Carrier

Air-Cooled Liquid Chillers

AQUAFORCE™

Quality Management System Approval

30XA 252-1702

Nominal cooling capacity 270-1700 kW

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

The Aquaforce liquid chillers are designed to meet current and future requirements in terms of energy efficiency and operating sound levels. They use the best technologies available today:
- Twin-rotor screw compressors with a variable capacity valve.
- Single refrigerant R134a.
- Low-noise generation IV Flying Bird fans made of composite material.
- Aluminium micro-channel heat exchangers (MCHX).
- Touch-screen Pro-Dialog control system.

To meet to all environmental and economic requirements, the Aquaforce is available in two versions:

One offers an extremely low noise level while at the same time boasting superior energy efficiency.

The other offers unequalled energy efficiency to satisfy the most stringent demands of building owners wanting to reduce operating costs to the minimum. This version is also recommended for applications in geographical zones where the air temperature is very high.

Features and advantages

Very economical operation

- Extremely high full load and part load energy efficiency:
  - Eurovent energy efficiency class “A”, average EER above 3.20 kW/kW (high-efficiency option)
  - Average ESEER above 4 kW/kW
  - 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.
  - All aluminium condenser with micro-channels that is more efficient than a copper/aluminium coil.
  - Flooded shell-and-tube evaporator to increase the heat exchange efficiency.
  - Electronic expansion device permitting operation at a lower condensing pressure and improved utilisation of the evaporator heat exchange surface (superheat control).
  - Economizer system with electronic expansion device for increased cooling capacity

Low operating sound levels

- Compressors
  - Discharge dampers integrated in the oil separator (Carrier patent).
  - Silencer on the economiser return line.
  - Acoustic compressor and oil separator enclosure reducing radiated noise
- Condenser section
  - Condenser coils in V-shape with an open angle, allowing quieter air flow across the coil
  - Low-noise 4th generation Flying Bird fans, made of a composite material (Carrier patent) are now even quieter and do not generate intrusive low-frequency noise
  - Rigid fan mounting preventing start-up noise (Carrier patent)

Easy and fast installation

- Integrated hydronic module (option)
  - Centrifugal low or high-pressure water pump (as required), based on the pressure loss of the hydronic installation
  - Single or dual pump (as required) with operating time balancing and automatic changeover to the back-up pump if a fault develops
  - Water filter protecting the water pump against circulating debris
  - High-capacity membrane expansion tank ensures pressurisation of the water circuit
  - Thermal insulation and aluminium protection
  - Pressure sensor to check filter pollution and for direct numerical display of the water flow rate with an estimate of the instantaneous cooling capacity at the control interface
  - Water flow control valve
- Simplified electrical connections
  - Main disconnect switch with high trip capacity
  - Transformer to supply the integrated control circuit (400/24 V)
- Fast commissioning
  - Systematic factory operation test before shipment
  - Quick-test function for step-by-step verification of the instruments, expansion devices, fans and compressors

Environmental care

- R134a refrigerant
  - Refrigerant of the HFC group with zero ozone depletion potential
  - 30% reduction in the refrigerant charge through the use of micro-channel heat exchangers
- 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
  - 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.
- Air condenser
  - All aluminium micro-channel heat exchanger (MCHX) with a corrosion resistance that is 3.5 times higher than for a traditional coil. The all aluminium design eliminates the formation of galvanic currents between aluminium and copper that cause coil corrosion in saline or corrosive environments.
- Evaporator
  - Thermal insulation with aluminium sheet finish for perfect resistance to external aggression (mechanical and UV protection).
- Auto-adaptive control
  - Control algorithm prevents excessive compressor cycling (Carrier patent)
  - Automatic compressor unloading in case of abnormally high condensing pressure. If condenser coil fouling or fan failure occurs, the Aquaforce continues to operate, but at reduced capacity
- 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. The test is based on a military standard and equivalent to 4000 km by truck.
  - Salt mist corrosion resistance test in the laboratory for increased corrosion resistance

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, fans 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 outside air temperature or the return water temperature
  - Master/slave control of two chillers operating in parallel with operating time equalisation and automatic changeover 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)

Aquaforce 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.

Aquaforce also communicates with other building management systems via optional communication gateways. A connection terminal allows remote control of the Aquaforce 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
- Heat reclaim (option): closing of this contact allows heat reclaim mode operation
- Water pump 1 and 2 control*: these outputs control the contactors of one or two evaporator water pumps
- Water pump on reversal*: these contacts are used to detect a water pump operation fault and automatically change over to the other pump
- 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

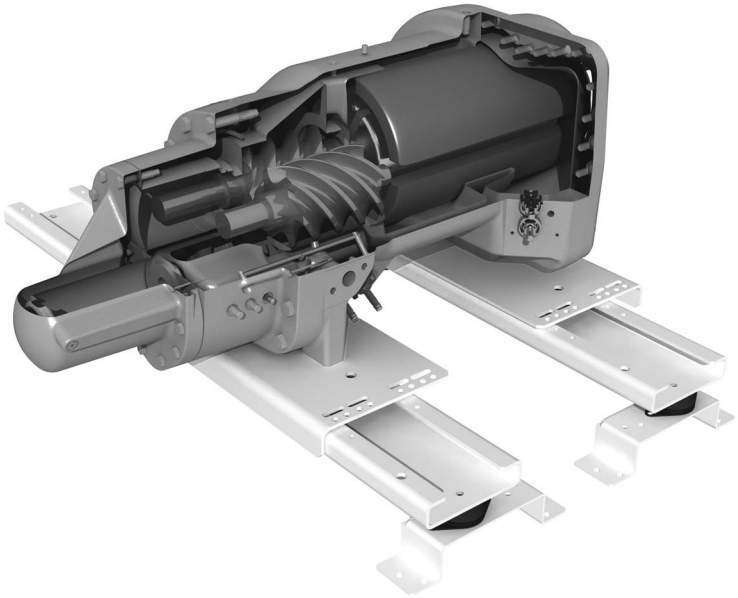
* not available for units with the hydronic module option

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 0-5 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

New generation 06T screw compressor

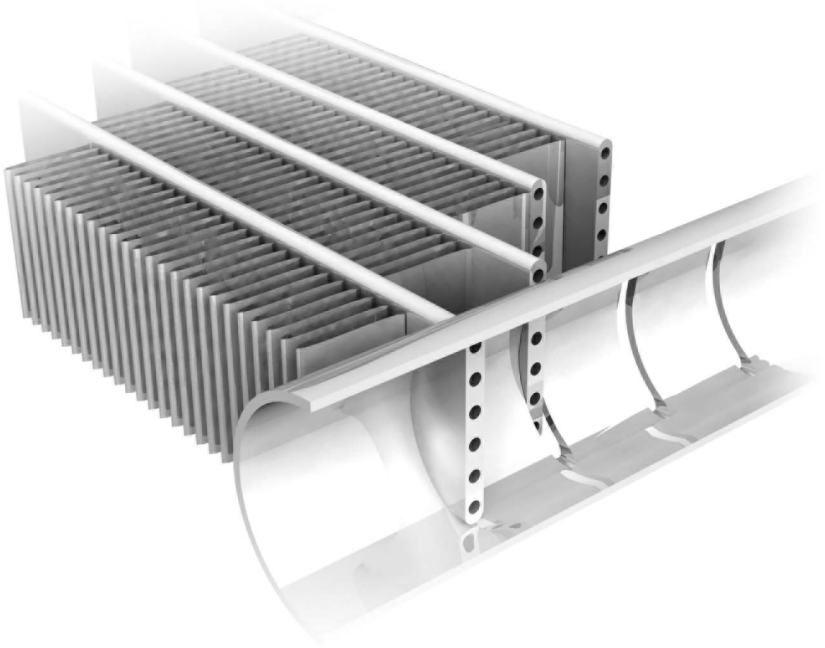


The new generation of the Carrier 06T screw compressors benefits from Carrier's long experience in the development of twin-rotor screw compressors. The compressor is equipped with bearings with oversized rollers, oil pressure lubricated for reliable and durable operation, even at maximum load. A variable control valve controlled by the oil pressure permits infinitely variable cooling capacity. This system allows optimal adjustment of the compressor cooling capacity and ensures exceptionally high stability of the chilled water leaving temperature.

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

The compressor is equipped with a separate oil separator that minimises the amount of oil in circulation in the refrigerant circuit and with its integrated silencer considerably reduces discharge gas pulsations for much quieter operation.

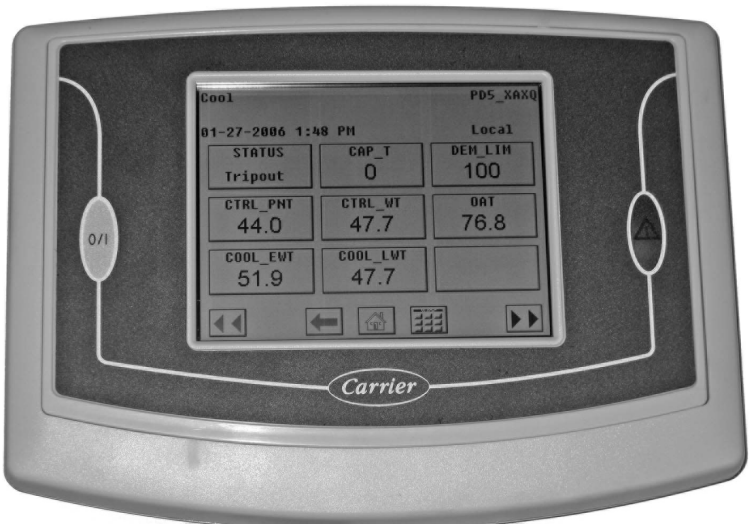
All-aluminium micro-channel heat exchanger (MCHX)



Already utilised in the automobile and aeronautical industries for many years, the MCHX used in the Aquaforce is entirely made of aluminium. This one-piece concept significantly increases its corrosion resistance by eliminating the galvanic currents that are created when two different metals (copper and aluminium) come into contact in traditional heat exchangers. Unlike traditional heat exchangers the MCHX heat exchanger can be used in moderate marine and urban environments.

From an energy efficiency point-of-view the MCHX heat exchanger is approximately 10% more efficient than a traditional coil and allows a 30% reduction in the amount of refrigerant used in the chiller. The low thickness of the MCHX reduces air pressure losses by 50% and makes it less susceptible to fouling (e.g. by sand) than a traditional coil. Cleaning of the MCHX heat exchanger is very fast using a high-pressure washer.

Pro-Dialog operator interface with touch-screen



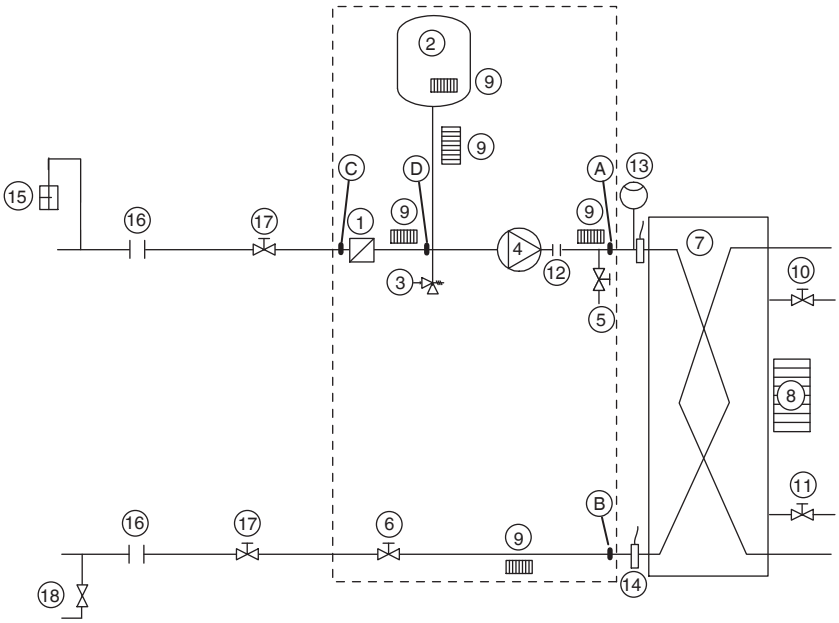
The Aquaforce operator interface is very user-friendly. It is a large-format touch-screen, and the information is easily accessible: clear text in the selected language allows consultation of all operating parameters. Up to eight screens can be personalised.

