



PRO-DIALOG Plus

WATER-COOLED 400 TO 1800 kW
AQUAFORCE



Quality Management System Approval



30XW- 30XWH

Nominal cooling capacity 476-1764 kW

Nominal heating capacity 498-1872 kW

The 30XW liquid chillers are the premium solution for industrial and commercial applications where installers, consultants and building owners require optimal performances and maximum quality.

The 30XW liquid chillers are designed to meet current and future requirements in terms of energy efficiency, flexibility of use and compactness. They use the most reliable technologies available today:

- Twin-rotor screw compressors with a variable capacity valve
- Single refrigerant R-134a
- Touch-screen Pro-Dialog control system
- Flooded heat exchangers that are mechanically cleanable

To meet to all environmental and economic requirements, the 30XW is available in two efficiency classes:

- Standard-efficiency 30XW units that offer an optimised balance of technical and economical aspects, while at the same time boasting superior energy efficiency.
- High-efficiency 30XW-P units that offer unequalled energy efficiency to satisfy the most stringent demands of building owners wanting to reduce operating costs to the minimum.

The 30XW Aquaforce range is also split into two versions:

- 30XW for air conditioning and refrigeration applications
- 30XWH for heating applications

These two versions provide the following performances:

- High heating temperature, allowing the 30XWH Aquaforce to supply water with a condenser leaving water temperature of +63°C (option 150)
- Low temperature, allowing the 30XW Aquaforce to operate with an evaporator leaving glycol temperature down to -6°C (option 5) or -12°C (option 6).

Features and advantages

Superior operating economy

- Full load and part load energy efficiency that surpasses the industry average:
 - Eurovent energy efficiency class "A"
 - EER of up to 6.15 kW/kW (30XW-P)
 - ESEER of up to 8.0 kW/kW (30XW-P)
- New twin-rotor screw compressor equipped with a high-efficiency motor and a variable capacity valve that permits exact matching of the cooling capacity to the load.
- Flooded multi-pipe evaporator and condenser for increased heat exchange efficiency.
- Electronic expansion device permitting operation at a lower condensing pressure and improved utilisation of the evaporator heat exchange surface.
- Economizer system with electronic expansion device for increased cooling capacity (30XW-P).

Low operating sound levels

- Compressors
 - Silencers on the discharge line.
 - Silencers on the economiser return line.
 - Acoustic insulation on the components that are most subjected to radiated noise.

Easy and fast installation

- Compact design
 - The 30XW units are designed to offer the most compact dimensions on the market.
 - With a width of approximately 1 m up to 1500 kW the units can pass through standard door openings and only require minimum floor space in the plant room.
- Simplified electrical connections
 - Main disconnect switch with high trip capacity
 - Transformer to supply the integrated control circuit (400/24 V)
- Simplified hydronic connections
 - Victaulic connections on the evaporator and condenser
 - Practical reference marks for entering and leaving water connections
 - Possibility to reverse the heat exchanger water inlet and outlet at the factory
 - Possibility to modify the number of heat exchanger passes
- Fast commissioning
 - Systematic factory operation test before shipment
 - Quick-test function for step-by-step verification of the instruments, expansion devices and compressors

Environmental care

- R-134a refrigerant
 - Refrigerant of the HFC group with zero ozone depletion potential
- Leak-tight refrigerant circuit
 - Reduction of leaks as no capillary tubes and flare connections are used
 - Verification of pressure transducers and temperature sensors without transferring refrigerant charge
 - Discharge line shut-off valve and liquid line service valve for simplified maintenance.

Absolute reliability

- Screw compressors
 - Industrial-type screw compressors with oversized bearings and motor cooled by suction gas.
 - All compressor components are easily accessible on site minimising down-time.
 - Protection increased by an electronic board.
- Refrigerant circuit
 - Two independent refrigerant circuits (from 1000 kW upwards); the second one automatically takes over, if the first one develops a fault, maintaining partial cooling under all circumstances.
- Evaporator
 - Electronic paddle-free flow switch. Auto-setting according to cooler size and fluid type.
- Auto-adaptive control
 - Control algorithm prevents excessive compressor cycling (Carrier patent)
 - Automatic compressor unloading in case of abnormally high condensing pressure.
- Exceptional endurance tests
 - Partnerships with specialised laboratories and use of limit simulation tools (finite element calculation) for the design of critical components.
 - Transport simulation test in the laboratory on a vibrating table and then on an endurance circuit (based on a military standard).

Pro-Dialog control

- Pro-Dialog combines intelligence with operating simplicity. The control constantly monitors all machine parameters and precisely manages the operation of compressors, electronic expansion devices and of the evaporator water pump for optimum energy efficiency.
- Energy management
 - Internal time schedule clock: controls chiller on/off times and operation at a second set-point
 - Set-point reset based on the return water temperature
 - Master/slave control of two chillers operating in parallel with operating time equalisation and automatic change-over in case of a unit fault.
- Ease-of-use
 - User interface with large touch screen (120 x 99 mm) for intuitive access to the operating parameters. The information is in clear text and can be displayed in local language (please contact your distributor).

Remote management (standard)

The 30XW is equipped with an RS485 serial port that offers multiple remote control, monitoring and diagnostic possibilities. Carrier offers a vast choice of control products, specially designed to control, manage and supervise the operation of an air conditioning system. Please consult your Carrier representative for more information.

The 30XW also communicates with other building management systems via optional communication gateways.

A connection terminal allows remote control of the 30XW by wired cable:

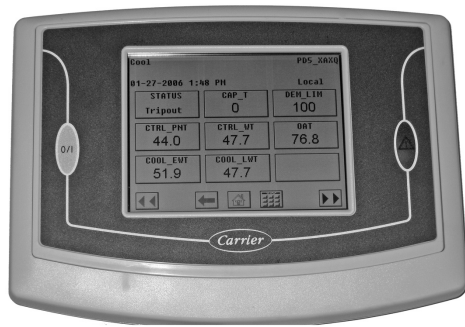
- Start/stop: opening of this contact will shut down the unit
- Dual set-point: closing of this contact activates a second set-point (example: unoccupied mode)
- Demand limit: closing of this contact limits the maximum chiller capacity to a predefined value
- Operation indication: this volt-free contact indicates that the chiller is operating (cooling load) or that it is ready to operate (no cooling load)
- Alert indication: this volt-free contact indicates the necessity to carry out a maintenance operation or the presence of a minor fault
- Alarm indication: this volt-free contact indicates the presence of a major fault that has led to the shut-down of one or several refrigerant circuits

Remote management (EMM option)

The Energy Management Module offers extended remote control possibilities:

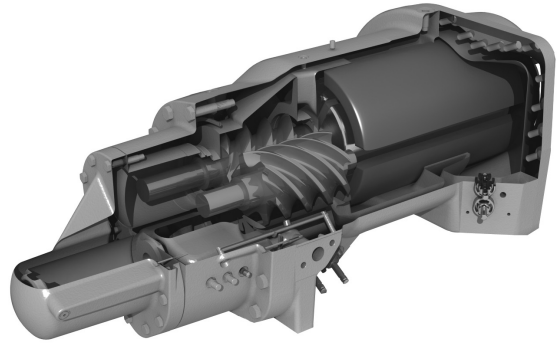
- Room temperature: permits set-point reset based on the building indoor air temperature (with Carrier thermostat)
- Set point reset: ensures reset of the cooling set-point based on a 4-20 mA or 0-10 V signal
- Demand limit: permits limitation of the maximum chiller power or current based on a 0-10 V signal
- Demand limit 1 and 2: closing of these contacts limits the maximum chiller power or current to two predefined values
- User safety: this contact can be used for any customer safety loop; opening of the contact generates a specific alarm
- Ice storage end: when ice storage has finished, this input permits return to the second set-point (unoccupied mode)
- Time schedule override: closing of this contact cancels the time schedule effects
- Out of service: this signal indicates that the chiller is completely out of service
- Chiller capacity: this analogue output (0-10 V) gives an immediate indication of the chiller capacity

Pro-Dialog operator interface with touch-screen



The 30XW operator interface is very user-friendly. It is a large-format touch-screen, and the information is easily accessible: clear text in the selected language allows consultation of all operating parameters. Up to eight screens can be personalised.

New generation 06T screw compressor



The new generation of the Carrier 06T screw compressors benefits from Carrier's long experience in the development of twin-rotor screw compressors. The compressor is equipped with bearings with oversized rollers, oil pressure lubricated for reliable and durable operation, even at maximum load.

A variable control valve controlled by the oil pressure permits infinitely variable capacity.

Among the other advantages: if a fault occurs e.g. if the condenser is fouled or at very high water temperature, the compressor does not switch off, but continues operation with a reduced capacity (unloaded mode).

The silencer in the discharge line considerably reduces discharge gas pulsations for much quieter operation.

The condenser includes an oil separator that minimises the amount of oil in circulation in the refrigerant circuit and re-directs it to the compressor function.

Part load performances

With the rapid increase in energy costs and the care about environmental impacts of electricity production, power consumption of air conditioning equipment has become an important topic. The energy efficiency of a liquid chiller at full load is rarely representative of the actual performance of the units, as on average a chiller works less than 5% of the time at full load.

The heat load of a building depends on many factors, such as the outside air temperature, the exposure to the sun and its occupation.

Consequently it is preferable to use the average energy efficiency, calculated at several operating points that are representative for the unit utilisation.

IPLV (in accordance with ARI 550/590-98)

The IPLV (integrated part load value) allows evaluation of the average energy efficiency based on four operating conditions defined by the ARI (American Refrigeration Institute). The IPLV is the average weighted value of the energy efficiency ratios (EER) at different operating conditions, weighted by the operating time.

ESEER (in accordance with EUROVENT)

The ESEER (European seasonal energy efficiency ratio) permits evaluation of the average energy efficiency at part load, based on four operating conditions defined by Eurovent. The ESEER is the average value of energy efficiency ratios (EER) at different operating conditions, weighted by the operating time.

IPLV (integrated part load value)

Load %	Condenser entering water temperature, °C	Energy efficiency	Operating time, %
100	35	EER ₁	1
75	26.7	EER ₂	42
50	18.3	EER ₃	45
25	12.8	EER ₄	12

$$\text{IPLV} = \text{EER}_1 \times 1\% + \text{EER}_2 \times 42\% + \text{EER}_3 \times 45\% + \text{EER}_4 \times 12\%$$

ESEER (European seasonal energy efficiency ratio)

Load %	Condenser entering water temperature, °C	Energy efficiency	Operating time, %
100	30	EER ₁	3
75	26	EER ₂	33
50	22	EER ₃	41
25	18	EER ₄	23

$$\text{ESEER} = \text{EER}_1 \times 3\% + \text{EER}_2 \times 33\% + \text{EER}_3 \times 41\% + \text{EER}_4 \times 23\%$$

Part load performances

	30XW--/30XWH	452	552	602	652	702	802	852	1002	1052	1152	1252	1352	1452	1552	1652	1702
IPLV kW/kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESEER kW/kW	6.30	6.40	6.50	6.93	6.85	6.86	6.91	7.13	7.13	7.48	7.46	7.72	7.47	7.35	7.16	7.36	7.30

	30XW-P/30XWH	512	562	712	812	862	1012	1162	1312	1462	1612	1762
IPLV kW/kW	-	-	-	-	-	-	-	-	-	-	-	-
ESEER kW/kW	6.78	6.79	7.00	7.05	6.98	7.64	7.99	7.72	7.59	7.65	7.18	

