AQUASNAP PLUS Reversible

Chillers/Heat pumps

30AW

Monobloc inverter

COMPACT, RELIABLE AND EFFICIENT

Carrier®

AQUASNAP PLUS Reversible

Compact, reliable and efficient

The new AquaSnap PLUS chillers and reversible heat pumps were designed and tested to address the specific needs of residential and light commercial buildings.

Carrier engineers were able to incorporate reliable quality components in its compact chassis including one of the most advanced electronic inverter controls in the industry.

The 30AW boasts impressive energy efficiency and can be easily matched with the wide range of Carrier terminal fan coil units.

- Residential homes
- Mid-size apartments
- Shops and laboratories
- Doctor's surgeries
- Family hotels
- Offices and waiting rooms

DC Inverter

Power at peak load conditions combined with efficiency for standard operation

Patented fan design

Innovative blade profile to maximise the supply air flow

More than a heat pump

AquaSnap PLUS heat pumps offer the ideal solution for a wide range of applications; in a new building, a refurbishment project or integrated with existing equipment. Carrier experts always provide the right system.

Dual-energy applications

The reversible AquaSnap PLUS heat pump can be integrated with existing heat sources. Simply define the parameters for switching to an alternative heat source and enjoy continuous operation with increased savings and optimum comfort in all weather conditions.

COLD/HOT-WATER PRODUCTION
- Heat pump/chiller

INTEGRATION
- Hydronic module
- Boiler
- Dehumidifier

DISTRIBUTION
- Under-floor systems
- Radiators
- Fan coils

CUSTOMISATION
- Solar panels
- Swimming pool heaters
- Domestic hot water production

Advanced technology

Brazed plate heat exchanger

High efficiency, with anti-corrosion protection

Pulse modulating valve

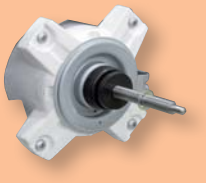
Electronically optimises the refrigerant flow in the circuit

Twin-rotary compressor

Two rotary compression cylinders, offset by 180° and a brushless DC motor with a perfectly balanced shaft

DC Fan motor

Brushless, vibration-free DC motor for increased fan performance and reliability



GMC Controller

Continuously analyses water, ambient conditions and customer inputs to provide the correct operating parameters

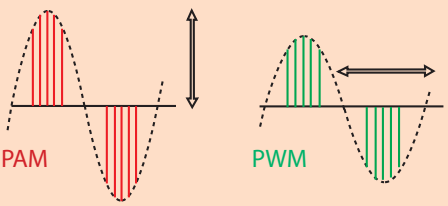
INVERTER Technology

COP>3.90
EER>3.60
ESEER>4.30

Carrier DC inverters deliver improved reliability and optimised energy efficiency, from 20 up to 120% of nominal capacity. Carrier's exclusive hybrid DC inverter technology, used in the AquaSnap PLUS heat pump, combines two distinct electronic management logics (PAM and PWM) to optimise compressor operation in all operating conditions.

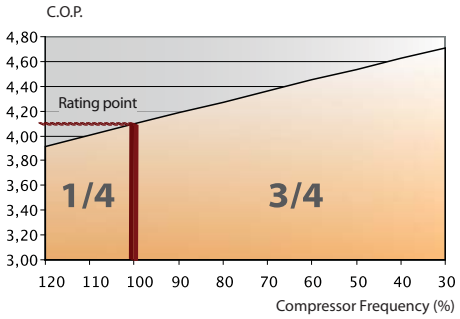
Pulse Amplitude Modulation (PAM) of the direct current drives the compressor at maximum load conditions (start-up and peak load conditions), increasing voltage at fixed frequency. The compressor works at high speed to rapidly achieve the desired temperature.

Pulse Width Modulation (PWM) of the direct current drives the compressor at part load conditions, adjusting frequency at fixed voltage. The compressor speed is fine-tuned and the system provides high-level comfort without temperature fluctuations.