Options and accessories

Options	No.	Description	Advantages	Use
Corrosion protection, traditional coils	2B	Factory application of Blygold Polual treatment on the copper/ aluminium coils	Improved corrosion resistance, recommended for industrial, rural and marine environments	30XA 252-1702
Corrosion protection, traditional coils	3A	Fins made of pre-treated aluminium (polyurethane and epoxy)	Improved corrosion resistance, recommended for moderate marine and urban environments	30XA 252-1702
Low temperature glycol solution	5	Low temperature chilled water production down to -6°C with ethylene glycol and -3°C with propylene glycol	Covers specific applications such as ice storage and industrial processes	30XA 252-1702
Very low temperature glycol solution	6	Low temperature chilled water production down to -12°C with ethylene glycol (limited to -10°C for certain sizes) and -8°C with propylene glycol (limited to -6°C for certain sizes)	Covers specific applications such as ice storage and industrial processes	30XA 252-1702
Unit equipped for air discharge ducting	10	Fans with available pressure equipped with discharge connection flanges	Facilitates connection to the discharge ducts	30XA 252-1702
IP 54 control box	20A	Increased leak tightness of control boxes	Increased control box protection	30XA 252-1702
Tropical applications	22	Unit control box suitable for tropical applications	Reduced relative humidity in the control box for operation in tropical environments (hot and humid)	30XA 252-1702
Grilles	23	Metallic grilles on the unit front, rear and sides	Enhanced aesthetics, protection against intrusion to the unit interior	30XA 252-1702
Enclosure panels	23A	Side panels at each end of the coil	Enhanced aesthetics	30XA 252-1702
Winter operation	28	Fan speed control via frequency converter	Stable unit operation when the air temperature is between -10°C and -20°C	30XA 252-1702
Evaporator frost protection	41A	Resistance heater on the evaporator	Evaporator frost protection down to -20°C outside temperature	30XA 252-1702
Evaporator and hydronic module frost protection	41B	Resistance heater on the evaporator and the hydronic module	Evaporator and hydronic module frost protection down to -20°C outside temperature	30XA 252-1502
Heat reclaim	50	Complete recovery of the heat rejected by the condenser	Free hot-water production as well as cold-water production	30XA 252-1002
Single power connection point	81	Power connection of the machine via one main supply connection	Quick and easy installation	30XA 252-1502
Service valve	92	Shut-off valves on the compressor suction piping, the economiser line and the compressor discharge piping	Simplified maintenance	30XA 252-1702
Discharge valve	93A	Shut-off valves on the compressor discharge piping	Simplified maintenance	30XA 252-1702
Evaporator with one pass more	100A	Evaporator with one pass more, water-side	Increased water inlet and outlet pressure loss on opposite sides	30XA 252-1702
Evaporator with one pass less	100C	Evaporator with one pass less, water-side	Reduced water inlet and outlet pressure loss on opposite sides	30XA 252-1002
21 bar evaporator	104	Reinforced evaporator for extension of the maximum water-side service pressure range to 21 bar	Covers applications with a high water column (high buildings)	30XA 252-1702
Reversed water connections	107	Evaporator with reversed water inlet/outlet	Simplification of the water piping	30XA 252-1702
High-pressure single-pump hydronic module	116B	See hydronic module chapter	Easy and fast installation	30XA 252-502
High-pressure dual-pump hydronic module	116C	See hydronic module chapter	Easy and fast installation, operating safety	30XA 252-502
Low-pressure single-pump hydronic module	116F	See hydronic module chapter	Easy and fast installation	30XA 252-502
Low-pressure dual-pump hydronic module	116G	See hydronic module chapter	Easy and fast installation, operating safety	30XA 252-502
Direct-expansion free-cooling system	118A	Chilled water production without the use of the compressors, using direct-expansion heat exchange on the condensers	Very economical chilled water production at low outdoor temperatures	30XA 252-1002
High energy efficiency	119	Improved condenser performance	Energy cost reduction, full load operation at higher air temperatures	30XA 252-1702
JBus gateway	148B	Two-directional communications board, complies with JBus protocol	Easy connection by communication bus to a building management system	30XA 252-1702
BacNet gateway	148C	Two-directional communications board, complies with BacNet protocol	Easy connection by communication bus to a building management system	30XA 252-1702
LON gateway	148D	Two-directional communications board, complies with LON protocol	Easy connection by communication bus to a building management system	30XA 252-1702
Energy Management Module EMM	156	See chapter “Energy Management Module”	Easy connection by wired connection to a building management system	30XA 252-1702
High pressure switch to comply with German (VBG 20) and Dutch (RLK) standards	193	One PZH/PZHH high-pressure switch per compressor	Conformance with German and Dutch regulations	30XA 252-1702
Dual safety valve installed with three-way valve	194	Three-way valve upstream of the safety valves on the evaporator and the oil separator	Valve replacement and inspection facilitated without refrigerant loss. Conforms to European standard EN378/BGVD4	30XA 252-1702
Swiss code compliance in addition to PED code	197	Additional tests on the water heat exchangers. Additional supply of PED documents, supplementary certificates and test certificates.	Conformance with Swiss regulations in addition to PED code	30XA 252-1702
Russian code compliance (GOST)	199	GOST certification	Conformance with Russian regulations (GOST)	30XA 252-1702
Australian code compliance	200	Heat exchanger approved in accordance with the Australian code.	Conformance with Australian regulations	30XA 252-1702
Unit without enclosure	253	Compressors not equipped with acoustic enclosure	More economical	30XA 252-1702
Traditional coils (Cu/Al)	254	Coils made of copper tubes with aluminium fins	Possibility to add specialised condenser treatment	30XA 252-1702
Traditional coils (Cu/Al) without slots	255	Coils made of copper tubes with aluminium fins without slots	Recommended for the Middle East, sand storms. Possibility to add specialised condenser treatment.	30XA 252-1702
Suction piping insulation	256	Thermal insulation of the suction piping with flexible, anti-UV insulant	Prevents condensation on the suction piping	30XA 252-1702
Low sound level	257	Sound insulation of certain unit refrigerant circuit components (suction, evaporator and economiser piping)	Unit sound power level reduction of -3 dB(A)	30XA 252-1702
Very low sound level (second attenuation level)	258	Additional sound insulation	Unit sound power level reduction of -1 to -3 dB(A), depending on unit size, compared to option 257	30XA 252-1702
MCHX anti-corrosion protection	263	Carrier factory treatment of the MCHX heat exchanger for applications in aggressive environments	The Super Enviro-Shield option was developed to extend the application range of MCHX heat exchangers in severe environmental conditions: this option is compulsory in industrial and coastal environments.	30XA 252-1702
Accessories		**Description**	**Advantages**	**Use**
CCN JBus gateway		See option 148B	See option 148B	See option 148B
CCN BacNet gateway		See option 148C	See option 148C	See option 148C
CCN LON Talk gateway		See option 148D	See option 148D	See option 148D
Connection sleeve		Piping to be welded with Victaulic connection	Ease-of-installation	30XA 252-1702
Energy Management Module EMM		See controls manual	Easy connection by wired connection to a building management system	30XA 252-1702
Lead-lag kit		Additional 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.	30XA 252-1502
Anti-vibration mountings		Elastomeric anti-vibration mountings for each unit weight distribution point	Absorption of vibrations, linked to the unit operation (essentially compressor)	30XA 252-1702

Hydronic module (option 116)

Typical hydronic circuit diagram



Legend

Components of unit and hydronic module

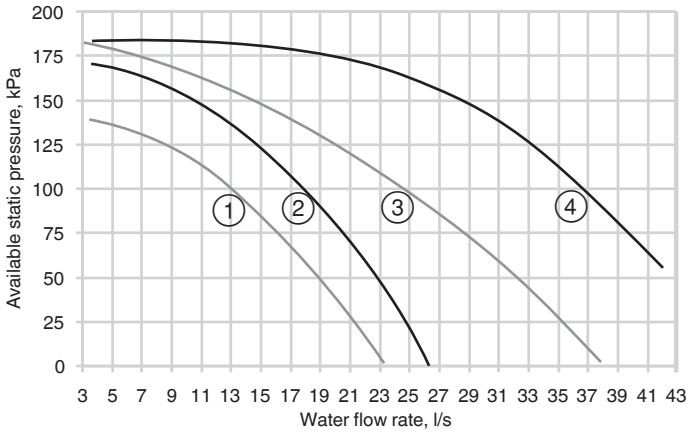
A Pressure sensor (A-B = Δp evaporator)
B Pressure sensor
C Pressure sensor (C-D = Δp water filter)
D Pressure sensor
1 Victaulic screen filter
2 Expansion tank
3 Safety valve
4 Available pressure pump
5 Drain valve
6 Water flow control valve
7 Evaporator
8 Evaporator defrost heater (option)
9 Hydronic module defrost heater
10 Air vent (evaporator)
11 Water purge (evaporator)
12 Expansion compensator (flexible connections)
13 Flow switch
14 Water temperature sensor

System components

15 Air vent
16 Flexible connection
17 Shut-down valves
18 Charge valve
---- Hydronic module (option)

Available static system pressure

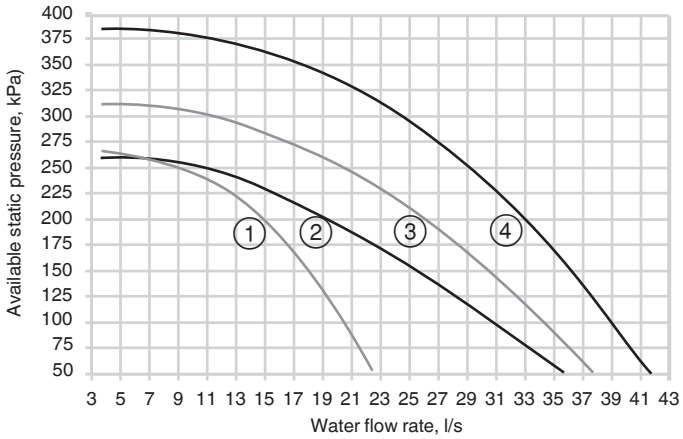
Low-pressure pump (hydronic module option)



Legend

1. 30XA 252-302
2. 30XA 352
3. 30XA 402
4. 30XA 452-502

High-pressure pump (hydronic module option)



Legend

1. 30XA 252
2. 30XA 302-352
3. 30XA 402
4. 30XA 452-502

Total heat reclaim (option 50)

Suitable for heating, domestic hot water preparation, agriculture and food industry, industrial processes and other hot-water requirements.

With the total heat reclaim option it is possible to reduce the energy consumption bill considerably compared to conventional heating equipment such as fossil fuel boilers or electric water tanks.

Operating principle

If hot water production is required, the compressor discharge gases are directed towards the heat reclaim condenser. The refrigerant releases its heat to the hot water that leaves the condenser at a temperature of up to 60°C. In this way 100% of the heat rejected by the liquid chiller can be used to produce hot water. When the demand for heat is satisfied, the hot gas is again directed towards the air condenser where the heat is rejected to the outside air by the fans. Hot water temperature control is ensured by the chiller Pro-Dialog control that independently controls the reclaim operation of each refrigerant circuit.

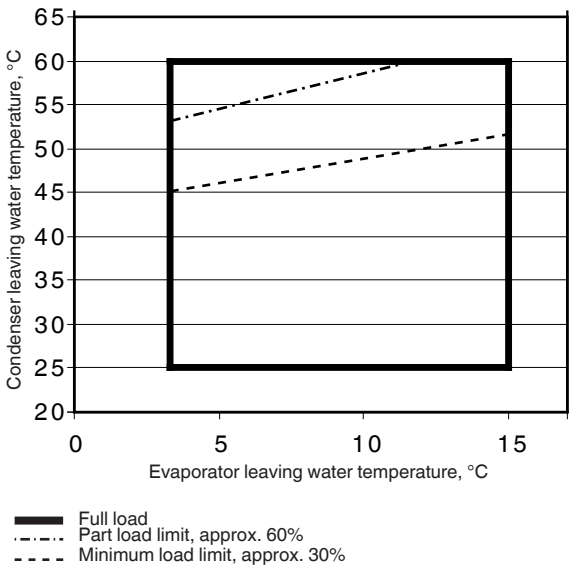
Note: Heat reclaim is only possible, if the unit produces cold water at the same time.

Condenser water temperature (°C)	Minimum	Maximum
Entering temperature at start-up	12.5*	55
Entering temperature during operation	20	55
Leaving temperature during operation	25	60
Evaporator water temperature (°C)		
Entering temperature at start-up	-	45
Entering temperature during operation	6.8	21
Leaving temperature during operation	3.3	15

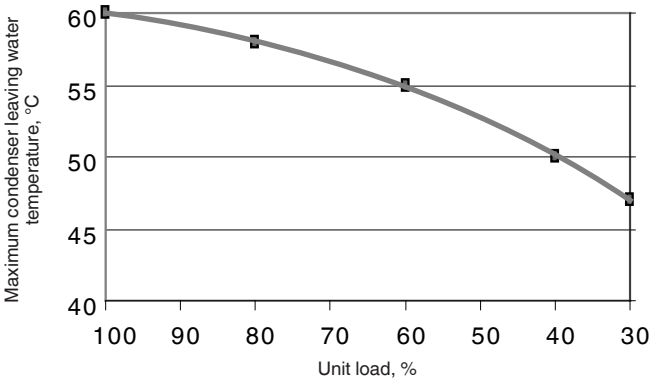
* The entering water temperature at start-up must not fall below 12.5°C. For installations with a lower temperature a three-way valve must be used.

Note: If the evaporator leaving water temperature is below 4°C, a glycol-water solution or the frost protection option must be used.

In part-load operation, the limitation of the condenser leaving water temperature is due to the operating range of the screw compressor. If the condenser leaving water temperature is above the limit value given in the curves on the right, the unit will automatically change over to the mode without heat recovery:



Part load operating limits (evaporator leaving water temperature = 7°C)



Physical data

These are the same as for the standard unit except:

30XA heat reclaim mode		252	302	352	402	452	502	602	702	752	802	852	902	1002
Cooling capacity*	kW	261	291	311	379	438	493	603	665	707	775	814	875	971
Heating capacity in heat reclaim mode	kW	336	373	401	481	554	620	760	832	894	974	1027	1105	1229
Total power input (unit)*	kW	82	90	99	113	128	140	172	183	206	219	234	253	283
Total energy efficiency ratio (EER)	kW/kW	3,16	3,22	3,15	3,36	3,40	3,53	3,52	3,63	3,43	3,53	3,48	3,45	3,42
Total energy efficiency ratio (COP)	kW/kW	4,07	4,13	4,06	4,27	4,31	4,46	4,44	4,55	4,35	4,45	4,40	4,38	4,35
Operating weight**	kg	4230	4270	4280	5260	5380	5880	7000	7100	7470	7680	8320	8670	9280
Refrigerant charge														
Circuit A	kg	36	37	37	53	54,5	62	62	62	70	74	77	74	96
Circuit B	kg	38	38	39	37	39	39	62	66	62	69	68	77	94
Heat reclaim condenser		Flooded shell-and-tube condenser												
Water volume	l	38	38	38	55	68	68	55 + 55	55 + 55	55 + 68	55 + 68	55 + 68	68 + 68	68 + 68
Water connection		Type Victaulic												
Diameter	inch	3	3	3	4	4	4	4	4	4	4	4	4	4
Outside diameter	mm	88.9	88.9	88.9	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3

* Entering and leaving water temperature: evaporator 12°C/7°C; heat reclaim condenser: 40°C/45°C
** Weights are for guidance only

DX free cooling system (option 118A)

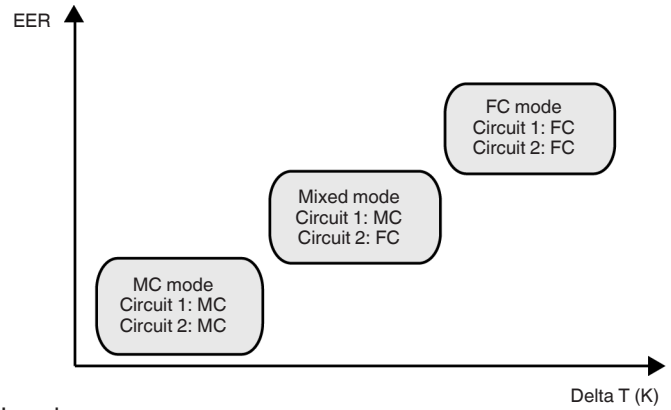
The DX free cooling option permits significant energy savings for all applications that require cooling in winter. In the free cooling mode the compressors are stopped and only the fan and cooling micro-pump are running. The changeover from compressor cooling mode to free cooling mode is automatically controlled by the Pro-Dialog control, based on the chiller heat load and the temperature difference between chilled water and ambient air.