Main options and accessories

Options	No.	Description	Advantages	Use
Medium-temperature brine solution	5	Medium-temperature glycol solution production down to -6°C	Covers specific applications such as ice storage and industrial processes	Only for: 30XW 0512, 0562, 1012, 1152
Low-temperature brine solution	6	Low-temperature glycol solution production down to -12°C	Covers specific applications such as ice storage and industrial processes	As above
Unit supplied in two assembled parts	51	Unit supplied in two assembled parts. The unit is equipped with flanges that allow disassembly of the unit on site.	Facilitates installation in plant rooms with limited access	Only for: 30XW 1312, 1462 30XW 1612-1762
No disconnect switch/no short-circuit protection	70E	Unit without disconnect switch and no short-circuit protection device supplied with the unit	Permits an external electrical disconnect system for the unit (to be field-supplied).	30XW 452-1762
Single power connection point	81	Power connection of the unit via one main supply connection	Quick and easy installation	30XW 1002-1762
No disconnect switch/but with short-circuit protection	82A	Unit without disconnect switch, but with short-circuit protection device	Permits an external electrical disconnect system for the unit (to be field-supplied). Short-circuit protection of the unit remains.	30XW 452-1762
Evaporator pump electrical power/control circuit	84	Unit equipped with an electrical power/control circuit for single evaporator pumps	Quick and easy installation	30XW 452-1252
Dual evaporator pump electrical power/control circuit	84D	Unit equipped with an electrical power/control circuit for dual evaporator pumps	Quick and easy installation	30XW 452-1252
Condenser pump electrical power/control circuit	84R	Unit equipped with an electrical power/control circuit for single condenser pumps	Quick and easy installation	30XW 452-1252
Service valve set	92	Valve set consisting of liquid line valve (evaporator inlet), economiser return line valve and compressor suction line valve to isolate the various refrigerant circuit components.	Simplified service and maintenance	30XW 452-1762
Condenser insulation	86	Thermal condenser insulation	Allows configuration with special installation criteria (hot parts insulated).	30XW 452-602 30XW 1002-1162
Evaporator with one pass	100C	Evaporator with one pass on the water-side. Evaporator inlet and outlet on opposite sides.	Quick and easy installation. Reduced evaporator pressure losses.	30XW 452-1762
Condenser with one pass	102C	Condenser with one pass on the water-side. Condenser inlet and outlet on opposite sides.	Quick and easy installation. Reduced condenser pressure losses.	30XW 1002-1762
21 bar evaporator	104	Reinforced evaporator for extension of the maximum water-side service pressure to 21 bar	Covers applications with a high water column (high buildings)	30XW 452-1762
21 bar condenser	104A	Reinforced condenser for extension of the maximum water-side service pressure to 21 bar	Covers applications with a high water column (high buildings)	30XW 452-1762
Reversed evaporator water connections	107	Evaporator with reversed water inlet/outlet	Simplification of the water piping	30XW 452-1762
Reversed condenser water connections	107A	Condenser with reversed water inlet/outlet	Simplification of the water piping	30XW 452-1762
JBus gateway	148B	Two-directional communications board, complies with JBus protocol	Easy connection by communication bus to a building management system	30XW 452-1762
BacNet gateway	148C	Two-directional communications board, complies with BacNet protocol	Easy connection by communication bus to a building management system	30XW 452-1762
LON gateway	148D	Two-directional communications board, complies with LON protocol	Easy connection by communication bus to a building management system	30XW 452-1762
High condensing temperature	150	Increased condenser leaving water temperature up to 63°C. To ensure control of the condenser leaving water temperature, this option must be fitted for 30XWH units (but not for 30XW units).	Allows applications with high condensing temperature (for heat reclaim or dry cooler applications)	30XW 452-602 30XW 1002-1162
Condensing temperature limitation	150B	Limitation of the maximum condenser leaving water temperature to 45°C. Modification on the unit name plate to reflect the reduced power input and current values.	Avoids oversizing of the protection elements and the power cables.	30XW 452-1762
Control for low condensing temperature systems	152	Output signal (0-10 V) to control the condenser water inlet valve.	Used for applications with cold water at the condenser inlet (well water). In this case the valve controls the water entering temperature to maintain an acceptable condensing pressure.	30XW 452-1762
Energy Management Module EMM	156	Remote control module. Additional contacts for an extension of the unit control functions.	Easy connection by wired connection to a building management system	30XW 452-1762
Code compliance for Switzerland	197	Additional tests on the water heat exchangers. Supply of PED documents, dimensional drawings and test certificates.	Conformance with Swiss regulations	30XW 452-1762
Code compliance for Australia	200	Heat exchanger approved in accordance with the Australian code.	Conformance with Australian regulations	30XW 452-1762
Options		Description	Advantages	Use
CCN JBus gateway		See option 148B	See option 148B	30XW 452-1762
CCN BacNet gateway		See option 148C	See option 148C	30XW 452-1762
CCN LON Talk gateway		See option 148D	See option 148D	30XW 452-1762
Energy Management Module EMM		See option 156	Easy connection by wired connection to a building management system	30XW 452-1762
Lead-lag kit		Supplementary water outlet temperature sensor kit, field-installed, allows master/slave operation of two chillers connected in parallel.	Optimised operation of two chillers connected in parallel with operating time balancing.	30XW 452-1762
Water connection kit for welded connections		Victaulic piping connections with welded joints.	Easy installation	30XW 452-1762
Water connection kit for flanged connections		Victaulic piping connections with flanged joints.	Easy installation	30XW 452-1762

Physical data, standard units

Standard-efficiency units

30XW--/30XWH		452	552	602	652	702	802	852	1002	1052	1152	1252	1352	1452	1552	1652	1702
 Nominal cooling capacity*	kW	476	536	541	681	735	796	844	1024	1068	1156	1265	1349	1463	1560	1664	1739
Power input	kW	85	98	98	120	131	144	148	184	193	200	211	232	255	274	279	290
EER	kW/kW	5.58	5.47	5.52	5.68	5.61	5.53	5.69	5.57	5.54	5.78	6.00	5.81	5.73	5.70	5.96	5.99
Eurovent class, cooling	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
ESEER part-load performance	kW/kW	6.30	6.40	6.50	6.93	6.85	6.86	6.91	7.13	7.48	7.46	7.72	7.47	7.35	7.16	7.36	7.30
 Heating capacity**	kW	498	568	596	707	770	820	892	1070	1121	1246	1308	1405	1531	1629	1790	1867
Power input	kW	110	127	130	158	173	184	195	238	251	264	278	303	334	356	375	388
Coefficient of performance (COP)	kW/kW	4.51	4.46	4.57	4.46	4.46	4.45	4.58	4.49	4.47	4.71	4.70	4.64	4.59	4.57	4.78	4.81
Eurovent class, heating	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Nominal cooling capacity***	kW	415	471	500	586	638	678	742	889	928	1049	1101	1177	1281	1362	1515	1577
Power input	kW	110	128	130	159	173	185	193	239	251	264	278	302	334	357	374	389
EER	kW/kW	3.76	3.69	3.84	3.69	3.68	3.67	3.84	3.72	3.69	3.97	3.96	3.89	3.84	3.82	4.05	4.06
Heating capacity***	kW	516	588	619	730	795	846	917	1106	1156	1290	1354	1452	1585	1687	1855	1930
Coefficient of performance (COP)	kW/kW	4.67	4.60	4.75	4.60	4.59	4.58	4.75	4.63	4.60	4.88	4.87	4.80	4.75	4.73	4.96	4.97
Operating weight	kg	2575	2613	2644	3247	3266	3282	3492	5370	5408	5705	7066	7267	7305	7337	8681	8699
Sound power level****	dB(A)	99	99	99	99	99	99	99	102	102	102	102	102	102	102	102	102
Sound pressure level at 1 m†	dB(A)	82	82	82	82	82	82	82	84	84	84	83	83	83	83	83	83
Compressors	Semi-hermetic 06T screw compressors, 50 r/s																
Circuit A		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit B		-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1
Refrigerant charge‡	R-134a																
Circuit A	kg	82	82	82	145	140	135	140	85	85	105	120	115	110	105	195	195
Circuit B	kg	-	-	-	-	-	-	-	85	85	105	120	115	110	105	195	195
Oil charge	SW220																
Circuit A	l	32	32	32	36	36	36	36	32	32	32	36	36	36	36	36	36
Circuit B	l	-	-	-	-	-	-	-	32	32	32	32	36	36	36	36	36
Capacity control	Pro-Dialog, electronic expansion valves (EXV)																
Minimum capacity	%	15	15	15	15	15	15	15	10	10	10	10	10	10	10	10	10
Evaporator	Multi-pipe flooded type																
Net water volume	l	72	72	72	109	109	109	98	185	185	214	307	307	307	307	363	363
Water inlet/outlet connections (Victaulic)	in	5	5	5	6	6	6	6	6	6	8	8	8	8	8	8	8
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Condenser	Multi-pipe type																
Net water volume	l	80	80	80	80	80	80	141	238	238	238	347	347	347	347	426	426
Water inlet/outlet connections (Victaulic)	in	5	5	5	6	6	6	8	8	8	8	8	8	8	8	8	8
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

High-efficiency units

30XW-P/30XWHP		512	562	712	812	862	1012	1162	1312	1462	1612	1762
 Nominal cooling capacity*	kW	512	581	740	789	865	1047	1165	1320	1474	1632	1764
Power input	kW	86	97	122	134	145	174	191	216	242	266	290
EER	kW/kW	5.97	5.99	6.07	5.87	5.96	6.03	6.09	6.12	6.09	6.13	6.08
Eurovent class, cooling	A	A	A	A	A	A	A	A	A	A	A	A
ESEER part-load performance	kW/kW	6.78	6.79	7.00	7.05	6.98	7.64	7.99	7.72	7.59	7.65	7.18
 Heating capacity**	kW	547	621	793	854	924	1110	1246	1411	1584	1752	1872
Power input	kW	113	129	163	182	193	228	253	287	322	361	396
Coefficient of performance (COP)	kW/kW	4.85	4.81	4.87	4.69	4.78	4.86	4.92	4.92	4.92	4.85	4.73
Eurovent class, heating	A	A	A	A	A	A	A	A	A	A	A	A
Nominal cooling capacity***	kW	463	525	672	718	780	941	1061	1198	1350	1485	1576
Power input	kW	113	129	163	182	193	228	253	286	321	361	396
EER	kW/kW	4.11	4.08	4.14	3.94	4.04	4.13	4.20	4.19	4.20	4.12	3.98
Heating capacity***	kW	566	642	820	884	956	1149	1290	1459	1642	1813	1936
Coefficient of performance (COP)	kW/kW	5.02	4.99	5.05	4.85	4.95	5.04	5.11	5.10	5.11	5.03	4.89
Operating weight	kg	2981	3020	3912	3947	3965	6872	6950	9099	9307	10910	10946
Sound power level****	dB(A)	99	99	99	99	99	102	102	102	102	102	102
Sound pressure level at 1 m†	dB(A)	82	82	81	81	81	83	83	83	83	83	83
Compressors	Semi-hermetic 06T screw compressors, 50 r/s											
Circuit A		1	1	1	1	1	1	1	1	1	1	1
Circuit B		-	-	-	-	-	1	1	1	1	1	1
Refrigerant charge‡	R-134a											
Circuit A	kg	130	130	180	175	170	120	120	205	205	240	250
Circuit B	kg	-	-	-	-	-	120	120	205	205	240	250
Oil charge	SW220											
Circuit A	l	32	32	36	36	36	32	32	36	36	36	36
Circuit B	l	-	-	-	-	-	32	32	32	36	36	36
Capacity control	Pro-Dialog, electronic expansion valves (EXV)											
Minimum capacity	%	15	15	15	15	15	10	10	10	10	10	10
Evaporator	Multi-pipe flooded type											
Net water volume	l	106	106	154	154	154	307	307	363	363	473	473
Water inlet/outlet connections (Victaulic)	in	6	6	8	8	8	8	8	8	8	10	10
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Condenser	Multi-pipe type											
Net water volume	l	112	112	165	165	165	347	347	497	497	623	623
Water inlet/outlet connections (Victaulic)	in	6	6	8	8	8	8	8	10	10	10	10
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

* Standard Eurovent conditions, cooling: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

** Standard Eurovent conditions, heating: condenser entering/leaving water temperature = 40°C/45°C, evaporator entering water temperature 10°C with the same flow rate as for Eurovent conditions in cooling mode.