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

The AquaSnap PLUS reversible heat pump and chiller offers an exceptionally high energy efficiency ratio both in cooling (EER) and heating (COP). This translates into substantial savings for the user.
With their low energy consumption the 30AW units can also qualify for local tax reductions and incentive programmes in all EU countries.
The seasonal efficiency (at part load) of the AquaSnap PLUS reversible heat pump is one of the highest in the industry.



Energy-efficiency class A for size 06 in under-floor heating applications.

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 inverter technology has one of the highest efficiency ratios.

GMC controller

The platform has 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

Comfort

Hybrid DC inverter technology modulates the compressor speed to match the load to give stable and controlled temperatures without fluctuations.
Heating on cold days with outside temperature down to -20°C.
Energy-efficient cooling during the summer.

Low sound levels

In addition to the use of the twin-rotary compressor, particular attention was given to noise elimination or reduction in all the moving parts. This led to a new propeller fan shape, dual insulation for the compressor and a new damper for the vibrating components.

Domestic hot water

The leaving water temperature of up to 60°C is ideal for hot water for domestic use.

User interfaces

33AW-CSI
Programmable thermostat

The new ComfortTM series user interface has a large display to show all system settings and operating parameters plus extended features like schedule timer, silent mode and pre-set operating programs. Auto-diagnosis and automatic configuration programs guide the technicians during commissioning and servicing.

Touch 'N' Go

This unique feature on the remote control is a revolutionary simple programming option - literally, touch and go to immediately get the desired comfort settings from the system (Home, Away, Sleep).

33AW-RCI
Remote controller

User-friendly remote controller to manage the main unit functions: cooling, heating and Eco mode. Small and unobtrusive LEDs indicate the unit status. LEDs are also used to signal possible faults during the auto-diagnosis tests.

Carrier

Installation made easy

Hydronic module

The 30AW version with hydronic kit (pump, expansion vessel, automatic purge valve and water pressure relief valve) increases the flexibility and ease of installation.

Easy access to all internal components - simply remove three screws to open the front panel and gain access to all main components for regular checks and maintenance of refrigerant pipes, control box, electrical connections, compressor hydronic kit and other key internal components. Water and drain connections are easily accessible from the rear of the unit.

Servicing and commissioning are facilitated by routines available on the user interface.

Dealer Service Tool for remote monitoring and parameter setting via a PC.

Handles
For easy transportation

3 wires
Fast electrical connections

Minimum operating weight

Reduced footprint

Compatible with all Carrier fan coil units

42GW
Cassette

Safety and performances certified by independent organisations

The AquaSnap PLUS heat pumps use air as a primary energy source. This results in reduced use of natural resources and reduced CO2 emissions to the atmosphere.

Quality Management Systems

The United Technologies ACE system guarantees the highest manufacturing standards.
Every unit undergoes a set of multiple tests at different stages on the production line for circuit leakage, electrical conformity, correct water and refrigerant pressure.