Important: In order to optimise chiller performances, it is recommended to use the leaving water set point reset function.

Operating principle

When the chilled water-air temperature difference exceeds a threshold value, the Pro-Dialog control carries out a comparison between the instantaneous chiller cooling capacity and the available free cooling capacity. If the operating conditions allow free cooling operation, the compressors are stopped, a set of valves on the suction piping connects the evaporator with the condenser, allowing the migration of the refrigerant vapours to the condenser. The refrigerant condenses in the condenser coils, and the cooling micro-pump transports the liquid to the evaporator. The cooling capacity in free cooling mode is controlled by the opening of the electronic expansion valve (EXV).

Operation in combined FC (free-cooling) and MC (mechanical cooling) mode is possible in the two independent refrigerant circuits. This can optimise the free-cooling operations and at the same time ensures that the cooling requirements of the system are met.



Legend
MC Mechanical cooling (compressors)
FC Free cooling
Delta T Difference between the leaving water temperature and the entering air temperaure (K)

Advantages of the DX free cooling system

- Operation without glycol
  Unlike traditional hydronic free-cooling systems that require the use of a glycol solution, the Aquaforce DX free cooling chiller works with pure water. The evaporator is protected against frost down to -20°C by an electric resistance heater (option).
- Low water pressure losses
  The Aquaforce DX free cooling chiller does not include a three-way valve nor free cooling coils connected in series with the evaporator. The Aquaforce free cooling chiller has the same water pressure losses as a standard chiller.
- Weight and dimensions gain
  - The DX free cooling option has practically no impact on the weight of the liquid chiller.
  - The Aquaforce free cooling chiller has the same dimensions as a standard chiller.
- Increased energy efficiency
  - In free cooling mode only the fans and the cooling micro-pump run. At an air-water temperature difference of 10 K for example the average chiller energy efficiency (EER) is 23 (kW/kW).
  - In the mechanical cooling mode chiller thermal and energy performances are not reduced by the use of a water-glycol solution.
  - As the pressure losses of the water circuit are low, the water pumps use less energy.

Cooling capacities

30XA 252-1002 in free-cooling mode

		Condenser entering air temperature, °C								
	LWT	0			-5			-10		
	°C	Cap kW	Unit kW	EER kW/kW	Cap kW	Unit kW	EER kW/kW	Cap kW	Unit kW	EER kW/kW
252	10	146	6	24.3	186	6	30.8	189	6	31
302		146	6	24.5	186	6	31	190	6	31.3
352		146	6	24.6	186	6	31	189	6	31.3
402		188	8	23.1	261	8	31.9	281	8	33.9
452		191	8	24	266	8	33.2	286	8	35.4
502		214	9	24	299	9	33.2	323	9	35.5
602		260	11	24	382	11	34.3	425	11	37.8
702		280	12	23.4	412	12	34.1	459	12	37.6
752		282	12	24.1	414	12	35.1	461	12	38.7
802		282	12	23.6	412	12	34.3	459	12	37.8
852		326	14	23.4	480	14	34.1	534	14	37.6
902		330	14	23.9	485	14	34.7	540	14	38.3
1002		370	15	24.1	544	15	35	605	16	38.6

Legend
LWT Leaving water temperature
Cap kW Cooling capacity
Unit kW Unit power input (compressors, fans, control)
EER kW/kW Energy efficiency ratio

Operating limits

	Free-cooling mode	Mechanical cooling mode (compressors)
Evaporator water temperature, °C		
Minimum leaving water temperature	3.3	3.3
Maximum leaving water temperature	25	15
Condenser water temperature, °C		
Minimum leaving air temperature	-20	-20*
Maximum leaving air temperature	20	55

* For operation at an air temperature below -10°C option 28 (winter operation) is required.

Physical data

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
Nominal cooling capacity*																					
Standard unit	kW	268	293	320	382	437	492	605	653	706	764	802	869	952	1116	1216	1297	1382	1426	1478	1605
Power input	kW	86.7	98	106	122	142	161	198	208	235	258	265	297	321	363	405	445	504	473	493	528
EER	kW/kW	3.09	2.99	3.02	3.13	3.08	3.04	3.06	3.14	3.00	2.96	3.03	2.93	2.97	3.07	3.00	2.91	2.74	3.01	3.00	3.04
Eurovent class cooling		B	B	B	A	B	B	B	A	B	B	B	B	B	B	B	B	C	B	B	B
ESEER	kW/kW	4.11	4.29	4.31	4.22	4.37	4.34	4.13	4.21	4.00	3.95	3.93	3.91	3.91	4.11	4.02	4.03	3.83	4.10	4.11	3.86
Nominal cooling capacity*																					
Unit with option 119	kW	274	300	326	393	451	508	616	677	726	792	838	899	1000	1147	1247	1354	1442	1468	1523	1675
Power input	kW	87.5	96.2	105	120	140	154	191	203	233	249	257	286	310	348	388	425	463	451	470	513
EER	kW/kW	3.13	3.12	3.11	3.28	3.21	3.29	3.23	3.33	3.12	3.18	3.26	3.14	3.23	3.30	3.21	3.19	3.11	3.25	3.24	3.27
Eurovent class cooling		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
ESEER	kW/kW	3.93	4.03	408	4.01	4.18	4.19	4.02	4.18	3.99	4.10	4.14	3.91	3.95	4.24	4.10	4.23	4.15	4.13	4.12	4.04
Operating weight**	kg																				
Standard unit + option 119***		3740	3780	3820	4673	4743	5174	6097	6247	6547	6847	7308	7648	8226	10170	10610	10990	11350	4128/ 8141	4143/ 8637	7348/ 7348
Option 254***		4160	4190	4710	5190	5260	5830	6870	7030	7820	8140	8260	9010	9260	11470	11890	12250	12640	4650/ 9180	4650/ 9340	8270/ 8270
Sound levels																					
Standard-efficiency unit																					
Sound power level****	dB(A)	89	89	89	92	93	93	93	92	95	95	94	96	95	96	96	96	97	97	97	97
Sound pressure level at 10 m†	dB(A)	57	57	57	60	61	61	62	61	63	63	62	63	63	63	63	63	64	64	64	64
Standard unit + option 257																					
Sound power level****	dB(A)	86	86	86	89	90	90	91	90	92	92	91	93	92	93	93	93	94	94	94	94
Sound pressure level at 10 m†	dB(A)	54	54	54	57	58	58	59	57	60	59	58	60	59	60	60	60	61	61	61	61
Standard unit + option 258																					
Sound power level****	dB(A)	-	-	-	-	88	88	88	88	89	89	89	89	90	91	92	91	92	92	92	92
Sound pressure level at 10 m†	dB(A)	-	-	-	-	56	55	57	55	56	56	56	57	57	58	59	58	59	59	59	58
High-efficiency unit (option 119)																					
Sound power level****	dB(A)	94	94	94	95	95	95	96	96	98	98	98	99	98	99	100	99	100	101	100	101
Sound pressure level at 10 m†	dB(A)	62	62	62	63	63	63	65	64	65	66	65	66	65	66	67	66	67	68	67	67
Unit with options 119 + 257																					
Sound power level****	dB(A)	92	92	92	94	94	94	96	95	96	96	96	97	97	98	98	98	98	99	99	99
Sound pressure level at 10 m†	dB(A)	60	60	60	62	62	62	64	62	63	63	63	64	64	65	65	65	65	66	66	65
Compressors		06T semi-hermetic screw compressors, 50 r/s																			
Circuit A		1	1	1	1	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	1	1	1	1	1	1	1	1	1	1	1
Circuit C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1
Circuit D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Refrigerant**		R134a																			
Standard unit + option 119***																					
Circuit A	kg	36	37	37	53	55	62	62	62	70	70	77	70	80	69	85	87	87	100	92	77
Circuit B	kg	38	38	39	37	39	39	62	66	62	57	66	75	84	66	66	68	80	85	95	66
Circuit C	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	100	96	100	100	77
Circuit D	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
Option 254***																					
Circuit A	kg	60	64	70	85	85	102	102	100	129	112	130	129	140	102	112	112	112	140	140	130
Circuit B	kg	64	64	56	56	56	56	88	95	88	95	95	103	129	92	92	92	98	103	129	95
Circuit C	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	135	135	135	122	135	135	130
Circuit D	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95
Capacity control		PRO-DIALOG, electronic expansion valve (EXV)																			
Minimum capacity	%	15	15	15	15	15	15	15	15	15	15	15	15	15	10	10	10	10	10	10	8
Condensers		Aluminium micro-channel heat exchanger																			
Fans		Axial Flying Bird 4 with rotating shroud																			
Qty. standard unit + option 119		6	6	6	8	8	9	11	12	12	12	14	14	16	19	20	20	20	24	24	28
Qty. option 254****		6	6	7	8	8	9	11	12	13	13	14	15	16	19	20	20	20	24	24	28
Standard total air flow	l/s	20500	20500	20500	27333	27333	30750	37583	41000	41000	41000	47833	47833	54667	64917	68333	68333	68333	82000	82000	95667
Standard speed	r/s	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
Evaporator		Flooded shell-and-tube type																			
Water content	l	58	61	61	66	70	77	79	94	98	119	119	130	140	168	182	203	224	230	240	240
Without hydronic module																					
Water connections, inlet/outlet		Victaulic																			
Diameter††	in	5	5	5	5	5	5	5	6	6	6	6	6	8	6	6	6	6/8	6/8	6/8	6/6
Outside diameter††	mm	141.3	141.3	141.3	141.3	141.3	141.3	141.3	168.3	168.3	168.3	168.3	168.3	219.1	168.3	168.3	168.3	168.3/ 219.1	168.3/ 219.1	168.3/ 219.1	168.3
Max. water-side pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
With hydronic module (option 116)																					
Water connections, inlet/outlet		Victaulic																			
Diameter	in	4	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Outside diameter	mm	114.3	114.3	114.3	114.3	114.3	114.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expansion tank volume	l	50	50	50	50	50	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Max. water-side pressure	kPa	400	400	400	400	400	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chassis paint colour		Colour code: RAL7035																			

* Standard Eurovent LCP/A/P/C/AC conditions in cooling mode: evaporator entering/leaving water temperature 12°C/7°C, outside air temperature 35°C, evaporator fouling factor 0.18 x 10^{-4} (m^2 K)/W.
** Weights are guidelines only. The refrigerant charge is also given on the unit nameplate.
*** Options: 119 = high energy efficiency; 254 = traditional Cu/Al coils.
**** 10^{-12} W - In accordance with ISO 9614-1 and certified by Eurovent
† Average sound pressure level, unit in a free field on a reflective surface
†† Weight and diameters of connection modules 1 and 2 for sizes 1402 to 1702.

Notes:
1. Unit sizes 30XA 1402 to 1702 are supplied in two field-assembled modules.
2. Option 119 (high energy efficiency can be used together with options 254 and 255.
3. Contact your Carrier representative to obtain the performances

Electrical data

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
Power circuit																					
Nominal power supply	V-ph-Hz	400-3-50																			
Voltage range	V	360-440																			
Maximum supply cable section																					
Circuits A + B	mm²	2 x 240	2 x 240	2 x 240	2 x 240	2 x 240	2 x 240	4 x 240	4 x 240	4 x 240	4 x 240	4 x 240	6 x 240	6 x 240	4 x 240	4 x 240	4 x 240	6 x 240	6 x 240	6 x 240	4 x 240
Circuits C + D†	mm²	-	-	-	-	-	-	-	-	-	-	-	-	-	2 x 240	2 x 240	2 x 240	2 x 240	2 x 240	2 x 240	4 x 240
Option 81	mm²	-	-	-	-	-	-	-	-	-	-	-	-	-	8 x 240	8 x 240	8 x 240	8 x 240	8 x 240	8 x 240	-
Short circuit holding current (TN system)*																					
Circuits A + B	kA	38	38	38	38	38	38	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Circuits C + D†	kA	-	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	50	50	50	50
Option 81	kA	-	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	50	50	50	-
Control circuit		24 V via internal transformer																			
Standard unit																					
Maximum start-up current**																					
Circuits A + B	A	269	269	287	402	505	505	574	606	773	803	805	893	941	574	773	803	891	893	941	805
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	587	587	805
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	991	1079	1155	1242	1248	1294	-
Nominal start-up current***																					
Circuits A + B	A	245	245	262	378	480	480	536	562	735	759	761	845	865	536	735	759	859	845	865	761
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	587	587	761
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	909	993	1036	1156	1125	1143	-
Cosine Phi (maximum)******		0.88	0.88	0.87	0.88	0.88	0.88	0.88	0.88	0.86	0.86	0.87	0.85	0.86	0.88	0.86	0.87	0.85	0.85	0.86	0.87
Cosine Phi (nominal)††		0.85	0.85	0.84	0.84	0.86	0.86	0.87	0.87	0.84	0.85	0.85	0.83	0.84	0.85	0.84	0.85	0.83	0.83	0.84	0.85
Maximum power input‡																					
Circuits A + B	kW	121	131	141	165	185	204	247	267	293	312	343	359	420	247	293	342	388	390	420	343
Circuits C + D†	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	210	210	210	209	210	210	343
Option 81	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	457	503	552	597	600	630	-
Nominal unit current draw††																					
Circuits A + B	A	151	167	184	210	240	266	322	349	406	431	452	516	556	322	406	449	569	538	556	452
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	278	278	278	292	278	278	452
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	600	684	727	861	816	834	-
Maximum unit current draw (Un)‡																					
Circuits A + B	A	198	215	233	270	303	335	404	436	492	522	572	611	707	404	492	568	655	661	707	572
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	354	354	354	352	354	354	572
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	758	845	922	1007	1015	1061	-
Maximum unit current draw (Un – 10%)******																					
Circuits A + B	A	208	232	251	290	326	360	435	469	529	561	615	657	760	435	529	611	705	711	760	615
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	380	380	380	378	380	380	615
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	815	909	991	1083	1091	1141	-
High energy efficiency version (option 119)																					
Maximum start-up current**																					
Circuits A + B	A	274	274	292	407	510	510	583	616	782	812	815	905	954	583	782	812	901	905	954	815
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	587	587	815
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	1010	1099	1175	1265	1275	1321	-
Nominal start-up current***																					
Circuits A + B	A	246	246	261	379	479	479	535	561	734	757	760	845	860	535	734	757	846	845	860	760
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	587	587	760
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	907	991	1026	1124	1122	1133	-
Cosine Phi (maximum)******		0.88	0.87	0.87	0.88	0.88	0.88	0.88	0.88	0.86	0.86	0.86	0.85	0.86	0.88	0.86	0.87	0.85	0.85	0.86	0.86
Cosine Phi (nominal)††		0.84	0.84	0.83	0.83	0.85	0.85	0.86	0.86	0.84	0.84	0.84	0.82	0.82	0.84	0.83	0.83	0.83	0.82	0.82	0.84
Maximum power input‡																					
Circuits A + B	kW	126	136	147	172	192	212	257	278	304	323	356	372	435	257	304	353	400	405	435	356
Circuits C + D†	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	217	217	217	216	217	217	356
Option 81	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	475	522	570	615	622	652	712
Nominal unit current draw††																					
Circuits A + B	A	151	167	182	210	237	264	320	346	404	427	446	516	546	320	404	439	537	535	546	446
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	273	273	273	275	273	273	446
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	593	678	712	812	808	820	893
Maximum unit current draw (Un)‡																					
Circuits A + B	A	208	226	243	284	316	350	423	457	512	542	596	635	734	423	512	588	678	688	734	596
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	367	367	367	364	367	367	596
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	790	879	956	1041	1056	1102	1191
Maximum unit current draw (Un – 10%)******																					
Circuits A + B	A	219	243	262	305	340	376	455	491	551	583	640	683	790	455	551	633	729	740	790	640
Circuits C + D†	A	-	-	-	-	-	-	-	-	-	-	-	-	-	395	395	395	391	395	395	640
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	850	946	1028	1120	1135	1185	1281

* kA eff: efficiency value: rms for English version

** Instantaneous start-up current (operating current of the smallest compressor + fan current + locked rotor current in star connection of the largest compressor). Values obtained at operation with maximum unit power input.

