FOCS2-W 1301 - 9604

306-2416 kW | High efficiency chiller, water source

(The photo of the unit is indicative and may vary depending on the model)

- HIGH EFFICIENCY
- ADAPTABILITY
- HEAT PUMP FUNCTION
- SILENT OPERATION

CERTIFICATIONS

Product certifications

Certificate Number MCS HP0005
Heat Pumps

Voluntary product certifications

This company participates in the Eurovent Certification Programme. The products are listed in the Directory of certified products.
The Eurovent certificate, for the applicable units, refers to products with cooling capacity up to 600 kW, voluntarily extended up to 1500 kW, for air-cooled models and water-cooled models.

System certifications

Certificate Number MCS HP0005
Heat Pumps

Climaveneta S.p.A.:

Quality System complying with the requirements of UNI EN ISO9001:2008 regulation

Environmental Management System complying with the requirements of UNI EN ISO14001:2004 regulation

SUMMARY

FOCS2-W
1301 - 9604

1. PRODUCT PRESENTATION

Unit for indoor installation for chilled water production. Semihermetic screw compressors optimized to operate with low compression ratio and R134a; shell and tubes condenser and direct expansion evaporator; electronic expansion valve. Frame in polyester-painted galvanized steel. High efficiency unit: the innovative optimized compressors and the high performing heat exchangers enhance EER values up to 5,1 (CA version) and even up to 5,6 (CA-E version) at Eurovent standars conditions.

1.2 High efficiency

The version ´CA-E´ is characterized by efficiency beyond the ´Class A´ for Eurovent. The technological choices adopted assure the minimization of operating costs and therefore a quick payback time.

1.3 Adaptability

Adaptability at the building's cooling request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

1.4 Silent operation

Silent operation thanks to the accurate unit' s design. Optional integral acoustic enclosure, further reduces the sound level beyond the best on market.

1.5 Heat pump function

Heat pump function water circuit side reversal.

3.2 High efficiency chiller, water source
Unit for indoor installation for chilled water production. Semihermetic screw compressors optimized to operate with low compression ratio and R134a; shell and tubes condenser and direct expansion evaporator; electronic expansion valve. Frame in polyester-painted galvanized steel. High efficiency unit: the innovative optimized compressors and the high performing heat exchangers enhance EER values up to 5,1 (CA version) and even up to 5,6 (CA-E version) at Eurovent standars conditions.
- The unit is supplied fully refrigerant charged and factory tested. On site installation only requires power and hydraulic connection.

3.3 Structure
Frame in polyester-painted galvanized steel.
The self-supporting frame is built to guarantee maximum accessibility for servicing and maintenance operations.

3.4 Refrigerant circuit
Unit designed with dedicated and independent refrigerant circuits in order to ensure continuous operation, limited pollution, and easy maintenance. In addition to main components described in the following sections, each refrigerant circuit is fitted as standard with:
- electronic expansion valve
- Inlet valve
- high and low pressure transducers
- non -return valve in compressor´s discharge line integrated in the compressor
- on-off cock on the compressor´s suction and delivery line and on the refrigerant line
- drier filter with replaceable cartridge
- refrigerant line sight glass with humidity indicator
- safety switching device for limiting the pressure

3.5 Compressor
New semi-hermetic screw compressors designed for high efficiency both at full and partial load.
Semi-hermetic screw compressors with 2 five- and six-lobe rotors: the five-lobe rotor is splined directly onto the motor (nominal speed 2950 rpm) without the use of interposed gears. The bearings provided along the rotor axis in a separate chamber isolated from the compression chamber are made in carbon steel. Each compressor is provided with an inlet for refrigerant injection (for the extension of operating limits) and the use of the economizer (for the output capacity and efficiency´s increase). Optimized lubrication guarantees oil´s distribution between mechanical parts, without using an oil pump; the built-in oil separator has 3 stages of separation, and a 10 mm stainless steel mesh filter ensures the constant presence of oil inside. Cooling power is partialized by a slide valve, which depending on the position assumed, permits a stepless compression chamber reduction; each compressor can therefore smoothly partialize from 25% to 100% of its capacity. The two pole motors are fitted as standard with electric devices to limit the absorbed current during compressor start-up, and with empty start-up. Each compressor is fitted with manual-reset motor thermal protection, delivery gas temperature and oil level controls and an electric resistance for the carter´s heating while the compressor is stopped. A check valve fitted on the refrigerant delivery line prevents the rotors from reversing after stopping. On-off cocks on the delivery line of each compressor to isolate the refrigerant charge in the heat exchanger when required.

3.6 Plant side heat exchanger
Direct expansion evaporator; refrigerant flows inside the tubes and water on the shell side. Baffles in the shell increase turbolence and therefore enhance the heat exchange´s efficiency.
Steel shell insulated with a foamed closed-cell elastomer 10 mm thickness and 0,033 W/mK at 0°C thermal conductivity.
Internal copper tubes are mecanically fitted onto the plates and grooved internally to enhance the heat exchange between refrigerant and water.
A differential pressure switch is present as standard to control the waterflow while the unit is working preventing the ice formation.
The heat exchanger complishes with PED and ASME regulation, respectively concerning the operating pressures and stresses. Flexible joint water connection.

3.7 Source side heat exchanger
Single step shell and tube condenser for the ´CA´ version, and 2-steps shell and tube condenser for the ´CA-E´ version; both of them flooded type, with water flowing inside and refrigerant flowing outside the pipes.
Only for the units in function /H (heat pump reversible on hydraulic side), the steel shell is insulated with a foamed polyethylene closed-cell mat of 10 mm thikness and a thermal condcuctivity of 0,033 W/mK at 0°C to avoid condensation on its surface.
The copper tubes are internally and externally grooved to improve heat exchange.
Heads can be removed to inspect the tubes.
Under request it´s possible to have a 4-steps heat exchanger (water side) for application with low-medium temperature sources (for example underground water).
The heat exchanger comply with PED standards, concerning to operating pressure. Flexible joint water connection.

3.8 Electrical and control panel
Electrical and control panel built to EN60204-1 and EC204-1 standards, complete with:
- electronic controller
- control circuit transformer
- general door lock isolator
- power circuit with bar distribution system
- fuses for compressors
- compressors protection with internal thermal overload
- terminals for cumulative alarm block
- remote ON/OFF terminals
- spring-type control circuit terminal board
- phases sequence control
- relays for voltage monitoring

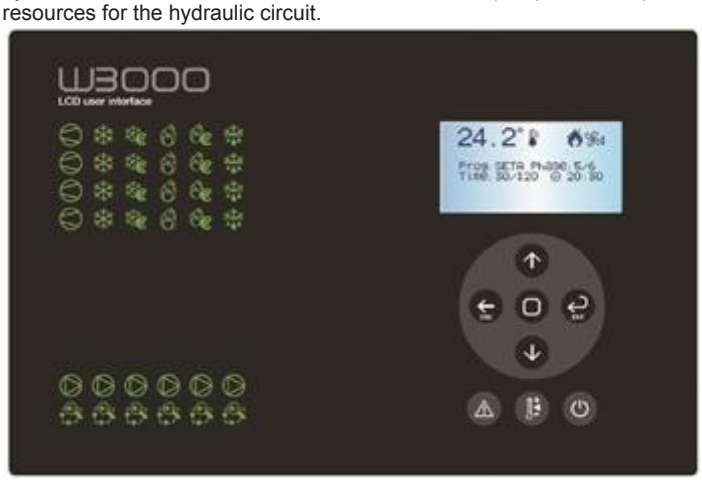
3.9 Certification, reference standard
The unit complies with the following directives and relative amendments:
- EUROVENT Certification program
- CE Declaration of conformity certificate for the European Union
- GOST Product quality certificate for Russian Federation
- SAFETY QUALITY LICENCE Product quality certificate for Popular Republic of China
- M&I Product quality certificate for Australia and New Zealand
- Machine directive 2006/42/EC
- PED directive 97/23/EC
- Low Voltage directive 2006/95/EC
- ElectroMagnetic compatibility directive 2004/108/EC
- ISO 9001 Company´s Quality Management System certification
- ISO 14001 Company´s Environmental Management System certification

3.10 Tests
Tests performed throughout the production process, as indicated in ISO9001.
Performance or noise tests can be performed by highly qualified staff in the presence of customers.
Performance tests comprise the measurement of:
- electrical data
- water flow rates
- working temperatures
- power input
- power output
- pressure drops on the water-side exchanger both at full load (at the conditions of selection and at the most critical conditions for the condenser) and at part load conditions.

During performance testing it is also possible to simulate the main alarm states.
Noise tests are performed to check noise emissions according to ISO3744.

3.11 Electronic control W3000 TE
The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard provides a complete view of the statuses of the unit. The controls and the complete LCD display favour an easy and safe access to the machine setup. These resources allow the assessment and intervention on the unit, by means of a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water

pumps (if present). An optional extra is the touch screen interface: 7.0” WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.
The diagnostics comprises a complete alarm management system, with “black box” (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance.
For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.
Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks protocols.
Compatibility with the remote keyboard managing up to 10 units.
The presence of the programmable timer allows the creation of an operating profile containing up to 4 typical days and 10 time bands.
The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.
Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.



3.12 Versions
CA, high efficiency version
The optimum ratio costsperformances characterizes this version. Electronic expansion valve, optimized heat exchangers with single-step condensers water side are common features in all the series for a total coverage range from 300 to 2.400 kW.

CA-E, very high efficiency version, Class A enhanced
Super high efficiency unit for the minimum investment payback time. EER of 5,6 at standard condition. Electronic expansion valve, high performing heat exchangers and generous heat exchange´s sufaces. 2-steps condensers water side.

3.14 Configurations
< >, Standard unit
Standard unit for production of chilled water

/D, with Desuperheater
Unit for production of chilled water, complete of an auxiliary heat exchanger on the discharge section of the compressor to the superheat reclaim. The reclaim heat is approximately the 20% of the total cooling capacity. This function is used for application with domestic hot water production or other secondary uses, as support of the existing boiler.

/R, with total heat Reclaim
Unit for the production of chilled water, with a dedicated heat exchanger refrigerant/water for the condensation heat reclaim. The heat reclaim is managed to reach the set-point. This function is used for air treatment in applications with AHU or for domestic hot water production together with an auxiliary boiler.

/H, Hydraulic side reversible heat pump
Heat pump reversible on hydraulic side. The unit has, as standard, an additional temperature probe on condenser and an extra insulating material on it. The controller is set to manage the unit on a double set-point, depending on the commutation: summer or winter mode.

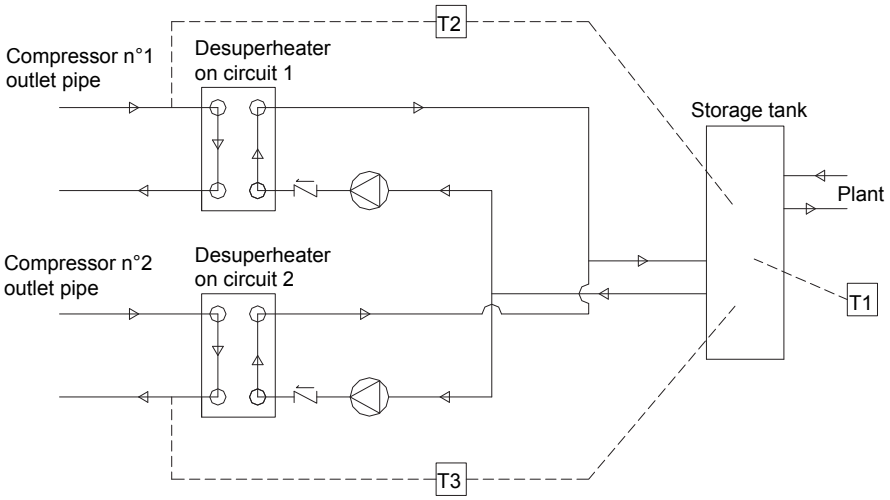
2.7 Accessories

ACCESSORIES	DESCRIPTION	BENEFIT
Soft start	Electronic device adopted to manage the inrush current.	Break down of the inrush current as soon as the electrical motor is switch on, lower motor's mechanical wear, favourable sizing for the electrical system.
Integral acoustic enclosure basic	Enclosure realized with peraluman panels lined with an acoustic insulation made by polyester f ber of thickness 30 mm. The sound power level reduction achieved with this accessory is 14 dB(A).	
Integral acoustic enclosure plus	Enclosure realized with peraluman panels lined with a special acoustic insulation composed by 5 alternating layers of polyurethane and gaiter of total thickness 50 mm. The sound power level reduction achieved with this accessory is 18 dB(A).	
Pressostatic valve for the condensation control (see dedicate section)	Pressostatic valve with grey cast iron body. It's used for regulating the f ow of water as a function of the condensing pressure, maintaining it constant during operation. When the refrigeration plant is stopped, the cooling water f ow is shut off automatically. The valve is selected and tested by Climaveneta during the unit's test. Recommended for applications with low temperature water, for example groundwater, where it's request the condensation pressure's control and it's possible to work with variable f ow on the rejection circuit (Separately supplied, not mounted)	
CuNi condensers	Shell and tube heat exchanger recommended for applications with water with an high corrosion potential. Headers, shell, baff es and refrigerant connection in carbon steel. Available tubes in CuNi 90/10 all, or CuNi 70/30; the last option is recommended for marine water applications. [Consider a penalization on the condensation temperature of 2,5°C (/CA version) and 2,0°C (/CA-E) for 90/10 alloy, and of 4°C (/CA version) or 3°C (/CA-E version) for 70/30]	
0-10 V signal for the condensation's control	0-10 V signal on terminal board for the condensation control.	For dry-cooler or cooling tower applications, it permits to modulate the fans' speed in order to maintain the condensing pressure in a pre-def ned range. Max transmission lenght 30 m. Shielded cable is recommended.
VPF system (see dedicate section)	Predisposition for the variable f ow pumps' control on the primary circuit. The system comprise: extensions on the controller to read the system's pressure transducer signals (4-20 mA) and the consequent management of pumps and bypass valve (0-10 V signal), additional pressure transducer as extra safety device. [Pressure transducer, pumps and bypass valve at client responsability]	
kit HWT	Kit for increased condenser leaving water temperature up to 60°C. To ensure control of the condenser leaving water temperature, this option must be f tted for /H function. NOTE: the adoption of "kit HWT" modif es the unit's performance in all the operating range; refer to the selection software to have the correct technical data.	The accessory is required for applications with high condensing temperature (heat pump, high level heat reclaim or dry cooler applications).
Partial heat reclaim management (Fig. 1)	On/off and thermal relay fot controlling the auxiliary pumps on the desuperheat circuit.	This option minimizes pumps' consumption. They are activated only when real capability of heat reclaim is detected: compressors on, hot storage tank's temperature lower than its set-point and than compressors' outlet gas temperature. [Pumps at client responsability]
Compressors' ON/OFF signal	Auxiliary contacts providing a voltage-free signal	Allows remote signalling of compressor's activation or remote control of any auxiliary loads.
ModBUS connectivity	Interface module for ModBUS protocols	Allows integration with BMS operating with ModBUS protocol
BACnet connectivity	Interface module for BACnet protocols	Allows integration with BMS operating with BACnet protocol
Echelon connectivity	Interface module for Echelon systems	Allows integration with BMS operating with LonWorks procotls
Auxiliary Signal 4-20mA	4..20mA analogue input. Allows to change the operating set-point according to the value of current applied to the analogue input	Enforce Energy Saving policies
Compressor suction valve	Shut-off solenoid valve on compressor's suction circuit.	Simplif es maintenance activities
Prearrangement for remote	LCD display keyboard type W3000 Compact	Easy of use, multi-language user interface, remote unit's control
Automatic circuit breakers	Over-current switch on the major electrical loads.	It protects compressors and/or fans from possible current peaks.
Input remote demand limit	Digital input (voltage free)	It permits to limit the unit's power absorption for safety reasons or in temporary situation.
Numbered cables on electrical board		
Remote Signal Double SP	Allows to activate the Energy Saving set-point	Enforce Energy Saving policy
Evaporator f owswitch (water side)		
Container packing		
Rubber anti vibration device		

ACCESSORIES	DESCRIPTION	BENEFIT
Relay for pump(s) managment	Relay for the pump(s) on/off.	It permits the pumps on/off. In case of 2 pumps, one in stand-by to the other, it's possible to balance the operating hours between them.
Flanged condenser connection		
Power factor correction		
BACnet over IP connectivity	Interface module for BACnet OVER-IP protocols	Allows to interconnect BACnet devices over Internet Protocol within wide-area networks
DEMETRA (see dedicated manual)	Software to monitor capacity and energy absorbed by the units.	Allows a dynamic monitoring of the installed units and therefore a data (hourly based) downloading to support the current needs of energy management.
Group regulation device	(see dedicate section)	
Supervisory device	(see dedicate section)	
Condensers' collectors (Fig. 2)	Hydraulic collector between the source-side circuit and the auxiliary heat exchanger. It's available only for FOCS2-W/CA, 3/4 compressors.	It semplif es the in-plant operations reducing to a minimum the number of connections and avoiding the water f owing under the electrical panel.

ACCESSORIES

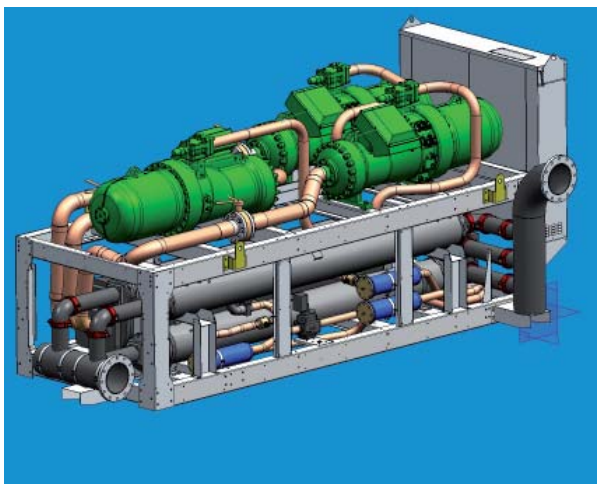
Fig. 1 - Operating scheme of the "partial heat reclaim management" device for two circuits units



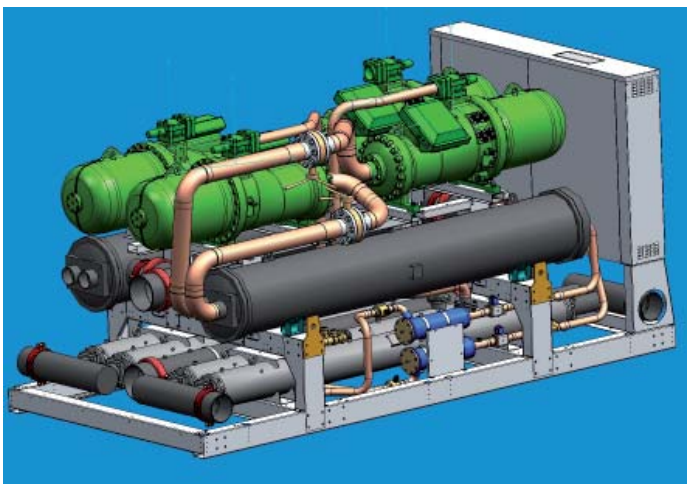
T1, T2 and T3: Thermostats supplied and cabled by Climaveneta. The correct positioning of the temperature probes inside the storage tank is at customer care.

Fig. 2 - Condensers' collectors

FOCS2-W/CA 3 compressors



FOCS2-W/CA 4 compressors



2.8 Group regulation device MANAGER 3000

Manager3000 allows the regulation within a group of hydronic units. The controller features high-level algorithms and user interface. The controller is suitable for the management of 2- or 4-pipe systems, with regulation on one water circuit, for chiller- or heat pump units and relevant mode change-over,and also with regulation on two circuits, with independent set-points and parameters, thus exploiting the simultaneous supply of chilled- and hot water.

The controller manages up to 8 units, with activation logic focused at the balancing of operation times and at the achievement of the highest energy eff ciency. It is possible to def ne conditions of dynamic stand-by and priority as regards the units' activation. It is also feasible the rotation among the system's units, also in cases of constant load.
The alarm management is featured, with plain text descriptions and possible notif cation to remote recipients. Two relay outputs are available, associated to unit- and device alarms.
The user interface allows a safe and easy use, thanks to its touch-screen display, back-lit 8.4" type.
The multi-level menu features the language selection and differentiated access prof les(user and maintenance).The circuit temperatures and the status of both system- and unit- operation are displayed, via one overview page plus detailed pages.The regulation can be based on proportional- or proportional+integral logics, or also on a dead-band algorithm with dynamic adjustment, with relevant temperature inputs managed by the device. Features as set-point offset, also referred to the outdoor temperature, and demand limit are included, with relevant analog inputs.
The device is integrated in the best way with the units, preventing simultaneous activations or resources and optimizing eff ciency, overall inrush current values and also operation of water pumps possibly associated to the units.
The WebManager option allows the access to the device and its settings, via any computer, with direct- or LAN-based connection, therefore also via internet resources; this is associated to the availability of historical charts for the main operating variables.
The "Variable Primary Flow" option represents a unique regulation dedicated to hydronic systems with variable water f ow.
This represents a crucial contribution to the reduction of the costs related to the hydraulic plant and its operation.
It is available as option the interface with the Demetra metering device: thus it is possible to acquire and log the values of the system units' electric consumption, together with their operating status; this allows therefore to analyze the system's operating performances throughout time, in terms of both absorbed energy and cooling / heating capacities, consistently with the implementation of enhanced energy management policies for the building.

2.9 Supervisory device FWS 3000

Supervisory device for a system composed of Climaveneta units.
Supervision can be operated via any computer, with direct- or LAN-based connection. It is therefore achieved the internet-based management of the resources, thanks to the built-in web-server and to the availability of web pages specif cally def ned both for the overall system monitoring and the access to detailed information about each unit.
The supervision achieved by this way does not require the installation of any additional software on the computer and utilizes the most common browsers. This allows the use of any computer connected to the network or web. A RS-485 serial connection is available for the communication with the slave devices, up to 15 connected units. FWS3000 is particularly effective for the supervision of systems composed of packaged or WET units.
The access to the supervision is easy and safe, thanks to the use of password. It is possible to visualize a complete list of unit operational variables: temperatures, humidity , indoor air quality, status of the unit. This is associated to the availability of historical charts for the main operating variables. It is also available the display of alarms, with plain text descriptions and possible notif cation to remote recipient.

The setting of the main operational parameters, for each unit, is also allowed: unit status, mode, set-point, time scheduling (based on 4 days, 10 time belts per day).
Various levels of customization are offered, for both the web pages and connectivity-related functions.
It is available as option the interface with the Demetra metering device: thus it is possible to acquire and log the values of the system units'electric consumption, together with their operating status; this allows therefore to analyze the system's operating performances throughout time, in terms of both absorbed energy and cooling / heating capacities, consistently with the implementation of enhanced energy management policies for the building.

