

WATER-COOLED/CONDENSERLESS LIQUID CHILLERS



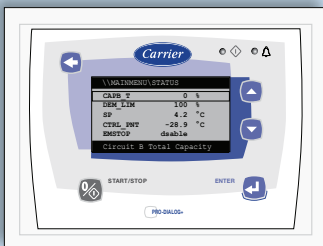
Air conditioning

AQUASNAP

30WG/30WGA

Options

- Very low temperature glycol solution (30WG)
- Soft starter
- Master/slave operation
- External disconnect handle
- Condenser insulation (30WG)
- Low or high-pressure fixed or variable-speed single-pump hydronic module, evaporator side
- Low or high-pressure fixed or variable-speed single-pump hydronic module, condenser side (30WG)
- JBus, BacNet and LON gateways
- Specific cooling control
- Low sound level
- Unit stackable
- Customer water connection at the top of the unit (30WG)
- Evaporator (30WG/30WGA) and condenser (30WG) screw or welded connection sleeves
- Remote user interface



Pro-Dialog+ operator interface

Features

- Eleven sizes with nominal cooling capacities from 23 to 95 kW and exceptionally high ESEER values.
- New generation of liquid chillers designed for commercial (offices, hotels etc.), residential (houses, apartments etc.) or industrial applications (low-temperature cooling).
- 30WG units offer Eurovent energy efficiency class B, and an ESEER of over 5.5 for dual-compressor units - one of the highest in its category.
- Condenserless version possible (30WGA) with remote condenser control box available as an option.
- R-410A refrigerant and scroll compressors.
- Compatible with Carrier 09 series drycoolers/remote condensers.
- Unique combination of high performance and functionality in an exceptionally compact chassis.
- Units include automatic condensing pressure control via three-way valve for optimised operation, even at low outside temperature.
- Reversibility by water flow inversion in the system.
- Pro-Dialog+ control and compatibility with the Aquasmart system
- Units available with connections at the top or at the rear.
- Easy installation: small footprint, ideal for refurbished buildings, allows access in very tight plant rooms.
- The variable water flow (VWF) technology of the variable-flow pump, optimises system operation and enhances energy efficiency.
- Standard low sound level allows installation in any building type.

Physical data

30WG/30WGA		020	025	030	035	040	045	050	060	070	080	090	
Air conditioning application as per EN14511-3 : 2011 – 30WG													
Nominal cooling capacity	kW	24.6	28.7	31.5	36.7	41.8	46.6	58.1	63.4	73.8	83.9	94.6	
EER	kW/kW	4.72	4.72	4.69	4.73	4.69	4.72	4.72	4.65	4.69	4.65	4.68	
Eurovent class		B	B	B	B	B	B	B	B	B	B	B	
Part load performance ESEER	kW/kW	5.10	5.09	5.03	5.05	5.03	5.07	5.83	5.90	5.79	5.99	5.93	
Air conditioning application (1) – 30WG													
Nominal cooling capacity	kW	24.7	28.8	31.6	36.9	42.0	46.8	58.3	63.6	74.0	84.1	94.8	
EER	kW/kW	4.93	4.94	4.93	4.96	4.93	4.96	4.90	4.82	4.88	4.84	4.87	
Part load performance ESEER	kW/kW	5.35	5.35	5.30	5.32	5.32	5.36	6.31	6.38	6.30	6.54	6.44	
Air conditioning application as per EN14511-3 : 2011 – 30WGA													
Nominal cooling capacity	kW	22.6	27.0	29.5	34.7	39.2	43.7	53.7	59.8	69.2	78.3	87.8	
EER	kW/kW	3.75	3.84	3.87	3.93	3.94	3.90	3.82	3.85	3.86	3.91	3.88	
Air conditioning application (1) – 30WGA													
Nominal cooling capacity	kW	22.7	27.1	29.6	34.8	39.4	43.8	53.8	59.9	69.4	78.4	88.0	
EER	kW/kW	3.80	3.91	3.94	4.00	4.02	3.98	3.86	3.89	3.91	3.95	3.93	
Operating weight 30WG/30WGA*	kg	191/164	200/171	200/171	207/177	212/180	220/185	386/321	392/324	403/332	413/339	441/354	
Compressors													
		Hermetic scroll 48.3 r/s											
Quantity		1	1	1	1	1	1	2	2	2	2	2	
Number of capacity stages		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 x depth x height	mm	600 x 1044 x 901						880 x 1474 x 901					
Refrigerant*													
		R-410A											
Control													
		Pro-Dialog+											
Evaporator													
		Direct-expansion plate heat exchanger											
Condenser (30WG only)													
		Plate heat exchanger											

