES

#### WITH SIMULTANEOUS HEATING AND COOLING OPERATION HEAT RECOVERY TYPE

ECOi 3-Pipe is one of the most advanced VRF systems available. Not only offering high-efficiency and performance for simultaneous heating and cooling, Its sophisticated design makes installation and maintenance much easier.

- Conforms to COP 3.94 as the top class in the industry (Average cooling and heating value for 8 HP outdoor unit).
- Simultaneous cooling or heating operation for up to 40 indoor units.
- Small installation space, top class in the industry.
- Rotation operation function and back-up operation function provided.







#### **TECHNICAL FOCUS**

- STANDARDIZATION OF O\_U TO ONE COMPACT CASING SIZE
- IMPROVED OPERATION EFFICIENCY
- THE CONSTANT-SPEED COMPRESSOR ADOPTS A HIGH-PERFORMANCE INTERNAL HIGH-PRESSURE SCROLL
- IMPROVEMENT OF THE HEAT EXCHANGER
- RELAYOUT OF STRUCTURAL PARTS
- · CLOSE SIDE-BY-SIDE INSTALLATION IS POSSIBLE

HP			8	10	12	14	16			
MODEL NAME			U-8MF1E8	U-10MF1E8	U-12MF1E8	U-14MF1E8	U-16MF1E8			
Power supply				380/400/415V-3phase/50Hz						
Cooling capacity		kW	22.4	28.0	33.5	40.0	45.0			
		BTU/h	76,400	95,500	114,300	136,500	153,600			
EER		W/W	3.78	3.45	3.41	3.45	3.38			
Cooling electrical ratings	Running current	Α	10.0 / 9.5 / 9.2	13.7 / 13.0 / 12.6	16.6 / 15.7 / 15.2	20.0 / 19.0 / 18.3	23.0 / 21.8 / 21.0			
	Power input	kW	5.93	8.12	9.82	11.6	13.3			
Heating capacity		kW	25.0	31.5	37.5	45.0	50.0			
		BTU/h	85,300	107,500	128,000	153,600	170,600			
COP		W/W	4.09	3.95	3.81	3.91	3.79			
Heating electrical ratings	Running current	Α	10.3 / 9.8 / 9.4	13.5 / 12.8 / 12.3	16.6 / 15.8 / 15.2	19.9 / 18.9 / 18.2	22.8 / 21.6 / 20.9			
	Power input	kW	6.11	7.97	9.84	11.5	13.2			
Dimensions	H x W x D	mm	1,887 x 890 x 890 (+60)	1,887 x 890 x 890 (+60)	1,887 x 890 x 890 (+60)	1,887 x 890 x 890 (+60)	1,887 x 890 x 890 (+60)			
Net weight		Kg	290	290	290	340	340			
Air circulation		m³/min	150	160	150	200	220			
Refrigerant amount at ship	ment	Kg	11.8	11.8	11.8	11.8	11.8			
Piping connections	Suction pipe	mm	Ø 19.05	Ø 22.22	Ø 25.40	Ø 25.40	Ø 28.58			
	Discharge pipe	mm	Ø 15.88	Ø 19.05	Ø 19.05	Ø 22.22	Ø 22.22			
	Liquid pipe	mm	Ø 9.52	Ø 9.52	Ø 12.70	Ø 12.70	Ø 12.70			
	Balance pipe	mm	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52			
Ambient temperature oper	ating range		Cooling	/Dry: -10 °C~+43 °C (DB). He	eating: -20 °C~+15 °C (WB) Sim	ultaneous operation: -10 ºC~+	43 °C (DB)			
Operating sound	Normal mode	dBA	54.5	55	56	60	61			
	Silent mode	dBA	51.5	52	53	57	58			

GLOBAL REMARKS Rated conditions: Cooling Heating Indoor air temperature 27 °C DB / 19 °C WB 20 °C DB / 20 °C DB / 21 °C WB



#### **System limitations**

Max. number of combined outdoor units	3
Max. HP of combined outdoor units	135 kW (48 HP)
Max. number of connectable indoor units	40
Indoor/outdoor unit capacity ratio	50 -130%

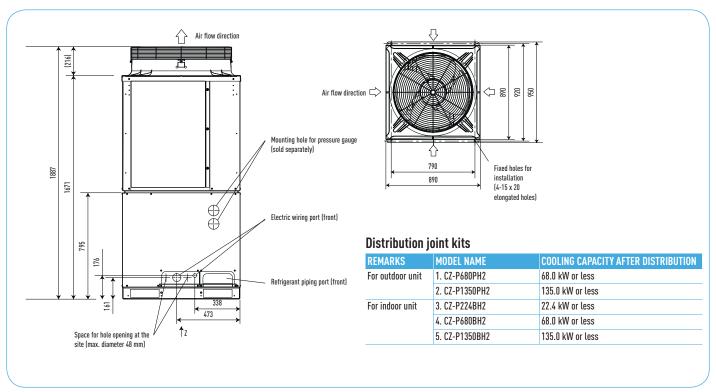
#### Additional refrigerant charge

	AMOUNT OF REFRIGERANT CHARGE/m (g/m)		AMOUNT OF REFRIGERANT CHARGE/m (g/m)
Ø 6.35	26	Ø 15.88	185
Ø 9.52	56	Ø 19.05	259
Ø 12.7	128	Ø 22.22	366

#### Refrigerant piping

PIPING SIZE (mm)								
O MATERIAL		1/2 H, H MATERIA	1/2 H, H MATERIAL					
Outer diameter	Wall thickness	Outer diameter	Wall thickness					
Ø 6.35	t 0.8	Ø 25.4	t 1.0					
Ø 9.52	t 0.8	Ø 28.58	t 1.0					
Ø 12.7	t 0.8	Ø 31.75	t 1.1					
Ø 15.88	t 1.0	Ø 38.1	t 1.15					
Ø 19.05	t 1.0	Ø 41.28	t 1.20					
Ø 22.22	t 1.15							

Note: When pipe bending is to be performed, the bending radius shall be at least 4 times the outer diameter. Also, take sufficient care to prevent pipe collapse and damage at the time of bending.





# 3-PIPE ECOi MF1 SERIES // COMBINATION FROM 18 TO 48 HP

WITH SIMULTANEOUS HEATING AND COOLING OPERATION HEAT RECOVERY TYPE

ECOi 3-Pipe is one of the most advanced VRF systems available. Not only offering high-efficiency and performance for simultaneous heating and cooling, Its sophisticated design makes installation and maintenance much easier.

- Conforms to COP 3.94 as the top class in the industry (Average cooling and heating value for 8 HP outdoor unit).
- Simultaneous cooling or heating operation for up to 40 indoor units.
- Small installation space, top class in the industry.
- Rotation operation function and back-up operation function provided.







#### **TECHNICAL FOCUS**

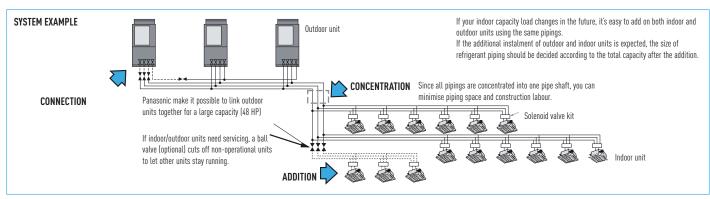
- STANDARDIZATION OF O\_U TO ONE COMPACT CASING SIZE
- IMPROVED OPERATION EFFICIENCY
- THE CONSTANT-SPEED COMPRESSOR ADOPTS A HIGH-PERFORMANCE INTERNAL HIGH-PRESSURE SCROLL
- IMPROVEMENT OF THE HEAT EXCHANGER
- RELAYOUT OF STRUCTURAL PARTS
- CLOSE SIDE-BY-SIDE INSTALLATION IS POSSIBLE

HP			18	20	22	24	26	28	30			
MODEL NAME					U-10MF1E8 U-12MF1E8		U-10MF1E8 U-16MF1E8	U-12MF1E8 U-16MF1E8	U-14MF1E8 U-16MF1E8			
Power supply				380/400/415V-3phase/50Hz								
Cooling capacity		kW	50.4	56.0	61.5	68.0	73.0	78.5	85.0			
		BTU/h	172,000	191,100	219,900	232,000	249,100	267,900	290,100			
EER		W/W	3.57	3.46	3.44	3.45	3.41	3.40	3.41			
Cooling electrical ratings	Running current	Α	23.8 / 22.6 / 21.8	27.3 / 26.0 / 25.0	30.2 / 28.7 / 27.7	33.6 / 31.9 / 30.8	36.5 / 34.7 / 33.5	39.4 / 37.5 / 36.1	43.0 / 40.8 / 39.4			
	Power input	kW	14.1	16.2	17.9	19.7	21.4	23.1	24.9			
Heating capacity		kW	56.5	63.0	69.0	76.5	81.5	87.5	95.0			
		BTU/h	192,800	215,000	235,500	261,100	278,100	300,300	324,200			
COP		W/W	4.01	3.96	3.88	3.92	3.84	3.80	3.85			
Heating electrical ratings	Running current	Α	23.8 / 22.6 / 21.8	26.8 / 25.5 / 24.6	30.0 / 28.5 / 27.5	33.3 / 31.6 / 30.5	36.2 / 34.4 / 33.1	39.3 / 37.3 / 36.0	42.6 / 40.5 / 39.0			
	Power input	kW	14.1	15.9	17.8	19.5	21.2	23.0	24.7			
Dimensions	HxWxD	mm	1,887x1,880x890(+60)	1,887x1,880x890(+60)	1,887x1,880x890(+60)	1,887x1,880x890(+60)	1,887x1,880x890(+60)	1,887x1,880x890(+60)	1,887x1,880x890(+60)			
Net weight		Kg	580	580	580	630	630	630	680			
Air circulation		m³/min	150+160	160+160	160+180	160+200	160+220	180+220	200+220			
Refrigerant amount at ship	ment	Kg	23.6	23.6	23.6	23.6	23.6	23.6	23.6			
Piping connections	Suction pipe	mm	Ø 28.58	Ø 28.58	Ø 28.58	Ø 28.58	Ø 31.75	Ø 31.75	Ø 31.75			
	Discharge pipe	mm	Ø 22.22	Ø 22.22	Ø 25.40	Ø 25.40	Ø 25.40	Ø 28.58	Ø 28.58			
	Liquid pipe	mm	Ø 15.88	Ø 15.88	Ø 15.88	Ø 15.88	Ø 19.05	Ø 19.05	Ø 19.05			
	Balance pipe	mm	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52			
Ambient temperature oper	ating range			Cooling/Dry: -	10 °C~+43 °C (DB). He	eating: -20 °C~+15 °C	(WB) Simultaneous o	peration: -10 °C~+24	PC (DB)			
Operating sound	Normal mode	dBA	58	58	58.5	58	60	60.5	61			
	Silent mode	dBA	55	55	55.5	55	57	57.5	58			

GLOBAL REMARKS Rated conditions: Cooling Heating Indoor air temperature 27 °C DB / 19 °C WB 20 °C DB / 20 °C DB / 21 °C WB



32	34	36	38	40	42	44	46	48
U-16MF1E8	U-10MF1E8 U-10MF1E8 U-14MF1E8	U-10MF1E8 U-10MF1E8 U-16MF1E8	U-10MF1E8 U-12MF1E8 U-16MF1E8	U-10MF1E8 U-14MF1E8 U-16MF1E8	U-10MF1E8 U-16MF1E8 U-16MF1E8		U-14MF1E8 U-16MF1E8 U-16MF1E8	U-16MF1E8 U-16MF1E8 U-16MF1E8
	•			380/400/415V-3phase,	/50Hz			
90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
307,100	327,600	344,700	363,400	385,600	402,700	421,400	443,600	460,700
3.38	3.45	3.41	3.42	3.42	3.40	3.41	3.40	3.38
45.9 / 43.6 / 42.1	47.5 / 45.1 / 43.5	50.5 / 48.0 / 46.3	53.0 / 51.0 / 49.0	57.0 / 54.0 / 52.0	60.0 / 57.0 / 55.0	63.0 / 60.0 / 58.0	66.0 / 63.0 / 60.0	69.0 / 65.0 / 63.0
26.6	27.8	29.6	31.3	33.0	34.7	36.4	38.2	39.9
100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
343,000	368,500	385,600	407,800	431,700	450,400	470,900	494,800	511,900
3.79	3.93	3.88	3.84	3.88	3.84	3.81	3.83	3.79
45.6 / 43.3 / 41.7	46.9 / 44.6 / 43.0	49.7 / 47.2 / 45.5	53.0 / 50.0 / 48.0	56.0 / 54.0 / 52.0	59.0 / 56.0 / 54.0	63.0 / 59.0 / 57.0	65.0 / 62.0 / 60.0	68.0 / 65.0 / 63.0
26.4	27.5	29.1	31.0	32.7	34.4	36.2	37.9	39.6
1,887x1,880x890(+60)	1,887x2,870x890(+60)	1,887x2,870x890(+60)	1,887x2,870x890(+60)	1,887x2,870x890(+60)	1,887x2,870x890(+60)	1,887x2,870x890(+60)	1,887x2,870x890(+60)	1,887x2,870x890(+60
680	920	920	920	970	970	970	1,020	1,020
220+220	160+160+200	160+160+220	160+180+220	160+200+220	160+220+220	180+220+220	200+220+220	220+220+220
23.6	35.4	35.4	35.4	36.0	36.0	36.0	36.0	36.0
Ø 31.75	Ø 31.75	Ø 38.10	Ø 38.10	Ø 38.10	Ø 38.10	Ø 38.10	Ø 38.10	Ø 38.10
Ø 28.58	Ø 28.58	Ø 28.58	Ø 31.75	Ø 31.75	Ø 31.75	Ø 31.75	Ø 31.75	Ø 31.75
Ø 19.05	Ø 19.05	Ø 19.05	Ø 19.05	Ø 19.05	Ø 19.05	Ø 19.05	Ø 19.05	Ø 19.05
Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52	Ø 9.52
		Cooling/Dry:	·10 ºC~+43 ºC (DB). Hea	ting: -20 °C~+15 °C (WB)	Simultaneous operation	: -10 °C~+24 °C (DB)		
61.5	61	61.5	61.5	62	62.5	62.5	63	63.5
58.5	58	58.5	58.5	59	59.5	59.5	60	60.5









# **ECO G AND ECO G MULTI, S SERIES**

Panasonic's GHP range is extensive and covers the ECO G and ECO G Multi Series, and the S Series. Our GHP VRF range of commercial systems is leading the industry in the development of efficient and flexible systems, and is the natural choice for commercial projects, especially those where power restrictions apply. As you would expect, all our gas-driven VRF systems have the highest reliability rates in the industry and a leading customer service programme. The torque and rpm control functions of the GHP's motor are comparable with an inverter-type electric air conditioner. Thus, the GHP ensures individual, and efficient control and performance - just as you expect from an electric inverter controlled air conditioner.

#### Easy to position

The advanced Gas Driven VRF systems offers increased efficiency and performance across the range. Now more powerful than ever before, it can connect up to 48 indoor units.

Improvements include increased part load performance, reduced gas consumption with a Miller-cycle engine and reduced electrical consumption by using DC fan motors.

- Up to 71 kW of cooling from a current consumption of 11.0 AMPs
- Single phase power supply across the range
- The option of natural gas or LPG as its main power source
- A water heat exchanger to connect to domestic hot water systems 16–25 HP (2-Pipe units only)
- Option of DX or chilled water for indoor heat exchange
- Reduced CO<sub>2</sub> emissions



#### ECO G AND ECO G MULTI

The S Series 2-Pipe not only offers improved performance but also increased flexibility.



#### **ECO G 3 WAY MULTI**

3 Way heat recovery system with simultaneous heating & cooling.



#### **ECO G AND ECO G MULTI BENEFITS**

#### **High-efficiency operation**

All models are equipped with a high-performance air exchanger and a newly developed refrigerant heat exchanger for high efficiency operation, making them one of the most energy efficient solutions on the market.

#### Lowest nitrogen oxide emissions

The GHP VRF systems have the lowest nitrogen oxide emissions, 66% below the standard. In a pioneering development, the Panasonic GHP features a brand new lean-burn combustion system that utilises air fuel ratio feedback control to reduce NOx emissions to an all time low.

#### High performance

With its advanced heat exchanger design, this new GHP system offers improved efficiency and reduced running costs, which, coupled with improved engine management systems, have greatly improved the system COP rating.



#### **Excellent economy**

The Panasonic GHP provides quick and powerful cooling/heating and increases delivery of heat into the space by the efficient recovery of heat from the engine cooling water, which is injected into the refrigerant circuit by a highly efficient plate heat exchanger. In addition, the use of engine waste heat ensures that our gas heat pump air conditioner requires no defrost cycle, therefore providing continuous 100% heating performance in severe weather conditions with an outside air temperature as low as -20 °C. During cooling mode the rejected heat from the engine is available for use with in a DHW system and can supply up to 30 kW of hot water at 75 °C. The DHW is also available in heating when the outside air temp is above 7 °C.

#### Water chiller option

Our GHP system is also available with a water chiller option, which can be combined with individual outdoor units or as part of a DX chilled water mix of indoor units. The system can be operated via a BMS system or a Panasonic supplied control panel, with chilled water set points from -15  $^{\circ}$ C - 15  $^{\circ}$ C and heating set points 25  $^{\circ}$ C - 55  $^{\circ}$ C.

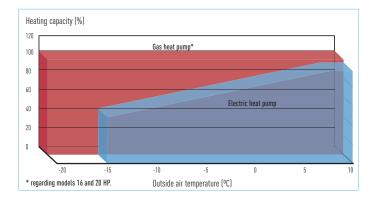
#### No defrost requirements

Below 7  $^{\circ}$ C ambient in heating mode, the outdoor fans switch off, saving further running costs and CO<sub>2</sub> emissions.

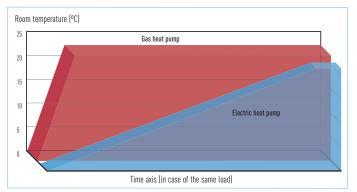
# **ECO G OUTDOOR UNITS RANGE**

HP CAPACITY (Cooling / Heating) kW	16 45.00 / 50.00	20 56.00 / 63.00	25 71.00 / 80.00	30 85.00 / 95.00	32 90.00 / 100.00	36 101.00 / 113.00	40 112.00 / 126.00	45 127.00 / 143.00	50 142.00 / 160.00
						2			
ECO G AND ECO G MULTI	U-16GE2E5	U-20GE2E5	U-25GE2E5	U-30GE2E5	U-16GE2E5 U-16GE2E5	U-16GE2E5 U-20GE2E5	U-20GE2E5 U-20GE2E5	U-20GE2E5 U-25GE2E5	U-25GE2E5 U-25GE2E5
ECO G 3 WAY MULTI	U-16GF2E5	U-20GF2E5	U-25GF2E5						

#### Comparison of heating capacity

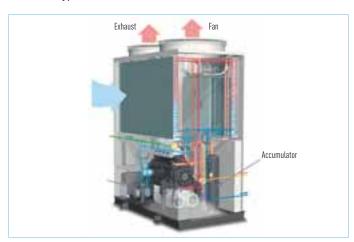


#### Comparison of the start times for heating operation



#### The Gas Heat Pump (GHP)

Panasonic Gas Heat Pump is the natural choice for commercial projects, especially for those projects where power restrictions apply. As you would expect, all of our Gas Driven VRF systems are designed to give the highest reliability rates. The GHP engine or (internal combustion engine) varies the engine speed to match the building load functions that are comparable with an inverter type electric air conditioner.



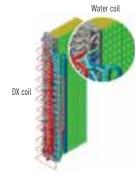
#### Power supply problems?

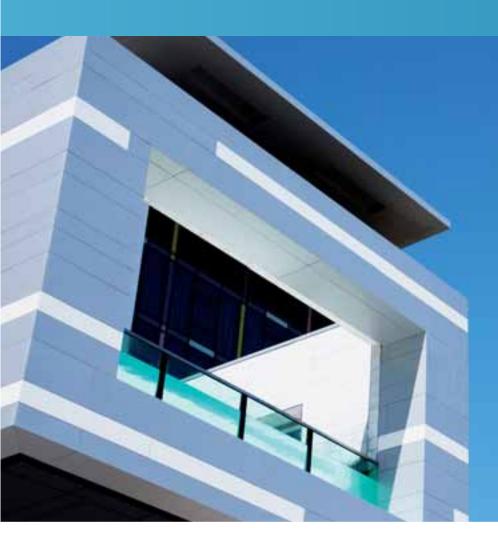
If you are short of electrical power, our gas heat pump could be the perfect solution:

- Runs on natural gas or LPG and just needs single phase supply
- Enables the building's electrical power supply to be used for other critical electrical demands
- Reduces capital cost to upgrade power substations to run heating and cooling systems
- Reduces power loadings within a building especially during peak periods
- Electricity supply freed up for other uses such as IT servers, commercial refrigeration, manufacturing, lighting etc.

#### **GHP Outdoor Heat Exchanger**

- Integrated DX and hot water coil
- No defrost required
- · Faster reaction to demand for heating



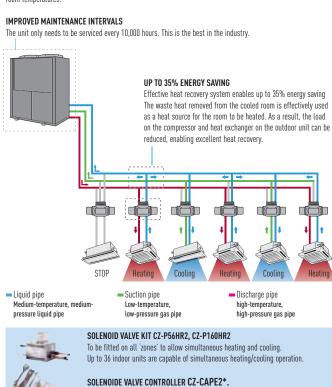


# ECO G 3 Way Multi

#### SYSTEM EXAMPLE

#### **EXCELLENT PERFORMANCE**

Panasonic 3 WAY multi system is capable of simultaneous heating/cooling and individual operation of each indoor unit by only one outdoor unit. As a result, efficient individual air conditioning is possible in buildings having diverse room temperatures.



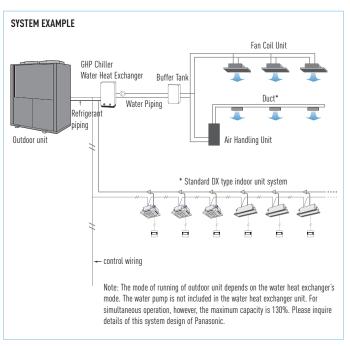
Must be added to the CZ-P56HR2 OR CZ-P160HR2.

\* For wall mounted CZ-CAPEK2.

## ECO G Water Heat Exchanger

#### **Mixed System Application**

- Combined with a water heat exchanger unit, the Panasonic GHP can create a flexible system--the ideal replacement for existing chiller and boiler systems.
- The GHP Multi System can have an indoor unit plus a GHP chiller. When the two systems are operated independently, an outdoor unit with 130% capacity can be connected.



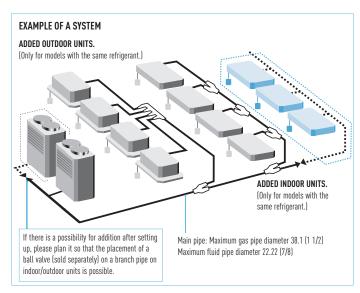
# **ECO G AND ECO G MULTI**

## 2-Pipe Heat Pump System

#### Easy to add additional units in the future

Load can easily be increased in the future by the addition of indoor and outdoor units without having to plumb pipe shafts.

\* When specifying refrigerant pipe work, please choose the size according to the horsepower after the increase of units.

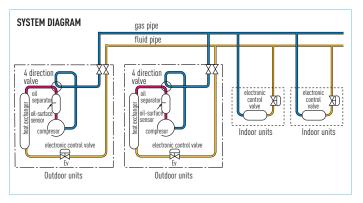


Maximum possible number of outdoor units to be combined: 2 units. Maximum horsepower of combined outdoor units: 50 HP. Maximum possible number of indoor units to be connected: 48 units<sup>1</sup>. Indoor/outdoor units capacity ratio: 50%~130%<sup>2</sup>.

- 1 When 2 outdoor units are connected.
- 2 Capacity of indoor units connection is: Minimum) 50% of the capacity of the smallest outdoor unit within the system.

  Maximum) 130%: total capacity of the system outdoor units.

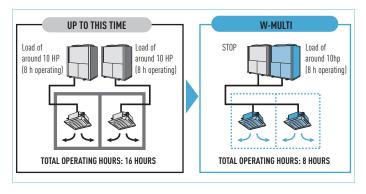
  Indoor units are same as multi series for buildings.



#### Saving Energy

- Energy savings achieved by the Appropriate Capacity.
- Equational Program Function.

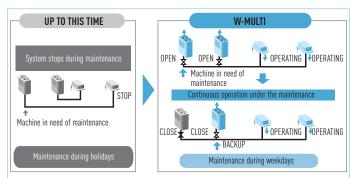
Energy savings are achieved by the Appropriate Load Divider Function, which enables efficient operation by concentrating the cooling/heating capacity to one outdoor unit and stopping the other. Compared to conventional machines with a similar COP, this function allows energy savings and thus reduces the running costs, especially in part-load seasons like spring and autumn.



#### Non-stop operation, even during maintenance

- System will not stop even during maintenance, due to Manual Backup Operating Function.
- Maintenance is possible during weekdays because it can continue operating during maintenance.
- Automatic Backup Operating Function enables continuous operation.

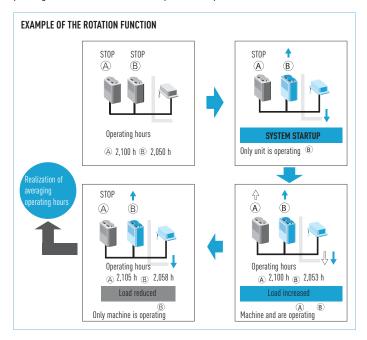
If one outdoor unit stops the backup function will automatically start on the remaining unit and continue operating. During service intervals, the system being serviced can be isolated by a closing valve in the outdoor unit, enabling continuous operation with the still operative outdoor unit.



#### Long lifetime

#### - Renewal period prolonged due to rotation function.

Rotation function, which is run from outdoor units with low operating time, will average the operating hours of each outdoor unit. This will result in prolongation of maintenance or replacement period.



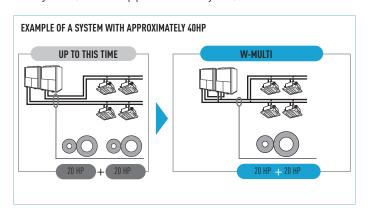
#### Ease of construction

#### By using common header pipe work the installation cost and time is significantly reduced.

By combining all pipes, which were needed for each indoor unit, into a common pipe in each system, the number of pipes are reduced by half\* which leads to ease of construction. Furthermore, space of pipes within pipe shafts can be reduced by 2/3.\*

\*System with approximately 40hp (20hp x 2 units)

Combining all pipes, which were needed for each outdoor unit, into a pipe in each system. (Number of pipes is reduced by half).

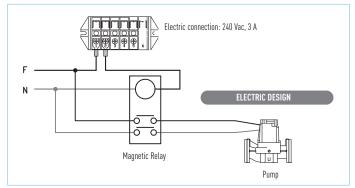


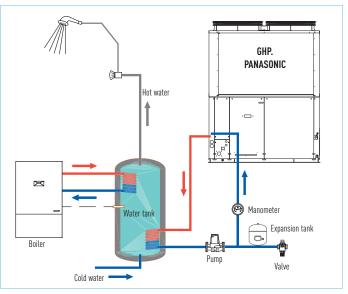
#### **Hot Water Supply Function**

#### - System Advantage.

The engine waste heat, which is normally exhausted into the atmosphere, is recovered via the heat exchanger and effectively used as hot water, so the GHP Chiller acts as a sub system that alleviates the load on the client's main hot water system, and therefore offers 'free' hot water.

