



THE HYDRONIC SOLUTION
Aquasmart

HYDRONIC SYSTEM

AQUASMART

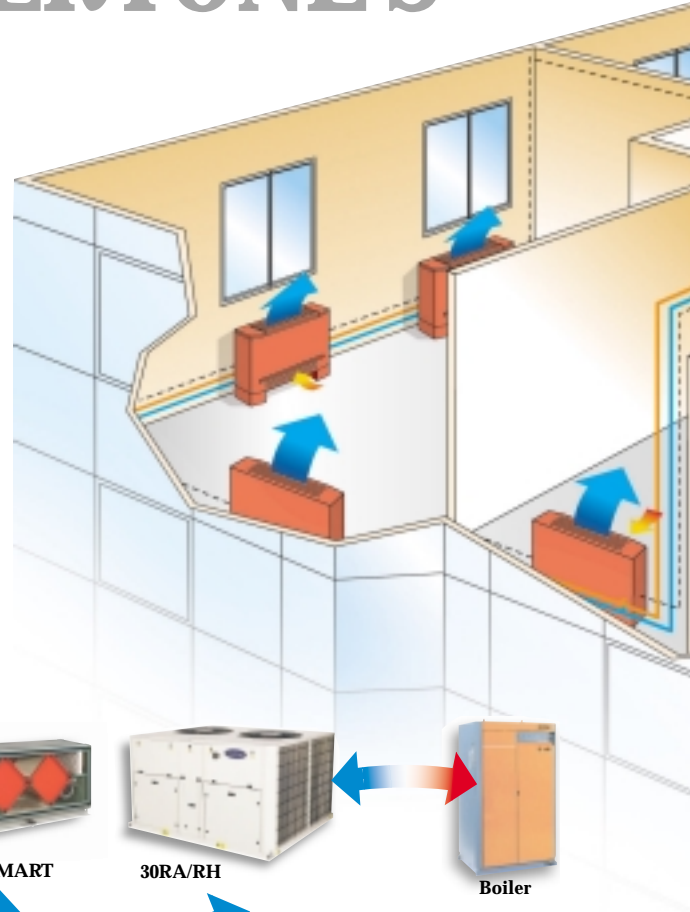


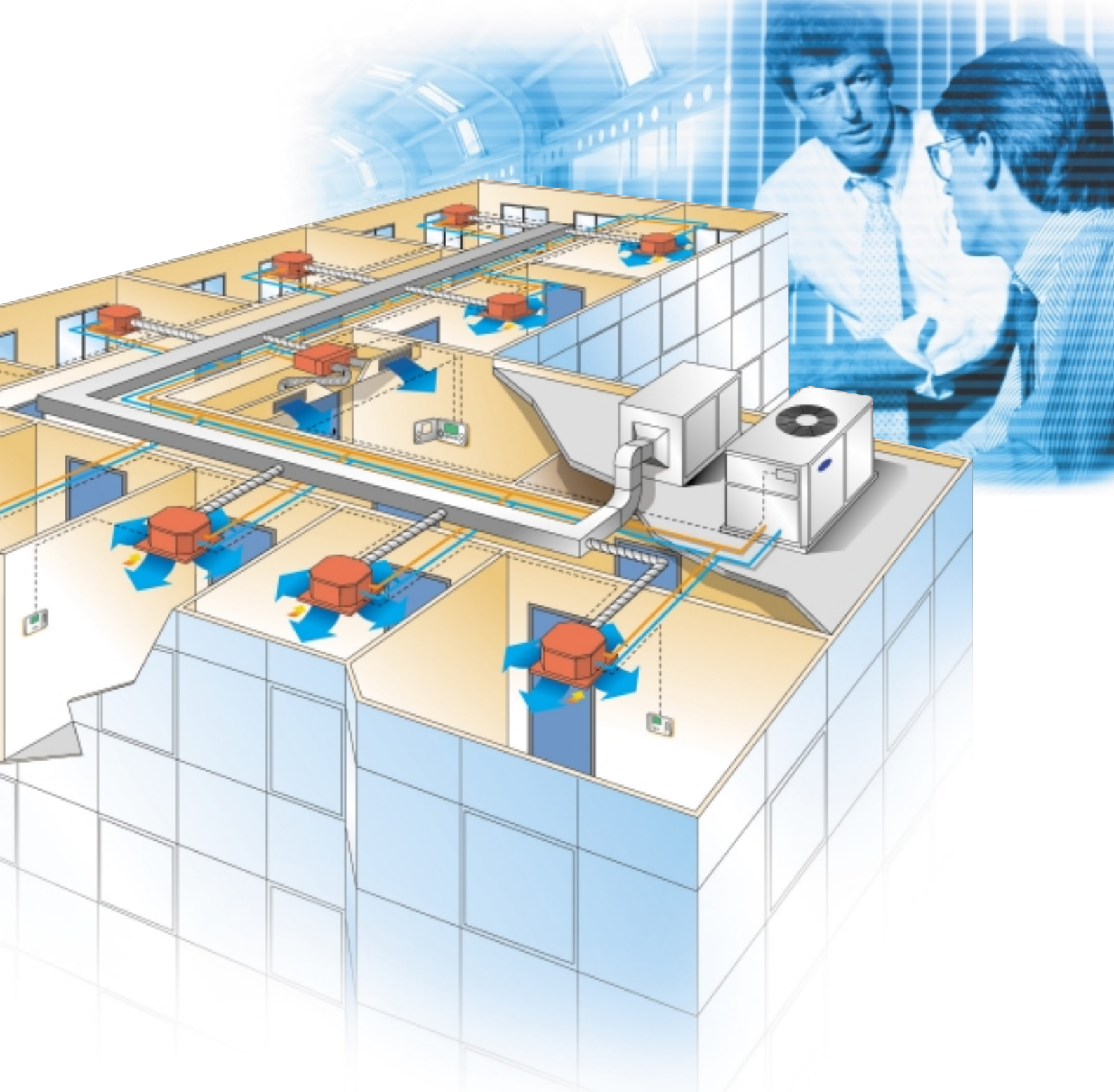
COMPLETE COMFORT
FROM ONE SYSTEM

WE ARE TAKING EVERYTHING INTO CONSIDERATION TO OPTIMISE EVERYONE'S COMFORT

For Carrier it would be unthinkable to design a system without considering the full suitability and compatibility of all the elements. Therefore we have developed a system that ensures compatibility during all stages: building design, installation and operation. Each element is studied together with the other elements. In fact, all components used speak the same language: A common language for a unique design.

This way there is no risk of mis-communication or errors when malfunctions occur. IS THIS NOT THE "SINE QUA NON" THE ULTIMATE IN COMFORT FOR EACH AND EVERYBODY?





AQUASMART SYSTEM

SYSTEM INTEGRITY THROUGH COMPATIBILITY OF ITS COMPONENTS

In order to make your work easier, each system component has been designed for fastest, easiest assembly, connection and operation. No more searching for components from different suppliers - a single partner for design, ordering and invoicing. A complete new standard for trouble-free operation of your installation!

Selection of each element is facilitated by the powerful and user-friendly selection program, and remote monitoring of system operation reduces diagnostic and intervention time.

This offers you round-the-clock service.

OUR MAIN OBJECTIVE: YEAR-ROUND INDIVIDUAL COMFORT

Carrier has always guaranteed its customers complete confidence, whatever the weather.

Different seasons and unexpected temperature differences are no problem. The Aquasmart system intelligently balances weather conditions and your comfort to optimise your well-being. Simplicity with complete peace-of-mind!



SPRING, SUMMER, AUTUMN OR WINTER - AQUASMART ENSURES IMMEDIATE RESPONSE

Efficiency that is shown in all aspects of air conditioning. Whether the thermometer falls below -10°C or exceeds the 45°C threshold, the Aquasmart system responds by rapidly adjusting the air conditioning to the environment and to your requirements.

AUTOMATIC COOLING/HEATING CONTROL

Based on the demands of all occupants, the Aquasmart system controls the change-over from hot water to cold water production. Depending on the outside conditions, the Aquasmart system automatically adjusts the leaving water temperature in heating or cooling mode. Perfect control!