NOTE: For the conditions please refer to page 31. 30WGA performance are given for an equivalent refrigerant piping length (without filter drier and valves) of 3 m.

* 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

30WG/30WGA		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, 30WG	A	98	142	142	147	158	197	163	165	174	188	233
Standard unit, 30WGA	A	98	142	142	147	158	197	160.7	161.8	170.2	183.4	226
Unit with electronic starter option, 30WG	A	53.9	78.1	78.1	80.9	86.9	108.4	100.1	102.1	108.9	117.9	144.4
Unit with electronic starter option, 30WGA	A	53.9	78.1	78.1	80.9	86.9	108.4	96.8	97.9	104.1	112.3	137.4
Maximum operating power input, 30WG**	kW	9.1	10.7	11.7	13.6	15	17	21.4	23.4	27.2	30	34
Maximum operating power input, 30WGA**	kW	8.7	10.2	11.3	12.5	14.2	16.1	20.4	22.6	25.0	28.5	32.2
Maximum operating current draw (Un), 30WG***	A	15.6	18.7	19.8	23.2	25.4	29	37.4	39.6	46.4	50.8	58
Maximum operating current draw (Un), 30WGA***	A	14.7	17.7	19.3	21.7	24.1	27.5	35.4	38.7	43.5	48.1	55.0

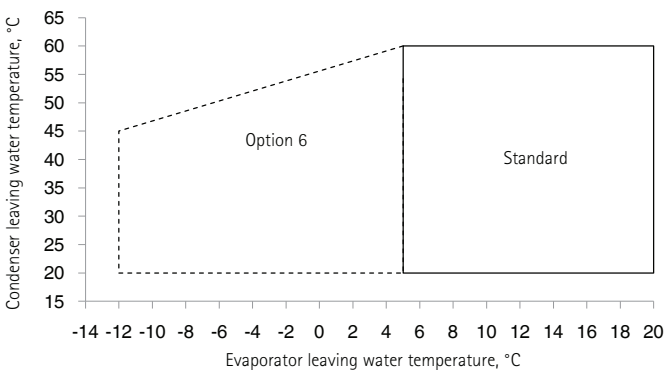
* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

** Maximum power input at the unit operating limits.

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

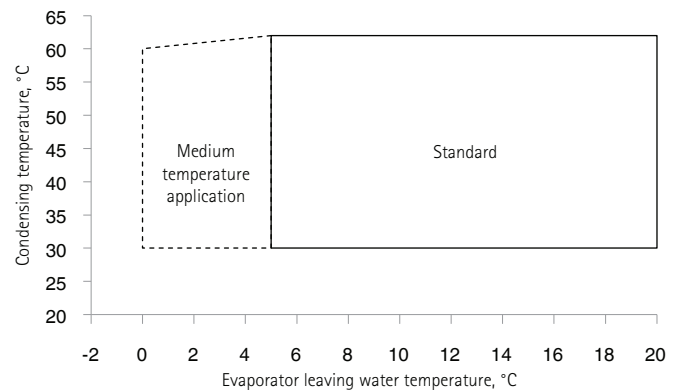
Operating range

30WG



— 30WG standard unit
 - - - 30WG unit with option 6 (brine)
 Option 6: Very low-temperature glycol solution