*** Conditions in cooling and heating mode: evaporator entering/leaving water temperature = 10°C/7°C, condenser entering/leaving water temperature = 40°C/45°C.

**** 10-12 W in accordance with ISO 9614-1

† in a free field

‡ Weights are guidelines only. The refrigerant charge is given on the unit nameplate

Electrical data, standard units

Standard-efficiency units

30XW--/30XWH		452	552	602	652	702	802	852	1002	1052	1152	1252	1352	1452	1552	1652	1702
Power circuit																	
Nominal power supply	V-ph-Hz	400-3-50															
Voltage range	V	360-440															
Control circuit		24 V via the built-in transformer															
Nominal start-up current*																	
Circuit A	A	414	414	414	587	587	587	587	414	414	414	587	587	587	587	587	587
Circuit B	A	-	-	-	-	-	-	-	414	414	414	587	587	587	587	587	587
Option 81	A	-	-	-	-	-	-	-	558	574	574	747	780	801	819	819	819
Maximum start-up current**																	
Circuit A	A	414	414	414	587	587	587	587	414	414	414	587	587	587	587	587	587
Circuit B	A	-	-	-	-	-	-	-	414	414	414	587	587	587	587	587	587
Option 81	A	-	-	-	-	-	-	-	631	656	656	829	882	904	938	938	938
Cosine phi nominal***		0.86	0.87	0.87	0.88	0.89	0.90	0.90	0.87	0.87	0.87	0.88	0.88	0.89	0.90	0.90	0.90
Cosine phi maximum****		0.89	0.90	0.90	0.90	0.91	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.91	0.92	0.92	0.92
Maximum power input†																	
Circuit A	kW	134	151	151	184	200	223	223	150	151	151	184	184	200	223	223	223
Circuit B	kW	-	-	-	-	-	-	-	134	151	151	151	184	200	223	202	223
Option 81	kW	-	-	-	-	-	-	-	284	301	301	334	367	399	447	425	447
Nominal current drawn***																	
Circuit A	A	144	162	162	193	214	232	232	162	162	162	193	193	214	232	232	232
Circuit B	A	-	-	-	-	-	-	-	144	162	162	162	193	214	232	214	232
Option 81	A	-	-	-	-	-	-	-	306	324	324	355	386	427	464	446	464
Maximum current drawn (Un)†																	
Circuit A	A	217	242	242	295	317	351	351	242	242	242	295	295	317	351	351	351
Circuit B	A	-	-	-	-	-	-	-	217	242	242	242	295	317	351	317	351
Option 81	A	-	-	-	-	-	-	-	459	484	484	537	590	634	702	668	702
Maximum current drawn (Un -10%)****																	
Circuit A	A	230	260	260	304	340	358	358	260	260	260	304	304	340	358	358	358
Circuit B	A	-	-	-	-	-	-	-	230	260	260	260	304	340	358	340	358
Option 81	A	-	-	-	-	-	-	-	490	520	520	564	608	680	716	698	716

High-efficiency units

30XW-P/30XWHP		512	562	712	812	862	1012	1162	1312	1462	1612	1762
Power circuit												
Nominal power supply	V-ph-Hz	400-3-50										
Voltage range	V	360-440										
Control circuit		24 V via the built-in transformer										
Nominal start-up current*												
Circuit A	A	414	414	587	587	587	414	414	587	587	587	587
Circuit B	A	-	-	-	-	-	414	414	414	587	587	587
Option 81	A	-	-	-	-	-	556	574	747	780	801	819
Maximum start-up current**												
Circuit A	A	414	414	587	587	587	414	414	587	587	587	587
Circuit B	A	-	-	-	-	-	414	414	414	587	587	587
Option 81	A	-	-	-	-	-	631	656	829	882	904	938
Cosine phi nominal***		0.86	0.87	0.88	0.89	0.90	0.86	0.87	0.88	0.88	0.89	0.90
Cosine phi maximum****		0.89	0.90	0.90	0.91	0.92	0.89	0.90	0.90	0.90	0.91	0.92
Maximum power input†												
Circuit A	kW	134	151	184	200	223	134	151	184	184	200	223
Circuit B	kW	-	-	-	-	-	134	151	151	184	200	223
Option 81	kW	-	-	-	-	-	267	301	334	367	399	447
Nominal current drawn***												
Circuit A	A	144	162	193	214	232	144	162	193	193	214	232
Circuit B	A	-	-	-	-	-	144	162	162	193	214	232
Option 81	A	-	-	-	-	-	288	324	355	386	427	464
Maximum current drawn (Un)†												
Circuit A	A	217	242	295	317	351	217	242	295	295	317	351
Circuit B	A	-	-	-	-	-	217	242	242	295	317	351
Option 81	A	-	-	-	-	-	434	484	537	590	634	702
Maximum current drawn (Un -10%)****												
Circuit A	A	230	260	304	340	358	230	260	304	304	340	358
Circuit B	A	-	-	-	-	-	230	260	260	304	340	358
Option 81	A	-	-	-	-	-	460	520	564	608	680	716

* Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

** Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

*** Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C

**** Values obtained at operation with maximum unit power input.

† Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Physical data, units for high condensing temperatures

Standard-efficiency units (option 150)

30XW--/30XWH		452	552	602	652	702	802	852	1002	1052	1152	1252	1352	1452	1552	1652	1702
	Nominal cooling capacity*	kW	462	518	526	-	-	-	977	1037	1129	-	-	-	-	-	-
	Power input	kW	91	102	104	-	-	-	193	205	216	-	-	-	-	-	-
	EER	kW/kW	5.06	5.06	5.07	-	-	-	5.05	5.06	5.21	-	-	-	-	-	-
	Eurovent class, cooling	A	A	A	-	-	-	-	A	A	A	-	-	-	-	-	-
	Heating capacity**	kW	485	542	581	-	-	-	1027	1085	1229	-	-	-	-	-	-
	Power input	kW	105	119	123	-	-	-	224	238	255	-	-	-	-	-	-
	Coefficient of performance (COP)	kW/kW	4.60	4.56	4.72	-	-	-	4.59	4.56	4.82	-	-	-	-	-	-
	Eurovent class, heating	A	A	A	-	-	-	-	A	A	A	-	-	-	-	-	-
	Nominal cooling capacity***	kW	331	369	431	-	-	-	699	739	908	-	-	-	-	-	-
	Power input	kW	135	152	164	-	-	-	287	304	339	-	-	-	-	-	-
	EER	kW/kW	2.46	2.43	2.64	-	-	-	2.44	2.43	2.68	-	-	-	-	-	-
	Heating capacity***	kW	454	508	580	-	-	-	960	1015	1216	-	-	-	-	-	-
	Coefficient of performance (COP)	kW/kW	3.37	3.34	3.55	-	-	-	3.35	3.34	3.59	-	-	-	-	-	-
	Operating weight	kg	2575	2613	2644	-	-	-	5370	5408	5705	-	-	-	-	-	-
	Sound power level****	dB(A)	99	99	99	-	-	-	102	102	102	-	-	-	-	-	-
	Sound pressure level at 1 m†	dB(A)	82	82	82	-	-	-	84	84	84	-	-	-	-	-	-
	Compressors	Semi-hermetic 06T screw compressors, 50 r/s															
	Circuit A		1	1	1	-	-	-	1	1	1	-	-	-	-	-	-
	Circuit B		-	-	-	-	-	-	1	1	1	-	-	-	-	-	-
	Refrigerant charge‡	R-134a															
	Circuit A	kg	82	82	82	-	-	-	85	85	105	-	-	-	-	-	-
	Circuit B	kg	-	-	-	-	-	-	85	85	105	-	-	-	-	-	-
	Oil charge	SW220															
	Circuit A	l	32	32	32	-	-	-	32	32	32	-	-	-	-	-	-
	Circuit B	l	-	-	-	-	-	-	32	32	32	-	-	-	-	-	-
	Capacity control	Pro-Dialog, electronic expansion valves (EXV)															
	Minimum capacity	%	30	30	30	-	-	-	20	20	20	-	-	-	-	-	-
	Evaporator	Multi-pipe flooded type															
	Net water volume	l	72	72	72	-	-	-	185	185	214	-	-	-	-	-	-
	Water inlet/outlet connections (Victaulic)	in	5	5	5	-	-	-	6	6	8	-	-	-	-	-	-
	Drain and vent connections (NPT)	in	3/8	3/8	3/8	-	-	-	3/8	3/8	3/8	-	-	-	-	-	-
	Max. water-side operating pressure	kPa	1000	1000	1000	-	-	-	1000	1000	1000	-	-	-	-	-	-
	Condenser	Multi-pipe type															
	Net water volume	l	80	80	80	-	-	-	238	238	238	-	-	-	-	-	-
	Water inlet/outlet connections (Victaulic)	in	5	5	5	-	-	-	8	8	8	-	-	-	-	-	-
	Drain and vent connections (NPT)	in	3/8	3/8	3/8	-	-	-	3/8	3/8	3/8	-	-	-	-	-	-
	Max. water-side operating pressure	kPa	1000	1000	1000	-	-	-	1000	1000	1000	-	-	-	-	-	-

High-efficiency units (option 150)

30XW-P/30XWHP		512	562	712	812	862	1012	1162	1312	1462	1612	1762
	Nominal cooling capacity*	kW	520	580	-	-	-	1017	1142	-	-	-
	Power input	kW	96	105	-	-	-	195	215	-	-	-
	EER	kW/kW	5.43	5.51	-	-	-	5.21	5.32	-	-	-
	Eurovent class, cooling	A	A	-	-	-	A	A	-	-	-	-
	Heating capacity**	kW	562	625	-	-	-	1107	1241	-	-	-
	Power input	kW	113	124	-	-	-	230	253	-	-	-
	Coefficient of performance (COP)	kW/kW	4.99	5.04	-	-	-	4.82	4.91	-	-	-
	Eurovent class, heating	A	A	-	-	-	A	A	-	-	-	-
	Nominal cooling capacity***	kW	419	466	-	-	-	817	916	-	-	-
	Power input	kW	150	165	-	-	-	306	338	-	-	-
	EER	kW/kW	2.80	2.83	-	-	-	2.67	2.71	-	-	-
	Heating capacity***	kW	555	617	-	-	-	1096	1224	-	-	-
	Coefficient of performance (COP)	kW/kW	3.71	3.74	-	-	-	3.58	3.62	-	-	-
	Operating weight	kg	2981	3020	-	-	-	6872	6950	-	-	-
	Sound power level****	dB(A)	99	99	-	-	-	102	102	-	-	-
	Sound pressure level at 1 m†	dB(A)	82	82	-	-	-	83	83	-	-	-
	Compressors	Semi-hermetic 06T screw compressors, 50 r/s										
	Circuit A		1	1	-	-	-	1	1	-	-	-
	Circuit B		-	-	-	-	-	1	1	-	-	-
	Refrigerant charge‡	R-134a										
	Circuit A	kg	130	130	-	-	-	120	120	-	-	-
	Circuit B	kg	-	-	-	-	-	120	120	-	-	-
	Oil charge	SW220										
	Circuit A	l	32	32	-	-	-	32	32	-	-	-
	Circuit B	l	-	-	-	-	-	32	32	-	-	-
	Capacity control	Pro-Dialog, electronic expansion valves (EXV)										
	Minimum capacity	%	30	30	-	-	-	20	20	-	-	-
	Evaporator	Multi-pipe flooded type										
	Net water volume	l	106	106	-	-	-	307	307	-	-	-
	Water inlet/outlet connections (Victaulic)	in	6	6	-	-	-	8	8	-	-	-
	Drain and vent connections (NPT)	in	3/8	3/8	-	-	-	3/8	3/8	-	-	-
	Max. water-side operating pressure	kPa	1000	1000	-	-	-	1000	1000	-	-	-
	Condenser	Multi-pipe type										
	Net water volume	l	112	112	-	-	-	347	347	-	-	-
	Water inlet/outlet connections (Victaulic)	in	6	6	-	-	-	8	8	-	-	-
	Drain and vent connections (NPT)	in	3/8	3/8	-	-	-	3/8	3/8	-	-	-
	Max. water-side operating pressure	kPa	1000	1000	-	-	-	1000	1000	-	-	-

* Standard Eurovent conditions, cooling: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

** Standard Eurovent conditions, heating: condenser entering/leaving water temperature = 40°C/45°C, evaporator entering water temperature 10°C with the same flow rate as for Eurovent conditions in cooling mode.