*** Instantaneous start-up current (operating current of the smallest compressor + fan current + locked rotor current in star connection of the largest compressor). Values obtained at standard Eurovent unit operating conditions: air 35°C, water 12/7°C

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

† Circuit D for size 1702 only

†† Values obtained at standard Eurovent unit operating conditions: air 35°C, water 12/7°C

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

Notes:

Motor and fan electrical data if the unit operates at Eurovent conditions (motor ambient temperature 50°C); 1.9 A for standard unit; 3.6 A for unit with option 119
Start-up current: 8.4 A for standard unit; 20 A for unit with option 119
Power input: 760 W for standard unit; 1650 W for unit with option 119

Unit sizes 30XA 1102 to 1702 have two power connection points (circuits A + B and circuits C + D).

Electrical data

Hydronic module (option 116)*

30XA		252	302	352	402	452	502
Single or dual low-pressure pump							
Motor power	kW	2.2	2.2	3	4	5.5	5.5
Power input	kW	2.8	2.8	3.9	5.1	7.2	7.2
Max. current draw	A	4.7	4.7	6.4	8.2	11.7	11.7
Single or dual high-pressure pump							
Motor power	kW	4	5.5	5.5	7.5	11	11
Power input	kW	5.1	7.2	7.2	9.2	13.2	13.2
Max. current draw	A	8.2	11.7	11.7	15	21.2	21.2

* Additional power and current.

Electrical data notes and operating conditions 30XA

- 30XA 252-1002 units have a single power connection point located immediately upstream of the two main disconnect switches.
- 30XA 1102-1702 units have two power connection points located upstream of the main disconnect switches.
- **The control box includes:**
  - One main disconnect switch per circuit
  - Starter and motor protection devices for each compressor, the fans and the pump
  - Control devices
- Field connections:
- All connections to the system and the electrical installations must be in full accordance with all applicable local codes.
- The Carrier 30XA units are designed and built to ensure conformance with these codes. The recommendations of European standard EN 60 204-1 (corresponds to IEC 60204-1) (machine safety - electrical machine components - part 1: general regulations) are specifically taken into account, when designing the electrical equipment.

Notes:

- Generally the recommendations of IEC 60364 are accepted as compliance with the requirements of the installation directives. Conformance with EN 60204 is the best means of ensuring compliance with the Machines Directive § 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 30XA units is specified below:
- Environment* Environment as classified in EN 60721 (corresponds to IEC 60721) :
  - outdoor installation*
  - ambient temperature range: minimum temperature 20°C to +55°C, class 4K4H*
  - altitude: lower than or equal to 2000 m
  - 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 simplified connection on TN(s) networks (IEC 60364). For IT networks derived currents may interfere with network monitoring elements, and it is recommended to create an IT type divider for the system units that require this and/or a TN type divider for Carrier units. Please consult the appropriate local organisations to define the monitoring and protection elements and carry out 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.

* The required protection level for this class is IP43B (according to reference document IEC 60529). All 30XA units are protected to IP44CW and fulfil this protection condition.

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 the building occupancy.

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 %	Air 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
ESEER =	EER_1 x 1% + EER_2 x 42% + EER_3 x 45% + EER_4 x 12%		

ESEER (European seasonal energy efficiency ratio)

Load %	Air temperature °C	Energy efficiency	Operating time %
100	35	EER_1	3
75	30	EER_2	33
50	25	EER_3	41
25	20	EER_4	23
ESEER =	EER_1 x 3% + EER_2 x 33% + EER_3 x 41% + EER_4 x 23%		

Part load performances

30XA standard		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
IPLV	kW/kW	4.53	4.63	4.81	4.50	4.58	4.75	4.61	4.67	4.48	4.42	4.46	4.35	4.39	4.64	4.53	4.56	4.35	4.61	4.58	4.31
ESEER	kW/kW	4.11	4.29	4.31	4.22	4.37	4.34	4.13	4.21	4.00	3.95	3.93	3.91	3.91	4.11	4.02	4.03	3.83	4.10	4.11	3.86

Operating limits

Evaporator water temperature	°C	Minimum	Maximum
Water entering temperature at start-up		-	45*
Water entering temperature during operation		6.8	21
Water leaving temperature during operation		3.3	15

Note: If the leaving water temperature is below 4°C, a glycol/water solution or the frost protection option must be used.

Condenser air temperature	°C	Minimum	Maximum
Storage		-20	68
Operation:			
Standard unit		-10	55**
With winter operation option (option 28)		-20	55**
With high energy efficiency option (option 119)***		-10	55****

Note: If the air temperature is below 0°C, a glycol/water solution or the frost protection option must be used.

* Based on the installation type and the air temperature
** Part load, based on the water temperature
*** Recommended for operation above 46°C
**** Part-load operation

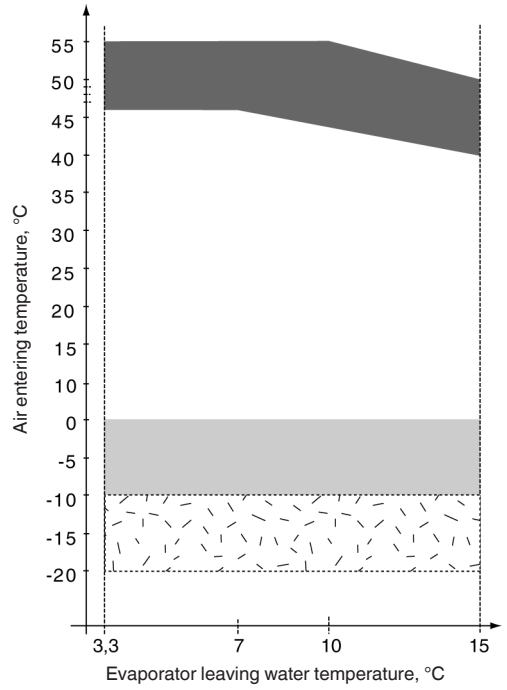
Evaporator water flow rate (l/s)

30XA	Minimum	Maximum*
252	3.6	37.5
302	4.0	40.5
352	4.3	40.5
402	5.3	34.1
452	6.0	36.9
502	6.7	42.0
602	8.1	45.0
702	8.9	56.1
752	9.6	59.1
802	10.4	67.1
852	11.0	67.1
902	11.8	73.9
1002	13.1	83.9
1102	15.1	87.8
1202	16.4	92.9
1302	17.5	96.1
1352	18.8	107.4
1402	19.3	107.4
1502	19.9	109.4
1702	22.0	107.4

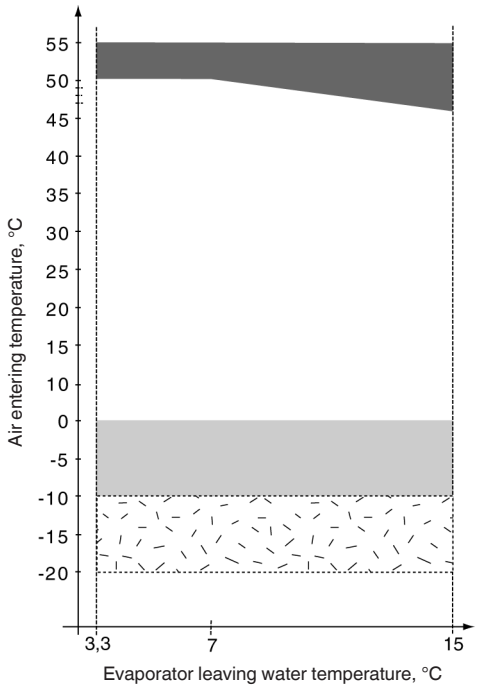
* The maximum water flow rate corresponds to a pressure drop of 100 kPa.

Operating range

30XA standard unit



30XA unit with option 119



Legend

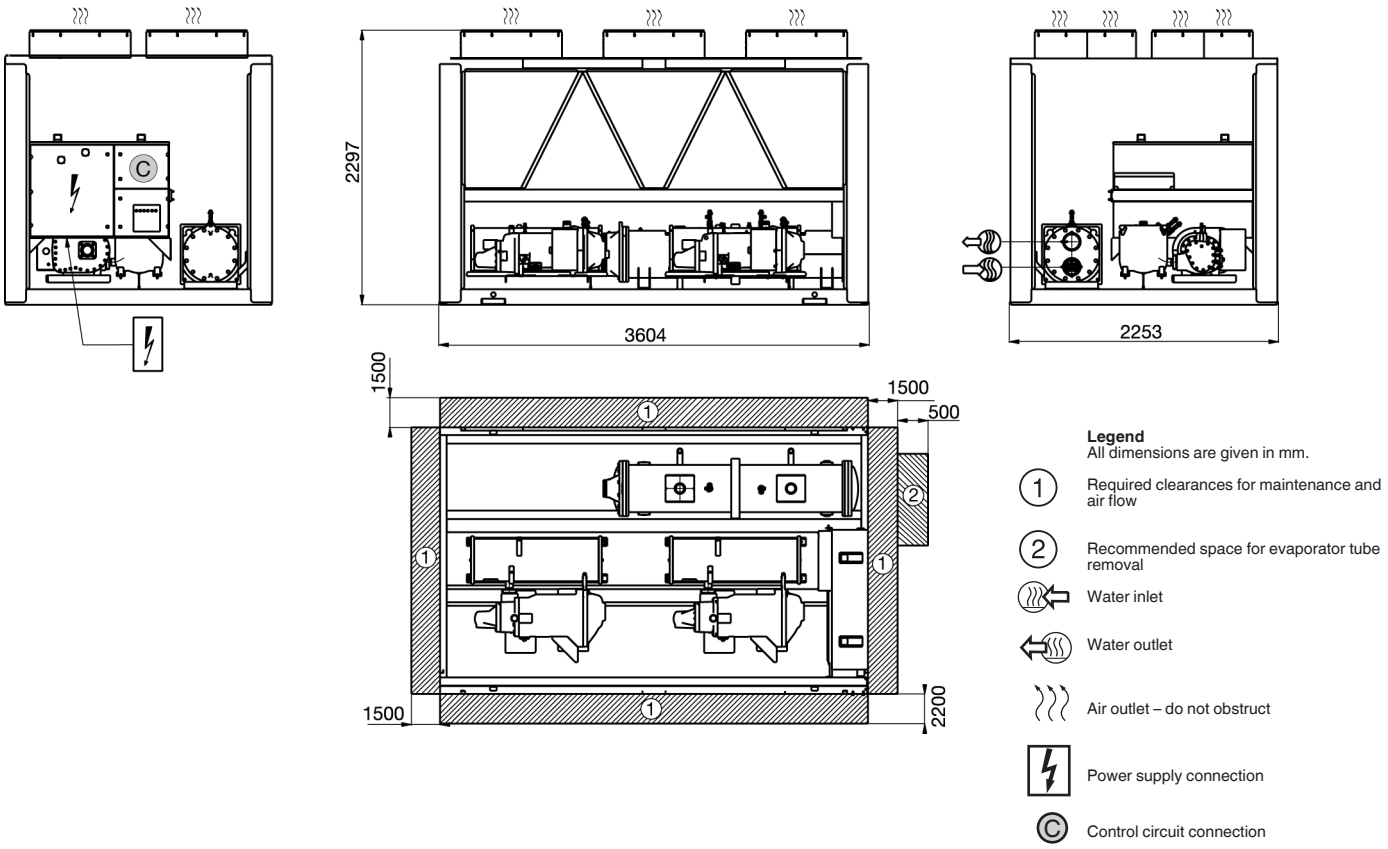
Operating range, unit equipped with option 28 (winter operation)

Below 0°C air temperature the unit must either be equipped with the evaporator frost protection option (41A or 41B), or the water loop must be protected against frost by using a frost protection solution (by the installer).