CAPACITY AT COOL	ING STANDARD POINT	OUTLET T	OUTLET TEMP 75 °C		
Outdoor unit	U-16GE2E5	kW	15.00		
	U-20GE2E5		20.00		
	U-25GE2E5		30.00		
	U-30GE2E5		30.00		
Hot water piping allo	wable pressure	MPa	0.7		
Hot water circulation	rate	m³/h	3.9		
Hot water tube size			Rp 3/4		





- All the items illustrated in this drawing (except the outdoor unit) are not supplied by Panasonic.
- During start up, set temperature value of the water in the outdoor unit's parameter.

#### ECO G WATER HEAT EXCHANGER FOR HYDRONIC APPLICATIONS

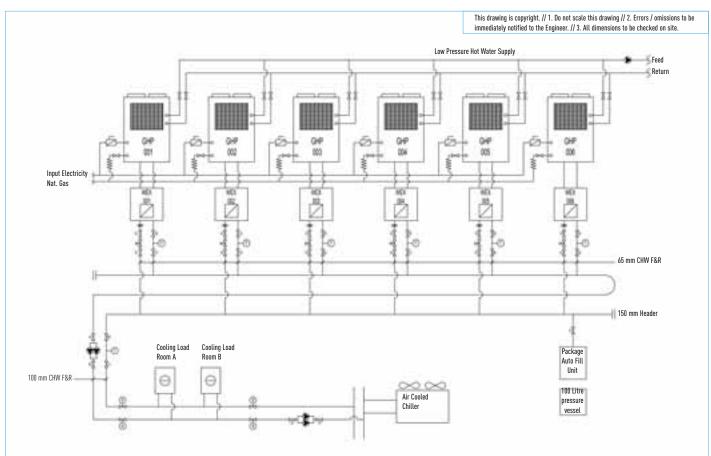
## **Application Examples**



#### **Application Examples**

CONNECTION TO 'CLOSE CONTROL' COMPUTER EQUIPMENT. COMPUTER ROOM APPLICATIONS

When all available electrical power needed to be utilised for the IT equipment for a leading international bank, the cooling load of over 450 kW needed to be powered by gas. The outdoor units were connected via Water heat exchangers to cooling coils inside the 'close control' units thereby maintaining a conditioned environment for temperature and humidity. By utilising the hot water function over 100 kW of hot water are supplied to the building and therefore the additional benefit of considerable  $\mathrm{CO}_2$  savings is ensured.



This Part L design has reduced CO, Emissions by 26% or 166 tonnes per annum compared to electric chillers.

Specifications subject to change without notice

Rating Conditions: Cooling Indoor 27 °C DB 19 °C WB Outdoor 35 °C DB 24 °C WB Heating Indoor 20 °C DB Outdoor 7 °C DB 6 °C WB.





CONNECTION TO CHILLED WATER COILS IN AIR HANDLING EQUIPMENT. AIR HANDLING APPLICATION

When a top London restaurant opened it needed large volumes of fresh air to ensure the optimum dining environment. GHP units connected to the cooling coils within the air handling equipment ensured the air was introduced in the right condition in both summer and winter.





CHILLER REPLACEMENT. CHILLED WATER SUPPLY TO FAN COILS. CHILLER REPLACEMENT

When some old chillers needed replacing at the end of their operational lifetime, GHPs with Water heat exchangers enabled the project to be carried out in stages whilst still utilising the existing water pipe work and fan coils. This enabled the project to be delivered on time, to a restricted budget and avoided all issues regarding refrigerant in confined spaces.



# ECO G AND ECO G MULTI

2-PIPE HEAT PUMP SYSTEM

ECO G and ECO G Multi 2-Pipe for Heat Pump Applications.

The S Series 2-Pipe not only offers improved performance but also increased flexibility. Now available as multi-systems, many combinations are possible, from 16 HP to 50 HP, allowing for more power and enabling accurate matching of a system building load. Additional new features include part load engine management and compressor run hour equalisation.



#### **TECHNICAL ZOOM**

- REDUCED GAS CONSUMPTION BY MILLER-CYCLE ENGINE
- REDUCED ELECTRICAL POWER CONSUMPTION BY USING DC MOTORS
- NEW LIGHTWEIGHT DESIGN BY USE OF ALUMINIUM ENGINE BLOCK REDUCES WEIGHT BY 110 Kg
- DIVERSITY RATIO 50-200% (SINGLE MODELS ONLY)
- QUIET MODE OFFERS A FURTHER 2 dB(A) REDUCTION
- PART LOAD EFFICIENCIES INCREASED

НР			16 HP	20 HP	25 HP	30 HP	32 HP	36 HP*	40 HP*	45 HP*	50 HP
MODEL NAME			U-16GE2E5	U-20GE2E5	U-25GE2E5	U-30GE2E5	U-16GE2E5 U-16GE2E5	U-16GE2E5 U-20GE2E5	U-20GE2E5 U-20GE2E5	U-20GE2E5 U-25GE2E5	U-25GE2E5 U-25GE2E5
Cooling capacity		kW	45.00	56.00	71.00	85.00	90.00	101.00	112.00	127.00	142.00
Hot water (cooling	mode)	kW	15.00	20.00	30.00	30.00	30.00	35.00	40.00	50.00	60.00
Power Input		kW	0.71	1.02	1.33	1.70	1.42	1.73	2.04	2.35	2.66
EER			1.48	1.40	1.15	1.22	1.48	1.43	1.40	1.25	1.15
Max COP (inc hot	water)		1.97	1.89	1.64	1.65	1.97	1.93	1.89	1.74	1.64
Gas consumption		kW	29.70	39.10	60.40	67.9	59.40	68.80	78.20	99.50	120.80
Heating capacity	STD	kW	50.00	63.00	80.00	95.00	100.00	113.00	126.00	143.00	160.00
	Low temp <sup>1</sup>	kW	53.00	67.00	78.00	90.00	106.00	120.00	134.00	145.00	156.00
Power Input		kW	0.60	0.64	0.83	1.45	1.20	1.24	1.28	1.47	1.66
COP			1.51	1.46	1.48	1.37	1.51	1.48	1.46	1.47	1.48
Gas consumption	STD	kW	32.50	42.50	53.2	68.1	65.00	75.00	85.00	95.70	106.40
	Low temp <sup>1</sup>	kW	41.5	56.4	62.3	78.0	83.00	97.90	112.80	118.70	124.60
COP	Average		1.50	1.43	1.32	1.29	1.50	1.46	1.43	1.36	1.32
Size	Height	mm	2273	2273	2273	2273	2273	2273	2273	2273	2273
	Width	mm	1650	1650	1650	2026	1650+100+1650	1650+100+1650	1650+100+1650	1650+100+1650	1650+100+1650
	Depth	mm	1000 (+80)	1000 (+80)	1000 (+80)	1000 (+80)	1000 (+80)	1000 (+80)	1000 (+80)	1000 (+80)	1000 (+80)
Weight		Kg	755	780	810	840	755.775	755.780	780.780	780.810	810
Starter amperes		Α	30	30	30	30	30	30	30	30	30
Pipe Connections	Gas	Inches (mm)	1 1/8 (Ø 28.58)	1 1/8 (Ø 28.58)	1 1/8 (28.58)	1 1/4 (Ø 31.75)	1 1/4 (Ø 31.75)	1 1/4 (Ø 31.75)	1 1/2 (Ø 38.10)	1 1/2 (Ø 38.10)	1 1/2 (Ø 38.10)
	Liquid	Inches (mm)	1/2 (Ø 12.7)	5/8 (Ø 15.88)	5/8 (Ø 15.88)	3/4 (Ø 19.05)	3/4 (Ø 19.05)	3/4 (Ø 19.05)	3/4 (Ø 19.05)	3/4 (Ø 19.05)	3/4 (Ø 19.05)
	Fuel gas		R3/4 (bolt thread)	R3/4 (bolt thread)	R3/4 (bolt thread)	R3/4 (bolt thread)	R3/4 (bolt thread)				
	Exhaust drain port	mm	Ø 25 rubber hose	Ø 25 rubber hose	Ø 25 rubber hose	Ø 25 rubber hose	Ø 25 rubber hose				
Operation sound		dB(A)	57	58	62	63	60	61	61	63	65
Indoor/outdoor ca	pacity ratio		50-200 %	50-200 %	50-200 %	50-170 %	50-130 %	50-130 %	50-130 %	50-130 %	50-130 %
Number of connec	tions indoor*		24	24	24	32	48	48	48	48	48

<sup>\*</sup> In these combinations, GEP2E5 is able to connect to a W-multi system Specifications subject to change without notice instead of a GE2E5

1 Low temp condition: outdoor temperature 2 °C.

Specifications subject to change without notice.

GLOBAL	Rated conditions:	Cooling	Heating (standard)	Heating (low temp.)
REMARKS	Indoor air temperature	27 °C DB / 19°C WB	20 °C DB	20 °C DB / 15 °C WB or less
	Outdoor air temperature	35 °C DB	7 °C DB / 6 °C WB	2 °C DB / 1 °C WB

Cooling and heating capacities in the tables are determined under the test conditions of JIS B 8627. Effective heating requires that the outdoor air intake temperature be at least -20 °C DB or -21 °C WB. DB: Dry Bulb; WB: Wet Bulb

- $\boldsymbol{\cdot}$  Gas consumption is the total (high) calorific value standard.
- Outdoor unit operating sound is measured 1 meter from the front and 1.5 meters above the floor (in an anechoic environment). Actual installations may have larger values due to ambient noise and reflections.

  - Values in parentheses () for refrigerant gas and liquid types are those when the maximum piping length exceeds 90 meters (equivalent
- length). (Reducers are available locally.)
- Specifications are subject to change without notice.
- Hot water heating capacity is applicable during cooling operation as in Note 1.
- $\cdot \text{The maximum water temperature that can be obtained is 75 °C. Water heating performance and temperature vary with the air or the contract of the contrac$ conditioning load. Because the hot water heating system uses waste heat from the engine, which runs the air conditioning, its ability to heat water is not guaranteed.

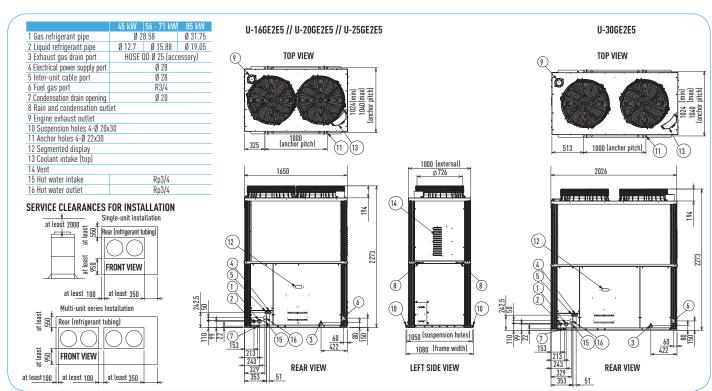


#### **More Technical Zoom**

- Connectability increased now up to 48 indoor units
- Multi-systems with combinations from 13 HP up to 50 HP
- 200 m maximum allowable piping length (L1)
- Extended pipe runs (total 780 m)
- 10,000 run hours between engine service intervals (equivalent to one maintenance every 3.2 years\*)
- Full heating capacity down to -20 °C
- No defrost cycle
- Assuming 3,120 running hours per year 12 h x 5 days x 52 weeks
- \* Referring to outside temperature



Sample installation





# ECO G 3 WAY MULTI

3 WAY HEAT RECOVERY SYSTEM WITH SIMULTANEOUS HEATING & COOLING The only 3 Way GHP system in Europe, the S Series ECO G 3 Way offers even more performance and outstanding features when you need simultaneous heating and cooling. Now with capacities available from 16 HP to 25 HP, Panasonic offers the greatest choice and flexibility to solve any power problem or site requirement.



#### **TECHNICAL ZOOM**

- SIMULTANEOUS HEATING AND COOLING FOR TOTAL CONTROL
- REDUCED GAS CONSUMPTION BY MILLER-CYCLE ENGINE
- REDUCED ELECTRICAL POWER CONSUMPTION BY USING DC MOTORS
- NEW USE OF ALUMINIUM ENGINE BLOCK REDUCES WEIGHT BY 110 Kg
- PART LOAD EFFICIENCIES INCREASED
- CONNECTABILITY INCREASED TO UP TO 36 INDOOR UNITS
- 200 m MAXIMUM ALLOWABLE PIPING LENGTH, L1

HP			16 HP	20 HP	25 HP
MODEL NAME			U-16GF2E5	U-20GF2E5	U-25GF2E5
Cooling capacity	ļ		45.00	56.00	71.00
Cooling power in		kW	0.71	1.02	1.33
EER			1.48	1.40	1.15
Cooling gas cons	sumption	kW	29.7	39.1	60.4
Heating capacity	STD	kW	50.00	63.00	80.00
	Low temp*	kW	53.00	67.00	75.00
Heating power in	put I	kW	0.60	0.64	0.83
COP			1.51	1.46	1.48
Heating gas	STD I	kW	32.5	42.5	53.2
consumption	Low	kW	41.5	56.4	62.3
COP	Average		1.50	1.43	1.32
Size	H x W x D	mm	2273 x 1650 x 1000 (+80)	2273 x 1650 x 1000 (+80)	2273 x 1650 x 1000 (+80)
Weight	I	Kg	775	775	805
Starter amperes	I	4	30	30	30
Pipe	Gas I	nches (mm)	1 1/8 (Ø 28.58)	1 1/8 (Ø 28.58)	1 1/8 (Ø 28.58)
	Liquid I	nches (mm)	3/4 (Ø 19.05)	3/4 (Ø 19.05)	3/4 (Ø 19.05)
	Discharge I	nches (mm)	7/8 (Ø 22.22)	1 (Ø 25.40)	1 (Ø 25.40)
	Fuel gas		R3/4	R3/4	R3/4
	Exhaust drain port		Ø 25	Ø 25	Ø 25
Operation sound	(	dB(A)	57	58	62
Indoor/outdoor c	apacity ratio		50-200%1	50-200% <sup>1</sup>	50-200%1
Number of conne	ected indoor units*		24	24	24

<sup>\*</sup>Low temp condition: outdoor temperture 2 °C.

1 Indoor unit can be connected to up to 16 kW model (model size 60)

Specifications subject to change without notice.

GLOBAL	Rated conditions:	Cooling	Heating (standard)	Heating (low temp.)
REMARKS	Indoor air temperature	27 °C DB / 19°C WB	20 °C DB	20 °C DB / 15 °C WB or less
ILLITATIO	Outdoor air tomporaturo	3E 0C DB	7 0C DD / 6 0C M/D	2 0C DD / 1 0C W/D

Cooling and heating capacities in the tables are determined under the test conditions of JIS B 8627. Effective heating requires that the outdoor air intake temperature be at least -20 °C DB or -21 °C WB. DB: Dry Bulb; WB: Wet Bulb

 $<sup>\</sup>boldsymbol{\cdot}$  Gas consumption is the total (high) calorific value standard.

<sup>•</sup> Outdoor unit operating sound is measured 1 meter from the front and 1.5 meters above the floor (in an anechoic environment). Actual installations may have larger values due to ambient noise and reflections.

- Values in parentheses () for refrigerant gas and liquid types are those when the maximum piping length exceeds 90 meters (equivalent

length). (Reducers are available locally.)

Specifications are subject to change without notice.

Hot water heating capacity is applicable during cooling operation as in Note 1.

 $<sup>\</sup>cdot \text{The maximum water temperature that can be obtained is 75 °C. Water heating performance and temperature vary with the air of the control of the contro$ conditioning load. Because the hot water heating system uses waste heat from the engine, which runs the air conditioning, its ability to heat water is not guaranteed.



#### **More Technical Zoom**

- Diversity ratio 50-200%
- Extended pipe runs (total 780 m)
- Quiet mode offers a further 2 dB(A) reduction
- Full heating capacity down to -21 °C
- No defrost cycle
- Option of using LPG as a power supply (increases flexibility and avoids problems of potential site restrictions in the future. The purer fuel is also excellent for further reductions in CO, emissions)
- 10,000 run hours between engine service intervals (equivalent to one maintenance every 3.2 years\*)

• Assuming 3,120 running hours per year - 12 h x 5 days x 52 weeks

#### Additional parts



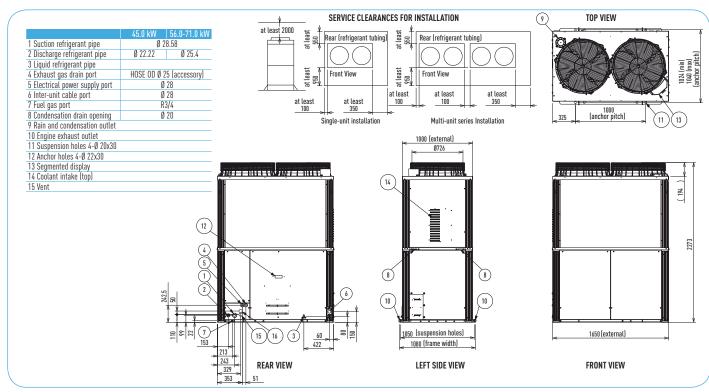
# Solenoid valve controller CZ-CAPE2 (For all indoor units excluding wall mounted) CZ-CAPEK2 (For wall mounted)



#### Solenoid valve kit

CZ-P56HR2 (for an indoor capacity of max. 5.6 kW) CZ-P160HR2 (for an indoor capacity of max. 16 kW)

\* For conference rooms and other locations where low noise is required, pay attention to the installation location and install in a corridor etc.



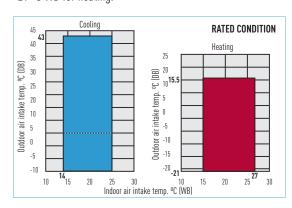
#### **FEATURES**

#### High technology features



#### Wider operation

Cooling can be performed throughout the year for computer rooms, banquet halls, etc. Wider operation range covers outdoor temperatures of as low as -10  $^{\circ}$ C DB for cooling and -21  $^{\circ}$ C WB for heating.



# practical operation AUTOMATIC RESTART

#### Automatic restart function for power failure

Even when power failure occurs, preset programmed operation can be reactivated once power is resumed.



#### **Self-diagnosing function**

By using electronic control valves for details of past warnings are stored and can be verified on the liquid crystal display. This makes it easier to diagnose malfunctions, greatly reducing service labor.

#### Simple, convenient features (Indoor Units)



#### **Automatic fan operation**

Convenient microprocessor control automatically adjusts fan speed to High, Medium or Low, corresponding to room sensor and maintains comfortable airflow throughout the room.



#### Air Sweep

The air sweep function moves the flap up and down in the air outlet, directing air in a "sweeping" motion around the room and providing comfort in every corner.



#### Mild dry

By intermittent control of compressor and indoor unit's fan, "New Mild Dry" gives you comfort. It realizes efficient dehumidification according to room temperature.



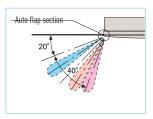
#### **Built-in drain pump**

Maximum head 50 cm (or 75 cm for U type) from the bottom of the unit.



#### Comfortable auto-flap control

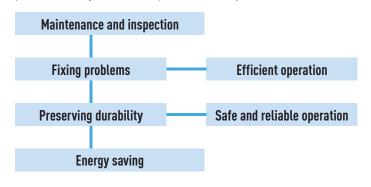
When the unit is first turned on, flap position is automatically adjusted inn accordance with the cooling or heating operation. This initial flap position can be preset within a certain



range, for both cooling and heating. Auto button is included for continuous movement of flap to vary airflow direction.

#### Maintenance and inspection is a must for gas heat pump airconditioning systems.

Just like an automobile, a heat pump air-conditioning system requires periodic servicing so that it can perform efficiently.



#### Main maintenance and inspection items

- 1. Changing the engine oil
- 2. Checking the coolant level
- 3. Inspecting the engine system
- 4. Checking the safety protection system
- 5. Checking and adjusting the running conditions, collecting operating data, etc.

Since a heat pump air-conditioning system uses a gas engine as its power source, it should be periodically inspected to avoid trouble and keep it running efficiently. We recommend a maintenance contract for your Panasonic Gas Heat Pump, a great value because it not only ensures that problems will be fixed, but it helps reduce running costs and improve comfort and economical efficiency as well.

#### PANASONIC'S DIAGNOSIS SOFTWARE

#### **GHP Checker Software**

#### The handy tool for optimising the running of your system:

Diagnosis for start ups, maintenance and system supervising.

# The GHP checker software needs no additional communication adaptor The communication between the PC and GHP is done by RS232

Features:

running

- Diagnosis with a PC

• Endless recording function allows analysis diagnosis even for long term

#### Panasonic VRF Service Checker

Panasonic will make available to installers and commissioning companies the VRF Service Checker as a communication interface to Panasonic VRF systems. This easy to manage tool is able to easily check all parameters of the system.

#### The VRF Service Checker allows:

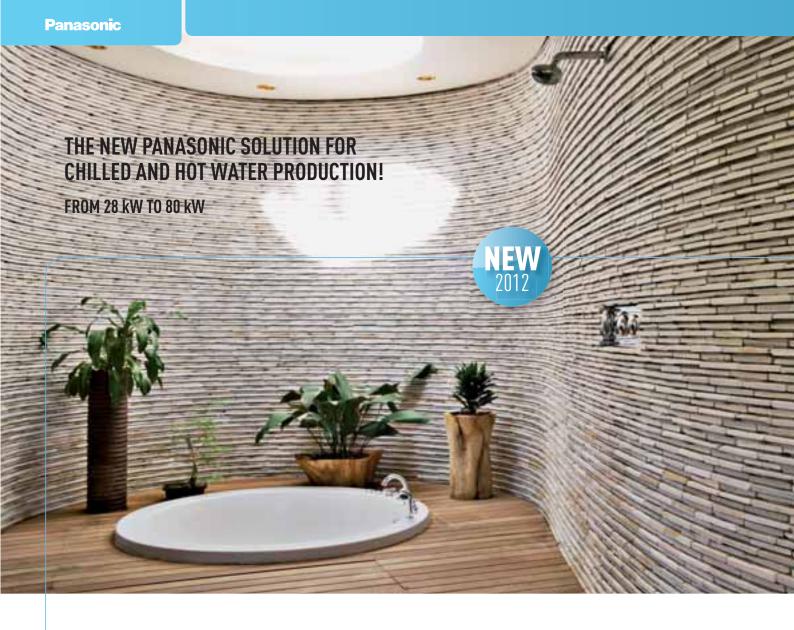
- On ECOi and Mini ECOi connect anywhere on the P-Link.
- Search the P-Link to validate systems that are connected.
- Monitor of all indoor and outdoor units simultaneously on 1 screen.
- Monitor all Temperature data, Pressure data, Valve position, and alarm status on 1 screen
- Data can be viewed in Graph or number format.
- Controlling the indoor unit ON/OFF, MODE, SET POINT, FAN, and TEST mode.
- Switching between various systems on same communication P-Link (ECOi only).
- Monitor and record at a set interval time.
- Record and review the data at a later date.
- Update software as ROM flash writer.

This Panasonic VRF Service Checker is available on your service partner.

#### INTERFACE BOX:







# Key benefits:

- No cascade installation up to 80 kW with GHP outdoor unit and 51.3 kW with ECOi
- · No Glycol needed when WHE is located on the heated part of the building
- Full line-up of outdoor units which can cover up to 80 kW heat demand
- Large choice of remote controls and interfaces
- 3.25 COP with water at 45 °C and outdoor temperature of +7 °C



With ECOi outdoor units

- Maximum hot water outlet temperature: 45 °C
- Minimum chilled water outlet temperature: 7 °C
- Outdoor temperature range in cooling mode: +5 °C to +43 °C
- Outdoor temperature range in heating mode: -20 °C to +15 °C

#### ECOi Water Heat Exchanger

Electrical VRF with water heat exchanger

• With this easy to install Aquarea Pro system, you can now cover projects up to 51 kW hot water demand or 44 kW on chilled application on a efficient way and cost effective.

#### SYSTEM EXAMPLE Floor Heating Fan Coil Unit ECOi Chiller Water Heat Exchanger Buffer Tank Water Piping Refrigerant piping Handling Unit

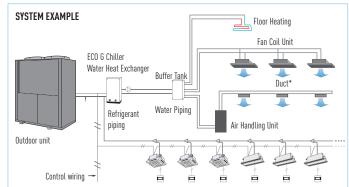
Note: The mode of running of outdoor unit depends on the water heat exchanger's mode. The water pump is not included in the water heat exchanger unit. For simultaneous operation, however, the maximum capacity is 130%. Please inquire details of this system design of Panasonic. \* Standard DX type indoor unit system

#### With GHP outdoor units:

- $\cdot$  Hot water outlet temperatures from 35 °C to 55 °C
- Chilled water outlet temperatures from 5  $^{\circ}\text{C}$  to 15  $^{\circ}\text{C}$
- Outdoor temperature range in cooling mode: -10 °C to +43 °C
- Minimum outdoor temperature in heating mode: -21 °C

#### ECO G Water Heat Exchanger. Mixed System Application

- Combined with a water heat exchanger unit, the Panasonic GHP can create a flexible system--the ideal replacement for existing chiller and boiler systems.
- The GHP Multi System can have an indoor unit plus a GHP chiller. When the two systems are operated independently, an outdoor unit with 130% capacity can be connected.



Note: The mode of running of outdoor unit depends on the water heat exchanger's mode. The water pump is not included in the water heat exchanger unit. For simultaneous operation, however, the maximum capacity is 130% Please inquire details of this system design of Panasonic. \* Standard DX type indoor unit system.

MODEL			S-250WX2E51	S-500WX2E5	S-710WX2E5 <sup>2</sup>			
Rated capacity	Cooling/Heating	kW	25 / 30	50 / 60	71 / 80			
Rated power input	Cooling/Heating	kW	0.01	0.01	0.01			
Rated current		Α	0.07	0.07	0.07			
Power supply		V / Ph / Hz	220-240 / 1 / 50	220-240 / 1 / 50	220-240 / 1 / 50			
Water volume flow		m³/h	4.3	8.6	12.24			
Pressure loss		kPa	6.6	7.3	11.7			
Water volume in heat exchanger / in primary circuit (min)		$m^3$	0.008 / 0.28	0.012 / 0.5 0.017 /				
Max. water pressure		MPa	0.686	0.686	0.686			
Type of anti-freeze protection			Flow switch					
Dimensions / Weight	H x W x D	mm / Kg	1,000 x 395 x 965 / 110	1,000 x 395 x 965 / 130	1,000 x 395 x 965 / 150			
Pipe connections	Gas pipe / Liquid pipe	mm	22.22 / 9.52	28.58 / 15.88	31.75 / 19.05			
Max. piping length		m	170 <sup>3</sup>	170 <sup>3</sup>	170 <sup>3</sup>			
Max. height difference IU above	OU / OU above IU	m	35 <sup>3 5</sup> / 50 <sup>3</sup>	35 <sup>3 5</sup> / 50 <sup>3</sup>	35 <sup>3 5</sup> / 50 <sup>3</sup>			
Power supply wire diameter		mm <sup>2</sup>	2 x 2.0 2 x 2.0 2 x 2.0		2 x 2.0			
Communication wire (LIYCY)		mm <sup>2</sup>	2 x 0.5~2.0 (total length up to 1,000 m) 2 x 0.5~2.0 (total length up to 1,000 m) 2 x 0.5~2.0 (total length up to 1,000 m)		2 x 0.5~2.0 (total length up to 1,000 m)			
Fuse size (slow-blow)		Α	15	15	15			

- 1. Only with indoors combination. Can not be used as 1 to 1.
- 2. Only connectable with GHP.
- 3. Not valid in case of mixed systems, combination ratio in case of mixed systems; 50 to 130 %, combination ratio in case of one-to-one-systems; 100 %,
- 4. Water circulating pump. Power supply: 230 V / 1 Ph / 50 Hz; power input: 0.75 kW; external pressure head: 6 m. 5. For cooling operation where the outdoor air temperature is 10 °C or less, this value should be 30 m.