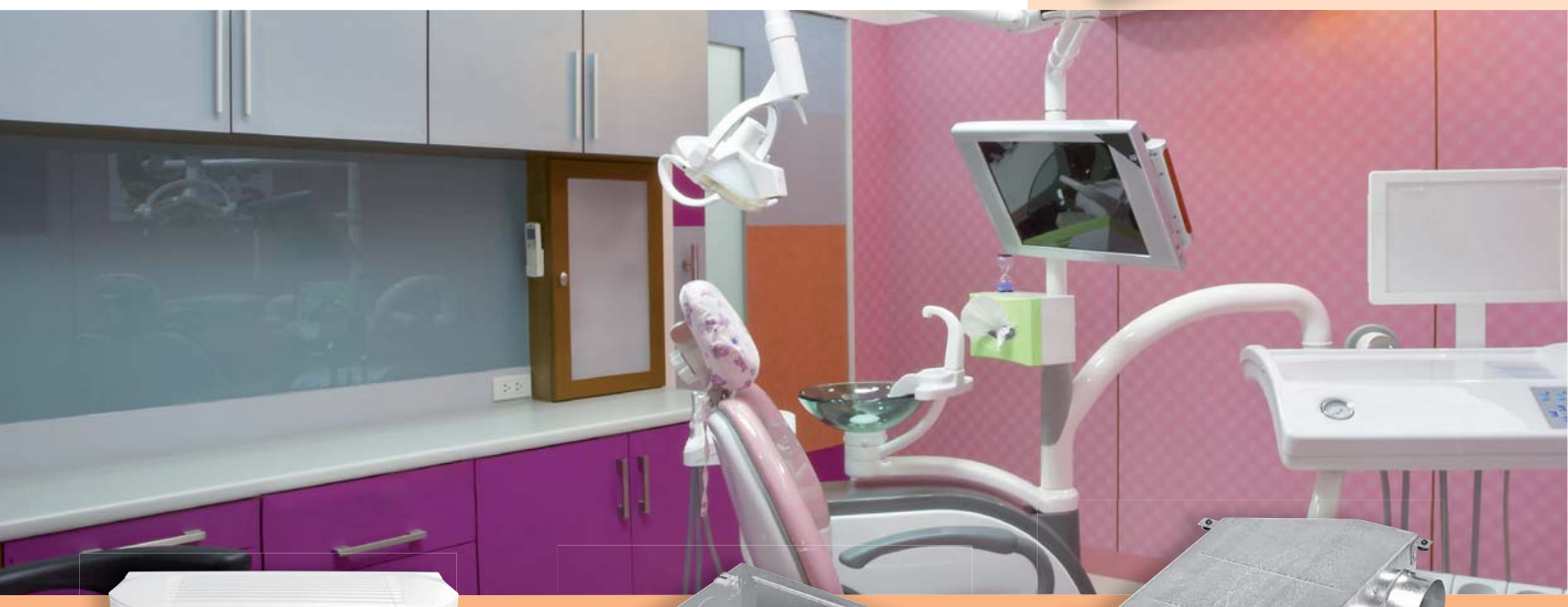
All unit components are free from any hazardous substances and specifically designed to operate effectively with chlorine-free refrigerant R-410A, which has an Ozone Depleting Potential (ODP) of zero.

The use of high-quality parts and components guarantees the overall quality and reliability of the 30AW AquaSnap PLUS unit. The hybrid DC compressor with its twin-rotary cylinders reduces the stress on the parts, and therefore increases unit operating life.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

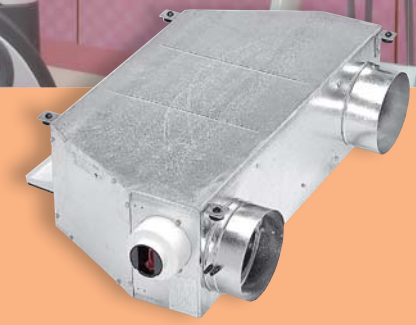
Recyclable packaging

Carrier is committed to reduce the amount of polluting material and this is reflected in the design of the unit packaging. The material used to protect the unit during its transport is 100% recyclable.