Part load average

Dimensions/clearances

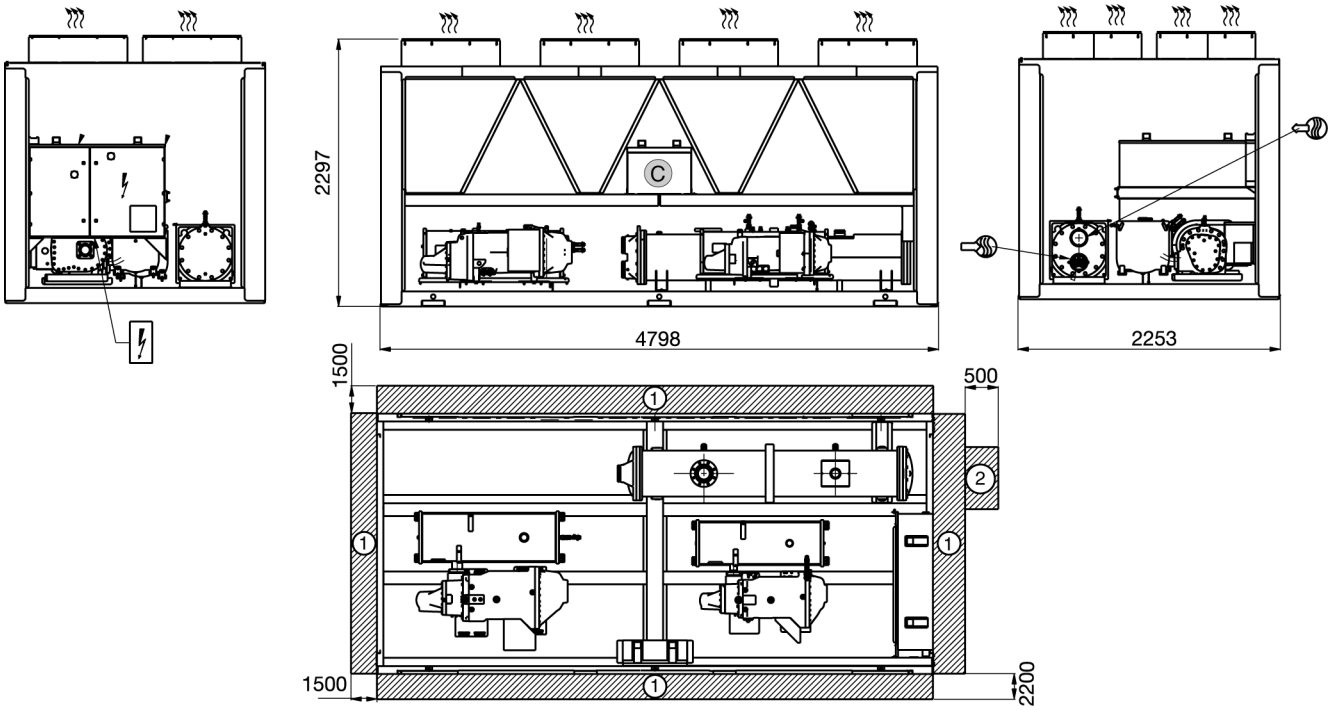
30XA 252-352 - MCHX heat exchanger (standard)
30XA 252-302 - Cu/Al heat exchanger (option 254/255)



Legend
All dimensions are given in mm.

1. Required clearances for maintenance and air flow
2. Recommended space for evaporator tube removal
- Water inlet
- Water outlet
- Air outlet – do not obstruct
- Power supply connection
- Control circuit connection

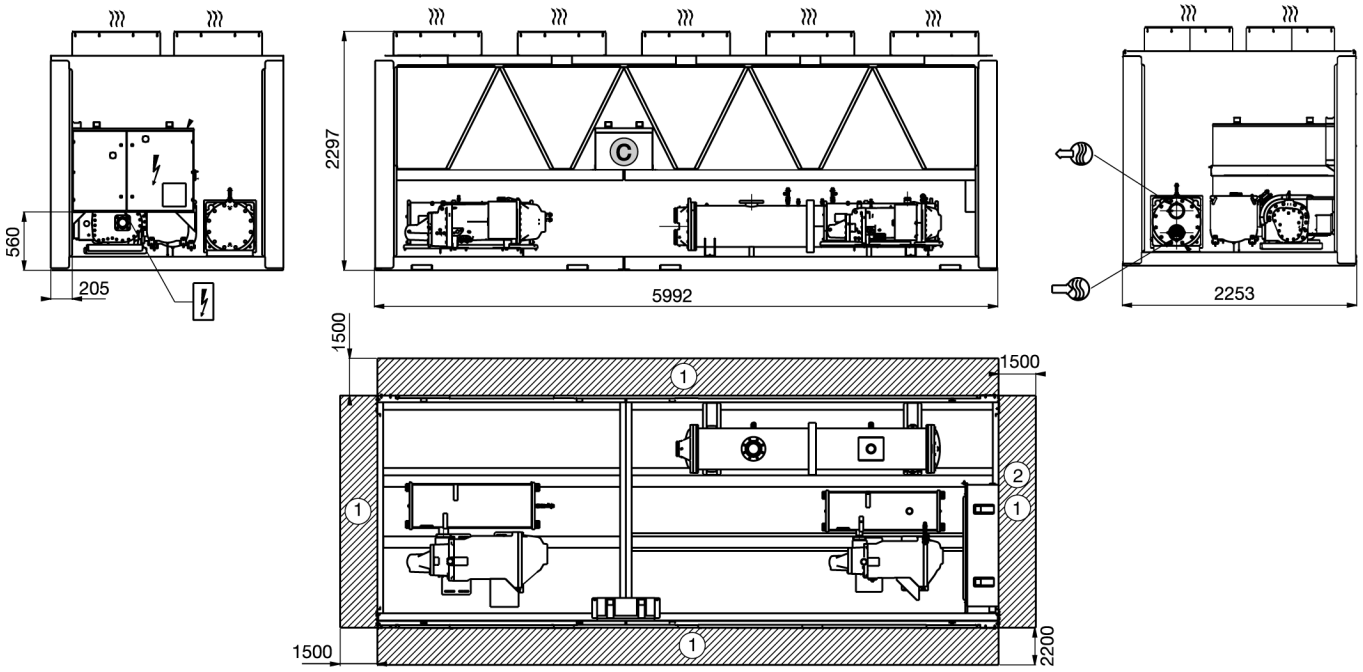
30XA 402-452 - MCHX heat exchanger (standard)
30XA 352-452 - Cu/Al heat exchanger (option 254/255)



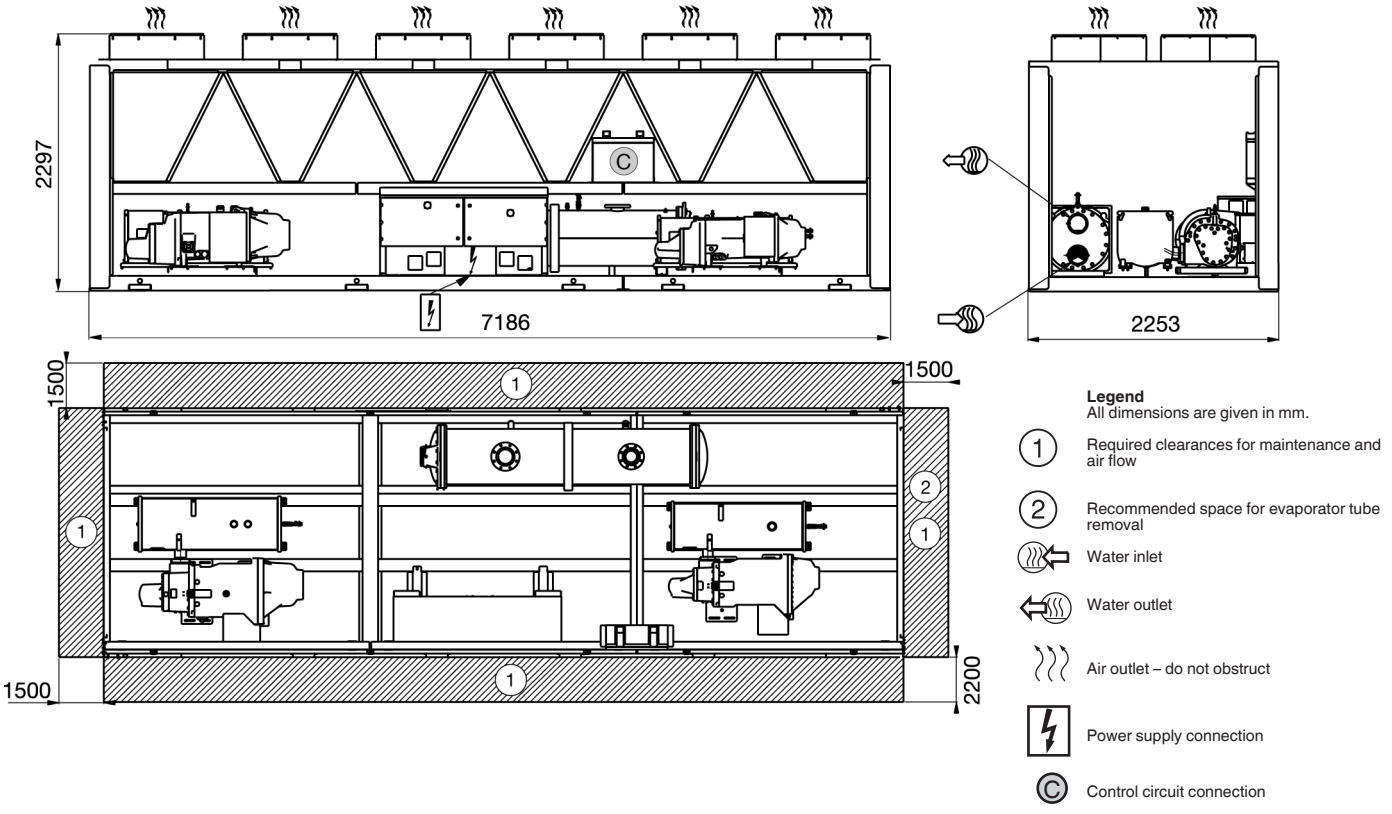
NOTE: Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings, available on request.

Dimensions/clearances

30XA 502 - MCHX heat exchanger (standard)
30XA 502 - Cu/Al heat exchanger (option 254/255)



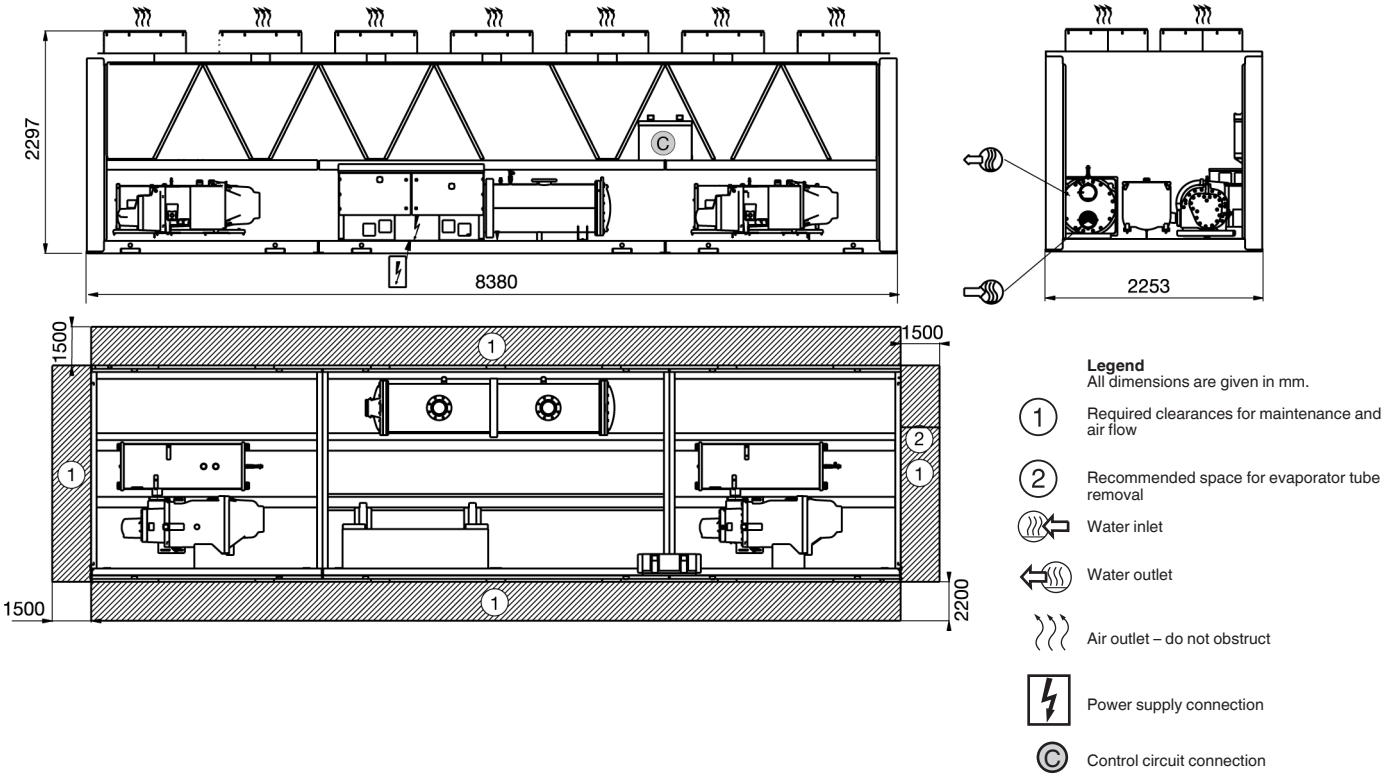
30XA 602-802 - MCHX heat exchanger (standard)
30XA 602-702 - Cu/Al heat exchanger (option 254/255)



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

Dimensions/clearances

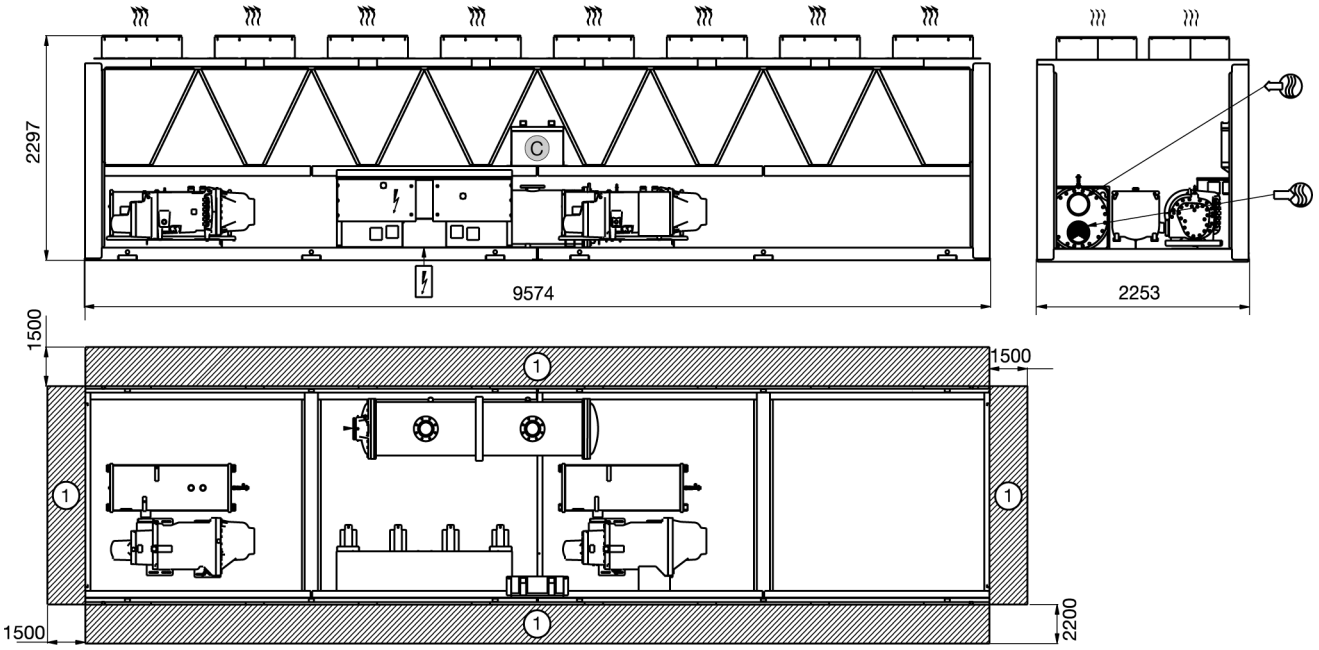
30XA 852-902 - MCHX heat exchanger (standard)
30XA 752-852 - Cu/Al heat exchanger (option 254/255)



Legend
All dimensions are given in mm.