# NEW ECOi 2-PIPE WITH WATER HEAT EXCHANGER FOR CHILLED AND HOT WATER PRODUCTION

#### FOR HYDRONIC APPLICATIONS

New water heat exchanger for GHP and ECOi, dimensions reduced by 45 %. Operation and control by wired remote control CZ-RTC2. Energy-efficient capacity control. Stainless steel plate heat exchanger with anti-freeze protection control. Change-over between heating and cooling operation



#### **TECHNICAL ZOOM**

- MAXIMUM DISTANCE BETWEEN OUTDOOR UNIT AND WATER HEAT EXCHANGER: 170 m
- MAXIMUM HOT WATER OUTLET TEMPERATURE: 45 °C
- MINIMUM CHILLED WATER OUTLET TEMPERATURE: 7 °C
- OUTDOOR TEMP. RANGE IN COOLING MODE: +5 °C TO +43 °C
- OUTDOOR TEMP. RANGE IN HEATING MODE: -20 °C TO +15 °C

				I
WATER HEAT EXCHANGER			S-250WX2E5*	S-500WX2E5
Nominal Cooling Capacity			25.0	50.0
Nominal Heating Capacity			28.0	51.3
Heating Capacity at +7°C, heating wa	ter temperature at 45 °C	kW	28.0	51.3
COP at +7°C with heating water temp	erature at 45 °C		3.25	3.10
Dimensions / Weight	H x W x D	mm / Kg	1,000 x 395 x 965 / 165	1,000 x 395 x 965 / 190
Water pipe connector			Rp2 Nut thread (50A)	Rp2 Nut thread (50A)
Pump			(Field supply)	(Field supply)
Heating water flow (△T=5 K. 35 °C) \  \text{I/min}			4.3	8.6
Capacity of integrated electric heater kW			(Not equipped)	(Not equipped)
Input Power kW			0.01	0.01
Maximum Current		Α	0.07	0.07
OUTDOOR UNIT			U-10ME1E81	U-20ME1E81
Sound pressure / Sound power level		dB(A) / dB	59 / 73.5	63 / 77.5
Dimensions Weight	H x W x D	mm / Kg	1,758 x 770 x 930 / 283	1,758 x 1,540 x 930 / 423
Pipe Diameter	Liquid / Gas	mm (Inch)	22.22 / 9.52	28.58 / 15.88
Refrigerant (R410A)		Kg	6.3 *Need Additional charge at site	9.0 *Need Additional charge at site
Pipe Length Range		m	max. 170	max. 170
Pipe Length for nominal capacity		m	7.5	7.5
Pipe Length for additional gas		m	0 <	0 <
Additional Gas Amount (R410A)		g/m	Reffer to Manual	Reffer to Manual
I/D&O/D Hight Difference		m	50 (OD above) 35 (OD below)	50 (OD above) 35 (OD below)
Operation Range	Outdoor Ambient	οС	-20 — 15	-20 — 15
	Water Outlet (at-2/-7/-15) 2)	oC	35 — 45	35 — 45

All values shown as tentative data.

Performance calculation in agreement with Eurovent.

Sound pressure measured at 1 m from the outdoor unit and at 1.5-m height.

\* Only with indoors combination. Can not be used as 1 to 1.

GLOBAL REMARKS

 Rated conditions:
 Cooling
 Heating

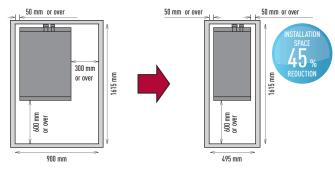
 Indoor air temperature
 27 °C DB / 19 °C WB
 20 °C DB

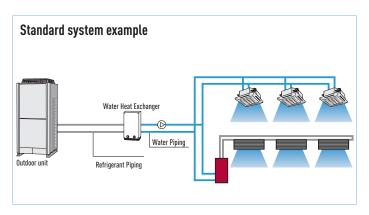
 Outdoor air temperature
 35 °C DB / 24 °C WB
 7 °C DB / 6 °C WB

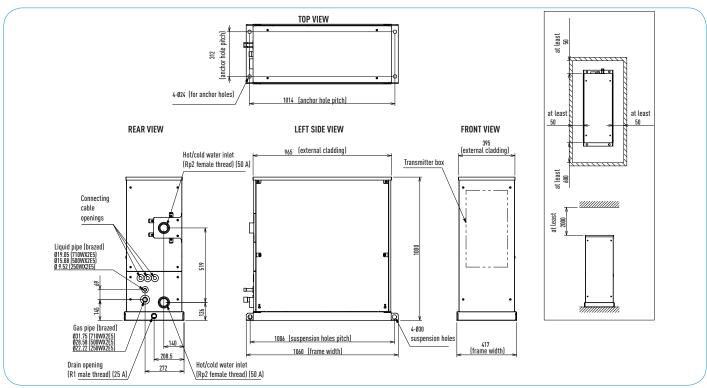


#### Newly Slim & Light design

Due to design review in side the unit, the width and weight are drastically reduced.









# NEW ECO G WITH WATER HEAT EXCHANGER FOR CHILLED AND HOT WATER PRODUCTION

#### FOR HYDRONIC APPLICATIONS

New water heat exchanger, dimensions reduced by 45 % (250 W x 2 and 500 W x 2). Operation and control by wired remote control CZ-RTC2. Energy-efficient capacity control. Stainless steel plate heat exchanger with anti-freeze protection control. Change-over between heating and cooling operation.



#### **TECHNICAL ZOOM**

- MAXIMUM DISTANCE BETWEEN O\_U AND WHE: 170 m
- POSSIBILITY TO MIX DX AND WATER HEAT EXCHANGER SYSTEMS
- NO COOLING TOWER NECESSARY
- HOT WATER OUTLET TEMPERATURES FROM 35 °C TO 55 °C
- Chilled water outlet temperatures from 5 °C to 15 °C
- OUTDOOR TEMP. RANGE IN COOLING MODE: -10 °C TO +43 °C
- MINIMUM OUTDOOR TEMPERATURE IN HEATING MODE: -21 °C

WATER HEAT EXCHANGER			S-250WX2E5*	S-500WX2E5	S-710WX2E5
Nominal Heating Capacity			30	60	80
Heating Capacity at +7 °C, heating w	ater temperature at 35 °C	kW		62	82,8
COP at +7 °C with heating water tem	perature at 35 °C			1.49	1.34
Heating Capacity at +7 °C, heating w	ater temperature at 45 °C	kW	30	60	80
COP at +7 °C with heating water tem	perature at 45 °C			1.30	1.17
Heating Capacity at -7 °C, heating wa	nter temperature at 35 °C	kW		57.2	74.6
COP at -7 °C, heating water temperat	ture at 35 °C			0.76	0.77
Heating Capacity at -15 °C, heating w	vater temperature at 35 °C	kW		59.2	77.4
COP at -15 °C with heating water tem	nperature at 35 °C			0.75	0.76
Nominal Cooling Capacity			25	50	71
Cooling capacity at +35 °C, outlet tp	7 °C, inlet tp 12 °C	kW		50	71
EER at +35 °C, outlet tp 7 °C, inlet tp	12 °C			1.15	1.05
Dimensions / Weight	H x W x D	mm / Kg	1,000 x 395 x 965 / 110	1,000 x 395 x 965 / 130	1,000 x 395 x 965 / 150
Water pipe connector			Rp2 Nut thread (50A)	Rp2 Nut thread (50A)	Rp2 Nut thread (50A)
Pump			(Field supply)	(Field supply)	(Field supply)
Heating water flow (△T=5 K. 35 °C)		l/min	4.3	8.6	12.2
Capacity of integrated electric heater	ſ	kW	(Not equipped)	(Not equipped)	(Not equipped)
Input Power		kW	0.01	0.01	0.01
Maximum Current		Α	0.07	0.07	0.07
OUTDOOR UNIT				U-20GE2E5	U-30GE2E5
Sound pressure / Sound power level		dB(A) / dB		58 / 83	63 / 86
Dimensions / Weight	H x W x D	mm / Kg		2,273 x 1,650 x 1,000 / 780	2,273 x 2,026 x 1,000 / 840
Pipe Diameter	Liquid / Gas	mm (Inch)		28.58 / 15.88	31.75 / 19.05
Refrigerant (R410A)		Kg		11.5 *Need additional chatge at site	11.5 *Need additional chatge at site
Pipe Length Range		m		max. 170	max. 170
Pipe Length for nominal capacity		m		7	7
Pipe Length for additional gas		m		0<	0<
Additional Gas Amount (R410A)		g/m		Refer to Manual	Refer to Manual
I/D&O/D High Difference		m	50 (OD above) 35 (OD below)	50 (OD above) 35 (OD below)	50 (OD above) 35 (OD below)
Operation Range	Outdoor Ambient	oC .		-21 — 15.5	-21 — 15.5
	Water Outlet (at-2/-7/-15) 2)	oC .		35 — 55	35 — 55

All values shown as tentative data.

Performance calculation in agreement with Eurovent.

Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height.

\* Only with indoors combination. Can not be used as 1 to 1.

GLOBAL REMARKS

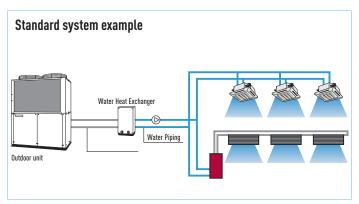
Rated conditions: Cooling Heating
Indoor air temperature 27 °C DB / 19 °C WB 20 °C DB
Outdoor air temperature 35 °C DB / 24 °C WB 7 °C DB / 6 °C WB

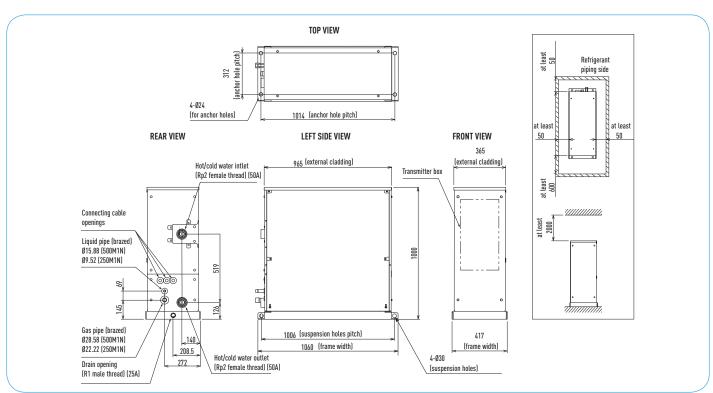
Specifications subject to change without notice.

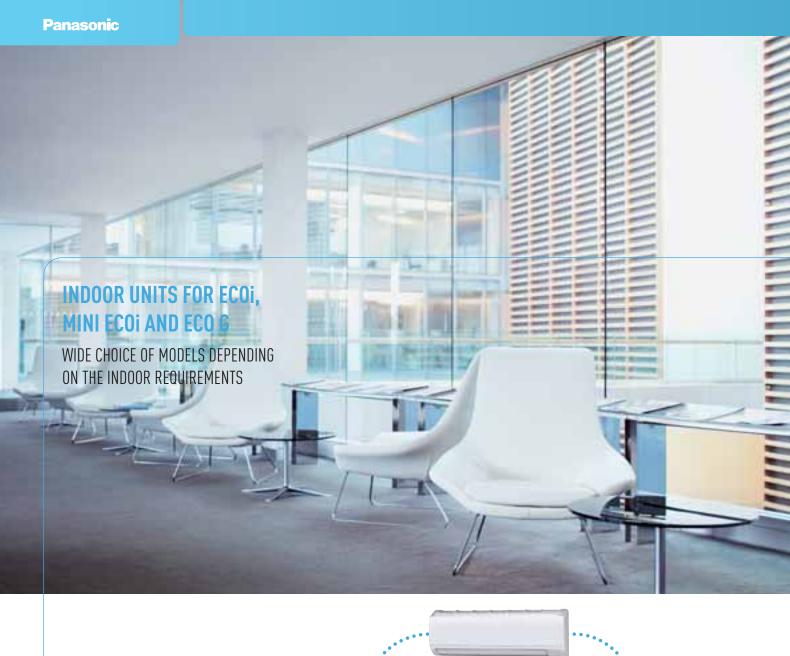


#### Mix system example

The GHP multi system can have indoor units with a GHP chiller. When the two systems are operated independently, an outdoor unit with 130% capacity can be connected.









#### 4 Way 90x90 Cassette

#### Wide & Comfortable Airflow

This proprietary design has wide-angle discharge outlets and flaps are larger in the middle, featuring a shape based on a combination of geometrics and the testing of prototype units. Air coming out of the center of the discharge outlets travels farther. From the sides of each outlet, where the openings are larger, airflow spreads out to reach the corners of the room. Air is discharged across a wide area from the four sides of the unit. The curves on the room temperature distribution graph expand gently out through 360° in a circle centered on the indoor unit.



#### HIGH-EFFICIENT & SILENT TURBO FAN.

It is realized more air volume and more silent due to new development of a bigger fan chassis than previous one and optimization design of airflow path.

#### HIGHER EFFICIENCY SPLIT FIN.

Improved heat-transfer coefficient due to adoption of high efficiently grooved heat exchanger tube

#### NEW DC-FAN MOTOR.

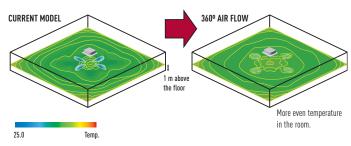
It is realized more optimum air-flow by a new DC-fan motor with independent control

#### INDIVIDUAL FLAP CONTROL.

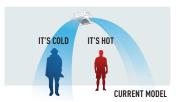
Flexible Air flow direction control by individual flap control is possible. 4 Flaps can be controlled individually by setting on wired timer remote controller. It can make more flexible Air-flow control to be matched to several demands in a room.

#### New 360° Air Flow for better comfort

By the new Design for the air-outlet and flap, Soft & 3D air flow circulates whole space and it keeps flat temperature distribution in the room.



Simulated condition: Floor area: 225 m². Ceiling height: 3 m, Unit 5 HP type.

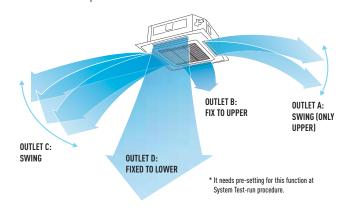




#### Flexible 3D air-flow control

Comfort air flow control & proper energy use. Flexible Air flow direction control by individual flap control:

- 4 Flaps can be controlled individually (by standard wired remote controller\*.
- It can make more flexible Air-flow control to be matched to several demands in one space.

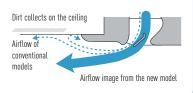


#### New design

Wide direction air discharge by outlet design.

The Circle Flow Flap and new designed air-outlet eliminate the airflow along the recreassed parts on the ceiling reduce the contamination of the ceiling. If air flows only along the recessed parts of the ceiling, they will quickly become dirty. Therefore, it has been improved the air-outlet design and the flap to greatly reduce accumulations of dirt.





# **VRF SYSTEMS INDOOR UNITS RANGE**

CLASS	22	28	36	45	56	60	73	90
Capacity kW (Cooling/Heating)	2.2 / 2.5	2.8 / 3.2	3.6 / 4.2	4.5 / 5.0	5.6 / 6.3	6.0 / 7.1	7.3 / 8.0	9.0 / 10.0
U1 TYPE // 4-WAY 90x90 CASSETTE	-1	-1	-1	-1	-1	NEW 2012	1	NEW 2012
	S-22MU1E51	S-28MU1E51	S-36MU1E51	S-45MU1E51	S-56MU1E51	S-60MU1E51	S-73MU1E51	S-90MU1E51
Y1 TYPE // 4-WAY 60x60 CASSETTE								
	S-22MY1E51	S-28MY1E51	S-36MY1E51	S-45MY1E51	S-56MY1E51			
L1 TYPE // 2-WAY CASSETTE								
	S-22ML1E5	S-28ML1E5	S-36ML1E5	S-45ML1E5	S- 56ML1E5		S-73ML1E5	
D1 TYPE // 1-WAY CASSETTE								
		S-28MD1E5	S-36MD1E5	S-45MD1E5	S-56MD1E5		S-73MD1E5	
F2 TYPE // LOW STATIC PRESSURE HIDE AWAY							-	
NEW 2012	S-22MF2E5	S-28MF2E5	S-36MF2E5	S-45MF2E5	S-56MF2E5	S-60MF2E5	S-73MF2E5	S-90MF2E5
M1 TYPE // SLIM LOW STATIC PRESSURE HIDE AWAY								
	S-22MM1E51	S-28MM1E51	S-36MM1E51	S-45MM1E51	S-56MM1E51			
E1 TYPE // HIGH STATIO PRESSURE HIDE AWAY								
T1 TYPE // CEILING							S-73ME1E5	
TITTE // CEILING								
K1 TYPE // WALL			S-36MT1E5	S-45MT1E5	S-56MT1E5		S-73MT1E5	
MOUNTED								
	S-22MK1E5	S-28MK1E5	S-36MK1E5	S-45MK1E5	S-56MK1E5		S-73MK1E5	
P1 TYPE // FLOOR STANDING								
	S-22MP1E5	S-28MP1E5	S-36MP1E5	S-45MP1E5	S-56MP1E5		S-71MP1E5	
R1 TYPE // CONCEALED FLOOR STANDING								
	S-22MR1E5	S-28MR1E5	S-36MR1E5	S-45MR1E5	S-56MR1E5		S-71MR1E5	
0.100		1	1	1440	1	1		
CLASS AIR HANDLING UNIT	28	56	84	112	140	168	_	
KIT	25	25	25	25	35	***		

CZ-280MAH1 + CZ-560MAH1 CZ-280MAH1 + CZ-560MAH1 x 2 CZ-560MAH1 x 3

(For more information please see Energy Recovery Ventilation section)

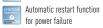
CZ-280MAH1

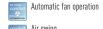
CZ-560MAH1

106	140	160	224	280	WIRELESS REMOTE C	CONTROL	
10.6 / 11.4	14.0 / 16.0	16.0 / 18.0	22.4 / 25.0	28.0 / 31.5	Wireless sender + built-in receiver	Wireless sender + sepa- rately installed receiver	Functions
-1	-1	-1			×	×	easy maintainance comfort perfect comfort comfort control municipal control municipa
S-106MU1E51	S-140MU1E51	S-160MU1E51					practical comfort everywhere to install DUALTON EXECUTION ARE DUALTON EXECUTION TO THE PROPERTY OF THE PROPERT
					×	×	easy more comfort comfort perfect comfort comf
					×	×	AUTOMATIC PRESTART BULLTAN DRAIN PUMP
						~	easy memorrance Comfort  ELF MANGER FOR POPERSON  Practical  Pract
					×	×	Practical
S-106MF2E5	S-140MF2E5	S-160MF2E5				×	easy management comfort confort perfect operation operat
						×	Casy (compared Compared Compar
						×	PORSY TO MORE TO MATCH TO MATC
S-106ME1E5	S-140ME1E5		S-224ME1E5	S-280ME1E5	×	X	cook for more contact further
0.40/MT4FF	O A CONTACT				^	^	easy memorrance Common perfect further Landby Control National Practical Pra
S-106MT1E5	S-140MT1E5				×	X	
							easy mendrance comfort comfort perfect further practical
S-106MK1E5						×	CASY MATERIAL PERSONNEL PROPERTY OF THE PROPER
						X	easy comfort Duration Comfort

Wide choice of models depending on the indoor requirements











# U1 TYPE // 4-WAY 90x90 CASSETTE // SEMI CONCEALED CASSETTE

The award winning range of U1 type cassettes are smaller, shallower and lighter than previous models and feature a 950 x 950 mm panel throughout. The DC fan motor and air discharge louvre ensure quiet, optimum air distribution.





Kg

23

23

23















								NEW 2012		<b>NEW</b> 2012			
MODEL NAME	MODEL NAME   S-22MU1E51   S-28MU1E51   S-36MU1E51   S-45MU1E51   S-56MU1E5					S-56MU1E51	S-60MU1E51	S-73MU1E51	S-90MU1E51	S-106MU1E51	S-140MU1E51	S-160MU1E51	
Power source							230	V / 1 phase /	50 Hz				
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	6.0	7.3	9.0	10.6	14.0	16.0
Cooling power input		W	20	20	20	20	25	35	40	40	95	100	115
Cooling operating cu	ırrent	Α	0.19	0.19	0.19	0.19	0.22	0.31	0.33	0.36	0.71	0.76	0.89
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	7.1	8.0	10.0	11.4	16.0	18.0
Heating power input		W	20	20	20	20	25	35	40	40	85	100	105
Heating operating cu	urrent	Α	0.17	0.17	0.17	0.17	0.20	0.30	0.32	0.34	0.65	0.73	0.80
Fan	Туре		Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan
	Air flow rate (Hi)	m³/h	840	840	840	900	960	1,260	1,320	1,380	1,980	2,100	2,160
Sound power level (I	L/M/H)	dB	45/46/47	45/46/47	45/46/47	45/46/48	45/47/50	46/49/53	46/49/54	49/52/55	51/55/61	51/55/62	53/56/63
Sound pressure leve	l (L/M/H)	dB(A)	28/29/30	28/29/30	28/29/30	28/29/31	28/30/33	29/32/36	29/32/37	32/35/38	34/38/44	35/39/45	38/40/46
Dimensions	H x W x D	mm			256	(+33.5) x 840	0 (950) x 840 l	[950]			319 (+33.5) x 840 (950) x 840 (950)		
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25

23

23

24

24

24

27

27

27

Net weight





#### AIR INTAKE CHAMBER

- 1. Air intake box CZ-BCU2 for main unit.
- 2. Air intake box CZ-ATU2\* for Air intake plenum.
- \* When using Air intake box (CZ-ATU2), Air intake plenum (CZ-FDU2) is required.

#### OPTIONAL CONTROLLER

Timer remote controller CZ-RTC2



Wireless remote controller CZ-RWSU2 CZ-RWSC2



Simplified remote controller CZ-RE2C2

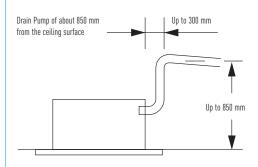




360° air flow

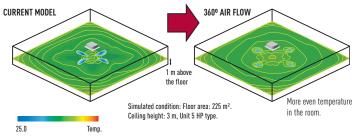
#### **TECHNICAL FOCUS**

- COMPACT DESIGN
- REDUCED SOUND LEVELS (FROM PREVIOUS MODELS)
- DC FAN MOTOR FOR INCREASED EFFICIENCY
- POWERFUL DRAIN PUMP GIVES 850 mm LIFT
- LIGHTWEIGHT DESIGN
- FRESH AIR KNOCKOUT
- BRANCH DUCT CONNECTION
- OPTIONAL AIR-INTAKE PLENUM CZ-FDU2



#### New 360° Air Flow for better comfort

By the new Design for the air-outlet and flap, Soft & 3D air flow circulates whole space and it keeps flat temperature distribution in the room.

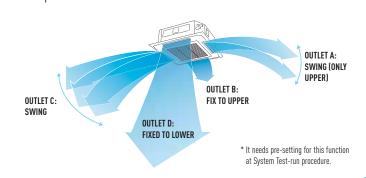




#### Flexible 3D air-flow control

Comfort air flow control & proper energy use. Flexible Air flow direction control by individual flap control:

- 4 Flaps can be controlled individually (by standard wired remote controller\*.
- It can make more flexible Air-flow control to be matched to several demands in one space.





# Y1 TYPE // 4-WAY 60X60 CASSETTE // MINI SEMI CONCEALED CASSETTE

Designed to fit exactly into a 600 x 600 mm ceiling grid without the need to alter the bar configuration, the Y1 is ideal for small commercial and retrofit applications. In addition, the improvements to efficiency make this one of the most advanced units in the industry.



















MODEL NAME			S-22MY1E51	S-28MY1E51	S-36MY1E51	S-45MY1E51	S-56MY1E51			
Power source				230 V / 1 phase / 50 Hz						
Cooling capacity		kW	2.2	2.8	3.6	4.7	5.6			
Cooling power input		W	25	25	27	31	38			
Cooling operating cu	ırrent	Α	0.16	0.16	0.18	0.21	0.29			
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3			
Heating power input		W	15	15	17	21	29			
Heating operating co	ırrent	Α	0.13	0.13	0.15	0.18	0.26			
Fan	Гуре		Centrifugal fan							
	Air flow rate (H/M/L)	m³/h	480 / 420 / 360	480 / 420 / 360	540 / 480 / 420	640 / 510 / 450	750 / 630 / 540			
Sound power level (	L/M/H)	dB	41 / 43 / 46	41 / 43 / 46	42 / 46 / 49	45 / 48 / 53	50 / 54 / 58			
Sound pressure leve	l (L/M/H)	dB(A)	25 / 27 / 30	25 / 27 / 30	26 / 29 / 32	28 / 32 / 36	33 / 37 / 41			
Dimensions	H x W x D	mm	283+(30) x 575 (625) x 575 (625)							
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)			
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)			
	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20			
Net weight		Kg	18.4	18.4	18.4	18.4	18.4			

#### PANEL CZ-KPY21



#### OPTIONAL CONTROLLER

Timer remote controller CZ-RTC2



Wireless remote controller CZ-RWSY2 CZ-RWSC2



Simplified remote controller





#### **TECHNICAL FOCUS**

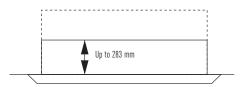
- MINI CASSETTE FITS INTO A 600x600 mm CEILING GRID
- FRESH AIR KNOCK OUT
- MULTIDIRECTIONAL AIR FLOW
- · ANTI-MOULD AND ANTI-BACTERIA WASHABLE FILTERS
- POWERFUL DRAIN PUMP GIVES 850 mm LIFT
- · TURBO FANS AND HEAT EXCHANGER FINS WITH IMPROVED DESIGN
- DC FAN MOTORS WITH VARIABLE SPEED, NEW HEAT EXCHANGERS, ETC. **ENSURE AN EFFICIENT POWER CONSUMPTION**
- OPTIONAL AIR-INTAKE PLENUM CZ-ATU2

#### Special designed flap

The flap can be removed easily for washing with water.

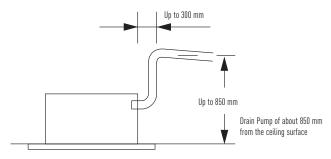


A lightweight unit at 18.4 Kg the unit is also very slim with a height of only 283 mm, making installation possible even in narrow ceilings.



#### A drain height of approx. 850 mm from the ceiling surface

The drain height can be increased by approximately 350 mm over the conventional value by using a high-lift drain pump, and long horizontal piping is possible.