*** Conditions in cooling and heating mode: evaporator entering/leaving water temperature = 10°C/7°C, condenser entering/leaving water temperature = 50°C/60°C.

**** 10⁻¹² W in accordance with ISO 9614-1

† in a free field

‡ Weights are guidelines only. The refrigerant charge is given on the unit nameplate.

Electrical data, units for high condensing temperatures

Standard-efficiency units (option 150)

30XW--/30XWH		452	552	602	652	702	802	852	1002	1052	1152	1252	1352	1452	1552	1652	1702
Power circuit																	
Nominal power supply	V-ph-Hz	400-3-50															
Voltage range	V	360-440															
Control circuit		24 V via the built-in transformer															
Nominal start-up current*																	
Circuit A	A	587	587	587					587	587	587	-	-	-	-	-	-
Circuit B	A	-	-	-	-	-	-	-	587	587	587	-	-	-	-	-	-
Option 81	A	-	-	-	-	-	-	-	757	757	757	-	-	-	-	-	-
Maximum start-up current**																	
Circuit A	A	587	587	587					587	587	587	-	-	-	-	-	-
Circuit B	A	-	-	-	-	-	-	-	587	587	587	-	-	-	-	-	-
Option 81	A	-	-	-	-	-	-	-	887	887	887	-	-	-	-	-	-
Cosine phi nominal***		0.88	0.88	0.88	-	-	-	-	0.88	0.88	0.88	-	-	-	-	-	-
Cosine phi maximum****		0.91	0.92	0.92	-	-	-	-	0.92	0.92	0.92	-	-	-	-	-	-
Maximum power input†																	
Circuit A	kW	173	191	191					190	191	191	-	-	-	-	-	-
Circuit B	kW	-	-	-	-	-	-	-	174	191	191	-	-	-	-	-	-
Option 81	kW	-	-	-	-	-	-	-	364	382	382	-	-	-	-	-	-
Nominal current drawn***																	
Circuit A	A	162	171	171	-	-	-	-	171	171	171	-	-	-	-	-	-
Circuit B	A	-	-	-	-	-	-	-	162	171	171	-	-	-	-	-	-
Option 81	A	-	-	-	-	-	-	-	333	342	342	-	-	-	-	-	-
Maximum current drawn (Un)†																	
Circuit A	A	275	300	300					300	300	300	-	-	-	-	-	-
Circuit B	A	-	-	-	-	-	-	-	275	300	300	-	-	-	-	-	-
Option 81	A	-	-	-	-	-	-	-	575	600	600	-	-	-	-	-	-
Maximum current drawn (Un -10%)****																	
Circuit A	A	300	330	330					330	330	330	-	-	-	-	-	-
Circuit B	A	-	-	-	-	-	-	-	300	330	330	-	-	-	-	-	-
Option 81	A	-	-	-	-	-	-	-	630	660	660	-	-	-	-	-	-

High-efficiency units (option 150)

30XW-P/30XWHP		512	562	712	812	862	1012	1162	1312	1462	1612	1762
Power circuit												
Nominal power supply	V-ph-Hz	400-3-50										
Voltage range	V	360-440										
Control circuit		24 V via the built-in transformer										
Nominal start-up current*												
Circuit A	A	587	587	-	-	-	587	587	-	-	-	-
Circuit B	A	-	-	-	-	-	587	587	-	-	-	-
Option 81	A	-	-	-	-	-	749	757	-	-	-	-
Maximum start-up current**												
Circuit A	A	587	587	-	-	-	587	587	-	-	-	-
Circuit B	A	-	-	-	-	-	587	587	-	-	-	-
Option 81	A	-	-	-	-	-	862	887	-	-	-	-
Cosine phi nominal***		0.88	0.88	-	-	-	0.87	0.88	-	-	-	-
Cosine phi maximum****		0.91	0.92	-	-	-	0.91	0.92	-	-	-	-
Maximum power input†												
Circuit A	kW	173	191	-	-	-	173	191	-	-	-	-
Circuit B	kW	-	-	-	-	-	173	191	-	-	-	-
Option 81	kW	-	-	-	-	-	346	382	-	-	-	-
Nominal current drawn***												
Circuit A	A	162	171	-	-	-	162	171	-	-	-	-
Circuit B	A	-	-	-	-	-	162	171	-	-	-	-
Option 81	A	-	-	-	-	-	324	342	-	-	-	-
Maximum current drawn (Un)†												
Circuit A	A	275	300	-	-	-	275	300	-	-	-	-
Circuit B	A	-	-	-	-	-	275	300	-	-	-	-
Option 81	A	-	-	-	-	-	550	600	-	-	-	-
Maximum current drawn (Un -10%)****												
Circuit A	A	300	330	-	-	-	300	330	-	-	-	-
Circuit B	A	-	-	-	-	-	300	330	-	-	-	-
Option 81	A	-	-	-	-	-	600	660	-	-	-	-

* Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values based on standard Eurovent unit operating conditions: evaporator entering/leaving water temp. = 12°C/7°C, condenser entering/leaving water temp. = 30°C/35°C.

** Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

*** Values based on standard Eurovent unit operating conditions: evaporator entering/leaving water temp. = 12°C/7°C, condenser entering/leaving water temp. = 30°C/35°C.

**** Values obtained at operation with maximum unit power input.

† Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Physical data, low-temperature units

Standard and high-efficiency 30XW-/30XWH units (options 5 and 6)

		Option 5 (medium temperature)				Option 6 (low temperature)			
Reference number		P0512	P0562	P1012	-1152	P0512	P0562	P1012	-1152
Nominal cooling capacity*	kW	298	332	626	705	222	245	452	502
Power input	kW	85	93	173	193	80	87	163	178
EER	kW/kW	3.49	3.56	3.62	3.66	2.76	2.81	2.78	2.81
Heating capacity	kW	376	417	784	880	295	325	601	664
Coefficient of performance (COP)	kW/kW	4.40	4.47	4.53	4.57	3.67	3.72	3.69	3.73
Nominal cooling capacity**	kW	316	354	668	760	245	271	505	558
Power input	kW	87	95	176	196	82	89	167	182
EER	kW/kW	3.65	3.72	3.80	3.87	3.00	3.04	3.03	3.06
Heating capacity	kW	395	440	827	938	320	352	657	724
Coefficient of performance (COP)	kW/kW	4.56	4.63	4.71	4.78	3.91	3.95	3.94	3.97

Option 5

* Values based on 25% ethylene glycol, evaporator entering/leaving water temperatures of -2°C/-6°C and condenser entering/leaving water temperatures of 30°C/35°C.

** Values based on 24% propylene glycol, evaporator entering/leaving water temperatures of +1°C/-3°C and condenser entering/leaving water temperatures of 30°C/35°C.

Note: Evaporator with 2 pass configuration with water inlet and outlet on the same side.

Option 6

* Values based on 35% ethylene glycol, evaporator entering/leaving water temperatures of -8°C/-12°C and condenser entering/leaving water temperatures of 30°C/35°C.

** Values based on 30% propylene glycol, evaporator entering/leaving water temperatures of -4°C/-8°C and condenser entering/leaving water temperatures of 30°C/35°C.

Note: Evaporator with 3 pass configuration with water inlet and outlet on opposite sides.

Electrical data, low-temperature units

Standard and high-efficiency 30XW-/30XWH units (options 5 and 6)

		Options 5 and 6			
Reference number		P0512	P0562	P1012	-1152
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50			
Voltage range	V	360-440			
Control circuit		24 V via the built-in transformer			
Nominal start-up current*					
Circuits A/B	A	587/-	587/-	587/587	587/587
Option 81	A	-	-	749	757
Maximum start-up current**					
Circuits A/B	A	587/-	587/-	587/587	587/587
Option 81	A	-	-	862	887
Cosine phi nominal***		0.88	0.88	0.87	0.88
Cosine phi maximum****		0.91	0.92	0.91	0.92
Maximum power input††					
Circuits A/B	kW	173/-	191/-	173/173	191/191
Option 81	kW	-	-	346	382
Nominal current drawn***					
Circuits A/B	A	162/-	171/-	162/162	171/171
Option 81	A	-	-	324	342
Maximum current drawn (Un)††					
Circuits A/B	A	275/-	300/-	275/275	300/300
Option 81	A	-	-	550	600
Maximum current drawn (Un -10%)†					
Circuits A/B	A	300/-	330/-	300/300	330/330
Option 81	A	-	-	600	660

* Instantaneous start-up current (maximum operating current of the smallest compressor(s)

+ locked rotor current or reduced start-up current of the largest compressor). Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

** Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

*** Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C. Maximum values obtained at operation with maximum unit power input.

**** Values obtained at operation with maximum unit power input.

† Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Notes, electrical data and operating conditions 30XW

- As standard
30XW 452 to 862 units have a single power connection point located immediately upstream of the main disconnect switch.
30XW 1002 to 1762 units have two connection points located immediately upstream of the main disconnect switches.
- The control box includes the following standard features:
 - One main disconnect switch per circuit*
 - Starter and motor protection devices for each compressor
 - Anti-short cycle protection devices**
 - Control devices
- Field connections:
All connections to the system and the electrical installations must be in full accordance with all applicable codes.
- The Carrier 30XW units are designed and built to ensure conformance with local codes. The recommendations of European standard EN 60204-1 (corresponds to IEC 60204-1) (machine safety - electrical machine components - part 1: general regulations) are specifically taken into account, when designing the electrical equipment.
- The absence of power supply disconnect switch(es) and short-cycle protection devices in options 82A and 70E is an important factor that has to be taken into consideration at the installation site.
Units equipped with one of these two options are supplied with a declaration of incorporation, as required by the machinery directive.

Notes:

- Generally the recommendations of IEC 60364 are accepted as compliance with the requirements of the installation directives. Conformance with EN 60204-1 is the best means of ensuring compliance with the Machines Directive and § 1.5.1.
- Annex B of EN 60204 1 describes the electrical characteristics used for the operation of the machines.

1. The operating environment for the 30XW units is specified below:

- Environment*** Environment as classified in EN 60721 (corresponds to IEC 60721):
 - indoor installation
 - ambient temperature range: minimum temperature +5°C to +42°C, class AA4
 - altitude: lower than or equal to 2000 m
 - presence of water: class AD2 (possibility of water droplets)
 - presence of hard solids, class 4S2 (no significant dust present)
 - presence of corrosive and polluting substances, class 4C2 (negligible)

2. Power supply frequency variation: ± 2 Hz.

3. The neutral (N) line must not be connected directly to the unit (if necessary use a transformer).

4. Overcurrent protection of the power supply conductors is not provided with the unit.

5. The factory installed disconnect switch(es)/circuit breaker(s) is (are) of a type suitable for power interruption in accordance with EN 60947-3 (corresponds to IEC 60947-3).

6. The units are designed for connection to TN networks (IEC 60364). For IT networks the earth connection must not be at the network earth. Provide a local earth, consult competent local organisations to complete the electrical installation.

NOTE: If particular aspects of an actual installation do not conform to the conditions described above, or if there are other conditions which should be considered, always contact your local Carrier representative.