1. Required clearances for maintenance and air flow
2. Recommended space for evaporator tube removal
- Water inlet
- Water outlet
- Air outlet – do not obstruct
- Power supply connection
- Control circuit connection

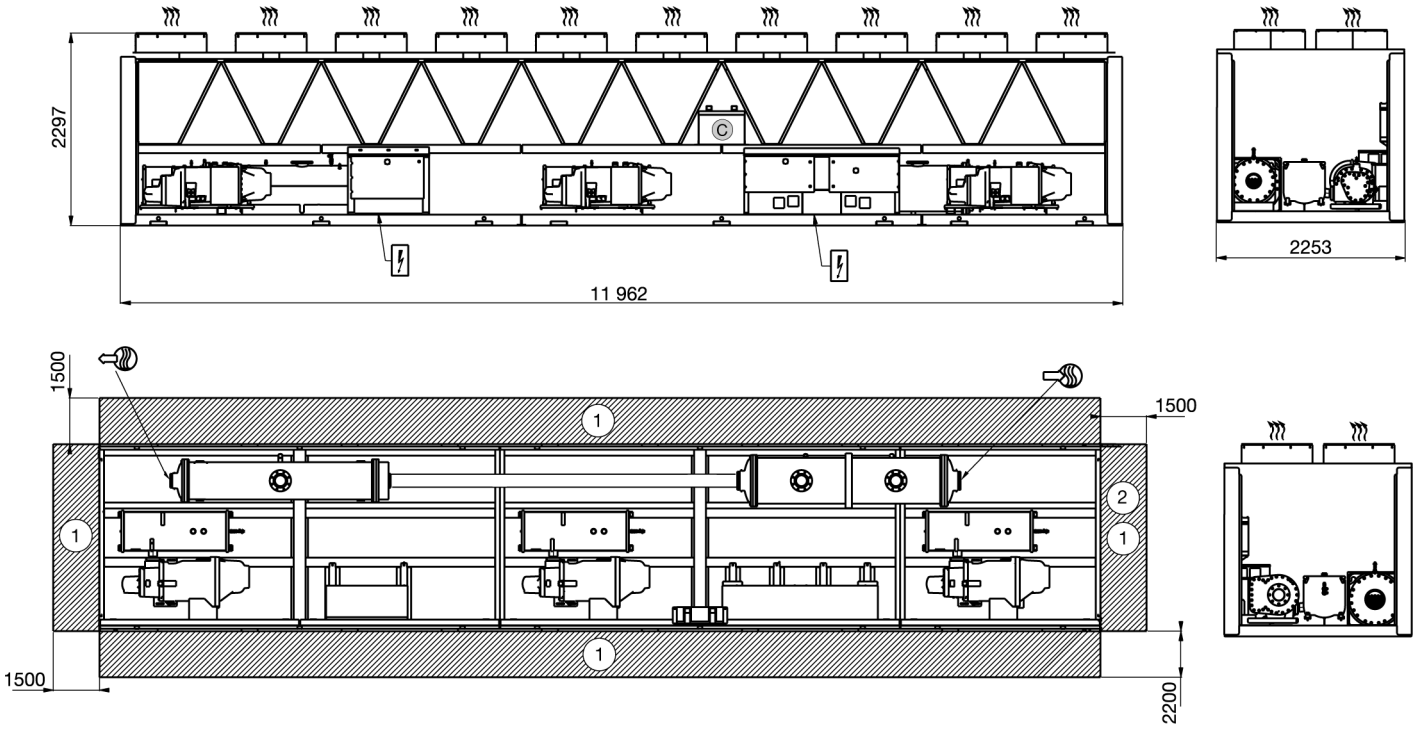
30XA 1002 - MCHX heat exchanger (standard)
30XA 902-1002 - Cu/Al heat exchanger (option 254/255)



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

Dimensions/clearances

30XA 1102-1352 - MCHX heat exchanger (standard)
30XA 1102-1352 - Cu/Al heat exchanger (option 254/255)



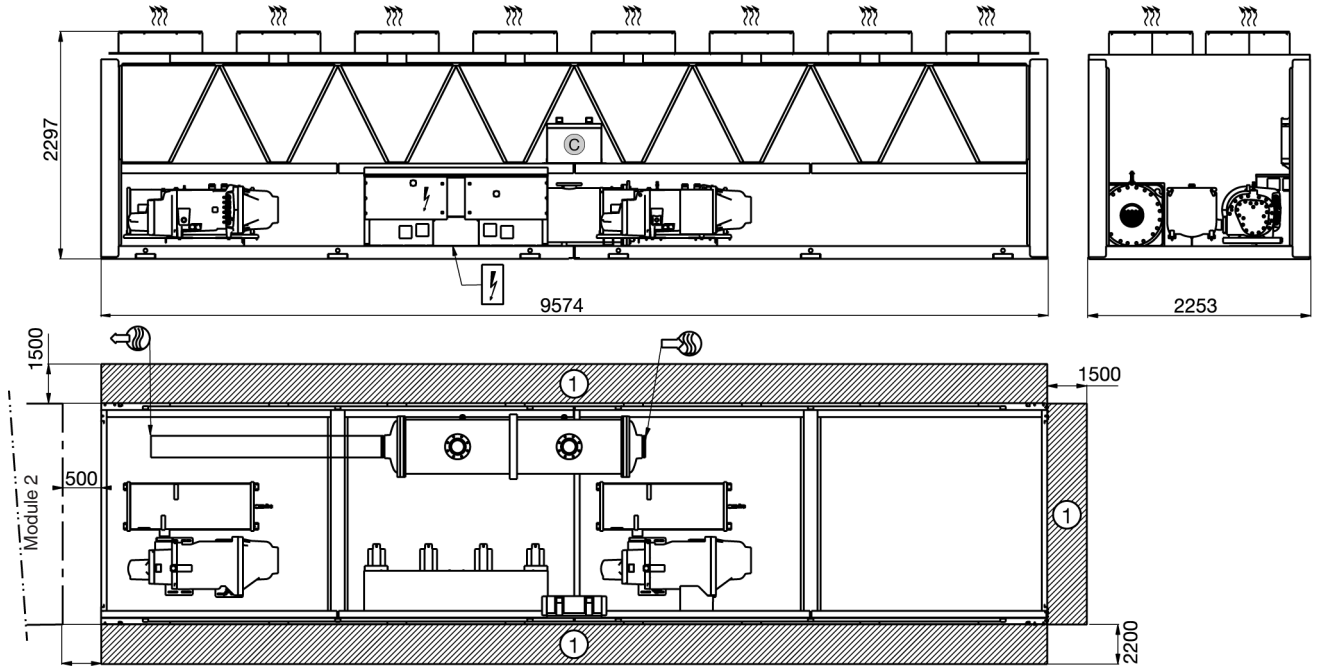
Legend
All dimensions are given in mm.

1	Required clearances for maintenance and air flow
2	Recommended space for evaporator tube removal
	Water inlet
	Water outlet
	Air outlet – do not obstruct
	Power supply connection
C	Control circuit connection

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

Dimensions/clearances

30XA 1402-1502 module 1/2 - MCHX heat exchanger (standard)
30XA 1402-1502 module 1/2 - Cu/Al heat exchanger (option 254/255))



Legend
All dimensions are given in mm.

1 Required clearances for maintenance and air flow

2 Recommended space for evaporator tube removal

Water inlet

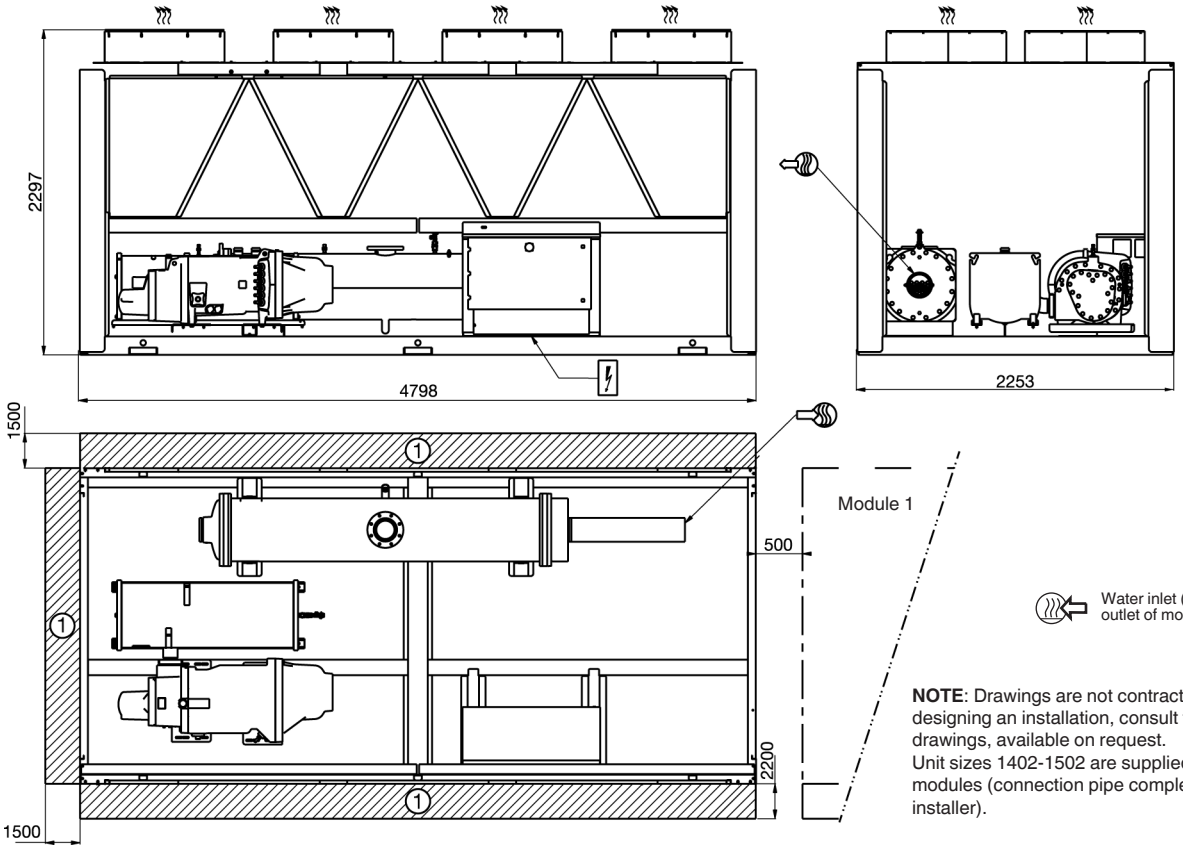
Water outlet (to be connected to the water inlet of module 2)

Air outlet – do not obstruct

Power supply connection

C Control circuit connection

30XA 1402-1502 module 2/2 - MCHX heat exchanger (standard)
30XA 1402-1502 module 2/2 - Cu/Al heat exchanger (option 254/255)

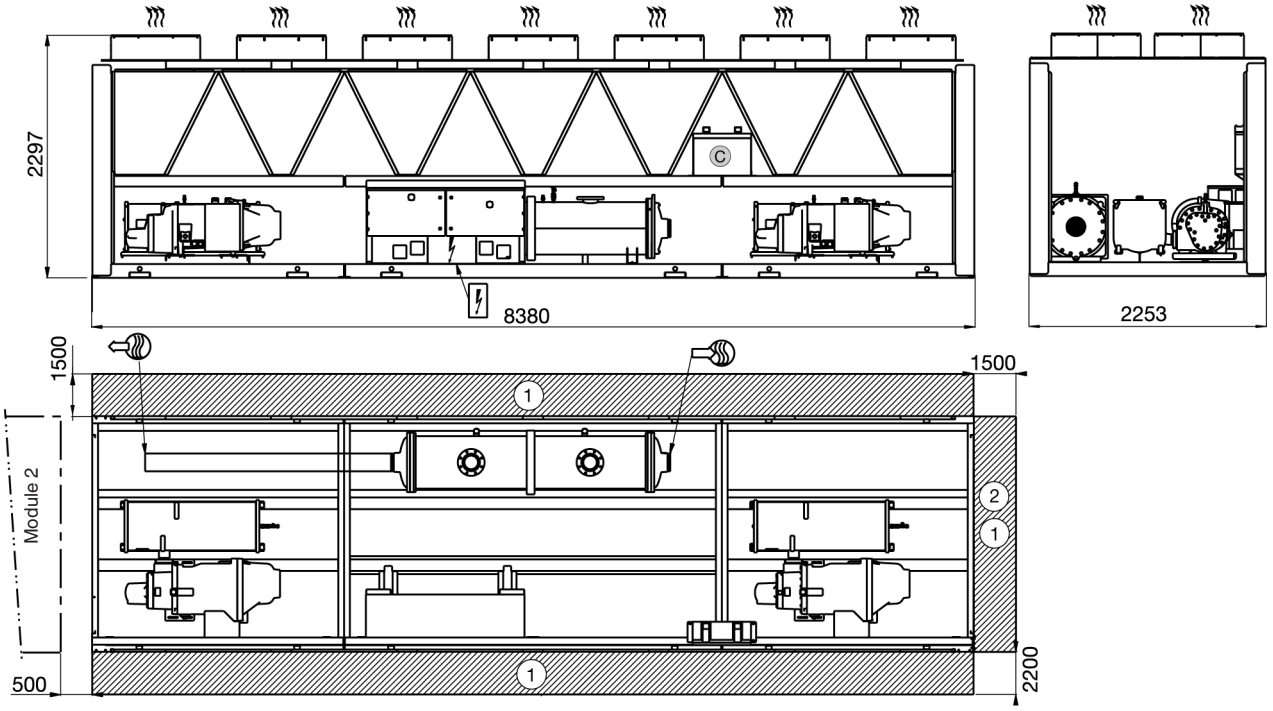


Water inlet (to be connected to the water outlet of module 1)

NOTE: Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings, available on request.
Unit sizes 1402-1502 are supplied in two field-assembled modules (connection pipe completion to be done by the installer).