FOCS2-W /CA			1301	1401	1601	1801	2101	2401	2701	2802	3001	3202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**306**	**348**	**422**	**477**	**538**	**607**	**675**	**694**	**746**	**844**
Total power input	(1)	kW	60,5	68,7	83,4	94,4	106	120	133	137	148	167
EER	(1)		5,06	5,07	5,06	5,06	5,07	5,07	5,06	5,05	5,06	5,06
ESEER	(1)		5,94	5,95	5,73	5,84	5,94	5,92	5,79	5,94	5,91	5,87
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**305**	**347**	**420**	**476**	**536**	**604**	**673**	**692**	**743**	**841**
EER	(1)(2)		4,86	4,87	4,85	4,87	4,89	4,86	4,88	4,87	4,86	4,89
ESEER	(1)(2)		5,45	5,45	5,25	5,41	5,50	5,42	5,38	5,44	5,43	5,41
Cooling energy class			B	B	B	B	B	B	B	B	B	B
COOLING WITH PARTIAL RECOVERY												
Cooling capacity	(3)	kW	318	361	438	495	558	630	700	720	774	876
Total power input	(3)	kW	58,4	66,3	80,4	91,1	102	115	129	133	142	161
Desuperheater heating capacity	(3)	**kW**	**15,7**	**17,8**	**21,6**	**24,5**	**27,5**	**31,1**	**34,7**	**35,7**	**38,3**	**43,3**
COOLING WITH TOTAL HEAT RECOVERY												
Cooling capacity with total heat recovery	(4)	kW	276	314	376	425	484	546	603	625	667	752
Total power input	(4)	kW	76,8	87,3	104	118	133	150	166	175	183	209
Recovery heat exchanger capacity	(4)	**kW**	**348**	**396**	**474**	**536**	**608**	**687**	**759**	**790**	**839**	**948**
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	52,7	60,0	72,6	82,2	92,6	104	116	119	129	145
Pressure drop	(1)	kPa	41,9	45,0	52,7	41,7	44,2	56,3	44,1	47,0	54,7	45,4
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	62,9	71,5	86,6	98,0	110	125	139	143	153	173
Pressure drop	(1)	kPa	35,9	35,0	34,8	34,6	34,5	36,2	34,8	34,8	36,2	34,8
PARTIAL RECOVERY USER SIDE IN												
Water flow	(3)	m³/h	2,73	3,10	3,76	4,26	4,78	5,40	6,02	6,20	6,66	7,52
Pressure drop	(3)	kPa	34,6	32,3	34,3	33,7	33,4	30,9	30,9	32,3	35,4	34,3
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION												
Water flow	(4)	m³/h	60,5	68,8	82,3	93,2	106	119	132	137	146	165
Pressure drop	(4)	kPa	33,3	32,4	31,4	31,3	31,6	33,2	31,5	32,2	32,8	31,5
COMPRESSORS												
N. of compressors		N°	1	1	1	1	1	1	1	2	1	2
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	1	1	1	1	1	1	1	2	1	2
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	25	25	25	25
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	45,0	44,0	70,0	70,0	71,0	68,0	94,0	87,0	94,0	143
Oil charge		kg	19,0	19,0	35,0	35,0	35,0	35,0	38,0	38,0	38,0	70,0
NOISE LEVEL												
Noise Pressure	(5)	dB(A)	65	65	65	65	65	65	67	67	67	67
Noise Power	(6)	dB(A)	97	97	97	97	97	97	99	99	99	99
SIZE AND WEIGHT												
A	(7)	mm	3830	3830	3860	3860	3860	3860	3930	4200	3930	4750
B	(7)	mm	900	900	900	900	900	900	900	1150	900	1150
H	(7)	mm	1700	1700	1840	1840	1840	1840	1990	2050	1990	2050
Operating weight	(7)	kg	2050	2110	2590	2810	2910	2970	3510	4120	3600	5110

Notes:
1 Evaporator water (in/out) = 12°C/7°C, condenser water (in/out) = 30°C/35°C, based on Eurovent Standard
2 Values in compliance with EN14511-3:2011
3 Evaporator water (in/out): 12°C/7°C; Condenser water (in/out): 30°C/35°C; Desuperheater water (in/out): 40°C/45°C.
4 Evaporator water (in/out) = 12°C/7°C; Recovery unit water (in/out) = 40°C/45°C.
5 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
7 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W /CA			3602	4202	4502	4802	5402	6002	6303	6603	7203	7803
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**957**	**1071**	**1145**	**1213**	**1348**	**1490**	**1604**	**1677**	**1815**	**1967**
Total power input	(1)	kW	189	212	226	240	267	295	317	331	359	389
EER	(1)		5,07	5,06	5,06	5,06	5,05	5,05	5,05	5,06	5,05	5,06
ESEER	(1)		6,14	6,08	6,23	6,17	6,00	6,09	6,14	6,24	6,18	6,11
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**954**	**1069**	**1142**	**1210**	**1344**	**1485**	**1600**	**1672**	**1809**	**1962**
EER	(1)(2)		4,90	4,92	4,91	4,90	4,88	4,87	4,91	4,90	4,88	4,91
ESEER	(1)(2)		5,63	5,67	5,78	5,70	5,54	5,57	5,67	5,73	5,63	5,63
Cooling energy class			B	B	B	B	B	B	B	B	B	B
COOLING WITH PARTIAL RECOVERY												
Cooling capacity	(3)	kW	993	1111	1188	1259	1399	1546	1664	1739	1883	2041
Total power input	(3)	kW	182	204	218	231	258	285	306	320	346	375
Desuperheater heating capacity	(3)	**kW**	**49,0**	**55,0**	**58,7**	**62,3**	**69,3**	**76,6**	**82,4**	**86,0**	**93,2**	**101**
COOLING WITH TOTAL HEAT RECOVERY												
Cooling capacity with total heat recovery	(4)	kW	853	964	1029	1091	1205	1333	-	-	-	-
Total power input	(4)	kW	237	265	283	300	331	366	-	-	-	-
Recovery heat exchanger capacity	(4)	**kW**	**1075**	**1213**	**1295**	**1373**	**1516**	**1677**	**-**	**-**	**-**	**-**
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	165	184	197	209	232	257	276	289	312	339
Pressure drop	(1)	kPa	46,4	30,6	34,2	38,4	47,4	54,6	38,1	45,0	52,7	41,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	197	220	235	249	277	306	329	344	373	404
Pressure drop	(1)	kPa	34,8	34,4	35,4	36,0	34,5	36,6	33,6	34,4	36,1	35,9
PARTIAL RECOVERY USER SIDE IN												
Water flow	(3)	m³/h	8,52	9,55	10,2	10,8	12,0	13,3	14,3	15,0	16,2	17,5
Pressure drop	(3)	kPa	33,7	33,3	32,2	31,0	30,9	35,4	33,2	32,4	31,0	31,4
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION												
Water flow	(4)	m³/h	187	211	225	239	264	291	-	-	-	-
Pressure drop	(4)	kPa	31,4	31,6	32,4	33,0	31,2	33,1	-	-	-	-
COMPRESSORS												
N. of compressors		N°	2	2	2	2	2	2	3	3	3	3
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	2	2	2	2	2	2	3	3	3	3
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	17	17	17	17
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	141	141	144	140	183	181	215	217	211	246
Oil charge		kg	70,0	70,0	70,0	70,0	76,0	76,0	105	105	105	111
NOISE LEVEL												
Noise Pressure	(5)	dB(A)	67	67	67	67	69	69	70	70	70	70
Noise Power	(6)	dB(A)	99	99	99	99	101	101	102	102	102	102
SIZE AND WEIGHT												
A	(7)	mm	4750	4750	4750	4750	4850	4850	4950	4950	4950	4950
B	(7)	mm	1150	1150	1150	1150	1150	1150	1700	1700	1700	1700
H	(7)	mm	2050	2200	2200	2200	2200	2200	2150	2150	2150	2150
Operating weight	(7)	kg	5400	6070	6120	6180	6950	7090	8980	9050	9120	9950

Notes:
1 Evaporator water (in/out) = 12°C/7°C, condenser water (in/out) = 30°C/35°C, based on Eurovent Standard
2 Values in compliance with EN14511-3:2011
3 Evaporator water (in/out): 12°C/7°C; Condenser water (in/out): 30°C/35°C; Desuperheater water (in/out): 40°C/45°C.
4 Evaporator water (in/out) = 12°C/7°C; Recovery unit water (in/out) = 40°C/45°C.
5 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
7 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W /CA			8103	9003	9004	9604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE						
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1)	**kW**	**2024**	**2236**	**2278**	**2416**
Total power input	(1)	kW	400	442	451	478
EER	(1)		5,05	5,06	5,05	5,05
ESEER	(1)		6,09	6,14	6,23	6,17
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2)	**kW**	**2018**	**2228**	**2273**	**2410**
EER	(1)(2)		4,90	4,89	4,92	4,91
ESEER	(1)(2)		5,61	5,60	5,80	5,71
Cooling energy class			B	B	B	B
COOLING WITH PARTIAL RECOVERY						
Cooling capacity	(3)	kW	2100	2319	2363	2507
Total power input	(3)	kW	386	427	435	461
Desuperheater heating capacity	(3)	**kW**	**104**	**115**	**117**	**124**
COOLING WITH TOTAL HEAT RECOVERY						
Cooling capacity with total heat recovery	(4)	kW	-	-	-	-
Total power input	(4)	kW	-	-	-	-
Recovery heat exchanger capacity	(4)	**kW**	**-**	**-**	**-**	**-**
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN REFRIGERATION						
Water flow	(1)	m³/h	349	385	392	416
Pressure drop	(1)	kPa	43,7	53,3	32,3	36,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION						
Water flow	(1)	m³/h	416	459	468	496
Pressure drop	(1)	kPa	34,6	35,8	35,0	37,0
PARTIAL RECOVERY USER SIDE IN						
Water flow	(3)	m³/h	18,1	19,9	20,3	21,6
Pressure drop	(3)	kPa	30,9	35,3	31,9	30,9
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION						
Water flow	(4)	m³/h	-	-	-	-
Pressure drop	(4)	kPa	-	-	-	-
COMPRESSORS						
N. of compressors		N°	3	3	4	4
Number of capacity		N°	0	0	0	0
No. of circuits		N°	3	3	4	4
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	17	17	12.5	12.5
Refrigerant			R134a	R134a	R134a	R134a
Refrigerant charge		kg	289	281	287	281
Oil charge		kg	114	114	140	140
NOISE LEVEL						
Noise Pressure	(5)	dB(A)	70	70	70	70
Noise Power	(6)	dB(A)	102	102	102	102
SIZE AND WEIGHT						
A	(7)	mm	4950	4950	4650	4650
B	(7)	mm	1700	1700	2250	2250
H	(7)	mm	2150	2150	2230	2230
Operating weight	(7)	kg	10170	10350	14330	14390

Notes:
1 Evaporator water (in/out) = 12°C/7°C, condenser water (in/out) = 30°C/35°C, based on Eurovent Standard
2 Values in compliance with EN14511-3:2011
3 Evaporator water (in/out): 12°C/7°C; Condenser water (in/out): 30°C/35°C; Desuperheater water (in/out): 40°C/45°C.
4 Evaporator water (in/out) = 12°C/7°C; Recovery unit water (in/out) = 40°C/45°C.
5 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
7 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W /CA / H			1301	1401	1601	1801	2101	2401	2701	2802	3001	3202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**306**	**348**	**422**	**477**	**538**	**607**	**675**	**694**	**746**	**844**
Total power input	(1)	kW	60,5	68,7	83,4	94,4	106	120	133	137	148	167
EER	(1)		5,06	5,07	5,06	5,06	5,07	5,07	5,06	5,05	5,06	5,06
ESEER	(1)		5,94	5,95	5,73	5,84	5,94	5,92	5,79	5,94	5,91	5,87
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**305**	**347**	**420**	**476**	**536**	**604**	**673**	**692**	**743**	**841**
EER	(1)(2)		4,86	4,87	4,85	4,87	4,89	4,86	4,88	4,87	4,86	4,89
ESEER	(1)(2)		5,45	5,45	5,25	5,41	5,50	5,42	5,38	5,44	5,43	5,41
Cooling energy class			B	B	B	B	B	B	B	B	B	B
HEATING ONLY (GROSS VALUE)												
Heating capacity	(3)	**kW**	**328**	**373**	**445**	**504**	**572**	**646**	**714**	**743**	**789**	**891**
Total power input	(3)	kW	76,3	86,7	103	117	131	148	164	173	180	207
COP	(3)		4,29	4,30	4,31	4,31	4,36	4,37	4,36	4,29	4,37	4,31
HEATING ONLY (EN14511 VALUE)												
Heating capacity	(3)(2)	**kW**	**328**	**374**	**446**	**505**	**573**	**648**	**715**	**745**	**791**	**893**
COP	(3)(2)		4,21	4,22	4,23	4,24	4,29	4,28	4,29	4,22	4,30	4,25
Cooling energy class			B	B	B	B	B	B	B	B	B	B
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	52,7	60,0	72,6	82,2	92,6	104	116	119	129	145
Pressure drop	(1)	kPa	41,9	45,0	52,7	41,7	44,2	56,3	44,1	47,0	54,7	45,4
Water flow	(1)	m³/h	62,9	71,5	86,6	98,0	110	125	139	143	153	173
Pressure drop	(1)	kPa	35,9	35,0	34,8	34,6	34,5	36,2	34,8	34,8	36,2	34,8
HEAT EXCHANGER USER SIDE IN HEATING												
Water flow	(3)	m³/h	56,9	64,8	77,4	87,6	99,3	112	124	129	137	155
Pressure drop	(3)	kPa	29,5	28,7	27,7	27,6	27,9	29,4	27,8	28,5	29,0	27,8
Water flow	(3)	m³/h	44,0	50,1	59,9	67,8	77,1	87,3	96,3	99,9	107	120
Pressure drop	(3)	kPa	29,3	31,4	35,9	28,4	30,7	39,3	30,4	32,8	37,6	30,9
COMPRESSORS												
N. of compressors		N°	1	1	1	1	1	1	1	2	1	2
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	1	1	1	1	1	1	1	2	1	2
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	25	25	25	25
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	45,0	44,0	70,0	70,0	71,0	68,0	94,0	87,0	94,0	143
Oil charge		kg	19,0	19,0	35,0	35,0	35,0	35,0	38,0	38,0	38,0	70,0
NOISE LEVEL												
Noise Pressure	(4)	dB(A)	65	65	65	65	65	65	67	67	67	67
Noise Power	(5)	dB(A)	97	97	97	97	97	97	99	99	99	99
SIZE AND WEIGHT												
A	(6)	mm	3830	3830	3860	3860	3860	3860	3930	4200	3930	4750
B	(6)	mm	900	900	900	900	900	900	900	1150	900	1150
H	(6)	mm	1700	1700	1840	1840	1840	1840	1990	2050	1990	2050
Operating weight	(6)	kg	2050	2110	2590	2810	2910	2970	3510	4120	3600	5110

Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C
2 Values in compliance with EN14511-3:2011
3 Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/* °C (flow rate as in cooling)
4 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
5 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
6 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W /CA / H			3602	4202	4502	4802	5402	6002	6303	6603	7203	7803
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**957**	**1071**	**1145**	**1213**	**1348**	**1490**	**1604**	**1677**	**1815**	**1967**
Total power input	(1)	kW	189	212	226	240	267	295	317	331	359	389
EER	(1)		5,07	5,06	5,06	5,06	5,05	5,05	5,05	5,06	5,05	5,06
ESEER	(1)		6,14	6,08	6,23	6,17	6,00	6,09	6,14	6,24	6,18	6,11
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**954**	**1069**	**1142**	**1210**	**1344**	**1485**	**1600**	**1672**	**1809**	**1962**
EER	(1)(2)		4,90	4,92	4,91	4,90	4,88	4,87	4,91	4,90	4,88	4,91
ESEER	(1)(2)		5,63	5,67	5,78	5,70	5,54	5,57	5,67	5,73	5,63	5,63
Cooling energy class			B	B	B	B	B	B	B	B	B	B
HEATING ONLY (GROSS VALUE)												
Heating capacity	(3)	**kW**	**1010**	**1141**	**1217**	**1291**	**1426**	**1577**	**1709**	**1785**	**1934**	**2082**
Total power input	(3)	kW	234	262	279	296	327	361	393	409	444	477
COP	(3)		4,31	4,35	4,36	4,35	4,36	4,37	4,35	4,36	4,35	4,36
HEATING ONLY (EN14511 VALUE)												
Heating capacity	(3)(2)	**kW**	**1012**	**1143**	**1220**	**1294**	**1429**	**1580**	**1712**	**1789**	**1938**	**2086**
COP	(3)(2)		4,25	4,30	4,30	4,29	4,30	4,30	4,29	4,30	4,29	4,30
Cooling energy class			B	B	B	B	B	B	B	B	B	B
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	165	184	197	209	232	257	276	289	312	339
Pressure drop	(1)	kPa	46,4	30,6	34,2	38,4	47,4	54,6	38,1	45,0	52,7	41,3
Water flow	(1)	m³/h	197	220	235	249	277	306	329	344	373	404
Pressure drop	(1)	kPa	34,8	34,4	35,4	36,0	34,5	36,6	33,6	34,4	36,1	35,9
HEAT EXCHANGER USER SIDE IN HEATING												
Water flow	(3)	m³/h	176	198	212	224	248	274	297	310	336	362
Pressure drop	(3)	kPa	27,8	27,9	28,6	29,2	27,6	29,3	27,3	27,9	29,4	28,8
Water flow	(3)	m³/h	136	154	164	174	192	213	230	241	261	281
Pressure drop	(3)	kPa	31,6	21,3	23,8	26,7	32,6	37,6	26,6	31,3	36,8	28,5
COMPRESSORS												
N. of compressors		N°	2	2	2	2	2	2	3	3	3	3
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	2	2	2	2	2	2	3	3	3	3
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	17	17	17	17
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	141	141	144	140	183	181	215	217	211	246
Oil charge		kg	70,0	70,0	70,0	70,0	76,0	76,0	105	105	105	111
NOISE LEVEL												
Noise Pressure	(4)	dB(A)	67	67	67	67	69	69	70	70	70	70
Noise Power	(5)	dB(A)	99	99	99	99	101	101	102	102	102	102
SIZE AND WEIGHT												
A	(6)	mm	4750	4750	4750	4750	4850	4850	4950	4950	4950	4950
B	(6)	mm	1150	1150	1150	1150	1150	1150	1700	1700	1700	1700
H	(6)	mm	2050	2200	2200	2200	2200	2200	2150	2150	2150	2150
Operating weight	(6)	kg	5400	6070	6120	6180	6950	7090	8980	9050	9120	9950

Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C
2 Values in compliance with EN14511-3:2011
3 Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/* °C (flow rate as in cooling)
4 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
5 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
6 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W /CA / H			8103	9003	9004	9604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE						
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1)	**kW**	**2024**	**2236**	**2278**	**2416**
Total power input	(1)	kW	400	442	451	478
EER	(1)		5,05	5,06	5,05	5,05
ESEER	(1)		6,09	6,14	6,23	6,17
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2)	**kW**	**2018**	**2228**	**2273**	**2410**
EER	(1)(2)		4,90	4,89	4,92	4,91
ESEER	(1)(2)		5,61	5,60	5,80	5,71
Cooling energy class			B	B	B	B
HEATING ONLY (GROSS VALUE)						
Heating capacity	(3)	**kW**	**2140**	**2366**	**2428**	**2577**
Total power input	(3)	kW	490	541	557	592
COP	(3)		4,36	4,37	4,36	4,35
HEATING ONLY (EN14511 VALUE)						
Heating capacity	(3)(2)	**kW**	**2144**	**2371**	**2433**	**2582**
COP	(3)(2)		4,30	4,31	4,31	4,30
Cooling energy class			B	B	B	B
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN REFRIGERATION						
Water flow	(1)	m³/h	349	385	392	416
Pressure drop	(1)	kPa	43,7	53,3	32,3	36,3
Water flow	(1)	m³/h	416	459	468	496
Pressure drop	(1)	kPa	34,6	35,8	35,0	37,0
HEAT EXCHANGER USER SIDE IN HEATING						
Water flow	(3)	m³/h	372	411	422	448
Pressure drop	(3)	kPa	27,7	28,7	28,5	30,1
Water flow	(3)	m³/h	289	320	328	348
Pressure drop	(3)	kPa	30,1	36,8	22,6	25,4
COMPRESSORS						
N. of compressors		N°	3	3	4	4
Number of capacity		N°	0	0	0	0
No. of circuits		N°	3	3	4	4
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	17	17	12.5	12.5
Refrigerant			R134a	R134a	R134a	R134a
Refrigerant charge		kg	289	281	287	281
Oil charge		kg	114	114	140	140
NOISE LEVEL						
Noise Pressure	(4)	dB(A)	70	70	70	70
Noise Power	(5)	dB(A)	102	102	102	102
SIZE AND WEIGHT						
A	(6)	mm	4950	4950	4650	4650
B	(6)	mm	1700	1700	2250	2250
H	(6)	mm	2150	2150	2230	2230
Operating weight	(6)	kg	10170	10350	14330	14390

Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C
2 Values in compliance with EN14511-3:2011
3 Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/* °C (flow rate as in cooling)
4 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
5 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
6 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W / CA-E			1301	1401	1601	1801	2101	2401	2802	3202	3602	4202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**321**	**365**	**442**	**506**	**574**	**649**	**729**	**884**	**1012**	**1147**
Total power input	(1)	kW	57,3	65,1	79,1	90,3	103	116	130	158	180	205
EER	(1)		5,60	5,60	5,59	5,61	5,59	5,59	5,60	5,59	5,61	5,59
ESEER	(1)		6,49	6,50	6,30	6,40	6,37	6,40	6,66	6,57	6,73	6,64
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**320**	**363**	**440**	**504**	**571**	**646**	**727**	**880**	**1009**	**1143**
EER	(1)(2)		5,32	5,33	5,30	5,32	5,31	5,30	5,34	5,32	5,37	5,33
ESEER	(1)(2)		5,83	5,83	5,65	5,72	5,72	5,70	5,96	5,84	6,06	5,91
Cooling energy class			A	A	A	A	A	A	A	A	A	A
COOLING WITH PARTIAL RECOVERY												
Cooling capacity	(3)	kW	322	367	444	509	577	653	733	889	1017	1153
Total power input	(3)	kW	57,2	65,0	78,9	90,1	102	116	130	158	180	205
Desuperheater heating capacity	(3)	**kW**	**15,4**	**17,5**	**21,2**	**24,2**	**27,5**	**31,2**	**35,0**	**42,5**	**48,4**	**55,1**
COOLING WITH TOTAL HEAT RECOVERY												
Cooling capacity with total heat recovery	(4)	kW	289	328	395	452	-	-	657	790	904	-
Total power input	(4)	kW	73,1	83,1	99,5	114	-	-	166	199	227	-
Recovery heat exchanger capacity	(4)	**kW**	**357**	**407**	**488**	**559**	**-**	**-**	**813**	**977**	**1118**	**-**
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	55,2	62,8	76,1	87,2	98,8	112	126	152	174	197
Pressure drop	(1)	kPa	45,7	47,7	53,5	53,4	52,8	60,2	51,9	58,6	41,3	55,0
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	64,9	73,8	89,4	102	116	131	148	179	205	232
Pressure drop	(1)	kPa	48,4	46,6	51,6	52,6	54,3	56,3	46,6	51,5	52,8	54,4
PARTIAL RECOVERY USER SIDE IN												
Water flow	(3)	m³/h	2,67	3,04	3,69	4,21	4,79	5,42	6,08	7,38	8,42	9,57
Pressure drop	(3)	kPa	9,80	12,6	12,4	10,6	13,7	17,6	12,7	12,4	10,6	13,7
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION												
Water flow	(4)	m³/h	62,1	70,6	84,8	97,1	-	-	141	170	194	-
Pressure drop	(4)	kPa	44,4	42,8	46,4	47,4	-	-	42,7	46,4	47,5	-
COMPRESSORS												
N. of compressors		N°	1	1	1	1	1	1	2	2	2	2
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	1	1	1	1	1	1	2	2	2	2
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	25	25	25	25
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	50,0	49,0	75,0	73,0	85,0	94,0	110	131	144	213
Oil charge		kg	19,0	19,0	35,0	35,0	35,0	35,0	38,0	70,0	70,0	70,0
NOISE LEVEL												
Noise Pressure	(5)	dB(A)	65	65	65	65	65	65	67	67	67	67
Noise Power	(6)	dB(A)	97	97	97	97	97	97	99	99	99	99
SIZE AND WEIGHT												
A	(7)	mm	4250	4250	4150	4150	4130	4350	4550	4950	5170	4920
B	(7)	mm	900	900	900	900	900	900	1150	1150	1150	1150
H	(7)	mm	1815	1910	1990	1990	1990	2090	2050	2200	2200	2350
Operating weight	(7)	kg	2470	2770	3570	3750	3790	4230	5390	6460	6920	7900