# L1 TYPE // 2-WAY CASSETTE

Realisation of thin, compact and light units. Remarkable size and weight reductions have been achieved by improvement of the design around the fan, the weight of all models now being 30 Kg.



















MODEL NAME			S-22ML1E5	S-28ML1E5	S-36ML1E5	S-45ML1E5	S-56ML1E5	S-73ML1E5		
Power source			230 V / 1 phase / 50 Hz							
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.3		
Cooling power input	t	W	90	92	93	97	97	145		
Cooling operating c	urrent	Α	0.45	0.45	0.45	0.45	0.45	0.65		
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	8.0		
Heating power inpu	t	W	58	60	61	65	65	109		
Heating operating o	urrent	Α	0.29	0.29	0.29	0.29	0.29	0.48		
Fan	Туре		Sirocco fan							
	Air flow rate (H/M/L)	m³/h	480 / 420 / 360	540 / 480 / 420	580 / 520 / 460	660 / 540 / 480	660 / 540 / 480	1,140 / 960 / 840		
Sound power level I	L/M/H)	dB	35 / 38 / 40	37 / 40 / 44	39 / 42 / 45	40 / 44 / 46	40 / 44 / 46	44 / 46 / 49		
Sound pressure lev	el (L/M/H)	dB(A)	24 / 27 / 30	26 / 29 / 33	28 / 31 / 34	29 / 33 / 35	29 / 33 / 35	33 / 35 / 38		
Dimensions	H x W x D	mm	350+(8) x 840 (1,060) x 600 (680)	350+(8) x 1,140 (1,360) x 600 (680)						
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)		
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)		
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25	VP-25		
Net weight		Kg	28.5	28.5	28.5	28.5	28.5	39		

GLOBAL REMARKS

 Rated conditions:
 Cooling
 Heating

 Indoor air temperature
 27 °C DB / 19 °C WB
 20 °C DB

 Outdoor air temperature
 35 °C DB / 24 °C WB
 7 °C DB / 6 °C WB

PANEL CZ-02KPL2 Big size panel (for S-73ML1E5) CZ-03KPL2





#### OPTIONAL CONTROLLER

Timer remote controller



Wireless remote controller CZ-RWSY2 CZ-RWSC2



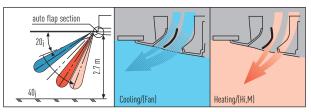
Simplified remote controller



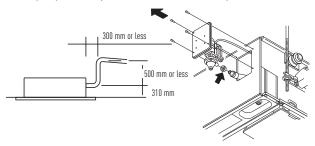
#### **TECHNICAL FOCUS**

- AIRFLOW AND DISTRIBUTION IS AUTOMATICALLY ALTERED DEPENDING ON THE OPERATIONAL MODE OF THE UNIT
- DRAIN UP IS POSSIBLE UP TO 500 mm FROM THE DRAIN PORT
- SIMPLE MAINTENANCE

Airflow and distribution is automatically altered depending on the operational mode of the unit.



Drain up is possible up to 500 mm from the drain port.



Maintenance of the drain pump is possible from two sides, from the left side (piping side) and from the inside of the unit.

#### Simple maintenance

The drain pan is equipped with site wiring and can be removed. The fan case has a split construction, and the fan motor can be removed easily when the lower case is removed.



# D1 TYPE // 1-WAY CASSETTE // SEMI CONCEALED SLIM CASSETTE

Designed for installation within the ceiling void, the D1 range of slimline 1 way blow cassettes feature powerful yet quiet fans for up to 4,2 metres.



















MODEL NAME			S-28MD1E5	S-36MD1E5	S-45MD1E5	S-56MD1E5	S-73MD1E5				
Power source			230 V / 1 phase / 50 Hz	230 V / 1 phase / 50 Hz							
Cooling capacity		kW	2.8	3.6	4.5	5.6	7.3				
Cooling power inpu	t	W	51	51	51	58	87				
Cooling operating c	urrent	Α	0.39	0.39	0.39	0.46	0.7				
Heating capacity		kW	3.2	4.2	5.0	6.3	8.0				
Heating power inpu	t	W	40	40	40	48	76				
Heating operating o	urrent	Α	0.35	0.35	0.35	0.41	0.65				
Fan	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan				
	Air flow rate (H/M/L)	m³/h	720 / 600 / 540	720 / 600 / 540	720 / 660 / 600	780 / 690 / 600	1,080 / 900 / 780				
Sound power level	(L/M/H)	dB	44 / 45 / 47	44 / 45 / 47	45 / 46 / 47	45 / 47 / 49	47 / 51 / 56				
Sound pressure lev	el (L/M/H)	dB(A)	33 / 34 / 36	33 / 34 / 36	34 / 35 / 36	34 / 36 / 38	36 / 40 / 45				
Dimensions	H x W x D	mm	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)				
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)				
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)				
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25				
Net weight		Kg	26.5	26.5	26.5	26.5	27.5				

GLOBAL REMARKS

 Rated conditions:
 Cooling
 Heating

 Indoor air temperature
 27 °C DB / 19 °C WB
 20 °C DB

 Outdoor air temperature
 35 °C DB / 24 °C WB
 7 °C DB / 6 °C WB







Timer remote controller CZ-RTC2



Wireless remote controller CZ-RWST2 CZ-RWSC2



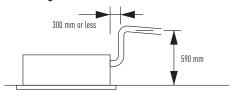
Simplified remote controller CZ-RE2C2



### **TECHNICAL FOCUS**

- · ULTRA-SLIM
- SUITABLE FOR STANDARD AND HIGH CEILINGS
- BUILT-IN DRAIN PUMP PROVIDES 590 mm LIFT
- EASY TO INSTALL AND MAINTAIN
- HANGING HEIGHT CAN BE EASILY ADJUSTED
- USES A DC FAN MOTOR TO IMPROVE ENERGY-EFFICIENCY

### Drain height





## F2 TYPE // LOW STATIC PRESSURE HIDE AWAY

The new F2 type is designed specifically for applications requiring fixed square ducting. The internal filter is equipped as standard.















MODEL NAME			S-22MF2F5	S-28MF2F5	S-36MF2E5	S-45MF2F5	S-56MF2F5	S-60ME2E5	S-73MF2F5	S-90MF2F5	S-106ME2E5	S-140ME2E5	S-160ME2E5
Power source				230 V / 1 phase / 50 Hz									
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	6.0	7.3	9.0	10.6	14.0	16.0
Cooling power input		W	70	70	70	70	100	120	120	135	195	215	225
Cooling operating cu	ırrent	A	0.57	0.57	0.57	0.57	0.74	0.89	0.89	0.97	1.30	1.44	1.50
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	7.1	8.0	10.0	11.4	16.0	18.0
Heating power input		W	70	70	70	100	100	120	120	135	200	210	225
Heating operating cu	ırrent	Α	0.57	0.57	0.57	0.57	0.74	0.89	0.89	0.97	1.30	1.44	1.50
Fan	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
	Air flow rate (Hi)	m³/h	840	840	840	840	960	1,260	1,260	1,500	1,920	2,040	2,160
	External static pressure	Pa	70 (10-150)	70 (10-150)	70 (10-150)	70 (10-150)	70 (10-150)	70 (10-150)	70 (10-150)	70 (10-150)	100 (10-150)	100 (10-150)	100 (10-150)
Sound power level (I	L/M/H)	dB	47/51/55	47/51/55	47/51/55	50/54/56	50/54/56	48/54/57	48/54/57	50/56/59	53/56/60	54/57/61	55/58/62
Sound pressure leve	l (L/M/H/(H-booster))	dB(A)	25/29/33	25/29/33	25/29/33	28/32/34	28/32/34	26/32/35	26/32/35	28/34/37	31/34/38	32/35/39	33/36/40
Dimensions	H x W x D	mm	290x800x700	290x800x700	290x800x700	290x800x700	290x800x700	290x1,000x700	290x1,000x700	290x1,000x700	290x1,400x700	290x1,400x700	290x1,400x700
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25
Net weight		Kg	29	29	29	29	29	34	34	34	46	46	46

GLOBAL REMARKS

Rated conditions:	Cooling	Heating
Indoor air temperature	27 °C DB / 19 °C WB	
Outdoor air temperature	35 °C DB / 24 °C WB	7 °C DB / 6 °C WB



S-22MF2E5 // S-28MF2E5 // S-36MF2E5 // S-45MF2E5 // S-56MF2E5



S-60MF2E5 // S-73MF2E5 // S-90MF2E5



S-106MF2E5 // S-140MF2E5 // S-160MF2E5

Timer remote controller CZ-RTC2



Simplified remote controller C7-RFI C2



Wireless remote controller C7-RWSC2



Simplified remote controller C7-RF2C2

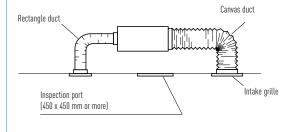


#### **TECHNICAL FOCUS**

- INDUSTRY-LEADING LOW SOUND LEVELS FROM 25 dB(A)
- BUILT-IN DRAIN PUMP PROVIDES 785 mm LIFT
- EASY TO INSTALL AND MAINTAIN
- · AIR OFF SENSOR AVOIDS COLD AIR DUMPING
- CONFIGURABLE AIR TEMPERATURE CONTROL
- · ANTI-MOULD WASHABLE FILTERS INCLUDED

#### System example

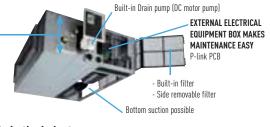
An inspection port (450 x 450 mm or more) is required at the lower side of the indoor unit body.



#### New Low Static Pressure Hide Away MF2 series

STANDARDIZED HEIGHT OF 290 mm FOR ALL MODELS Height standardization enables easy and uniform

installation for models with different capacities.



### Lowest noise levels in the industry.

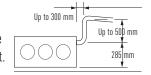
The static pressure outside the unit can be increased. New DC fan motor is adopted to new unit. External static pressure is available up to 150 Pa.

\*No booster cable is needed.

TYPE	22-90	106-160
Standard	70 Pa	100 Pa
Range	10-150 Pa	10-150 Pa

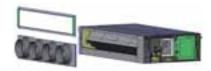
#### More powerful drain pump

Using a high-lift drain pump, drain piping can be elevated up to 785 mm from the base of the unit.



### Circle duct flange (option)

CZ-160DAF2 (4 SA outlet) CZ-90DAF2 (3 SA outlet) CZ-56DAF2 (2 SA outlet)





## M1 TYPE // SLIM LOW STATIC PRESSURE HIDE AWAY // CONCEALED DUCT

The ultra slim M1 type is one of the leading products of its type in the industry. With a depth of only 200 mm it provides greater flexibility and can be used in far more applications. In addition, its high-efficiency and extremely quiet sound levels make it very popular with many users, including hotels and small offices.

















MODEL NAME			S-22MM1E51	S-28MM1E51	S-36MM1E51	S-45MM1E51	S-56MM1E51
Power source			O ZZPIITIEOT	0 2011111201	230 V / 1 phase / 50 Hz	0 4011111201	O CONTINUED I
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6
		W	36	40	42	49	64
Cooling operating cu		A	0.26	0.30	0.31	0.37	0.48
Heating capacity	inent	kW	2.5	3.2	4.2	5.0	6.3
Heating power input		W	26	30	32	39	54
0		A	0.23	0.27	0.28	0.34	0.45
Heating operating cu		А		1			
Fan	Туре		Sirocco fan				
	Air flow rate (H/M/L)	m³/h	480 / 420 / 360	510 / 450 / 390	540 / 480 / 420	630 / 570 / 480	750 / 690 / 600
	External static pressure	Pa	10 (30)	15 (30)	15 (40)	15 (40)	15 (40)
Sound power level (	_/M/H)	dB	40 / 42 / 43	42 / 44 / 45	43 / 45 / 47	45 / 47 / 49	48 / 50 / 52
Sound pressure leve	l (L/M/H)	dB(A)	25 / 27 / 28 (27 / 29 / 30)1	27 / 29 / 30 (29 / 31 / 32)1	28 / 30 / 32 (30 / 32 / 34)1	30 / 32 / 34 (32 / 34 / 36)1	31 / 33 / 35 (32 / 35 / 37)1
Dimensions	H x W x D	mm	200 x 750 x 640				
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)
	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20
Net weight Kg		19	19	19	19	19	

<sup>1.</sup> With booster cable using short circuit connection.



Timer remote controller CZ-RTC2







Simplified remote controller CZ-RE2C2



#### **TECHNICAL FOCUS**

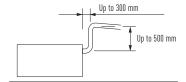
- ULTRA-SLIM PROFILE: 200 mm FOR ALL MODELS
- DC FAN MOTOR GREATLY REDUCES POWER CONSUMPTION
- IDEAL FOR HOTEL APPLICATION WITH VERY NARROW FALSE CEILINGS
- · ANTI-MOULD WASHABLE FILTERS INCLUDED
- EASY MAINTENANCE AND SERVICE BY EXTERNAL ELECTRICAL BOX
- 40 Pa STATIC PRESSURE ENABLES DUCTWORK TO BE FITTED.
- INCLUDES DRAIN PUMP

## Ultra-slim profile for all models



### Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping rise height can be increased to 785 mm from the lower surface of the body.





# E1 TYPE // HIGH STATIC PRESSURE HIDE AWAY // CONCEALED DUCT HIGH-STATIC PRESSURE

The E1 range of ducted units offers improved design flexibility for extended duct layouts as a result of their increased external static pressures.









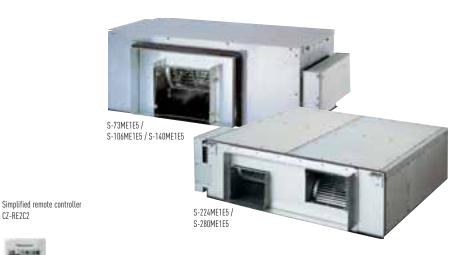




MODEL NAME			S-73ME1E5	S-106ME1E5	S-140ME1E5	S-224ME1E5	S-280ME1E5
Power source					230 V / 1 phase / 50 Hz		
Cooling capacity		kW	7.3	10.6	14.0	22.4	28.0
Cooling power input W		W	505	545	660	900	1330
Cooling operating cu	irrent	Α	2.30	2.46	2.90	4.06	6.06
Heating capacity		kW	8.0	11.4	16.0	25.0	31.5
Heating power input		W	505	545	660	900	1330
Heating operating cu	ırrent	A	2.30	2.46	2.90	4.06	6.06
Fan	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
	Air flow rate (H/M/L)	m³/h	1,380 / 1,320 / 1,260	1,800 / 1,680 / 1,500	2,160 / 2,100 / 1,980	3,360 / 3,190 / 2,980	4,320 / 4,200 / 3,960
	External static pressure	Pa	186	176	167	176	216 (235)1
Sound power level (I	_/M/H)	dB	53 / 54 / 55	53 / 55 / 56	55 / 57 / 58	57 / 58 / 59	60 / 61 / 62
Sound pressure leve	l (L/M/H)	dB(A)	42 / 43 / 44	42 / 44 / 45	44 / 46 / 47	46 / 47 / 48	49 / 50 / 51 (50 / 51 / 52)1
Dimensions	H x W x D	mm	420 x 1,065 x 620	420 x 1,065 x 620	450 x 1,065 x 620	467 x 1,428 x 1,230	467 x 1,428 x 1,230
Pipe connections	Liquid	inches (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas	inches (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	3/4 (19.05)	7/8 (22.22)
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25
Net weight		Kg	47	50	54	110	120

1 With booster cable.

GLOBAL REMARKS
Rated conditions:
Indoor air temperature
Outdoor air temperature



Timer remote controller CZ-RTC2



Wireless remote controller



### **TECHNICAL FOCUS**

- COMPLETE FLEXIBILITY FOR DUCTWORK DESIGN
- CAN BE LOCATED INTO A WEATHERPROOF HOUSING FOR **EXTERNAL SITING**
- AIR OFF SENSOR AVOIDS COLD AIR DUMPING
- CONFIGURABLE AIR TEMPERATURE CONTROL

#### System example

An inspection port (450 x 450 mm or more) is required at the lower side of the indoor unit body (field supply).



## Rap valve kit CZ-P160RVK2

The types 224 and 280 require two rap valve kits for each unit.

(not required on a 1:1 installation)





## T1 TYPE // CEILING

The T1 type ceiling mounted unit feature a DC fan motor for increased efficiency and reduced operating sound levels. All the units are the same height and depth for a uniform appearance in mixed installations and feature a fresh air knockout for improved air quality.

















MODEL NAME			S-36MT1E5	S-45MT1E5	S-56MT1E5	S-73MT1E5	S-106MT1E5	S-140MT1E5			
Power source				230 V / 1 phase / 50 Hz							
Cooling capacity		kW	3.6	4.5	5.6	7.3	10.6	14.0			
Cooling power input		W	29	29	32	43	74	86			
Cooling operating c	urrent	Α	0.24	0.24	0.26	0.35	0.57	0.63			
Heating capacity		kW	4.2	5.0	6.3	8.0	11.4	16.0			
Heating power input	t	W	28	28	31	42	73	85			
Heating operating c	urrent	Α	0.24	0.24	0.26	0.35	0.57	0.63			
Fan	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan			
	Air flow rate (H/M/L)	m³/h	720 / 600 / 540	780 / 660 / 540	780 / 660 / 540	1,110 / 900 / 840	1,650 / 1,380 / 1,200	1,800 / 1,560 / 1,320			
Sound power level (	L/M/H)	dB	41 / 43 / 46	41 / 44 / 47	41 / 44 / 47	44 / 47 / 49	46 / 49 / 52	48 / 51 / 54			
Sound pressure leve	el (L/M/H)	dB(A)	30 / 32 / 35	30 / 33 / 36	30 / 33 / 36	33 / 36 / 38	35 / 38 / 41	37 / 40 / 43			
Dimensions	H x W x D	mm	210 x 910 x 680	210 x 910 x 680	210 x 910 x 680	210 x 1,180 x 680	210 x 1,595 x 680	210 x 1,595 x 680			
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)			
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)			
	Drain piping	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20			
Net weight		Kg	21	21	21	25	33	33			



Timer remote controller CZ-RTC2



Wireless remote controller CZ-RWST2 CZ-RWSC2



Simplified remote controller C7-RF2C2

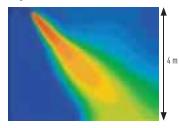


#### **TECHNICAL FOCUS**

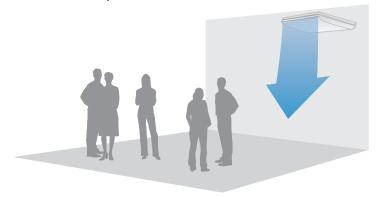
- LOW SOUND LEVELS
- · NEW DESIGN, ALL UNITS JUST 210 mm HIGH
- LARGE AND WIDE AIR DISTRIBUTION
- EASY TO INSTALL AND MAINTAIN
- FRESH AIR KNOCKOUT

#### **Further comfort improvement**

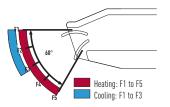
The wide air discharge opening widens the air flow to the left and the right, so that a comfortable temperature is obtained in the entire room. The unpleasant feeling caused when the air flow directly hits the human body is prevented by the "Draft prevention position", which changes the swing width, so that the degree of comfort is increased.



#### Further comfort improvement with airflow distribution



Air distribution is automatically altered depending on the operational mode of the unit





## K1 TYPE // WALL MOUNTED

The K1 Type wall mounted unit has a stylish smooth panel which not only looks good but is also easy to clean. The unit is also smaller, lighter and substantially quieter than previous models making it ideal for small offices and other commercial applications.

















MODEL NAME			S-22MK1E5	S-28MK1E5	S-36MK1E5	S-45MK1E5	S-56MK1E5	S-73MK1E5	S-106MK1E5
Power source				'		230 V / 1 phase / 50	Hz		
Cooling capacity		kW	2.20	2.80	3.60	4.5	5.6	7.3	10.6
Cooling power input	t	W	19	19	22	20	30	57	60
Cooling operating c	urrent	A	0.16	0.16	0.19	0.26	0.35	0.58	0.62
Heating capacity		kW	2.50	3.20	4.20	5.0	6.3	8.0	11.4
Heating power inpu	t	W	19	19	23	20	30	57	68
Heating operating c	urrent	Α	0.17	0.17	0.20	0.26	0.35	0.58	0.70
Fan	Туре		Cross flow	Cross flow	Cross flow	Cross flow	Cross flow	Cross flow	Cross flow
	Air flow rate (H/M/L)	m³/h	540 / 450 / 360	540 / 450 / 360	600 / 510 / 390	720 / 630 / 510	840 / 720 / 630	1,080 / 870 / 690	1,140 / 990 / 780
Sound power level (	[L/M/H]	dB	39 / 43 / 46	39 / 43 / 46	40 / 44 / 48	41 / 45 / 49	43 / 47 / 51	51 / 55 / 58	53 / 56 / 60
Sound pressure leve	el (L/M/H)	dB(A)	28 / 32 / 35	28 / 32 / 35	29 / 33 / 37	30 / 34 / 38	32 / 36 / 40	40 / 44 / 47	42 / 45 / 49
Dimensions	H x W x D	mm	285 x 825 x 217	285 x 825 x 217	285 x 825 x 217	300 x 1,065 x 230	300 x 1,065 x 230	300 x 1,065 x 230	300 x 1,065 x 230
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)	5/8 (15.88)
	Drain piping	Drain piping		VP-13	VP-13	VP-13	VP-13	VP-13	VP-13
Net weight Kg		Kg	10	10	10	13	13	14.5	14.5



Timer remote controller CZ-RTC2







Simplified remote controller



S-45MK1E5 / S-56MK1E5 / S-73MK1E5 / S-106MK1E5



- CLOSED DISCHARGE PORT
- LIGHTER AND SMALLER UNITS MAKE THE INSTALLATION EASY
- QUIET OPERATION
- SMOOTH AND DURABLE DESIGN
- PIPING OUTLET IN THREE DIRECTIONS
- WASHABLE FRONT PANEL
- AIR DISTRIBUTION IS AUTOMATICALLY ALTERED DEPENDING ON THE OPERATIONAL MODE OF THE UNIT
- ANTI-MOULD FILTERS ARE STANDARD

#### **EXTERNAL VALVE (OPTIONAL)**



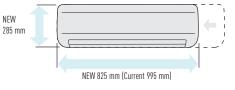
CZ-P56SVK2 (model sizes 22 to 56) CZ-P160SVK2 (model sizes 73 to 106)

#### Closed discharge port

When the unit is turned off, the flap closes completely to prevent entry of dust into the unit and to keep the equipment clean.

### Lighter and smaller units make the installation easy 285 mm

The width has been decreased by 17% and the units are lighter.



#### **Quiet operation**

These units are among the quietest in the industry, making them ideal for hotels and hospitals.

#### Smooth and durable design

The smooth cover means these units match most modern interiors. Their compact size enables them to blend in, even in small spaces.

#### Piping outlet in three directions

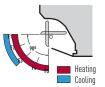
Piping outlet is possible in the three directions of rear, right, and left, making the installation work easier.

#### Washable front panel

The indoor unit's front panel can be easily removed and washed for trouble-free cleaning.



Air distribution is automatically altered depending on the operational mode of the unit





## P1 TYPE // FLOOR STANDING

The compact floor standing P1 units are the ideal solution for providing perimeter air conditioning. The standard wired controller can be incorporated into the body of the unit.













MODEL NAME			S-22MP1E5	S-28MP1E5	S-36MP1E5	S-45MP1E5	S-56MP1E5	S-71MP1E5			
Power source				230 V / 1 phase / 50 Hz							
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.1			
Cooling power input	t	W	56	56	85	126	126	160			
Cooling operating c	urrent	A	0.25	0.25	0.38	0.56	0.56	0.72			
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	8.0			
Heating power inpu	t	W	40	40	70	91	91	120			
Heating operating c	urrent	Α	0.18	0.18	0.31	0.41	0.41	0.54			
Fan	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan			
	Air flow rate (H/M/L)	m³/h	420 / 360 / 300	420 / 360 / 300	540 / 420 / 360	720 / 540 / 480	900 / 780 / 660	1,020 / 840 / 720			
Sound power level (	[L/M/H)	dB	39 / 41 / 44	39 / 41 / 44	40 / 46 / 50	42 / 46 / 49	42 / 47 / 50	46 / 49 / 52			
Sound pressure leve	el (L/M/H)	dB(A)	28 / 30 / 33	28 / 30 / 33	29 / 35 / 39	31 / 35 / 38	31 / 36 / 39	35 / 38 / 41			
Dimensions	H x W x D	mm	615 x 1,065 x 230	615 x 1,065 x 230	615 x 1,065 x 230	615 x 1,380 x 230	615 x 1,380 x 230	615 x 1,380 x 230			
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)			
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)			
	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20	VP-20			
Net weight	•	Kg	29	29	29	39	39	39			





Timer remote controller CZ-RTC2





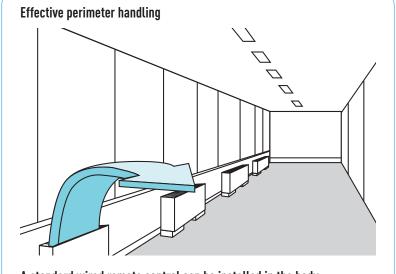


Simplified remote controller C7-RF2C2



### **TECHNICAL FOCUS**

- PIPES CAN BE CONNECTED TO EITHER SIDE OF THE UNIT FROM THE BOTTOM OR REAR
- EASY TO INSTALL
- FRONT PANEL OPENS FULLY FOR EASY MAINTENANCE
- REMOVABLE AIR DISCHARGE GRILLE GIVES FLEXIBLE AIR FLOW
- ROOM FOR CONDENSATE PUMP









## R1 TYPE // CONCEALED FLOOR STANDING

At just 229 mm deep, the R1 unit can be easily concealed in perimeter areas to provide powerful and effective air conditioning.













