

INTEGRATED HEATING SYSTEMS

CATALOGUE 2013 - 2014

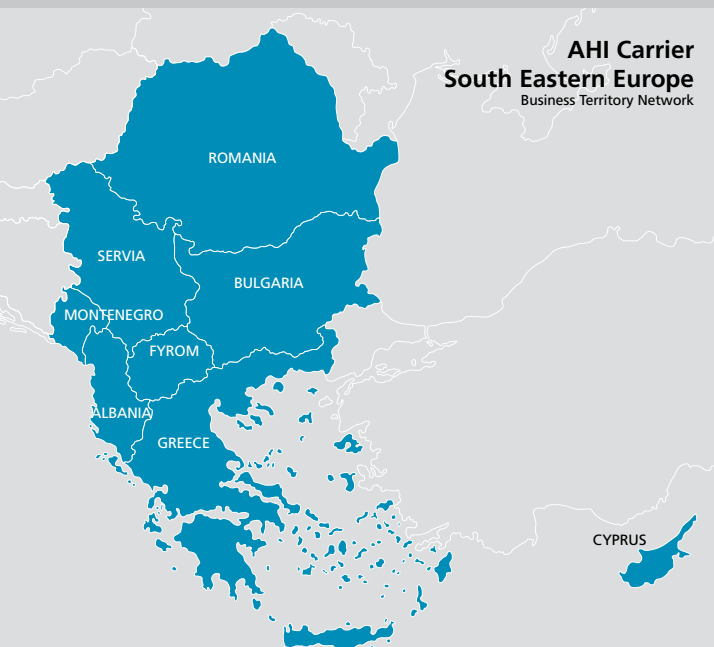
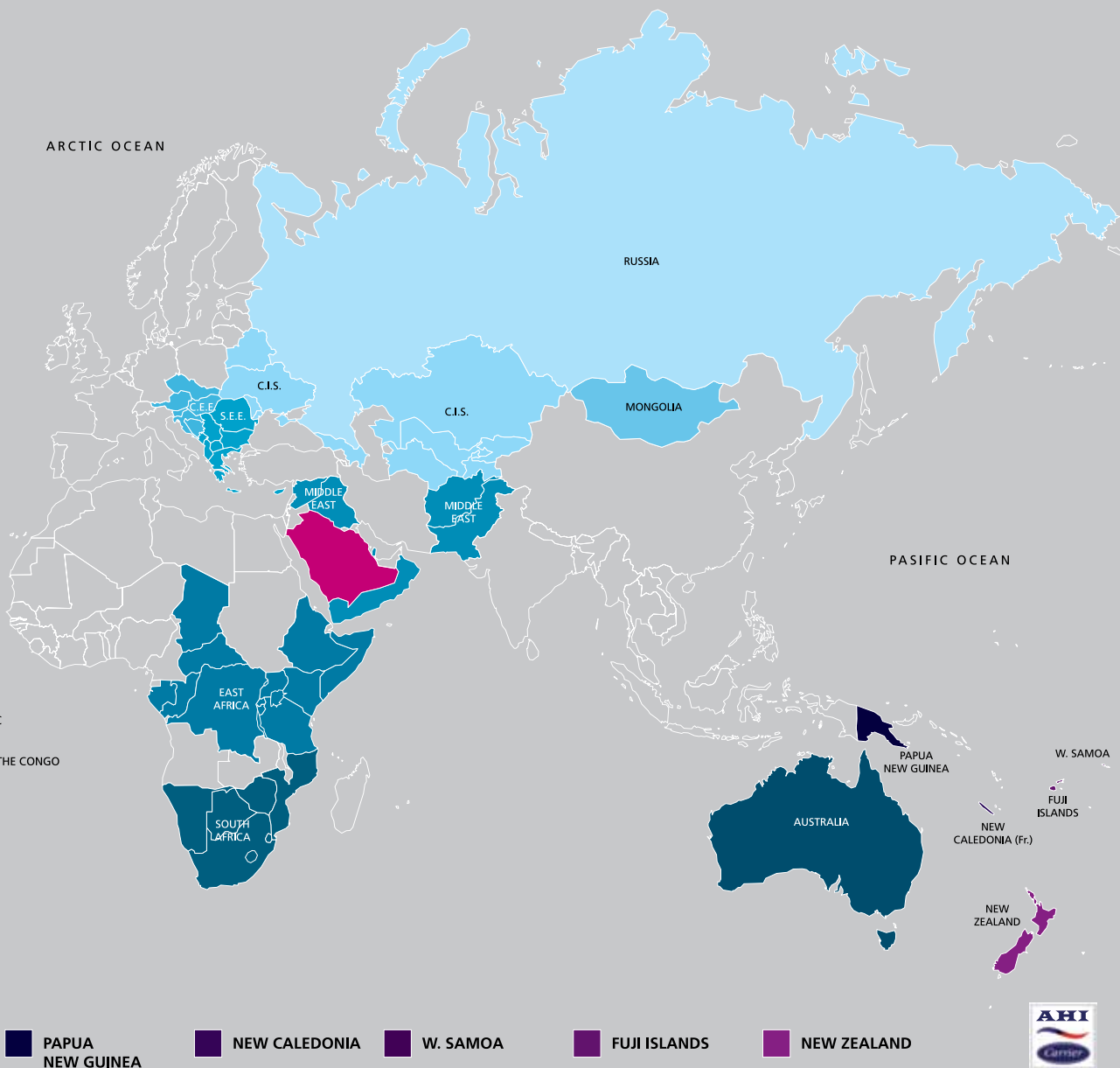




AHI Carrier Fzc
Business Territory Network

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AHI Carrier
South Eastern Europe
Business Territory Network

AHI CARRIER SOUTH EASTERN EUROPE S.A.

Headquarters

18, Kifissou Ave
104 42 - Athens
GREECE
Tel.: +30 210 6796300
Fax: +30 210 6796390

Thessaloniki Branch

5, Ag. Georgiou str., Cosmos Offices
570 01 - Themi Thessaloniki
GREECE
Tel.: +30 231 3080430
Fax: +30 231 3080435

Bulgaria Branch

25, Petar Dertliev blvd
1324 - Sofia
BULGARIA
Tel.: +35 929 483960
Fax: +35 929 483990

Romania Branch

270d, Turnu Magurele str. Sector 4
Cavar center - Bucharest
ROMANIA
Tel.: +40 214 050751
Fax: +40 214 050753



COMPANY PROFILE

Dating back to 1952, **Carrier** was the first air-conditioning company in Greece. In 1996, **Carrier Hellas Air-Conditioning S.A.** was established as a subsidiary of UTC with distribution and after sales services rights for Carrier, Toshiba & Totaline air-conditioning brands in Greece. Simultaneously, Carrier expanded its distribution rights to the Balkan area with offices in Romania & Bulgaria. In 2009, the company was renamed to **Carrier South Eastern Europe Air-Conditioning S.A.** signifying the distribution rights in Greece, Cyprus and the Balkan region.

The first Semester of 2011, Carrier entered into an agreement to transfer its HVAC distribution and after-sales support operations in Greece, Cyprus & the Balkans to its existing AHI Carrier FZC joint venture. The company was renamed to **AHI Carrier South Eastern Europe Air-Conditioning S.A.** and continues to provide customers with high quality Carrier and Toshiba HVAC solutions, supported by dedicated after-sales service technicians and the Totaline parts and supply network.

We are a company of ideas committed to applying cutting edge research and development techniques to create solutions that improve the environment and enhance human comfort.

The quality and efficiency of our products and services represent a commitment to consolidating our leading position in the market. We supply long-lasting, efficient products whose performance exceeds our customers' expectations.

We are committed to excellence in customer satisfaction. We listen to our customers and respond to their diverse needs by delivering exceptional products and services.

Our Mission

To be our customers' first choice for air-conditioning, heating and refrigeration solutions in our region.

Our Purpose

To create comfortable environment regardless of the climate by providing solutions that maintain exceptional indoor air quality.

About AHI Carrier

THE LARGEST CARRIER JOINT VENTURE HVAC DISTRIBUTION COMPANY OUTSIDE USA

AHI is part of Darwish Bin Ahmed Group, U.A.E. founded in 1964. DBA Group is engaged in the following “core” business activities through a large, diversified investment and property portfolio, wholly owned companies, partnerships, agency agreements and joint ventures.

- Civil Engineering
- Real Estate & Hospitality
- International Representation of Major Manufacturers
- Business Investments
- **Joint Venture with Carrier Corporation**

AHI Carrier formerly known as Air-conditioning & Heating International (AHI) became a Carrier Joint Venture Company on December 18th, 2008. The partnership between Carrier and AHI dates back to December 1997 when the first agreement was signed for distribution of Carrier products in Russia and all of CIS countries (12 countries).

In 1999, Carrier & Toshiba Air-conditioning entered into a Joint Venture and as a consequence the Toshiba range of air-conditioning products were added for distribution in our territories. Success came early and in 2000 Carrier rewarded us by expanding our distribution rights to East and Central Africa (15 countries).

Since the creation of “AHI Carrier” Joint Venture, more countries have been added to include Middle East, Central and South Eastern Europe, Australia, New Zealand and South Africa (42 countries).

The most critical factor contributing AHI’s successful track record of profitable growth has been its commitment to service – and this commitment will become increasingly important in the future.

AHI Carrier runs TOTALINE stores in Australia, New Zealand & Middle East where more such stores are being added. TOTALINE stocks and sells a full range of HVACR parts, consumables & tools for residential and commercial applications.

AHI Carrier now distributes Carrier & Toshiba HVAC products in 63 & 50 countries respectively across 4 continents.

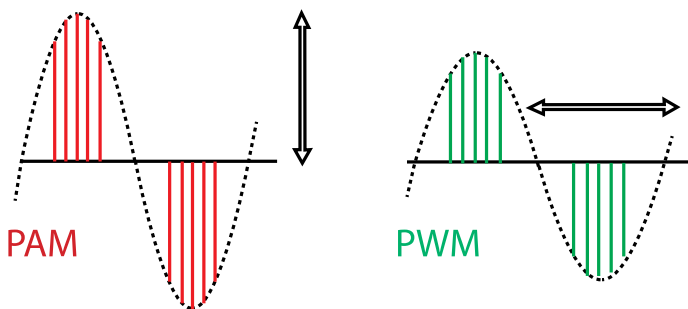


THE HEATING AND COOLING SYSTEMS OF THE FUTURE!

The increase of CO₂ and other green house gases is a key concern. Following the European commitment of reducing 20% of the emissions by 2020, energy waste from residential space heating and domestic hot water have been identified as the possible reduction targets.

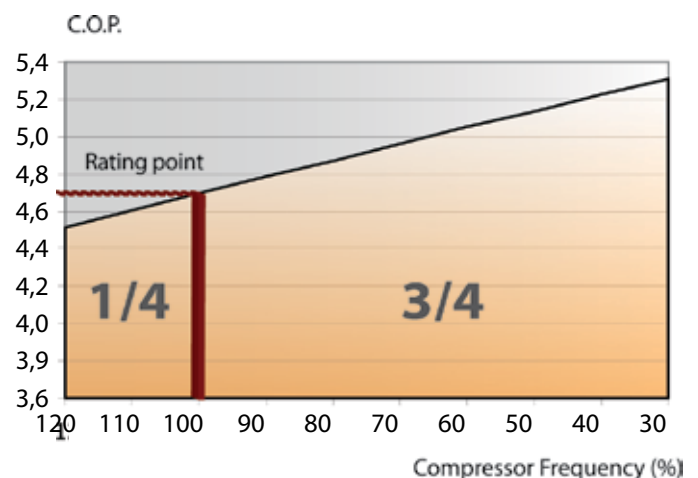
Air-to-water heat pumps are considered as renewable energy technology compared to heating systems dependent on fossil fuel or non efficient electrical heating. They are now considered as ideal solutions for space heating and domestic hot water.

Residential heat production by means of gas, oil or electricity contribute to raise the CO₂ emissions level in the atmosphere. In addition these traditional heating systems are less efficient and therefore the energy running costs increase.



Maximum power at high speed and unmatched efficiency at low and medium speed.

This new technology enables greater energy savings and the use of Carrier & Toshiba high efficiency heat pump units ensure long term reliability. Our engineers in recent years have developed and patented innovative cutting edge solutions and components like the twin rotary compressor and the IPDU inverter which has led to the achievement of great energy savings and high efficiency.



Seasonal energy efficiency

The inverter efficiency ratio is calculated at nominal value, when the compressors run at 100% capacity. But in practice the unit operates at lower compressor speeds (part load) 75% of the time. Here the Carrier & Toshiba inverter technology has one of the highest efficiency ratios.

Energy-efficiency class A in under-floor heating applications.



The products have been enhanced with a new, sophisticated algorithm for use with the new inverter board.
The extended features include:

- customised or pre-defined climate curves
- domestic hot water control
- night noise reduction function
- defrost/alarm output signal
- external heat source
- pump blockage protection function
- freeze protection
- compressor operation management

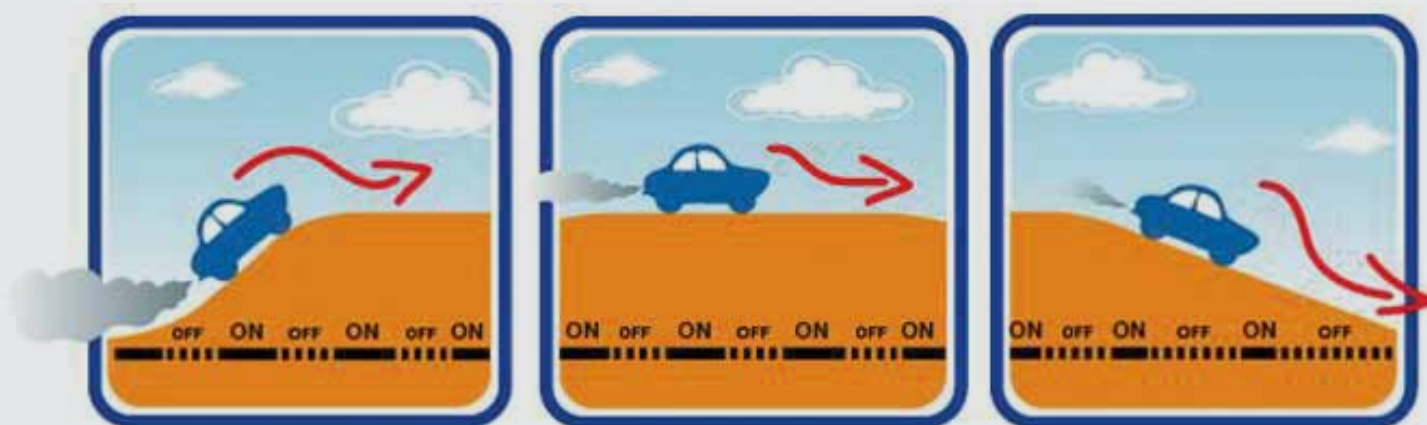


KEY FEATURES

- DC Twin rotary inverter compressor 20% to 120% with booster heating
- R410a or R407C, depending on the model
- Max LWT 65°C down to -10°C OAT, depending on the model
- Heating mode available from -20°C to +40°C, depending on the model

Real inverter system designed for heating:

- Communication between indoor and outdoor to manage Hz
- Inverter controls designed to deal with high thermal inertia emitters
- System controlled on LWT to terminal unit to better cope with UFH thermal inertia



Toshiba Carrier DC-inverter compressors

Twin-rotary for the larger sizes, for improved reliability, smooth and vibrations-free operation, from 20 up to 120% of their nominal capacity.

Toshiba Carrier inverter IPDU

Our exclusive hybrid inverter technology, combining PAM & PWM for maximum power at high rpm and unmatched efficiency at low and mid rpms.



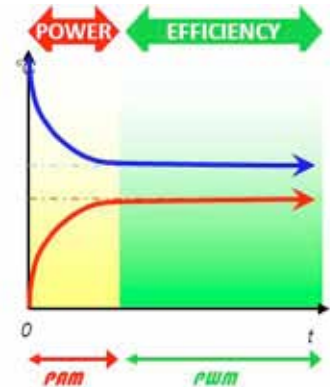
CDU DC Twin rotary inverter technology Inverter IPDU

PAM (Power Amplitude Modulation)

The PAM ensures maximum power for the prompt achievement of the set temperature.

PWM (Power Width Modulation)

The PWM ensures maximum power efficiency, once the temperature has stabilized.



PWM (Pulse Width Modulation)

The PWM driver generates a pseudo 3-phase alternate current by combining rectangular-shaped current pulses, having a fixed voltage of 325 Volts. This driver accurately and efficiently controls the compressor revolution (rpm) by adjusting the frequency (Hertz) of the 325V waves and their power factor.

Although the PWM is the most efficient inverter-driver technology, its maximum power output reaches its limit, when the power factor ratio of the rectangular waves comes near to 100%.

PWM is engaged when the unit operates at low and mid capacities. But when maximum capacity is required, Toshiba Carrier inverters have a second card to play.



PAM (Pulse Amplitude Modulation)

To overcome the PWM output limitation, Toshiba Carrier inverter offers the PAM driver, which takes over the control of the compressor revolution when maximum capacity is required.

The PAM driver adjusts the compressor revolution by varying the voltage of the rectangular-shaped electric pulses, their frequency and power factor.





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Air-to-Water Heat Pump System

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55°C

• **Made in Japan**

The heating and cooling systems of the future!

Toshiba Estia air-to-water heat pumps, are the ideal solution to increase energy efficiency (COP), using air as a main source of energy. This is an all-in-one system designed to deliver the right temperature for space heating, for domestic sanitary hot water and with the additional advantage of offering air-conditioning in the warmer seasons.

Toshiba air-to-water heat pump systems can manage two independent zones. This solution enables the delivery of water to diverse emitters at different temperature levels up to 55 °C.

KEY FEATURES

- **World-leading energy efficiency - COP up to 4,88 (11kW model)**
- Easy to install
- Environment conscious
- One system, multiple Solutions
- The right temperature at the right time
- **A class pump included**

Outdoor unit

Inverter technology and the DC twin rotary compressor. Estia heat pumps operate with the reliable and safe R-410A refrigerant.