Notes:
1 Evaporator water (in/out) = 12°C/7°C, condenser water (in/out) = 30°C/35°C, based on Eurovent Standard
2 Values in compliance with EN14511-3:2011
3 Evaporator water (in/out): 12°C/7°C; Condenser water (in/out): 30°C/35°C; Desuperheater water (in/out): 40°C/45°C.
4 Evaporator water (in/out) = 12°C/7°C; Recovery unit water (in/out) = 40°C/45°C.
5 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
7 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W / CA-E			4802	2701	3001	5402	6002	6004	6404	6804	7204	7804
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**1299**	**707**	**781**	**1411**	**1551**	**1610**	**1768**	**1897**	**2025**	**2157**
Total power input	(1)	kW	232	128	141	256	282	289	316	338	361	386
EER	(1)		5,59	5,53	5,55	5,52	5,51	5,58	5,59	5,61	5,61	5,60
ESEER	(1)		6,66	6,38	6,41	6,66	6,55	6,65	6,57	6,72	6,75	6,64
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**1293**	**704**	**779**	**1407**	**1545**	**1604**	**1761**	**1891**	**2019**	**2149**
EER	(1)(2)		5,31	5,27	5,30	5,29	5,27	5,34	5,34	5,38	5,40	5,35
ESEER	(1)(2)		5,87	5,76	5,81	6,00	5,88	5,98	5,89	6,08	6,13	5,94
Cooling energy class			A	A	A	A	A	A	A	A	A	A
COOLING WITH PARTIAL RECOVERY												
Cooling capacity	(3)	kW	1305	710	785	1418	1558	1618	1777	1907	2035	-
Total power input	(3)	kW	232	128	141	255	281	288	316	338	360	-
Desuperheater heating capacity	(3)	**kW**	**62,4**	**34,3**	**37,9**	**68,6**	**75,7**	**77,5**	**84,9**	**90,9**	**96,9**	**-**
COOLING WITH TOTAL HEAT RECOVERY												
Cooling capacity with total heat recovery	(4)	kW	-	-	-	-	-	-	-	-	-	-
Total power input	(4)	kW	-	-	-	-	-	-	-	-	-	-
Recovery heat exchanger capacity	(4)	**kW**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	224	122	135	243	267	277	304	327	349	371
Pressure drop	(1)	kPa	65,0	51,5	47,2	46,0	55,6	56,9	58,4	45,9	41,3	59,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	263	143	158	286	314	326	358	384	409	436
Pressure drop	(1)	kPa	56,6	51,7	49,3	51,5	48,4	48,9	51,2	51,5	52,0	53,3
PARTIAL RECOVERY USER SIDE IN												
Water flow	(3)	m³/h	10,8	5,96	6,58	11,9	13,1	13,5	14,8	15,8	16,8	-
Pressure drop	(3)	kPa	17,6	18,2	21,5	18,2	21,5	12,5	12,4	11,4	10,6	-
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION												
Water flow	(4)	m³/h	-	-	-	-	-	-	-	-	-	-
Pressure drop	(4)	kPa	-	-	-	-	-	-	-	-	-	-
COMPRESSORS												
N. of compressors		N°	2	1	1	2	2	4	4	4	4	4
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	2	1	1	2	2	4	4	4	4	4
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	25	25	25	25
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	207	138	137	279	266	328	328	325	327	335
Oil charge		kg	70,0	38,0	38,0	76,0	76,0	108	140	140	140	140
NOISE LEVEL												
Noise Pressure	(5)	dB(A)	67	67	67	69	69	70	70	70	70	70
Noise Power	(6)	dB(A)	99	99	99	101	101	102	102	102	102	102
SIZE AND WEIGHT												
A	(7)	mm	4920	4350	4350	5200	5200	4900	4900	5220	5220	4900
B	(7)	mm	1285	900	900	1285	1285	2250	2250	2250	2250	2250
H	(7)	mm	2430	2180	2180	2440	2440	2305	2305	2305	2305	2455
Operating weight	(7)	kg	8560	4760	4870	8850	8960	12200	13140	13710	13720	15850

Notes:
1 Evaporator water (in/out) = 12°C/7°C, condenser water (in/out) = 30°C/35°C, based on Eurovent Standard
2 Values in compliance with EN14511-3:2011
3 Evaporator water (in/out): 12°C/7°C; Condenser water (in/out): 30°C/35°C; Desuperheater water (in/out): 40°C/45°C.
4 Evaporator water (in/out) = 12°C/7°C; Recovery unit water (in/out) = 40°C/45°C.
5 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
7 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W / CA-E			8404
Power supply		V/ph/Hz	400/3/50
PERFORMANCE			
COOLING ONLY (GROSS VALUE)			
Cooling capacity	(1)	**kW**	**2294**
Total power input	(1)	kW	410
EER	(1)		5,59
ESEER	(1)		6,65
COOLING ONLY (EN14511 VALUE)			
Cooling capacity	(1)(2)	**kW**	**2286**
EER	(1)(2)		5,35
ESEER	(1)(2)		5,97
Cooling energy class			A
COOLING WITH PARTIAL RECOVERY			
Cooling capacity	(3)	kW	-
Total power input	(3)	kW	-
Desuperheater heating capacity	(3)	**kW**	**-**
COOLING WITH TOTAL HEAT RECOVERY			
Cooling capacity with total heat recovery	(4)	kW	-
Total power input	(4)	kW	-
Recovery heat exchanger capacity	(4)	**kW**	**-**
EXCHANGERS			
HEAT EXCHANGER USER SIDE IN REFRIGERATION			
Water flow	(1)	m³/h	395
Pressure drop	(1)	kPa	54,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION			
Water flow	(1)	m³/h	464
Pressure drop	(1)	kPa	53,8
PARTIAL RECOVERY USER SIDE IN			
Water flow	(3)	m³/h	-
Pressure drop	(3)	kPa	-
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION			
Water flow	(4)	m³/h	-
Pressure drop	(4)	kPa	-
COMPRESSORS			
N. of compressors		N°	4
Number of capacity		N°	0
No. of circuits		N°	4
Regulation			STEPLESS
Min. capacity step		%	25
Refrigerant			R134a
Refrigerant charge		kg	335
Oil charge		kg	140
NOISE LEVEL			
Noise Pressure	(5)	dB(A)	70
Noise Power	(6)	dB(A)	102
SIZE AND WEIGHT			
A	(7)	mm	4900
B	(7)	mm	2250
H	(7)	mm	2455
Operating weight	(7)	kg	16100

Notes:
1 Evaporator water (in/out) = 12°C/7°C, condenser water (in/out) = 30°C/35°C, based on Eurovent Standard
2 Values in compliance with EN14511-3:2011
3 Evaporator water (in/out): 12°C/7°C; Condenser water (in/out): 30°C/35°C; Desuperheater water (in/out): 40°C/45°C.
4 Evaporator water (in/out) = 12°C/7°C; Recovery unit water (in/out) = 40°C/45°C.
5 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
7 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W / CA-E / H			1301	1401	1601	1801	2101	2401	2802	3202	3602	4202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**321**	**365**	**442**	**506**	**574**	**649**	**729**	**884**	**1012**	**1147**
Total power input	(1)	kW	57,3	65,1	79,1	90,3	103	116	130	158	180	205
EER	(1)		5,60	5,60	5,59	5,61	5,59	5,59	5,60	5,59	5,61	5,59
ESEER	(1)		6,49	6,50	6,30	6,40	6,37	6,40	6,66	6,57	6,73	6,64
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**320**	**363**	**440**	**504**	**571**	**646**	**727**	**880**	**1009**	**1143**
EER	(1)(2)		5,32	5,33	5,30	5,32	5,31	5,30	5,34	5,32	5,37	5,33
ESEER	(1)(2)		5,83	5,83	5,65	5,72	5,72	5,70	5,96	5,84	6,06	5,91
Cooling energy class			A	A	A	A	A	A	A	A	A	A
HEATING ONLY (GROSS VALUE)												
Heating capacity	(3)	**kW**	**335**	**381**	**457**	**523**	**597**	**676**	**762**	**914**	**1046**	**1194**
Total power input	(3)	kW	72,7	82,6	98,6	113	128	145	165	197	225	256
COP	(3)		4,61	4,61	4,63	4,64	4,67	4,67	4,61	4,63	4,65	4,67
HEATING ONLY (EN14511 VALUE)												
Heating capacity	(3)(2)	**kW**	**336**	**382**	**458**	**525**	**599**	**678**	**765**	**917**	**1049**	**1198**
COP	(3)(2)		4,50	4,51	4,53	4,54	4,56	4,56	4,52	4,53	4,56	4,57
Cooling energy class			A	A	A	A	A	A	A	A	A	A
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	55,2	62,8	76,1	87,2	98,8	112	126	152	174	197
Pressure drop	(1)	kPa	45,7	47,7	53,5	53,4	52,8	60,2	51,9	58,6	41,3	55,0
Water flow	(1)	m³/h	64,9	73,8	89,4	102	116	131	148	179	205	232
Pressure drop	(1)	kPa	48,4	46,6	51,6	52,6	54,3	56,3	46,6	51,5	52,8	54,4
HEAT EXCHANGER USER SIDE IN HEATING												
Water flow	(3)	m³/h	58,2	66,2	79,4	90,9	104	117	132	159	182	207
Pressure drop	(3)	kPa	39,0	37,6	40,7	41,5	43,4	45,0	37,6	40,6	41,6	43,5
Water flow	(3)	m³/h	45,9	52,2	62,7	71,8	82,1	92,9	104	125	144	164
Pressure drop	(3)	kPa	31,6	33,0	36,3	36,3	36,4	41,6	35,9	39,8	28,0	38,0
COMPRESSORS												
N. of compressors		N°	1	1	1	1	1	1	2	2	2	2
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	1	1	1	1	1	1	2	2	2	2
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	25	25	25	25
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	50,0	49,0	75,0	73,0	85,0	94,0	110	131	144	213
Oil charge		kg	19,0	19,0	35,0	35,0	35,0	35,0	38,0	70,0	70,0	70,0
NOISE LEVEL												
Noise Pressure	(4)	dB(A)	65	65	65	65	65	65	67	67	67	67
Noise Power	(5)	dB(A)	97	97	97	97	97	97	99	99	99	99
SIZE AND WEIGHT												
A	(6)	mm	4250	4250	4150	4150	4130	4350	4550	4950	5170	4920
B	(6)	mm	900	900	900	900	900	900	1150	1150	1150	1150
H	(6)	mm	1815	1910	1990	1990	1990	2090	2050	2200	2200	2350
Operating weight	(6)	kg	2470	2770	3570	3750	3790	4230	5390	6460	6920	7900

Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C
2 Values in compliance with EN14511-3:2011
3 Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/* °C (flow rate as in cooling)
4 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
5 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
6 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W / CA-E / H			4802	2701	3001	5402	6002	6004	6404	6804	7204	7804
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE												
COOLING ONLY (GROSS VALUE)												
Cooling capacity	(1)	**kW**	**1299**	**707**	**781**	**1411**	**1551**	**1610**	**1768**	**1897**	**2025**	**2157**
Total power input	(1)	kW	232	128	141	256	282	289	316	338	361	386
EER	(1)		5,59	5,53	5,55	5,52	5,51	5,58	5,59	5,61	5,61	5,60
ESEER	(1)		6,66	6,38	6,41	6,66	6,55	6,65	6,57	6,72	6,75	6,64
COOLING ONLY (EN14511 VALUE)												
Cooling capacity	(1)(2)	**kW**	**1293**	**704**	**779**	**1407**	**1545**	**1604**	**1761**	**1891**	**2019**	**2149**
EER	(1)(2)		5,31	5,27	5,30	5,29	5,27	5,34	5,34	5,38	5,40	5,35
ESEER	(1)(2)		5,87	5,76	5,81	6,00	5,88	5,98	5,89	6,08	6,13	5,94
Cooling energy class			A	A	A	A	A	A	A	A	A	A
HEATING ONLY (GROSS VALUE)												
Heating capacity	(3)	**kW**	**1352**	**731**	**808**	**1460**	**1607**	**1674**	**1828**	**1961**	**2092**	**2238**
Total power input	(3)	kW	289	158	174	316	348	363	394	422	450	481
COP	(3)		4,67	4,63	4,64	4,62	4,62	4,62	4,63	4,64	4,65	4,66
HEATING ONLY (EN14511 VALUE)												
Heating capacity	(3)(2)	**kW**	**1356**	**733**	**810**	**1464**	**1611**	**1678**	**1833**	**1966**	**2098**	**2244**
COP	(3)(2)		4,57	4,53	4,55	4,54	4,53	4,53	4,54	4,56	4,57	4,56
Cooling energy class			A	A	A	A	A	A	A	A	A	A
EXCHANGERS												
HEAT EXCHANGER USER SIDE IN REFRIGERATION												
Water flow	(1)	m³/h	224	122	135	243	267	277	304	327	349	371
Pressure drop	(1)	kPa	65,0	51,5	47,2	46,0	55,6	56,9	58,4	45,9	41,3	59,3
Water flow	(1)	m³/h	263	143	158	286	314	326	358	384	409	436
Pressure drop	(1)	kPa	56,6	51,7	49,3	51,5	48,4	48,9	51,2	51,5	52,0	53,3
HEAT EXCHANGER USER SIDE IN HEATING												
Water flow	(3)	m³/h	235	127	140	254	279	291	318	341	364	389
Pressure drop	(3)	kPa	45,2	40,6	38,8	40,5	38,2	38,9	40,4	40,6	41,0	42,4
Water flow	(3)	m³/h	186	100	111	200	220	229	251	269	287	307
Pressure drop	(3)	kPa	44,9	34,9	32,1	31,2	37,8	38,9	39,6	31,1	28,0	40,6
COMPRESSORS												
N. of compressors		N°	2	1	1	2	2	4	4	4	4	4
Number of capacity		N°	0	0	0	0	0	0	0	0	0	0
No. of circuits		N°	2	1	1	2	2	4	4	4	4	4
Regulation			STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS	STEPLESS
Min. capacity step		%	25	25	25	25	25	25	25	25	25	25
Refrigerant			R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant charge		kg	207	138	137	279	266	328	328	325	327	335
Oil charge		kg	70,0	38,0	38,0	76,0	76,0	108	140	140	140	140
NOISE LEVEL												
Noise Pressure	(4)	dB(A)	67	67	67	69	69	70	70	70	70	70
Noise Power	(5)	dB(A)	99	99	99	101	101	102	102	102	102	102
SIZE AND WEIGHT												
A	(6)	mm	4920	4350	4350	5200	5200	4900	4900	5220	5220	4900
B	(6)	mm	1285	900	900	1285	1285	2250	2250	2250	2250	2250
H	(6)	mm	2430	2180	2180	2440	2440	2305	2305	2305	2305	2455
Operating weight	(6)	kg	8560	4760	4870	8850	8960	12200	13140	13710	13720	15850

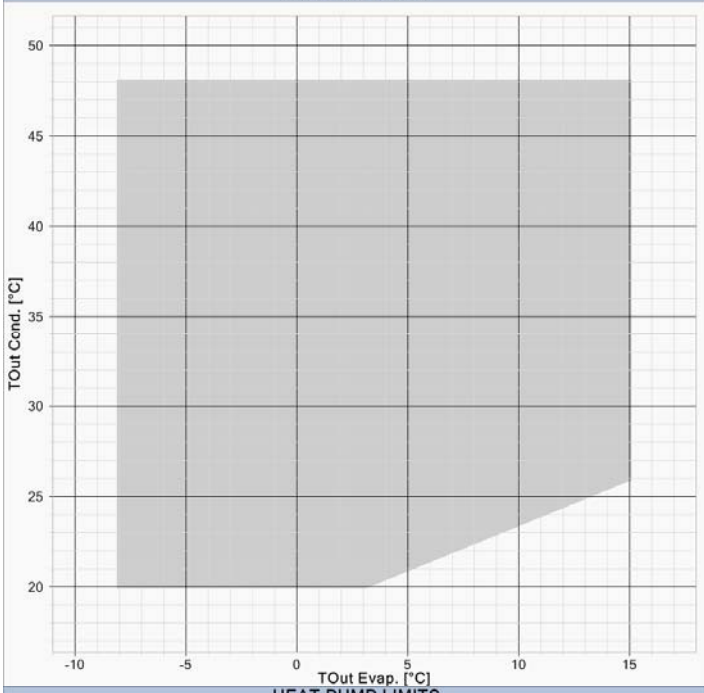
Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C
2 Values in compliance with EN14511-3:2011
3 Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/* °C (flow rate as in cooling)
4 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
5 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
6 Unit in standard configuration/execution, without optional accessories.
- Unavailable

FOCS2-W / CA-E / H			8404
Power supply		V/ph/Hz	400/3/50
PERFORMANCE			
COOLING ONLY (GROSS VALUE)			
Cooling capacity	(1)	**kW**	**2294**
Total power input	(1)	kW	410
EER	(1)		5,59
ESEER	(1)		6,65
COOLING ONLY (EN14511 VALUE)			
Cooling capacity	(1)(2)	**kW**	**2286**
EER	(1)(2)		5,35
ESEER	(1)(2)		5,97
Cooling energy class			A
HEATING ONLY (GROSS VALUE)			
Heating capacity	(3)	**kW**	**2387**
Total power input	(3)	kW	511
COP	(3)		4,67
HEATING ONLY (EN14511 VALUE)			
Heating capacity	(3)(2)	**kW**	**2394**
COP	(3)(2)		4,58
Cooling energy class			A
EXCHANGERS			
HEAT EXCHANGER USER SIDE IN REFRIGERATION			
Water flow	(1)	m³/h	395
Pressure drop	(1)	kPa	54,6
Water flow	(1)	m³/h	464
Pressure drop	(1)	kPa	53,8
HEAT EXCHANGER USER SIDE IN HEATING			
Water flow	(3)	m³/h	415
Pressure drop	(3)	kPa	43,0
Water flow	(3)	m³/h	328
Pressure drop	(3)	kPa	37,7
COMPRESSORS			
N. of compressors		N°	4
Number of capacity		N°	0
No. of circuits		N°	4
Regulation			STEPLESS
Min. capacity step		%	25
Refrigerant			R134a
Refrigerant charge		kg	335
Oil charge		kg	140
NOISE LEVEL			
Noise Pressure	(4)	dB(A)	70
Noise Power	(5)	dB(A)	102
SIZE AND WEIGHT			
A	(6)	mm	4900
B	(6)	mm	2250
H	(6)	mm	2455
Operating weight	(6)	kg	16100

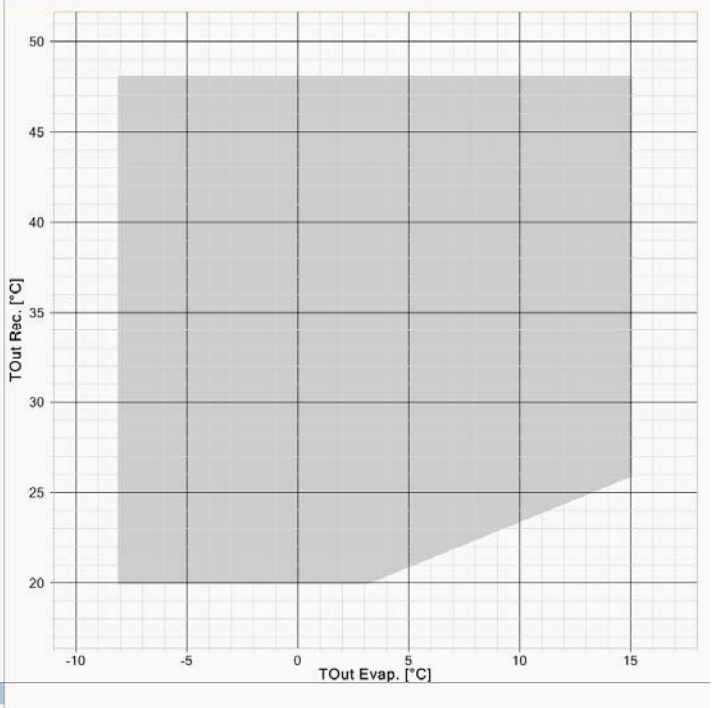
Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C
2 Values in compliance with EN14511-3:2011
3 Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/* °C (flow rate as in cooling)
4 Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
5 Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
6 Unit in standard configuration/execution, without optional accessories.
- Unavailable