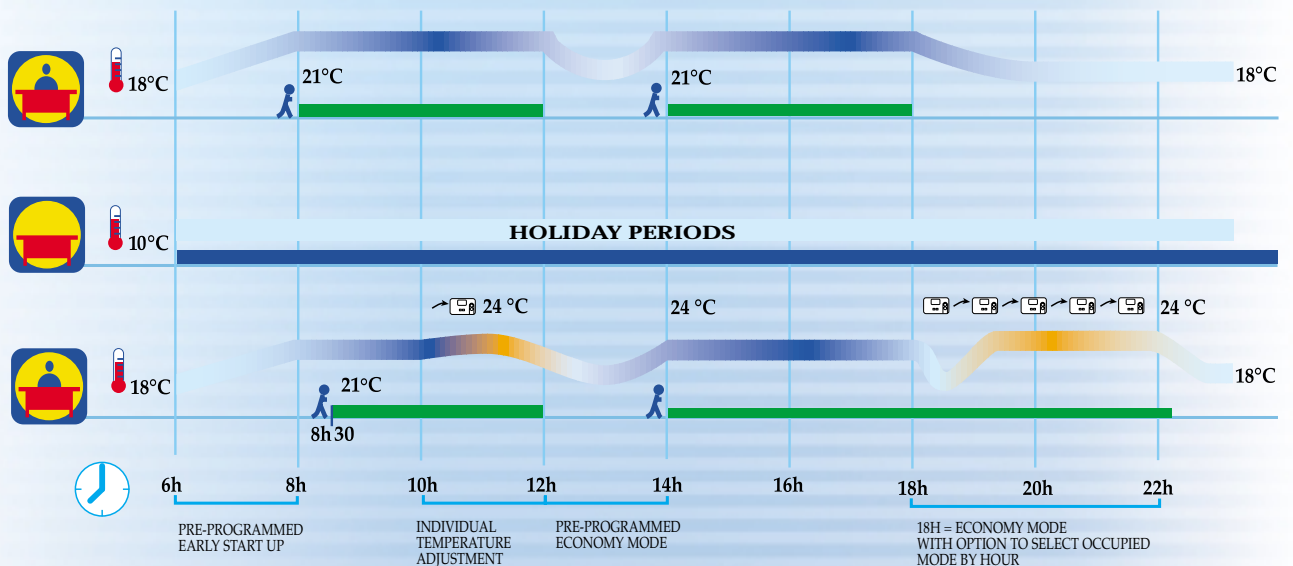


PROGRAMMED ENERGY SAVINGS

With the Aquasmart system,

control of energy consumption control becomes child's play. In fact, a simple, user-friendly program permits control of up to 128 terminals in 32 zones. Thus each zone has the desired temperature, taking into consideration the expectations of the occupants and the activities of the organisation. Minimum and maximum temperature values and fan speeds are individually adjustable by the occupant. This way everybody finds optimal comfort – without paying too much.

FROM CONTROL TO INDIVIDUAL CHOICE



ONE-DAY ENERGY CHART

00:00

Aquasmart begins to calculate the heating and cooling requirements to achieve the programmed temperature around 8.00 o'clock when the employees arrive. Comfort conditions set in.

8:00 - 12:00

Each zone maintains a temperature of 21°C. Everyone can change this setting until noon.

12:00 - 14:00

During the lunch-time break an economy mode is programmed, but during this time the occupant can reselect the occupied mode.

14:00 - 18:00

The occupied mode restarts, applying the data selected by each occupant.

18:00 - 8:00

The economy mode again takes effect. But each occupant can at any time reselect the occupied mode for one hour, if he/she wants to stay longer in the office. When he/she leaves, the economy mode is again activated.

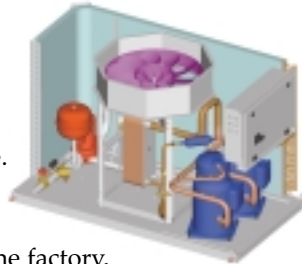


AQUASNAP, THE BEST IN TECHNOLOGY

► HOT/COLD WATER PRODUCTION

THE "ALL-IN-ONE" CONCEPT SAVES TIME

Simplify your life and reduce installation time. All Aquasnap chillers and heat pumps are supplied complete with a hydronic module. This packaged unit is tested and installed in the factory, and also incorporates the refrigerant system, a water pump, an expansion valve, a water flow switch and the electrical wiring. Everything is built-in. All you need to do is bolt down, plug in and you are ready! Child's play.