MODEL NAME			S-22MR1E5	S-28MR1E5	S-36MR1E5	S-45MR1E5	S-56MR1E5	S-71MR1E5			
Power source				230 V / 1 phase / 50 Hz							
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.1			
Cooling power input	t	W	56	56	85	126	126	160			
Cooling operating c	urrent	Α	0.25	0.25	0.38	0.56	0.56	0.72			
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	8.0			
Heating power inpu	t	W	40	40	70	91	91	120			
Heating operating o	urrent	Α	0.18	0.18	0.31	0.41	0.41	0.54			
Fan	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan			
	Air flow rate (H/M/L)	m³/h	420 / 360 / 300	420 / 360 / 300	540 / 420 / 360	720 / 540 / 480	900 / 780 / 660	1,020 / 840 / 720			
Sound power level I	(L/M/H)	dB	39 / 41 / 44	39 / 41 / 44	40 / 46 / 50	42 / 46 / 49	42 / 46 / 49	46 / 49 / 52			
Sound pressure lev	el (L/M/H)	dB(A)	28 / 30 / 33	28 / 30 / 33	29 / 35 / 39	31 / 35 / 38	31 / 36 / 39	35 / 38 / 41			
Dimensions	H x W x D	mm	616 x 904 x 229	616 x 904 x 229	616 x 904 x 229	616 x 1,219 x 229	616 x 1,219 x 229	616 x 1,219 x 229			
Pipe connections	Liquid	inches (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)			
	Gas	inches (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)			
	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20	VP-20			
Net weight		Kg	21	21	21	28	28	28			



Timer remote controller CZ-RTC2







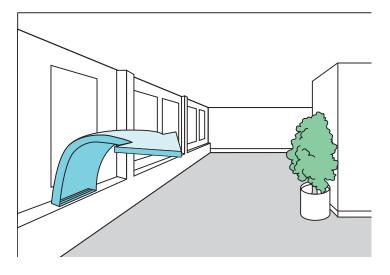
Simplified remote controller CZ-RE2C2



### **TECHNICAL FOCUS**

- · CHASSIS UNIT FOR DISCRETE INSTALLATION
- COMPLETE WITH REMOVABLE FILTERS
- PIPES CAN BE CONNECTED TO EITHER SIDE OF THE UNIT FROM THE BOTTOM OR REAR
- EASY TO INSTALL

## Perimeter air conditioning with high interior quality





OPERATION SYSTEM	INDIVIDUAL CONTROL SYST	EMS		TIMER OPERATION			
Requirements	Normal operation	Operation fro	om each seat	Quick and easy		Daily and weekly program	
External appearance	西灣湖	50 50 50		2012			
Type, model name	Timer Remote Controller (Wired)	Wireless Remot	te Controller	Simplified Remote Controller	Backlight remote controller	Schedule Timer	
	CZ-RTC2	CZ-RWSU2 CZ-RWSY2 CZ-RWSL2	CZ-RWSC2 CZ-RWST2 CZ-RWSK2	CZ-RE2C2	CZ-RELC2	CZ-ESWC2	
Built-in Thermostat	×	X		X			
N. of I_O which can be controlled	1 group, 8 units	1 group, 8 units		1 group, 8 units		64 groups, max. 64 units	
Use limitations	Up to 2 controllers can be connected per group.	- Up to 2 contro connected per		- Up to 2 controlle connected per gr		Required power supply from the system controller     When there is no system controller, connection is possible to the T10 terminal of an indoor unit.	
Function ON/OFF	×	×		×		_	
Mode setting	×	X		X		_	
Fan speed setting	×	X		X		_	
Temperature setting	×	X		X		_	
Air flow direction	×	<b>X</b> 1		<b>X</b> 1		_	
Permit/Prohibit switching	_	_		_		_	
Weekly program	×	_		_		X	

<sup>1.</sup> Setting is not possible when a remote control unit is present. (Use the remote control for setting.) All specifications subject to change without notice.

## **CONTROL SYSTEMS FOR VRF**

A WIDE VARIETY OF CONTROL OPTIONS TO MEET THE REQUIREMENTS OF DIFFERENT APPLICATIONS.

CENTRALIZED CONTROL SYSTI	EMS			
Operation with various function from center station	Only ON/OFF operation from center station	Simplified load distribution ratio (LDR) for each tenant	BMS System. PC Base	Connection with 3rd Party Controller
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			P-AIMS  P-AIMS	Seri-Para I/O unit for outdoor unit CZ-CSWKC2
System Controller	ON/OFF Controller	Intelligent Controller (Touch screen panel)	CZ-CSWKC2	ON/OFF I
CZ-64ESMC2	CZ-ANC2	CZ-256ESMC2 (CZ-CFUNC2)	Optional software	Local adaptor for ON/OFF control CZ-CAPC2
_	_	_		
64 groups, max. 64 units	16 groups, max. 64 units	64 units x 4 systems, max. 256 units		MINI Seri-Para I/O Unit
Up to 10 controllers, can be connected to one system.     Main unit/sub unit (1 main unit + 1 sub unit) connection is possible.     Use without remote controller is possible.	Up to 8 controllers (4 main units + 4 sub units)     can be connected to one system.     Use without remote controller is impossible.	- A communication adaptor (CZ-CFUNC2) must be installed for three or more systems.	CZ-CSWAC2 for Load distribution. CZ-CSWWC2 for Web application. CZ-CSWGC2 for Object layout display. CZ-CSWBC2 for BAC net software interface. *PC required (field supply)	CZ-CAPBC2  Communication Adaptor CZ-CFUNC2
X	X	×	Web Interface Systems CZ-CWEBC2	
X	_	×	*PC required (field supply)	
X	_	X	TOTAL STREET	
X	_	X	a Mili	LonWorks Interface
<b>X</b> <sup>1</sup>	_	<b>X</b> 1	O miles	CZ-CLNC2
X	×	X	Total II	
_	_	X		

## INDIVIDUAL CONTROL SYSTEMS

### Timer remote controller (CZ-RTC2)



Dimensions H 120 x W 120 x D 16 mm

#### Basic remote controller ON/OFF

- Operation mode changeover (Cooling, Heating, Dry, Auto, Fan).
- Temperature setting (Cooling/Dry: 18-30 deg Heating: 16-30 deg).
- Fan speed setting H/ M/ L and Auto.
- Air flow direction adjustment.

#### Time Function 24 hours real time clock

• Day of the week indicator.

#### **Weekly Programme Function**

- A maximum of 6 actions can be programmed for each day.

#### **Outing Function**

• This function can prevent the room temperature from dropping or rising when the occupants are out for a long time.

#### **Sleeping Function**

- This function controls the room temperature for comfortable sleeping.

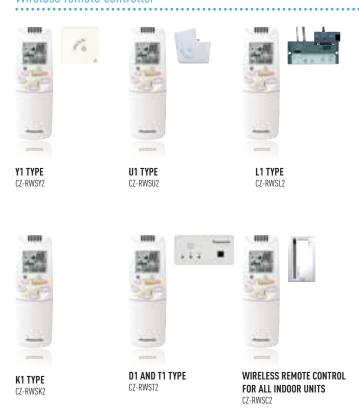
#### Max. 8 indoor units can be controlled from one remote controller

## Remote control by main remote controller and sub controller is possible

Max. 2 remote controllers (main remote controller and sub controller) can be installed for one indoor unit.

Possible to connect to the outdoor unit using PAW-MRC cable for servicing purposes

#### Wireless remote controller



## Easy installation for the 4-way cassette type simply by replacing the corner part

#### 24 hour timer function

## Remote control by main remote controller and sub controller is possible

• Max. 2 remote controllers (main remote controller and sub controller) can be installed for one indoor unit.

## When CZ-RWSC2 is used, wireless control becomes possible for all indoor units

- When a separate receiver is set up in a different room, control from that room also becomes possible.
- Automatic operation by means of the emergency operation button is possible even when the remote controller has been lost or the batteries have been exhausted.

#### Operation of separate energy recovery ventilators

When commercial ventilation fans or heat-exchange ventilation fans have been installed, they can be operated with this remote control (interlocked operation with the indoor unit or independent ventilation ON/OFF).

### Simplified remote controller (CZ-RE2C2)



Dimensions H 120 x W 70 x D 16 mm

#### A remote controller with simple functions and basic operation

- Suitable for open rooms or hotels where detailed functions are not required.
- ON/OFF, operation mode switching, temperature setting, wind velocity switching, wind direction setting, alarm display, and remote controller self-diagnosis can be performed.
- Batch group control for up to 8 indoor units.
- Remote control by main remote controller and sub controller is possible with a simplified remote controller or a wired remote controller (up to two units).

#### Backlight remote controller (CZ-RELC2)



#### Backlight remote controller with simple and friendly operation

- ON/OFF, operation mode switching, temperature setting, wind velocity switching, wind direction setting, alarm display can be performed. LCD backlight display.
- Built-in temp sensor and batch group control for up to 8 indoor units.

#### Remote sensor (CZ-CSRC2)



- This remote sensor can be connected to any indoor unit. Please use it to detect the room temperature when no remote controller sensor or body sensor is used. (connection to a system without a remote controller is
- For joint use with a remote control switch, use the remote control switch as main remote controller.
- Batch group control for up to 8 indoor units.

CONTROL CONTENTS	PART NAME, MODEL NO.	QUANTITY
Standard Control  Control of the various operations of the indoor unit by wired or wireless remote controller.  Cooling or heating mode of the outdoor unit is decided by the first priority of the remote controller.  Switching between remote controller sensor and body sensor is possible.	Timer remote controller CZ-RTC2 // CZ-RE2C2 // CZ-RELC2 Wireless remote controller CZ-RWSY2 // CZ-RWSU2 // CZ-RWSL2 // CZ-RWSG2 CZ-RWSK2 // CZ-RE2C2	1 unit each
(1) Group control  - Batch remote control on all indoor units.  - Operation of all indoor cells in the same mode.  - Up to 8 units can be connected.	Timer remote controller CZ-RTC2 // CZ-RE2C2 Wireless remote controller CZ-RWSY2 // CZ-RWSU2 // CZ-RWSL2 // CZ-RWSG2 CZ-RWSK2 // CZ-RE2C2	1 unit
(2) Main/sub remote control  Max 2 remote controllers per indoor unit.  The button pressed last has priority.  Timer setting is possible even with the sub remote controller.	Main or sub. Timer remote controller CZ-RTC2 Wireless remote controller CZ-RWSY2 // CZ-RWSU2 // CZ-RWSL2 // CZ-RWSG2 CZ-RWSK2 // CZ-RE2C2	As required

## **CENTRALISED CONTROL SYSTEMS**

#### Schedule timer (CZ-ESWC2)



Dimensions H 120 x W 120 x D 16 mm

The power supply for the schedule timer is taken from one of the following.

- 1. Control circuit board (T10) of a nearby indoor unit (power supply wiring length: within 200 m from the indoor unit).
- 2. System controller (power supply wiring length: within 100 m from the indoor unit).

When the power supply for the schedule timer is taken from the control circuit board of the indoor unit, that indoor unit cannot be used with other control devices using the CZ-T10 terminal. As operation mode and temperature settings are not possible with the schedule timer, it must be used together with a remote controller, a system controller, an intelligent

controller, etc. Also, as it does not have an address setting function, the control function of a system controller etc. must be used for address setting.

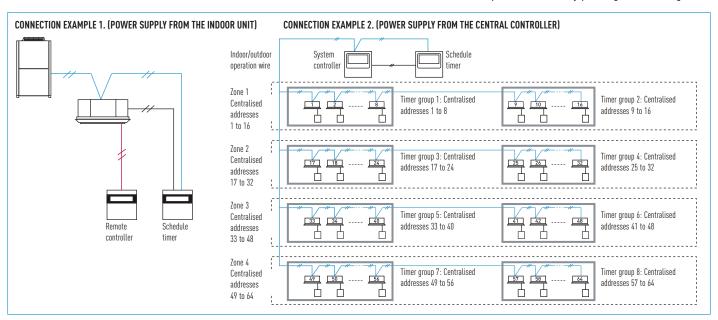
## Up to 64 groups (max. 64 indoor units) can be controlled divided into 8 timer groups

## Six program operations (Operation/Stop/Local permission/ Local prohibition) per day can be set in a program for one week

- Only operation or stop, remote controller local permission or remote controller local prohibition, and their respective combinations are possible. (Operation + local permission, stop + local prohibition, only local permission, etc.)
- Local prohibition and the combination of the three items of temperature setting, mode change, and operation/stop can be set at the time of installation.

### A function for pausing the timer in case of national holidays has been added, and timer operation also can be stopped for a long time

- By setting holidays or operation stop within one week, the timer can be paused just for that week.
- All timer settings can be stopped with the timer "ON/OFF effective" button. (Return to timer operation is made by pressing the button again.)



#### ON/OFF controller (CZ-ANC2)



Dimensions H 121 x W 122 x D 14 + 52 (embedding dimension mm)

Power supply: AC 220 to 240 V I/O part: Remote input (effective voltage: within DC 24 V): All ON/OFF

Remote output (allowable voltage: within DC 30 V):
All ON All alarm

- 16 groups of indoor units can be controlled.
- Collective control and individual group (unit) control can also be performed.
- Up to 8 ON/OFF controller (4 main, 4 sub) can be installed in one link system.
- The operation status can be determined immediately.

Note: As operation mode and temperature settings are not possible with the ON/OFF controller, it must be used together with a remote controller, a system controller etc.

### System controller (CZ-64ESMC2)



Dimensions H 120 x W 120 x D 21 + 69 (embedding dimension mm)

Power supply:

I/O part: Remote input (effective voltage: DC 24 V): All ON/All OFF

Remote output (voltage-free contact): All ON/All OFF (external Power supply within DC 30 V, max 1 A)

Total wiring length 1 km

#### Individual control is possible for max. 64 groups, 64 indoor units.

Control of 64 indoor units divided into 4 zones. (One zone can have up to 16 groups, and one group can have up to 8 units.)

Control is possible for ON/OFF, operation mode, fan speed, air flow direction (only when used without a remote controller), operation monitoring, alarm monitoring, ventilation, remote controller local operation prohibition, etc.

- Individual All operations are possible also from the remote controller. However, the contents will be changed to the contents of the controller operated last.
- Central 1 The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)
- Central 3 The remote controller cannot be used for mode change or temperature setting change. (All other operations are possible from the remote controller.)
- Central 4 The remote controller cannot be used for operation mode change. (All other operations are possible from the remote controller.)

#### Joint use with a remote controller, an intelligent controller, a schedule timer, etc. is possible

(The maximum number of connectable system controllers is 10, including other central controllers on the same circuit.)

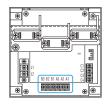
(In case of joint use with a wireless remote controller, there are limitations for the control mode. Please use only with "Individual" and "Central 1".)

### Control of systems without a remote controller and of main/sub systems (a total of up to 2 units) is possible

#### **External Contacts On Central Controllers**

Terminals for remote monitoring:

- A1) Input for turning ON air conditioners concurrently
- A2) Input for turning OFF air conditioners concurrently
- A3) Common input for turning air conditioners ON or OFF
- B1) On operation state indicator output
- B2) Alarm indicator output
- B3) Common indicator output



### A control mode corresponding to the use condition can be selected from 10 patterns

#### A. Operation mode: Central control mode or remote control mode can be selected

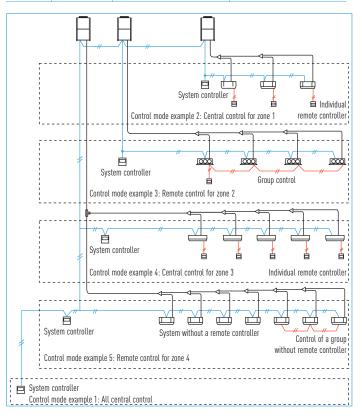
Central control mode: The system controller is used as centralised control device. (Setting from a remote controller can be prohibited by prohibiting local operation from the system controller.) Remote control mode: The system controller is used as a remote controller. (Setting from the system controller can be prohibited by prohibiting local operation from another central control unit.)

#### B. Controlled unit number mode: All mode or zone 1, 2, 3, 4 mode can be selected

All mode: All, zone, or group unit can be selected.

Zone 1, 2, 3, 4 mode: Setting is possible only for the indoor units of zone 1, 2, 3, or 4.

	ON EXAMPLE	A Operation mode		
		Central control mode	Remote control mode	
B Controlled unit number mode	All mode	All central control Example 1	All remote control	
	Zone 1 mode	Zone 1 central control Example 2	Zone 1 remote control	
	Zone 2 mode	Zone 2 central control	Zone 2 remote control Example 3	
	Zone 3 mode	Zone 3 central control Example 4	Zone 3 remote control	
	Zone 4 mode	Zone 4 central control	Zone 4 remote control Example 5	



## Intelligent controller (CZ-256ESMC2)



## Touch panel

#### Dimensions H 240 x W 280 x D 138 mm

Power supply AC 100 to 240 V (50 Hz), 30 W (separate power supply) I/O part Remote in put (voltage-free contact): All ON/OFF Remote output (voltage-free contact): All ON, All alarm (external

power supply within DC 30 V, 0.5 A) Total wiring length: 1 km for each system Only for embedding in the panel

#### Limitation contents for prohibited operation

Prohibition means limitation of the operation contents from the remote controller. It is also possible to change the prohibition items.

#### Limitation contents (Limitations can be user defined)

Individual There is no limitation for the operation of the remote controller. However, the contents will be changed to the contents of the controller operated last. (Last-pressed priority.)

Prohibition 1 The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)

Prohibition 2 The remote controller cannot be used for ON/OFF, operation mode change and temperature setting. (All other operations are possible from the remote controller.)

Prohibition 3 The remote controller cannot be used for operation mode change and temperature setting. (All other operations are possible from the remote controller.)

Prohibition 4 The remote controller cannot be used for operation mode change.

(All other operations are possible from the remote controller.)

Note: Avoid joint use of the AMY system and the intelligent controller on the same indoor/ outdoor operation line.

Max. 256 indoor units (4 systems x 64 units) can be controlled. In case of three or more systems, a communication adaptor CZ-CFUNC2 must be installed on the outside

Operation is possible as batch, in zone units, in tenant and in group units

ON/OFF, operation mode setting, temperature setting, for fan speed setting, air flow direction setting (when used without a remote controller), and remote controller local operation prohibition (prohibition 1, 2, 3, 4) can be done

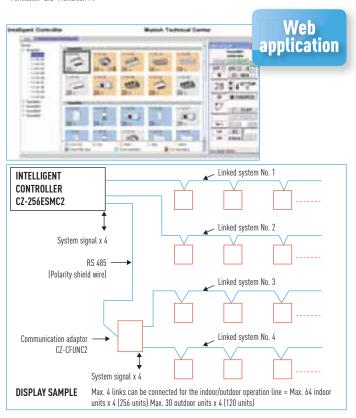
A system without a remote controller is possible. Joint use with a remote controller or a system controller is also possible

Use of a schedule timer and holiday setting also can be done

Proportional distribution of the air conditioning energy is possible. Including csv-file export via CF-card (supplementary accessory)

NEW function: Pulse signal input from electric/gas consumption meter

In case of joint use with a wireless remote control system, there are limitations for the control mode. Please use only with "Permission" and "Prohibition 1".



# P-AIMS. Panasonic Total Air Conditioning Management System

#### P-AIMS Basic software / CZ-CSWKC2

 $\sim$  Up to 1024 indoor units can be controlled by one PC  $\sim$ 

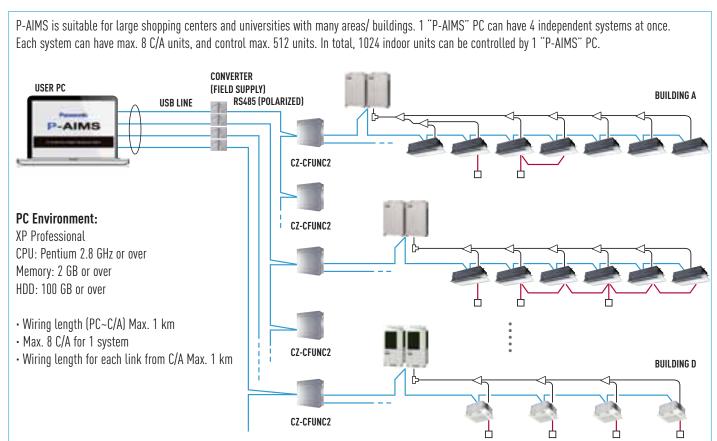
#### Functions of basic software

- Standard remote control for all indoor units.
- Many timer schedule programs can be set on the calender.
- Detailed information display for alarms.
- CSV file output with alarm history, operating status.
- Automatic data backup to HDD.





With 4 upgrade packages the basic software can be upgraded to suit individual requirements



#### P-AIMS optional software CZ-CSWAC2 for Load distribution

#### Load distribution calculation for each tenant

- Air-conditioner load distribution ratio is calculated for each unit (tenant) with used energy consumption data (m³, kWh).
- Calculated data is stored as a CSV type file.
- Data from the last 365 days is stored.

## P-AIMS optional software CZ-CSWWC2 for Web application

## Web access & control from remote station

- Accessing P-AIMS software from remote PC.
- You can monitor/operate ECOi 6N system by using Web browser (Internet Explorer).

## P-AIMS optional software CZ-CSWGC2 for Object layout display

### Whole system can be controlled visually

- Operating status monitor is available on the layout display.
- Object's layout and indoor unit's location can be checked at once.
- Each unit can be controlled by virtual remote controller on the display.
- Max. 4 layout screens are shown at once.

## P-AIMS optional software CZ-CSWBC2 for BACnet software interface

### Connectable to BMS system

- Can communicate with other equipment by BACnet protocol.
- ECOi 6N system can be controlled by both BMS and P-AIMS.
- Max. 255 indoor units can be connected to 1 PC (that has P-AIMS basic & BACnet software).

#### Web Interface / CZ-CWEBC2

#### **Functions**

- Access and operation by Web browser.
- · Icon display.
- Language codes available in English, French, German, Italian, Portguese, Spanish.
- Individual control possible (max. 64 indoor units) ON/OFF operation mode, set temperature, fan speed, Flap set, timer on/off alarm code monitoring, prohibit Remote Control.
- Zone control\*.
- All Units control.
- · Alarm Log.
- Mail Sent Log.
- Program Timer set 50 daily timers with 50 actions each day, 50 weekly timers 50 weekly timers, 1 holiday timer, 5 special day timers, for each tenant

(HxWxD): 248x185x80 mm

AC 100 to 240 V (50/60Hz), 17 W

- Prohibit Remote Control set.
- IP ADDRESS could be changed via Internet.

Note: It is recommended to install a remote controller or a system controller on site to enable local control if it network experience a problem.

## Easy to set to every room by recognizable icon and user-friendly remote control window

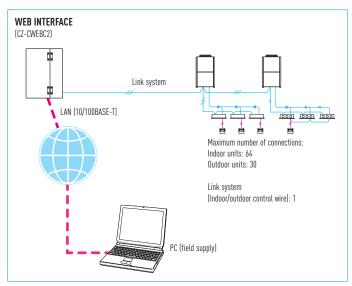
• If any of the indoor units is selected, the remote control window shown will be displayed for detailed setting modifications.

#### Easy to manage and monitor each tenant use\*

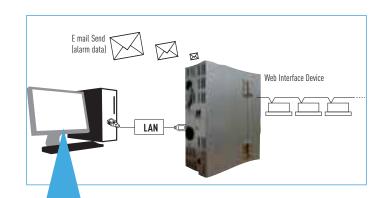
- Each floor or tenant, otherwise each zone can be displayed and controlled.
- All unit statuses can also be displayed on one screen.

#### **Program Timer set**

- 50 daily timers with 50 actions each day, 50 weekly timers, holiday timer, 5 special day timers, for each tenant.
- \* Web interface system not applicable for load distribution.



#### Web Interface Device (CZ-CWEBC2)





#### **Functions**

- Access and operation by Web browser.
- · Icon display.
- Language codes available in English, French, German, Italian, Portuguese, Spanish.
- Individual control possible (max. 64 indoor units) ON/OFF operation mode, set temperature, fan speed, Flap set, timer on/off alarm code monitoring, prohibit Remote Control.
- Each Tenant (Zone) control.
- All Units control.
- Alarm Log.
- Mail Sent Log.
- Program Timer set 50 daily timers with 50 actions each day, 50 weekly timers 50 weekly timers, 1 holiday timer, 5 special day timers, for each tenant.
- · Prohibit Remote Control set.
- IP ADDRESS could be changed via Internet.

Note: it is recommended to install a remote controller or a system controller on site to enable local control if IT network experiance a problem.

### Seri-Para I /O unit for outdoor unit (CZ-CAPDC2 for ECOi, CZ-CAPDC3 for Mini ECOi and PACi)



Dimensions H 80 x W 290 x D 260 mm

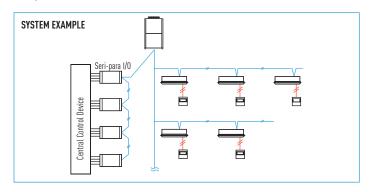
Power supply Single phase 100/200 V (50/60 Hz), 18 W

Input Batch operation/Batch stop (non-voltage contact/DC 24 V, pulse signal). Cooling/Heating (non-voltage

contact/static signal). Demand 1/2 (non-voltage contact/static signal) (Local stop by switching)

Output Operation output (non-voltage contact). Alarm output (non-voltage contact)
Wiring length Indoor/Outdoor operation lines: Total length 1 km. Digital signal: 100 m or shorter

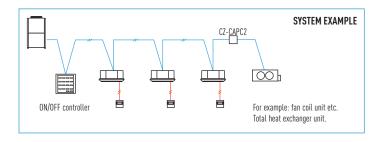
- This unit can control up to 4 outdoor units.
- From the centre control device, mode changing and batch operation/batch stop are possible.
- Required for demand control.



### Local adaptor for ON/OFF control (CZ-CAPC2)



• Control and status monitoring is possible for individual indoor unit (or any external electrical device up to 250 V AC, 10 A) by contact signal.

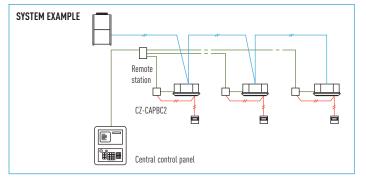


#### CZ-CAPBC2 Parallel interface 0 -10 V



- Control and status monitoring is possible for individual indoor unit (1 group).
- In addition to operation and stop, there is a digital input function for air speed and operation mode.
- Temperature setting and measuring of the indoor suction temperature can be performed from central monitoring.
- The analog input for temperature setting is 0 to 10 V, or 0 to 140 Ohm.

- Power is supplied from the CZ-T10 terminal of the indoor units.
- Separate power supply also is possible (in case of suction temperature measuring).



#### LonWorks Interface CZ-CLNC2

#### **Functions**

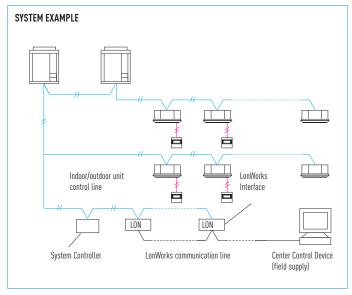
- This interface is a communications converter for connecting LonWorks to the control network of ECOi
- From the host connected to LonWorks, basic settings and status monitoring is possible for up to 16 groups of A/C units



#### **Functions**

A/C unit settings	Settings for each group	Start/stop	
from the of indoor units		Temp. setting	
LonWorks		Operation mode	
communicator		Option 1 settings*	
		Option 2 settings*	
	Settings for all units	Emergency stop	
A/C unit status not	ifications made to the	Start/stop	
LonWorks commun	icator	Temp setting	
		Operation mode	
		Option 1 settings*	
		Option 2 settings*	
		Alarm status	
		Indoor units with active alarms	
		Room temp.	
		A/C unit status	
Configuration properties		Transmission intervals settings	
		Minimum time secured for transmission	

<sup>\*</sup> Select two of the following: remote controller prohibit, fan speed setting, air direction setting, filter sign reset.