/CA - 1301 ÷ 9604

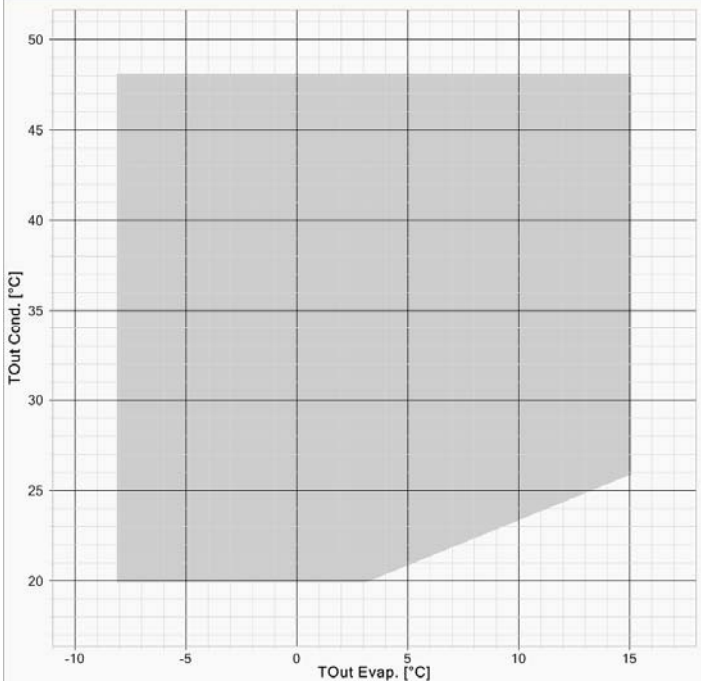
COOLING LIMITS



RECOVERY LIMITS

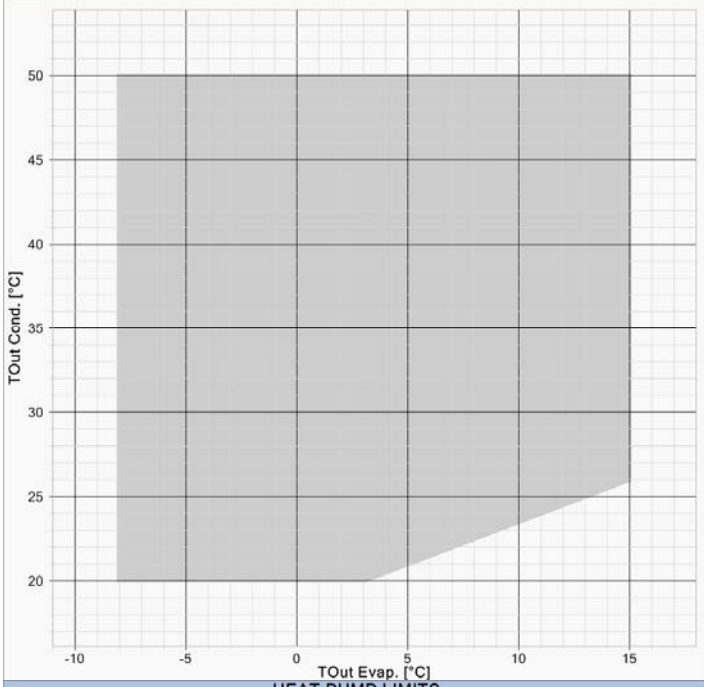


HEAT PUMP LIMITS

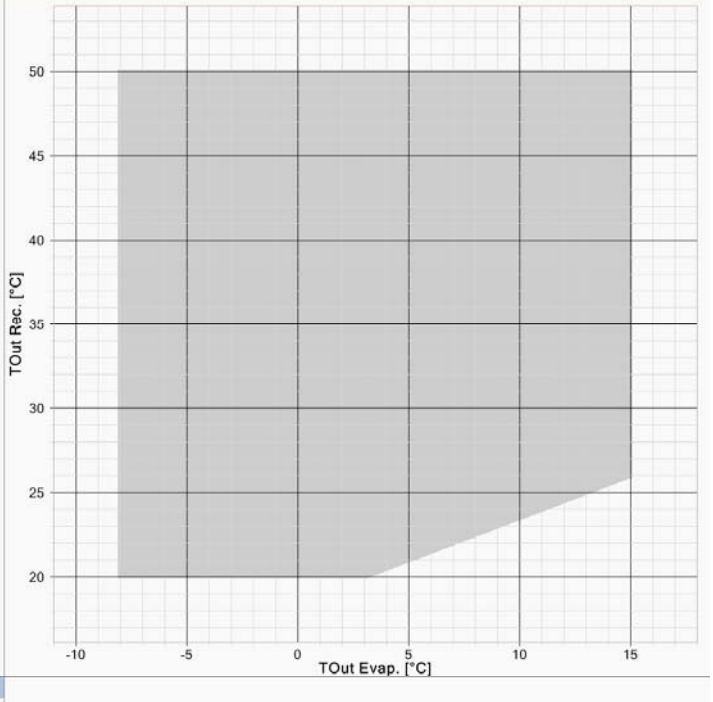


/CA-E - 1301 ÷ 4802

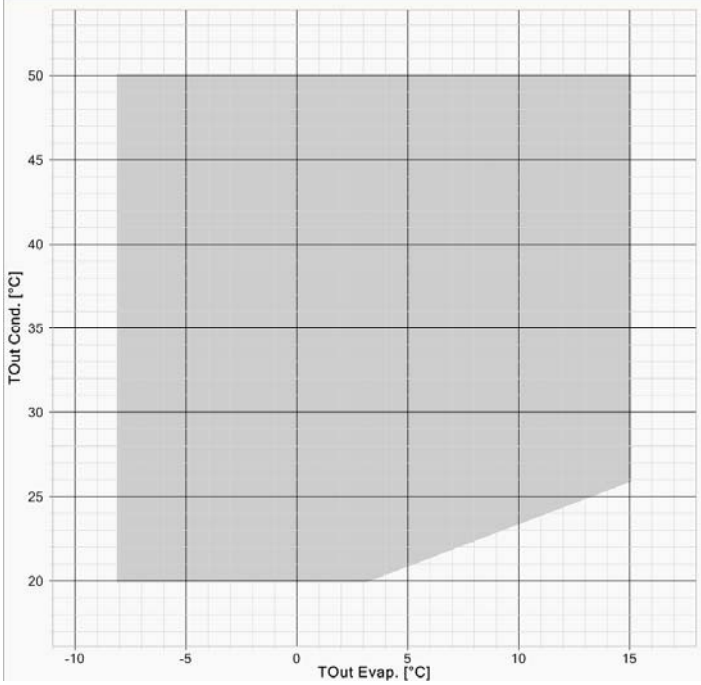
COOLING LIMITS



RECOVERY LIMITS

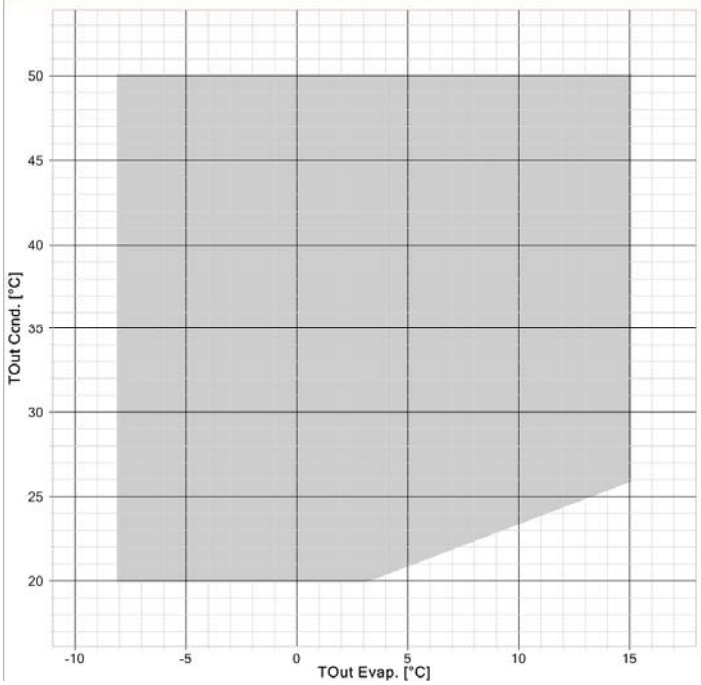


HEAT PUMP LIMITS

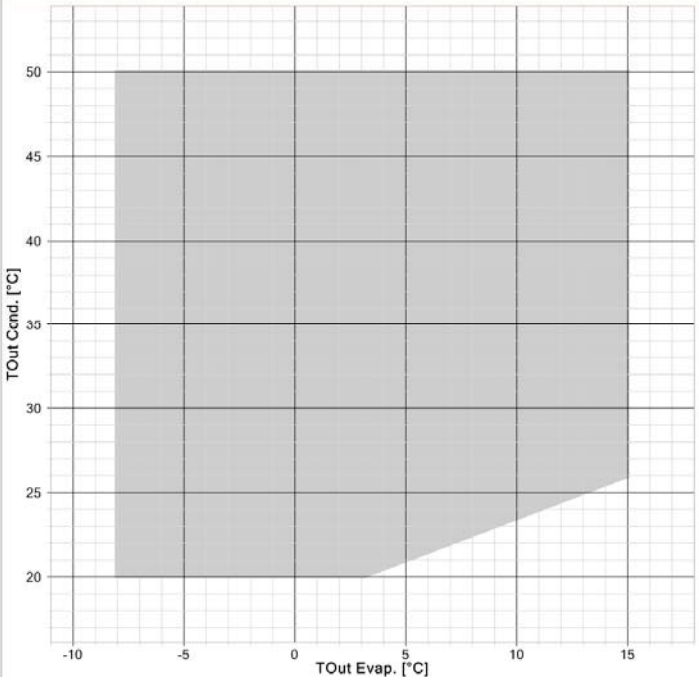


/CA-E - 5402 ÷ 8404

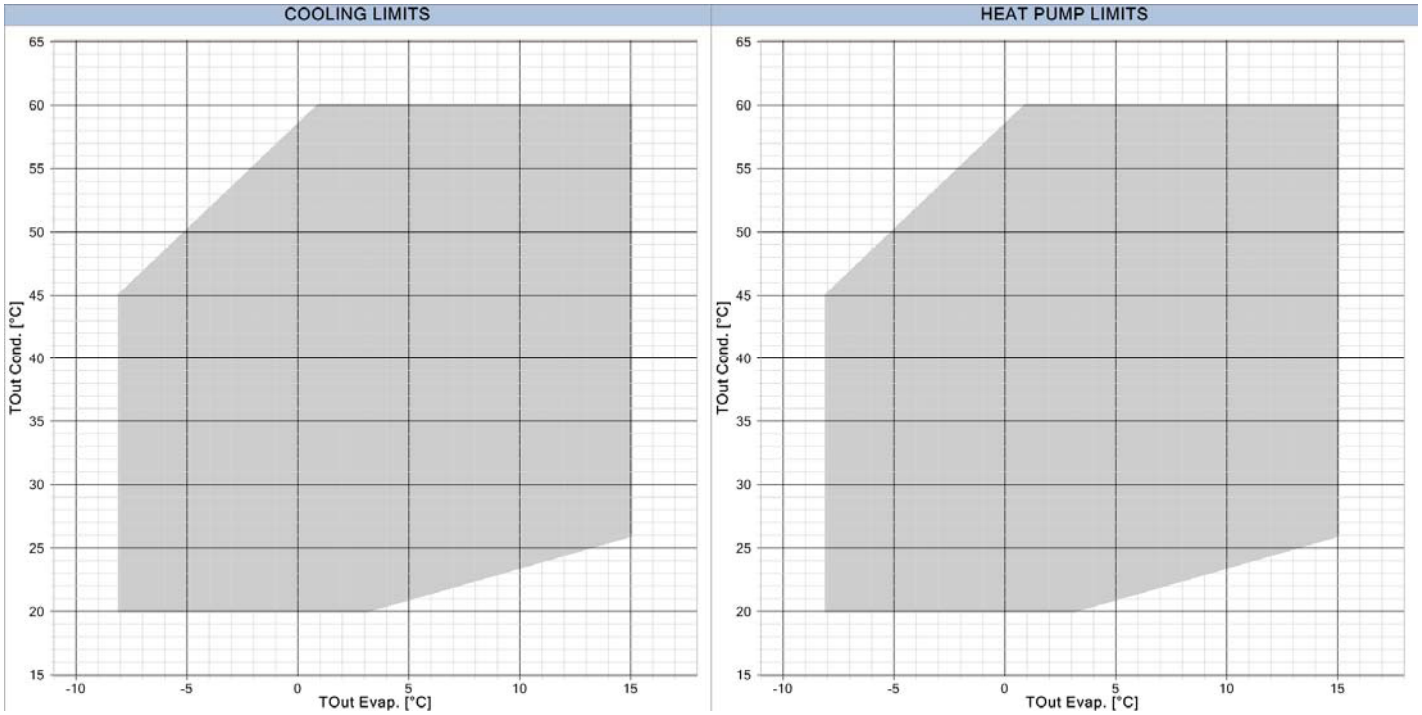
COOLING LIMITS



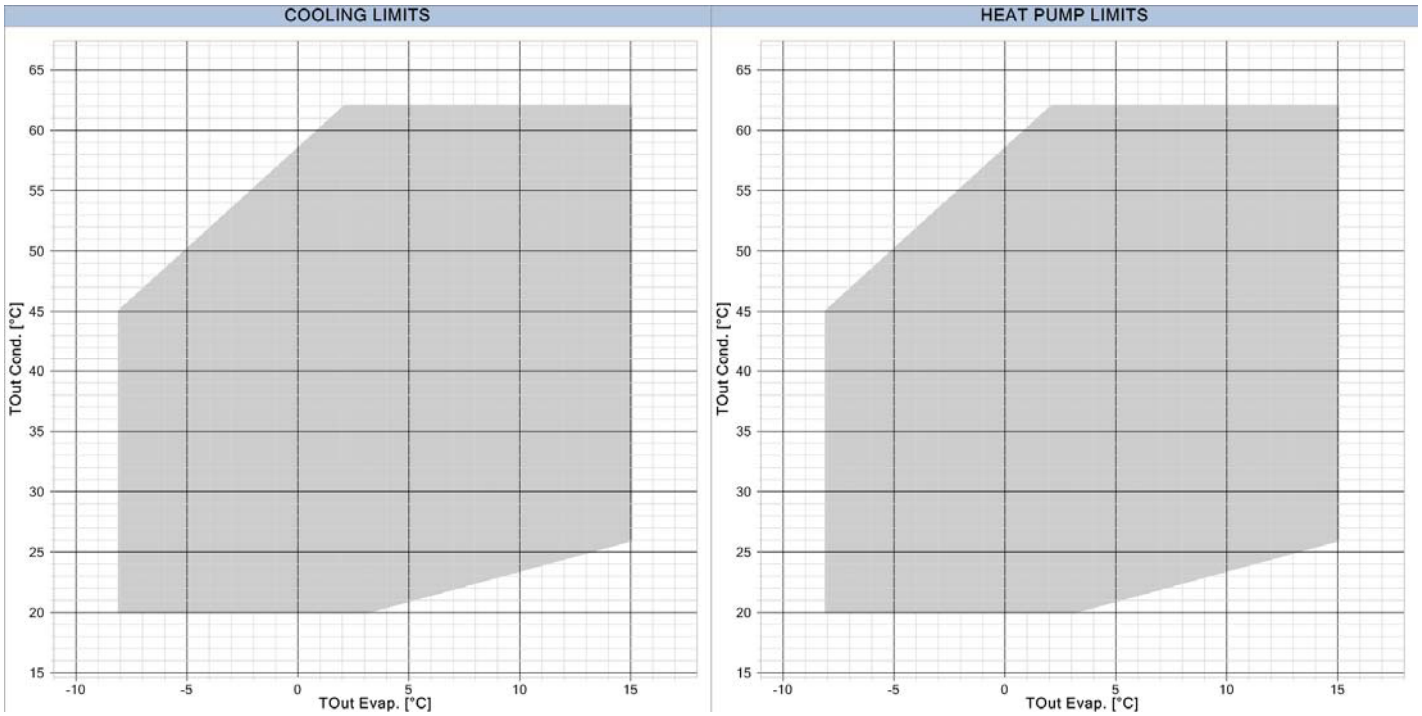
HEAT PUMP LIMITS



/CA + kit HWT - 1301 ÷ 9604



/CA-E + kit HWT - 1301 ÷ 8404



NOTE:
The HWT kit is not available for sizes 2701-3001-5402 and 6002. For high temperature applications with these sizes, please contact Climaveneta.

4.2 ETHYLENE GLYCOL MIXTURE

Ethylene glycol and water mixture, used as a heat-conveying fluid, cause a variation in unit performance. For correct data, use the factors indicated in the following tabel.

	Freezing point (°C)							
	0	-5	-10	-15	-20	-25	-30	-35
	Ethylene glycol percentage by weight							
	0	12%	20%	30%	35%	40%	45%	50%
cPf	1	0,985	0,98	0,974	0,97	0,965	0,964	0,96
cQ	1	1,02	1,04	1,075	1,11	1,14	1,17	1,2
cdp	1	1,07	1,11	1,18	1,22	1,24	1,27	1,3

cPf: cooling power correction factor
cQ: flow correction factor
cdp: pressure drop correction factor

For data concerning other kind of anti-freeze solutions (e,g, propylene glycol) please contact our Sale Department.

4.3 FOULING FACTORS

Performances are based on clean condition of tubes (fouling factor = 1). For different fouling values, performance should be adjusted using the correction factors shown in the following table.

SERIE	FOULING FACTORS	EVAPORATOR			CONDENSER/RECOVERY			DESUPERHEATER
	ff (m^2 °CW)	F1	FK1	KE [°C]	F2	FK2	KC [°C]	R3
FOCS2-W/CA	0	1,000	1,000	0,0	1,000	1,000	0,0	1,000
FOCS2-W/CA	1,80 x 10^{-5}	1,000	1,000	0,0	1,000	1,000	0,0	1,000
FOCS2-W/CA	4,40 x 10^{-5}	1,000	1,000	0,0	0,990	1,030	1,0	0,990
FOCS2-W/CA	8,80 x 10^{-5}	0,960	0,990	0,7	0,980	1,040	1,5	0,980
FOCS2-W/CA	13,20 x 10^{-5}	0,944	0,985	1,0	0,964	1,050	2,3	0,964
FOCS2-W/CA	17,20 x 10^{-5}	0,930	0,980	1,5	0,950	1,060	3,0	0,950

ff: fouling factors
f1 - f2: potential correction factors
fk1 - fk2: compressor power input correction factors
r3: capacity correction factors
KE: minimum condenser outlet temperature increase
KC: maximum condenser outlet temperature decrease

SERIE	FOULING FACTORS (m^2°CW)	EVAPORATOR				CONDENSER/RECOVERY				DESUPERHEATER
		f1	fk1	fx1	KE (°C)	f2	fk2	fx2	KC (°C)	r3
FOCS2-W/CA-E	1,80 x 10^{-5}	1	1	1	0	1	1	1	0	1
FOCS2-W/CA-E	4,40 x 10^{-5}	1	1	1	0	0,998	1,010	1,010	0,3	0,990
FOCS2-W/CA-E	8,80 x 10^{-5}	0,970	0,998	0,998	0,5	0,995	1,015	1,015	0,5	0,980
FOCS2-W/CA-E	13,20 x 10^{-5}	0,960	0,994	0,994	0,8	0,992	1,023	1,023	1	0,964
FOCS2-W/CA-E	17,20 x 10^{-5}	0,950	0,990	0,990	1	0,990	1,030	1,030	1,5	0,950

f1 - f2 : capacity correction factors
fk1 - fk2 : compressor power input correction factors
fx1 - fx2 : total power input correction factors

r3 : capacity correction factors
KE : minimum condenser outlet temperature increase
KC : maximum condenser outlet temperature decrease

Water flow and pressure drop

Water flow in the heat exchangers is given by: Q=Px0,86/Dt
Q: water flow (m3/h)
Dt: difference between inlet and outlet water temp. (°C)
P: heat exchanger capacity (kW)

Pressure drop is given by: Dp= K x Q2/1000
Q: water flow (m3/h)
Dp: pressure drop (kPa)
K: unit size ratio

SIZE	PLANT SIDE HEAT EXCHANGER					SOURCE SIDE HEAT EXCHANGER				AUXILIARY SIDE HEAT EXCHANGER			
	K	Q min m^3/h	Q max m^3/h	C.A.S. dm^3	C.a. min m^3	K [1]	Q min [2] m^3/h	C.A.S. dm^3	Q max m^3/h	K	Q min m^3/h	C.A.S. dm^3	Q max m^3/h
FOCS2-W /CA 1301	15,1	32,9	68	120	1,53	9,1	19,5	29	73	-	-	-	-
FOCS2-W /CA 1401	12,5	37,4	79	109	1,74	6,84	22,2	35	90,2	-	-	-	-
FOCS2-W /CA 1601	10	45,3	95	110	2,11	4,63	26,9	41	101	-	-	-	-
FOCS2-W /CA 1801	6,17	51,3	108	167	2,39	3,6	30,4	48	118	-	-	-	-
FOCS2-W /CA 2101	5,16	57,8	136	155	2,69	2,83	34,3	54	135	-	-	-	-
FOCS2-W /CA 2401	5,16	65,2	136	155	3,03	2,33	38,7	60	152	-	-	-	-
FOCS2-W /CA 2701	3,27	72,6	136	266	3,37	1,81	43	76	192	-	-	-	-
FOCS2-W /CA 2802	3,29	74,6	136	266	3,47	1,71	44,3	70	180	-	-	-	-
FOCS2-W /CA 3001	3,31	80,2	136	258	3,73	1,54	47,6	83	206	-	-	-	-
FOCS2-W /CA 3202	2,15	90,7	170	251	4,22	1,16	53,8	82	202	-	-	-	-
FOCS2-W /CA 3602	1,71	103	227	236	4,79	0,9	61	96	236	-	-	-	-
FOCS2-W /CA 4202	0,9	115	266	412	5,36	0,71	68,3	108	270	-	-	-	-
FOCS2-W /CA 4502	0,88	123	266	395	5,72	0,64	73	114	287	-	-	-	-
FOCS2-W /CA 4802	0,88	130	266	395	6,07	0,58	77	120	304	-	-	-	-
FOCS2-W /CA 5402	0,88	145	266	395	6,74	0,45	86	152	384	-	-	-	-
FOCS2-W /CA 6002	0,83	160	266	386	7,45	0,39	95	166	412	-	-	-	-
FOCS2-W /CA 6303	0,5	172	335	688	8,02	0,31	102	162	405	-	-	-	-
FOCS2-W /CA 6603	0,54	180	334	671	8,38	0,29	107	168	422	-	-	-	-
FOCS2-W /CA 7203	0,54	195	334	671	9,08	0,26	116	180	456	-	-	-	-
FOCS2-W /CA 7803	0,36	211	405	811	9,84	0,22	125	212	536	-	-	-	-
FOCS2-W /CA 8103	0,36	218	405	811	10,12	0,2	129	228	576	-	-	-	-
FOCS2-W /CA 9003	0,36	240	405	811	11,18	0,17	142	249	618	-	-	-	-
FOCS2-W /CA 9004	0,21	245	642	970	11,39	0,16	145	228	574	-	-	-	-
FOCS2-W /CA 9604	0,21	260	642	970	12,08	0,15	154	240	608	-	-	-	-
FOCS2-W /CA-E 1301	15	34,5	97,5	208	1,6	11,5	20,1	73	92,4	-	-	-	-
FOCS2-W /CA-E 1401	12,1	39,2	112	201	1,82	8,57	22,9	92	106,8	-	-	-	-
FOCS2-W /CA-E 1601	9,25	47,5	110	308	2,21	6,45	27,8	104	123,2	-	-	-	-
FOCS2-W /CA-E 1801	7,03	54,4	128	299	2,53	5,02	31,8	116	139,6	-	-	-	-
FOCS2-W /CA-E 2101	5,41	61,7	149	281	2,87	4,03	36	126	152	-	-	-	-
FOCS2-W /CA-E 2401	4,82	69,8	163	307	3,25	3,26	40,8	145	168,4	-	-	-	-
FOCS2-W /CA-E 2701	3,48	76	191	541	3,53	2,52	44,4	166	197	-	-	-	-
FOCS2-W /CA-E 2802	3,29	78,4	210	473	2,56	2,14	45,8	184	213,6	-	-	-	-
FOCS2-W /CA-E 3001	2,61	84	230	518	3,91	1,97	49,1	185	222	-	-	-	-
FOCS2-W /CA-E 3202	2,53	95,1	230	504	3,09	1,61	55,5	208	246,5	-	-	-	-
FOCS2-W /CA-E 3602	1,36	108,8	287	535	3,54	1,26	63,5	232	279,3	-	-	-	-
FOCS2-W /CA-E 4202	1,41	123,3	288	892	4,01	1,01	72	252	304	-	-	-	-
FOCS2-W /CA-E 4802	1,3	139,6	288	884	4,55	0,82	81,5	290	336,9	-	-	-	-
FOCS2-W /CA-E 5402	0,78	152	359	931	7,06	0,63	88,8	332	394	-	-	-	-
FOCS2-W /CA-E 6002	0,78	167	359	931	7,75	0,49	97,6	370	444	-	-	-	-
FOCS2-W /CA-E 6004	0,74	173	421	1045	8,05	0,46	101	392	460	-	-	-	-

K [1]: The coefficient “K” on the source side heat exchanger is referred to its standart selection (single step on “/CA” version and 2 steps on “/CA-E” version). When it’s required to move to an higher number of steps water side (with delta T >=10°C), “K” coefficient as to be multiplied for 8,5 (Knew = K x 8,5)

Q min: minimum water flow admitted to the heat exchanger

Q min [2]: minimum water flow admitted to the heat exchanger (heat exchanger with 2 steps on “/CA” and 4 steps on “/CA-E”)

Q max: maximum water flow admitted to the heat exchanger

C.a. min: minimum water content admitted in the plant, using traditional control logic