SUPER-QUIET OPERATION

With the scroll compressor and the high-technology fans everything is designed for quiet, discreet operation. At night-time, when the thermal load decreases, the fans adjust their speed for even quieter operation. Good night!



REAL SPACE SAVINGS

Reduced weight, low profile, integrated hydronic components - the Aquasnap offers the ultimate in compactness for minimum space requirements. Moreover, as the compressor is protected by the auto-adaptive Carrier-patented Pro-Dialog control system, a buffer tank is not required. And this means extra space and extra savings.

ECOLOGY AT NO EXTRA COST

Aquasnap was especially designed for the new ecological refrigerants: HFC 410A for the Junior range and HFC 407C for the more powerful units.

All Aquasnap chillers and heat pumps are harmless to the environment and the ozone layer. The solution for investment at no extra cost.

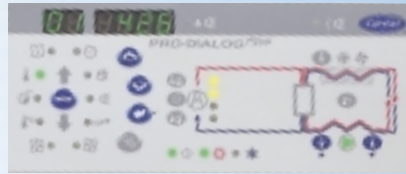


▶ CONTROL

All Aquasnap units are equipped with Pro-Dialog control, which combines high efficiency with great operating simplicity.

Pro-Dialog monitors all safety parameters and precisely controls the operation of compressor, fan and water pump for optimal energy usage. Based on the outdoor conditions Pro-Dialog adjusts the leaving water temperature and controls supplementary heating.

The Aquasnap chiller permanently communicates with the System Manager via a simple, three-wire communication bus.



The compact System Manager supervises, analyses and determines the equipment operating mode, based on the individual requirements of each occupant. Equipped with an 8-line matrix screen and a simplified keyboard with four menu keys, two up and down keys and four navigation keys, it ensures ease-of-use. It has two access levels, one for the installer with security access and the other for the building supervisor to permit interrogation and modification of the time schedules and the zone set points.

Within the limits set at installation, the CRC/IR user interface allows each occupant to modify fan speed, set point temperature, motorised grille louvres and to change over from the Comfort to the Eco mode and vice-versa at any time.

These simple and intuitive operations prevent misunderstandings that frequently require intervention from an installer.

▶ AIR DISTRIBUTION

The technologies of the state-of-the-art fan, heat exchanger, acoustics and terminal unit size reduction are complemented by the addition of an electronic control system, guaranteeing precise and reliable control of each component. Depending on its configuration, each terminal unit can be supplied complete with valves, electric heater, condensate pump and temperature sensors, all factory-installed and tested.

The electronic control is the same for each terminal unit type and configured and tested at the end of the assembly line.



GUARANTEED EFFICIENCY FROM -10°C TO +45°C

No additional accessories!

With the Pro-Dialog control system with intelligent fan speed control all Aquasnap liquid chillers operate down to -10°C.

Whatever the climate, the Aquasnap 30RH heat pumps ensure normal hot water production.

The patented, auto-adaptive Pro-Dialog control guarantees optimal reliability and increased heating capacity as well as perfect defrost cycle control.

THE SYSTEM SOLUTION FOR ANY APPLICATION



AQUASNAP JUNIOR 30RA/30RH
5-13 kW



AQUASNAP 30RA/30RH
17-33 kW



AQUASNAP 30RA/RH
40-240 kW



AQUASNAP DUCTABLE 30RY/RYH
17-80 kW



AQUASNAP 30RW
20-300 kW



**SYSTEM
MANAGER**

Always led by your requirements, Carrier offers a multitude of combinations that allow you to put together the solution that most suits your building type and your environment. By combining chillers/heat pumps and terminal units as required by you and in accordance with your architectural and budgetary constraints, Carrier always offers the solution most suited to your requirements.



HIGH-WALL 42WH



**FAN COIL
IDROFAN 42N**



**CASSETTE
42GW**



AQUALIA 42EL



Wired CRC



42JW

FLEXIBILITY FOR COMPLETE PEACE-OF -MIND

Carrier offers all types of chilled-water terminal units to meet your individual requirements: cassettes, fan coil units, ductable units and high-wall units, available as 2-pipe change-over, 2-pipe/2-wire and 4-pipe versions, equipped and factory-tested with the same electronic controls, valves and sensors.