## Communication adaptor (CZ-CFUNC2)



Dimensions H 260 x W 200 x D 68 mm

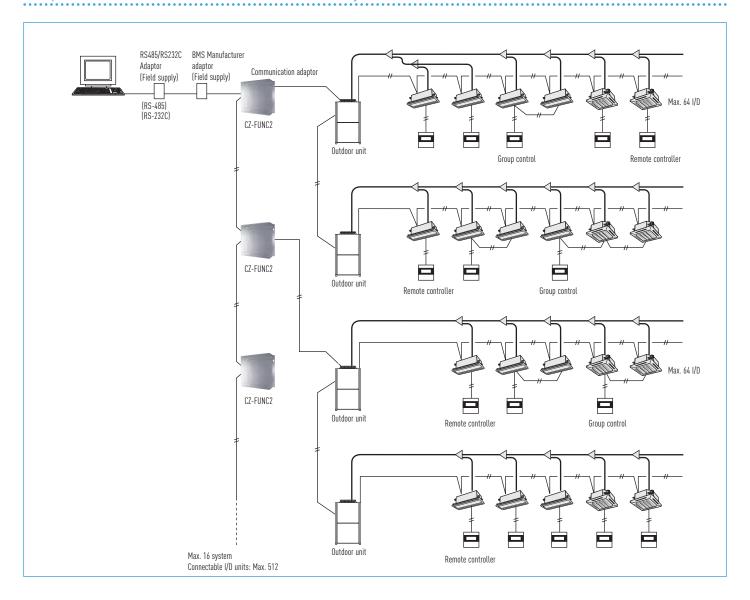
Required to connect three or more linked wiring systems (indoor/outdoor operation lines) to the intelligent controller

Also required for connection of P-AIMS

Two linked wiring systems can be connected to one CZ-CFUNC2, but max. 4 systems can be connected for the entire intelligent controllers

 $^{st}$  As this is not a splash-proof design, it must be installed indoors or in the control panel, etc.

## Example of BMS connection for air conditioner central control system



A/C unit settings	Unit ON/OFF	
	Mode-change	
	Room temperature setting	
	Fan speed setting	
	Flap setting	
	Central control setting	
	Filter-sign clear	
	Alarm reset	
A/C unit status	Unit ON/OFF status	
	Operation mode	
	Setting temperature	
	Fan speed status	
	Flap status	
	Central control setting	
	Filter-sign situation	
	Correct/incorrect status	
	Alarm code	







## **Modbus**<sup>®</sup>



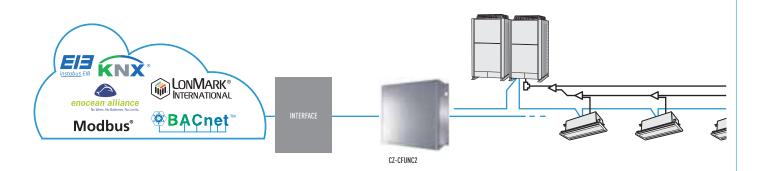


Great flexibility for integration into your KNX / EnOcean / Modbus / LonWorks / BACnet projects allows fully bi-directional monitoring and control of all the functioning parameters

Panasonic Partners have designed solutions specifically for Panasonic air conditioners, and provide complete monitoring, control and full functionality of the entire Commercial line-up from KNX / EnOcean / Modbus / LonWorks / BACnet installations.

For more information, contact Panasonic.

## Example of installation:



		MAXIMUM NUMBER OF INDOOR UNITS CONNECTED	POSSIBLE TO CONNECT MORE THAN 1 INDOOR UNIT (GROUP OF INDOORS)	COMMUNICATION INTERFACE CZ-CFUNC2
PACi / ECOi	KNX	1 (1 Group of Indoor Units)	No	No
	En-Ocean	1 (1 Group of Indoor Units)	No	No
	Modbus*	1 (1 Group of Indoor Units)	No	No
	Airzone	1	No	No
	Intesishome	1 (1 Group of Indoor Units)	No	No
FS / FS Multi	KNX	1 (1 Group of Indoor Units)	No	No
	En-Ocean	1 (1 Group of Indoor Units)	No	No
	Modbus*	1 (1 Group of Indoor Units)	No	No
	Airzone	1	No	No
	Intesishome	1 (1 Group of Indoor Units)	No	No
P-LINK	KNX	64 / 128	Yes	Yes
	Bacnet	64 / 128	Yes	Yes
	Lonworks	64 / 128	Yes	Yes
	Modbus	64 / 128	Yes	Yes

<sup>\*</sup> Interface Modbus RTU/TCP is needed

## **ECOI CONNECTIVITY INDOOR UNITS**

#### T10 connector (CN015)

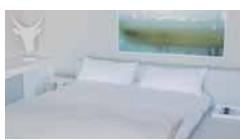
CZ-T10: Panasonic has developed an optional accessory (consisting of plug + wires) called CZ-T10 to enable an easy connection to this T10 connector.



Connecting an ECOi indoor unit to an external device is easy. The T10 terminal featured in the electronic circuit board of all indoor units enables digital connection to external devices.

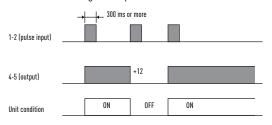
#### **EXAMPLE OF APPLICATIONS**





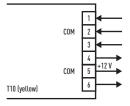
#### T10 terminal Specification (T10: CN015 at indoor unit PCB)

- Control items: 1. Start/stop input
  - 2. Remote controller prohibit input
  - 3. Start signal output
  - 4. Alarm signal output



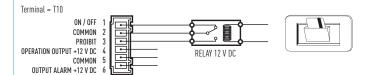
NOTE: The wire length from indoor unit to the Relay must be within 2.0 m. Pulse signal changeable to static with JP cutting. (Refer to JP001)

- Condition
- 1. 1-2 (Pulse input): Unit ON/OFF condition switching with a pulse signal. (1 pulse signal: shortage status more than 300 msec. or more)
- 2. 2-3 (Static input): Open / Operation with Remote is permitted.(Normal condition) Close / Remote controller is prohibited.
- 3. 4-5 (Static output): 12 V output during the unit ON. / No output at OFF.
- 4. 5-6 (Static output): 12 V output when some errors occur / No output at normal.
- · Example of wiring



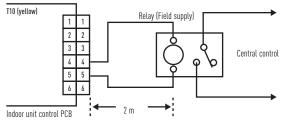
#### **Usage Example** Forced OFF control

- Term 1 & 2: Free contact for ON/OFF signal (cut \*JP1\* for static signal) when the hotel card is it connected the contact must be close (the unit can be used).
- Term 2 & 3: Free contact to proibit all function in the remote controller install in the room when the hotel card is it removed the contact must be closed (the unit can not work).



#### Operation ON/OFF signal output

- Condition:
- 4-5 (Static output): 12 V output during the unit ON / No output at OFF
- Example of wiring



NOTE: The wire length from indoor unit to the Relay must be within 2.0 m. Pulse signal changeable to static with JP cutting. (Refer to JP001)

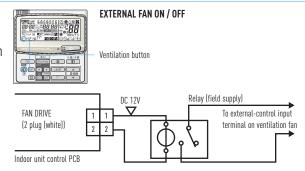
### Fan Drive Connector (CN017)

PAW-FDC: Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-FDC to enable an easy connection to this Fan **Drive Connector** (CN017).



#### Operating the ventilation fan from the remote controller

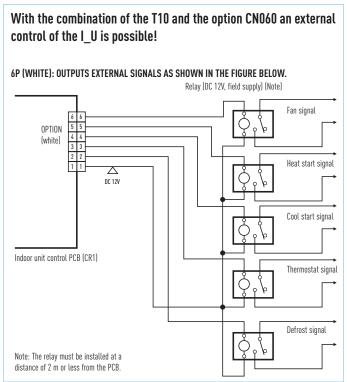
- Start / stop of external ventilation and total heat exchanger fans
- · Works even if indoor unit is stopped
- In case of group control → all fans will operate: no individual control

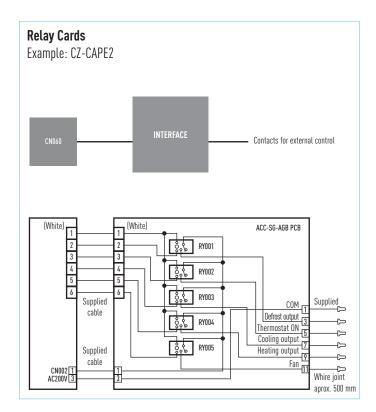


### Option Connector (CN060) Output external signals



PAW-OCT: Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-OCT to enable an easy connection to this Option Connector (CN060).





#### EXCT Connector (CN009)

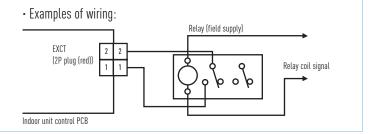
PAW-EXCT: Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-EXCT to enable an easy connection to this EXCT Connector (CN009).

#### A) With static input

#### → STATIC INPUT → THERMO OFF → ENERGY SAVING

2P plug (red): Can be used for demand control. When input is present, forces the unit to operate with the thermostat OFF.

Note: The length of the wiring from the indoor unit control PCB to the relay must be 2m or less. \* Lead wire with 2P plug (special—order part: WIRE K/854 05280 75300)



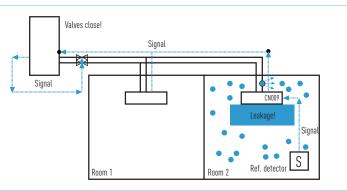
#### B) Example: In connection with a refrigerant sensor

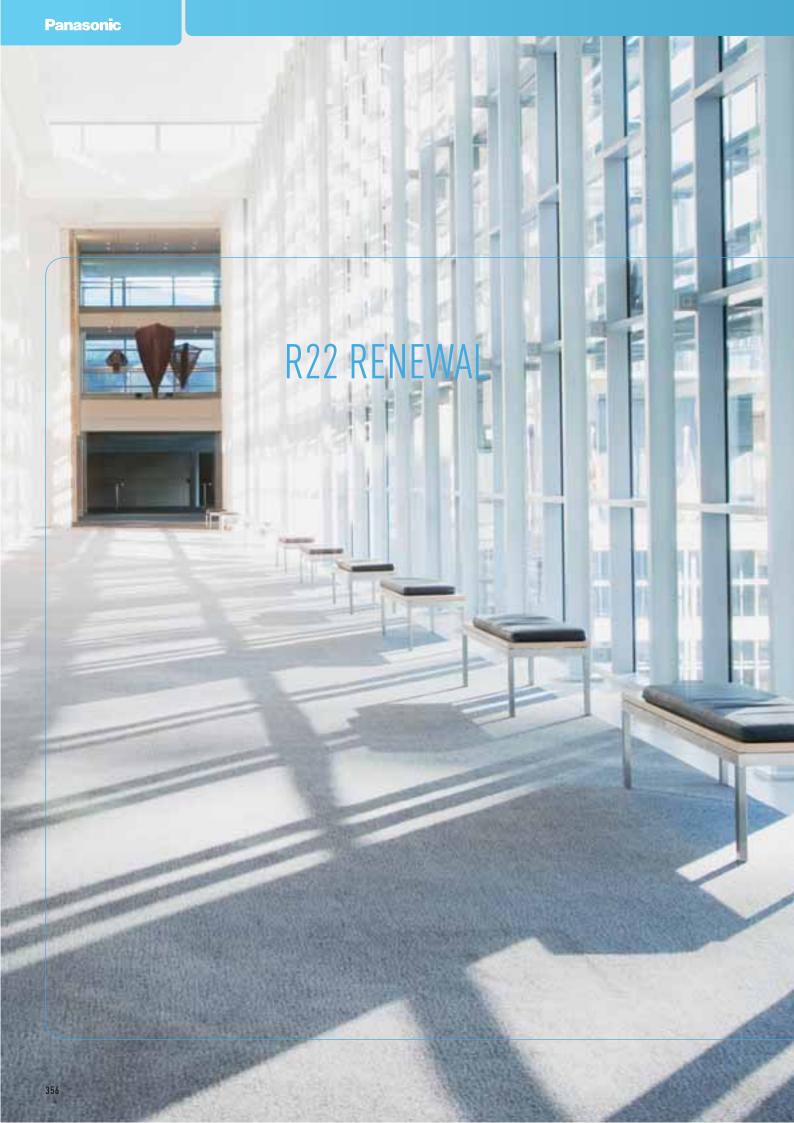
- Signal from leakage detector: non voltage, static.
- Indoor unit setting: Code 0b → 1
- Connector for leak detector: EXCT
- Outdoor unit setting:

Code C1  $\rightarrow$  1 power output if alarm from O2 connector 230 V

Code C1  $\rightarrow$  2 power output if alarm from O2 connector O V

- Displayed alarm message P14







## WHY RENEWAL?

AN IMPORTANT DRIVE TO FURTHER REDUCE THE POTENTIAL DAMAGE TO OUR OZONE

It is often said that legislation is ruling our lives but sometimes it is there to help save lives. R22 phase out can be described as one of these and starting from Jan 1st 2010 the use of Virgin (new) R22 refrigerant is banned within the European Community.

#### Panasonic are doing our part

We at Panasonic are also doing our part – recognising that all finances are under pressure at the moment., Panasonic have developed a clean and cost effective solution to enable this latest legislation to be introduced with as minimum an effect on businesses and cash reserves as possible.

The Panasonic renewal system allows good quality existing R22 pipe work to be re-used whilst installing new high efficiency R410A systems.

By bringing a simple solution to the problem Panasonic can renew all Split Systems and VRF systems; and depending upon certain restrictions we don't even limit the manufactures equipment we are replacing.

By installing a new high efficiency Panasonic R410A system you can benefit from around 30% running cost saving compared to the R22 system. The installation can also qualify for the government's ECA (Enhanced Capital Allowance Scheme) which enables you to offset the cost against your Capital Gains Tax.

#### Yes...

- 1. Check the capacity of the system you wish to replace
- 2. Select from the Panasonic range the best system to replace it with
- 3. Follow the procedure detailed in the brochure and technical data Simple...

R22 - The reduction of Chlorine critical for a cleaner future

## VRF RENEWAL

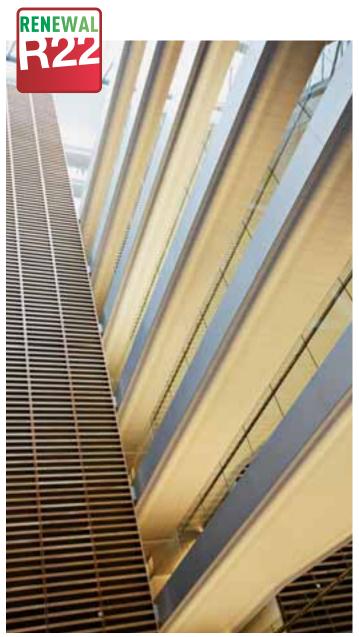
Panasonic's Renewal system allows a completely new VRF system, indoor and outdoor units, to be installed using the existing systems pipe work. Panasonic's advanced technology enables the system to work with previously installed pipe work by managing the working pressure within the system down to R22 (33 bar) levels, this ensures the system works safely and efficiently without loss of capacity.

The new equipment can offer increased COP/EER by using state of the art inverter compressor and heat exchanger technology.

Having contacted your Panasonic supplier regarding pipe work restrictions and gained approval to use the Panasonic Renewal System there are three main tests that have to be carried out to ensure that the system can be used effectively.

Firstly a thorough inspection of the pipe work must be carried out and any damage must be repaired.

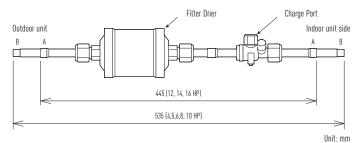
Secondly an oil test has to be carried out to ensure that the system has not been subject to a compressor burnout during its lifetime, Lastly a VRF Renewal Kit (CZ-SLK2) has to be installed within the pipe work to ensure that the system is cleaned of any remnants of oil.



#### VRF Renewal Kit (CZ-SLK2) and Sight Glass

The following shows an overview of the VRF Renewal Kit (CZ-SLK2) that is required when existing tubing is reused. If the exact tube length and tube size of the existing tubing are uncertain, attach a sight glass in accordance with the figure below. It will be used for checking the amount of additional refrigerant charge.

#### VRF RENEWAL KIT: CZ-SLK2



#### Connecting tube dimensions (Inch mm)

A Ø 1/2 (12.7) (12, 14, 16 HP) B Ø 3/8 (9.52) (4,5,6,8 10 HP)

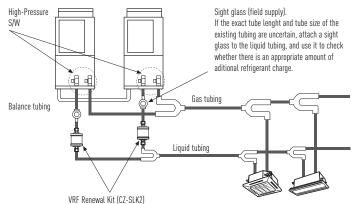
Note: If the tube size does not match that of the existing tubing, use a reducer (field supply) to adjust the tube diameter.

#### Sight glass (field supply)

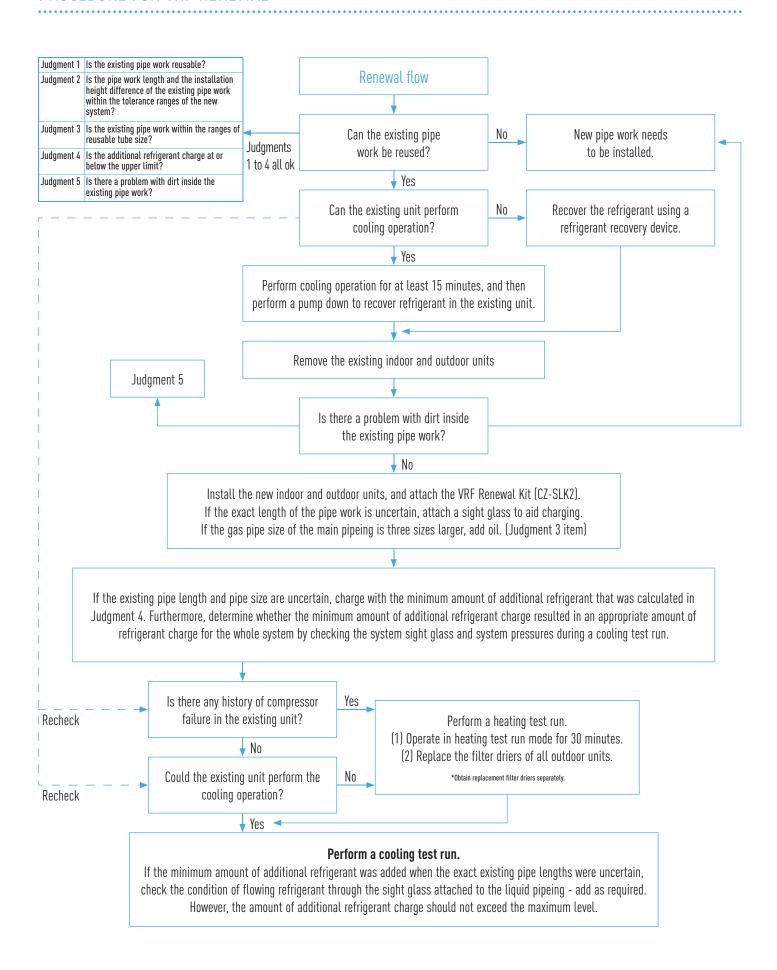
If the exact tube length and tube size of the existing tubing are uncertain, attach a sight glass to the liquid tubing, and use it to check whether there is an appropriate amount of additional refrigerant charge.

#### Attaching the Filter Drier Kit and sight glass

- To adjust the limited pressure level into 3.3 MPa, special setting is necessary at site.
- A filter Drier shall be attached to the liquid tubing of each outdoor unit.
- High-Pressure switches shall be attached to both the liquid and the gas tubings of each outdoor unit.
- There is no need to remove the Filter Drier Kit after a test run is performed because normal operation continues while it is attached. (High pressure switch kit: CZ-PSWK(2way), CZ-PSWH(3way))
- When attaching the Filter Drier Kit, care shall be taken with reguards to
  the installation location and orientation of the filter drier and ball valve. If
  a mistake is made, the refrigerant is the system needs to be recovered
  when the filter drier is replaced, which will make maintenance difficult.
- Thermal insulation material (field supply: heat resistance of 80 °C or higher and thickness of 10 mm or greater) shall be applied to the Filter Drier Kit.
- The filter drier of the Filter Drier Kit may need to be replaced depending on the condition of the existing unit. Use a Danfoss DMB 164 as the replacement filter drier (field supply).



## PROCEDURE FOR VRF RENEWAL



## PANASONIC VRF DESIGNER: NEW SOFTWARE FOR EASY VRF CALCULATION

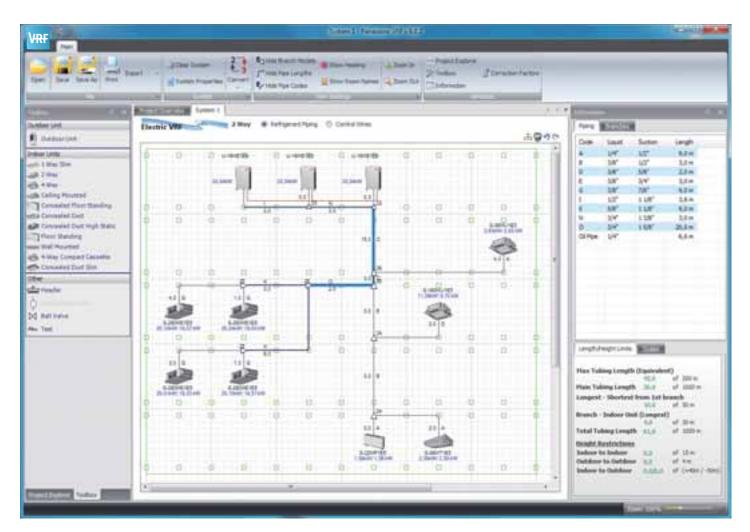
### Panasonic VRF Designer



#### System designing for VRF (ECOi 6N and FS Multi) has never been easier

Panasonic has identified the importance of ever-increasing demands for fast and accurate responses to customer requests in our industry. More and more emphasis is being placed upon energy-efficiency in our marketplace. The ability to calculate cooling/heating loads and produce information of actual design conditions is a major advantage to any architect, consultant, contractor or end user.

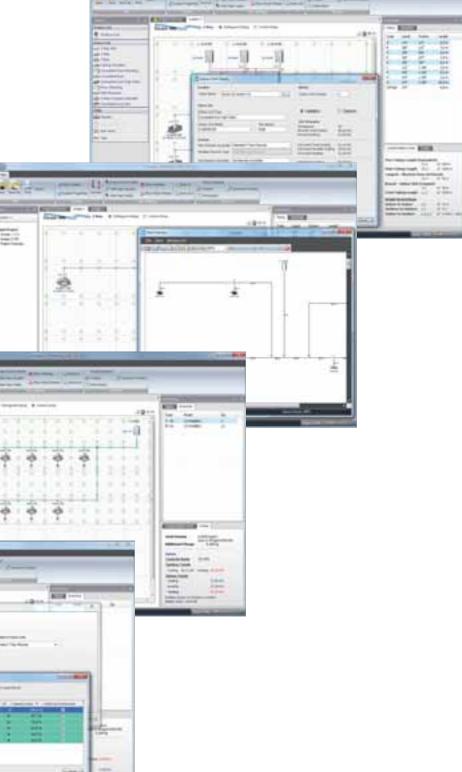
Panasonic understands the ever-changing and demanding industry we are in and we are pleased to announce the launch of the next generation of our system design software program. The advanced Panasonic VRF Designer system design software has been customised to make any selection and design process as quick and easy as possible. The design package utilises system wizards and import tools to enable both simple and complex systems to be created. In addition, the system will allow outdoor and indoor units to be dragged and dropped on an interactive desktop. This allows users to create everything from realistic floor plans with detailed piping and wiring schematics to send out with quotations, through to installation guidance drawings.



VRF software covers PACi, FS Multi, ECOi and GHP.

## The Panasonic VRF Designer system software can be used for all Panasonic ECOi 6N and FS Multi VRF Features include • Easy to use system wizards. • Auto piping and wiring features. - Converted duties for conditions and pipework. Auto CAD (DXF), Excel and PDF export. - Detailed wiring and pipework diagram.

TEL



## **BRANCHES AND HEADERS**

### Dimensions and Tube Sizes of Branches and Headers for 2-Pipe ECOi 6N Systems

### **Optional Distribution Joint Kits**

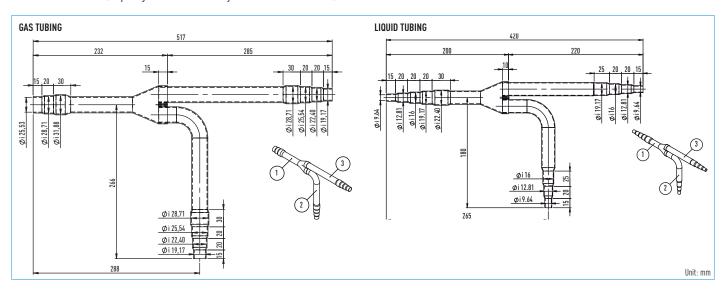
See the installation instructions packaged with the distribution joint kit for the installation procedure.

	COOLING CAPACITY AFTER DISTRIBUTION	REMARKS
Outdoor unit side	68.0 kW or less	CZ-P680PH2BM
	From 68.0 kW to 168.0 kW	CZ-P1350PH2BM
Indoor unit side	22.4 kW or less	CZ-P224BK2BM
	From 22.4 kW to 68.0 kW	CZ-P680BK2BM
	From 68.0 kW 168.0 kW or less	CZ-P1350BK2BM

### Tubing size (with thermal insulation)

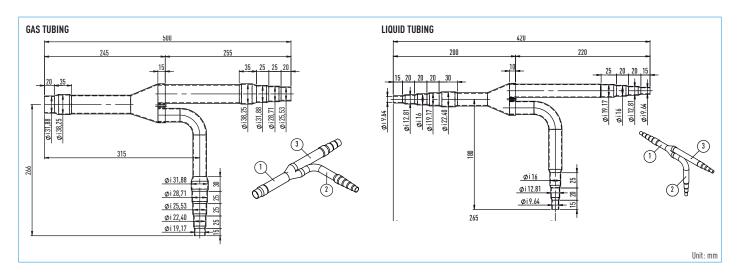
### 1. CZ-P680PH2BM

For outdoor unit side (Capacity after distribution joint is 68.0 kW or less.)



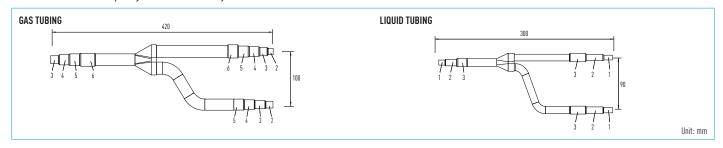
### 2. CZ-P1350PH2BM

For outdoor unit side (Capacity after distribution joint is greater than 68.0 kW and no more than 168.0 kW.)



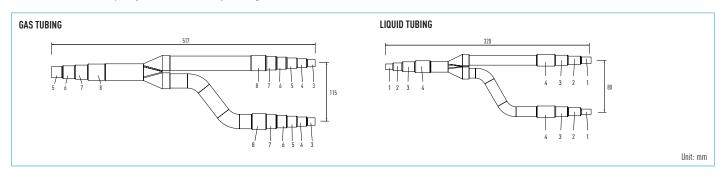
### 3. CZ-P224BK2BM

For indoor unit side (Capacity after distribution joint is 22.4 kW or less.)



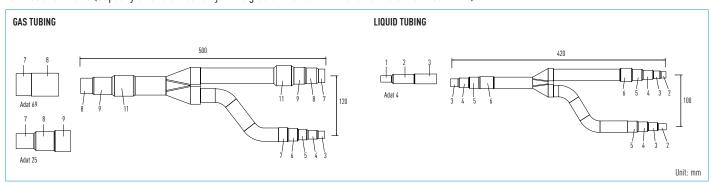
### 4. CZ-P680BK2BM

For indoor unit side (Capacity after distribution joint is greater than 22.4 kW and no more than 68.0 kW.)



### 5. CZ-P1350BK2BM

For indoor unit side (Capacity after distribution joint is greater than 68.0 kW and no more than 168.0 kW.)