Hydro unit

The high efficiency plate heat exchanger receives the optimum quantity of refrigerant to produce hot water at low or medium temperature (20-55 °C), or cold water (7°C - 20°C). A back-up heater (3, 6 or 9 kW options) further supports the operation for extreme conditions.



Domestic hot water tank

The Estia tank is a compact stainless steel insulated tank producing domestic hot water for sanitary use. The performance of the overall system is also maximized thanks to the integrated coaxial heat exchanger which uses hot water produced by the heat pump (whenever energy efficient and possible).



Physical data

Performance data

Outdoor unit Hydro unit combination	HWS- HWS-	Single Phase Units			Three Phase Units		
		804H-E 804XWH**E	1104H-E 1404XWH**E	1404H-E 1404XWH**E	1104H8-E 1404XWH**E	1404H8-E 1404XWH**E	1604H8-E 1404XWH**E
Heating Power *- (Nominal / Maximum)		8,00 / 8,78	11,20 / 14,97	14,00 / 17,08	11,20 / 14,82	14,00 / 16,12	16,00 / 17,03
Power input - (Nominal / Maximum)		1,79 / 2,07	2,30 / 3,23	3,11 / 3,94	2,34 / 3,24	3,16 / 3,77	3,72 / 4,05
COP		4,46 / 4,25	4,88 / 4,63	4,50 / 4,34	4,80 / 4,57	4,44 / 4,28	4,30 / 4,20
Cooling Power *- (Nominal / Maximum)		T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.
Power input - (Nominal / Maximum)		T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.
EER		T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.
Heating Power **- (Nominal / Maximum)	kW	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.
Power input - (Nominal / Maximum)	kW	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.
COP	W/W	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.	T.B.D.
Cooling Power **- (Nominal / Maximum)	kW	6,00	10,00	11,00	10,00	11,00	13,00
Power input - (Nominal / Maximum)	kW	1,94	3,26	3,81	3,26	3,81	4,80
EER	W/W	3,10	3,07	2,89	3,07	2,89	2,71

* HEATING POWER : 35°C / 30°C @ 7°C AND COOLING POWER : 18°C / 23°C @ 35°C

** HEATING POWER : 45°C / 40°C @ 7°C AND COOLING POWER : 7°C / 12°C @ 35°C

Physical data - Outdoor Units

Outdoor unit	HWS-	Single Phase Units			Three Phase Units		
		804H-E	1104H-E	1404H-E	1104H8-E	1404H8-E	1604H8-E
Power supply	V-ph-Hz	220/230-1-50			380/400-3N-50		
Dimensions (HxWxD)	mm	890x900x320	1340x900x320	1340x900x320	1340x900x320	1340x900x320	1340x900x320
Weight	kg	63	92	92	92	92	92
Sound pressure Level	dB(A)	49	50	51	50	51	52
Operating range in space heating	°C	-20 + 35					
Operating range Domestic hot water	°C	-20 + 43					
Operating range in cooling	°C	10 + 43					
Minimum pipe length	m	5					
Maximum pipe length	m	30					
Maximum height difference	m	30					
Chargeless pipe length	m	30					
Compressor type		DC Twin rotary					
Refrigerant		R410A					
Flare connections (gas-liquid)		5/8" - 3/8"					

Physical data - Hydro Units

Hydro unit		HWS-	804XWH**E	1404XWHT6-E	1404XWHT9-E	1404XWHM3-E	1404XWHT6-E	1404XWHT9-E
To be used with size			80	80	80	110-140-160	110-140-160	110-140-160
Electric back up heater capacity		kW	3	6	9	3	6	9
Electric back up heater supply		V-ph-Hz	220/230-1-50	380/400-3N-50	380/400-3N-50	220/230-1-50	380/400-3N-50	380/400-3N-50
Leaving water temperature		°C	20 - 55°C			20 - 55°C		
		°C	7 - 25°C			7 - 25°C		
Sound pressure level		dB(A)	29					
Dimensions (HxWxD)		mm	925 x 525 x 355					
Weight		kg	54					

Physical data - Hot Water Tank

Domestic hot water tank	HWS-	1501CSHM3-E	2101CSHM3-E	3001CSHM3-E
Water volume	lt	150	210	300
Height / Diameter	mm	1090 / 550	1474 / 550	2040 / 550
Weight	kg	31	41	60
Material		Stainless steel		
Max water temperature	°C	75		
Electric heater	kW	2,75		
Power supply	V-ph-Hz	220/230-1-50		

TOSHIBA

AIR-TO-WATER HEAT PUMP SPLIT SYSTEM

80AW/38AW



Hot water and comfortable ambient temperature all year round

The new reversible XP Energy air-to-water split system heat pumps with built-in inverter technology were designed for residential and light commercial applications. They offer excellent energy efficiency rates, exceptionally quiet operation and meet the most stringent operating temperature demands.

The units integrate the latest technological innovations: ozone-friendly refrigerant R-410A, DC inverter twin-rotary compressors, low-noise fan and microprocessor control.

The 80AW/38AW systems were specifically designed for ease-of-installation and service and underline Carrier's reputation for highest product quality and reliability.

Features

- Eight sizes with nominal heating capacities from 5 to 11.5 kW and nominal cooling capacities from 4.2 to 9.0 kW.
- DC inverter twin-rotary compressors with Pulse Amplitude Modulation (PAM) and Pulse Width Modulation (PWM) for enhanced reliability, low energy consumption and smooth vibration-free operation under all operating conditions.
- Variable-speed fans with an innovative patented fan blade shape ensure improved air distribution at exceptionally low noise levels.
- Heating and Cooling of up to two independent thermal zones.
- Leaving water temperature up to 60°C.
- Temperature and humidity control.
- Time scheduling.

		1- phase				3- phase	
System		Heating and cooling (1-phase)					
Indoor unit (comfort module)		80AWX 065	80AWX 065	80AWX 115	80AWX 115		
Outdoorunit (heat pump)		38AW 050H7	38AW 065H7	38AW 090H7	38AW 115H7	38AW120H9	38AW150H9
Max. leaving water temperature	°C	60	60	60	60	T.B.D.	T.B.D.
Nominal heating capacity*	kW	5.0	6.5	9.1	11.5		
Min./Max. heating capacity*	kW	1.5/5.9	1.3/7.8	3.6/11.1	3.5/14.0	T.B.D.	T.B.D.
COP*	kW/kW	4.10	4.10	4.20	4.10		
Nominal cooling capacity**	kW	4.2	5.6	7.9	9.0		
Min./Max. heating capacity**	kW	1.6/6.6	2.0/7.3	3.9/9.5	4.1/12.1	T.B.D.	T.B.D.
EER**	kW/kW	3.65	3.65	4.05	3.80		

* The nominal heating capacity is in accordance with EN 14511, water temperature 35°C/30°C, air temperature 7°C/6°C
** The nominal cooling capacity is in accordance with EN 14511, water temperature 18°C/23°C, air temperature 35°C

		1- phase				3- phase	
Indoor unit (comfort module)		80AW 065	80AW 065	80AW 115	80AW 115		
Outdoorunit (heat pump)		38AW 050H7	38AW 065H7	38AW 090H7	38AW 115H7	38AW120H9	38AW150H9
Number of comfort zones		1	1	1	1	T.B.D.	T.B.D.
Nominal water flow rate	l/s (l/h)	0.24 (860)	0.31 (1118)	0.43 (1548)	0.55 (1978)	T.B.D.	T.B.D.
Minimum water flow rate	l/s (l/h)	0.19 (688)	0.25 (894)	0.34 (1238)	0.44 (1582)	T.B.D.	T.B.D.
Maximum water flow rate	l/s (l/h)	0.29 (1032)	0.37 (1342)	0.52 (1858)	0.66 (2374)	T.B.D.	T.B.D.
Nominal temperature difference	K	5	5	5	5	T.B.D.	T.B.D.
Sound power level, cooling	dB(A)	40.9	40.9	40.9	40.9	T.B.D.	T.B.D.
Sound power level, heating	dB(A)	40.9	40.9	40.9	40.9	T.B.D.	T.B.D.
Dimensions, H x L x D	mm	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	T.B.D.	T.B.D.
Operating weight	kg	48	48	50	50	T.B.D.	T.B.D.

Outdoorunit		38AW 050H7	38AW 065H7	38AW 090H7	38AW 115H7	38AW120H9	38AW150H9
Compressor type		DC twin-rotary	DC twin-rotary	DC twin-rotary	DC twin-rotary	T.B.D.	T.B.D.
Inverter type		PAM + PWM	PAM + PWM	PAM + PWM	PAM + PWM	T.B.D.	T.B.D.
Refrigerant		R-410A	R-410A	R-410A	R-410A	T.B.D.	T.B.D.
Maximum pipe length	m	50	30	70	70	T.B.D.	T.B.D.
Maximum height difference	m	30	30	30	30	T.B.D.	T.B.D.
Pre-charged length	m	20	20	20	30	T.B.D.	T.B.D.
Air flow	l/s (m³/h)	728 (2620)	783 (2820)	1658 (5970)	1767 (6360)	T.B.D.	T.B.D.
Dimensions, H x L x D	mm	690 x 900 x 320	820 x 900 x 320	1360 x 900 x 320	1360 x 900 x 320	T.B.D.	T.B.D.
Operating weight	kg	49	51	88	88	T.B.D.	T.B.D.
Pipe connections	in	1/4 - 1/2	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	T.B.D.	T.B.D.
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	T.B.D.	T.B.D.

*** Sound pressure levels are given for a distance of 4 m from the unit.

Indoor unit for 38AW 050H7 & 38AW065H7		80AWX 065M0	80AWX 065M3	80AWX 065M6	80AWX 065T6
Number of comfort zones		1	1	1	1
Electric heater element	kW	0	3	6	6
Heating only		No	No	No	No
Heating and cooling		Yes	Yes	Yes	Yes
Connection of back-up boiler		Yes	No	No	No
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	400-3-50

Indoor unit for 38AW090H7 and 38AW115H7, 38AW120H9 & 38AW150H9		80AWX 115M0	80AWX 115M3	80AWX 115M6	80AWX 115T6	80AWX 150M0	80AWX 150T6	80AWX 150T9
Number of comfort zones		1	1	1	1	1	1	1
Electric heater element	kW	0	3	6	6	9	0	6
Heating only		No	No	No	No	No	No	No
Heating and cooling		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connection of back-up boiler		Yes	No	No	No	No	Yes	No
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	400-3-50	400-3-50	230-1-50	400-3-50

Electrical data, indoor and outdoor units

Outdoorunit		38AW 050	38AW 065	38AW 090	38AW 115	38AW120H9	38AW150H9
Power supply/voltage range	V-ph-Hz/V	230-1-50/198-264	230-1-50/198-264	230-1-50/198-264	230-1-50/198-264	400-30-50	400-30-50
Full load current/operating current	A	11/7.9	11.7/9.0	18.9/13.4	21.2/17.9	15.4	15.4
Fuse rating*	A	16	16	25	25	T.B.D.	T.B.D.
Power consumption	W	1473	1930	2887	3731	T.B.D.	T.B.D.
Main power wire size	mm2	2.5	2.5	2.5	2.5	T.B.D.	T.B.D.
Power factor	%	0.95	0.95	0.95	0.95	T.B.D.	T.B.D.

* Time delay fuse

Comfort module		80AW-065				80AW-115			
		M0	M3	M6	T6	M0	M3	M6	T6
Outdoorunits		38AW 050H7/38AW 065H7				38AW 090H7/38AW 115H7			
Power supply	V-ph-Hz	230-1-50 ± 10%			400-3-50 ± 10%	230-1-50 ± 10%			400-3-50 ± 10%
Power input	kW	-	3	6	6	-	3	6	9
Operating current	A	-	13	26	L1: 13 L2: 13 N: 13	-	13	26	L1: 19.5 L2: 19.5 N: 19.5



AIR-TO-WATER HEAT PUMP SPLIT SYSTEM

80AW/38AW

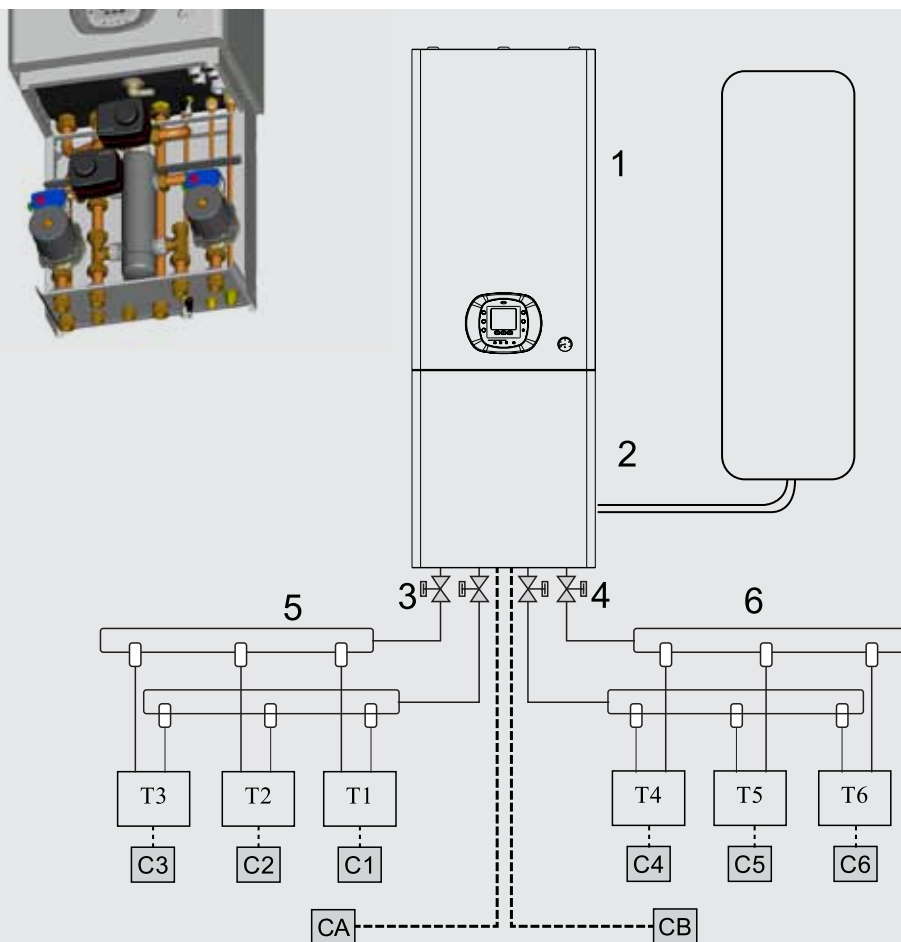
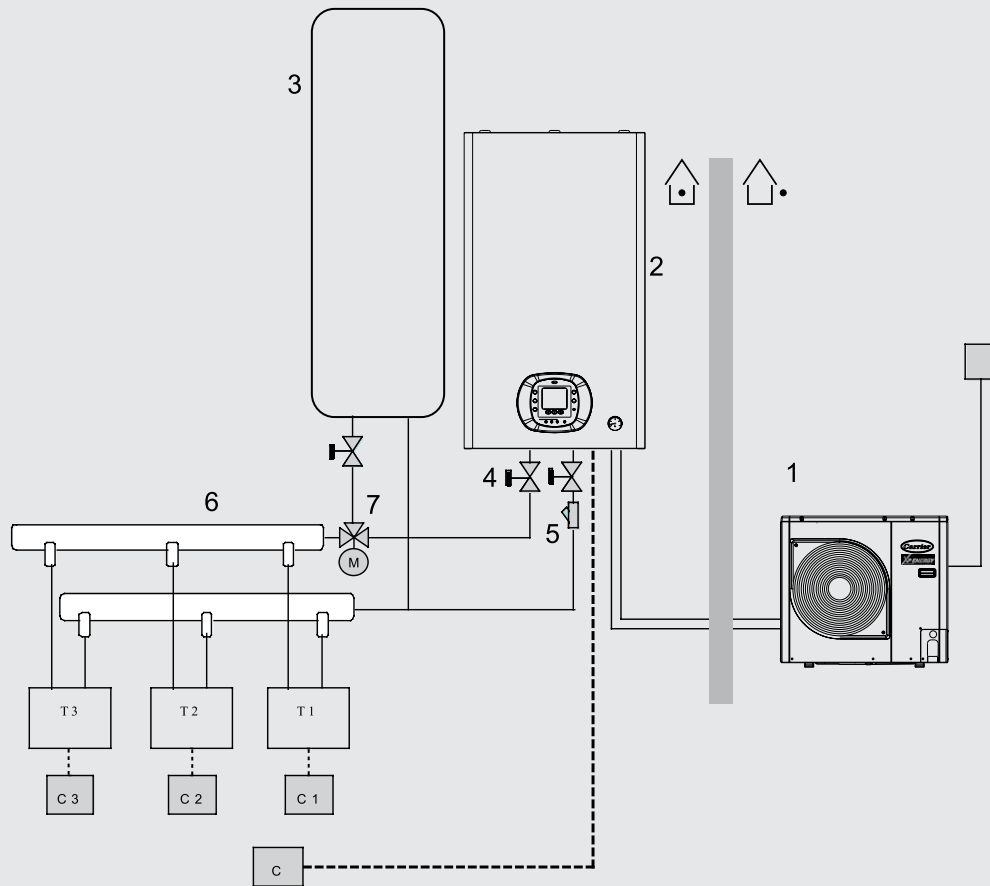


Two-zone kit

The new design facilitates the installation process and makes two independent comfort zones easy to control. This kit includes a hydronic disconnection collector, the necessary circulating pumps and modulating valves. Installed together with the domestic hot water tank, the two-zone kit can integrate all accessories, such as the diverting valve and T-connection.