Simplified as much as possible, installation is limited to the unit water connections and the installation of the communication bus.

The real brain of the Aquasmart, the System Manager, is equipped with an intelligence that is comparable to that of a centralised Building Management System.

It also permits complete configuration of your installation – from automatic addressing of each terminal unit to individual setting of each element.

If required, the system supervisor can modify time schedules and set points, and display the alarms for each component.

The CRC user interface is equipped with a screen and a four-key keyboard, and offers simple access for the comfort control of each occupant.

AQUASNAP

30RA 005-033 AIR-COOLED LIQUID CHILLERS

30RH 005-033 AIR-TO-WATER HEAT PUMPS

COMPACT UNITS WITH THE SAME BENEFITS AS LARGE UNITS

Integrated hydronic module, quiet scroll compressor, ecological refrigerants, year-round operation in standard mode, Pro-Dialog controls, these "little ones" have everything the larger ones have.

With their compact size (width less than 500 mm) and their horizontal air discharge, they are ideal for residential and small commercial applications. They are easy to install close to the zones to be air conditioned – e.g. on a balcony.

AQUASNAP

30RA 040-240 AIR-COOLED LIQUID CHILLERS

30RH 040-240 AIR-TO-WATER HEAT PUMPS

EVERYTHING STANDARD - NOTHING OPTIONAL

With their compact dimensions (only 1329 mm high for 30RA/RH 040-160), quickly connected by a simple 3-phase cable without neutral, and the low operating noise of the scroll compressor and Flying Bird fan, these units are ideal for applications in new and refurbished buildings.



AQUASNAP THE A

30RA / 30RH		005	007	009	011	013	017	021	026	033	
Cooling capacity 30RA	kW	5.1	6.7/6.5	7.6	9.6	11.2	17.7	21.6	25.8	31.7	
Cooling capacity 30RH	kW	5	6.7/6.3	7.2	9.6	11.5	16.7	21.6	24.6	29	
Heating capacity	kW	5.7	7.5/7.7	8.7	10.1	13.8	18.8	24.8	27.8	34	
Refrigerant		HFC-410A				HFC-407C					
Compressor: type/quantity		Scroll/1									
Water pump		Three-speed									
Water pump available pressure	kPa	46	35/37	50	34	34	142	125	155	142	
Sound pressure level	dB(A)	36/34*	40/39*	41/43*	42/43*	44/45*	42/45*	43/47*	46/47*	46/48	
Sound power level	dB(A)	64/62*	68/67*	69/71*	70/71*	72/73*	70/73*	71/75*	74/75*	74/76*	
Length/depth	mm	800 x 300				1328 x 478		1503 x 478			
Height	mm	590/803*	590/803*	803	1264	1264	1383	1587	1587	1587	
Weight	kg	71/83*	73/85*	85/88*	108/112*	118/123*	220/255*	240/285*	280/315*	315/345*	
Power supply	V-ph-Hz	230-1-50		230-1-50/400-3-50		400-3-50					

* Only for 30RH - The above data refer to eurovent conditions

30RA		040	050	060	070	080	090	100	120	140	160	200	240	
Cooling capacity	kW	39.4	49	57	67	79	89	97	115	135	157	202	245	
Cooling capacity	kW	38.3	44.5	54	66	71	83	92	108	132	142	179	210	
Heating capacity	kW	39.2	47.3	58	67	80	87	98	117	133	160	194	229	
Refrigerant		HFC-407C												
Compressor: type/quantity		Scroll/1	Scroll/2			Scroll/3			Scroll/4		Scroll/5		Scroll/6	
Water pump		Single monocell pump (dual pump option)												
Water pump available pressure	kPa	140	140	130	120	150	120	110	170	150	120	190	230	
Sound power level	dB(A)	82	82	82	86	87	85	85	85	89	90	91	92	
Length x depth x height	mm	2071 x 1081 x 1329					2071 x 2278 x 1329				3351 x 2279 x 1674			
Weight (30RA/RH)	kg	526/566	584/624	597/647	611/661	631/691	1093/1183	1106/1196	1205/1238	1212/1312	1248/1368	2133/2233	2305/2405	
Power supply	V-ph-Hz	400-3-50												