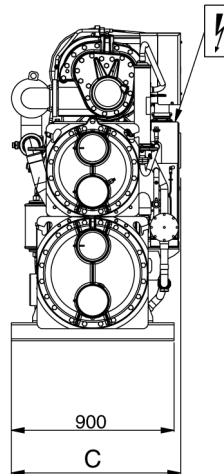
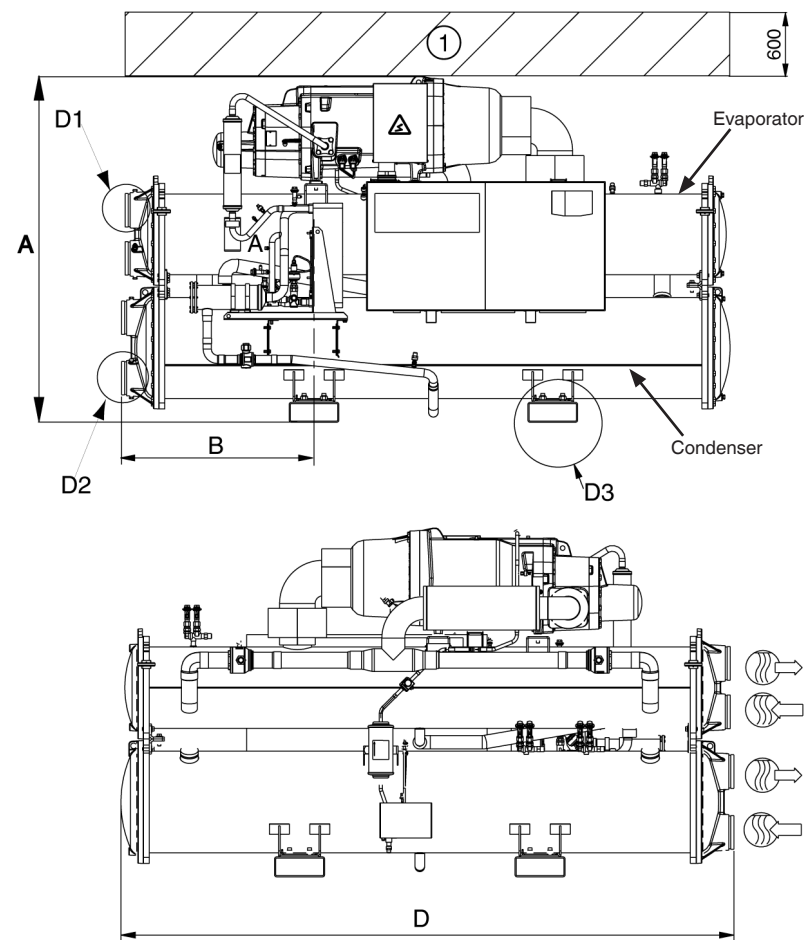
* Not provided for units equipped with options 70E and 82A

** Not provided for units equipped with option 70E

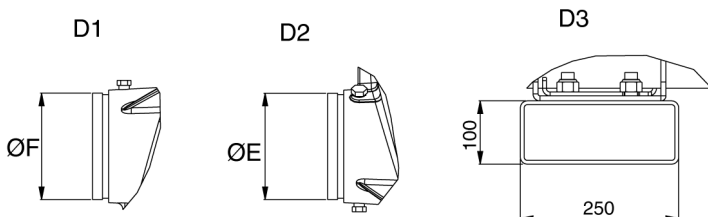
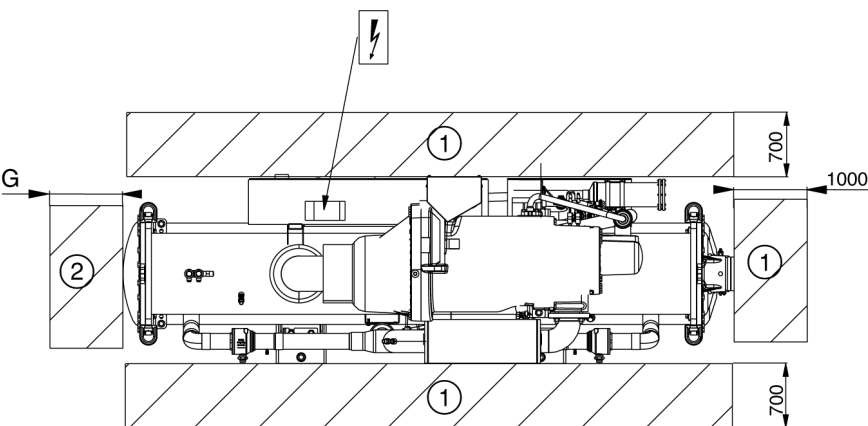
*** The required protection level for this class is IP21BW (according to reference document IEC 60529). All 30XW units are protected to IP23C and fulfil this protection condition.

Dimensions/clearances

30XW--/30XWH- 452-852
30XW-P/30XWHP 512-862



Dimensions in mm							
	A	B	C	D	E	F	G
Standard-efficiency units 30XW--/30XWH-							
452	1693	810	936	2742	141.3	141.3	2600
552	1693	810	936	2742	141.3	141.3	2600
602	1693	810	936	2742	141.3	141.3	2600
652	1848	968	1044	3059	168.3	168.3	2900
702	1848	968	1044	3059	168.3	168.3	2900
802	1848	968	1044	3059	168.3	168.3	2900
852	1898	828	1044	2780	219.1	168.3	2600
High-efficiency units 30XW-P/30XWHP							
512	1743	968	936	3059	168.3	168.3	2900
562	1743	968	936	3059	168.3	168.3	2900
712	1950	1083	1065	3290	219.1	219.1	3100
812	1950	1083	1070	3290	219.1	219.1	3100
862	1950	1083	1070	3290	219.1	219.1	3100



Legend:

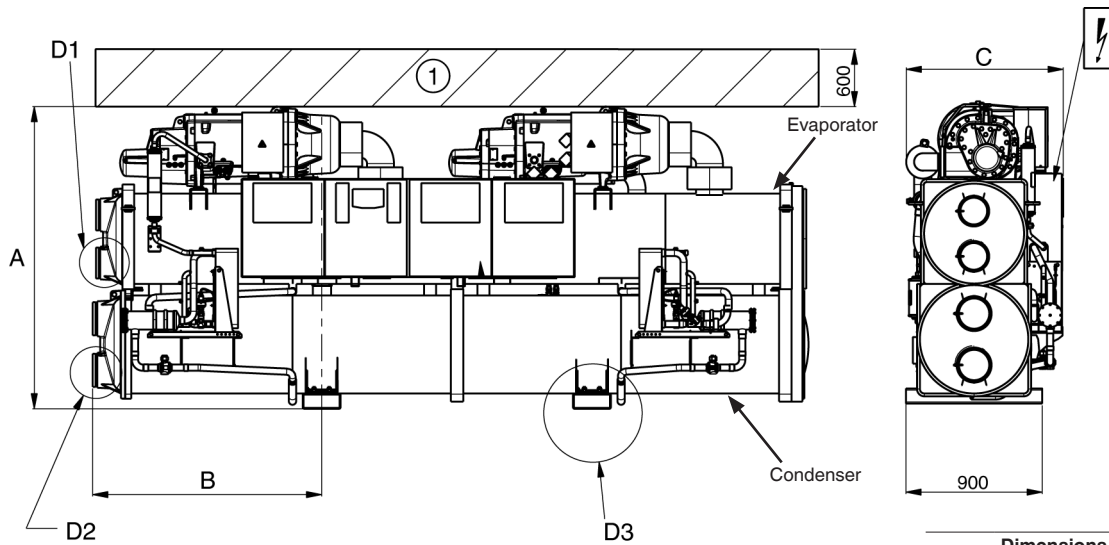
All dimensions are in mm.

- ① Required clearance for maintenance
- ② Recommended clearance for tube removal
- Water inlet
- Water outlet
- Power supply connection

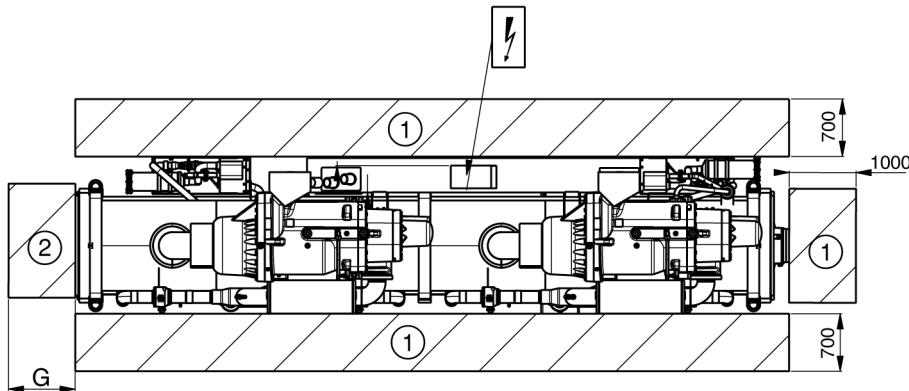
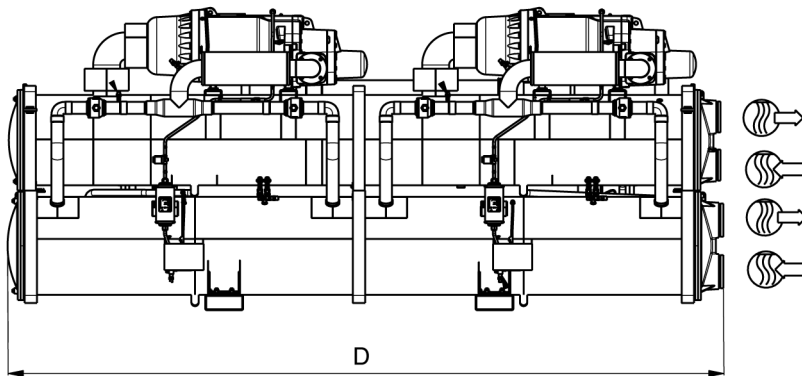
NOTE: Drawings are not contractually binding.
 Before designing an installation, consult the certified
 dimensional drawings, available on request.

Dimensions/clearances

30XW--/30XWH- 1002-1552
30XW-P/30XWHP 1012-1162



Dimensions in mm							
	A	B	C	D	E	F	G
Standard-efficiency units 30XW--/30XWH-							
1002	1870	950	1036	4025	219.1	168.3	3800
1052	1870	950	1036	4025	219.1	168.3	3800
1152	1926	950	1036	4025	219.1	219.1	3800
1252	2051	1512	1162	4730	219.1	219.1	4500
1352	2051	1512	1162	4730	219.1	219.1	4500
1452	2051	1512	1162	4730	219.1	219.1	4500
1552	2051	1512	1162	4730	219.1	219.1	4500
High-efficiency units 30XW-P / 30XHP							
1012	1997	1512	1039	4795	219.1	219.1	4500
1162	1997	1512	1039	4795	219.1	219.1	4500



Legend:

All dimensions are in mm.

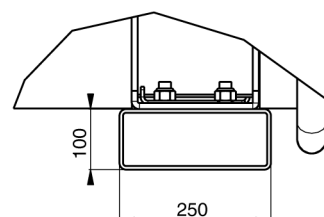
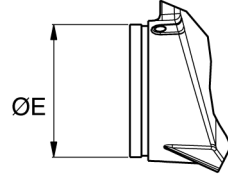
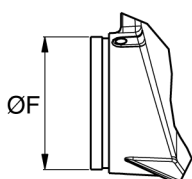
- ① Required clearance for maintenance
- ② Recommended clearance for tube removal
- ⤵ Water inlet
- ⤵ Water outlet
- ⚡ Power supply connection

NOTE: Drawings are not contractually binding.
Before designing an installation, consult the certified dimensional drawings, available on request.