Domestic Hot Water Tank

		60STS 020E03	60STD 020E03	60STS 030E03	60STD 030E03
Water tank size	l	212	212	291	291
Number of coils		1	2	1	2
Electric heater back-up	kW	3,3, single phase	3,3, single phase	3,3, single phase	3,3, single phase
Voltage	V	230 ± 10%	230 ± 10%	230 ± 10%	230 ± 10%
Operating temperature range	°C	5 to 95	5 to 95	5 to 95	5 to 95
Operating pressure DHW module	bar	0 to 10	0 to 10	0 to 10	0 to 10
Operating pressure heat exchangers	bar	0 to 6	0 to 6	0 to 6	0 to 6
Ambient operating temperature range	°C	5 to 45 °C	5 to 45 °C	5 to 45 °C	5 to 45 °C
Storage temperature range	°C	-20 to +75 °C	-20 to +75 °C	-20 to +75 °C	-20 to +75 °C
Lower heat exchanger	m²	1,2	1,2	1,5	1,5
Upper heat exchanger	m²		0,5		1,1
Diameter	mm	600	600	600	600
Height	mm	1215	1215	1615	1615



REVERSIBLE AIR-TO-WATER HEAT PUMPS

30AWH

AQUASNAP^{PLUS}
Reversible

60°C



More than a heat pump. Compact, reliable and efficient




The new reversible AquaSnap PLUS air-to-water heat pumps with built-in inverter technology were designed for residential and light commercial applications. They offer excellent energy efficiency values, exceptionally quiet operation and meet the most stringent operating temperature demands.

The units integrate the latest technological innovations: ozone-friendly refrigerant R410A, DC inverter twin-rotary compressors, low-noise fan and microprocessor control.

Features

- Two versions with or without hydronic module in five sizes with nominal cooling capacities from 3 to 13 kW and nominal heating capacities from 4 to 14 kW.
- AquaSnap PLUS air-to-water heat pumps with built-in inverter technology were designed for residential and light commercial applications. They offer excellent energy efficiency values, exceptionally quiet operation and meet the most stringent operating temperature demands.
- Leaving water temperature up to 60°C for domestic hot water applications, making hot water readily available.
- Temperature & humidity control.
- Time scheduling.

Physical data

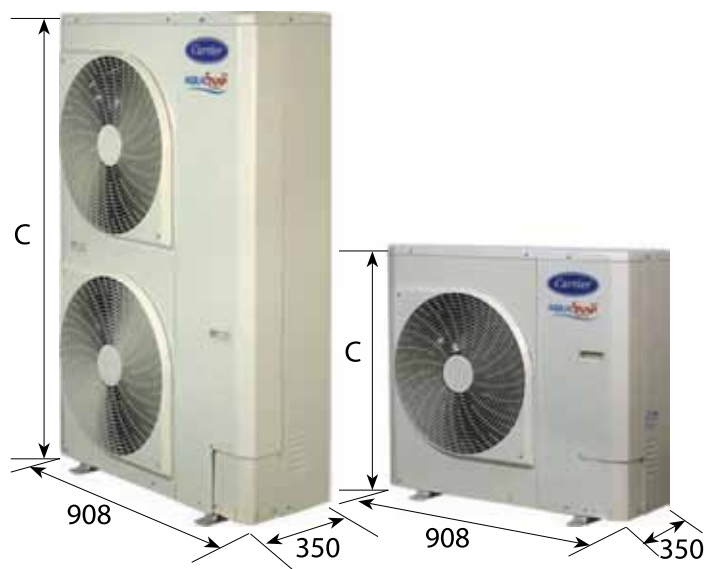
		1- phase					3 - phase		
30AW		004	006	008	012	015	012	015	
	Air conditioningapplication as per EN14511-3 : 2011								
	Nominal cooling capacity	kW	3.3	4.7	5.8	10.2	13.0		
	Nominal heating capacity	kW	4.0	6.0	7.0	13.0	14.0		
	EER (cooling)/COP (heating)	kW/kW	3.02/3.30	3.00/3.10	2.98/3.20	2.96/3.00	2.95/3.2		
	ESEER part-load performance, cooling	kW/kW	4.36	4,51	4.15	4.22	4.31		
	Air conditioningapplication (1)							Coming Soon / T.B.D.	Coming Soon / T.B.D.
	Nominal cooling capacity	kW	3.3	4.7	5.8	10.2	13.0		
	Nominal heating capacity	kW	3.9	5.8	7.4	12.9	14.0		
	EER (cooling)/COP (heating)	kW/kW	2.91/3.2	2.95/3.06	2.95/3.18	2.96/3.03	2.91/3.21		
	ESEER part-load performance, cooling	kW/kW	4.5	4.6	4.4	4.3	4.4		
	Cooling/heatingfloor application as per EN14511-3 : 2011							Coming Soon / T.B.D.	Coming Soon / T.B.D.
	Nominal cooling capacity	kW	4.93	7.04	7.84	13.54	16.04		
	Nominal heating capacity	kW	4.0	6.0	7.0	12.0	14.0		
	EER (cooling)/COP (heating)	kW/kW	4.2/4.2	3.7/4.3	3.99/4..0	3.66/4.0	3.85/4.1		
	Cooling/heatingfloor application (1)								
Nominal cooling capacity	kW	4.9	7.0	7.8	13.5	16.0			
Nominal heating capacity	kW	4.1	5.8	7.2	11.9	14.5			
EER (cooling)/COP (heating)	kW/kW	4.05/4.05	3.66/4.24	3.95/3.95	3.67/3.94	3.81/4.06			
Operatingweight, unit with/without hydronic module	kg	59/56	61/58	71/68	105/99	130/124			
Refrigerant		R-410	R-410A	R-410A	R-410A	R-410A			
Compressor		DC twin-rotary with PMV expansion valve							
Fans		Propeller fans							
Quantity/diameter	mm	1/495	1/495	1/495	2/495	2/495			
Dimensions									
Lenath x depth x height	mm	908 x 350 x 821	908 x 350 x 821	908 x 350 x 821	908 x 350 x 1363	908 x 350 x 1363			

NOTE: For the conditions please refer to page 58.

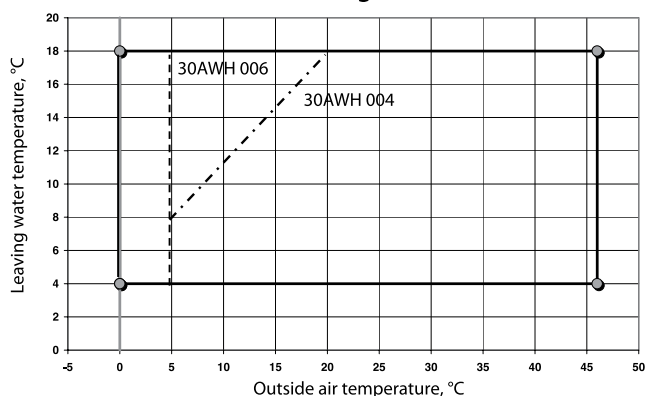
Electrical data

30AW		004	006	008	012	015
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Voltage range	V	198-264	198-264	198-264	198-264	198-264
Full load current	A	7.2	11	14	23	20
Fuse rating	A	10	16	16	25	25
Main power cable section	mm ²	2.5	2.5	2.5	2.5	2.5

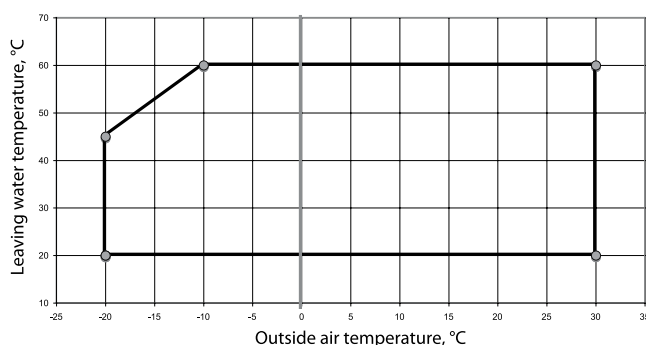
Operating range



Cooling mode



Heating mode



INVERTER
Technology



turn to the experts™

COMFORT MODULE FOR MONOBLOCK HEAT PUMPS

80HMA

60°C

Compatible with:
30AWH***C,
61AF014-019,
30RQ017-021



Choose the easy heating solution!

The new comfort module range monoblock inverter heat pumps offers a complete heating system that is easy to design and install.

System controls ensure optimized energy efficiency, using auto-adaptive weather compensation control that constantly monitors the indoor and outdoor climate to optimize the heat pump energy efficiency and deliver perfect indoor climate.

Features

- Reversible operation.
- Electric booster heater of boiler back up.
- Auto-adaptive weather compensation control.
- Dual comfort zone with independent control of two terminals unit types.
- Domestic hot water production control with possible interfacing with thermal solar panels.

Options

- Two zone kit compatible with all model of comfort module.
- Intermediate heat exchanger to isolate brine water from heat pump from terminal unit fresh water.
- Three way valve for domestic hot water production.
- Pump kit.

Air to water monobloc system 30AWH + 80HMA

Part number		Heat pump					Comfort module				
		Maximum heating capacity* 35°C LWT									
		-7°C OAT	-2°C OAT	0°C OAT	+2°C OAT	+7°C OAT	80HMA-M00	80HMA-M03	80HMA-M06	80HMA-T06	80HMA-T09
30AWH004HC	kW	2,9	3,1	3,3	3,5	4,7	●	●	●	●	●
30AWH006HC	kW	3,5	3,8	4,1	4,3	6,1	●	●	●	●	●
30AWH008HC	kW	4,3	4,8	5,2	5,5	8,0	●	●	●	●	●
30AWH012HC	kW	7,9	8,9	9,6	10,1	13,5	●	●	●	●	●
30AWH015HC	kW	9,1	10,2	11,1	12,1	16,5	●	●	●	●	●

One zone kit

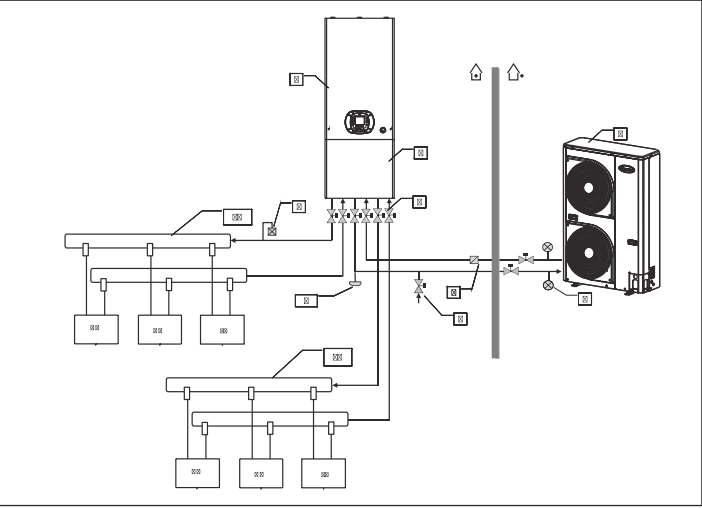
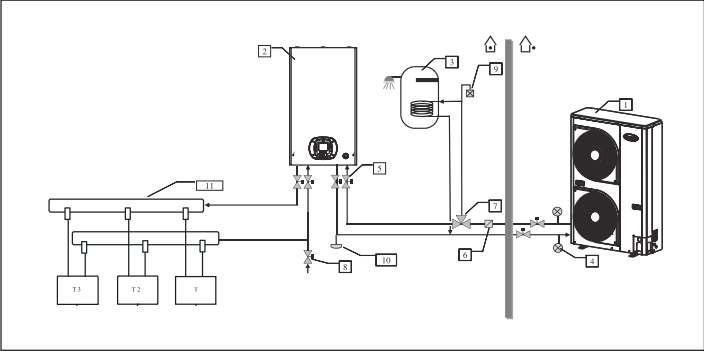
Comfort module		80HMA-M00	80HMA-M03	80HMA-M06	80HMA-T06	80HMA-T09
Booster Electrical Heater	kW	0 Boiler back up	3 1 stage	6 3 stages	6 3 stages	9 3 stages
Buffert tank volume	l	10	10	10	10	10
Dimensions, H x L x D	mm	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320
Operating weight	kg	34	35	35	35	35
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	400-3-50	400-3-50
Maximum leaving water temperature*	°C	80	80	80	80	80

* With booster electrical heater or boiler back up

Two zone kit

Dimensions			
Unit H x L x D	mm	485 x 450 x 330	
Packaging H x L x D	mm	565 x 530 x 410	
Unit weight		kg	22
Gross weight		kg	27
Hydronic data			
Water connections	in	1" male	
Operating water pressure	kPa (bar)	100 (1)	
Maximum pressure	kPa (bar)	300 (3)	
Hydronic components			
Pump		Two water-cooled pumps, three speeds, 70 kPa static pressure	
Three-way valve		One modulating valve, 6.3 Kv, switching time (90°) 240 seconds, 230-V, 3-point SPDT actuator	
Collector volume	l	1	
Draining valve		√	
Outside air operating range, heating and cooling		See Comfort module	

Diagrams



50°C

AQUASNAP^{PLUS}
Reversible

Fast installation – enhanced performance

With its complete factory wiring, easy handling features, factory-installed options and intuitive interface, setting up the Aquasnap® air-cooled chiller is fast and straightforward. Thanks to its low profile and small footprint, it can be installed virtually anywhere, making it the ideal choice for smaller offices, hotels and shops.

Features

- The units are equipped with a hydronic module integrated into the unit chassis, limiting the installation to straight-forward operations like connection of the power supply and the water supply and return piping.
- Low-noise scroll compressors with low vibration level.
- Vertical air heat exchanger coils with protection grilles on anti-vibration mountings.
- Low-noise fans, now even quieter. Rigid fan installation for reduced start-up noise.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Exceptionally high energy efficiency at part load - all units are A rated in both cooling and heating mode.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.

Physical data

30RQ		017	021	026	033
Air conditioning application as per EN14511-3 : 2011					
Condition 1/condition 2					
Nominal cooling capacity	kW	16.0/22.2	20.2/27.4	26.7/34.3	32.7/43.6
EER	kW/kW	3.17/4.02	3.11/3.76	3.01/3.62	3.21/3.96
Eurovent class, cooling (condition 1)		A	A	B	A
ESEER (condition 1)	kW/kW	3.61	3.44	3.36	3.58
Air conditioning application**					
Condition 1/condition 2					
Nominal cooling capacity	kW	16.2/22.5	20.4/27.7	27.0/34.7	33.1/44.2
EER	kW/kW	3.29/4.27	3.24/4.00	3.13/3.84	3.36/4.25
ESEER (condition 1)	kW/kW	3.77	3.60	3.51	3.77
Heating application as per EN14511-3:2011*					
Condition 1/condition 2					
Nominal heating capacity	kW	17.0/17.6	21.7/22.2	29.9/31.0	33.3/34.7
COP	kW/kW	3.18/3.99	3.28/3.98	3.20/3.98	3.19/3.98
Eurovent class, heating (condition 1)		B	A	A	B
Heating application**					
Condition 1/condition 2					
Nominal heating capacity	kW	16.8/17.4	21.4/22.0	29.6/30.7	33.0/34.3
COP	kW/kW	3.24/4.10	3.35/4.10	3.27/4.10	3.26/4.10
Operating weight*					
Standard unit with/without hydronic module*	kg	206/191	223/208	280/262	295/277
Refrigerant		R-410A			
Compressor		One hermetic scroll compressor			
Control		Pro-Dialog+			
Fans		Two twin-speed axial fans, 3 blades		One twin-speed axial fan, 7 blades	
Air flow	l/s	2217	1978	3530	3530
Water heat exchanger		Plate heat exchanger			
Air heat exchanger		Copper tubes and aluminium fins			
Unit with hydronic module		One single-speed pump, screen filter, expansion tank, flow switch, pressure gauge, automatic air purge valve, safety valve			
Power input	kW	0.54	0.59	0.99	1.10
Nominal operating current	kW	1.30	1.40	2.40	2.60
Dimensions					
Length x depth x height	mm	1136 x 584 x 1579	1136 x 584 x 1579	1002 x 824 x 1790	1002 x 824 x 1790

NOTE: For the conditions please refer to page 58.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RQ		017	021	026	033
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50 ± 10%			
Control circuit supply		24 V via internal transformer			
Maximum start-up current (Un)*	A	75	95	118	118
Maximum operating power input**	kW	7.8	9.1	11	13.8
Nominal unit operating current draw***	A	8	12	16	17

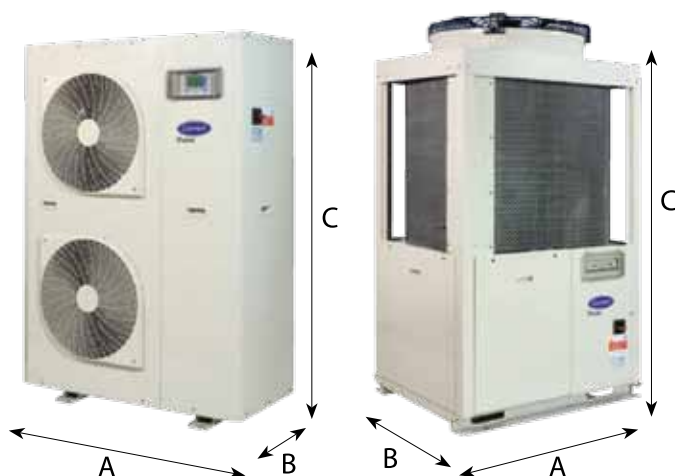
* Maximum instantaneous start-up current (locked rotor current of the compressor).

** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

*** Standardised Eurovent conditions: water heat exchanger entering/leaving water temperature 12°C/7°C, outside air temperature 35°

30RQ 017-021

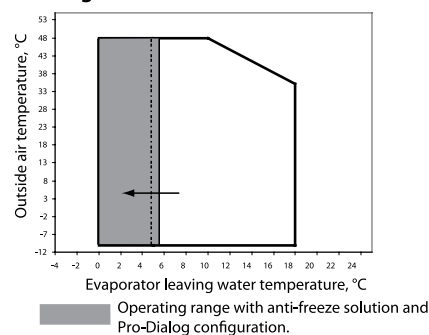
30RQ 026-033



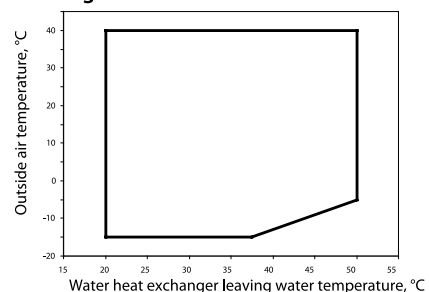
turn to the experts

Operating range

Cooling mode



Heating mode



50°C





Heating and cooling solutions you can count on

A unit that integrates the latest technological innovations: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans and auto-adaptive microprocessor control.

Features

- The units are equipped with a hydronic module integrated into the unit chassis, limiting the installation to straight-forward operations like connection of the power supply, the water supply and return piping and the air distribution ducting.
- Low-noise scroll compressors with low vibration level.
- Vertical condenser coils with protection grilles on anti-vibration mountings.
- Easy duct connection and fans with 80 Pa available pressure.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.

Physical data

30RQY		017	021	026	033	
	Air conditioningapplication as per EN14511-3 : 2011					
	Condition 1/condition 2					
	Nominal cooling capacity	kW	14.9/18.4	19.0/23.9	27.1/35.6	32.3/41.3
	EER	kW/kW	2.63/2.93	2.63/3.01	2.90/3.54	3.05/3.63
	Eurovent class, cooling (condition 1)		B	B	A	A
	ESEER (condition 1)	kW/kW	2.91	2.88	3.15	3.30
		Air conditioningapplication**				
Condition 1/condition 2						
Nominal cooling capacity		kW	15.0/18.6	19.2/24.1	27.3/36.1	32.6/41.9
EER		kW/kW	2.72/3.06	2.72/3.15	3.03/3.77	3.19/3.87
ESEER (condition 1)		kW/kW	2.78	2.78	2.97	3.16
Heating application as per EN14511-3:2011*						
Condition 1/condition 2						
Nominal heating capacity	kW	17.0/17.5	20.5/20.8	28.8/29.9	31.4/32.3	
COP	kW/kW	2.77/3.38	2.77/3.29	2.76/3.36	2.76/3.34	
Eurovent class, heating (condition 1)		C	C	C	C	
Heating application**						
Condition 1/condition 2						
Nominal heating capacity	kW	16.9/17.3	20.3/20.6	28.5/29.6	31.1/32.0	
COP	kW/kW	2.81/3.45	2.81/3.36	2.81/3.44	2.81/3.42	
Operatingweight*						
Standard unit (with hydronic module)	kg	226	243	280	295	
Standard unit (without hydronic module)	kg	211	228	262	277	
Refrigerant		R-410A				
Compressor		One scroll compressor				
Control		Pro-Dialog+				
Fans		Two twin-speed centrifugal fans, 5 backward-curved blades		One twin-speed axial fan, 7 blades		
Air flow	l/s	1640	1640	3472	3472	
Evaporator		One plate heat exchanger				
Condenser		Copper tubes and aluminium fins				
Unit with hydronic module		One single-speed pump, screen filter, expansion tank, flow switch, water circuit drain valve, pressure gauge, automatic air purge valve, safety valve				
Dimensions						
Length x depth x height	mm	1135 x 584 x 1608	1135 x 584 x 1608	1002 x 824 x 1829	1002 x 824 x 1829	

NOTE: For the conditions please refer to page 58.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RQY		017	021	026	033
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50 ± 10%			
Control circuit supply		24 V via internal transformer			
Maximum start-up current (Un)*	A	75	95	118	118
Maximum operating power input**	kW	8.0	9.3	11.2	14.0
Nominal unit operating current draw***	A	13	16	20	24

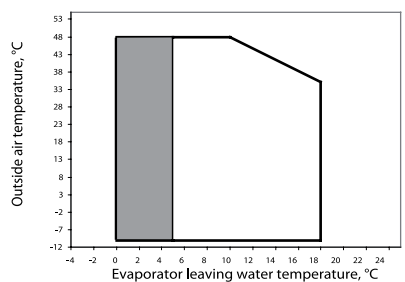
* Maximum instantaneous start-up current (locked rotor current of the compressor).

** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

*** Standardised Eurovent conditions: water heat exchanger entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

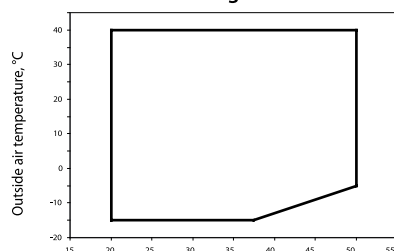
Operating range

Cooling mode



Operating range with anti-freeze solution and Pro-Dialog configuration.

Heating mode

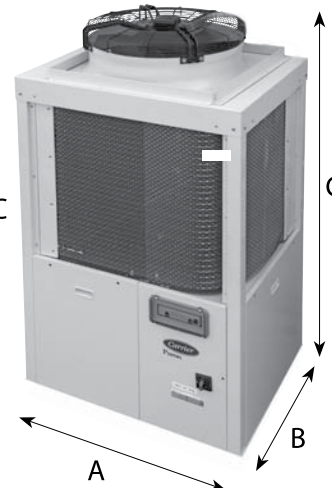


Water heat exchanger leaving water temperature, °C

30RQY 017-021

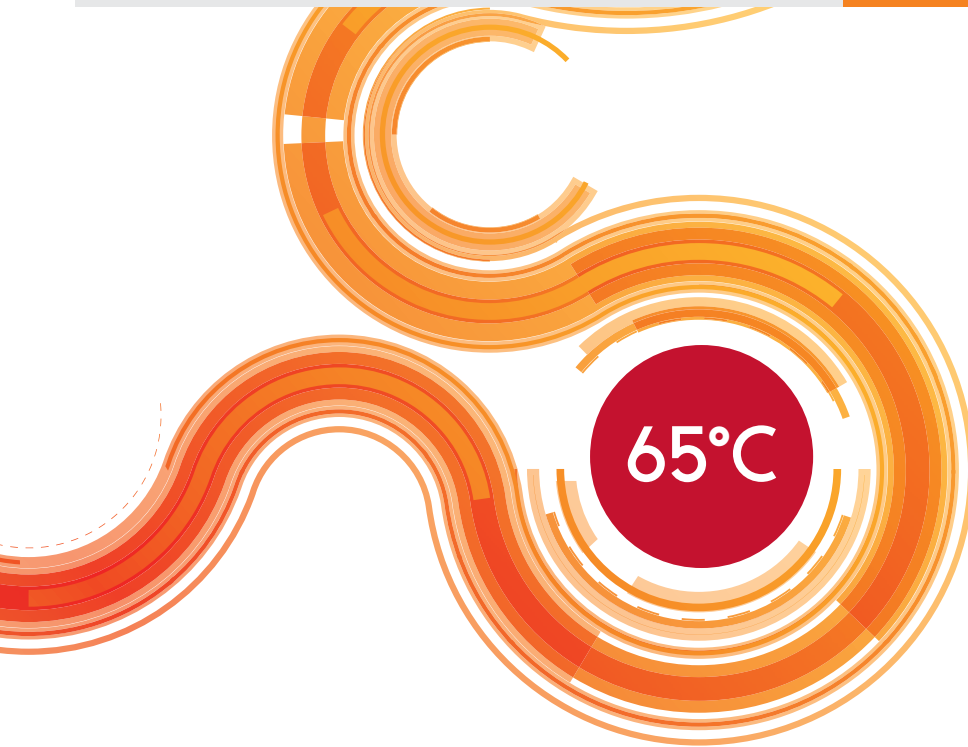


30RQY 026-033



turn to the experts™





AQUASNAP.
Heating



High Temperature Heating

High temperature air to water heat pumps with integrated hydronic module for leaving water temperature up to 65°C.

- Scroll compressors with vapour injection
- Low-noise fans made of a composite material
- Auto-adaptative microprocessor control
- Electronic expansion valve
- Multi-speed pump

Features

- Energy savings
The 61AF range is certified to the Eurovent energy efficiency class A with a coefficient of performance (COP) of over 4. This complies with the COP required by the Ecolabel certification.
- Ease-of-installation
The high-temperature Aquasnap heat pumps incorporate a hydronic module with a multi-speed pump, as standard.
- Easy integration
The low noise levels of the 61AF heat pump and its very compact chassis reduce the noise disturbance from the unit.
- Application flexibility
The operating range allows outside temperatures down to -20°C and leaving water temperatures up to 65°C .

* Built in OAT compensation curves.

Physical data

61AF		014-7	014-9	019
Air conditioning application as per EN14511-3 : 2011				
Condition 1				
Nominal heating capacity	kW	14.1	13.7	19.8
COP	kW/kW	3.32	3.50	3.45
Eurovent class, heating		A	A	A
Condition 2				
Nominal heating capacity	kW	13.9	13.5	20.2
COP	kW/kW	3.89	4.16	4.24
Heating application**				
Condition 1				
Nominal heating capacity	kW	14.0	13.6	19.7
COP	kW/kW	3.36	3.54	3.50
Condition 2				
Nominal heating capacity	kW	13.8	13.5	20.1
COP	kW/kW	3.94	4.22	4.32
Operating weight*				
Standard unit without hydronic module	kg	159	159	206
Standard unit with hydronic module option	kg	169	169	216
Compressor	One, hermetic scroll, 48.3 r/s			
Refrigerant***	R-407C			
Condenser	Direct-expansion plate heat exchanger			
Fan	Axial			
Quantity		2	2	2
Air flow	l/s	2050	2050	2000
Evaporator	Grooved copper tubes and aluminium fins			
Dimensions				
Length x depth x height	mm	1103 x 333 x 1278	1103 x 333 x 1278	1135 x 559 x 1579

NOTE: For the conditions please refer to page 58.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

61 AF - Standard unit		Without pump			With pump		
		014-7	014-9	019	014-7	014-9	019
Power circuit							
Nominal power supply	V-ph-Hz	230-1-50 ± 10%	400-3-50 ± 10%	400-3-50 ± 10%	230-1-50 ± 10%	400-3-50 ± 10%	400-3-50 ± 10%
Control circuit supply		24 V, via internal transformer					
Maximum start-up current (Un)*							
Standard unit	A	-	66	102	-	67	104
Unit with electronic starter option	A	47	-	-	48	-	-
Unit powerfactor at maximum capacity**		0.82	0.82	0.82	0.82	0.82	0.82
Maximum unit power input**	kW	6.41	5.90	8.80	6.41	6.10	9.20
Nominal unit current draw***	A	22.9	7.9	12.4	23.7	7.9	12.4
Maximum unit current draw (Un)****	A	30.7	10.8	16.0	31.5	10.8	16.0

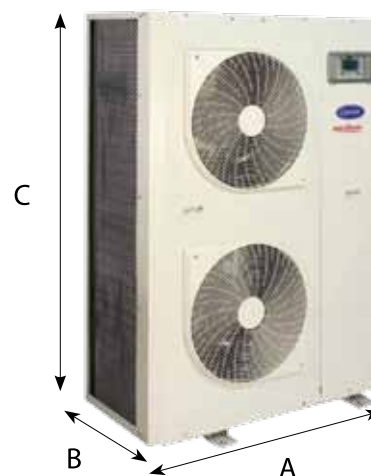
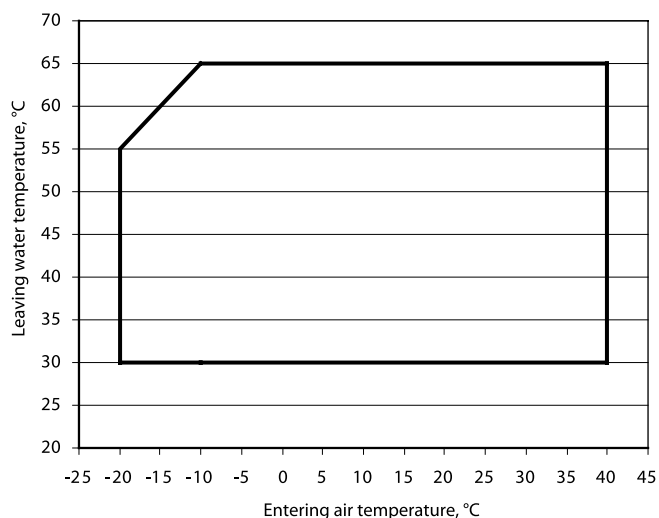
* Maximum instantaneous start-up current at operating limit values (maximum operating current of the pump + fan current + locked rotor current of the compressor).

** Power input, compressors and fan, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

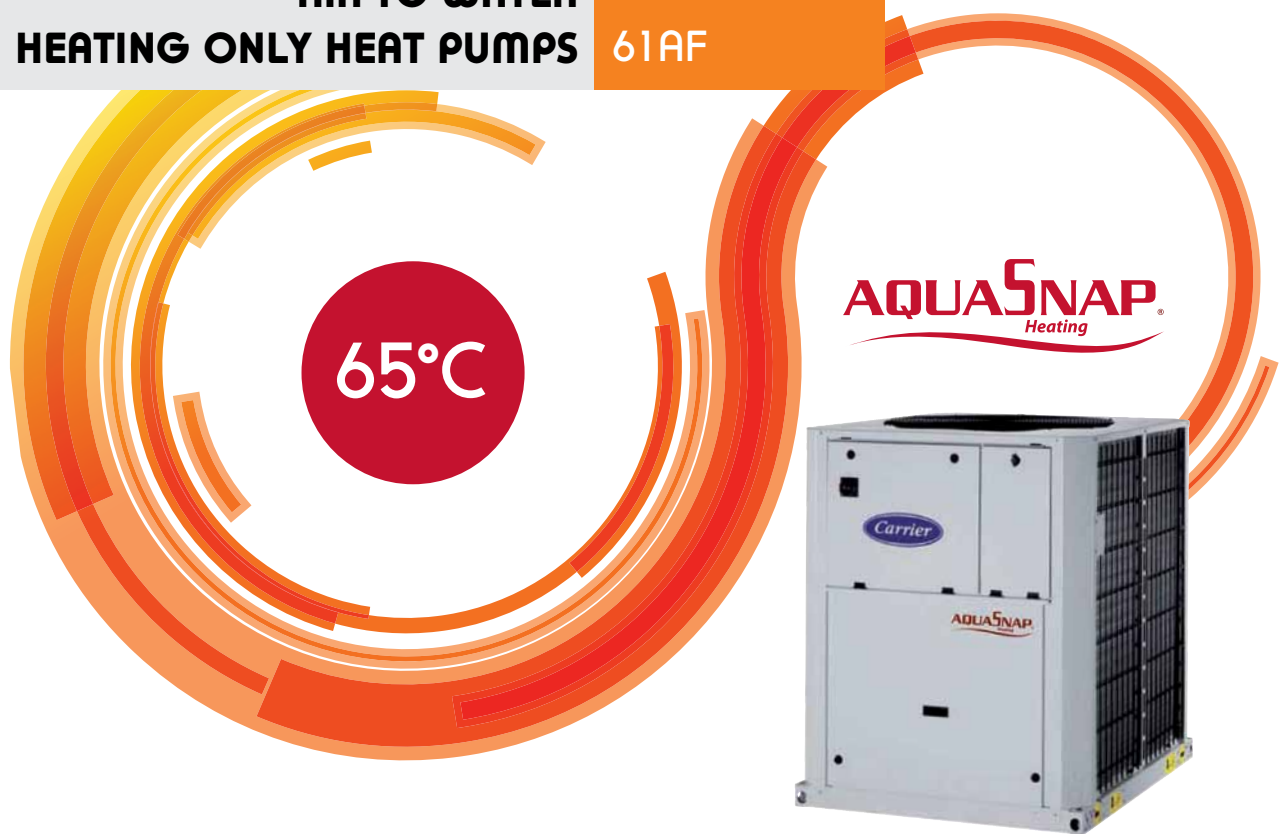
*** Standardised Eurovent conditions: condenser entering/leaving water temperature 40°C/45°C, outside air temperature 7°C.

**** Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

Operating range



turn to the experts™



High Temperature Heating

The new generation of high-temperature heat pumps incorporates the latest technological features:

- Scroll compressors with vapour injection
- Low-noise fans made of a composite material
- Auto-adaptative microprocessor control
- Electronic expansion valve
- Multi-speed pump

Features

- Low noise levels and a very compact chassis reduce the noise disturbance from the unit.
- The operating range allows outside temperatures down to -20°C and leaving water temperatures up to 65°C. Intelligent unit control permits unit operation in extreme conditions, minimising unit shut-down times.
- Systematic factory run test before shipment and quick-test function for verification of instruments, electrical components and motors.
- Condenser with pre-treated fins (option).
- Ductable version.
- Low noise level (option).
- Soft starter (option).
- Heating system control (option).
- Twinning – lead-lag kit (accessory).