The above data refer to eurovent conditions



AQUASNAP

30RY 017-080 DUCTABLE LIQUID CHILLERS FOR INDOOR INSTALLATION

30RYH 017-080 REVERSIBLE DUCTABLE HEAT PUMPS FOR INDOOR INSTALLATION

DUCTABLE AQUASNAP VERSION

Neighbourhood constraints, limited roof space, architectural or aesthetic considerations: with only 870 mm width (30RY/RYPH 017-033), the Aquasnap is ideal for installation in a plant room. The chillers are installed inside the building, a quiet high-pressure fan permits ducting of the air supply and return. The axial fan is so simple to use, that it does not need to be adjusted after installation, nor does the belt need replacing. This ductable unit comes complete with everything!

AQUASNAP

30RW/RWA 020-300 WATER-COOLED LIQUID CHILLER

EASIER, AS EVERYTHING IS BUILT-IN

The intelligent design of the Aquasnap water-cooled liquid chiller includes all hydronic and control components to offer unrivalled installation simplicity: evaporator water pump, condenser water pump, expansion tanks, filters, safety accessories and even the drycooler fan control ... everything is incorporated in the chiller.

ALL-IN-ONE RANGE

30RY / 30RYH		017	021	026	033	040	050	060	070	080
Cooling capacity 30RY	kW	18.6	23.1	25.8	31.7	39.4	50	58	67	79
Cooling capacity 30RYH	kW	17.8	22.4	24.1	31.3	37.8	44.7	56	65	76
Heating capacity	kW	18.3	22.1	25.6	34.5	37	48.3	55	62	78
Refrigerant		←				R407C	→			
Compressor: type/quantity		←				Scroll/1	→			
Pump: type		←				Single multicell pump	→			
Water pump available pressure	kPa	230	200	190	150	140	140	130	120	150
Expansion tank volume	l	←				8	→			
Max. pressure available (fan)	Pa	←				100	→			
Length	mm	←				2058	→			
Width	mm	←				962	→			
Height	mm	←				1351	→			
Weight (30RY/RYPH-single pump)	kg	386/410	416/440	436/460	451/475	510/550	572/612	587/627	638/688	675/736
Power supply	V-ph-Hz	←				400-3-50	→			

The above data refer to eurovent conditions

30RW/RWA		020	025	030	040	045	060	070	080	090	110	120	135	150	160	185	210	245	275	300								
Cooling capacity (30RW)	kW	20.2	25.9	29.9	39.7	45.3	56	70	80	91	108	123	139	149	162	183	216	247	284	310								
Refrigerant	kW	←				R407C	→																					
No. of refrigerant circuits	kW	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2								
Compressor: type/quantity		←				Scroll/1	→				←				Scroll/2	→				←				Scroll/4	→			
Evaporator		←										Stainless steel welded plates	→															
Evaporator water pump	kPa	←										Monocell centrifugal	→															
Evaporator water pump pressure	kPa	136	149	140	146	148	189	182	172	160	185	170	152	142	211	200	207	187	168	144								
Condenser		←										Stainless steel welded plates	→															
Condenser water pump		←										Variable speed, monocell, centrifugal	→															
Condenser water pump pressure	kPa	184	203	190	201	204	197	182	164	141	205	196	188	184	180	159	203	183	170	148								
Length	mm	←				1204	→				←				2004	→				←				2950	→			
Width	mm	←				695	→				←				895	→				←				922	→			
Height	mm	←								1750	→								←				1993	→				
Operating weight (30RW)	kg	377	396	399	432	452	717	748	789	815	959	1032	1052	1072	1404	1469	1697	1811	1897	1897								
Power supply	V-ph-Hz	←										400-3-50	→															

The above data refer to eurovent conditions

CASSETTE

42GW

HIGH PERFORMANCE- QUIET OPERATION

Considerably simplified installation.

Extra slim (298 mm) and easy to handle, the 42GW can be integrated into false ceilings without problems. It offers more space, less weight and less installation time. New air quality – new quality of life. The 42GW cassette was designed with 10% fresh air intake.