C.A.S.: heat exchanger water content

- - -

SIZE	PLANT SIDE HEAT EXCHANGER					SOURCE SIDE HEAT EXCHANGER				AUXILIARY SIDE HEAT EXCHANGER			
	K	Q min m^3/h	Q max m^3/h	C.A.S. dm^3	C.a. min m^3	K [1]	Q min [2] m^3/h	C.A.S. dm^3	Q max m^3/h	K	Q min m^3/h	C.A.S. dm^3	Q max m^3/h
FOCS2-W /CA-E 6404	0,63	190	460	1008	8,84	0,4	111	416	493	-	-	-	-
FOCS2-W /CA-E 6804	0,43	204	536	1053	9,49	0,35	119	440	526	-	-	-	-
FOCS2-W /CA-E 7204	0,34	218	574	1070	10,12	0,31	127	464	559	-	-	-	-
FOCS2-W /CA-E 7804	0,43	232	466	1823	10,79	0,28	135	484	583	-	-	-	-
FOCS2-W /CA-E 8404	0,35	247	576	1784	11,47	0,25	144	504	608	-	-	-	-
FOCS2-W /D /CA 1301	15,1	32,9	68	120	1,53	9,1	19,5	29	73	4650	-	-	3,1
FOCS2-W /D /CA 1401	12,5	37,4	79	109	1,74	6,84	22,2	35	90,2	3356	-	-	3,5
FOCS2-W /D /CA 1601	10	45,3	95	110	2,11	4,63	26,9	41	101	2422	-	-	4,3
FOCS2-W /D /CA 1801	6,17	51,3	108	167	2,39	3,6	30,4	48	118	1860	-	-	4,9
FOCS2-W /D /CA 2101	5,16	57,8	136	155	2,69	2,83	34,3	54	135	1460	-	-	5,5
FOCS2-W /D /CA 2401	5,16	65,2	136	155	3,03	2,33	38,7	60	152	1060	-	-	6,2
FOCS2-W /D /CA 2701	3,27	72,6	136	266	3,37	1,81	43	76	192	852	-	-	7
FOCS2-W /D /CA 2802	3,29	74,6	136	266	3,47	1,71	44,3	70	180	839	-	-	7
FOCS2-W /D /CA 3001	3,31	80,2	136	258	3,73	1,54	47,6	83	206	798	-	-	7,4
FOCS2-W /D /CA 3202	2,15	90,7	170	251	4,22	1,16	53,8	82	202	606	-	-	8,6
FOCS2-W /D /CA 3602	1,71	103	227	236	4,79	0,9	61	96	236	465	-	-	9,8
FOCS2-W /D /CA 4202	0,9	115	266	412	5,36	0,71	68,3	108	270	365	-	-	11
FOCS2-W /D /CA 4502	0,88	123	266	395	5,72	0,64	73	114	287	309	-	-	11,7
FOCS2-W /D /CA 4802	0,88	130	266	395	6,07	0,58	77	120	304	265	-	-	12,4
FOCS2-W /D /CA 5402	0,88	145	266	395	6,74	0,45	86	152	384	213	-	-	14
FOCS2-W /D /CA 6002	0,83	160	266	386	7,45	0,39	95	166	412	200	-	-	14,8
FOCS2-W /D /CA 6303	0,5	172	335	688	8,02	0,31	102	162	405	162	-	-	16,5
FOCS2-W /D /CA 6603	0,54	180	334	671	8,38	0,29	107	168	422	145	-	-	17,2
FOCS2-W /D /CA 7203	0,54	195	334	671	9,08	0,26	116	180	456	118	-	-	18,6
FOCS2-W /D /CA 7803	0,36	211	405	811	9,84	0,22	125	212	536	102	-	-	20,2
FOCS2-W /D /CA 8103	0,36	218	405	811	10,12	0,2	129	228	576	94,7	-	-	21
FOCS2-W /D /CA 9003	0,36	240	405	811	11,18	0,17	142	249	618	88,7	-	-	22,2
FOCS2-W /D /CA 9004	0,21	245	642	970	11,39	0,16	145	228	574	77	-	-	23,4
FOCS2-W /D /CA 9604	0,21	260	642	970	12,08	0,15	154	240	608	66,3	-	-	24,8
FOCS2-W /D /CA-E 1301	15	34,5	97,5	208	1,6	11,5	20,1	73	92,4	1370	-	16	8,2
FOCS2-W /D /CA-E 1401	12,1	39,2	112	201	1,82	8,57	22,9	92	106,8	1370	-	6	8,2
FOCS2-W /D /CA-E 1601	9,25	47,5	110	308	2,21	6,45	27,8	104	123,2	910	-	9	10,3
FOCS2-W /D /CA-E 1801	7,03	54,4	128	299	2,53	5,02	31,8	116	139,6	600	-	10	12,3
FOCS2-W /D /CA-E 2101	5,41	61,7	149	281	2,87	4,03	36	126	152	600	-	16	12,3
FOCS2-W /D /CA-E 2401	4,82	69,8	163	307	3,25	3,26	40,8	145	168,4	600	-	9	12,3
FOCS2-W /D /CA-E 2701	3,48	76	191	541	3,53	2,52	44,4	166	197	512	-	9	14
FOCS2-W /D /CA-E 2802	3,29	78,4	210	210	2,56	2,14	45,8	184	213,6	343	-	12	16,4
FOCS2-W /D /CA-E 3001	2,61	84	230	518	3,91	1,97	49,1	185	222	497	-	9	14
FOCS2-W /D /CA-E 3202	2,53	95,1	230	230	3,09	1,61	55,5	208	246,5	228	-	18	20,5
FOCS2-W /D /CA-E 3602	1,36	108,8	287	287	3,54	1,26	63,5	232	279,3	150	-	20	24,6
FOCS2-W /D /CA-E 4202	1,41	123,3	288	288	4,01	1,01	72	252	304	150	-	32	24,6
FOCS2-W /D /CA-E 4802	1,3	139,6	288	288	4,55	0,82	81,5	290	336,9	150	-	18	24,6
FOCS2-W /D /CA-E 5402	0,78	152	359	931	7,06	0,63	88,8	332	394	128	-	18	28
FOCS2-W /D /CA-E 6002	0,78	167	359	931	7,75	0,49	97,6	370	444	124,3	-	18	28
FOCS2-W /D /CA-E 6004	0,74	173	421	1045	8,05	0,46	101	392	460	69,1	-	30	37
FOCS2-W /D /CA-E 6404	0,63	190	460	1008	8,84	0,4	111	416	493	56,9	-	36	41,1
FOCS2-W /D /CA-E 6804	0,43	204	536	1053	9,49	0,35	119	440	526	45,7	-	38	45,2
FOCS2-W /D /CA-E 7204	0,34	218	574	1070	10,12	0,31	127	464	559	37,5	-	40	49,3

K [1]: The coefficient “K” on the source side heat exchanger is referred to its standart selection (single step on “/CA” version and 2 steps on “/CA-E” version). When it’s required to move to an higher number of steps water side (with delta T >=10°C), “K” coefficient as to be multiplied for 8,5 (Knew = K x 8,5)

Q min: minimum water flow admitted to the heat exchanger

Q min [2]: minimum water flow admitted to the heat exchanger (heat exchanger with 2 steps on “/CA” and 4 steps on “/CA-E”)

Q max: maximum water flow admitted to the heat exchanger

C.a. min: minimum water content admitted in the plant, using traditional control logic

C.A.S.: heat exchanger water content

- - -

SIZE	PLANT SIDE HEAT EXCHANGER					SOURCE SIDE HEAT EXCHANGER				AUXILIARY SIDE HEAT EXCHANGER			
	K	Q min m^3/h	Q max m^3/h	C.A.S. dm^3	C.a. min m^3	K [1]	Q min [2] m^3/h	C.A.S. dm^3	Q max m^3/h	K	Q min m^3/h	C.A.S. dm^3	Q max m^3/h
FOCS2-W /H /CA 1301	15,1	32,9	68	120	1,53	9,1	19,5	29	73	-	-	-	-
FOCS2-W /H /CA 1401	12,5	37,4	79	109	1,74	6,84	22,2	35	90,2	-	-	-	-
FOCS2-W /H /CA 1601	10	45,3	95	110	2,11	4,63	26,9	41	101	-	-	-	-
FOCS2-W /H /CA 1801	6,17	51,3	108	167	2,39	3,6	30,4	48	118	-	-	-	-
FOCS2-W /H /CA 2101	5,16	57,8	136	155	2,69	2,83	34,3	54	135	-	-	-	-
FOCS2-W /H /CA 2401	5,16	65,2	136	155	3,03	2,33	38,7	60	152	-	-	-	-
FOCS2-W /H /CA 2701	3,27	72,6	136	266	3,37	1,81	43	76	192	-	-	-	-
FOCS2-W /H /CA 2802	3,29	74,6	136	266	3,47	1,71	44,3	70	180	-	-	-	-
FOCS2-W /H /CA 3001	3,31	80,2	136	258	3,73	1,54	47,6	83	206	-	-	-	-
FOCS2-W /H /CA 3202	2,15	90,7	170	251	4,22	1,16	53,8	82	202	-	-	-	-
FOCS2-W /H /CA 3602	1,71	103	227	236	4,79	0,9	61	96	236	-	-	-	-
FOCS2-W /H /CA 4202	0,9	115	266	412	5,36	0,71	68,3	108	270	-	-	-	-
FOCS2-W /H /CA 4502	0,88	123	266	395	5,72	0,64	73	114	287	-	-	-	-
FOCS2-W /H /CA 4802	0,88	130	266	395	6,07	0,58	77	120	304	-	-	-	-
FOCS2-W /H /CA 5402	0,88	145	266	395	6,74	0,45	86	152	384	-	-	-	-
FOCS2-W /H /CA 6002	0,83	160	266	386	7,45	0,39	95	166	412	-	-	-	-
FOCS2-W /H /CA 6303	0,5	172	335	688	8,02	0,31	102	162	405	-	-	-	-
FOCS2-W /H /CA 6603	0,54	180	334	671	8,38	0,29	107	168	422	-	-	-	-
FOCS2-W /H /CA 7203	0,54	195	334	671	9,08	0,26	116	180	456	-	-	-	-
FOCS2-W /H /CA 7803	0,36	211	405	811	9,84	0,22	125	212	536	-	-	-	-
FOCS2-W /H /CA 8103	0,36	218	405	811	10,12	0,2	129	228	576	-	-	-	-
FOCS2-W /H /CA 9003	0,36	240	405	811	11,18	0,17	142	249	618	-	-	-	-
FOCS2-W /H /CA 9004	0,21	245	642	970	11,39	0,16	145	228	574	-	-	-	-
FOCS2-W /H /CA 9604	0,21	260	642	970	12,08	0,15	154	240	608	-	-	-	-
FOCS2-W /H /CA-E 1301	15	34,5	97,5	208	1,79	11,5	20,1	73	92,4	-	-	-	-
FOCS2-W /H /CA-E 1401	12,1	39,2	112	201	2,03	8,57	22,9	92	106,8	-	-	-	-
FOCS2-W /H /CA-E 1601	9,25	47,5	110	308	2,44	6,45	27,8	104	123,2	-	-	-	-
FOCS2-W /H /CA-E 1801	7,03	54,4	128	299	2,8	5,02	31,8	116	139,6	-	-	-	-
FOCS2-W /H /CA-E 2101	5,41	61,7	149	281	3,19	4,03	36	126	152	-	-	-	-
FOCS2-W /H /CA-E 2401	4,82	69,8	163	307	3,61	3,26	40,8	145	168,4	-	-	-	-
FOCS2-W /H /CA-E 2701	3,48	76	191	541	3,53	2,52	44,4	166	197	-	-	-	-
FOCS2-W /H /CA-E 2802	3,29	78,4	210	473	2,85	2,14	45,8	184	213,6	-	-	-	-
FOCS2-W /H /CA-E 3001	2,61	84	230	518	3,91	1,97	49,1	185	222	-	-	-	-
FOCS2-W /H /CA-E 3202	2,53	95,1	230	504	3,42	1,61	55,5	208	246,5	-	-	-	-
FOCS2-W /H /CA-E 3602	1,36	108,8	287	535	3,91	1,26	63,5	232	279,3	-	-	-	-
FOCS2-W /H /CA-E 4202	1,41	123,3	288	892	4,46	1,01	72	252	304	-	-	-	-
FOCS2-W /H /CA-E 4802	1,3	139,6	288	884	5,05	0,82	81,5	290	336,9	-	-	-	-
FOCS2-W /H /CA-E 5402	0,78	152	359	931	7,06	0,63	88,8	332	394	-	-	-	-
FOCS2-W /H /CA-E 6002	0,78	167	359	931	7,75	0,49	97,6	370	444	-	-	-	-
FOCS2-W /H /CA-E 6004	0,74	173	421	1045	8,05	0,46	101	392	460	-	-	-	-
FOCS2-W /H /CA-E 6404	0,63	190	460	1008	8,84	0,4	111	416	493	-	-	-	-
FOCS2-W /H /CA-E 6804	0,43	204	536	1053	9,49	0,35	119	440	526	-	-	-	-
FOCS2-W /H /CA-E 7204	0,34	218	574	1070	10,12	0,31	127	464	559	-	-	-	-
FOCS2-W /H /CA-E 7804	0,43	232	466	1823	10,79	0,28	135	484	583	-	-	-	-
FOCS2-W /H /CA-E 8404	0,35	247	576	1784	11,47	0,25	144	504	608	-	-	-	-
FOCS2-W /R /CA 1301	15,1	32,9	68	120	1,53	9,1	19,5	29	73	9,1	26	-	73
FOCS2-W /R /CA 1401	12,5	37,4	79	109	1,74	6,84	22,2	35	90,2	6,84	32,2	-	90,2
FOCS2-W /R /CA 1601	10	45,3	95	110	2,11	4,63	26,9	41	101	4,63	36	-	101

K [1]: The coefficient “K” on the source side heat exchanger is referred to its standart selection (single step on “/CA” version and 2 steps on “/CA-E” version). When it’s required to move to an higher number of steps water side (with delta T >=10°C), “K” coefficient as to be multiplied for 8,5 (Knew = K x 8,5)

Q min: minimum water flow admitted to the heat exchanger

Q min [2]: minimum water flow admitted to the heat exchanger (heat exchanger with 2 steps on “/CA” and 4 steps on “/CA-E”)

Q max: maximum water flow admitted to the heat exchanger

C.a. min: minimum water content admitted in the plant, using traditional control logic

C.A.S.: heat exchanger water content

- - -

SIZE	PLANT SIDE HEAT EXCHANGER					SOURCE SIDE HEAT EXCHANGER				AUXILIARY SIDE HEAT EXCHANGER			
	K	Q min m^3/h	Q max m^3/h	C.A.S. dm^3	C.a. min m^3	K [1]	Q min [2] m^3/h	C.A.S. dm^3	Q max m^3/h	K	Q min m^3/h	C.A.S. dm^3	Q max m^3/h
FOCS2-W /R /CA 1801	6,17	51,3	108	167	2,39	3,6	30,4	48	118	3,6	42	-	118
FOCS2-W /R /CA 2101	5,16	57,8	136	155	2,69	2,83	34,3	54	135	2,83	48	-	135
FOCS2-W /R /CA 2401	5,16	65,2	136	155	3,03	2,33	38,7	60	152	2,33	54	-	152
FOCS2-W /R /CA 2701	3,27	72,6	136	266	3,37	1,81	43	76	192	1,81	48	-	192
FOCS2-W /R /CA 2802	3,29	74,6	136	266	3,47	1,71	44,3	70	180	1,71	64,4	-	180
FOCS2-W /R /CA 3001	3,31	80,2	136	258	3,73	1,54	47,6	83	206	1,54	54	-	206
FOCS2-W /R /CA 3202	2,15	90,7	170	251	4,22	1,16	53,8	82	202	1,16	72	-	202
FOCS2-W /R /CA 3602	1,71	103	227	236	4,79	0,9	61	96	236	0,9	84	-	236
FOCS2-W /R /CA 4202	0,9	115	266	412	5,36	0,71	68,3	108	270	0,71	96	-	270
FOCS2-W /R /CA 4502	0,88	123	266	395	5,72	0,64	73	114	287	0,64	102	-	287
FOCS2-W /R /CA 4802	0,88	130	266	395	6,07	0,58	77,3	120	304	0,58	108	-	304
FOCS2-W /R /CA 5402	0,88	145	266	395	6,74	0,45	86	152	384	0,45	96	-	384
FOCS2-W /R /CA 6002	0,83	160	266	386	7,45	0,39	95	166	412	0,39	108	-	412
FOCS2-W /R /CA-E 1301	15	34,5	97,5	208	1,6	11,5	20,1	73	92,4	11,5	40,2	78	92,4
FOCS2-W /R /CA-E 1401	12,1	39,2	112	201	1,82	8,57	22,9	92	107	8,57	45,8	89	107
FOCS2-W /R /CA-E 1601	9,25	47,5	110	308	2,21	6,45	27,8	104	123	6,45	55,6	101	123
FOCS2-W /R /CA-E 1801	7,03	54,4	128	299	2,53	5,02	31,8	116	140	5,02	63,6	110	140
FOCS2-W /R /CA-E 2802	3,29	78,4	210	473	2,56	2,14	45,8	184	214	2,14	91,6	178	214
FOCS2-W /R /CA-E 3202	2,53	95,1	230	504	3,09	1,61	55,5	208	247	1,61	111	202	247
FOCS2-W /R /CA-E 3602	1,36	109	287	535	3,54	1,26	63,5	232	279	1,26	127	220	279

K [1]: The coefficient “K” on the source side heat exchanger is referred to its standart selection (single step on “/CA” version and 2 steps on “/CA-E” version). When it’s required to move to an higher number of steps water side (with delta T >=10°C), “K” coefficient as to be multiplied for 8,5 (Knew = K x 8,5)

Q min: minimum water flow admitted to the heat exchanger

Q min [2]: minimum water flow admitted to the heat exchanger (heat exchanger with 2 steps on “/CA” and 4 steps on “/CA-E”)

Q max: maximum water flow admitted to the heat exchanger

C.a. min: minimum water content admitted in the plant, using traditional control logic

C.A.S.: heat exchanger water content

- - -

SIZE	Maximum values						
	Compressor				Total (1)		
	n	F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A. [A]	S.A. [A]
1301	1	1x89	1x146,8	1x300	89.0	147	300
1401	1	1x101,3	1x168	1x360	101	168	360
1601	1	1x121,6	1x197,2	1x318	122	197	318
1801	1	1x137,7	1x223	1x436	138	223	436
2101	1	1x154,9	1x247	1x465	155	247	465
2401	1	1x175,1	1x286	1x586	175	286	586
2701	1	1x195,5	1x318	1x650	196	318	650
2802	2	2x101,3	2x168	2x360	203	336	462
3001	1	1x216	1x351	1x805	216	351	805
3202	2	2x121,6	2x197,2	2x318	243	394	444
3602	2	2x137,7	2x223	2x436	275	446	571
4202	2	2x154,9	2x247	2x465	310	494	612
4502	2	1x154,9 + 1x175,1	1x247 + 1x286	1x465 + 1x586	330	533	733
4802	2	2x175,1	2x286	2x586	350	572	761
5402	2	2x195,5	2x318	2x650	391	636	860
6002	2	2x216	2x351	2x805	432	702	1025
6303	3	3x154,9	3x247	3x465	465	741	760
6603	3	2x154,9 + 1x175,1	2x247 + 1x286	2x465 + 1x586	485	780	881
7203	3	3x175,1	3x286	3x586	525	858	936
7803	3	1x175,1 + 2x195,5	1x286 + 2x318	1x586 + 2x650	566	922	1035
8103	3	3x195,5	3x318	3x650	587	954	1070
9003	3	3x216	3x351	3x805	648	1053	1245
9004	4	2x154,9 + 2x175,1	2x247 + 2x286	2x465 + 2x586	660	1066	1055
9604	4	4x175,1	4x286	4x586	700	1144	1111

F.L.I.: Full load power

F.L.A.: Full load current

L.R.A.: Locked rotor amperes for single compressor

S.A.: Inrush current

(1) Safety values to be considered when cabling the unit for power supply and line-protections

Power supply: 400/3/50
Voltage tolerance: 10%
Maximum voltage unbalance: 3%

Given the typical operating conditions of units designed for indoor installation, which can be associated (according to reference document IEC 60721) to the following classes:
- climatic conditions class AA4: air temperature range from 5 up to 42°C (*)
- special climatic conditions negligible
- presence of water class AD2: possibility of water dripping inside the technical room
- biological conditions class 4B1 and 4C2: negligible presence of corrosive and polluting substances
- mechanically active substances class 4S2: locations in areas with sand or dust sources

The required protection level for safe operation, according to reference document IEC 60529, is IP21 BW (protection against access of external devices with diameter larger than 12 mm and water falling vertically).
The unit can be considered IP21 CW protected, thus fulfilling the above operating conditions.

(*) for the unit's operating limits, see "selection limits" section

SIZE	Maximum values						
	Compressor				Total (1)		
	n	F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A. [A]	S.A. [A]
1301	1	1x89	1x146.8	1x300	89.0	146.8	300.0
1401	1	1x101.3	1x168	1x360	101.3	168.0	360.0
1601	1	1x121.6	1x197.2	1x404	121.6	197.2	404.0
1801	1	1x137.7	1x223	1x436	137.7	223.0	436.0
2101	1	1x154.9	1x247	1x465	154.9	247.0	465.0
2401	1	1x175.1	1x286	1x586	175.1	286.0	586.0
2701	1	1x195.5	1x318	1x650	195.5	318	650
2802	2	2x101.3	2x168	2x360	202.6	336.0	456.0
3001	1	1x216	1x351	1x805	216	351	805
3202	2	2x121.6	2x197.2	2x404	243.2	394.4	520.0
3602	2	2x137.7	2x223	2x436	275.4	446.0	560.0
4202	2	2x154.9	2x247	2x465	309.8	494.0	600.2
4802	2	2x175.1	2x286	2x586	350.2	572.0	747.8
5402	2	2x195.5	2x318	2x650	391	636	860
6002	2	2x216	2x351	2x805	432	702	1025
6004	4	2x101.3 + 2x121.6	2x168 + 2x197.2	2x360 + 2x318	445.8	730.4	739
6404	4	4x121.6	4x197.2	4x318	486.4	788.8	697
6804	4	2x121.6 + 2x137.7	2x197.2 + 2x223	2x318 + 2x436	518.6	840.4	815
7204	4	4x137.7	4x223	4x436	550.8	892	840
7804	4	2x137.7 + 2x154.9	2x223 + 2x247	2x436 + 2x465	585.2	940	878
8404	4	4x154.9	4x247	4x465	619.6	988	907

F.L.I.: Full load power

F.L.A.: Full load current

L.R.A.: Locked rotor amperes for single compressor

S.A.: Inrush current

(1) Safety values to be considered when cabling the unit for power supply and line-protections

Power supply: 400/3/50
Voltage tolerance: 10%
Maximum voltage unbalance: 3%

Given the typical operating conditions of units designed for indoor installation, which can be associated (according to reference document IEC 60721) to the following classes:
- climatic conditions class AA4: air temperature range from 5 up to 42°C (*)
- special climatic conditions negligible
- presence of water class AD2: possibility of water dripping inside the technical room
- biological conditions class 4B1 and 4C2: negligible presence of corrosive and polluting substances
- mechanically active substances class 4S2: locations in areas with sand or dust sources

The required protection level for safe operation, according to reference document IEC 60529, is IP21 BW (protection against access of external devices with diameter larger than 12 mm and water falling vertically).
The unit can be considered IP21 CW protected, thus fulfilling the above operating conditions.

(*) for the unit's operating limits, see "selection limits" section

SOUND POWER									
SIZE	Octave band [Hz]								Total sound level
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB(A)								
1301	81	78	89	93	96	84	73	67	**97**
1401	81	78	89	93	96	84	73	67	**97**
1601	81	78	89	93	96	84	73	67	**97**
1801	81	78	89	93	96	84	73	67	**97**
2101	81	78	89	93	96	84	73	67	**97**
2401	81	78	89	93	96	84	73	67	**97**
2701	83	80	90	95	98	86	75	69	**99**
2802	83	80	90	95	98	86	75	69	**99**
3001	83	80	90	95	98	86	75	69	**99**
3202	83	80	90	95	98	86	75	69	**99**
3602	83	80	90	95	98	86	75	69	**99**
4202	83	80	90	95	98	86	75	69	**99**
4502	83	80	90	95	98	86	75	69	**99**
4802	83	80	90	95	98	86	75	69	**99**
5402	84	82	93	97	100	89	77	70	**101**
6002	84	82	93	97	100	89	77	70	**101**
6303	85	83	94	97	101	91	78	72	**102**
6603	85	83	94	97	101	91	78	72	**102**
7203	85	83	94	97	101	91	78	72	**102**
7803	85	83	94	97	101	91	78	72	**102**
8103	85	83	94	97	101	91	78	72	**102**
9003	85	83	94	97	101	91	78	72	**102**
9004	85	83	94	97	101	91	78	72	**102**
9604	85	83	94	97	101	91	78	72	**102**

Working conditions
Plant (side) cooling exchanger water (in/out) 12/7 °C
Source (side) heat exchanger water (in/out) 30/35 °C
Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units;
in compliance with ISO 3744 for non-certified units
Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz] at 10 m								Total sound level
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB(A)								
1301	49	46	57	61	64	52	41	35	**65**
1401	49	46	57	61	64	52	41	35	**65**
1601	49	46	57	61	64	52	41	35	**65**
1801	49	46	57	61	64	52	41	35	**65**
2101	49	46	57	61	64	52	41	35	**65**
2401	49	46	57	61	64	52	41	35	**65**
2701	51	48	58	63	66	54	43	37	**67**
2802	51	48	58	63	66	54	43	37	**67**
3001	51	48	58	63	66	54	43	37	**67**
3202	51	48	58	63	66	54	43	37	**67**
3602	51	48	58	63	66	54	43	37	**67**
4202	51	48	58	63	66	54	43	37	**67**
4502	51	48	58	63	66	54	43	37	**67**
4802	51	48	58	63	66	54	43	37	**67**
5402	52	50	61	65	68	57	45	38	**69**
6002	52	50	61	65	68	57	45	38	**69**
6303	53	51	62	65	69	59	46	40	**70**
6603	53	51	62	65	69	59	46	40	**70**
7203	53	51	62	65	69	59	46	40	**70**
7803	53	51	62	65	69	59	46	40	**70**
8103	53	51	62	65	69	59	46	40	**70**
9003	53	51	62	65	69	59	46	40	**70**
9004	53	51	62	65	69	59	46	40	**70**
9604	53	51	62	65	69	59	46	40	**70**

Working conditions
Plant (side) cooling exchanger water (in/out) 12/7 °C
Source (side) heat exchanger water (in/out) 30/35 °C
Average sound pressure level, at 10 (m.) distance, unit in a free field on a reflective surface; non-binding value obtained
from the sound power level

Additional soundproofing
The sound power and pressure levels are reduced of 14 dB(A) when present the accessory “integral acoustical enclosure basic”and of 18 dB(A) when present the accessory “integral acoustical enclosure plus”.