Physical data



61AF		022	030	035	045	055	075	105
Air conditioning application as per EN14511-3 : 2011								
Condition 1								
Nominal heating capacity	kW	20.8	25.7	32.3	43.8	52.3	66.9	101.9
COP	kW/kW	3.45	3.45	3.37	3.56	3.65	3.41	3.58
Eurovent class, heating		A	A	A	A	A	A	A
Condition 2								
Nominal heating capacity	kW	20.8	25.7	32.3	43.7	52.2	66.8	101.7
COP	kW/kW	4.11	4.14	4.07	4.31	4.36	3.97	4.25
Heating application**								
Condition 1								
Nominal heating capacity	kW	20.8	26.2	32.6	44.2	52.1	64.9	101.9
COP	kW/kW	3.46	3.47	3.39	3.58	3.67	3.43	3.61
Condition 2								
Nominal heating capacity	kW	20.8	26.2	32.5	44.1	52.0	64.8	101.6
COP	kW/kW	4.13	4.17	4.10	4.34	4.39	4.00	4.29
Operating weight*								
Standard unit without hydronic module	kg	343	396	421	509	533	900	1020
Standard unit with hydronic module option	kg	349	403	436	524	549	926	1044
Compressor	One, hermetic scroll 48.3 r/s						Two, hermetic scroll 48.3 r/s	
Condenser	Direct-expansion plate heat exchanger							
Fan	Axial with rotating shroud, Flying Bird IV							
Quantity		1	1	1	1	1	2	2
Total air flow at high speed	l/s	3770	3748	3736	4035	4036	7479	8072
Evaporator	Grooved copper tubes and aluminium fins							
Refrigerant*	R-407C							
Dimensions								
Length x depth x height	mm	1110 x 1327 x 1330			1114 x 2100 x 1330		2273 x 2100 x 1330	

NOTE: For the conditions please refer to page 58.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

61 AF - Standard unit (without hydronic module)		022	030	035	045	055	075	105
Power circuit								
Nominal power supply	V-ph-Hz	400-3-50 ± 10%						
Control circuit supply		24 V, via internal transformer						
Maximum start-up current (Un)*								
Standard unit	A	104	102	130	170	190	157	229
Unit with electronic starter option	A	56	55	70	91	101	101	142
Unit powerfactor at maximum capacity**		0.82	0.82	0.82	0.82	0.82	0.82	0.82
Maximum unit power input**	kW	8.7	11.6	12.9	14.6	16.8	25.8	33.7
Nominal unit current draw***	A	13.6	16.4	20.1	23.2	27.7	40.2	55.4
Maximum unit current draw (Un)****	A	16.8	21.1	27.0	32.8	38.8	54.0	77.6

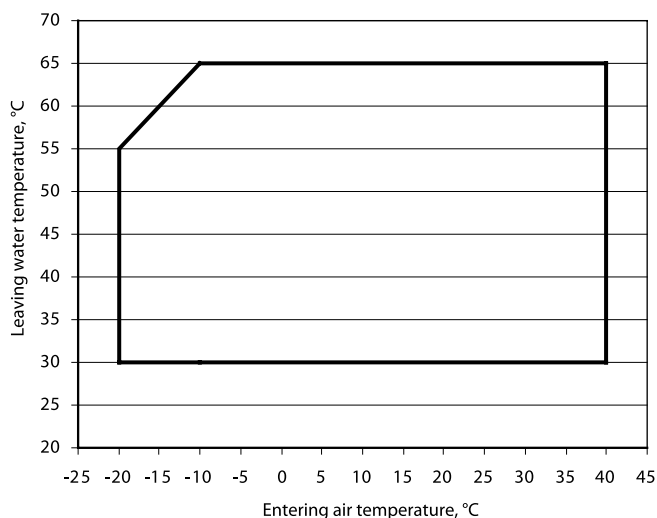
* Maximum instantaneous start-up current at operating limit values (maximum operating current of the compressor + fan current + locked rotor current of the compressor).

** Power input, compressors and fan, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

*** Standardised Eurovent conditions: condenser entering/leaving water temperature 40°C/45°C, outside air temperature 7°C/6°C.

**** Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

Operating range



turn to the experts™



High Performance in Heating

- High leaving water temperature of 65°C without supplementary heating
- Underground water: COP from 4.19 to 5.49
- Bore holes: COP 3.03 to 4.28
- Design to stringent quality standards such as 2005/32/EC «ecodesign» or 2002/96/CE «ROHS»

Features

- R410A optimized Scroll compressor for each application.
- Large High efficiency evaporator.
- Improved control with EXV & sensors.
- RBS/RQS field proven display.
- High Resistant grade material for very hot water application.
- Modular design for compactness & weight reduction.
- Control compatible with large heating applications.
- Electronic flow switch.
- Zero tool for unit accessibility.
- 1 Screw type only.
- All components accessible and easy dismantable.
- Modularity for Water connexion (back or top [option]).

Physical data

61WG		020	025	030	035	040	045	050	060	070	080	090
Heating application as per EN14511-3 : 2011 - condition 1												
Heating capacity	kW	27.7	33.1	36.7	42.7	48.7	54.8	66.4	75.7	84.2	95.3	109
COP	kW/kW	4.35	4.34	4.20	4.27	4.32	4.36	4.51	4.32	4.35	4.27	4.31
Eurovent class	B	B	B	B	B	B	B	A	B	B	B	B
Heating application (1)												
Heating capacity	kW	27.6	32.9	36.5	42.5	48.5	54.5	66.2	75.4	83.8	94.9	109
COP	kW/kW	4.53	4.53	4.39	4.47	4.53	4.58	4.67	4.47	4.51	4.44	4.47
Heating application as per EN14511-3 : 2011 - condition 2												
Heating capacity	kW	29.0	34.4	38.3	44.2	50.2	57.2	68.6	78.2	88.4	100	117
COP	kW/kW	5.42	5.29	5.21	5.29	5.34	5.32	5.49	5.36	5.46	5.28	5.33
Eurovent class	A	A	A	A	A	A	A	A	A	A	A	A
Heating application (1)												
Heating capacity	kW	28.9	34.3	38.1	44.1	49.9	57.0	68.3	77.9	88.1	100	116
COP	kW/kW	5.75	5.62	5.56	5.65	5.73	5.69	5.76	5.63	5.76	5.59	5.65
Operating weight	kg	191	200	200	207	212	220	386	392	403	413	441
Compressors	Hermetic scroll 48.3 r/s											
Quantity	1	1	1	1	1	1	1	2	2	2	2	2
Number of capacity stages	1	1	1	1	1	1	1	2	2	2	2	2
Minimum capacity	%	100	100	100	100	100	100	50	50	50	50	50
Dimensions, standard unit**												
Width	mm	600	600	600	600	600	600	880	880	880	880	880
Depth	mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474
Height	mm	901	901	901	901	901	901	901	901	901	901	901
Refrigerant*	R-410A											
Control	Pro-Dialog+											
Evaporator	Direct-expansion plate heat exchanger											
Condenser	Plate heat exchanger											

NOTE: For the conditions please refer to page 58.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

** The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.

Electrical data

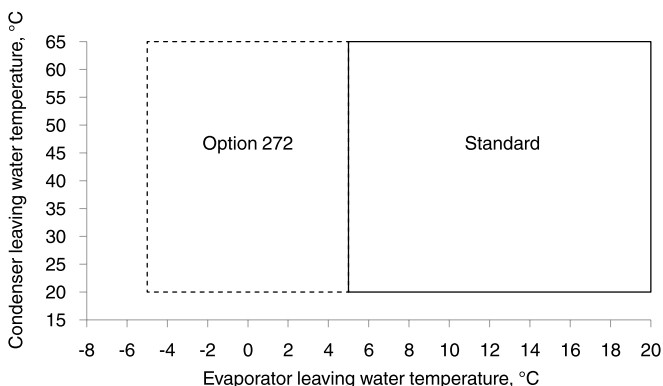
61WG		020	025	030	035	040	045	050	060	070	080	090
Power circuit												
Nominal voltage	V-ph-Hz	400-3-50 ± 10%										
Control circuit supply		24 V, via internal transformer										
Maximum start-up current draw (Un)*												
Standard unit	A	98	142	142	147	158	197	162	163	171	185	228
Unit with electronic starter option	A	53.9	78.1	78.1	80.9	86.9	108.4	98	99	105	114	139
Maximum operating power input**	kW	9.7	11.4	12.7	14.6	16.5	18.6	22.8	25.4	29.2	33	37.2
Maximum operating current draw (Un)***	A	16.1	19.6	21.1	24.4	26.7	30.9	39.2	42.2	48.8	53.4	61.8

* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

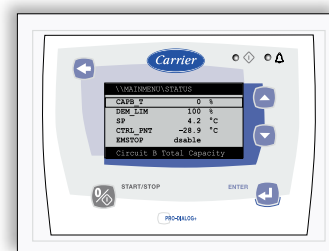
** Maximum power input at the unit operating limits.

*** Maximum unit operating current at maximum unit power input and 400 V.

Operating range



— 61WG standard unit
 --- 61WG unit with option 272 (brine to water)
 Option 272: Condenser-side high-temperature water production, with glycol solution on the evaporator side



Pro-Dialog+ operator interface



HYDRONIC FAN COIL SOLUTIONS

A solution designed for optimized performance

Hydronic systems offer a reliable, flexible and ecological solution to meet the demands of the heating, ventilation and air-conditioning markets. All solutions allow cooling, heating, fresh air intake and controls to satisfy the needs of our customers.

The final choice of one of the system components, the fan coil, very much depends on the application and the installation site.

Carrier can rely on extensive technological and product experience and know-how. We offer customers a large number of solutions to satisfy all of their needs and suit all possible applications: in the room, in the ceiling, above a false ceiling, in a plant room ... and others.

RESIDENTIAL APPLICATIONS

Heat pump systems are often considered as the most suitable solution, offering both air conditioning and heating. At European level, permanent research for economic and ecological comfort has already resulted in new hydronic solutions with under-floor heating and cooling.

In the most demanding applications fan coils complete the system to offer a true air-conditioning solution.

Today the most frequent solutions are:

- floor-mounted solutions for individual houses –easy to install in refurbishment projects, using existing central heating pipes. Enhanced comfort without a lot of work.
- ductable solutions for apartments, utilising false ceilings in the entrance hall.
- high-wall solutions, using the space above doors that is otherwise lost.

The ductable unit may well become the solution of the future, if the building concept takes the application limits of this solution into consideration.

LODGING (HOTELS, HOSPITALS)

In hotels, customer comfort is increasingly important and air-conditioning is essential.

At the same time construction cost must be minimized to offer customers a favourable quality/price ratio.

The trend is towards modularity of the rooms, as well as the air-conditioning system installed.

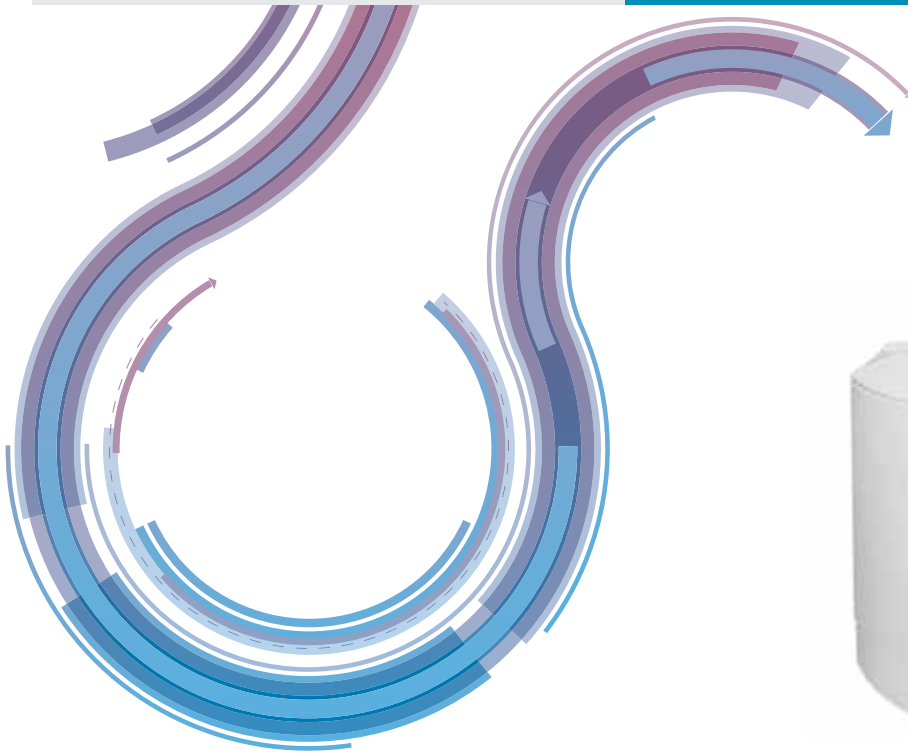
The most frequent choices for this approach:

- ductable solutions, using false ceilings in entrance halls and room corridors for new buildings.
- floor-mounted solutions for refurbishment projects.

For either of these two systems, areas such as large open spaces, dining rooms, receptions and conference halls that have other requirements, often use the cassette solution.

The choice depends on many different criteria, and therefore Carrier has a variety of products in order to choose the best fan coil solution for your application.





The New Generation. Elegance, Performance, Comfort

The new generation 42N_S and 42N_E product ranges combine aesthetic and attractive design with versatility to satisfy any application need, from large office buildings or hotels to shops and residential applications.

Variable-speed LEC motors reduce the fan coil unit power consumption by 50% to 70%. This option meets the building energy regulation objectives. LEC motors include autoadaptive control of the air flow from 0 to 100% to match individual comfort levels in both cooling and heating mode.

Features

- The range now includes eleven sizes, with air flows from 35 to 422 l/s (126 to 1520 m³/h).
- The Idrofan offers an ultra-lownoise option for applications where a low noise level is the most important selection parameter.
- The new Idrofan is available with two types of fans, a tangential fan for the smallest sizes and a centrifugal fan for all other sizes.
- The 42N_S is available with a new-generation three- or five-speed AC motor.
- The 42N_E is available with a variable speed low energy consumption EC motor.
- The flexibility of the plastic-moulded unit drain pan allows the same unit to be installed in a vertical or horizontal position without the need for a dedicated accessory.

Physical and Electrical data, units with AC motors

42N_5																														
Fan type		15					20					26			30					42			45					65		
Fan speed		5	4	3	2	1	5	4	3	2	1	3	2	1	5	4	3	2	1	3	2	1	5	4	3	2	1	3	2	1
Fan speed No.	l/s	35	56	69	84	97	59	80	92	107	128	93	149	196	97	126	153	182	207	147	222	268	146	185	224	277	333	237	331	422
	m3/h	125	200	250	300	350	215	285	330	385	460	335	536	706	350	455	550	655	745	531	798	965	525	665	805	995	1195	853	1191	1519
COIL TYPE		2-PIPE					2-PIPE					2-PIPE			2-PIPE					2-PIPE			2-PIPE					2-PIPE		
Total cooling capacity	kW	0,83	1,07	1,19	1,34	1,49	1,39	1,81	2,08	2,34	2,54	2,10	3,00	3,60	2,07	2,54	3,01	3,46	3,70	3,00	4,00	4,50	2,60	3,37	3,98	4,74	5,45	3,90	5,45	6,35
Sensible cooling capacity	kW	0,70	0,93	1,03	1,19	1,31	1,03	1,42	1,60	1,85	2,03	1,65	2,35	2,90	1,40	1,96	2,35	2,84	3,10	2,35	3,30	3,85	2,12	2,78	3,30	3,98	4,55	3,20	4,60	5,10
Heating capacity	kW	1,14	1,42	1,66	1,89	2,09	1,70	2,10	2,54	2,87	3,18	2,56	3,68	4,38	2,86	3,54	4,18	4,80	5,29	4,05	5,55	6,40	4,00	5,05	5,90	6,90	8,08	6,10	8,00	9,50
Power Input (fan)	W	16	17	19	23	30	29	30	31	34	36	45	55	65	42	44	46	50	57	45	75	100	69	77	83	92	128	90	125	165
Sound power	dB(A)	28	37	42	47	51	29	36	42	46	50	44	54	61	36	42	47	51	54	47	57	62	41	47	53	57	62	54	62	68
Sound pressure*	dB(A)	19	28	33	38	42	20	27	33	37	41	35	45	52	27	33	38	42	45	38	48	53	32	38	44	48	53	45	53	59
NR value*		15	24	28	34	39	14	23	29	33	36	31	40	48	22	29	33	37	40	31	44	49	28	34	40	43	48	40	49	54

Physical and Electrical data, units with LEC motors

42N_E																					
42N_E		19					29					39					49				
Fan type	%	20	40	60	80	100	20	40	60	80	100	20	40	60	80	100	20	40	60	80	100
Fan speed	l/s	35	56	69	84	97	59	80	92	107	128	97	126	153	182	207	146	185	224	277	333
Fan speed No.	m3/h	125	200	250	300	350	215	285	330	385	460	350	455	550	655	745	525	665	804	995	1195
COIL TYPE		2-PIPE					2-PIPE					2-PIPE					2-PIPE				
Total cooling capacity	kW	0,83	1,07	1,19	1,34	1,49	1,39	1,81	2,08	2,34	2,54	2,07	2,54	3,01	3,46	3,70	2,60	3,37	3,98	4,74	5,45
Sensible cooling capacity	kW	0,70	0,93	1,03	1,19	1,31	1,03	1,42	1,60	1,85	2,03	1,40	1,96	2,35	2,84	3,10	2,12	2,78	3,30	3,98	4,55
Heating capacity	kW	1,14	1,42	1,66	1,89	2,09	1,70	2,10	2,54	2,87	3,18	2,86	3,54	4,18	4,80	5,29	4,00	5,05	5,90	6,90	8,08
Power Input (fan)	W	3	4	7	10	14	3	5	7	10	15	5	9	15	23	35	8	14	25	39	65
Sound power	dB(A)	28	37	42	47	51	29	38	42	46	50	36	42	47	51	54	41	47	53	57	62
Sound pressure*	dB(A)	19	28	33	38	42	20	29	33	37	41	27	33	38	42	45	32	38	44	48	53
NR value*		15	24	28	34	39	14	24	29	33	36	22	29	33	37	40	28	34	40	43	48

Dimensions and weight

		Vertical units with cabinet				Horizontal units with cabinet				Horizontal concealed units				Vertical concealed units			
		S15	S20-26	S30-42	S45-65	S15	S20-26	S30-42	S45-65	S15	S20-26	S30-42	S45-65	S15	S20-26	S30-42	S45-65
		E19	E29	E39	E49	E19	E29	E39	E49	E19	E29	E39	E49	E19	E29	E39	E49
Length	mm	830	1030	1230	1430	830	1030	1230	1430	606	806	1006	1206	606	806	1006	1206
Width	mm	220	220	220	220	657	657	657	657	518	518	518	518	220	220	220	220
Height	mm	657	657	657	657	220	220	220	220	220	220	220	220	640	640	640	640
Weight	kg	17	19	22	35	17	19	22	35	13	15	16	28	13	15	16	28



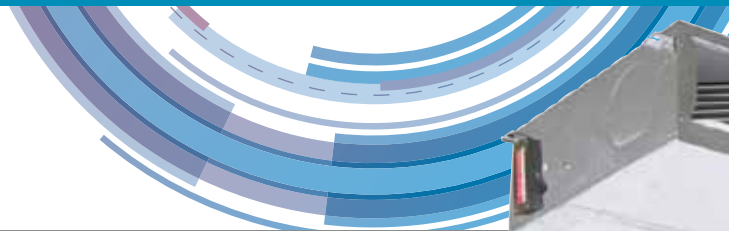
42GW Air Treatment Solution

The Idrofan 42GW offers a wide range of options dedicated to performance and to providing solutions finely adapted to your needs.