This benefit facilitates room air renewal and improves its quality. Optional electrostatic and activated carbon filters contribute to exceptional air quality.

Simplified maintenance. With the removable grille one person alone can carry out all maintenance and service tasks for all components.



42GW	2 Pipe						4 Pipe					
	42GWC 004	42GWC 008	42GWC 010	42GWC 012	42GWC 016	42GWC 020	42GWD 004	42GWD 008	42GWD 010	42GWD 020		
	2 Pipe + Electric heater											
	42GWE 004	42GWE 008	42GWE 010	42GWE 012	42GWE 016	42GWE 020						
Total cooling capacity	kW	2.4	4.0	4.7	5.9	8.3	11.0	1.9	3.4	4.0	9.8	
Sensible cooling capacity	kW	2.3	3.3	3.9	4.8	6.3	8.6	1.8	2.9	3.4	7.9	
Water flow, cooling	l/s	0.11	0.19	0.22	0.28	0.40	0.53	0.09	0.16	0.19	0.43	
Water pressure drop, cooling	kPa	9	12	20	19	14	25	8	12	16	30	
Heating capacity	kW	3.8	5.5	6.6	8.5	10.6	14.4	1.9	4.8	5.4	9.0	
Electric heaters (42GWE models)	W	1.5	2.5	2.5	3.0	3.0	3.0	-	-	-	-	
Fan		← Centrifugal →										
Air flow	H	l/s	184	194	236	283	338	468	184	194	236	468
	M	l/s	125	136	167	203	242	315	125	136	167	315
	L	l/s	100	86	131	150	147	178	100	86	131	178
Power input	W	70	85	95	85	120	200	70	85	95	200	
Sound pressure level	dB(A)	24/29/40	23/34/43	33/39/48	25/31/40	29/40/47	33/46/54	24/29/40	23/34/43	33/39/48	33/46/54	
Sound power level	dB(A)	33/38/49	32/43/52	42/48/57	34/40/49	38/49/56	42/55/63	33/38/49	32/43/52	42/48/57	42/55/63	
Nominal dimension (H X L X D)	mm	← 298 x 575 x 575 →			← 298 x 825 x 825 →			← 298 x 575 x 575 →		← 298 x 825 x 825 →		
Weight	kg	21.5	22.5	22.5	46	48	51	21.5	22.5	22.5	51	
Power supply	V-ph-Hz	← 230-1-50/400-3-50* →										

The above data refer to Eurovent conditions. Cooling conditions: 27°C dry bulb / 19°C wet bulb air temperature; 7°C/12°C entering and leaving water temperature at high fan speed.

Heating conditions (2 pipes): 20°C entering air temperature, 50°C entering water temperature, same water flow rate as in cooling, at high fan speed.

Heating conditions (4 pipes): 20°C entering air temperature, 70°C/60°C entering and leaving water temperature at high fan speed.

Sound pressure is measured in a 100 m³ room with 0.5 s reverberation time.

*Required for electric heaters only.



FAN COIL UNIT

42N

PERFORMANCE AND FLEXIBILITY COMBINED

Discreet and elegant.

The 42N has a modern design that blends in harmoniously with most room decors.

Improved performance!

Available with two and four pipes, the 42N offers additional capacity for the same size, since it is equipped with a high-performance coil.

Vertical or horizontal!

In order to facilitate installation the 42N can be installed vertically or horizontally without field modification.