SOUND POWER									
SIZE	Octave band [Hz]								Total sound level
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB(A)								
1301	81	78	89	93	96	84	73	67	**97**
1401	81	78	89	93	96	84	73	67	**97**
1601	81	78	89	93	96	84	73	67	**97**
1801	81	78	89	93	96	84	73	67	**97**
2101	81	78	89	93	96	84	73	67	**97**
2401	81	78	89	93	96	84	73	67	**97**
2701	83	80	90	95	98	86	75	69	**99**
2802	83	80	90	95	98	86	75	69	**99**
3001	83	80	90	95	98	86	75	69	**99**
3202	83	80	90	95	98	86	75	69	**99**
3602	83	80	90	95	98	86	75	69	**99**
4202	83	80	90	95	98	86	75	69	**99**
4802	83	80	90	95	98	86	75	69	**99**
5402	84	82	93	97	100	89	77	70	**101**
6002	84	82	93	97	100	89	77	70	**101**
6004	85	83	94	97	101	91	78	72	**102**
6404	85	83	94	97	101	91	78	72	**102**
6804	85	83	94	97	101	91	78	72	**102**
7204	85	83	94	97	101	91	78	72	**102**
7804	85	83	94	97	101	91	78	72	**102**
8404	85	83	94	97	101	91	78	72	**102**

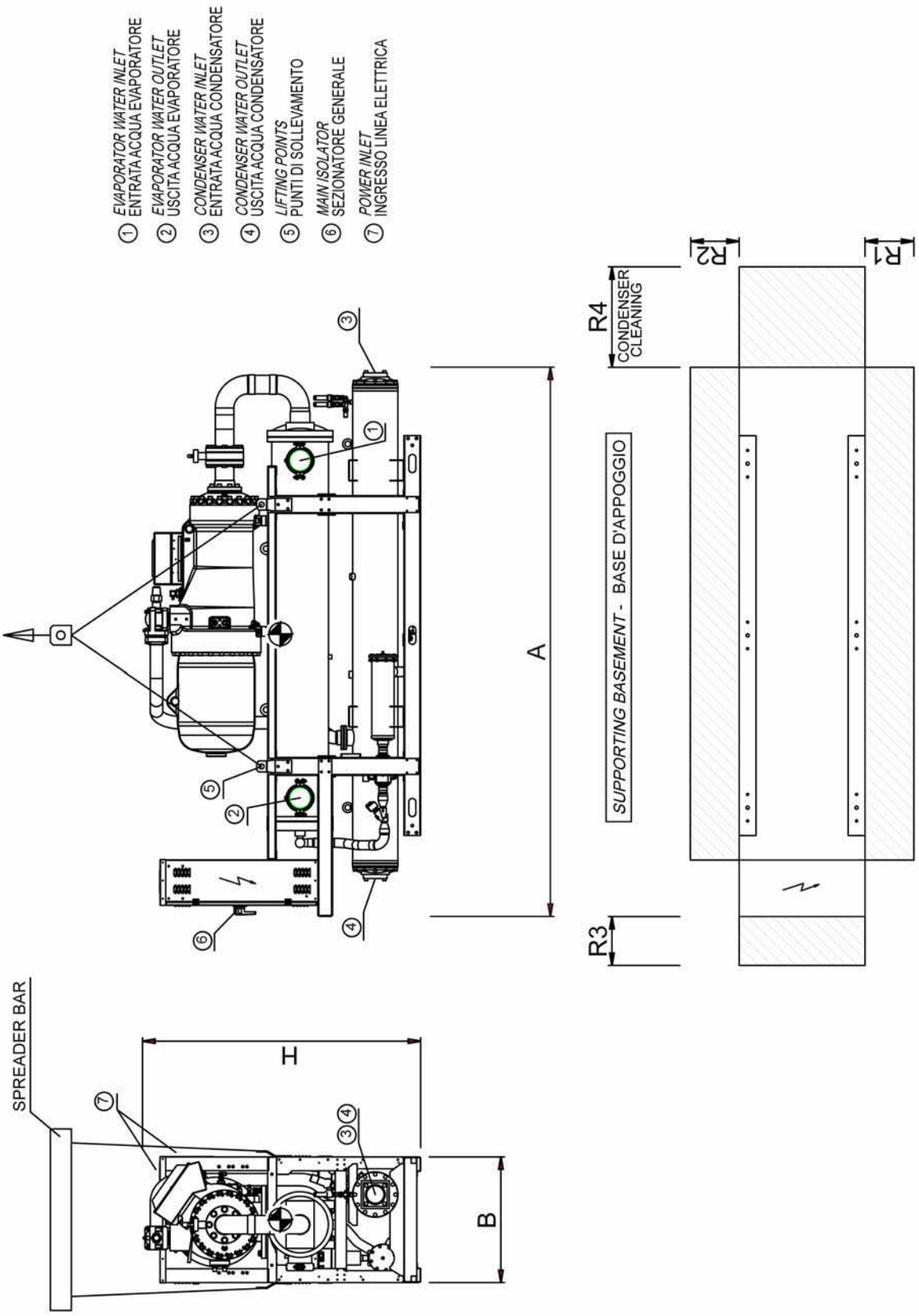
Working conditions
Plant (side) cooling exchanger water (in/out) 12/7 °C
Source (side) heat exchanger water (in/out) 30/35 °C
Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units;
in compliance with ISO 3744 for non-certified units
Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz] at 10 m								Total sound level
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB(A)								
1301	49	46	57	61	64	52	41	35	**65**
1401	49	46	57	61	64	52	41	35	**65**
1601	49	46	57	61	64	52	41	35	**65**
1801	49	46	57	61	64	52	41	35	**65**
2101	49	46	57	61	64	52	41	35	**65**
2401	49	46	57	61	64	52	41	35	**65**
2701	51	48	58	63	66	54	43	37	**67**
2802	51	48	58	63	66	54	43	37	**67**
3001	51	48	58	63	66	54	43	37	**67**
3202	51	48	58	63	66	54	43	37	**67**
3602	51	48	58	63	66	54	43	37	**67**
4202	51	48	58	63	66	54	43	37	**67**
4802	51	48	58	63	66	54	43	37	**67**
5402	52	50	61	65	68	57	45	38	**69**
6002	52	50	61	65	68	57	45	38	**69**
6004	53	51	62	65	69	59	46	40	**70**
6404	53	51	62	65	69	59	46	40	**70**
6804	53	51	62	65	69	59	46	40	**70**
7204	53	51	62	65	69	59	46	40	**70**
7804	53	51	62	65	69	59	46	40	**70**
8404	53	51	62	65	69	59	46	40	**70**

Working conditions
Plant (side) cooling exchanger water (in/out) 12/7 °C
Source (side) heat exchanger water (in/out) 30/35 °C
Average sound pressure level, at 10 (m.) distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level

Additional soundproofing
The sound power and pressure levels are reduced of 14 dB(A) when present the accessory “integral acoustical enclosure basic”and of 18 dB(A) when present the accessory “integral acoustical enclosure plus”.

FOCS2-W /CA
FOCS2-W /H /CA
1301 - 3001

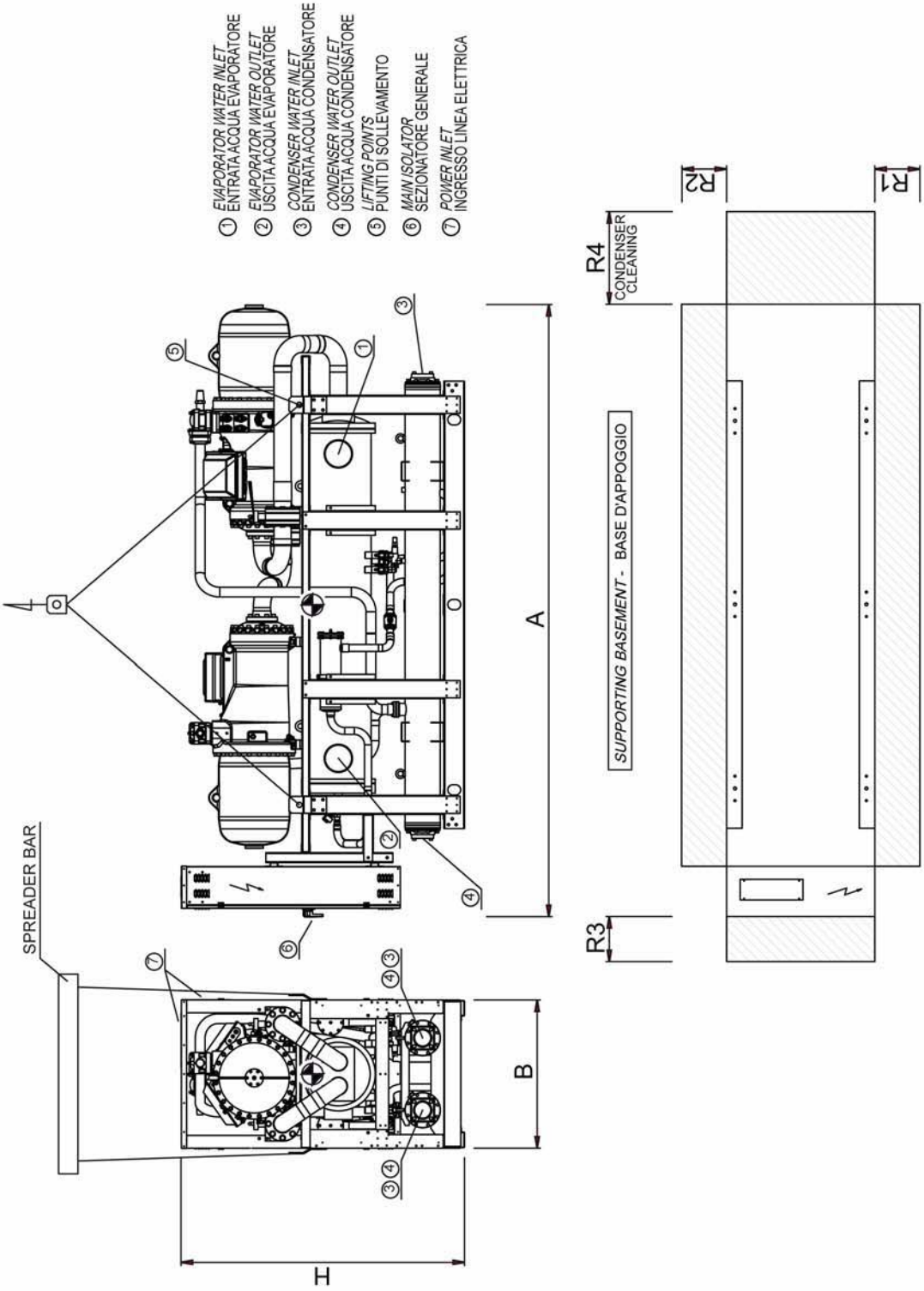


"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA 1301	3830	900	1700	2050	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	-	-
FOCS2-W /CA 1401	3830	900	1700	2110	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	-	-
FOCS2-W /CA 1601	3860	900	1840	2590	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	5"	-	-
FOCS2-W /CA 1801	3860	900	1840	2810	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	-	-
FOCS2-W /CA 2101	3860	900	1840	2910	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	-	-
FOCS2-W /CA 2401	3860	900	1840	2970	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	-	-
FOCS2-W /CA 2701	3930	900	1990	3510	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	5"	-	-
FOCS2-W /CA 3001	3930	900	1990	3600	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	5"	-	-
FOCS2-W /H /CA 1301	3830	900	1700	2050	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	-	-
FOCS2-W /H /CA 1401	3830	900	1700	2110	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	-	-
FOCS2-W /H /CA 1601	3860	900	1840	2590	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	5"	-	-
FOCS2-W /H /CA 1801	3860	900	1840	2810	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	-	-
FOCS2-W /H /CA 2101	3860	900	1840	2910	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	-	-
FOCS2-W /H /CA 2401	3860	900	1840	2970	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	-	-
FOCS2-W /H /CA 2701	3930	900	1990	3510	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	5"	-	-
FOCS2-W /H /CA 3001	3930	900	1990	3600	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	5"	-	-

FOCS2-W

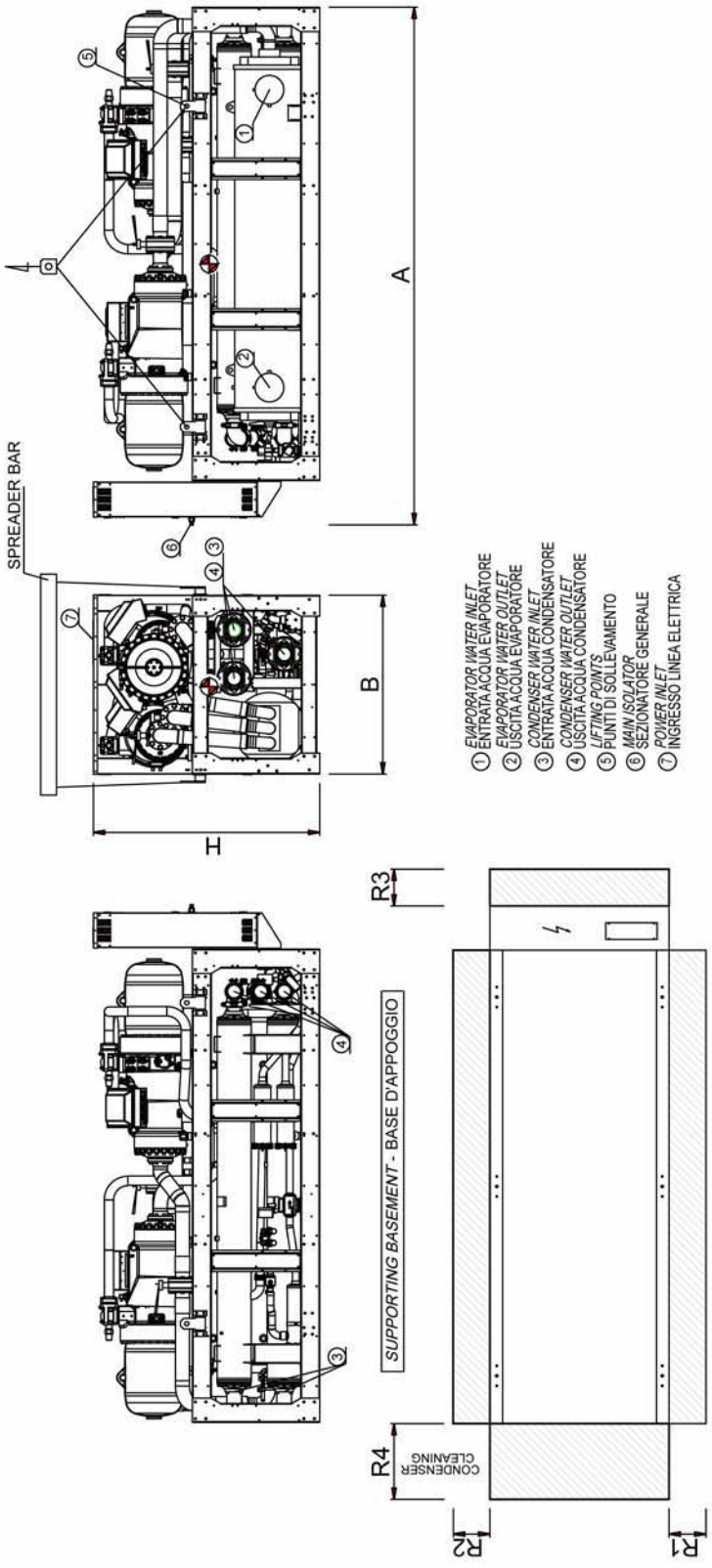
FOCS2-W /CA
FOCS2-W /H /CA
2802 - 6002



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA 2802	4200	1150	2050	4120	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	4"	-	-
FOCS2-W /CA 3202	4750	1150	2050	5110	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	-	-
FOCS2-W /CA 3602	4750	1150	2050	5400	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	-	-
FOCS2-W /CA 4202	4750	1150	2200	6070	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /CA 4502	4750	1150	2200	6120	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /CA 4802	4750	1150	2200	6180	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /CA 5402	4850	1150	2200	6950	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /CA 6002	4850	1150	2200	7090	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /H /CA 2802	4200	1150	2050	4120	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	4"	-	-
FOCS2-W /H /CA 3202	4750	1150	2050	5110	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	-	-
FOCS2-W /H /CA 3602	4750	1150	2050	5400	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	-	-
FOCS2-W /H /CA 4202	4750	1150	2200	6070	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /H /CA 4502	4750	1150	2200	6120	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /H /CA 4802	4750	1150	2200	6180	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /H /CA 5402	4850	1150	2200	6950	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-
FOCS2-W /H /CA 6002	4850	1150	2200	7090	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	-	-

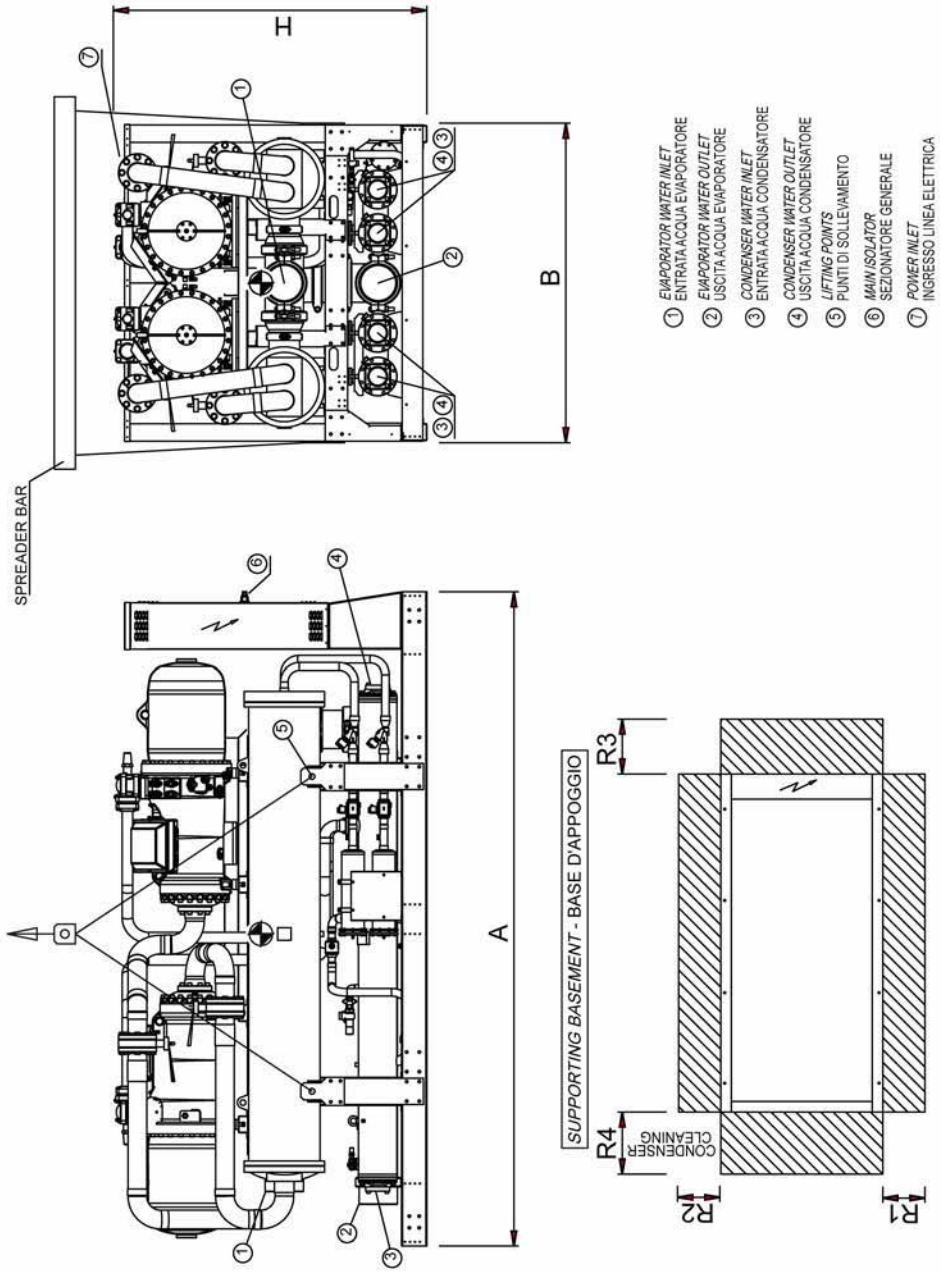
FOCS2-W /CA
FOCS2-W /H /CA
6303 - 9003



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA 6303	4950	1700	2150	8980	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA 6603	4950	1700	2150	9050	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA 7203	4950	1700	2150	9120	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA 7803	4950	1700	2150	9950	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA 8103	4950	1700	2150	10170	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA 9003	4950	1700	2150	10350	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA 6303	4950	1700	2150	8980	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA 6603	4950	1700	2150	9050	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA 7203	4950	1700	2150	9120	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA 7803	4950	1700	2150	9950	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA 8103	4950	1700	2150	10170	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA 9003	4950	1700	2150	10350	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-

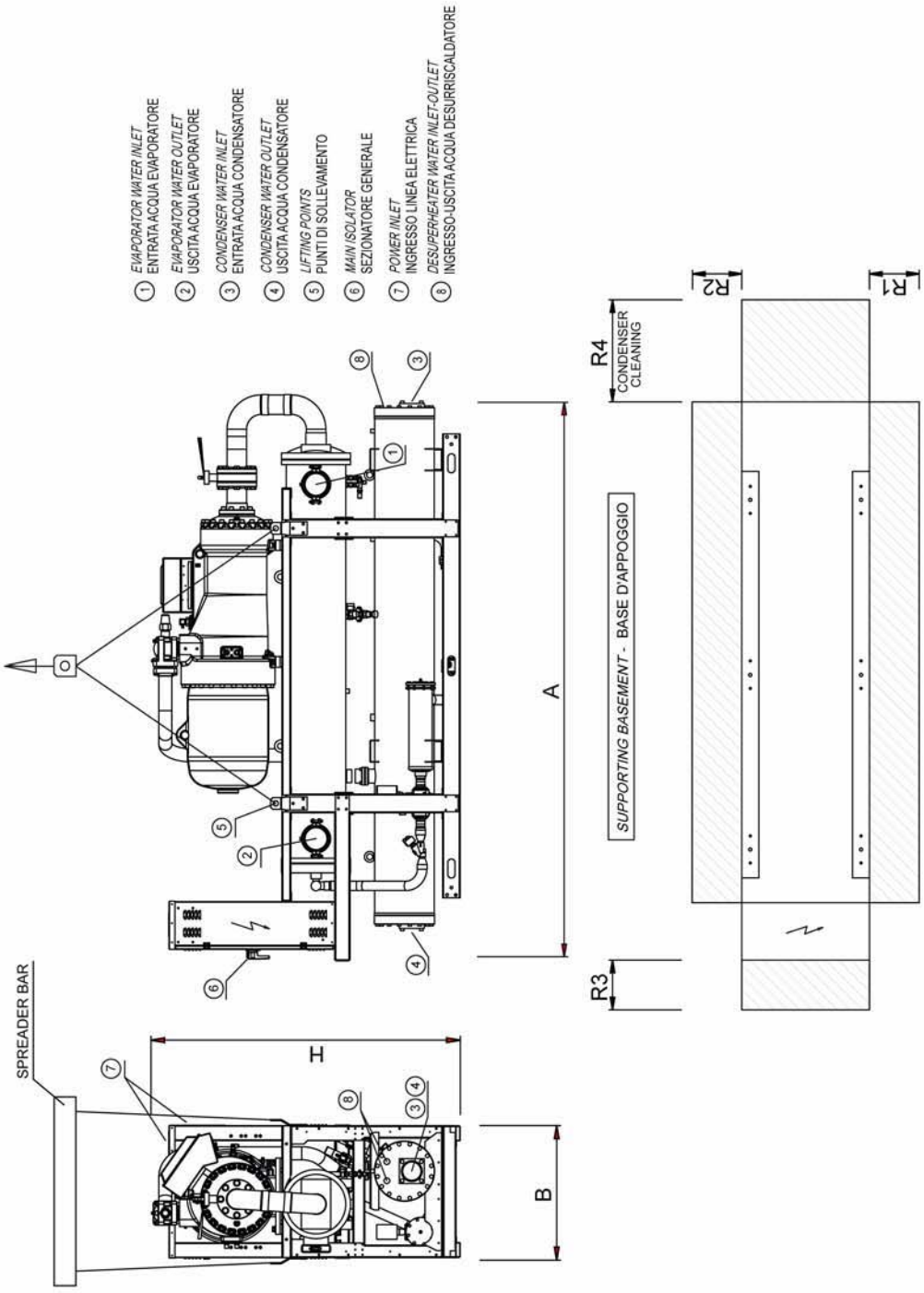
FOCS2-W /CA
FOCS2-W /H /CA
9004 - 9604



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA 9004	4650	2250	2230	14330	900	900	1800	3500	FLEXIBLE JOINT	10"	FLANGE	5"	-	-
FOCS2-W /CA 9604	4650	2250	2230	14390	900	900	1800	3500	FLEXIBLE JOINT	10"	FLANGE	5"	-	-
FOCS2-W /H /CA 9004	4650	2250	2230	14330	900	900	1800	3500	FLEXIBLE JOINT	10"	FLANGE	5"	-	-
FOCS2-W /H /CA 9604	4650	2250	2230	14390	900	900	1800	3500	FLEXIBLE JOINT	10"	FLANGE	5"	-	-