30WGA



— 30WGA standard unit
 - - - 30WGA unit for medium temperature application (≤ 25% glycol)

WATER-COOLED/CONDENSERLESS LIQUID CHILLERS WITH INTEGRATED HYDRONIC MODULE



Air conditioning

AQUASNAP

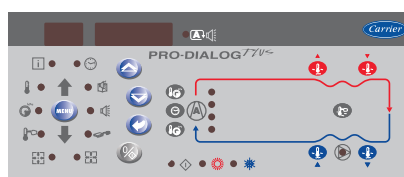
30RW

Options

- High-pressure single or dual pump, evaporator
- Condenser hydronic module with variable-speed single or dual pump
- Heat pump (hot-water control)
- Electronic starter for reduced start-up current
- RS485 communications and "CCN Clock Board" time schedule board
- Very low temperature glycol solution down to -10°C
- Field water connections at the unit top

Features

- Ten sizes with nominal cooling capacities from 109 to 315 kW.
- Aquasnap chillers with scroll compressors, digital auto-adaptive Pro-Dialog control and ozone-friendly refrigerant HFC-407C.
- Can be supplied with integrated hydronic evaporator and condenser modules, limiting the installation to simple operations such as the entering and leaving water piping connection.
- Intelligent control of condenser water pump speed and operation of glycol cooler (30RW) or air-cooled condenser fans (30RWA) to ensure reliable and economical operation.
- Quick electrical connections.
- Units can operate down to -20°C outside temperature.
- The variable-speed condenser water pump automatically adjusts the water flow rate to maintain the ideal condensing conditions.
- High-performance plate heat exchangers maximise the thermodynamic properties of refrigerant HFC-407C. From size 30RW 160 the evaporator and the condenser have two interlaced refrigerant circuits.
- Space-saving design.
- No plant room required – unit can be installed in a place that is open to the public, if local regulations permit.
- The refrigerant circuit is completely leak-proof.
- Used with Carrier 09 series glycol coolers or air-cooled condensers, supplied ready for installation with a control box. All control components are installed and tested in the factory.



Pro-Dialog Plus operator interface

Physical data

30RW/RWA		110	120	135	150	160	185	210	245	275	300
Air conditioning application as per EN14511-3 : 2011 – 30RW											
Nominal cooling capacity	kW	110	125	142	152	165	186	219	251	288	315
EER	kW/kW	4.06	3.92	4.01	3.93	4.51	4.24	4.38	4.25	4.36	4.32
Eurovent class	D	D	D	D	D	C	D	C	C	C	C
ESEER part-load performance	kW/kW	4.79	4.56	4.74	4.66	5.36	5.06	5.17	5.01	5.27	5.15
Air conditioning application (1)											
Nominal cooling capacity 30RW	kW	110	125	142	152	165	187	220	252	289	316
EER	kW/kW	4.23	4.07	4.16	4.06	4.67	4.42	4.48	4.42	4.45	4.45
ESEER part-load performance	kW/kW	5.41	4.89	5.32	5.20	6.00	5.44	5.63	5.67	5.72	5.63
Air conditioning application as per EN14511-3 : 2011 – 30RWA											
Nominal cooling capacity	kW	109	125	142	152	160	184	212	243	282	309
EER	kW/kW	4.05	4.01	4.10	4.02	4.09	4.08	4.00	3.92	4.09	4.12
Air conditioning application (1)											
Nominal cooling capacity 30RWA	kW	110	126	143	153	161	184	213	243	283	310
EER	kW/kW	4.15	4.10	4.19	4.10	4.17	4.13	4.02	3.98	4.16	4.13
Operating weight											
30RW unit without pump	kg	864	937	956	977	1079	1144	1357	1471	1557	1557
30RWA unit without pump	kg	773	836	845	855	948	996	1159	1273	1311	1311
Extra weight											
30RW: single evaporator pump (option 116B)	kg	15	15	15	15	245	245	245	245	245	245
30RWA: single evaporator pump (option 116B)		15	15	15	15	245	245	245	285	285	285
30RW/RWA: dual evaporator pump (option 116C)	kg	130	130	130	130	300	300	358	358	358	358
30RW: single condenser pump (option 270B)	kg	80	80	80	80	250	250	265	265	265	265
30RW: dual condenser pump (option 270C)	kg	140	140	140	140	310	310	368	368	368	368
Dimensions (length x depth x height)											
Standard unit with or without hydronic module	mm	2300 x 922 x 1963									
Unit with hydronic module (options 116B, 116C, 270B, 270C)	mm	2950 x 922 x 1993									
Refrigerant 30RW		R-407C									
Compressors 30RW/30RWA		Hermetic scroll, 48.3 r/s									
Control		Pro-Dialog Plus									
Condensers (30RW)		Welded plate heat exchangers, max. water-side operating pressure with hydronic module 1000 kPa, without hydronic module 400 kPa									
Hydronic condenser module (30RW)		Removable screen filter, variable-speed water pump, expansion tank, safety valve, pressure gauge, and purge valve									
Condenser pump		Single or twin-head composite centrifugal pump, according to option used, variable speed by frequency converter (48.3 r/s)									
Evaporator (30RW/30RWA)		Welded direct-expansion plate heat exchanger, max. water-side operating pressure with hydronic module 1000 kPa, without hydronic module 400 kPa									
Hydronic evaporator module (30RW/30RWA)		Removable screen filter, water pump, expansion tank, water flow switch, safety valve, pressure gauge, purge valve and control valve									
Evaporator pump		Single or twin-head composite centrifugal pump, according to option used (48.3 r/s)									
Water connections (30RW/30RWA)		Victaulic**									
Field refrigerant connections (30RWA)		Welded copper tube									