DIAMETERS		DIAMETERS		DIAMETERS	
1	6.35 mm 1/4"	6	22.40 mm 7/8"	11	38.10 mm 1''1/2
2	9.52 mm 3/8"	7	25.40 mm 1"	12	41.28 mm 1''5/8
3	12.70 mm 1/2"	8	28.57 mm 1" 1/8	13	44.45 mm 1"3/4
4	15.88 mm 5/8"	9	31.75 mm 1" 1/4	14	50.80 mm 2"
5	19.05 mm 3/4"	10	34.92 mm 1''3/8		

## **BRANCHES AND HEADERS**

### Dimensions and Tube Sizes of Branches and Headers for 3-Pipe ECOi 6N Systems (MF1)

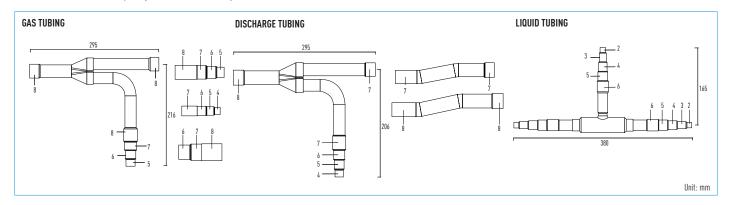
### **Optional Distribution Joint Kits**

See the installation instructions packaged with the distribution joint kit for the installation procedure.

MODEL NAME	CAPACITY AFTER DISTRIBUTION JOINT	REMARKS
For outdoor unit	68.0 kW or less	CZ-P680PJ2BM
	greater than 68.0 kW and no more than 135.0 kW	CZ-P1350PJ2BM
For indoor unit	22.4 kW or less	CZ-P224BH2BM
	greater than 22.4 kW and no more than 68.0 kW	CZ-P680BH2BM
	greater than 68.0 kW and no more than 135.0 kW	CZ-P1350BH2BM

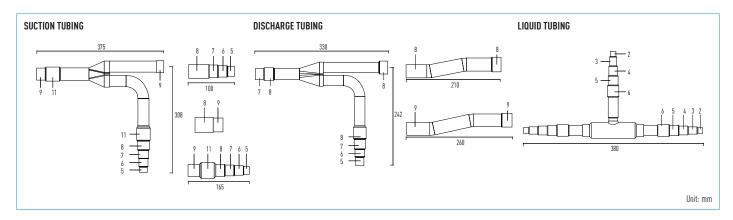
### 1. CZ-P680PJ2BM

For outdoor unit side (Capacity after distribution joint is 68.0 kW or less.)



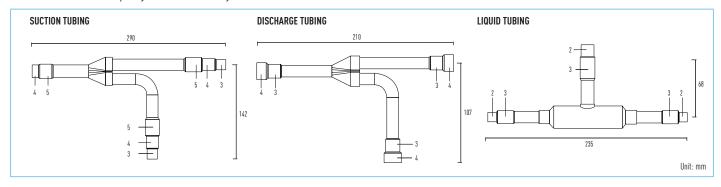
### 2. CZ-P1350PJ2BM

For outdoor unit side (Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW.)



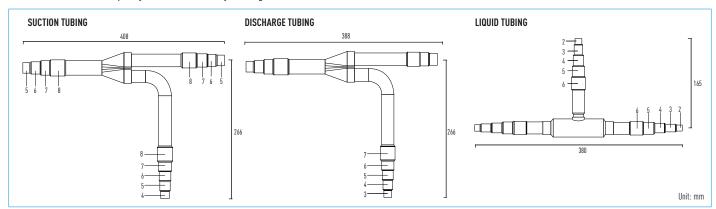
### 3. CZ-P224BH2BM.

For outdoor unit side (Capacity after distribution joint is 22.4 kW or less.)



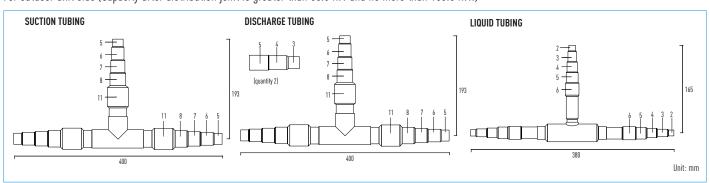
### 4. CZ-P680BH2BM.

For outdoor unit side (Capacity after distribution joint is greater than 22.4 kW and no more than 68.0 kW.)



### 5. CZ-P1350BH2BM.

For outdoor unit side (Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW.)

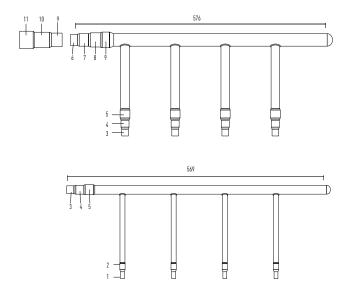


DIAMETERS		DIAMETERS		DIAMETERS	
1	6.35 mm 1/4"	6	22.40 mm 7/8"	11	38.10 mm 1''1/2
2	9.52 mm 3/8"	7	25.40 mm 1"	12	41.28 mm 1''5/8
3	12.70 mm 1/2"	8	28.57 mm 1" 1/8	13	44.45 mm 1"3/4
4	15.88 mm 5/8"	9	31.75 mm 1" 1/4	14	50.80 mm 2"
5	19.05 mm 3/4"	10	34.92 mm 1''3/8		

## Header pipe set for ECOi 6N 2-Pipe system

### Header pipe models for 2-Pipe systems:

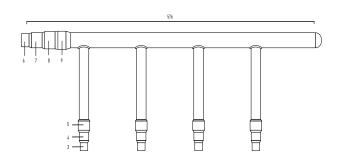
CZ-P4HP4C2BM

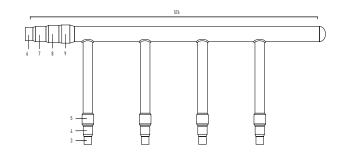


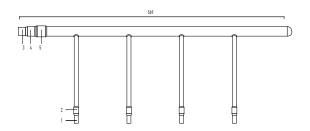
## Header pipe set for ECOi 6N 3-Pipe system

### Header pipe model for 3-Pipe systems:

CZ-P4HP3C2BM

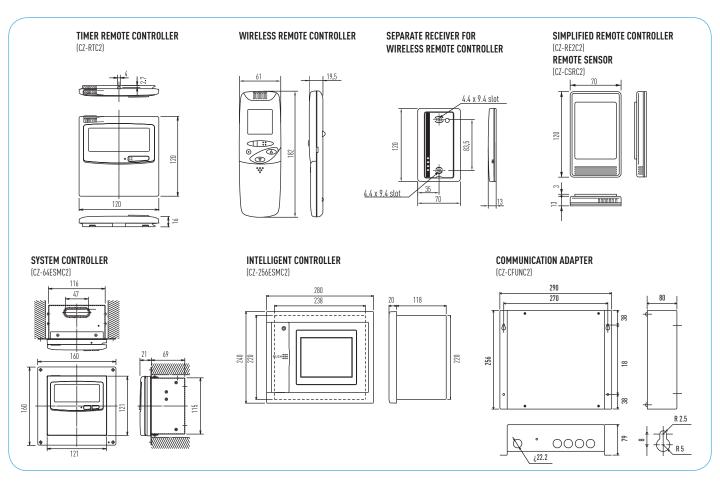


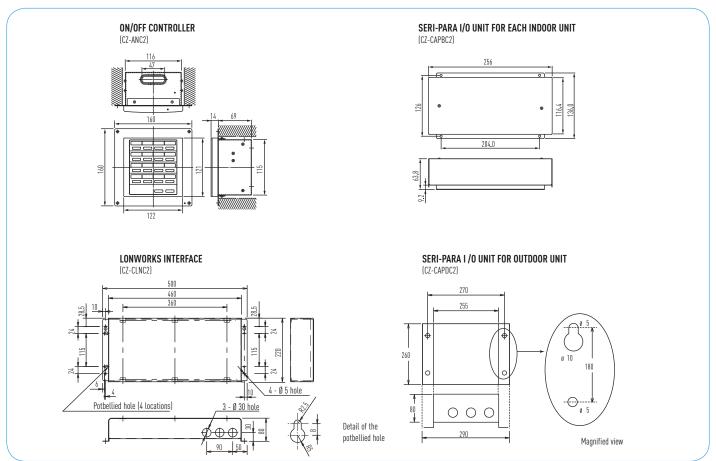




DIAM	ETERS	
1	6.35 mm	1/4"
2	9.52 mm	3/8"
3	12.70 mm	1/2"
4	15.88 mm	5/8"
5	19.05 mm	3/4"
6	22.40 mm	7/8''
7	25.40 mm	1"
8	28.57 mm	1" 1/8
9	31.75 mm	1" 1/4
10	34.92 mm	1"3/8
11	38.10 mm	1"1/2

## **CONTROL EQUIPMENT EXTERNAL DIMENSIONS**



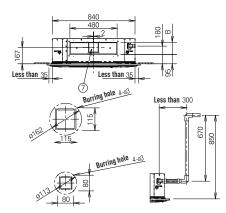


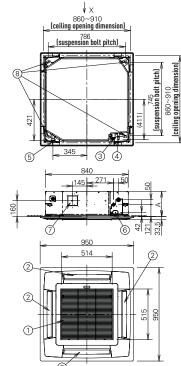
## **ECOI 6N INDOOR UNITS DIMENSIONS**

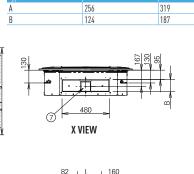
### U1 TYPE // 4-WAY 90x90 CASSETTE

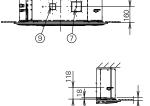
Туре	36-50	60-140					
1 Air intake grill							
2 Air discharge outlet							
3 Refrigerant piping (liquid pipes)	Ø6.35 (flared)	Ø9.52 (flared)					
4 Refrigerant piping (gas pipes)	Ø12.7 (flared)	Ø15.88 (flared)					
5 Drain outlet VP50	outer Ø32						
6 Power supply port							
7 Discharge duct	Ø150						
8 Suspension bolt hole	4-12x30 slot						
9 Fresh air intake duct connection port	Ø100¹						

1 Air inlet kit is necessary. Flter size: 520 x 520 x 16





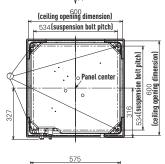


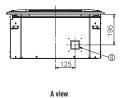


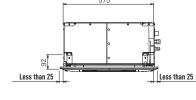
Adjust the suspension bolt length so that the gap from the lower ceiling surface becomes 30 mm or more (18 mm or more from the lower surface of the body) as shown in the figure. When the suspension bolt length is long, it hits the ceiling panel and installation is not possible.

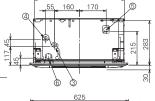
### Y1 TYPE // 4-WAY 60x60 CASSETTE

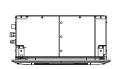
- 1 Air intake
- 2 Discharge outlet
- 3 Refrigerant piping (liquid pipes) Size 22 to 56: Ø 6.35 (flared)
- 4 Refrigerant piping (gas pipes) Size 22 to 56: Ø 12.7 (flared)
- 5 Drain tube connection port VP20 (outer Ø 26)
- 6 Power supply port
- 7 Suspension bolt hole (4-12 x 30 hole)
- 8 Fresh air intake duct connection port (Ø 100)

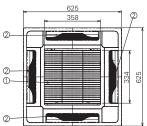








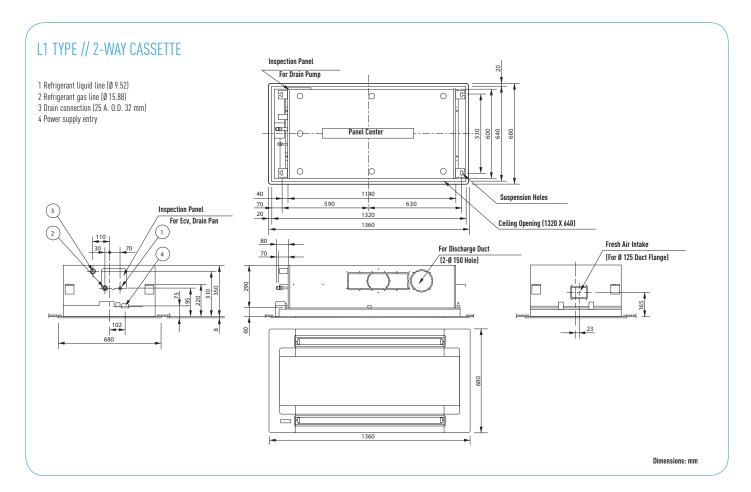


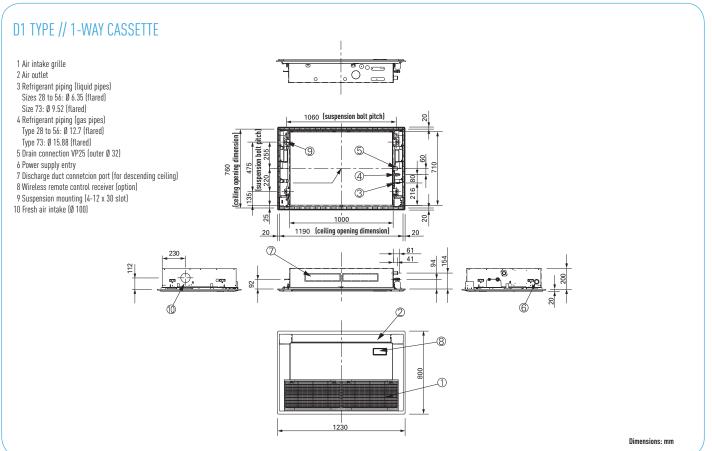


The lenght of the suspension bolts should be selected so that there is a gap of 30 mm or the ceiling (17 mm or more below the lower surface of the main unit), as shown in the figure at right. If the suspension bolts is too long, it will contact the ceiling panel and the unit cannot be installed.



Dimensions: mm

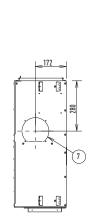




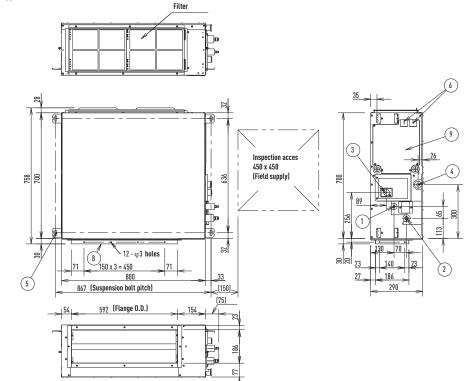
## **ECOI 6N INDOOR UNITS DIMENSIONS**

### F2 TYPE // LOW STATIC PRESSURE HIDE AWAY

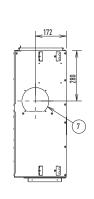
### S-22MF2E5 // S-28MF2E5 // S-36MF2E5 // S-45MF2E5 // S-56MF2E5



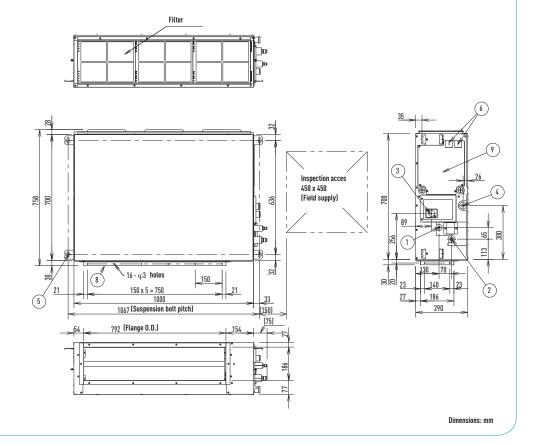
- 8 Flange for flexible air outlet duct
- 9 Electrical component box



### S-60MF2E5 // S-73MF2E5 // S-90MF2E5

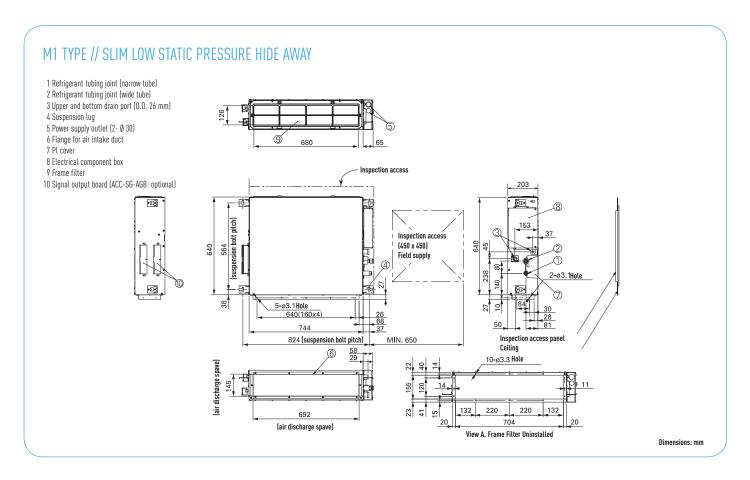


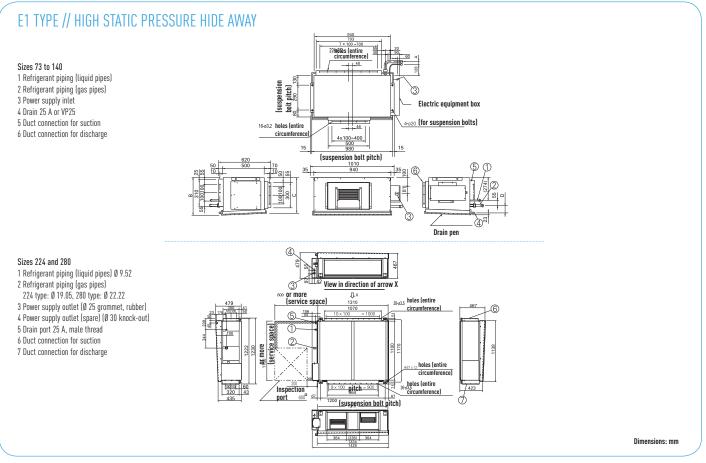
- 1 Refrigerant tubing joint (liquid tube) Ø9.52 flare 2 Refrigerant tubing joint (gas tube) Ø15.88 flare 3 Upper drain port VP25 (0.D. Ø32 mm) & 200 flexible hose supplied 4 Bottom drain port VP 25 (0.D. Ø32 mm) 5 Suspension lug (4-12 x 30 mm) 6 Power supply outlet 7 Fresh air intake port (Ø150 mm) 8 Flange for flexible air outlet duct 9 Electrical component box



## F2 TYPE // LOW STATIC PRESSURE HIDE AWAY S-106MF2E5 // S-140MF2E5 // S-160MF2E5 Filter 172 (3) Inspection acces 450 x 450 (Field supply) 758 700 200 636 300 20 - φ3 holes 8 <u> 140</u> 150 x 7 = 1050 186 1400 1467 (Suspension bolt pitch) [150] 1 Refrigerant tubing joint (liquid tube) Ø9.52 flare 2 Refrigerant tubing joint (gas tube) Ø15.88 flare 3 Upper drain port VP25 (O.D. Ø32 mm) x 200 flexible hose supplied 4 Bottom drain port VP 25 (O.D. Ø32 mm 5 Suspension lug (4-12 x 30 mm) 6 Power supply outlet 7 Fresh air intake port (Ø150 mm) 8 Flange for flexible air outlet duct 9 Flectrical component box 1192 (Flange O.D.) 9 Electrical component box Dimensions: mm

## **ECOI 6N INDOOR UNITS DIMENSIONS**



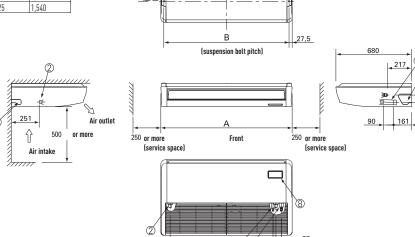


### T1 TYPE // CEILING

- 1 Drain port VP20 (inner Ø 26, hose accessory)
  2 Drain for left piping
  3 Upper piping outlet port (knock-out hole)
  4 Right piping outlet port (knock-out hole)
  5 Drain left piping outlet port (knock-out hole)
  6 Power supply entry port (knock-out hole Ø 40)
  7 Remote controller wiring inlet port
  8 Wireless remote control receiver mounting part

	36-56 type	73 type	106-140 type
A (body)	910	1,180	1,595
B (suspension bolt pitch)	855	1,125	1,540

9 Refrigerant gas piping Type 36 to 56: Ø 12.7 Type 73 to 140: Ø 15.88 10 Refrigerant liquid piping Type 36 to 56: Ø 6.35 Type 73 to 140: Ø 9.52



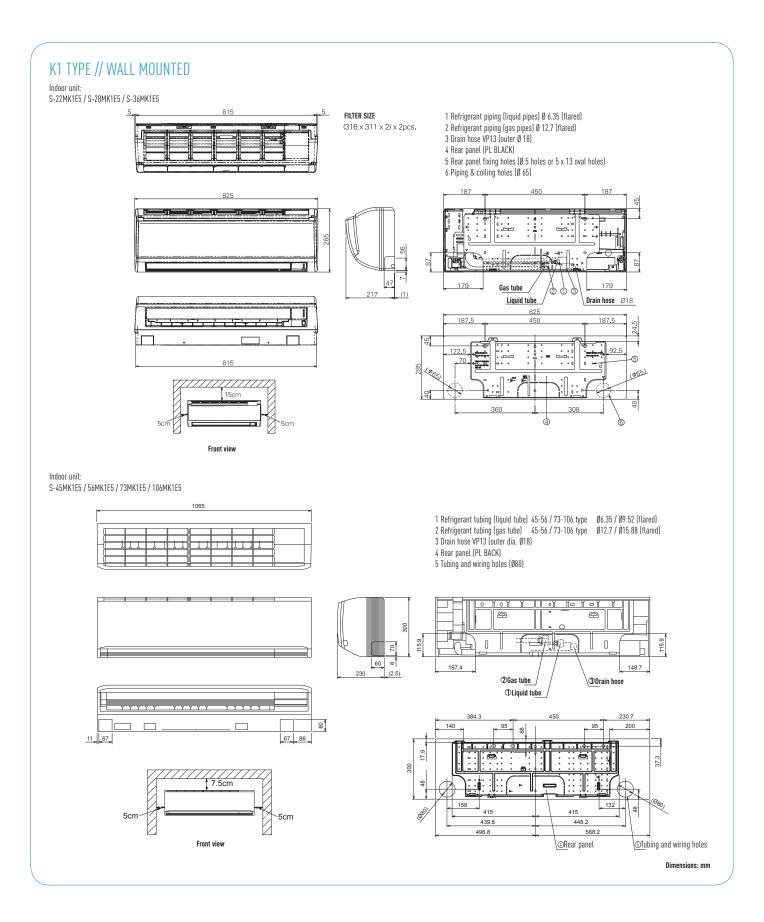
84

6

75 146

Dimensions: mm

## **ECOI 6N INDOOR UNITS DIMENSIONS**

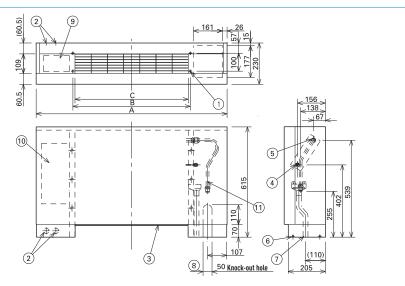


### P1 TYPE // FLOOR STANDING

- 1 4 x Ø 12 holes (for floor fixing)
- 2 Power supply outlet 3 Air filter

- 3 Air filter
  4 Refrigerant piping (liquid pipes)
  5 Refrigerant piping (gas pipes)
  6 Level adjustment bott
  7 Drain outlet VP20 (with vinyl hose)
  8 Refrigerant piping connection port (bottom or rear)
  9 Operation switch mounting part
- 10 Electric equipment box
- 11 Accessory copper pipe for gas pipe connection

Indoor unit	A	В	C	Liquid pipes	Gas pipes
22 to 36 type	1,065	665	632		
45 type				Ø 6.35	Ø 12.7
56 type	1,380	980	947		
71 type				Ø 9.52	Ø 15.88

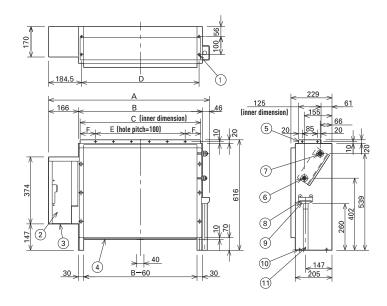


### R1 TYPE // CONCEALED FLOOR STANDING

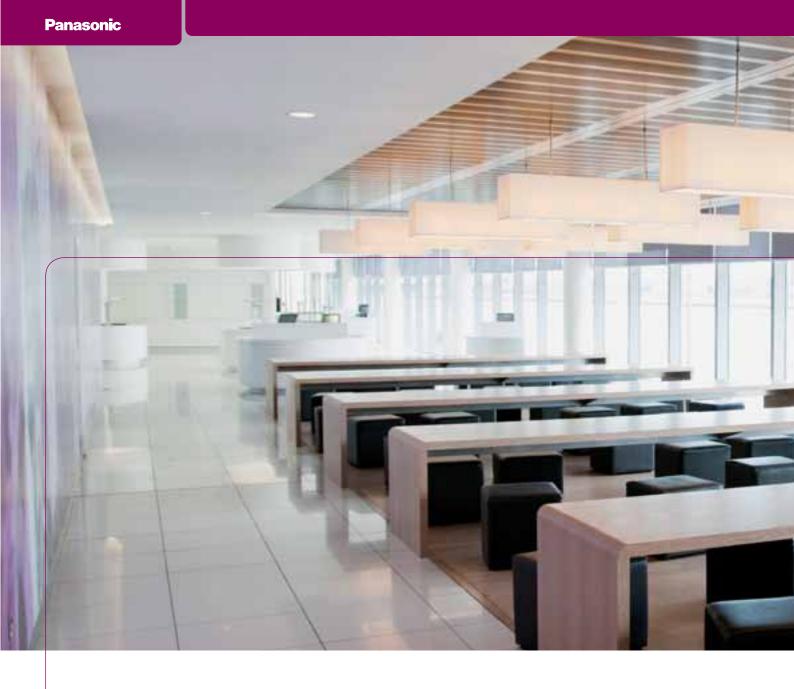
- 1 4 x Ø 12 holes (for floor fixing)
  2 Electric equipment box
  3 Power supply outlet
  4 Air filter
  5 Discharge duct connection flange
  6 Refrigerant connection outlet (liquid pipes)
  7 Refrigerant connection outlet (gas pipes)
  8 Drain filter

- 8 Drain Inter 9 Drain pan 10 Level adjustment bolt 11 Drain outlet VP20 (with vinyl hose)

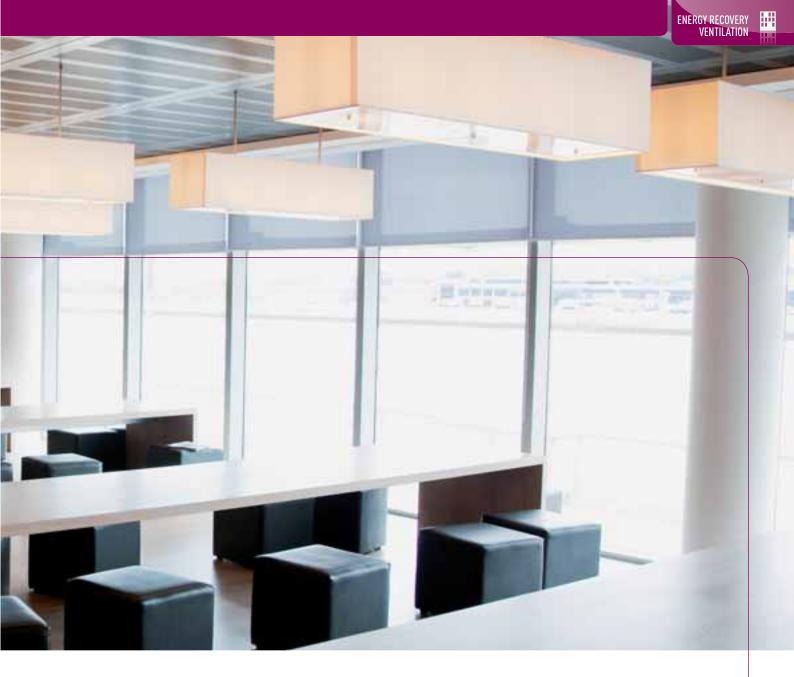
Indoor unit	A	В	С	D	E	F	Liquid pipes	Gas pipes
22 to 36 type	904	692	672	665	500	86		
45 type							Ø 6.35	Ø 12.7
56 type	1,219	1,007	1,002	980	900	51		
71 type							Ø 9.52	Ø 15.88



Dimensions: mm



PANASONIC VENTILATION
SOLUTIONS. FOR MAXIMUM
SAVINGS AND EASY TO INTEGRATE



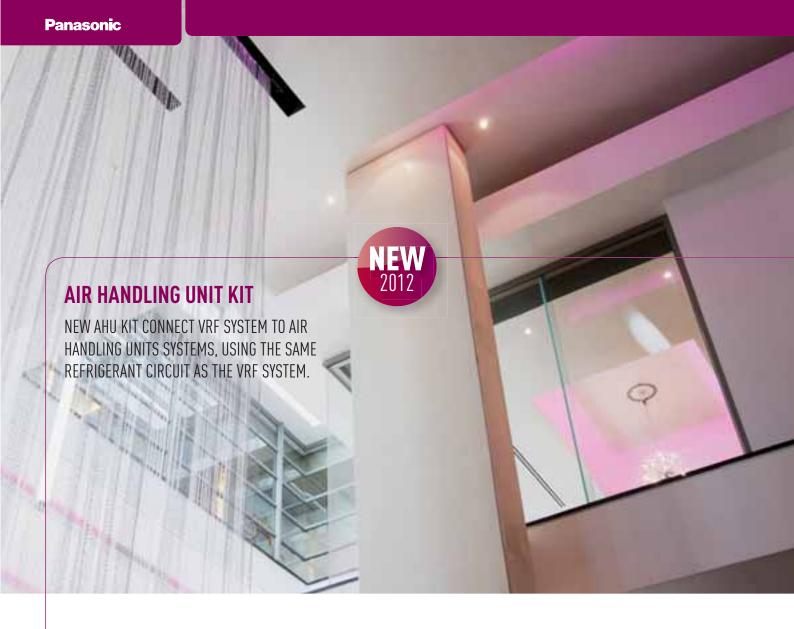


## AIR HANDLING UNIT KIT

Connect easely your ECOi & GHP system to AHU Kit.