Energy consumption is reduced by 50 to 70 percent through variable speed LEC motors which continuously adjust the power providing an airflow adapted to the space. The switch to lower power modes results in a reduction in energy consumption.

Features

- The Carrier hydronic cassette is available in six sizes suitable for a wide range of applications, with air flows from 100 to 443 l/s (360 to 1600 m³/h). The Idrofan cassette offers an ultra-low-noise solution for applications where a low noise level is the most important selection parameter.
- The low-profile 42GW is light and easy to install. The small chassis fits neatly with standard ceiling tiles and is simple to install wherever it is needed.
- Four-way air distribution gives individual comfort while for localised control each diffuser may be adjusted or even shut down completely.
- Integrated, factory-mounted cooling and heating coils, two-pipe or two-pipe with electric heater, and four-pipe applications.
- The elegant air inlet grille blends aesthetically with any room decor.
- The 42GW_AC is available with a new-generation threespeed AC motor. The 42GW_LEC is available with variable-speed Low Energy Consumption EC motor.



42DW False Ceiling In The Space

The Carrier 42DW fan coil units offer reliable, economical cooling and heating for light and medium commercial and residential applications.

Features

- Six sizes with two-pipe, two-pipe plus electric heater or four-pipe coils, with an air low range from 100 to 470 l/s, a cooling capacity range from 1.5 to 10 kW, and a heating capacity range from 1.2 to 12 kW.
- Low sound level.
- Minimised size, using a U-shape coil and low height of 300 mm.
- Cassette chilled-water fan coil system designed for installation in false ceilings with an all-in-one air distribution grille integrated in the ceiling panel.
- Easy maintenance with direct access from below to all main components.

Physical and electrical data, units with AC motors

42GW		200C			300C			400C			500C			600C			700C***		
Coil type		2 pipes			2 pipes			2 pipes			2 pipes			2 pipes			2 pipes		
Fan speed*		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air flow	l/s	183	125	100	204	140	89	249	173	134	272	199	147	321	229	139	443	299	166
Cooling mode																			
Total cooling capacity	kW	2.40	1.80	1.55	4.00	2.90	1.90	4.70	3.50	2.85	6.30	4.50	3.40	7.20	5.50	3.70	9.60	6.60	4.05
Sensible cooling capacity	kW	2.01	1.49	1.31	3.10	2.20	1.41	3.70	2.70	2.10	4.80	3.60	2.70	5.50	4.10	2.70	7.35	4.85	3.00
Water flow rate	l/s	0.11	0.09	0.07	0.19	0.14	0.09	0.22	0.17	0.14	0.30	0.22	0.16	0.34	0.26	0.18	0.46	0.32	0.19
	l/h	413	310	267	688	499	327	808	602	490	1084	774	585	1238	946	636	1651	1135	697
Water pressure drop	kPa	11.1	6.5	4.9	11.0	6.2	2.9	14.7	8.6	6.0	23.3	13.6	8.7	11.6	7.0	3.4	19.8	9.9	4.0
Heating mode																			
Heating capacity	kW	3.20	2.50	2.20	5.00	4.00	2.50	6.20	4.60	3.70	8.11	6.00	4.50	10.00	7.40	4.60	13.00	9.30	5.20
Water pressure drop	kPa	10.9	5.6	4.0	11.1	5.2	1.9	16.2	8.1	5.0	18.1	10.1	6.2	10.5	6.6	3.3	17.3	9.1	3.9
Water content	l	0.55			1.1			1.1			1.6			2.4			2.4		
Sound power level	dB(A)	47	37	32	52	44	32	57	48	42	47	40	34	53	46	37	61	52	40
Sound pressure level**	dB(A)	38	28	23	43	35	23	48	39	33	38	31	25	44	37	28	52	43	31
Power input	W	58	35	25	54	32	16	94	55	35	63	39	27	85	59	33	185	130	60
Current input	A	0.27	0.17	0.12	0.24	0.14	0.07	0.41	0.24	0.16	0.30	0.17	0.12	0.46	0.27	0.14	0.85	0.58	0.26
Eurovent energy class FCEER/FCCOP	D/D				C/C			D/D			C/C			C/C			D/D		
Electric heater (high capacity)	W	1500			2500			2500			3000			3000			3000		
Current input (high capacity)	A	6.3			10.4			10.4			12.5			12.5			12.5		

Physical and electrical data, units with LEC motors

Note: All other data is the same as for the units with AC motors

42GW		209C			309C			409C			509C			609C			709C		
Coil type		2 pipes			2 pipes			2 pipes			2 pipes			2 pipes			2 pipes		
Voltage (d.c.)	V	10	6	2	10	6	2	10	6	2	10	6	2	10	6	2	10	6	2
Air flow	l/s	183	125	100	204	140	89	249	173	134	272	199	147	321	229	139	443	299	166
Power input	W	23	10	7	33	14	7	57	23	13	25	12	7	46	23	9	115	40	11
Current input	A	0.19	0.10	0.08	0.27	0.13	0.08	0.46	0.20	0.12	0.23	0.12	0.08	0.40	0.22	0.10	0.89	0.35	0.12
Eurovent energy class FCEER/FCCOP	A/A				A/A			B/B			A/A			A/A			A/A		

Dimensions and weights

All units		42GW 200/209	42GW 300/309	42GW 400/409	42GW 500/509	42GW 600/609	42GW 700/709
Dimensions (H x L x D)	mm	298 x 569/627 x 569/627	298 x 569/627 x 569/627	298 x 569/627 x 569/627	302 x 822/879 x 822/879	302 x 822/879 x 822/879	302 x 822/879 x 822/879
Grille dimensions (H x L x D)	mm	36 x 720 x 720	36 x 720 x 720	36 x 720 x 720	37 x 960 x 960	37 x 960 x 960	37 x 960 x 960
Weight unit/weight grille	kg	14.8/3	16.5/3	16.5/3	37/5	39.6/5	39.6/5

Where two values are given the second value applies to units with two or four-way valves.

Physical data

42DW																	
		42DWC07				42DWC09				42DWC012				42DWC016			
Fan type		L	M	H	SH	L	M	H	SH	L	M	H	SH	L	M	H	SH
Total cooling capacity Sensible cooling capacity Heating capacity Power Input Sound power Sound pressure* NR value	l/s	220	251	261	273	253	303	348	372	475	562	625	668	598	655	691	726
	m3/h	793	903	941	983	910	1090	1251	1338	1710	2024	2250	2403	2154	2359	2489	2614
	kW	4,39	5,51	5,7	5,88	5,89	6,82	7,68	8,05	9,27	10,33	11,04	11,6	11,98	12,72	13,43	13,71
	kW	3,88	4,32	4,49	4,66	4,54	5,32	6,03	6,37	7,5	8,52	9,17	9,68	9,35	10,02	10,64	10,53
	kW	6,53	7,29	7,64	7,78	7,95	9,31	10,46	11,02	13	14,78	16,12	16,58	17,35	18,71	18,91	19,76
	W	85	95	100	105	125	165	180	195	265	310	335	360	370	410	430	450
	dB(A)	55	57	58	59	56	60	64	65	62	66	68	70	68	70	72	73
dB(A)	38	40	41	42	39	43	47	48	45	49	51	53	51	53	55	56	
NR value		35	37	38	39	35	40	44	45	41	45	48	50	48	49	51	52
DIMENSIONS (unit)																	
Height	mm	285				285				285				285			
Length	mm	925				925				1325				1325			
Depth	mm	750				750				750				750			
Weight (w/o electric heater)	kg	35				37				48				53			
Weight (with electric heater)	kg	39				41				53				58			



turn to the experts™

PANEL RADIATOR

The line which reaches the 21'st Century in panel radiator

Carrier steel panel radiators provide the possibility of a wide selection of radiators to choose from which have dimensions most suitable to the heating requirements of the environment and the architectural and decorative designs with models produced in:

- 6 different heights between 300-900 mm
- 21 different lengths between 400-1.800 mm with an increment of 100 mm
- 2.000-3.000 mm with an increment of 200 mm

They are coated in white colour (RAL 9010) as standard.

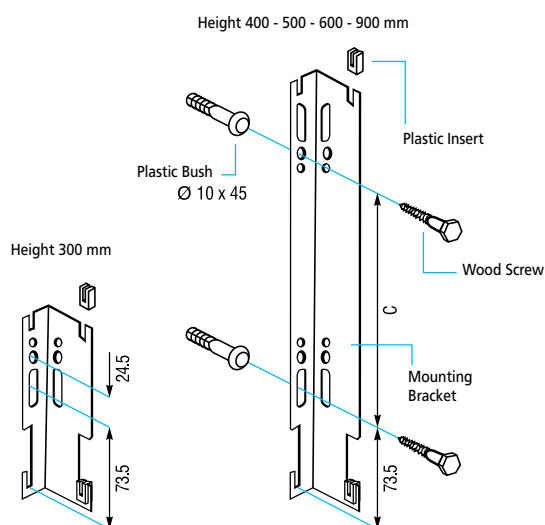
Coating can be ordered in desired colours for special cumulative orders.

Multiple adaptations:

Carrier steel panel radiators, with their perfect designs and up-to-date production technology, are the excellent choice for use in multi-story buildings in which high operation pressure is required. The various alternative sizes available and their compactness also make them suitable for smaller spaces.

Carrier steel panel radiators can also be supplied with compact valve ensuring piping connection from the bottom side. This type of radiator provides savings in heating costs, when equipped with a thermostatic regulator.

MOUNTING BRACKET DIMENSIONS

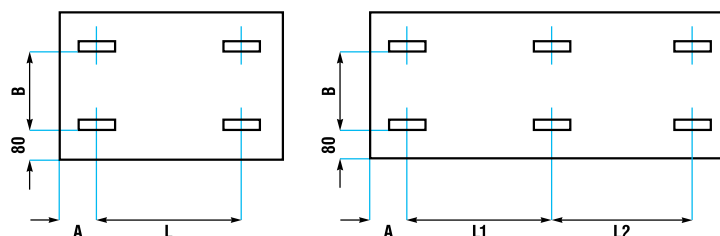


The mounting bracket can be installed either on the wide or the narrow side, depending on the installation requirements.

All the dimensions are given in mm.

RADIATOR HEIGHT	C
400	92.5
500	192.5
600	292.5
900	592.5

SUSPENSION BRACKET DIMENSIONS



For lengths between 400-1700 mm.

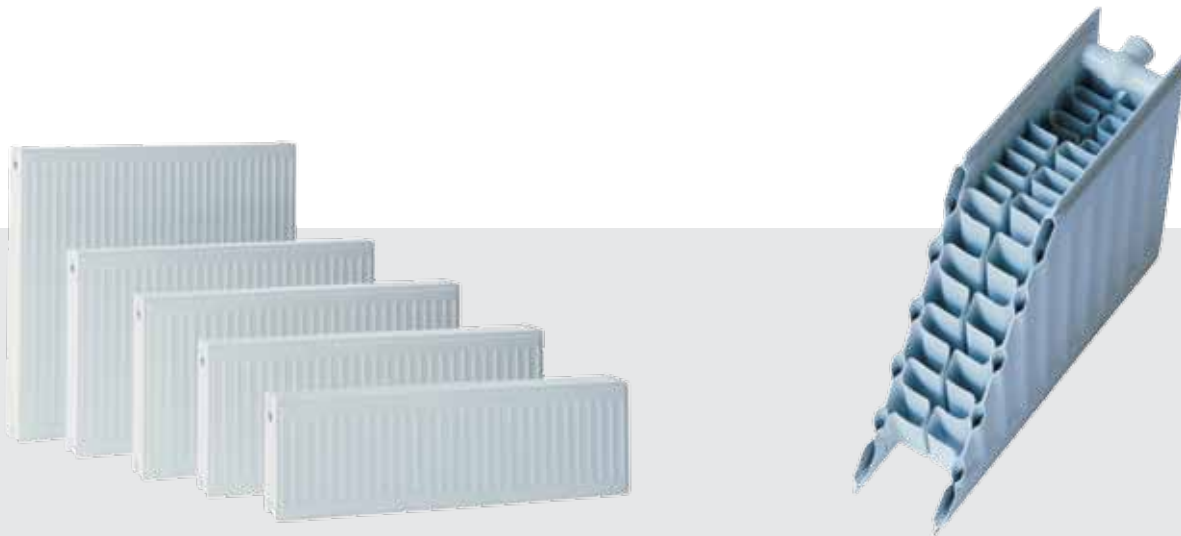
TYPE	A
10-20-21-22-33	100
11	116.5

L = Radiator Length - 2xA

RADIATOR HEIGHT	B
300	115
400	215
500	315
600	415
900	715

For lengths between 1800-3000 mm.

	TYPE 10-20-21-22-23			
	L1	L2	L1	L2
1800	800	800	766.5	800
1900	866.5	833.5	866.5	800
2000	900	900	866.5	900
2200	1000	1000	966.5	1000
2400	1100	1100	1066.5	1100
2600	1200	1200	1166.5	1200
2800	1300	1300	1266.5	1300
3000	1400	1400	1366.5	1400



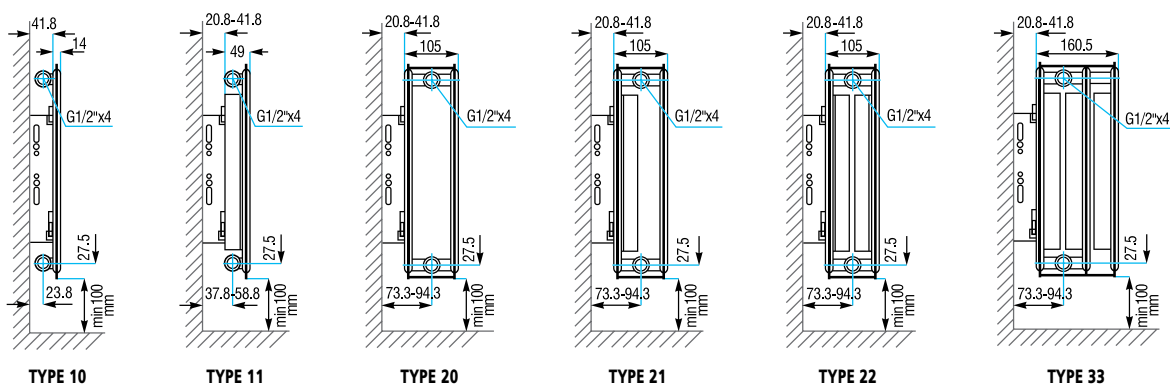
PANEL RADIATORS HEAT OUTPUT (kcal/h)

TYPE	TYPE 11					TYPE 22					TYPE 33				
HEIGHT (mm)	300	400	500	600	900	300	400	500	600	900	300	400	500	600	900
LENGTH (mm)	Capacity kcal/h					Capacity kcal/h					Capacity kcal/h				
400	238	304	370	433	612	452	574	693	812	1154	650	833	1007	1173	1600
500	298	381	462	541	765	565	717	867	1015	1442	813	1041	1259	1465	2000
600	358	457	555	649	918	679	861	1041	1218	1731	975	1250	1511	1759	2401
700	417	533	647	758	1072	791	1004	1213	1421	2019	1138	1458	1763	2052	2801
800	476	610	740	866	1225	905	1147	1387	1624	2308	1300	1666	2015	2345	3201
900	537	685	832	974	1378	1017	1291	1561	1827	2596	1463	1874	2267	2638	3602
1000	596	762	924	1083	1531	1131	1434	1734	2030	2885	1625	2082	2518	2932	4002
1100	655	838	1017	1191	1684	1244	1577	1907	2233	3173	1788	2290	2770	3225	4401
1200	716	914	1109	1299	1837	1357	1721	2080	2436	3462	1950	2499	3022	3518	4801
1300	775	990	1201	1408	1990	1470	1864	2254	2638	3750	2113	2707	3274	3812	5202
1400	834	1066	1293	1515	2143	1583	2008	2428	2841	4039	2276	2915	3526	4104	5602
1600	954	1219	1478	1732	2449	1809	2294	2774	3247	4616	2601	3332	4029	4690	6403
1800	1072	1371	1663	1949	2755	2036	2582	3121	3653	5194	2926	3748	4533	5277	7203
2000	1192	1523	1848	2165	3062	2262	2868	3468	4059	5771	3251	4165	5037	5863	8003
2200	1312	1675	2033	2382	3368	2488	3155	3815	4465	6348	3576	4581	5540	6450	8803
2400	1430	1828	2218	2598	3674	2714	3442	4162	4871	6925	3901	4997	6044	7036	9604
2600	1550	1980	2402	2816	3980	2940	3728	4508	5276	7500	4226	5414	6548	7624	10404
2800	1668	2132	2586	3030	4286	3166	4016	4856	5682	8078	4552	5830	7052	8208	11204
3000	1788	2286	2772	3249	4593	3393	4302	5202	6090	8655	4875	6246	7554	8796	12006

Ex stock units

Panel radiators heat output tested by DIN EN 4704, and tested under below conditions : 90/70°C water temperature and 20°C room temperature.