D1

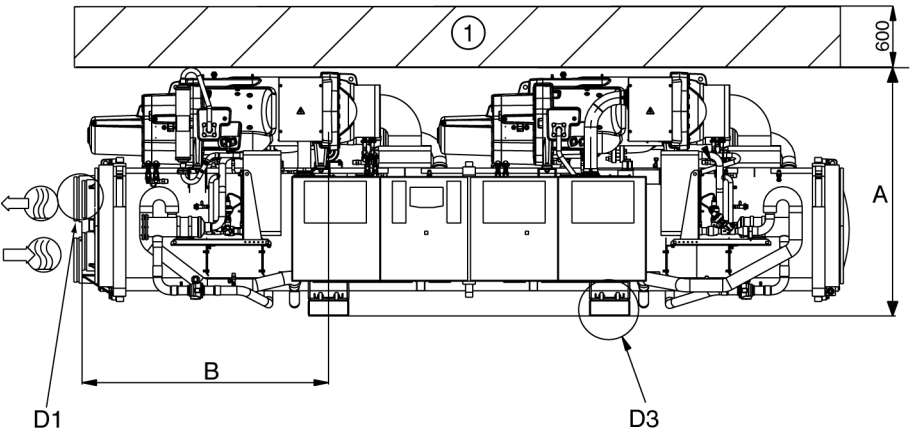
D2

D3

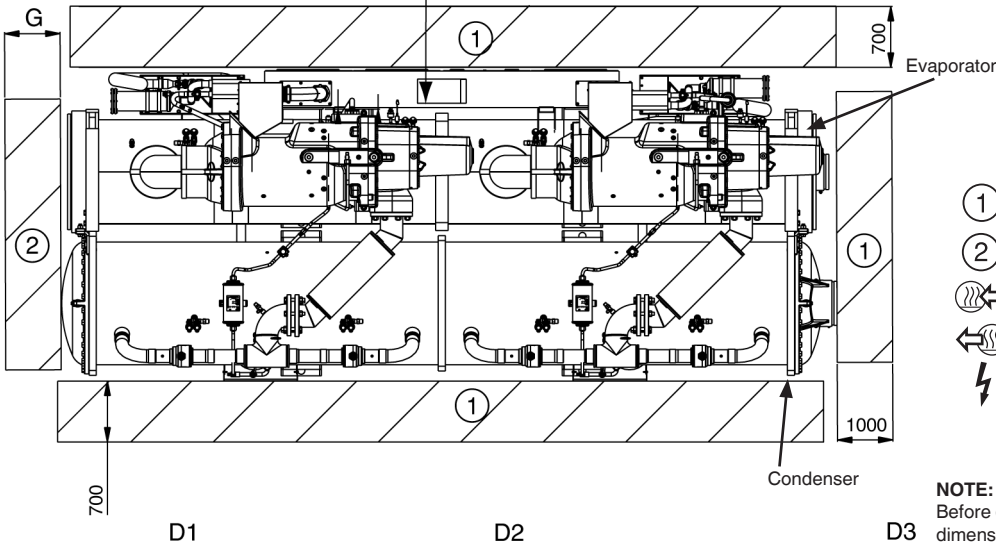
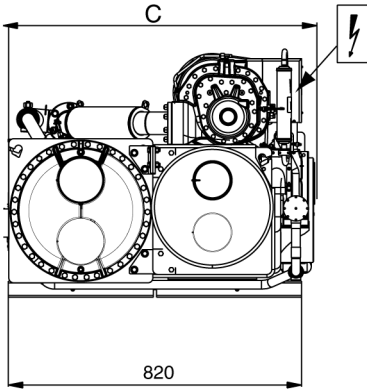
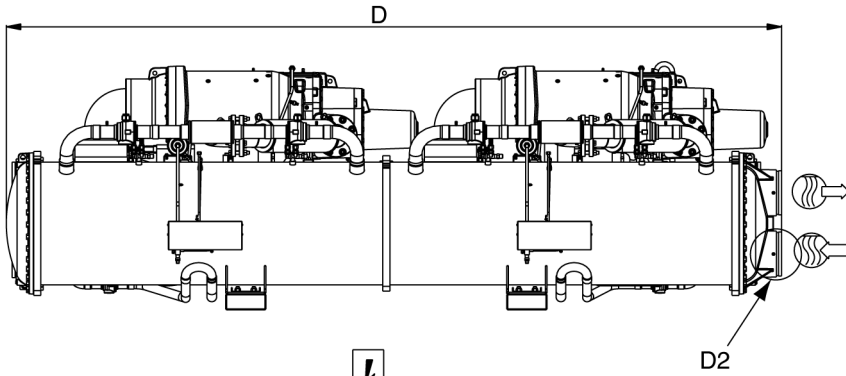


Dimensions/clearances

30XW--/30XWH- 1652-1702
30XW-P/30XWHP 1312-1762



Dimensions in mm							
	A	B	C	D	E	F	G
Standard-efficiency units 30XW--/30XWH-							
1652	1541	1568	1902	4790	219.1	219.1	4500
1702	1541	1568	1902	4790	219.1	219.1	4500
High-efficiency units 30XW-P/30XHP							
1312	1541	1581	1935	4812	273.0	219.1	4500
1462	1541	1581	1935	4812	273.0	219.1	4500
1612	1594	1591	2129	4832	273.0	273.0	4600
1762	1594	1591	2129	4832	273.0	273.0	4600

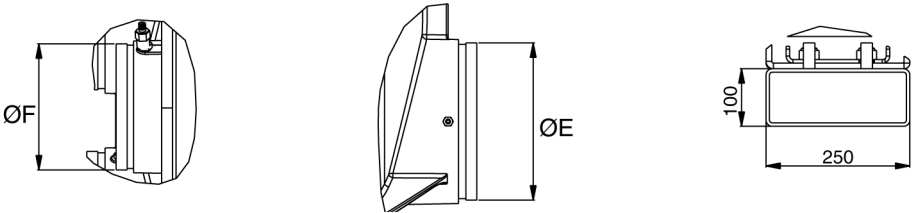


Legend:

All dimensions are in mm.

- ① Required clearance for maintenance
- ② Recommended clearance for tube removal
- Water inlet
- Water outlet
- Power supply connection

NOTE: Drawings are not contractually binding.
 Before designing an installation, consult the certified dimensional drawings, available on request.



Operating limits and operating ranges

Standard 30XW-- and 30XW-P units	Minimum	Maximum
Evaporator		
Entering temperature at start-up	-	35.0°C
Leaving temperature during operation	3.3°C*	20.0°C
Entering/leaving temperature difference at full load	2.8 K	11.1 K
Condenser		
Entering temperature at start-up	13.0°C**	-
Leaving temperature during operation	19.0°C**	50.0°C***
Entering/leaving temperature difference at full load	2.8 K	11.1 K

* For low-temperature applications, where the leaving water temperature is below 3.3°C, a frost protection solution must be used. Please refer to option 5 and option 6.

** For lower condenser temperatures, a water flow control valve must be used at the condenser (two or three-way valve). Please refer to option 152 to ensure the correct condensing temperature.

*** Please refer to option 150 for applications with a high condenser leaving temperature (up to 63°C).

Units with option 150 30XW--/30XWH-/30XW-P/30XWHP	Minimum	Maximum
Evaporator		
Entering temperature at start-up	-	35.0°C
Leaving temperature during operation	3.3°C*	15.0°C
Entering/leaving temperature difference at full load	2.8 K	11.1 K
Condenser		
Entering temperature at start-up	13.0°C**	-
Leaving temperature during operation	23.0°C**	63.0°C
Entering/leaving temperature difference at full load	2.8 K	11.1 K

* For low-temperature applications, where the leaving water temperature is below 3.3°C, a frost protection solution must be used. Please refer to option 5 and option 6.

** For lower condenser temperatures, a water flow control valve must be used at the condenser (two or three-way valve). Please refer to option 152 to ensure the correct condensing temperature.

Units with options 5 and 6 30XW--/30XWH-/30XW-P/30XWHP	Minimum	Maximum
Evaporator		
Entering temperature at start-up	-	35.0°C
Leaving temperature during operation*		
EG 5 Option 5 with ethylene glycol	-6°C	15.0°C
PG 5 Option 5 with propylene glycol	-3°C	15.0°C
EG 6 Option 6 with ethylene glycol	-12°C	15.0°C
PG 6 Option 6 with propylene glycol	-8°C	15.0°C
Entering/leaving temperature difference at full load	2.8 K	11.1 K***
Condenser		
Entering temperature at start-up	13.0°C**	-
Leaving temperature during operation	19.0/23.0°C**	55.0/ 63.0°C****
Entering/leaving temperature difference at full load	2.8 K	11.1 K

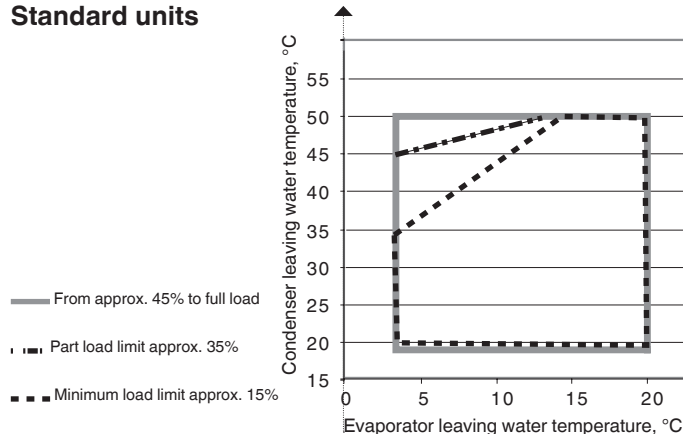
* The operating range with evaporator leaving temperatures above 3°C is permitted, but the performances are not optimised.

** For lower condenser temperatures, a water flow control valve must be installed at the condenser (two-way or three-way). Please refer to option 152 to ensure the correct condensing temperature.

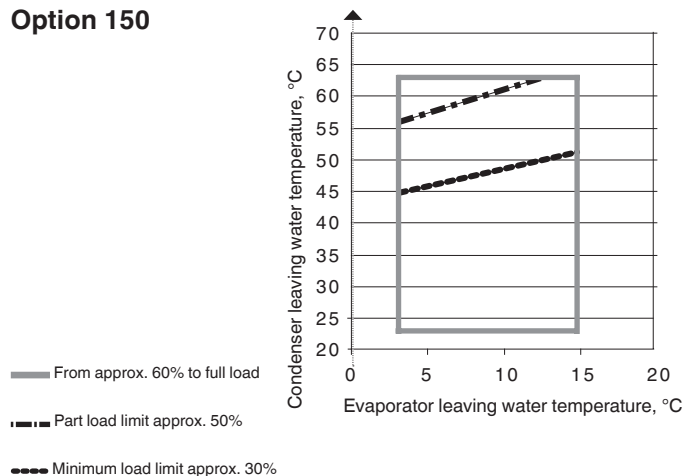
*** Please refer to chapter 10.5 of the installation manual for the minimum recommended evaporator glycol flow rate.