42N		16*	25*	33*	43*	50*	60	75
Total cooling capacity	kW	1.43	2.18	3.14	4.04	4.42	5.87	7.26
Sensible cooling capacity	kW	1.11	1.82	2.52	3.28	3.55	4.88	6.14
Water flow (cooling)	l/s	0.07	0.10	0.15	0.19	0.21	0.28	0.35
Water pressure drop (cooling)	kPa	18	12	10	18	21	19	18
Heating capacity (high fan speed)	kW	2.02	3.05	4.30	5.79	6.24	7.85	9.80
Electric heaters L/H	W	500/1000	◀ 1000/2000 ▶			◀ 1500/3000 ▶		
Fan type			◀ Tangential* ▶				◀ Centrifugal ▶	
Air flow	H l/s	90	131	158	227	242	339	438
	M l/s	69	99	128	179	196	272	328
	L l/s	43	72	69	111	128	175	228
Power input	W	32	32	44	57	69	113	164
Sound pressure level l/m/h	dB(A)	25/35/41	27/35/41	30/41/47	35/45/51	38/47/52	38/49/54	45/54/61
Sound power level l/m/h	dB(A)	33/43/49	35/43/49	38/49/55	43/53/59	46/55/60	46/57/62	53/62/69
Unit with cabinet - H x L x D	mm	657 x 830 x 220	◀ 657 x 1030 x 220 ▶		◀ 657 x 1230 x 220 ▶		◀ 657 x 1430 x 220 ▶	
Weight	kg	17	◀ 19 ▶		◀ 22 ▶		◀ 35 ▶	
Concealed units - H x L x D	mm	618 x 599 x 220	◀ 618 x 799 x 220 ▶		◀ 618 x 999 x 220 ▶		◀ 618 x 1199 x 220 ▶	
Weight	kg	13	◀ 15 ▶		◀ 16 ▶		◀ 28 ▶	
Power supply	V-ph-Hz				◀ 230-1-50/230-1-60 ▶			

The above data refer to Eurovent Conditions. Cooling conditions: 27°C dry bulb / 19°C wet bulb air temperature; 7°C/12°C entering and leaving water temperature at high fan speed. Heating conditions: 20°C air temperature, entering water temperature: 50°C, same water flow rate as in cooling condition test at high fan speed. Sound pressure is measured in a 100 m³ room with 0,5 s reverberation time.

* Also available with centrifugal fan

HIGH-WALL UNIT

42WH

IDEAL FOR RESIDENTIAL AND HOTEL APPLICATIONS

Discreet system integration.

Can be installed on any wall or above a door frame for perfect discretion.

Automatic temperature control. The 42WH has a standard cold draft prevention system in order to create the ideal conditions in the room. If the power supply is interrupted, the units restarts, without having to reset the operating parameters.

Easy to install and maintain. With the pre-equipped wall panel the 42WH is easy to install and maintain. Filter change is simplified by direct front access.



42WH		42WHC 016	42WHC 020	42WHC 028
Total cooling capacity	kW	1.43	1.65	2,1
Sensible cooling capacity	kW	1.08	1.35	1.95
Water flow rate (cooling)	l/s	0.068	0.079	0.100
Water pressure drop (cooling)	kPa	14/22*	19/30*	34/50*
Heating capacity	kW	1.94	2.3	3.2
Air flow rate (low-medium-high)	l/s	47/59/69	72/81/86	111/123/131
Power input	W	19	27	28
Sound pressure level (l/m/h)	dB(A)	21/26/31	29/33/35	35/38/40
Sound power level (l/m/h)	dB(A)	30/35/40	38/42/44	44/47/49
Weight, unit	kg	14.5	14.5	15
Weight, back panel	kg	5/4.5*	5/4.5*	5.5/4.5*
Power supply	V-ph-Hz	230-1-50		
Dimensions height x length x width	mm	290 x 800 x 145/190*		337 x 800 x 170/215*

* Value with valves installed.

Cooling conditions: air temperature 27°C db/19°C wb, entering and leaving water temperature 7°C/12°C at high fan speed.

Heating conditions, 2-pipe units: air temperature 20°C db, entering water temperature 50°C same water flow rate as in cooling, at high fan speed.

The data for the connection module correspond to the fully equipped version.

The sound pressure level is measured in a 100m³ room with 0,5 s reverberation time.

EUROVENT CERTIFIED PERFORMANCE



Carrier actively participates in the Eurovent certification programmes. Eurovent is an independent organisation that tests products and verifies the conformance between test results and data published by the manufacturer. Eurovent certification is an important guarantee for consultants and installers. They can be sure that a product with Eurovent certification will operate in conformance with the specifications and satisfy customer requirements.



Products & systems shown in this document are designed, manufactured and tested according to Quality Management System ISO 9001.

Order N°.: 18162-20-11/2003

Supersedes order N°.: 18162-20-10/2000

Manufacturer reserves the right to change any product specifications without notice



A member of the United Technologies Corporation family