Dimensions/clearances

30XA 1702 module 1/2 - MCHX heat exchanger (standard)
30XA 1702 module 1/2 - Cu/Al heat exchanger (option 254/255)

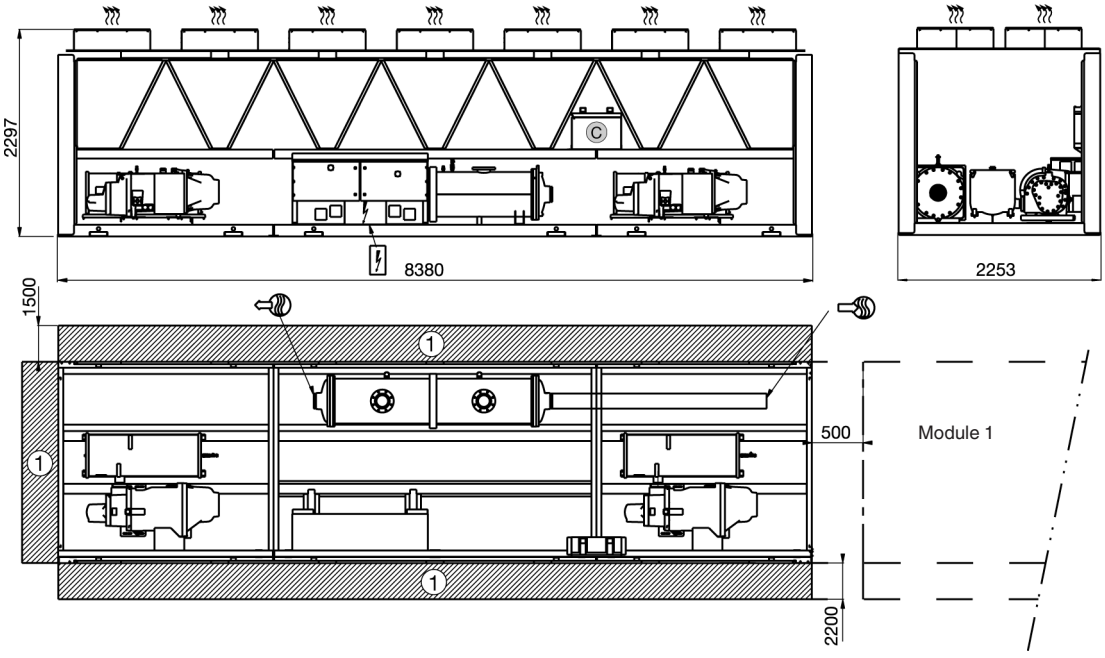


Legend
All dimensions are given in mm.

1. Required clearances for maintenance and air flow
2. Recommended space for evaporator tube removal

Water inlet
Water outlet (to be connected to the water inlet of module 2)
Air outlet – do not obstruct
Power supply connection
Control circuit connection

30XA 1702 module 2/2 - MCHX heat exchanger (standard)
30XA 1702 module 2/2 - Cu/Al heat exchanger (option 254/255)



Water inlet (to be connected to the water outlet of module 1).

NOTE: Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings, available on request.
Unit size 1702 is supplied in two field-assembled modules (connection pipe completion to be done by the installer).

Cooling capacities

Standard unit - LWT = 5°C

	Air temperature, °C																									
	25					30					35					40					46				
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa
252	272	66	71	13	14	262	73	77	12	13	252	80	84	12	12	241	87	92	11	11	227	97	102	11	10
302	300	75	80	14	14	289	82	87	14	13	277	90	95	13	12	263	99	103	13	11	247	111	115	12	10
352	329	81	85	16	17	316	89	93	15	16	302	98	102	14	14	287	107	111	14	13	268	120	124	13	12
402	386	95	101	18	32	373	104	110	18	30	360	113	120	17	28	346	124	130	16	26	328	138	144	16	24
452	444	113	119	21	35	429	124	130	20	33	413	136	142	20	30	396	149	154	19	28	374	166	172	18	25
502	499	124	131	24	34	482	136	143	23	32	464	149	156	22	30	444	164	170	21	27	419	183	190	20	25
602	613	153	161	29	43	591	167	175	28	41	569	183	191	27	38	546	200	208	26	35	515	224	231	25	31
702	662	161	170	32	34	640	176	185	30	32	616	192	201	29	30	590	211	219	28	28	557	235	244	27	25
752	717	182	191	34	35	693	199	208	33	33	667	218	227	32	31	639	239	248	30	29	605	267	275	29	26
802	779	201	210	37	33	751	220	229	36	31	722	240	249	34	29	691	263	272	33	27	644	290	298	31	23
852	815	205	216	39	36	787	224	235	37	34	757	245	256	36	31	726	269	279	35	29	686	301	311	33	26
902	885	230	241	42	34	854	252	262	41	32	821	276	286	39	30	787	302	312	37	28	737	333	343	35	25
1002	968	248	260	46	33	935	271	283	45	31	899	297	309	43	29	862	326	338	41	27	814	365	377	39	24
1102	1133	280	295	54	40	1094	307	321	52	37	1053	335	350	50	35	1009	367	381	48	32	953	410	424	45	29
1202	1236	314	329	59	41	1194	343	358	57	39	1149	375	390	55	36	1102	411	426	52	33	1035	455	470	49	30
1302	1323	345	360	63	44	1276	378	393	61	41	1226	414	429	58	38	1173	454	469	56	35	1017	451	466	48	27
1352	1413	392	407	67	41	1362	429	444	65	38	1308	470	485	62	36	1251	516	530	60	33	922	420	434	44	19
1402	1452	366	384	69	44	1401	400	418	67	41	1348	438	455	64	38	1291	480	497	61	35	1191	518	535	57	30
1502	1505	382	400	72	45	1452	417	436	69	42	1397	457	475	67	39	1339	501	519	64	36	1252	553	571	60	32
1702	1631	408	429	78	53	1575	446	467	75	50	1516	488	509	72	46	1453	535	556	69	43	1367	595	616	65	38

Standard unit - LWT = 6°C

	Air temperature, °C																									
	25					30					35					40					46				
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa
252	280	67	72	13	14	270	74	78	13	14	260	81	86	12	13	248	89	93	12	12	234	99	103	11	10
302	309	77	81	15	15	297	84	**88**	14	14	285	92	96	14	13	272	101	105	13	12	255	113	117	12	10
352	338	83	87	16	18	325	91	95	15	16	311	100	104	15	15	295	109	113	14	14	276	122	126	13	12
402	398	96	102	19	34	385	105	112	18	32	371	115	121	18	30	356	126	132	17	28	338	140	146	16	25
452	457	115	121	22	36	442	126	132	21	34	425	138	144	20	32	407	151	157	19	30	385	169	175	18	27
502	514	127	133	25	36	497	139	145	24	34	478	152	159	23	31	457	167	173	22	29	431	187	193	21	26
602	632	156	164	30	46	610	171	179	29	43	587	187	195	28	40	563	204	212	27	37	531	228	236	25	33
702	683	164	173	33	36	659	179	188	31	34	634	196	205	30	31	608	214	223	29	29	573	240	248	27	26
752	739	186	195	35	37	714	203	212	34	35	687	222	231	33	33	658	243	252	31	30	615	267	275	29	27
802	802	205	214	38	35	773	224	233	37	32	743	245	254	35	30	711	268	277	34	28	655	290	299	31	24
852	840	209	220	40	38	810	228	239	39	35	780	250	261	37	33	747	274	284	36	31	705	307	317	34	28
902	911	235	246	43	36	879	257	267	42	34	845	281	291	40	31	810	308	318	39	29	735	324	335	35	24
1002	998	253	265	48	35	962	277	289	46	33	925	303	315	44	31	887	332	344	42	28	831	368	379	40	25
1102	1167	286	300	56	42	1127	312	327	54	39	1084	342	356	52	36	1039	374	388	50	34	981	418	432	47	30
1202	1273	320	335	61	44	1229	350	365	59	41	1182	383	398	56	38	1134	419	434	54	35	1057	458	473	50	31
1302	1362	353	368	65	46	1313	385	400	63	43	1261	422	437	60	40	1207	463	478	57	37	1039	453	467	50	28
1352	1454	400	415	69	43	1401	438	453	67	40	1345	480	494	64	37	1286	526	541	61	34	956	427	441	46	20
1402	1496	373	391	71	46	1443	408	426	69	43	1387	446	464	66	40	1329	489	506	63	37	1200	511	528	57	31
1502	1550	390	408	74	47	1495	426	444	71	44	1437	466	484	68	41	1377	511	529	66	38	1258	544	561	60	32
1702	1678	415	437	80	56	1621	454	475	77	52	1560	497	518	74	49	1495	545	566	71	45	1401	602	622	67	40

Legend

LWT Leaving water temperature
CAP kW Cooling capacity
COMP kW Compressor power input
UNIT kW Unit power input (compressors, fans and control circuit))
COOL l/s Evaporator water flow rate
COOL kPa Evaporator pressure drop

Application data:
Standard units, refrigerant R134a
Evaporator temperature rise: 5 K

Evaporator fluid: chilled water
Fouling factor: 0,18 x10^{-4} (m^2 K) / W
Performances in acordance with EN 14511

Standard unit - LWT =7°C

	Air temperature, °C																									
	25					30					35					40					46					
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa
252	289	68	73	14	15	279	75	80	13	14	268	82	87	13	13	256	90	94	12	12	241	100	105	11	11
302	318	78	82	15	16	306	86	90	15	15	293	94	98	14	13	279	103	107	13	12	262	115	119	12	11
352	349	85	89	17	19	335	93	97	16	17	320	102	106	15	16	304	111	115	14	14	284	125	129	14	13
402	410	98	104	20	35	397	107	113	19	33	382	117	123	18	31	367	128	134	17	29	347	142	148	17	26
452	471	117	123	22	38	455	129	134	22	36	437	141	147	21	33	419	154	160	20	31	396	172	178	19	28
502	530	129	136	25	38	511	141	148	24	35	492	155	161	23	33	470	170	176	22	30	444	190	197	21	27
602	651	159	167	31	48	629	174	182	30	45	605	190	198	29	42	580	208	216	28	39	547	232	240	26	35
702	703	167	176	34	38	679	182	191	32	35	653	200	208	31	33	626	218	227	30	30	590	244	253	28	27
752	761	190	198	36	39	734	207	216	35	37	706	226	235	34	34	677	248	256	32	32	625	267	275	30	27
802	825	209	218	39	36	795	228	237	38	34	764	250	258	36	32	731	273	282	35	29	658	284	293	31	24
852	864	213	224	41	40	834	233	243	40	37	802	255	265	38	35	769	279	289	37	32	719	308	318	34	28
902	938	240	250	45	38	904	262	272	43	35	869	286	297	41	33	832	313	324	40	30	741	321	331	35	25
1002	1027	258	270	49	37	990	282	294	47	34	952	309	321	45	32	912	338	350	43	30	830	359	370	40	25
1102	1202	292	306	57	44	1160	319	333	55	41	1116	348	363	53	38	1069	381	395	51	35	989	412	426	47	30
1202	1311	327	342	62	46	1265	357	372	60	43	1216	390	405	58	40	1166	427	441	56	37	1057	448	462	50	31
1302	1401	360	375	67	49	1350	393	408	64	45	1297	430	445	62	42	1240	472	487	59	39	1055	451	465	50	29
1352	1496	409	424	71	45	1440	447	462	69	42	1382	490	504	66	39	1320	537	551	63	36	990	434	448	47	21
1402	1539	381	399	73	48	1484	416	434	71	45	1426	455	473	68	42	1366	498	516	65	39	1174	485	502	56	29
1502	1596	398	416	76	49	1538	434	452	73	46	1478	475	493	70	43	1416	520	538	68	39	1222	513	530	58	30
1702	1728	424	445	82	59	1668	463	484	80	55	1605	507	528	77	51	1539	555	576	73	47	1429	605	625	68	41

Standard unit - LWT = 10°C

	Air temperature, °C																									
	25					30					35					40					46					
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa
252	316	72	77	15	18	304	79	83	15	16	292	86	91	14	15	280	94	99	13	14	263	104	109	13	13
302	348	82	87	17	18	335	90	94	16	17	320	99	103	15	16	305	108	112	15	14	285	121	125	14	13
352	381	89	94	18	22	366	98	102	17	20	348	107	111	17	18	331	118	122	16	17	309	132	136	15	15
402	447	103	109	21	41	433	113	119	21	38	417	123	129	20	36	400	134	140	19	33	378	149	155	18	30
452	513	124	130	24	44	495	136	142	24	41	476	148	154	23	38	456	162	168	22	35	422	176	182	20	31
502	578	137	143	28	43	557	149	156	27	40	535	163	170	26	38	512	179	186	24	35	483	201	207	23	31
602	710	169	177	34	55	686	184	192	33	52	659	201	209	31	48	632	219	227	30	45	588	239	247	28	39
702	766	177	186	37	43	739	193	202	35	41	711	211	220	34	38	681	231	239	33	35	642	257	266	31	31
752	829	201	210	40	45	799	219	228	38	42	768	239	248	37	39	736	261	270	35	36	599	233	242	29	25
802	897	222	231	43	42	864	242	251	41	39	829	265	273	40	36	793	289	298	38	33	631	248	257	30	22
852	941	226	237	45	46	908	247	258	43	43	872	270	280	42	40	835	295	306	40	37	702	279	289	33	27
902	1020	255	265	49	44	983	278	288	47	41	943	303	314	45	38	903	331	341	43	35	674	261	272	32	20
1002	1118	275	287	53	42	1077	300	312	51	39	1034	327	339	49	37	989	358	370	47	34	760	299	310	36	21
1102	1308	310	324	62	50	1261	338	352	60	47	1213	369	383	58	44	1162	403	417	55	40	969	374	388	46	29
1202	1425	347	362	68	53	1374	378	393	66	49	1321	413	428	63	46	1265	451	466	60	42	990	381	395	47	27
1302	1522	384	399	73	56	1466	418	433	70	52	1406	457	472	67	48	1331	492	507	64	43	1023	404	418	49	27
1352	1622	437	452	77	52	1561	477	492	75	48	1496	521	536	71	44	1374	534	549	66	38	1047	434	448	50	23
1402	1674	405	423	80	55	1612	442	460	77	52	1548	482	500	74	48	1481	527	545	71	44	1135	431	449	54	27
1502	1736	423	441	83	57	1672	461	480	80	53	1606	504	522	77	49	1536	551	569	73	45	1186	459	476	57	28
1702	1881	450	471	90	68	1815	491	512	87	63	1745	536	557	83	59	1671	587	608	80	54	1455	578	598	69	42