MOUNTING PANEL DIMENSIONS



turn to the experts™



UNDERFLOOR HEATING



Underfloor heating is a reliable and effective heating method combining a warm and comfortable environment and economical operation. In this system, **warm water at 35-45°C circulates inside a pipe system embedded in the floor of the space, turning the floor itself into a heating unit.** Heat is transmitted by radiation from the floor to the heated space, from the lower levels to the higher ones, throughout the entire space without any strong currents forming. The desired layering of the temperature is thus achieved, which means that the temperature reaches 18-20°C at the height of the head.

Using pipes that run through the entire surface of the space for heating ensures the basic requirements of modern life, which means comfortable and healthy living in warm coziness. Aesthetics without restrictions in the modern home and environmentally friendly, which one can enjoy easily **saving energy and expenses, thanks to underfloor heating!**



The most important advantages one enjoys after installing underfloor heating are:

- **Thermal comfort and a healthy living environment** thanks to the uniform distribution of the heat which does not dry the air.
- **Saving energy** due to reduced thermal losses and operation at lower temperatures (35°C – 45°C). At the same time, due to reduced operating and maintenance costs, the installation cost is amortized in the short-term.
- **Total utilization of interior spaces** and freedom in their layout resulting in appealing architectural layouts.
- **Safer heating** without the hot surfaces of the heating units.
- **Capacity of combined operation** with periodically heated spaces through fan coils or heating units.
- **Environmentally friendly** with the capability of using alternative and renewable energy sources such as solar or geothermal energy and the air-to-water pump.
- **Cooling option** with the addition of the appropriate mechanism for producing cold water (cooler, heat pump).

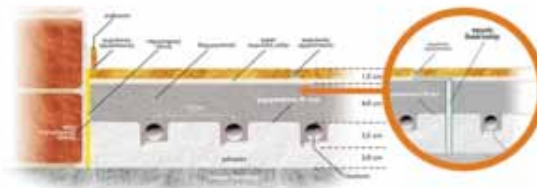


AHI CARRIER supplies a **17 X 2.0mm** pipe for use in underfloor heating, in compliance with all European specifications, certified by the largest European and American institutes. The pipe is manufactured from special type polyethylene, suitable for high temperatures that meet and exceed the temperature requirements of the underfloor heating, and has oxygen barrier that protects the installation's metal parts. It is especially flexible, something which facilitates installation during the layering of the circuits.

The pipes are installed on a castellated panel made of expanded polystyrene with vapour barrier, with special arrangement on its surface (plugs). The panel offers heat insulation, sound insulation and humidity insulation from the plaster coating and ensures that the pipe is perfectly supported and it is covered by the plaster coating. Item dimensions are 1350 x 750 mm² and the total height (plug + base) is 4.5cm.

A perimeter wall insulation is installed around the perimeter between the panel and the wall, made of polyethylene foam 8mm thick and 150mm high. It has nylon film on the lower part of its front and a special fixing adhesive strip on the back.

A special joint section is placed at predetermined points, selected during our study, and on the lower cases of the building's internal doors so that they can accommodate the heated floor's contractions and expansions.



Underfloor Heating - Autonomy of Spaces-Compensator

The underfloor heating system provides us with the option of controlling the temperature of each room independently, as best suits our needs!

For complete control, we must have:

- **Space thermostat**, which reacts to temperature changes with up to 0.1°C accuracy, and we thus achieve the desired space temperature.
- **Thermoelectric actuators which** are connected through the distributor with the corresponding thermostat and open or close the underfloor heating circuits. We can connect up to four thermoelectric actuators with one space thermostat. In this way we achieve independency in all the areas of a house and as a result more economical operation and selection of different temperatures in each heating space.
- The **communication base – distributor** which is controlled by the thermostats and is connected to the thermoelectric actuators on the manifold to open and close the circuits depending on the desired temperature in each space.
- **Circulator activator** which starts or stops the circulator with the required time delay when the thermostats give start and stop heating commands to the thermoelectric actuators.
- An intelligent and flexible solution for cases when we wish to install separate thermostats at a later date to control the desired temperature in each space without the need of installing communication cables, is the **wireless thermostat communication system**. Thermostats operate as transmitters and the base as receiver, giving commands to the thermoelectric actuators on the manifold to open and close the circuits without the use of wires.
- **Compensator systems** are available for automating the control of the operation of underfloor heating. A compensator recognizes ambient temperature with a sensor and interacts with the three-way mixing valve and the heating circulator. In this way we prevent the system's inertia according to the environment's temperature changes, achieving more economic operation of the heating.

UNDERFLOOR HEATING AHI - CARRIER

Como floor Oxygen Barrier plastic pipe



Plastic pipe manufactured from special type polyethylene resistant to high temperatures with oxygen barrier. The production and the quality control of the pipe are in accordance with European Standard EN ISO 22391 and German standard DIN 16833. The physical and mechanical properties of the pipe are certified by German Institute SKZ, certificate number A 401. The oxygen barrier is certified by German Institute MPA – NRW according to standard DIN 4726. The pipe's cross section for the underfloor system is 17 x 2 mm.

Item No	770521720
External Diameter	Ø 17 Oxygen barrier
Wall Thickness	2,00
MTS/ROLL	200

Manifold group



The manifold is the "heart" of the installation. A bar type manifold of nickel-plated brass, without connections, nominal diameter 1" with 3/4" threading (Eurocone). The flow manifold bears Allen bolts or a flow meter for regulation of circuit flow, while the return manifold includes thermoelectric actuator valves enabling the fitting of thermoelectric actuators which receive commands from the thermostats of each space and enable independent operation of the respective circuits of each space.

In order to achieve optimum regulation of the heating system, we propose special in-flow and return couplings with attached thermometers.

Item No	Outlets
589344400023	2 outlets x 1" x 3/4
589344400033	3 outlets x 1" x 3/4
589344400043	4 outlets x 1" x 3/4
589344400053	5 outlets x 1" x 3/4
589344400063	6 outlets x 1" x 3/4
589344400073	7 outlets x 1" x 3/4
589344400083	8 outlets x 1" x 3/4
589344400093	9 outlets x 1" x 3/4
589344400103	10 outlets x 1" x 3/4
589344400113	11 outlets x 1" x 3/4
589344400123	12 outlets x 1" x 3/4

Metal panel



Metal panel, suitable for wall mounting, constructed from galvanized steel, 1mm in width, painted with electrostatic paint. It is adjusted to a height of up to 815mm. Bears an adjustable removable frame for protection from the plaster, which sets the panel depth from 115 to 165mm.

Item No	Dimension	Pack
670094069	40 x 69 x 11,5	1
670096069	60 x 69 x 11,5	1
670097569	75 x 69 x 11,5	1
670099069	90 x 69 x 11,5	1
670091069	100 x 69 x 11,5	1

Castellated Panel

Item No	Dimension	Pack
670060001	1350 x 750 x 45	14.175 m ²
670060130	30 mm	8,40 m ²

Manufactured of expanded polystyrene with polyethylene film and special arrangement on its surface (plugs). The panel offers heat insulation, sound insulation and humidity insulation from the plaster coating. It ensures that the pipe is perfectly supported and covered by the plaster coating. It allows that the layering distances of circuits are observed at a 7.5cm and 15cm step. Item dimensions are 1350 x 750 mm² and they are available in boxes of 14.. The panel's compressive strength is 150kPa according to EN 826. The total height of the panel (plub + base) is 4.5cm. The thermal conductivity factor is 0.034 w/mK and thermal resistance is 0.4m²k/W.



Perimeter wall insulation

Item No	Dimension	Pack
670060002	150 x 8	50

Manufactured from polyethylene foam 8mm thick and 150mm high. It has nylon film on the lower part of its front and a special fixing adhesive strip on the back.



Brass fittings

Item No	Dimension	Pack
587823400172	Ø 17 x 2,0	200
670150011	1" x 1"	80
670163434	3/4" x 3/4"	100
670130000	30 mm	480

Brass fittings are available for the entire range of materials, for the integrated installation of the group. Among them: Connecting coupling Ø17x2 – "(Eurocone), terminal 'T's, automatic daerators, filling valves as well as special couplings for installing thermometers at returns and the central intake.



Concrete hyper-plasticizer

Item No	Description	Pack
670000003	Plasticizer	Tank 20 kg

Improves the thermal concrete mix, increasing strength, watertightness and plasticity. This results in easier pumping and pouring



Valve electromotor with temperature preset function



This is installed on the three-way mix valve where, with the aid of a sensor, the desired feed water temperature is set (15-70°C). We are also able to adjust the time intervals (recommended time: 30 sec) at which the sensor commands the electromotor to balance the feed water temperature.

Item No	Description
670900201	1" - WILO Star RS 25/6
670900204	1 1/4" - WILO Star RSG 25/8
670900001	1" - WILO Star RS 25/6
670900004	1 1/4" - WILO Star RSG 25/8
670900101	1" - WILO Star RS 25/6
670900103	1" - WILO Star RSG 25/8
670900105	3-way mixing valve
670900106	3-way mixing valve with climatic controller

Contact sensor hydrostat



This interrupts the circulator's operation when the water temperature exceeds the maximum desired setting.

Item No	Description
670910002	Digital water temperature controller
670220060	Dip in sensor
670220061	Ambient sensor
670220062	Contact sensor
670150020	Copper 100mm (1/2")
670150021	Nickel 40mm (1/2")

Thermoelectric actuators



Thermoelectric actuators are connected through a communication base with the corresponding thermostat and open or close the underfloor heating circuits. In this way we can achieve independency in the areas of a house and as a result more economical operation and selection of different temperatures in each heating space.

Item No	Description
670050000001	24 V
670050000002	230 V

Communication base - distribution



It is controlled by the thermostats and is connected to the thermoelectric actuators on the manifold to open and close the circuits depending on the desired temperature in each space.

Item No	Description
670180007	Receiver 230V with pump module
670180000	Transformer receiver for 24V

Circulator activator

Item No	Description
670230000	24V PL 4000
670230001	230V PL 2000

This starts or stops the circulator with the required time delay when the thermostats give start and stop heating commands to the thermoelectric actuators.



Wireless thermostat communication system

Item No	Description
670170001	Wireless thermostat for heating-cooling
670170002	Wireless receiver 6/13
670170003	Wireless receiver with pump module and heating-cooling module

Thermostats operate as transmitters and the base as receiver, giving commands to the thermoelectric actuators on the manifold to open and close the circuits without the use of wires. This is an intelligent and flexible solution for cases when we wish to install at a later date separate thermostats to control the desired temperature in each space without the need to install communication cables.



Thermostat

Item No	Description
670500001	Heating-Cooling Thermostat (24V)

The thermostat, which reacts to temperature changes with up to 0.1°C accuracy, we achieve the desired space temperature. This way we achieve a tenfold increase of temperature accuracy compared to common thermostats.



UNDERFLOOR HEATING BY UPONOR

Uponor PE-Xa pipes



PE-Xa pipe with an oxygen diffusion barrier manufactured from peroxide cross-linked polyethylene (PE-Xa) using the Engel method complying with e.g. prENISO 15875 "Plastics piping systems for hot and cold water installations - Cross-linked polyethylene" with an oxygen diffusion barrier of EVOH (ethyl vinyl alcohol). Uponor pipes fulfil the requirements for oxygen diffusion resistance as per DIN 4726. Malfunction temperature 95°C. Design pressure 8,8 bar (at 70°C).

Item No	1034535
d (mm)	17
s (mm)	2.0
l (m)	240
V (L/m)	0.13
Description	Uponor pe PE-Xa Q&E pipe 17x2.0 / 240 m coil
unit	240 m

Uponor MLCP white in coils



Diffusion-tight multi-layer composite pipe (PE-RT - adhesive - longitudinally welded aluminium - adhesive - PE-RT) for distribution conduits, rising mains and connection lines for plumbing, radiator connection and fancoil connection. Fire classification cation E according to DIN EN 13501-1. Pipe end caps as hygienic seal according EN 806.

Resistance of temperature:

Tap water: The maximum permanent operating temperature exists between 0°C and 70°C at a maximum permanent operating pressure of 10 bars. The short-term malfunction temperature is 95°C of a maximum of 100 hours in the operating lifetime.

Heating: The maximum permanent operating temperature is 80°C at a maximum permanent operating pressure of 10 bars. The short-term malfunction temperature is 95°C of a maximum of 150 hours in the operating time per year.

Item No	1013371
d (mm)	16
s (mm)	2.0
l (m)	200
Description	Uponor MLCP 16x2 white in coils 200m
unit	200 m

Uponor plastic manifold basic kit

Item No	1009209
Description	Uponor Plastic manifold Basic kit G1"
unit	1 set

For Uponor modular plastic manifold including brackets, flat at sealing screw connection pieces with swivel nut, thermometer and end pieces with air vent, filling and draining tap and a by-pass.



Uponor modular plastic manifold with flow meter

Item No	1030584	1030583	1030585
outlets [-]	4	3	6
Description	Uponor modular plastic manifold with flow meter		
unit	1 pcs		

Pack includes supply and return manifolds made of fibreglass reinforced polyamid. Heating loop connections 3/4 MT euro-cone compatible with Uponor compression adapters. Spacing of individual outlets 50 mm. Manifolds can be joined to make the required number of ports. Uponor actuators can be mounted on the return manifold. Supply manifold with adjustable and shut-off inserts (flow meter inspection window with scale of 0 – 4 l/min) for flow adjustment of individual heating loops. Max. operating temperature: 60°C Max. operating pressure: 6 bar.



Uponor plastic manifold single segment set



For Uponor modular plastic manifold with topmeter for additional heating loop extension. Supply segment with adjustable and shut-off inserts (topmeter inspection window with scale of 0 – 4 l/min) for flow adjustment of individual heating loops. Return segment with thermostat upper section incl. cap for locking. Made of fibreglass reinforced polyamid. Max. operating temperature: 60°C Max. operating pressure: 6 bar.

Item No	1042471
Description	Uponor plastic manifold single segment set with flow meter
unit	1 set

Uponor plastic manifold connection valve kit



For the hydraulic balancing and shut-off of the Uponor plastic manifold, consisting of:

- G 1/Rp 1 inlet control valve for the hydraulic balancing and independent shut-off of the manifold, including hand wheel and display for settings / closing
kvs value: 5.4 m³/h
- G 1/Rp 1 return valve for the shut-off of the manifold, including hand wheel and display for closing; adaptable for Uponor plastic manifold actuators.
kvs value: 6.4 m³/h

In conjunction with Uponor plastic manifold actuators, the kvs value is 4.8 m³/h. The connecting valve can be used to control individual zones. Material: Housing made in brass, hand wheels made in polyamide Max. testy pressure: 10 bar (water)

Item No	1005100
l (mm)	80
h1 (mm)	50
z (mm)	45
MT ["]	G1
FT ["]	Rp 1
A/F (mm)	38
Description	Uponor plastic manifold connection valve G-1/Rp 1
unit	1 set

Uponor actuator 230 V



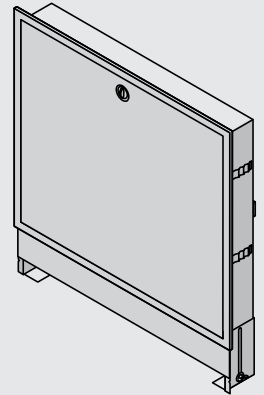
230 V, with open/closed indicator, suitable for use with Uponor plastic manifolds. Closes when idle. With all-round shower protection (IP 54). Suitable for operation at ambient temperature of up to 60°C. Threaded connector M 30 x 1.5 mm MT. Height: 54 mm.

Item No	1005605
MT [-]	30 X 1.5
d (mm)	40
h (mm)	54
OV (V)	230
P (W)	< 3
Description	Uponor actuator 230V for plastic manifold, 30 x 1.5 MT
unit	1 pcs

Manifold cabinet concealed version

Item No	1046992
w (mm)	710
h (mm)	820 - 910
Description	Uponor cabinet concealed version, UFH2 width 710mm, colour white
unit	1 pcs

For attachment of Uponor manifolds, Uponor controller and Uponor pump control stations on universal rail fixation incl. fixation set. Made of galvanized steel. All visible parts are powder coated in white colour (RAL 9010).
Cabinet width (with frame): 555-950mm
Cabinet installation depth: 120-180mm
Cabinet installation high: 820-910mm



Uponor installation panel 14-16 / 11

Item No	1016703
Description	Installation panel
unit	1 pcs

For cement and self-levelling cement screeds; allows for right-angled or diagonal pipe installation at 6 plus 4 different pipe installation based on actual room geometry with minimum cut-offs thanks to sophisticated system technology; allows for fast and easy installation of the hard/soft PS rigid foam panels with overlapping foil edges. Meets the requirements for standard impact noise insulation (DIN 4109), thermal insulation (DIN EN1264), fire safety (DIN 4102) B2 and heat output (DIN EN 1264), irrespective of the pipe spacing; the height and distance of the sturdy pipe holders (DIN EN 1264) are fixed to prevent shifting of the pipes; the overlapping application foil acts as a damp-proofing course and eliminates sound bridges (DIN 18560); protects the environment thanks to use of environmentally friendly PS. Properties subject to continuous RAL quality monitoring.

Pipe spacing with right-angle installation:

RA 5.5 - 11 - 16.5 - 22 - 27.5 - 33 cm

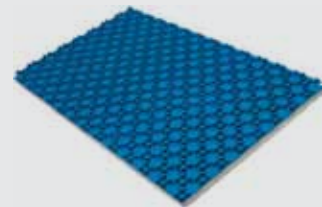
Pipe spacing with diagonal installation:

RA 7.5 - 15 - 22.5 - 30 cm Type: 11 mm, for universal use in residential and commercial buildings up to 30 kN/m² EPS 040 DE0 (100kPa)

Dimensions: 1447 x 900 mm

Plate thickness: 29 mm

Application range: up to 30 kN/m²



Uponor PE pattern foil 0.25mm



0,25 mm-thick foil with printed on pattern 100 x 100 mm for laying over existing heat/sound insulation and fixation of clamp tracks. Prevents screed from flowing down into the insulating layer.