NOTE: For the conditions please refer to page 31.

* The RWA units only have a nitrogen holding charge.

** With tubular sleeve, supplied with the unit, consisting of a Victaulic connection at one end and a plain section at the other end.

Electrical data

30RW/RWA (without hydronic module)		110	120	135	150	160	185	210	245	275	300
Power circuit											
Nominal power supply	V-ph-Hz	400-3-50 ± 10%									
Control circuit supply											
The control circuit is supplied via the unit-mounted transformer											
Maximum unit power input, 30RW + 30RWA*	kW	42.4	48.8	54.0	59.1	63.2	72.2	84.9	97.6	107.9	118.2
Nominal unit current draw 30RW**	A	48.1	54.0	61.0	68.0	71.7	84.2	96.1	108.0	122.0	136.0
Nominal unit current draw 30RWA***	A	51.4	58.0	64.7	71.4	76.3	89.6	102.8	116.0	129.4	142.8
Maximum start-up current, (standard unit without electronic starter)											
30RW + 30RWA†	A	245.2	254.0	309.0	318.0	212.6	245.7	314.5	332.0	396.0	414.0
Maximum start-up current, (electronic-starter option)											
30RW + 30RWA‡	A	159.2	168.0	201.0	210.0	158.6	183.7	228.5	246.0	288.0	306.0

* Power input of the compressor(s) at maximum unit operating conditions: entering/leaving evaporator water temp. 15°C/10°C, maximum condensing temp. 65°C, and 400 V nominal voltage.

** Nom. unit current draw at standard conditions: evaporator entering/leaving water temp. 12°C/7°C, condenser entering/leaving water temp. 30°C/35°C. The current values are given at 400 V nom. voltage.

*** Nom. unit current draw at standard conditions: evaporator entering/leaving water temp. 12°C/7°C, saturated condensing temp. (dew point) 45°C, subcooling 5 K. The current values are given at 400 V nom. voltage.

† Max. instantaneous starting current at 400 V nom. voltage and with compressor in across-the-line start (max. operating current of the smallest compressor(s) + locked rotor current of the largest compressor).

‡ Max. instantaneous starting current at 400 V nom. voltage and with compressor with electronic starter (max. operating current of the smallest compressor(s) + reduced start-up current of the largest compressor).