FOCS2-W /D /CA
1301 - 3001

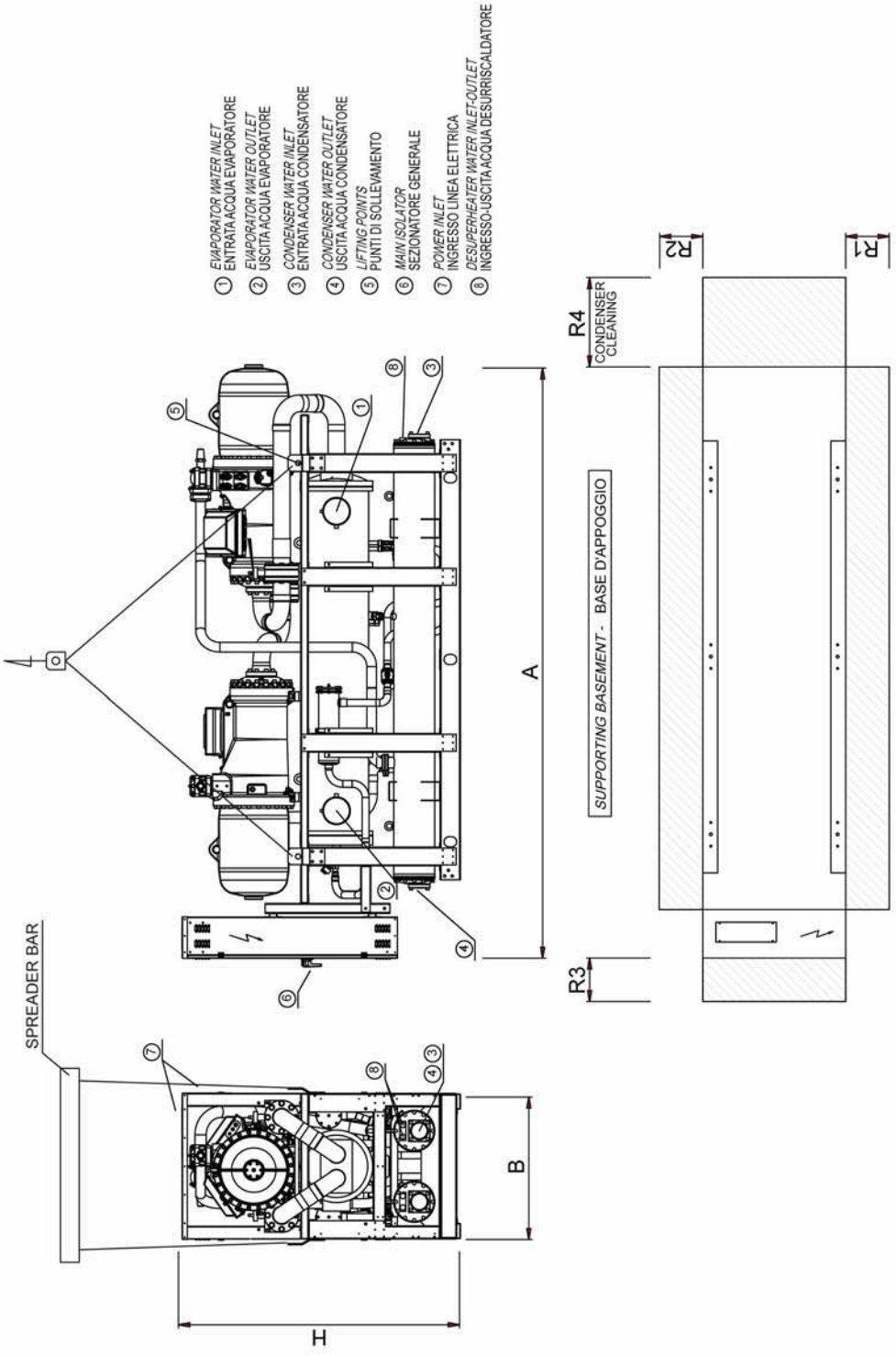


"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

DIMENSIONAL DRAWINGS

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA 1301	3830	900	1700	2070	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	GAS	1"
FOCS2-W /D /CA 1401	3830	900	1700	2130	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	GAS	1"
FOCS2-W /D /CA 1601	3860	900	1840	2690	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 1801	3860	900	1840	2910	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 2101	3860	900	1840	3010	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 2401	3860	900	1840	3070	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 2701	3820	900	2110	3650	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 3001	3820	900	2110	3740	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	5"	GAS	1-1/4"

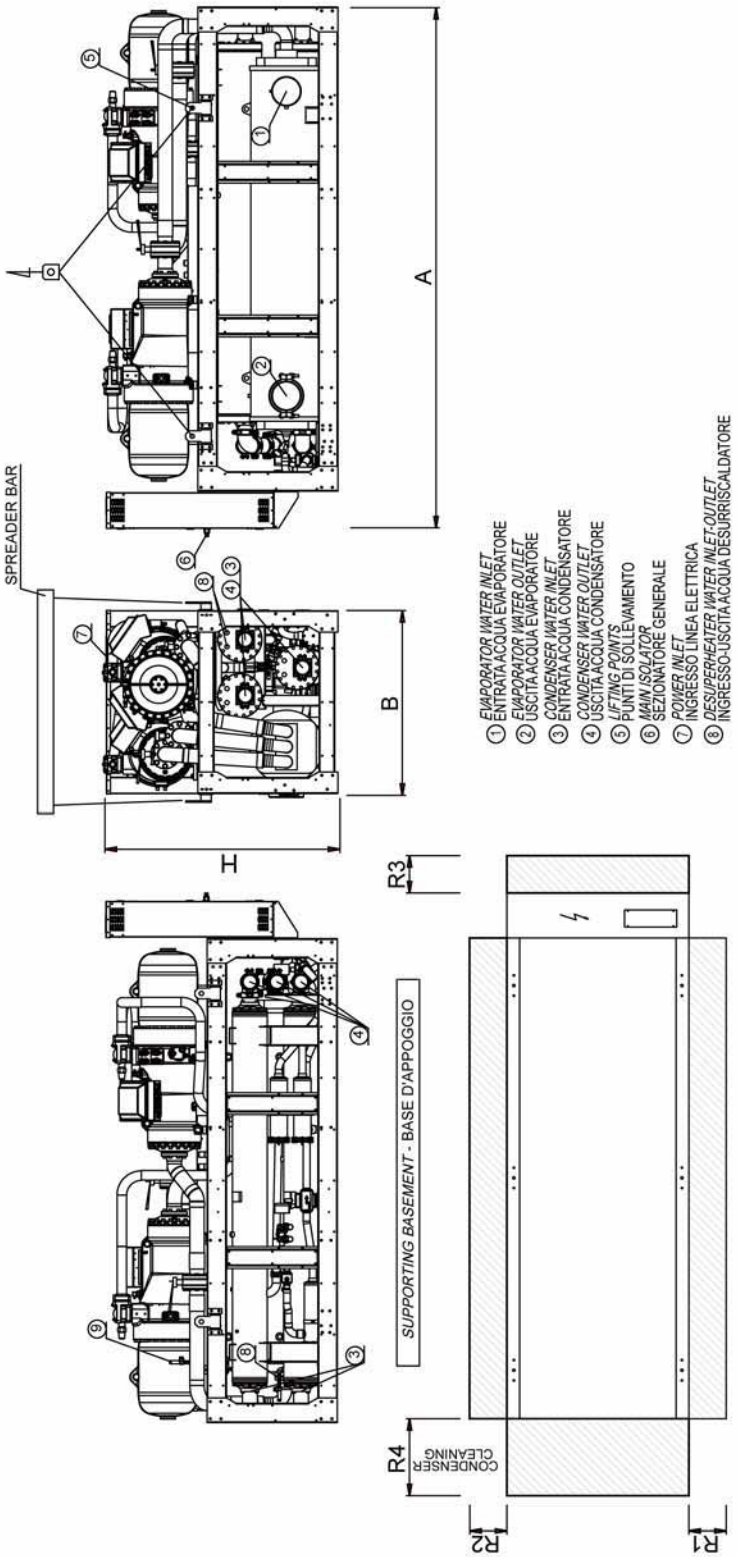
FOCS2-W /D /CA
2802 - 6002



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA 2802	4200	1150	2050	4150	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	4"	GAS	1"
FOCS2-W /D /CA 3202	4750	1150	2050	5310	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 3602	4750	1150	2050	5600	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 4202	4750	1150	2200	6270	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 4502	4750	1150	2200	6320	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 4802	4750	1150	2200	6370	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 5402	4850	1260	2250	6930	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 6002	4850	1260	2250	7060	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	GAS	1-1/4"

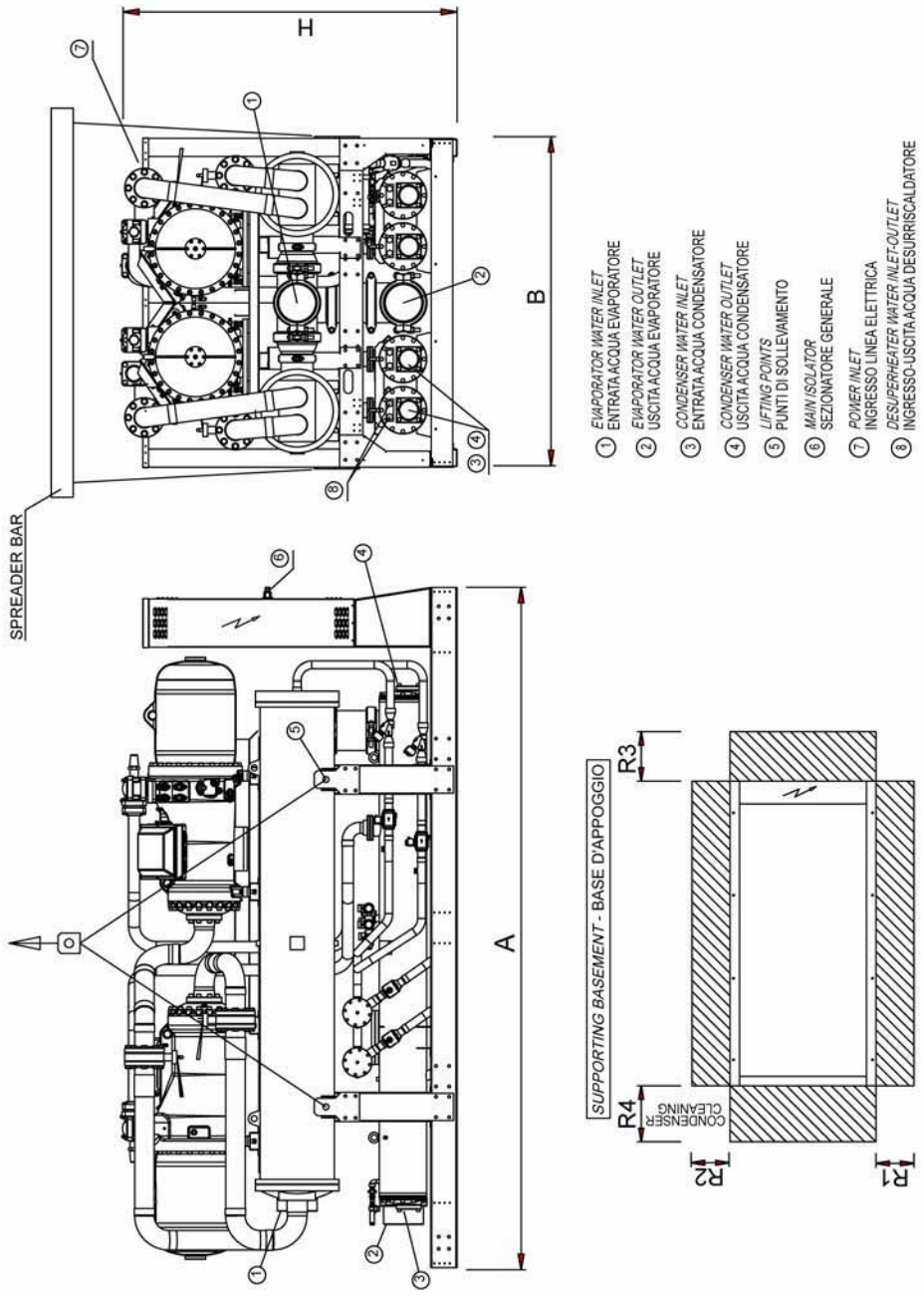
FOCS2-W /D /CA
6303 - 9003



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA 6303	4950	1700	2150	9280	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1-1/4"
FOCS2-W /D /CA 6603	4950	1700	2150	9330	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1-1/4"
FOCS2-W /D /CA 7203	4950	1700	2150	9420	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1-1/4"
FOCS2-W /D /CA 7803	4950	1700	2190	10360	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1-1/4"
FOCS2-W /D /CA 8103	4950	1700	2190	10620	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1-1/4"
FOCS2-W /D /CA 9003	4950	1700	2190	10810	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1-1/4"

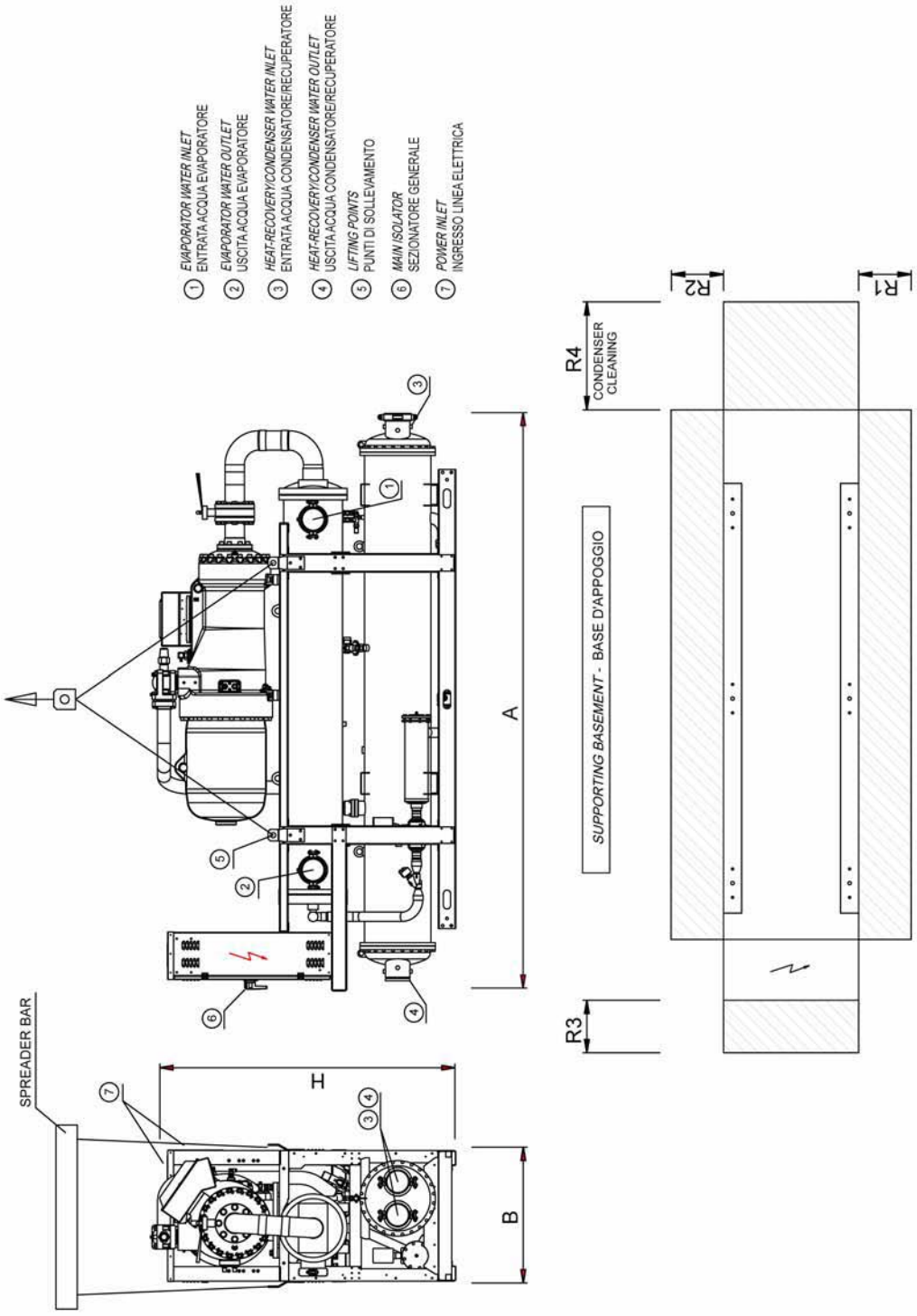
FOCS2-W /D /CA
9004 - 9604



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA 9004	4650	2250	2310	14730	900	900	1800	3500	FLEXIBLE JOINT	10"	FLANGE	5"	GAS	1-1/4"
FOCS2-W /D /CA 9604	4650	2250	2310	14770	900	900	1800	3500	FLEXIBLE JOINT	10"	FLANGE	5"	GAS	1-1/4"

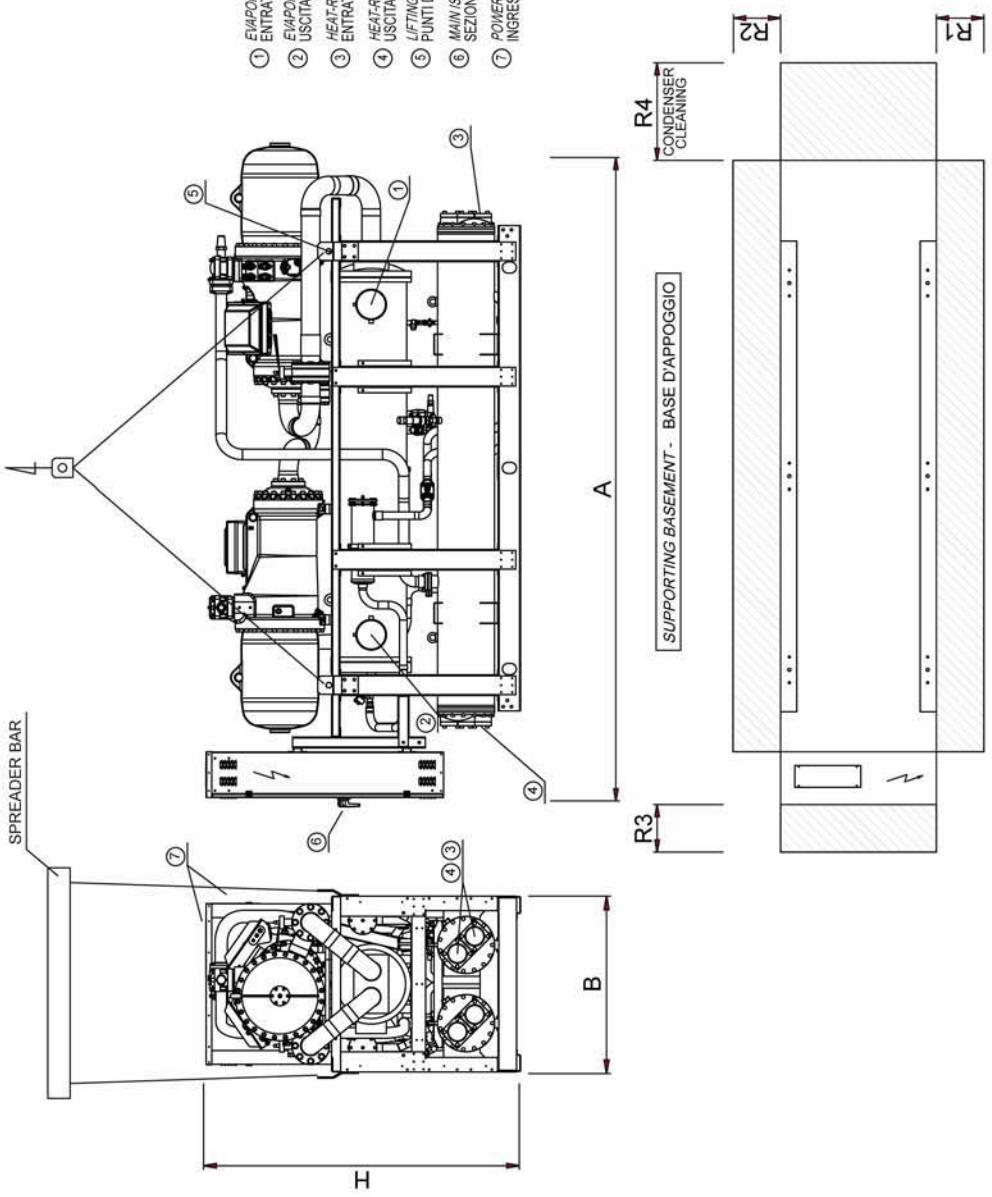
FOCS2-W /R /CA
1301 - 3001



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /R /CA 1301	3830	900	1810	2270	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	FLANGE	4"
FOCS2-W /R /CA 1401	3830	900	1810	2380	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	4"	FLANGE	4"
FOCS2-W /R /CA 1601	3860	900	1840	2970	900	900	1500	3500	FLEXIBLE JOINT	4"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 1801	3860	900	1950	3210	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 2101	3860	900	1950	3330	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 2401	3860	900	1950	3410	900	900	1500	3500	FLEXIBLE JOINT	5"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 2701	3950	900	2110	4000	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"
FOCS2-W /R /CA 3001	3950	900	2110	4130	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"