**** Depends on the conditions at the evaporator and the load conditions.

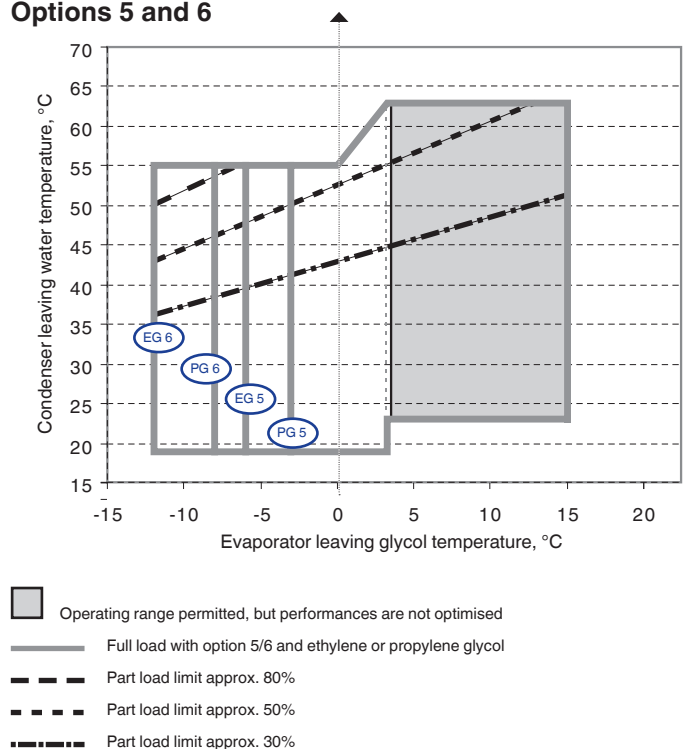
Standard units



Option 150



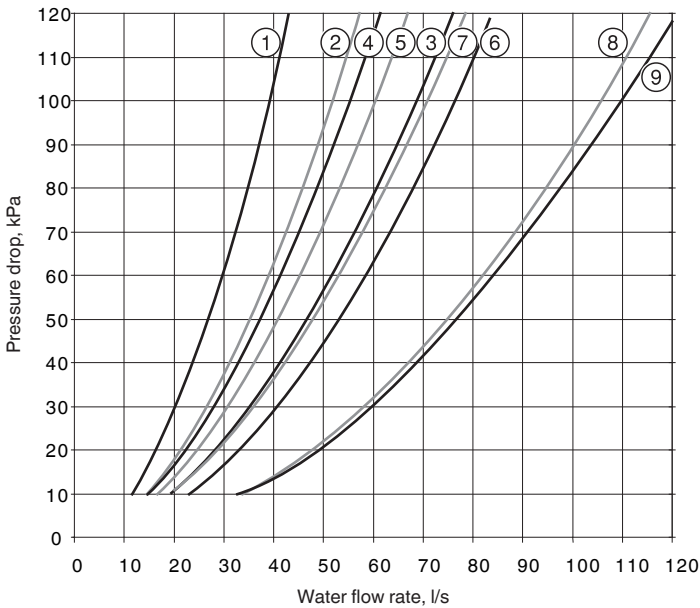
Options 5 and 6



Note: Ambient temperatures: During storage and transport of the 30XW units (including by container) the minimum and maximum permissible temperatures are -20°C and 72°C (and 65°C for option 200).

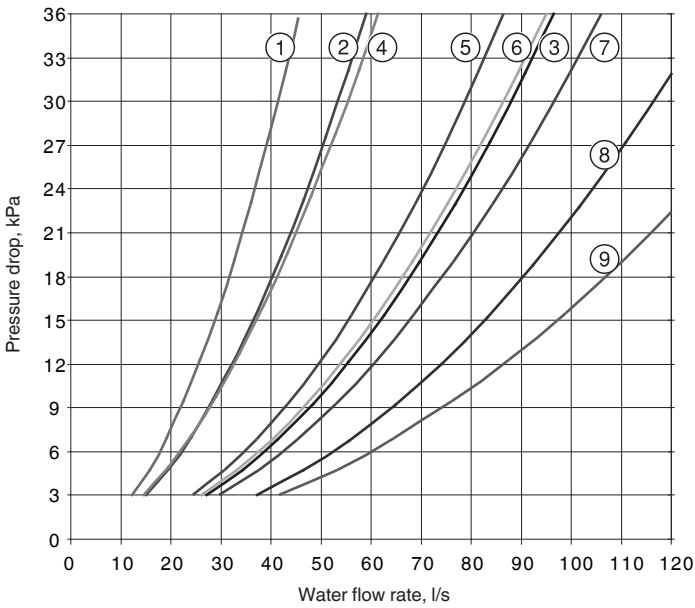
Evaporator pressure drop curves

Units with two evaporator passes (standard):
30XW--/30XWH-/30XW-P/30XWHP



- Legend**
- ① 452, 552, 602
 - ② 512, 562, 652, 702, 802
 - ③ 712, 812, 862
 - ④ 852
 - ⑤ 1002, 1052
 - ⑥ 1012, 1162, 1252, 1352, 1452, 1552
 - ⑦ 1152
 - ⑧ 1312, 1462, 1652, 1702
 - ⑨ 1612, 1762

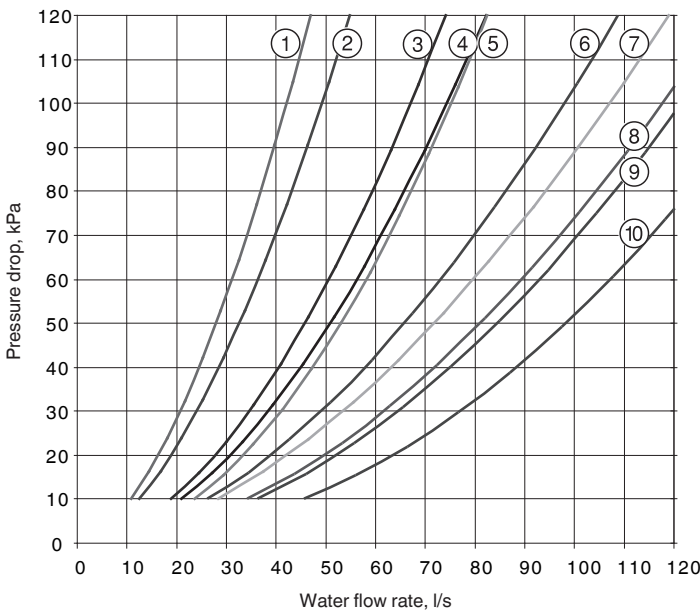
Units with one evaporator pass (option 100C):
30XW--/30XWH-/30XW-P/30XWHP



- Legend**
- ① 452, 552, 602
 - ② 512, 562, 652, 702, 802
 - ③ 712, 812, 862
 - ④ 852
 - ⑤ 1002, 1052
 - ⑥ 1012, 1162, 1252, 1352, 1452, 1552
 - ⑦ 1152
 - ⑧ 1312, 1462, 1652, 1702
 - ⑨ 1612, 1762

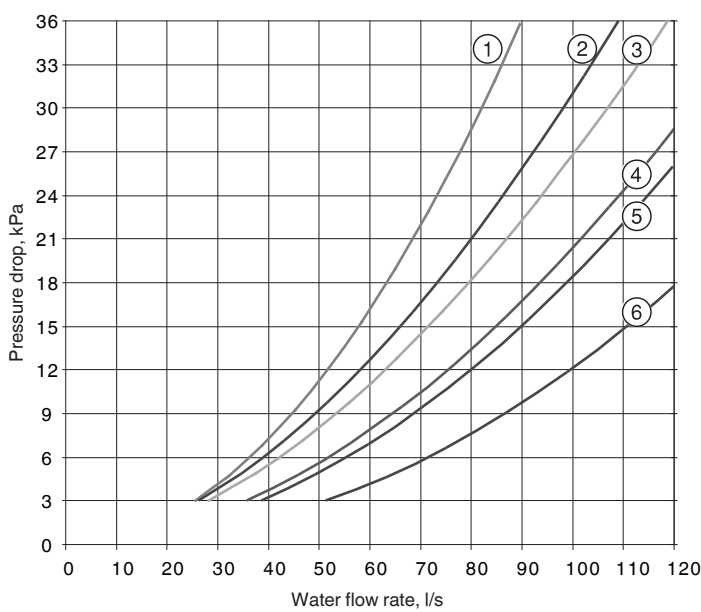
Condenser pressure drop curves

Units with two condenser passes (standard):
30XW--/30XWH-/30XW-P/30XWHP



- Legend**
- ① 452, 552, 602
 - ② 512, 562, 652, 702, 802
 - ③ 712, 812, 862
 - ④ 852
 - ⑤ 1002, 1052
 - ⑥ 1152
 - ⑦ 1012, 1162, 1252, 1352, 1452, 1552
 - ⑧ 1312, 1462
 - ⑨ 1652, 1702
 - ⑩ 1612, 1762

Units with one condenser pass (option 102C):
30XW--/30XWH-/30XW-P/30XWHP



- Legend**
- ① 1002, 1052
 - ② 1152
 - ③ 1012, 1162, 1252, 1352, 1452, 1552
 - ④ 1312, 1462
 - ⑤ 1652, 1702
 - ⑥ 1612, 1762

Cooling and heating capacities, standard units

Evaporator leaving water temperature = 5°C

30XW	Condenser leaving water temperature. °C																													
	30										35					40					45					50				
	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa					
Standard-efficiency units 30XW-30XWH-																														
452	462	530	75	22.0	36	441	518	85	21.0	33	412	500	97	19.6	29	386	486	110	18.4	26	359	473	125	17.1	22					
552	517	596	86	24.6	45	497	586	98	23.7	42	467	569	112	22.2	37	439	555	127	20.9	33	407	539	145	19.4	29					
602	523	601	86	24.9	46	505	595	99	24.1	43	487	590	114	23.2	40	467	586	130	22.3	37	447	582	149	21.3	34					
652	657	754	107	31.3	43	632	741	120	30.1	40	590	716	138	28.1	36	545	689	158	26.0	31	504	668	180	24.0	27					
702	717	822	116	34.1	51	682	801	131	32.5	46	636	774	151	30.3	41	594	751	173	28.3	36	548	728	197	26.1	31					
802	768	883	126	36.6	57	738	868	143	35.2	53	685	833	162	32.6	47	632	800	184	30.1	40	576	768	211	27.4	34					
852	813	931	130	38.7	58	798	935	150	38.0	56	752	909	172	35.8	51	697	875	196	33.2	44	654	858	224	31.1	40					
1002	992	1140	163	47.2	70	947	1114	184	45.1	64	891	1083	210	42.4	57	828	1044	238	39.4	50	766	1013	271	36.5	44					
1052	1042	1197	170	49.6	76	992	1167	192	47.2	70	936	1137	221	44.6	63	866	1094	251	41.2	55	788	1047	284	37.5	46					
1152	1104	1263	174	52.6	63	1084	1266	200	51.6	61	1028	1238	231	48.9	56	985	1225	264	46.9	52	939	1219	308	44.7	47					
1252	1233	1403	187	58.7	65	1175	1367	211	55.9	60	1103	1324	242	52.5	53	1028	1281	278	48.9	46	955	1243	317	45.5	40					
1352	1326	1510	203	63.1	75	1253	1465	232	59.7	67	1178	1420	266	56.1	60	1101	1376	303	52.4	53	1020	1334	345	48.6	45					
1452	1437	1640	223	68.4	88	1359	1592	256	64.7	79	1279	1545	292	60.9	70	1196	1499	334	56.9	62	1109	1455	380	52.8	53					
1552	1533	1751	239	73.0	99	1447	1696	274	68.9	89	1359	1643	312	64.7	79	1266	1590	356	60.3	69	1172	1540	405	55.8	59					
1652	1608	1829	244	76.5	56	1557	1812	280	74.1	53	1488	1784	326	70.8	48	1422	1763	375	67.7	44	1352	1743	429	64.4	40					
1702	1679	1910	254	80.0	61	1627	1892	291	77.5	58	1555	1861	337	74.0	53	1480	1833	388	70.5	48	1405	1808	444	66.9	43					
High-efficiency units 30XW-P/30XWHP																														
512	487	555	75	23.2	25	477	555	86	22.7	24	456	546	99	21.7	22	435	537	113	20.7	20	415	533	129	19.8	19					
562	553	630	85	26.3	32	542	631	97	25.8	30	516	618	112	24.6	28	492	610	129	23.4	26	470	604	148	22.4	23					
712	708	805	106	33.7	30	690	801	123	32.8	28	661	789	141	31.5	26	630	778	163	30.0	24	598	769	188	28.5	22					
812	758	866	118	36.1	34	736	860	136	35.1	32	705	849	158	33.6	30	674	839	182	32.1	27	642	832	209	30.6	25					
862	826	941	127	39.3	39	803	936	146	38.2	37	767	920	168	36.5	34	731	907	193	34.8	32	694	894	221	33.0	29					
1012	970	1107	150	46.2	41	975	1133	174	46.4	42	926	1107	200	44.1	38	882	1090	229	42.0	34	843	1080	261	40.1	31					
1162	1122	1274	167	53.4	55	1088	1263	192	51.8	51	1040	1242	221	49.5	47	995	1225	254	47.4	43	950	1214	290	45.2	40					
1312	1260	1431	187	60.0	34	1232	1429	217	58.7	33	1171	1399	250	55.8	30	1124	1385	287	53.5	27	1073	1373	330	51.1	25					
1462	1417	1608	210	67.5	44	1377	1598	243	65.6	41	1323	1578	280	63.0	38	1266	1559	322	60.3	35	1209	1546	370	57.6	32					
1612	1573	1786	235	74.9	52	1528	1771	267	72.7	49	1458	1743	313	69.4	45	1395	1724	362	66.4	41	1329	1706	415	63.3	38					
1762	1682	1915	256	80.1	59	1644	1909	291	78.3	57	1566	1876	341	74.6	52	1478	1838	396	70.4	46	1401	1816	456	66.7	42					