42N
Floor and under-ceiling

42DW/42EM
False ceiling



42BJ/42GR
Suspended ceiling

Carrier

Physical data

30AW		004	006	008	012	015
Data at Eurovent LCP/A/CHF conditions*						
Nominal heating capacity	kW	4.1	5.8	7.2	11.9	14.5
Power input	kW	1.01	1.37	1.82	3.01	3.57
COP	kW/kW	4.05	4.24	3.95	3.94	4.06
Eurovent class, heating		A	A	B	B	A
Nominal cooling capacity	kW	4.9	7.0	7.8	13.5	16
Power input	kW	1.21	1.92	1.98	3.68	4.20
EER	kW/kW	4.05	3.66	3.95	3.67	3.81
Eurovent class, cooling		A	B	A	B	A
Data at Eurovent LCP/A/AC conditions**						
Nominal heating capacity	kW	3.9	5.8	7.4	12.9	14
Power input	kW	1.22	1.90	2.32	4.26	4.36
COP	kW/kW	3.2	3.06	3.18	3.03	3.21
Eurovent class, heating		A	B	B	B	A
Nominal cooling capacity	kW	3.3	4.7	5.8	10.2	13
Power input	kW	1.13	1.60	1.97	3.46	4.47
EER	kW/kW	2.91	2.95	2.95	2.96	2.91
ESEER part-load performance	kW/kW	4.5	4.6	4.4	4.3	4.4
Eurovent class, cooling		B	B	B	B	B
Data at ECOLABEL LCP/A/CHF conditions						
Nominal heating capacity ***	kW	3.5	3.9	3.4	7.3	10.2
Power input	kW	1.13	1.23	1.31	2.90	3.29
COP	kW/kW	3.10	3.10	3.10	3.10	3.10
Data at ECOLABEL LCP/A/AC conditions						
Nominal heating capacity ****	kW	3.4	3.7	2.8	7.7	10.20
Power input	kW	1.31	1.42	1.48	3.42	3.92
COP	kW/kW	2.6	2.60	2.60	2.60	2.60
Operating weight	kg					
Unit without hydronic module		56	58	68	99	124
Unit with hydronic module		59	61	71	105	130
Refrigerant		R-410A	R-410A	R-410A	R-410A	R-410A
Compressor		DC twin-rotary	DC twin-rotary	DC twin-rotary	DC twin-rotary	DC twin-rotary
Expansion valve		PMV	PMV	PMV	PMV	PMV
Hydronic circuit						
Net water volume	l	0.8	0.8	1.0	2,3	2.3
Expansion tank volume	l	2	2	2	3	3
Maximum water-side operating pressure	kPa	300	300	300	300	300
Water pressure drop, X version (CHF)	kPa	16	9.5	14.5	26.0	33
Available static pressure, H version (AC)	kPa	4.7	43	40	45	30
Water connections, inlet/outlet (MPT gas)	in	1	1	1	1	1
Fans		Propeller fans	Propeller fans	Propeller fans	Propeller fans	Propeller fans
Quantity/diameter	mm	1/495	1/495	1/495	2/495	2/495
Number of blades		3	3	3	3	3
Sound levels						
Sound power level, heating‡	dB(A)	62	62	64	67	68
Sound power level, cooling††	dB(A)	64	64	65	68	69
Sound pressure level, heating‡	dB(A)	42	42	44	47	48
Sound pressure level, cooling††	dB(A)	44	44	45	48	49

The water heat exchanger fouling factor is 0,18 x 10-4 (m^2 K)/W for all conditions.

* Standard Eurovent LCP/A/CHF conditions in heating mode: water heat exchanger entering/leaving water temp. 30°C/35°C, outside air temp. 7°C db/6°C wb.
Standard Eurovent LCP/A/CHF conditions in cooling mode: water heat exchanger entering/leaving water temp. 23°C/18°C, outside air temp. 35°C. Performances measured in accordance with EN 14511.

** Standard Eurovent LCP/A/AC conditions in heating mode: water heat exchanger entering/leaving water temp. 40°C/45°C, outside air temp. 7°C db/6°C wb.
Standard Eurovent LCP/A/AC conditions in cooling mode: water heat exchanger entering/leaving water temp. 12°C/7°C, outside air temp. 35°C. Performances measured in accordance with EN 14511.

*** Ecolabel LCP/A/CHF conditions in heating mode: water heat exchanger entering/leaving water temp. 30°C/35°C, outside air temp. 2°C db/1°C wb. Performances are in accordance with EN 14511.

**** Ecolabel LCP/A/AC conditions in heating mode: water heat exchanger entering/leaving water temp. 40°C/45°C, outside air temp. 2°C db/1°C wb. Performances are in accordance with EN 14511.

† Conditions in heating mode: entering/leaving water temperature 55°C/a, outside air temperature 7°C db/6°C wb. Performances are in accordance with EN 14511.

‡ Based on the following conditions: entering/leaving water temperature 35°C/30°C, outside air temperature 7°C.

†† Based on the following conditions: entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.
Note: The sound pressure level is measured in a hemisperic field at 4 m distance from the unit.

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