## **ENERGY RECOVERY VENTILATOR**

Energy recovery ventilators offer ventilation which increases comfort and saves energy. They efficiently recover the heat lost in ventilation during the heat recovery process.





Panasonic AHU Kit have large connectivity possibilities in order to be easily integrated.

Application: Hotels, offices, server rooms or all large buildings where air quality control such as humidity control and fresh air and is needed.

### AHU CONNECTION KIT



PCB, Power trans, Terminal block



Remote control can be easily Expansion installed on the AHU Kit box. valve Remote control must be purchase separately.



Thermistor x2 (Refrigerant: E1, E3)



Thermistor x2 (Air: Tf, Tb)

### REMOTE CONTROLLER

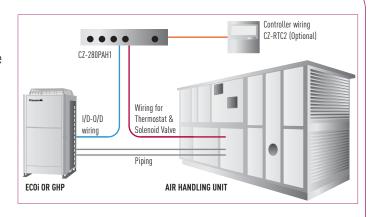


Standard wired remote controller. Optional

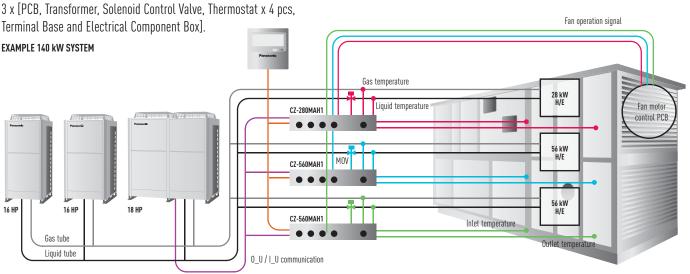
### Possible Solution 1 by 1

### Panasonic AHU Kit, 28 / 56 kW

PCB, Transformer, Solenoid Control Valve, Thermostat x 4 pcs, Terminal Base and Electrical Component Box.



### System example for big capacity (more than 56 kW)



## Optional parts: Following functions are available by using different type of control accessories:

### CZ-RTC2 Wired remote controller

- Operation-ON/OFF
- Mode select
- Temperature setting
- \* Fan operation signal can be taken from the PCB.

### CZ-T10 terminal

- Input signal= Operation ON/OFF
- Remote controller prohibition
- Output signal= Operating-ON status
- Alarm output (by DC12V)

### PAW-OCT, DC12 V outlet. OPTION terminal

- Output signal= Cooling/Heating/Fan status
- Defrost
- Thermostat-ON

### CZ-CAPBC2 Mini seri-para I/O unit

- Temperature setting by 0-10 V or 0-140  $\Omega$  input signal
- Room (inlet air) temp outlet by 4-20 mA
- Mode select or/and ON/OFF control
- Fan operation control
- Operation status output/ Alarm output

## AHU CONNECTION KIT, 28 kW AND 56 kW FOR ECOI AND GHP

6N SERIES 2-PIPE ECOI OUTDOOR UNIT SHALL BE USED FOR AHU CONNECTION KIT.

2 models for VRF system: 10 HP (CZ-280MAH1) and 20 HP (CZ-560MAH1)

Heat exchanger, Fan & Fan motor to be mounted in AHU Kit shall be provided in the field.

AHU connection Kit can be connected this (field supplied) AHU Kit system. (Contents of kit:

Control PCB, expansion valve, sensors)

Application: Hotels, offices, server rooms or all large buildings where air quality control such as humidity control and fresh air and is needed.

AHU Kit combine air conditioning and fresh air in only one solution.

MODEL		CZ-280MAH1	CZ-560MAH1	CZ-280MAH1 + CZ-560MAH1	CZ-560MAH1 + CZ-560MAH1	CZ-560MAH1 + CZ-560MAH1 + CZ-280MAH1	CZ-560MAH1 + CZ-560MAH1+ CZ-560MAH1
Nominal Cooling capacity @ 50hz	kW	28.0	56.0	84.0	112.0	140.0	168.0
Nominal Heating @ 50hz	kW	31.5	63.0	95.0	127.0	155.0	189.0
Horsepower	HP	10	20	30	40	50	60
Cooling Airflow High	m³/min	5,000	10,000	15,000	20,000	25,000	30,000
Cooling Airflow Low	m³/min	3,500	7,000	10,500	14,000	17,500	21,000
Heating Airflow High	m³/min						
Heating Airflow Low	m³/min						
Bypass Factor				0.9 (rec	ommended)		
Fan Input Power		_	_	_	_	_	_
Total Cooling (incl. T-Heat exch.)	Nom (Min - Max)	_	_	_	_	_	_
Total Heating (incl. T-Heat exch.)	Nom (Min - Max)	_	_	_	_	_	_
Fuse Size	A	_	_	_	_	_	_
Running Current @ 230v		_	_	_	_	_	_
Input Power @ 230v							
Dimensions of the box (H x W x D)	mm			420 x	280 x 160		
Weight	Kg						
Sound pressure level on cooling mode (nominal)	dB(A)	_	_	_	_	_	_
Sound power level on cooling mode (nominal)		_	_	_	_	_	_
Piping length (min/max)	m	10/100	10/100	10/100	10/100	10/100	10/100
Installation height difference (max)	m	10	10	10	10	10	10
Pipe Diameters	Inch (mm)	3/8 (9.52)	5/8 (15.88)	3/4 (19.05)	3/4 (19.05)	3/4 (19.05)	3/4 (19.05)
	Inch (mm)	7/8 (22.22)	1 1/8 (28.58)	1 1/4 (31.75)	1 1/2 (38.15)	1 1/2 (38.15)	1 1/2 (38.15)
Intake temperature of AHU Kit (Min / Max)	°C	Cooling:18 - 32DB (13 - 23 WB) / Heating:16 - 30 DB					
Ambient temperature of outdoor unit (min / Max)	oC O	Cooling: -5 - 43 DB / Heating: -15 - 15.5 WB					

AHU CONNECTION KIT / SYSTEM COMBINATION									
CAPACITY (HP)	OUTDOOR UNIT CO	MBINATION		AHU KIT COMBINA	AHU KIT COMBINATION				
28 kW (10 HP)	U-10ME1E81			CZ-280MAH1					
56 kW (20 HP)	U-20ME1E81			CZ-560MAH1					
84 kW (30 HP)	U-16ME1E81	U-14ME1E81		CZ-560MAH1	CZ-280MAH1				
112 kW (40 HP)	U-20ME1E81	U-20ME1E81		CZ-560MAH1	CZ-560MAH1				
140 kW (50 HP)	U-18ME1E81	U-16ME1E81	U-16ME1E81	CZ-560MAH1	CZ-560MAH1	CZ-280MAH1			
168 kW (60 HP)	U-20ME1E81	U-20ME1E81	U-20ME1E81	CZ-560MAH1	CZ-560MAH1	CZ-560MAH1			





### OPTIONAL

Standard wired remote controller CZ-RTC2





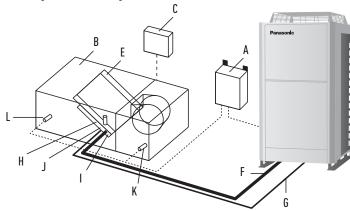
### **TECHNICAL ZOOM**

- MAX. CAPACITY: 60HP (168 kW)
- MAX. PIPING LENGTH: 180 m
- MAX. TOTAL PIPING: 210 m
- ELEV. DIFF. (0\_U~I\_U): 50 m (0\_U ABOVE)
- ELEV. DIFF. (I\_U~I\_U): 4 m
- IN/OUT CAPACITY RATIO: 50~100%
  - MAX. I\_U NUMBER: 2 UNITS\*
- AVAILABLE TEMPERATURE RANGE IN HEATING: -15~15.5 °C
- AVAILABLE TEMPERATURE RANGE FOR THE SUCTION AIR AT AHU KIT: COOL: 15~24 °C / HEAT: 10~30 °C
- $\ensuremath{^{*}}$  To be simultaneous operation controlled by one remote controller sensor.

### CZ-280MAH1 // CZ-560MAH1

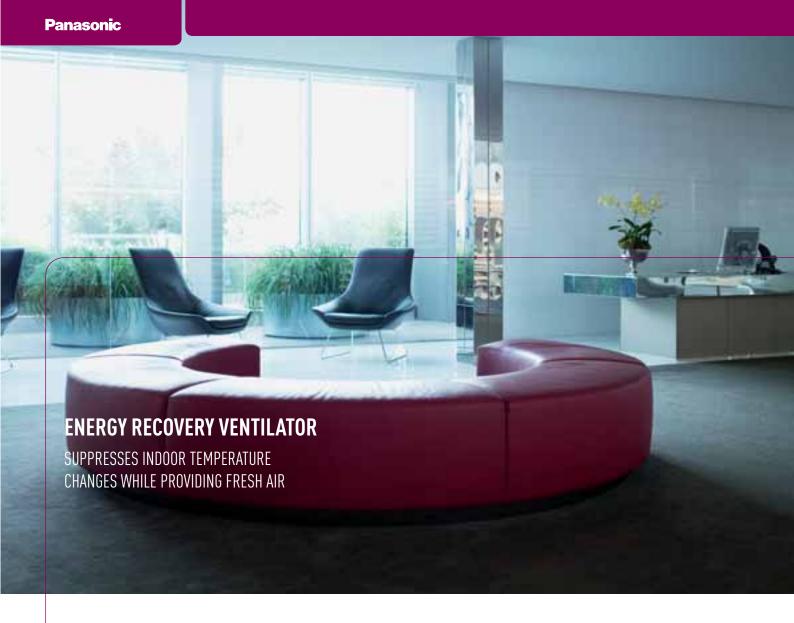
- The system controlled by the suction air (or return air from room) temperature as same as standard indoor unit. (Selectable mode: Automatic / Cooling / Heating / Fan / Dry (but same as Cool)
- The discharge air temperature is also controlled to prevent too-low air discharge in Cooling or too-high air discharge in Heating. (in case of VRF system)
- Demand control (Forcible thermostat-OFF control by operating current)
- Defrost operation signal, Thermo-ON/OFF states output
- Drain pump control (Drain-pump and the float switch to be supplied in local)
- External target temperature setting via Indoor/Outdoor signal interface is available with CZ-CAPBC2. (Ex.  $0-10~\rm V$ )
- Connectable with P-LINK system
   Special care for the electrical noise may necessary depending on the system at site.]
- Fan control signal from the PCB can be used for control the air volume (High/Mid/Low and LL for Th-off)

Need to change the fan control circuit wiring at field.



### System & regulations. System overview

- A: AHU Kit controller box (with control PCB)
- B: AHU Kit equipment (Field supplied)
- C: AHU Kit system controller (Field supplied)
- D: Outdoor unit
- F: Gas piping (Field supplied)
- G: Liquid piping (Field supplied)
- H: Electronic expansion valve
- I: Thermistor for Gas pipe
- J: Thermistor for Liquid pipe
- K: Thermister for Suction air
- L: Thermistor for Discharge air



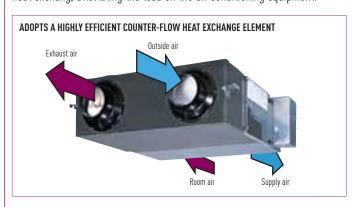
### Heat exchange ventilation and normal ventilation

### Heat exchange ventilation

When a room is cooled or heated, the exhausted cooling / heating energy is recoverd by heat-exchange ventilation.

### **Normal ventilation**

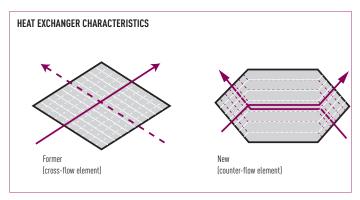
This is used in the spring and autumn, when rooms are not cooled or heated, that is, when there is little difference between the indoor and outdoor air conditions. In addition, at night during the hot season, when the outside air temperature drops the outside air is drawn inside without heat exchang, alleviating the load on the air conditioning equipment.



The heat exchanger is made up of a membrane manufactured from a special material covered in resin for optimal heat transmission. The nylon/polyester fibre filter offers high dust retention capacity. We have also redesigned the air ducts to obtain a long-lasting heat exchange system which does not need periodic cleaning.

### Energy efficiency and ecology

Energy consumption is dramatically reduced by using a counter-flow heat-exchange element. Air conditioning load is reduced by approximately 20%, resulting in significant energy savings.



### Heat exchanger

With the cross-flow element, air moves in a straight line across the element. With the counter-flow element, air flows through the element for a longer time (longer distance), so the heat-exchange effect remains unchanged even if the element is made thinner.

### Characteristics common to all models

- Counter-flow heat exchange element used for reduced noise and slimmer, more compact body shape.
- All maintenance can be performed through a single inspection hole.
- Straight air supply / exhaust system used for easier installation.
- Each unit can be mounted in reverse position.
- Equipped with an Extra-High setting.
- Can incorporate a medium performance filter (optional, installed on site).

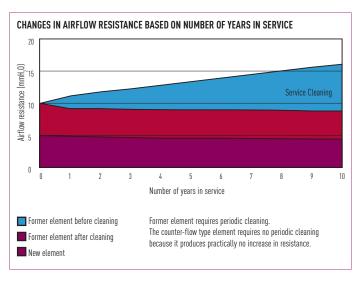
### More Comfort

### Quiet operation

Low noise operation results in noticeably quieter units. All models with capacities below  $500~\text{m}^3/\text{h}$  run at noise levels below 32~dB (High setting) and even our largest 1,000 m³/h-capacity model runs at only 37.5~dB (High setting).

### Long heat-exchange element service life

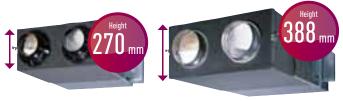
Cleaning reduced due to the special material heat exchanger. The nylon/polyester fibre filter offers high dust retention capacity.



### Easy Installation and Maintenance

### Slim shape and easier installation

Counter-flow heat exchange element used for reduced noise and slimmer, more compact body shape.



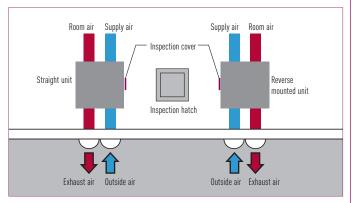
FY-250ZDY2 // FY-350ZDY2 // FY-500ZDY2

FY-800ZDY2 // FY-01KZDY2A

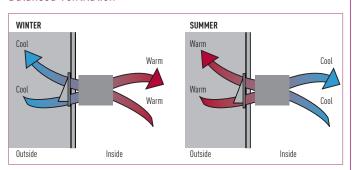
### Reverse mountable direct air supply / exhaust system

Adoption of straight air supply / exhaust system: Duct design is simplified because the air supply / exhaust ducts are straight.

Since each unit can be mounted in reverse position, only one inspection hole is needed for two units: Two units can share one inspection hole so duct work is easier and more flexible.



### **Balanced Ventilation**



## ENERGY RECOVERY VENTILATION SYSTEM

Recovers up to 77% of the heat in the outgoing air, for an ecological and energy saving building.











FY-250ZDY2

FY-350ZDY2

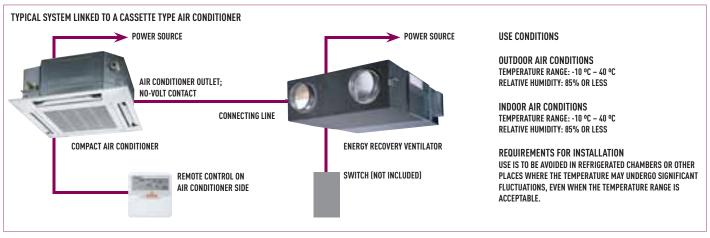
FY-500ZDY2

FY-800ZDY2

FY-01KZDY2A

RATED FLOW RATE 250 m³/h			250 m³/h	350 m³/h	500 m³/h	800 m³/h	1000 m³/h
MODELS			FY-250ZDY2	FY-350ZDY2	FY-500ZDY2	FY-800ZDY2	FY-01KZDY2A
Power Source		V A.C	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240
Frequency		Hz	50	50	50	50	50
<b>HEAT EXCHANGE VEN</b>	ITILATION			•	•		
Input	Extra High / High / Low	W	104-119 / 99-114 / 79-90	137-154 / 124-137 / 117-128	188-214 / 169-188 / 151-166	316-347 / 309-329 / 302-327	399-445 / 360-399 / 332-367
Current	Extra High / High / Low	Α	0.48-0.50 / 0.46-0.48 / 0.37-0.39	0.63-0.65 / 0.59-0.60 / 0.56-0.57	0.86-0.90 / 0.79-0.81 / 0.72-0.73	1.51-1.54 / 1.48-1.50 / 1.44-1.46	1.97-2.04 / 1.85-1.93 / 1.68-1.76
Air Volume	Extra High / High / Low	m³/h	250 / 250 / 170	350 / 350 / 280	500 / 500 / 370	800 / 800 / 650	1000 / 1000 / 810
Air Volume	Extra High / High / Low	ft3/min	148 / 148 / 100	207 / 207 / 165	295 / 295 / 218	472 / 472 / 384	590 / 590 / 478
External Static Pressure	Extra High / High / Low	Pa	90 / 80 / 37	95 / 65 / 42	105 / 70 / 38	140 / 110 / 70	90 / 55 / 35
Temperature Exchange Efficiency	Extra High / High / Low	%	75 / 75 / 77	75 / 75 / 77	75 / 75 / 77	75 / 75 / 76	75 / 75 / 76
Enthalpy Exchange	Extra High / High / Low	Cooling %	63 / 63 / 66	66 / 66 / 69	62 / 62 / 67	65 / 65 / 68	65 / 65 / 68
Efficiency	Extra High / High / Low	Heating %	70 / 70 / 73	69 / 69 / 71	67 / 67 / 71	71 / 71 / 74	71 / 71 / 73
NORMAL VENTILATION	N						
Input	Extra High / High / Low	W	103-119 / 98-114 / 79-90	133-151 / 119-132 / 113-125	184-210 / 161-182 / 145-164	309-337 / 300-325 / 297-316	392-438 / 358-392 / 329-362
Current	Extra High / High / Low	Α	0.47-0.50 / 0.46-0.48 / 0.37-0.39	0.61-0.63 / 0.57-0.60 / 0.54-0.56	0.84-0.88 / 0.76-0.77 / 0.71-0.73	1.47-1.50 / 1.45-1.48 / 1.41-1.43	1.95-2.03 / 1.84-1.92 / 1.67-1.74
Air Volume	Extra High / High / Low	m³/h	250 / 250 / 170	350 / 350 / 280	500 / 500 / 370	800 / 800 / 650	1000 / 1000 / 810
External Static Pressure	Extra High / High / Low	Pa	90 / 80 / 37	95 / 65 / 42	105 / 70 / 38	140 / 110 / 70	90 / 55 / 35
Noise	Extra High / High / Low	dB	27-28 / 26.5-27.5 / 21.5-22.5	31-32 / 30-31 / 26-27	34-35 / 32-33 / 26.5-27.5	38.5-39.5 / 37-38 / 33.35	38-39 / 36.5-37.5 / 31.5-33.5
Product Weight	·	Kg	29	37	43	71	83

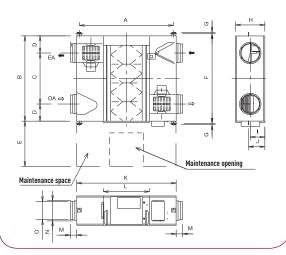
This noise of the product is the value which was measured at the acoustic room. Actually, in the established condition, that undergo influence by the echoing of the room and so that become bigger than the display numerical value. The input, the current and the exchange efficiency are values at the time of the mentioned air volume. The noise level shall be measured 1.5m below the centre of the unit. The temperature exchange efficiency averages that of when cooling and when heating.





### **TECHNICAL ZOOM**

- HIGH ENERGY SAVING, UP TO 20%
- COUNTER CROSS FLOW TECHNOLOGY FOR BETTER EFFICIENCY
- LONG LIFE ELEMENT CORE
- · EASY INSTALLATION AND 20% LESS THICKNESS
- EASY CONNECTION TO AIR CONDITIONING UNITS
- SUPER QUIET UNITS



# FY-250ZDY2 // FY-350ZDY2 // FY-500ZDY2 // FY-800ZDY2 // FY-01KZDY2A

### **HEALTHY AIR**

· The filter guarantees healthier air

### **ENERGY EFFICIENCY AND ECOLOGY**

- Up to 20% energy saving in the installation
- Recovers up to 77% of the heat in the outgoing air

#### COMFORT

- Quiet units (21,5 dB for the FY-250ZDY2)
- Cleaning reduced due to the revolutionary structure of the exchanger (recommended every 6 months)
- · Ideal for indoor spaces without windows

### **EASY INSTALLATION AND MAINTENANCE**

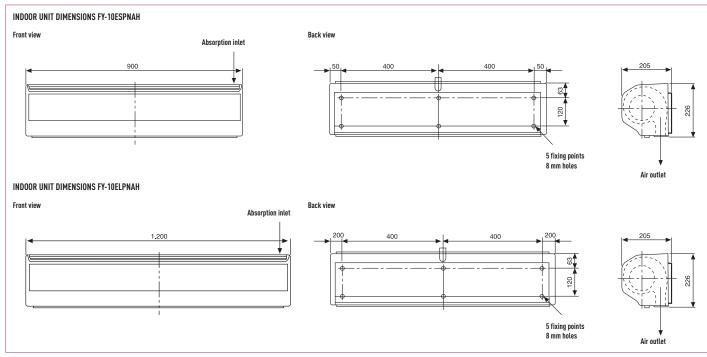
- Five models for easier selection
- Reduced system height (270 mm and 388 mm)
- Side opening for cleaning (inspection of filter, motor and other parts)
- Installation can be reversed to share an inspection opening between 2 machines
- Easy connection to the air conditioning unit (without additional elements)
- Installation in false ceilings
- Units operate at 220 240 V
- High static pressure for easier installation

	FY-250ZDY2	FY-350ZDY2	FY-500ZDY2	FY-800ZDY2	FY-01KZDY2A	
A 810		810	890	1,250	1,250	
В	599	804	904	884	1,134	
С	315	480	500	428	678	
D	142	162	202	228	228	
Е	600	600	600	600	600	
F	655	860	960	940	1,190	
G	19	19	19	19	19	
Н	270	270	270	288	388	
I	135	145	145	194	194	
J	159	159	159	218	218	
K	882	882	962	1,322	1,322	
L	414	414	414	612	612	
М	95	95	107	85	85	
N	219	219	246	258	258	
0	144	144	194	242	242	

## AIR CURTAIN

 $2\ \text{sizes}$  for 900 mm and 1200 mm air curtains. Ideal for separating areas and energy saving.

			FY-10ESPNAH	FY-10ELPNAH
Width		900	1.200	
Watts	Hi	W	71,5	96
	Lo	W	61,5	74
Current	Hi	Α	0,40	0,54
	Lo	Α	0,29	0,35
Air speed	Hi	m/s	13,0	13,1
	Lo	m/s	11,1	11,0
Air volume	Hi	m³/h	750	1.000
	Lo	m³/h	630	830
Noise lever	Hi	dB(A)	46	46
	Lo	dB(A)	42	41
Weight		Kg	11	14





### **TECHNICAL ZOOM**

- 2 SIZES: 900 mm AND 1,200 mm
- POWERFUL AIR FLOW (10 m/s)
- VERY LOW NOISE, ONLY 42 dB

### FY-10ESPNAH // FY-10ELPNAH

### COMFORT

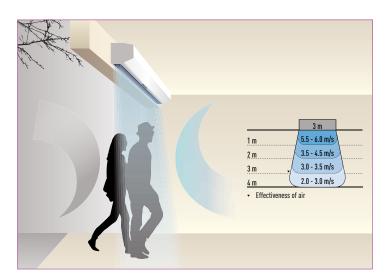
 $\cdot$  Easy redirection of airflow by means of the manual deflector

#### EASE OF USE

 $\boldsymbol{\cdot}$  Speed selector (high and low) on the unit itself

### EASY INSTALLATION AND MAINTENANCE

- Simple installation
- Its compact dimensions improve installation and positioning in any space









# **Panasonic**

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