Evaporator leaving water temperature = 7°C

Condenser leaving water temperature, °C																									
30XW	30					35					40					45					50				
	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa
Standard-efficiency units 30XW-/30XWH-																									
452	495	564	75	23.6	41	476	554	85	22.7	38	444	532	97	21.2	33	416	517	110	19.8	29	387	501	125	18.5	26
552	549	628	86	26.2	50	536	625	98	25.6	48	499	602	112	23.8	42	472	588	128	22.5	37	439	571	145	20.9	33
602	559	636	86	26.6	51	541	631	98	25.8	49	519	623	114	24.8	45	498	617	130	23.8	41	476	612	149	22.7	38
652	705	803	107	33.6	48	681	790	120	32.5	46	635	760	138	30.3	40	587	732	159	28.0	35	544	708	181	25.9	30
702	767	872	116	36.5	56	735	854	131	35.1	52	684	822	152	32.6	46	639	797	173	30.5	41	592	771	198	28.2	35
802	813	928	127	38.7	63	796	927	144	37.9	60	737	885	163	35.1	53	680	848	185	32.4	45	498	641	157	23.8	26
852	849	965	127	40.5	62	844	979	148	40.2	61	797	951	169	38.0	55	741	917	193	35.3	49	621	814	212	29.6	39
1002	1069	1217	163	51.0	79	1024	1192	184	48.8	73	960	1152	210	45.8	65	890	1108	239	42.4	57	826	1074	272	39.4	50
1052	1122	1277	171	53.5	86	1068	1244	193	50.9	79	1007	1209	222	48.0	71	928	1157	251	44.3	61	843	1102	284	40.2	51
1152	1166	1324	173	55.6	69	1156	1338	200	55.1	68	1096	1306	230	52.3	62	1050	1291	264	50.1	57	1001	1282	308	47.7	53
1252	1327	1498	187	63.3	74	1265	1457	211	60.3	68	1189	1409	242	56.7	60	1109	1362	278	52.9	53	1031	1319	316	49.2	46
1352	1426	1610	203	68.0	85	1349	1560	232	64.3	77	1269	1510	265	60.5	68	1187	1462	302	56.6	60	1102	1415	344	52.5	52
1452	1547	1750	223	73.8	100	1463	1695	255	69.7	90	1377	1643	292	65.7	80	1289	1592	333	61.4	70	1197	1543	380	57.1	61
1552	1649	1867	239	78.6	113	1560	1808	274	74.4	101	1465	1749	313	69.8	90	1366	1691	357	65.1	79	1265	1634	405	60.3	68
1652	1719	1940	243	81.9	64	1664	1918	279	79.3	60	1589	1885	325	75.8	54	1519	1860	374	72.4	50	1444	1834	429	68.8	45
1702	1795	2026	253	85.6	70	1739	2003	290	82.9	65	1660	1967	337	79.2	59	1581	1935	389	75.4	54	1501	1905	444	71.5	48
High-efficiency units 30XW-P/30XWHP																									
512	521	588	74	24.8	28	512	590	86	24.4	27	488	577	98	23.3	25	464	567	113	22.1	23	443	560	129	21.1	21
562	592	669	84	28.2	35	581	669	97	27.7	34	551	653	112	26.3	31	526	643	129	25.1	28	502	636	147	23.9	26
712	760	856	106	36.2	33	740	851	122	35.3	32	706	835	141	33.7	29	674	821	163	32.1	27	641	811	187	30.6	25
812	811	918	118	38.7	38	789	912	134	37.6	36	752	895	157	35.9	33	718	884	182	34.2	30	685	875	209	32.6	28
862	882	997	126	42.0	44	865	997	145	41.2	42	820	972	168	39.1	38	780	956	193	37.2	35	741	943	221	35.4	32
1012	1021	1158	150	48.7	45	1047	1205	174	49.9	47	991	1172	199	47.2	42	943	1150	228	44.9	39	900	1137	260	42.9	35
1162	1201	1352	166	57.3	61	1165	1339	191	55.5	58	1111	1312	220	53.0	53	1062	1292	253	50.6	49	1014	1277	289	48.3	44
1312	1349	1518	186	64.3	39	1320	1516	216	62.9	37	1252	1478	249	59.7	34	1201	1461	286	57.2	31	1147	1446	328	54.7	28
1462	1511	1701	209	72.0	49	1474	1694	242	70.3	47	1414	1668	279	67.4	43	1352	1644	321	64.5	39	1291	1627	369	61.6	36
1612	1682	1895	234	80.2	58	1632	1874	266	77.8	55	1556	1840	312	74.2	50	1489	1817	361	71.0	46	1419	1795	414	67.6	42
1762	1800	2031	255	85.8	66	1764	2028	290	84.1	64	1674	1984	341	79.8	58	1580	1940	396	75.3	52	1499	1914	456	71.4	47

Cooling and heating capacities, standard units

Evaporator leaving water temperature = 10°C

Condenser leaving water temperature. °C																									
30XW	30					35					40					45					50				
	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa	Qc kW	Qh kW	Unit kW	Cool l/s	Cool kPa
Standard-efficiency units 30XW--/30XWH-																									
452	533	602	76	25.5	46	521	600	86	24.9	44	494	583	98	23.6	40	464	565	111	22.2	36	433	547	125	20.7	31
552	580	659	87	27.7	55	578	668	99	27.6	54	539	641	113	25.7	47	519	636	128	24.8	44	484	616	146	23.1	39
602	604	681	85	28.8	59	595	684	98	28.4	57	570	673	113	27.2	53	547	665	130	26.1	49	522	658	149	25.0	45
652	763	861	108	36.4	55	745	855	121	35.6	53	705	832	139	33.7	48	654	799	159	31.2	42	607	772	181	29.0	36
702	816	921	116	38.9	62	797	918	133	38.1	60	760	899	153	36.3	55	711	870	174	34.0	48	660	841	198	31.5	42
802	848	964	127	40.5	67	849	982	146	40.5	67	804	955	165	38.4	61	752	923	188	35.9	54	693	888	214	33.1	46
852	872	988	127	41.6	64	864	998	148	41.3	63	838	990	168	40.0	59	812	989	193	38.8	56	783	988	225	37.4	53
1002	1186	1335	164	56.7	93	1134	1302	185	54.1	86	1061	1254	212	50.7	76	989	1208	240	47.2	67	923	1171	272	44.1	60
1052	1242	1398	171	59.3	101	1185	1361	194	56.6	93	1114	1316	223	53.2	83	1019	1248	252	48.7	71	931	1190	285	44.5	60
1152	1239	1393	169	59.2	76	1236	1416	198	59.0	75	1206	1415	230	57.6	72	1154	1395	264	55.1	67	1100	1381	309	52.5	61
1252	1478	1648	187	70.6	90	1401	1595	213	66.9	81	1321	1543	244	63.1	73	1238	1491	278	59.1	64	1154	1441	316	55.1	56
1352	1586	1770	203	75.7	103	1502	1712	232	71.7	93	1414	1656	265	67.5	83	1325	1600	302	63.3	73	1232	1545	344	58.8	64
1452	1723	1925	223	82.3	121	1631	1863	255	77.9	109	1536	1801	292	73.3	97	1438	1741	334	68.6	85	1337	1683	380	63.8	74
1552	1836	2054	240	87.7	137	1737	1986	274	82.9	123	1634	1919	313	78.0	109	1528	1853	357	73.0	96	1416	1786	406	67.6	83
1652	1856	2076	242	88.6	73	1824	2079	280	87.1	71	1750	2045	324	83.5	65	1672	2013	374	79.9	59	1590	1981	429	75.9	54
1702	1941	2171	253	92.7	80	1905	2170	292	91.0	77	1825	2132	338	87.1	71	1742	2096	389	83.2	64	1653	2059	446	78.9	58
High-efficiency units 30XW-P/30XWHP																									
512	573	640	74	27.3	33	559	636	85	26.7	31	534	623	98	25.5	29	511	613	112	24.4	27	488	605	128	23.3	24
562	651	727	84	31.1	41	634	722	97	30.3	39	605	706	112	28.9	36	579	695	128	27.6	33	557	691	147	26.6	31
712	837	933	106	39.9	39	809	920	122	38.6	37	775	903	141	37.0	34	742	889	162	35.4	32	707	877	186	33.8	29
812	888	995	117	42.4	44	864	987	135	41.3	42	824	968	158	39.4	38	789	955	182	37.7	35	752	943	209	35.9	32
862	966	1081	127	46.1	51	945	1077	145	45.1	49	899	1052	168	42.9	45	860	1036	193	41.1	41	817	1019	221	39.0	38
1012	1061	1197	150	50.6	48	1112	1269	172	53.1	52	1090	1270	198	52.0	50	1038	1245	227	49.6	46	992	1228	259	47.4	42
1162	1311	1461	164	62.6	72	1281	1454	190	61.2	68	1225	1424	218	58.5	63	1171	1399	251	55.9	58	1117	1379	288	53.3	53
1312	1442	1610	185	68.9	44	1445	1638	213	69.0	44	1382	1606	246	66.0	40	1325	1583	283	63.3	37	1265	1561	325	60.4	34
1462	1622	1810	207	77.4	56	1617	1834	239	77.2	55	1556	1807	276	74.3	51	1491	1780	318	71.2	47	1423	1757	367	68.0	43
1612	1845	2057	233	88.1	69	1786	2030	269	85.3	64	1712	1995	311	81.8	60	1637	1964	359	78.2	55	1560	1936	413	74.5	50
1762	1952	2184	255	93.2	76	1925	2192	294	91.9	74	1842	2152	342	87.9	68	1742	2102	396	83.2	62	1653	2069	457	78.9	56

Legend:
Qc kW Cooling capacity
Qh kW Heating capacity
Unit kW Unit power input (compressors, control)
Cool l/s Evaporator water flow rate
Cool kPa Evaporator pressure drop

Application data:
 Standard units, refrigerant R-134a
 Evaporator water temperature rise: 5 K
 Evaporator fluid: chilled water
 Fouling factor: $0.18 \times 10^{-4} \text{ (m}^2 \text{ K)/W}$

Performances in accordance with EN 14511

Carrier is participating in the Eurovent Certification Programme for liquid chilling packages. Certified data of certified models are as listed in the Eurovent Directory of Certified Products or on the Internet site www.eurovent-certification.com.

This programme covers air-cooled chillers up to 600 kW and water-cooled chillers up to 1500 kW.



Environmental Management System Approval



Order No. 13457-20, 10.2009. Supersedes order No. 13457-20, 01.2009
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