Dimensions: 100 m x 1.03 m

Item No	1000015
l (m)	100
w (m)	1.03
s (mm)	0.25
Description	Uponor PE pattern foil 0.25mm thickness for clamp track fixation
unit	103 m ²

Uponor edging strip 150x10



For installation between screed and adjacent building parts for floor constructions according to DIN 18560 and DIN EN 1264; with multiple tear perforation, laminated PE foil, self-adhesive sealing strips, particularly suitable for self-levelling screeds; bottom side adhesive for attachment to wall and exact installation in wall corners

Material: Closed-cell polyethylene PE-LD

Building material class: B2

Colour: blue

Item No	1000080
h (mm)	150
s (mm)	10
l (m)	50
color (-)	blue
Description	Uponor edging strip 150x10 in length of 50 m
unit	200 m

Uponor thermostat display T-75 radio



Designed as a wireless single room temperature sensor, measuring the perceived room temperature and transmitting the values to the wireless base unit or wireless control module, with display showing the set and measured room temperature, consisting of:

Housing with

- Temperature programming buttons
- Control electronics

Signal range: max. 30 m

Signal frequency: 868 MHz

Power supply: Alkaline battery, service life approx. 5 years, size AAA

Transmission power: approx. 1 mW

Set temperature range: 5 - 30 °C

Colour: pure white (near RAL 9010) or silver (near RAL 9006)

Item No	1000502
l (mm)	124
w (mm)	66
h (mm)	16
color (-)	white
Description	Uponor thermostat display T-75 radio white
unit	1 pcs

Uponor controller with interface C-56+I-76 radio

Item No	1045562
OV (V)	230
P (W)	1
EP/a (W)	> 2
color (-)	gray
Description	Uponor controller with interface C-56+I-76 radio, grey
unit	1 set

For receiving and transforming of radio signals from the thermostats, with integrated DEM functions consisting of:

- Controller C-56 with
- Electronic control
 - Reception of max. 12 room-thermostats
 - Connection of max. 14 actuators 24 Volt
 - Heating/Cooling function switched by external contact
 - Pump relay
 - Valve exercise, pump exercise

Interface I-76 with

- Display, back lighted, new look, blue full dot matrix
- Menu in English,

Integrated functions

- Five temperature setback programs
- Max/min temperature limitations
- Holiday temperature
- Automatic summer/wintertime change
- Auto adapt function
- Room check function
- Room bypass function
- The Interface can control up to 3 controllers

Key Advantages

- 15% faster response in heating variations
- 12% reduction in operation costs
- Autobalancing

Accessories

External Antenna, cables for connections, mounting material

Mark of conformity: CE

Operational voltage: 230 V / 50 Hz

Max. power input per actuator: 0,2 A

Protection class: IP 30 (EN 60 529)

Colour: grey (RAL 7015)



Uponor MLCP white in straight lengths



Diffusion-tight multi-layer composite pipe (PE-RT - adhesive - longitudinally welded aluminium - adhesive - PE-RT) for distribution conduits, rising mains and connection lines for plumbing, radiator connection and fancoil connection. Fire classification E according to DIN EN 13501-1. Pipe end caps as hygienic seal according EN 806.

Resistance of temperature:

Tap water: The maximum permanent operating temperature exists between 0°C and 70°C at a maximum permanent operating pressure of 10 bars. The short-term malfunction temperature is 95°C of a maximum of 100 hours in the operating lifetime.

Heating: The maximum permanent operating temperature is 80°C at a maximum permanent operating pressure of 10 bars. The short-term malfunction temperature is 95°C of a maximum of 150 hours in the operating time per year.

Item No	Description	d (mm)	s (mm)	l (m)	Unit	GTIN/EAN
1013432	Uponor MLCP 16x2 white in straight length 5m	16	2.0	5	125m	4021598005525
1013438	Uponor MLCP 20x2,25 white in straight length 5m	20	2.25	5	85m	4021598005549
1013442	Uponor MLCP 25x2,5 white in straight length 5m	25	2.5	5	50m	4021598005556
1013444	Uponor MLCP 32x3 white in straight length 5m	32	3.0	5	30m	4021598005563
1013446	Uponor MLCP 40x4 white in straight length 5m	40	4.0	5	20m	4021598005570
1013449	Uponor MLCP 50x4,5 white in straight length 5m	50	4.5	5	20m	4021598005587
1013451	Uponor MLCP 63x6 white in straight length 5m	63	6.0	5	15m	4021598005594
1013453	Uponor MLCP 75x7,5 white in straight length 5m	75	7.5	5	5m	4021598010277
1013455	Uponor MLCP 90x8,5 white in straight length 5m	90	8.5	5	5m	4021598012677
1013457	Uponor MLCP 110x10 white in straight length 5m	110	10.0	5	5m	4021598012608

Aqua-plus pipes

The structure of the material and the smooth texture of the surface ensure low friction losses resulting in low resistance and low pressure drop in the piping. The material used presents a greatly reduced noise factor and restricted transmission of noise through the pipes. Thus plastic pipes of smaller cross-section can be used for the same quantity of water. Aqua-plus pipes are manufactured in cross-sections ranging from 20mm to 160mm, in green, in straight 4m lengths.

Aqua-Plus pipe with Fiberglass

The new pipes Aqua-Plus-GF are designed, manufactured and tested for quality in compliance with the standards that apply for the simple polypropylene pipes (EN 15874 & DIN 8077/78) and in accordance with the special instruction HR 3.28 of the German Institute SKZ.

Pipe dimensions Aqua-plus GF SDR 7,4

Outer diameter (mm)	Wall thickness (mm)	Inner diameter (mm)	Water content l/m	Pipe weight kgr/m	Packaging (m)
(mm)	(mm)	(mm)	(L/m)	(kgr/m)	(m)
20	2.8	14.4	0.163	0.158	100
25	3.5	18.0	0.254	0.246	80
32	4.4	23.2	0.423	0.394	60
40	5.5	29.0	0.660	0.613	40
50	6.9	36.2	1.029	0.955	16
63	8.6	45.8	1.647	1.500	12
75	10.3	54.4	2.323	2.135	8
90	12.3	65.4	3.358	3.058	4
110	15.1	79.8	4.999	4.576	4
125	17.1	90.8	6.472	5.891	1
160	21.9	116.2	10.599	9.538	1

Pipes

Interplast apart from single-wall Random (Type 3) polypropylene pipes, also manufactures three layer polypropylene - aluminium - polypropylene pipes. The new pipes are designed, manufactured and tested for quality, in compliance with the standards in effect for simple polypropylene pipes.

Aqua-Plus Fittings PN 25

The fittings are manufactured in accordance with DIN 16962 from Polypropylene Random (Type 3) and available in cross-sections from 20mm to 160 mm. For the production of the fittings the company uses raw material with a low melt flow index, identical to that of its pipes so that the mechanical strength of the pipe does not differ from that of the fittings.



SOLAR

Metallic Substructure for Collectors

Suitable for flat roofs or roof tiles.



Solar Collectors

Solar collector with selective surface, with aluminum profile and insulation of polyurethane.



Solar Kits

Hydraulic units with all necessary parts and differential controllers for solar systems.



BUFFER TANKS & HOT WATER TANKS

Buffer Tanks

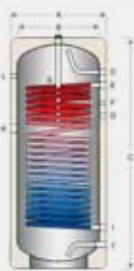
Buffer tanks from 150lt to 1000lt with insulation suitable for internal installation. There is the choice for an electric heater (resistance) and heat exchangers (coil type).

- Type BF0, without coils (150, 200, 300, 420, 500, 800 & 1000 litres)
- Type BF1, with one coil heat exchanger (150, 200, 300, 420, 500, 800 & 1000 litres)
- Type BF2, with two coil heat exchangers (150, 200, 300, 420, 500, 800 & 1000 litres)
- Type BF1, with one coil heat exchanger and one inox (300, 500, 800 & 1000 litres)

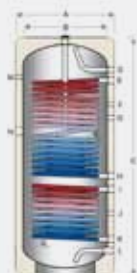


Special Products:

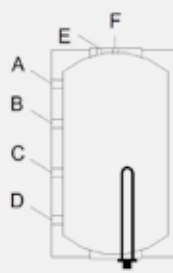
Boilers for heat pumps with oversized heat exchanger (200, 300, 400, 500 litres)



Boilers for heat pumps with oversized heat exchanger and solar exchanger (200, 300, 400, 500 litres)



Small buffer tanks with integrated electrical resistance (60, 80 litres)



Hot Water Tanks

Boiler from 150lt to 1000lt with one heat exchanger (coil type) and insulation suitable for internal installation.

There is the choice for an electric heater (resistance) and a second heat exchanger (coil type).

- Type BL0, without coils (150, 200, 300, 420, 500, 800 & 1000 litres)
- Type BL1, with one coil heat exchanger (150, 200, 300, 420, 500, 800 & 1000 litres)
- Type BL2, with two coil heat exchangers (150, 200, 300, 420, 500, 800 & 1000 litres)
- Type TTT, Tank in Tank (800 & 1000 litres)



* Sizes and Technical characteristics, upon request to AHI CARRIER SEE S.A.

** Capability to manufacture boiler or buffer tanks of 1500, 2000, 3000, 4000, 5000, 7000, 9000 litres

BELIMO

Precisely positioning air dampers and valves in:

- Air conditioning plants
- District heating transfer stations
- Central heating plants
- Cooling water conditioning plants

Motorization of dampers in ventilation and air conditioning systems:

- Rotary actuators-90°
- Linear actuators
- Full-rotation actuators 360°
- Quick running actuators
- Robust Line actuators
for extreme environmental conditions
- Rotary actuators for outdoor applications



Water Solutions - Motorized valves for controlling

- Heating and cooling hydronic circuits:
- 2-way, 3-way and 6-way characterized control valves
- Mechanical and electronically controlled pressure
- Independent characterized control valves
- Shut-off and change-over valves
- Globe valves

WATER PUMPS AND CIRCULATORS

GRUNDFOS

Pumps and circulators for the following applications:

COOLING - HEATING - AIR-CONDITIONING

- Pumps / Circulators of any type and size, conventional for electronically controlled

WATER SUPPLY

- Submersible and surface pumps
- Domestic Pumps and Pressure Systems

SEWAGE WATERS

- Submersible drainage pumps, made of stainless steel or cast iron
- Stainless steel wastewater pumps
- Large cast iron pumps for wastewater pumping stations, wastewater treatment

INDUSTRY

- Pumps and Pressure Systems for industrial use, conventional for electronically controlled



WILO



** Sizes and Technical characteristics,
upon request to AHI CARRIER SEE S.A.*

ALFA LAVAL

Plate heat exchanger

General heating and cooling duties. Heating by means of steam. The plate heat exchanger consists of a pack of corrugated metal plates with portholes for the passage of the two fluids between which heat transfer will take place.



STANDARD MATERIALS

Frame plate

Mild steel, Epoxy painted

Nozzles

Carbon steel

Metal lined: Stainless steel, Titanium, Alloy 254 SMO, Alloy C276

Rubber lined: Nitrile, EPDM

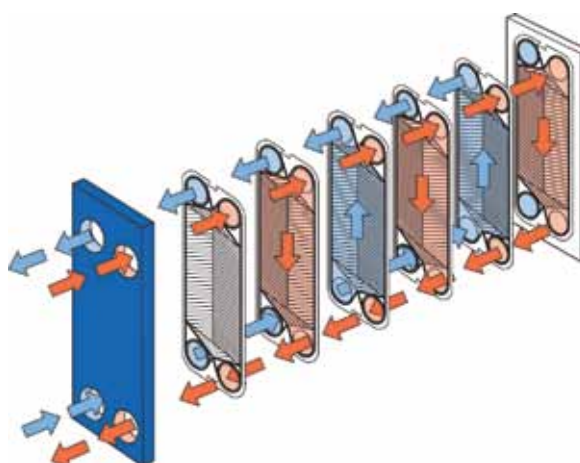
Plates

Stainless steel: Alloy 316, Alloy 304, Alloy 254 SMO, Alloy C276, Titanium

Gaskets

M6 Nitrile, EPDM, HeatSeal F™

M6M Nitrile, EPDM, HeatSeal F™, HNBR, Viton® G



EFERGY

Efergy energy meter for monitoring and registering of energy consumption to help consumer to understand where and how much energy is spent. The screen elite is connected wirelessly to the transmitter, which is located next to the electrical panel of the site, transmitting wirelessly and instantly consumption data current through the sensor in order to monitor each time the use of energy. At the same time, the counter informs you about the cost of this, as for produced emissions from consumption of energy.



Screen of energy socket enables you to control and measure energy consumption of the connected device. Watch the consumption of your device in kWh and calculate running costs. With this control you can reduce the cost use or select a new less energy intensive device.



The engage hub device is the only device that you need to track your energy spending through the internet, in real time, from everywhere and whenever you wish. The data is collected wireless to the hub device by your installed transmitter, and transported through the internet connection (connection to your router) in the high security power management platform ENGAGE.



** Sizes and Technical characteristics,
upon request to AHI CARRIER SEE S.A.*

INFRARED UNDERFLOOR HEATING

HEAT PLUS

Heat Plus Infrared Underfloor Heating, is one of the most effective and healthy heating methods. Heat Plus Underfloor Heating ensures, a unique warm and comfortable environment, while the cost of installation and operation is low. Heat Plus Underfloor Infrared Heating works with power supply 230/1/50 connected to the Infrared Heating Film Heat Plus. Heating Film, is integrated in the floor, under wooden floor, tiles marble, parking entrance, outdoor corridors, and according to the type of the Heating Film, it can easily placed under carpets! The desired temperature can be set, according to the type, at temperatures 0 – 70°C, turning the floor into a heating unit. Infrared rays pass from the floor to the heated space equally, from the lower levels to the higher ones through the entire space, providing a warm and comfortable environment. Using Infrared Heating Film, into the entire floor, there is no strong current forming while the temperature is equally pass to the entire space of the room and the set temperature is accomplished in few minutes (5 min). Using Heat Plus Infrared Underfloor Heating we are enjoying a healthy, warm and comfortable environment while at the same time it does not influence the interior of the house and reduces the heating cost.

Heat Plus Infrared Heating Film, are in compliance with a large number of certifications (CE, RoHS, e.t.c) as well as ISO 9001 Certification and ISO 14001 Certification.



Advantages of Infrared Underfloor Heating Heat Plus

- Healthy Heating Method
- High Efficiency & Performance
- Economy
- Long Life
- Anti - Humidity Effect
- Functional
- Easy and Quick Installation

Types of infrared films

High End Line
(super durable - use under carpets)



All Coated Line
(use under carpets)



Stripe - Classic Line
(new constructions - Renovations)



APPLICATION RATING CONDITIONS

Application of the new EN14511 : 2011 chiller and heat pump performance standard:

Chiller and heat pump performances are calculated with the EN14511 : 2011 calculation standard and certificated by Eurovent.

The latest version of EN14511 was ratified on July 19th, 2011. It uses a different method to take into account the contribution of water pumps, or heat exchanger pressure drops in the unit performances. The efficiency of the pump is no longer a default value, but a function of the required hydraulic power. In January 2012, the Eurovent Certification Company decided that this method is more realistic and it is fully applied starting from the 2012 certification campaign. The performances declared based on the new version of the standard were published on the ECC website www.eurovent-certification.com at the end of March 2012.

IMPORTANT: Only 2012 performances rated according to the new EN14511 : 2011, taking in account water pump and heat exchanger pressure drop are certified by Eurovent. For units declared before 2012, the previous gross EER and COP values without pump correction (for units with integral pump - measured with the pump not running) and the corresponding energy classes are available on ECC website.

Application rating conditions

Air conditioning applications (AC)		Cooling and heating floor applications (CHF)		High-temperature heating (HT)		Very high-temperature heating (VHT)	
Air-cooled cooling - condition 1		Condition 2					
Evaporator EWT/LWT 12°C/7°C OAT 35°C		Evaporator EWT/LWT 23°C/18°C OAT 35°C					
Air-cooled heating - condition 1		Condition 2					
Condenser EWT/LWT 40°C/45°C Evaporator OAT 7°C	EWT/LWT 40°C/45°C OAT 2°C	Condenser EWT/LWT 30°C/35°C Evaporator OAT 7°C	EWT/LWT 30°C/35°C OAT 2°C	Condenser EWT/LWT 47°C/55°C Evaporator OAT 7°C	EWT/LWT 47°C/55°C OAT 2°C	Condenser EWT/LWT 50°C/65°C Evaporator OAT 7°C	EWT/LWT 47°C/55°C OAT 2°C
Water-cooled cooled - condition 1		Condition 2					
Evaporator EWT/LWT 12°C/7°C Condenser EWT/LWT 30°C/35°C		Evaporator EWT/LWT 23°C/18°C Condenser EWT/LWT 30°C/35°C					
Water-cooled heating condition 1		Condition 2					
Condenser EWT/LWT 10°C/7°C Condenser EWT/LWT 40°C/45°C		Evaporator EWT/LWT 10°C/7°C Condenser EWT/LWT 30°C/35°C		Evaporator EWT/LWT 10°C/7°C Condenser EWT/LWT 47°C/55°C		Evaporator EWT/LWT 0°C/-3°C Condenser EWT/LWT 47°C/55°C	

- (1) Gross performances, not in accordance with EN14511-3:2011. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger.

Legend

EWT Entering water temperature
LWT Leaving water temperature
OAT Outdoor air temperature

NOTES

[illegible]

NOTES

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turn to the experts 

AHI CARRIER SOUTH EASTERN EUROPE S.A.

Headquarters

18, Kifissou Ave
104 42 - Athens
GREECE
Tel.: +30 210 6796300
Fax: +30 210 6796390

Thessaloniki Branch

5, Ag. Georgiou str., Cosmos Offices
570 01 - Themi Thessaloniki
GREECE
Tel.: +30 231 3080430
Fax: +30 231 3080435

Bulgaria Branch

25, Petar Dertliev blvd
1324 - Sofia
BULGARIA
Tel.: +35 929 483960
Fax: +35 929 483990

Romania Branch

270d, Turnu Magurele str. Sector 4
Cavar center - Bucharest
ROMANIA
Tel.: +40 214 050751
Fax: +40 214 050753