Legend

LWT Leaving water temperature
CAP kW Cooling capacity
COMP kW Compressor power input
UNIT kW Unit power input (compressors, fans and control circuit))
COOL l/s Evaporator water flow rate
COOL kPa Evaporator pressure drop

Application data:
Standard units, refrigerant R134a
Evaporator temperature rise: 5 K

Evaporator fluid: chilled water
Fouling factor: 0,18 x10^{-4} (m^2 K) / W
Performances in acordance with EN 14511

Cooling capacities

Unit with option 119 (high energy efficiency)

Unit with option 119 - LWT = 5°C

	Air temperature,°C																									
	25					30					35					40					46					
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	
252	277	63	73	13	14	268	70	79	13	13	257	76	85	12	12	247	84	93	12	12	233	93	102	11	10	
302	305	70	79	15	15	294	77	86	14	14	282	84	93	13	13	269	93	102	13	12	253	104	112	12	10	
352	333	77	86	16	17	321	84	93	15	16	307	93	102	15	15	292	101	110	14	14	273	114	123	13	12	
402	395	88	101	19	33	382	97	109	18	31	369	106	118	18	30	356	116	128	17	28	338	130	141	16	25	
452	455	103	115	22	36	440	113	125	21	34	425	125	136	20	32	408	137	148	19	30	387	153	164	18	27	
502	513	113	127	24	36	497	124	138	24	34	479	136	150	23	32	460	149	163	22	29	435	167	180	21	26	
602	620	141	158	29	44	600	154	171	29	42	579	169	186	28	39	556	185	202	26	36	528	206	223	25	33	
702	682	148	168	32	36	660	163	182	31	34	637	178	197	30	32	613	195	214	29	30	581	218	237	28	27	
752	732	173	193	35	37	708	190	209	34	35	684	208	226	33	32	658	228	246	31	30	625	254	273	30	28	
802	799	185	206	38	35	773	202	223	37	33	746	222	242	36	31	718	243	263	34	28	681	272	291	32	26	
852	846	189	212	40	39	818	206	230	39	36	789	226	249	38	34	759	248	271	36	32	720	277	299	34	29	
902	908	213	237	43	36	879	232	256	42	34	848	254	278	40	32	815	279	302	39	30	774	312	334	37	27	
1002	1009	228	257	48	36	976	249	278	46	34	942	272	301	45	32	905	299	327	43	30	859	334	362	41	27	
1102	1156	257	288	55	41	1119	281	312	53	39	1080	307	338	51	36	1039	336	367	49	34	985	376	405	47	31	
1202	1257	287	320	60	43	1216	314	347	58	40	1174	344	376	56	38	1130	377	409	54	35	1073	421	452	51	32	
1302	1367	317	350	65	47	1322	346	379	63	44	1275	379	412	61	41	1226	416	449	58	38	1163	466	498	55	35	
1352	1460	348	379	70	44	1411	380	411	67	41	1360	417	448	65	38	1306	457	488	62	35	1238	512	542	59	32	
1402	1482	333	373	71	45	1434	363	404	68	43	1383	397	437	66	40	1330	436	475	63	37	1263	487	526	60	34	
1502	1540	347	388	73	47	1489	379	420	71	44	1436	415	455	68	41	1380	455	495	66	38	1309	509	548	62	35	
1702	1691	377	424	80	57	1636	413	459	78	53	1578	452	498	75	50	1518	495	541	72	46	1440	554	599	69	42	

Unit with option 119 - LWT = 6°C

	Air temperature,°C																									
	25					30					35					40					46					
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	
252	286	64	74	14	15	276	71	80	13	14	266	77	86	13	13	255	85	94	12	12	240	95	104	11	11	
302	315	71	80	15	15	303	78	87	14	14	291	86	95	14	13	278	94	103	13	12	261	105	114	12	11	
352	344	78	87	16	18	330	86	95	16	17	316	94	103	15	16	301	103	112	14	14	282	116	124	13	13	
402	407	90	102	19	35	395	98	110	19	33	381	107	120	18	31	367	118	130	17	29	349	131	143	17	26	
452	469	105	117	22	38	454	115	127	22	36	438	127	138	21	34	421	139	150	20	31	399	155	167	19	28	
502	529	115	129	25	38	512	126	140	24	35	493	138	152	24	33	474	151	165	23	31	448	169	183	21	28	
602	640	143	160	30	47	619	157	174	29	44	598	172	189	28	41	575	188	205	27	38	545	210	226	26	35	
702	704	151	171	34	38	681	165	185	32	36	657	181	200	31	33	632	198	217	30	31	599	221	240	29	28	
752	755	177	196	36	39	730	193	212	35	36	705	211	230	34	34	678	231	250	32	32	644	258	277	31	29	
802	824	188	209	39	36	797	206	226	38	34	769	225	245	37	32	740	247	267	35	30	702	276	295	33	27	
852	872	192	216	42	41	843	210	233	40	38	814	230	253	39	36	782	252	275	37	33	742	281	304	35	30	
902	937	217	241	45	38	906	237	260	43	36	873	259	282	42	33	839	283	306	40	31	797	316	339	38	28	
1002	1041	232	261	50	38	1007	253	282	48	36	971	277	306	46	33	933	304	332	44	31	885	340	367	42	28	
1102	1192	261	292	57	43	1153	286	316	55	41	1113	312	343	53	38	1070	342	372	51	35	1016	382	412	48	32	
1202	1296	293	326	62	45	1254	319	352	60	42	1210	349	382	58	40	1164	383	415	55	37	1105	427	459	53	33	
1302	1409	322	356	67	49	1363	352	386	65	46	1314	386	419	63	43	1263	423	456	60	40	1198	473	505	57	36	
1352	1505	355	386	72	46	1454	388	419	69	43	1401	425	455	67	40	1346	466	496	64	37	1275	521	551	61	34	
1402	1529	339	379	73	48	1478	370	410	70	45	1426	404	444	68	42	1371	443	483	65	39	1301	495	534	62	36	
1502	1587	354	395	76	49	1535	386	427	73	46	1479	422	463	70	43	1421	463	503	68	40	1348	517	557	64	36	
1702	1742	384	431	83	60	1685	420	466	80	56	1626	459	505	77	53	1563	503	549	74	49	1483	562	607	71	44	

Legend

LWT Leaving water temperature
CAP kW Cooling capacity
COMP kW Compressor power input
UNIT kW Unit power input (compressors, fans and control circuit))
COOL l/s Evaporator water flow rate
COOL kPa Evaporator pressure drop

Application data:
Standard units, refrigerant R134a
Evaporator temperature rise: 5 K

Evaporator fluid: chilled water
Fouling factor: 0,18 x10^{-4} (m^2 K) / W
Performances in acordance with EN 14511

Cooling capacities

Unit with option 119 (high energy efficiency)

Unit with option 119 - LWT = 7°C

	Air temperature,°C																									
	25					30					35					40					46					
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa
252	295	65	75	14	16	285	72	81	14	15	274	78	88	13	14	263	86	95	13	13	248	96	105	12	11
302	325	72	82	15	16	313	79	89	15	15	300	87	96	14	14	286	95	104	14	13	269	107	116	13	12
352	354	79	89	17	19	341	87	96	16	18	326	96	105	16	16	310	105	114	15	15	291	118	126	14	13
402	420	91	103	20	37	407	99	112	19	35	393	109	121	19	33	378	119	131	18	31	359	133	145	17	28
452	483	107	119	23	40	468	117	129	22	38	451	129	141	22	35	433	141	153	21	33	411	157	169	20	30
502	545	117	131	26	39	527	128	142	25	37	508	140	154	24	35	488	154	168	23	32	462	172	186	22	29
602	660	146	163	31	49	638	159	177	30	46	616	174	191	29	43	593	191	208	28	40	562	213	229	27	37
702	726	154	173	35	40	702	168	188	33	37	677	184	203	32	35	651	201	221	31	33	617	225	244	29	30
752	778	180	199	37	41	753	196	215	36	38	726	215	233	35	36	698	235	254	33	33	663	262	281	32	30
802	849	192	212	40	38	821	209	230	39	36	792	229	249	38	34	762	251	271	36	31	723	280	300	34	28
852	899	196	219	43	43	869	214	237	41	40	838	234	257	40	37	805	256	279	38	35	764	286	308	36	32
902	965	221	244	46	40	933	241	264	44	38	899	263	286	43	35	864	288	311	41	33	820	321	344	39	30
1002	1073	236	265	51	40	1037	258	286	49	37	1000	282	310	48	35	961	309	337	46	33	911	345	373	43	30
1102	1229	266	297	59	46	1189	291	322	57	43	1147	318	348	55	40	1103	348	378	53	37	1046	388	418	50	34
1202	1336	298	331	64	47	1292	325	358	62	45	1247	355	388	59	42	1199	389	421	57	39	1138	434	466	54	35
1302	1452	328	362	69	52	1404	359	392	67	49	1354	393	425	65	46	1301	430	463	62	42	1233	481	513	59	38
1352	1550	362	393	74	48	1497	395	426	71	45	1442	433	463	69	42	1385	474	504	66	39	1311	530	560	62	35
1402	1575	345	386	75	50	1523	376	417	73	47	1468	411	451	70	44	1411	450	490	67	41	1339	503	542	64	37
1502	1636	360	401	78	52	1581	393	434	75	48	1523	430	470	73	45	1463	471	511	70	42	1387	526	565	66	38
1702	1795	391	438	86	63	1736	427	474	83	59	1675	467	513	80	55	1610	512	557	77	51	1527	572	616	73	46

Unit with option 119 - LWT = 10°C

	Air temperature,°C																									
	25					30					35					40					46					
	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL	CAP	COMP	UNIT	COOL	COOL
30XA	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa	kW	kW	kW	l/s	kPa
252	323	68	78	15	18	312	75	84	15	17	300	82	91	14	16	287	90	99	14	15	271	100	109	13	13
302	355	76	85	17	19	342	83	93	16	18	328	91	100	16	16	313	100	109	15	15	294	112	121	14	13
352	387	84	93	19	22	372	92	101	18	21	356	101	110	17	19	339	110	119	16	17	318	124	133	15	15
402	460	95	107	22	43	446	104	116	21	41	430	113	126	21	38	414	124	136	20	35	393	138	150	19	32
452	527	113	125	25	46	510	124	136	24	44	492	135	147	23	41	472	148	160	23	38	448	165	177	21	34
502	595	123	138	28	46	575	135	149	27	43	554	147	162	26	40	532	162	176	25	37	504	181	194	24	34
602	722	154	171	34	57	699	168	185	33	54	674	183	200	32	50	648	200	217	31	47	614	223	240	29	42
702	793	162	182	38	46	767	177	197	37	43	740	193	213	35	41	711	211	231	34	38	673	236	255	32	34
752	851	190	209	41	47	823	207	226	39	44	793	226	245	38	41	762	247	266	36	39	723	275	293	35	35
802	929	202	223	44	44	898	220	241	43	42	865	241	261	41	39	832	263	283	40	36	789	293	313	38	33
852	981	207	230	47	49	948	225	249	45	46	914	246	269	44	43	878	269	292	42	40	832	300	323	40	36
902	1055	233	257	50	46	1019	254	277	49	43	981	277	300	47	41	942	303	326	45	38	893	337	360	43	34
1002	1173	250	279	56	46	1133	272	301	54	43	1091	297	326	52	40	1048	325	353	50	38	993	363	390	47	34
1102	1341	281	312	64	53	1297	307	337	62	50	1251	335	365	60	46	1202	365	396	57	43	1140	407	437	54	39
1202	1458	315	348	70	55	1410	343	376	67	52	1359	374	407	65	48	1306	409	441	62	45	1239	456	487	59	41
1302	1586	347	381	76	60	1532	379	412	73	56	1476	414	447	70	53	1418	453	486	68	49	1322	494	525	63	43
1352	1691	384	415	81	56	1632	419	450	78	52	1571	458	489	75	49	1506	501	531	72	45	1351	517	547	65	37
1402	1721	365	405	82	58	1663	397	438	79	55	1602	434	474	76	51	1538	474	513	73	47	1458	528	567	70	43
1502	1786	381	422	85	60	1724	415	456	82	56	1660	453	494	79	52	1594	496	536	76	48	1509	553	592	72	44
1702	1959	413	460	94	73	1894	450	497	90	69	1826	492	538	87	64	1754	538	584	84	59	1663	600	645	79	54

Legend

LWT Leaving water temperature
CAP kW Cooling capacity
COMP kW Compressor power input
UNIT kW Unit power input (compressors, fans and control circuit))
COOL l/s Evaporator water flow rate
COOL kPa Evaporator pressure drop

Application data:
Standard units, refrigerant R134a
Evaporator temperature rise: 5 K

Evaporator fluid: chilled water
Fouling factor: 0,18 x10^{-4} (m^2 K) / W
Performances in acordance 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.

EUROVENT CERTIFIED PERFORMANCE

LLOYD'S REGISTER QUALITY ASSURANCE ISO 14001

UKAS ENVIRONMENTAL MANAGEMENT 001

Environmental Management System Approval

Carrier

Order No.: 13450-20, 10.2009. Supersedes order No.: 13450-20, 10.2007
Manufacturer reserves the right to change any product specifications without notice.

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