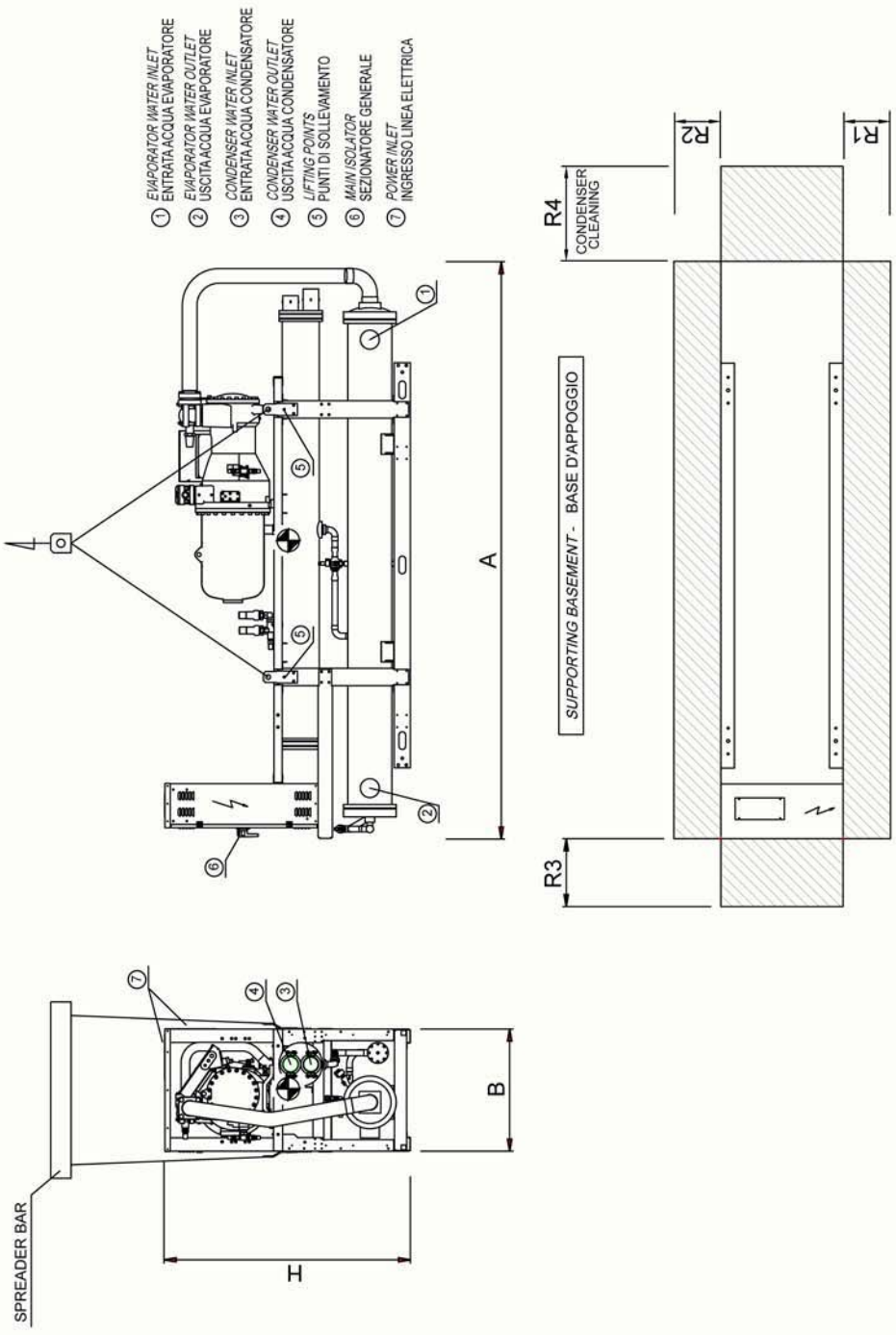
FOCS2-W /R /CA
2802 - 6002



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /R /CA 2802	4210	1150	2135	4120	900	900	1500	3500	FLEXIBLE JOINT	6"	FLANGE	4"	FLANGE	4"
FOCS2-W /R /CA 3202	4750	1260	2250	5900	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 3602	4750	1260	2250	6210	900	900	1500	3000	FLEXIBLE JOINT	6"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 4202	4750	1260	2250	6910	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 4502	4750	1260	2250	6990	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 4802	4750	1260	2250	7250	900	900	1500	3000	FLEXIBLE JOINT	8"	FLANGE	5"	FLANGE	5"
FOCS2-W /R /CA 5402	4850	1260	2250	7790	900	900	1500	3000	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"
FOCS2-W /R /CA 6002	4850	1260	2250	7900	900	900	1500	3000	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"

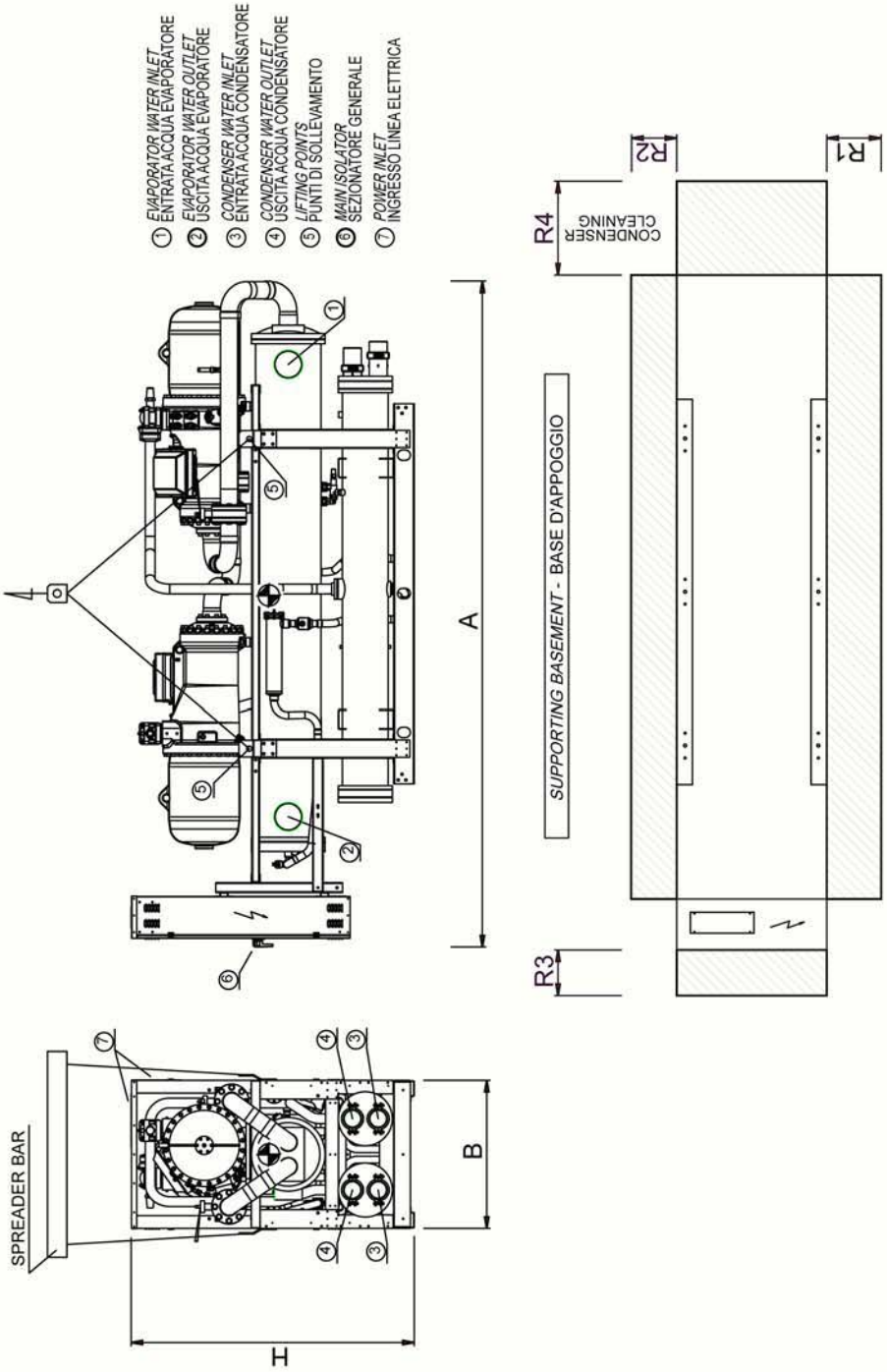
FOCS2-W /CA-E
FOCS2-W /H /CA-E
1301 - 3001



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA-E 1301	4300	900	1950	2460	900	900	1500	3000	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	4"	-	-
FOCS2-W /CA-E 1401	4300	900	1950	2750	900	900	1500	3000	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 1601	4000	900	2000	3560	900	900	1500	3250	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 1801	4000	900	2000	3720	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 2101	4000	900	2000	3760	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 2401	4300	900	2100	4180	900	900	1500	3000	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /CA-E 2701	4400	900	2195	4810	900	900	1500	3500	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /CA-E 3001	4400	900	2195	4920	900	900	1500	3500	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /H /CA-E 1301	4300	900	1950	2460	900	900	1500	3000	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	4"	-	-
FOCS2-W /H /CA-E 1401	4300	900	1950	2750	900	900	1500	3000	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 1601	4000	900	2000	3560	900	900	1500	3250	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 1801	4000	900	2000	3720	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 2101	4000	900	2000	3760	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 2401	4300	900	2100	4180	900	900	1500	3000	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /H /CA-E 2701	4400	900	2195	4810	900	900	1500	3500	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /H /CA-E 3001	4400	900	2195	4920	900	900	1500	3500	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	6"	-	-

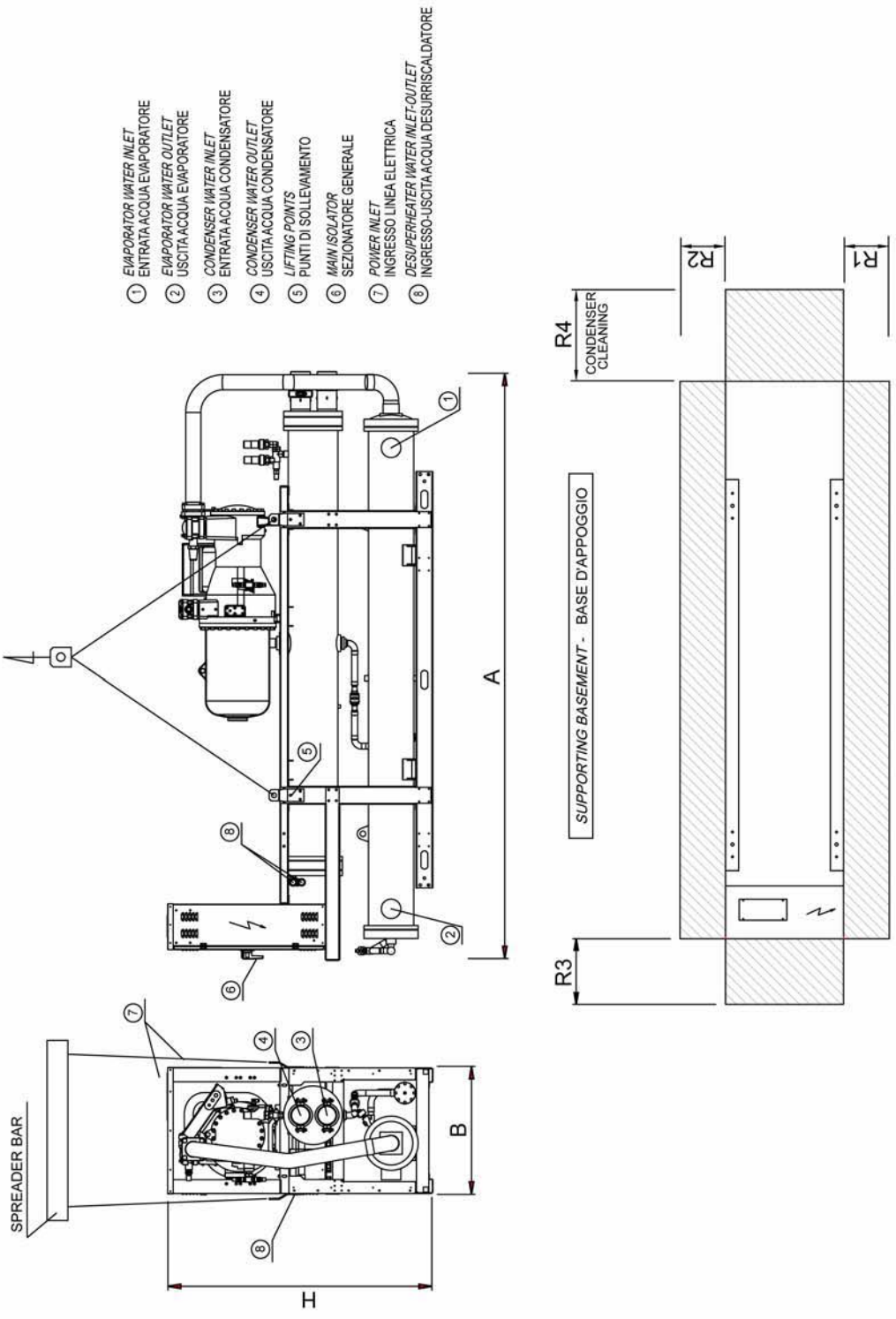
FOCS2-W /CA-E
FOCS2-W /H /CA-E
2802 - 4802



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA-E 2802	4600	1150	2195	5360	900	900	1500	3000	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 3202	4950	1150	2195	6410	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 3602	5220	1150	2195	6870	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 4202	4920	1150	2350	7850	900	900	1500	2750	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 4802	4920	1285	2430	8470	900	900	1500	2750	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /H /CA-E 2802	4600	1150	2195	5360	900	900	1500	3000	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 3202	4950	1150	2195	6410	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 3602	5220	1150	2195	6870	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 4202	4920	1150	2350	7850	900	900	1500	2750	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 4802	4920	1285	2430	8470	900	900	1500	2750	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	6"	-	-

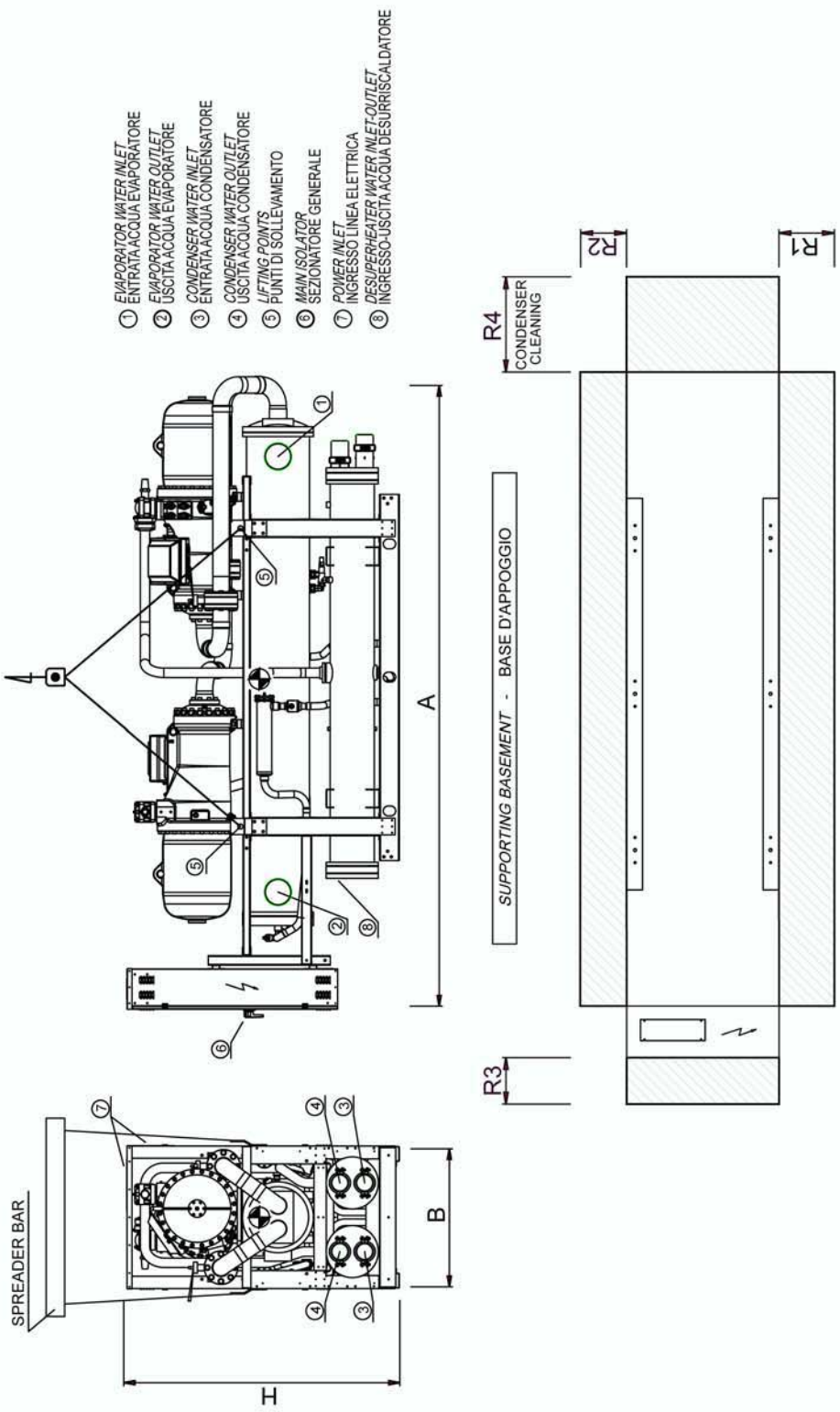
FOCS2-W /D /CA-E
1301 - 3001



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA-E 1301	4300	900	1950	2650	900	900	1500	3250	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 1401	4300	900	1950	2770	900	900	1500	3000	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 1601	4000	900	2000	3590	900	900	1500	3250	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 1801	4000	900	2000	3750	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 2101	4000	900	2000	3790	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 2401	4300	900	2100	4210	900	900	1500	3000	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 2701	4400	900	2195	4810	900	900	1500	3500	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 3001	4400	900	2195	4920	900	900	1500	3500	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	GAS	1"1/4

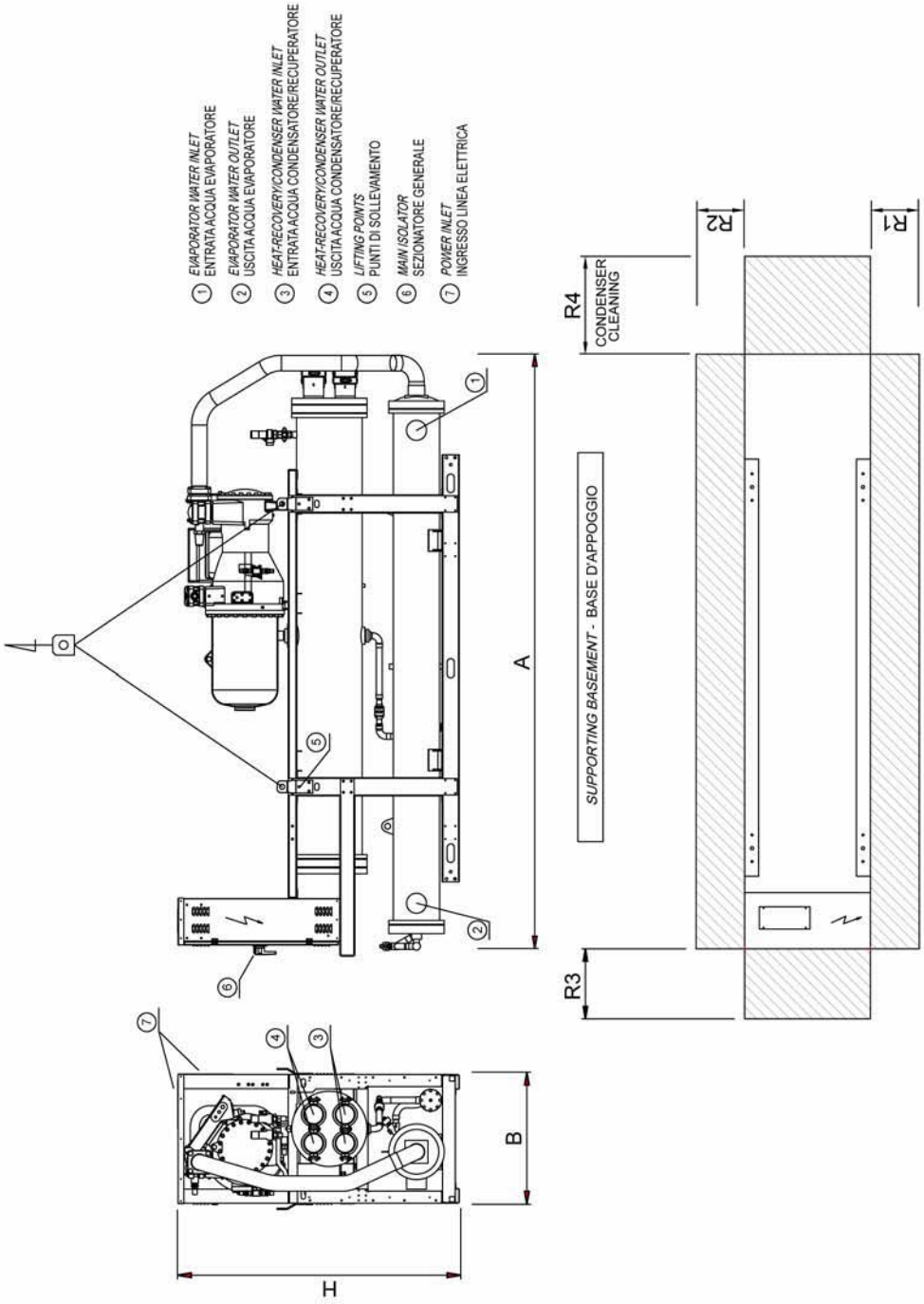
FOCS2-W /D /CA-E
2802 - 4802



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA-E 2802	4600	1150	2195	5390	900	900	1500	3000	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 3202	4950	1150	2195	6470	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 3602	5220	1150	2195	6930	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 4202	4920	1285	2430	8500	900	900	1500	2750	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 4802	4920	1285	2430	8530	900	900	1500	2750	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4

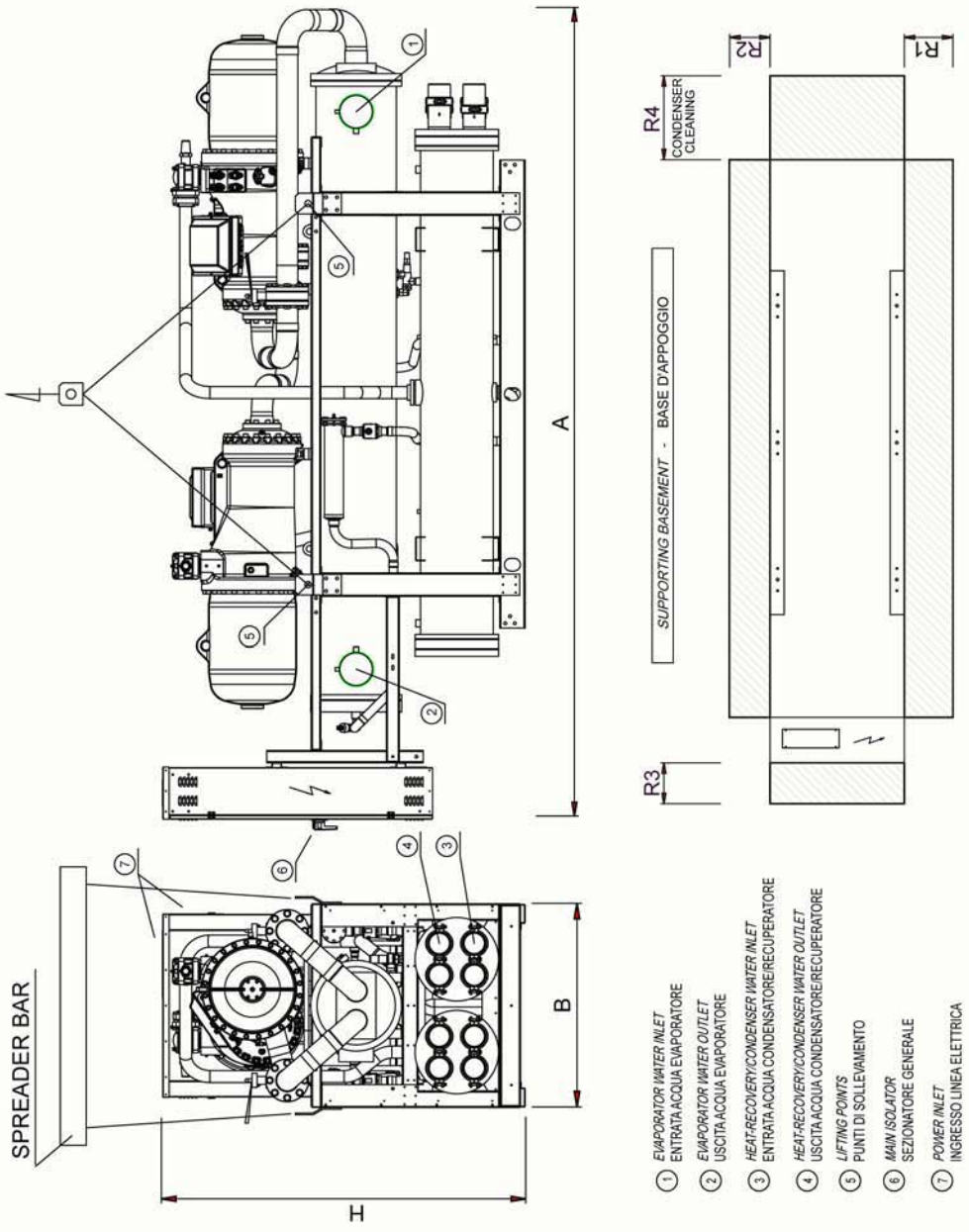
FOCS2-W /R /CA-E
1301 - 1801



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /R /CA-E 1301	4000	900	2000	3170	900	900	1500	3250	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"
FOCS2-W /R /CA-E 1401	4000	900	2000	3240	900	900	1500	3250	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"
FOCS2-W /R /CA-E 1601	4000	900	2100	4070	900	900	1500	3250	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"
FOCS2-W /R /CA-E 1801	4000	900	2100	4240	900	900	1500	3500	FLEXIBLE JOINT	6"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"

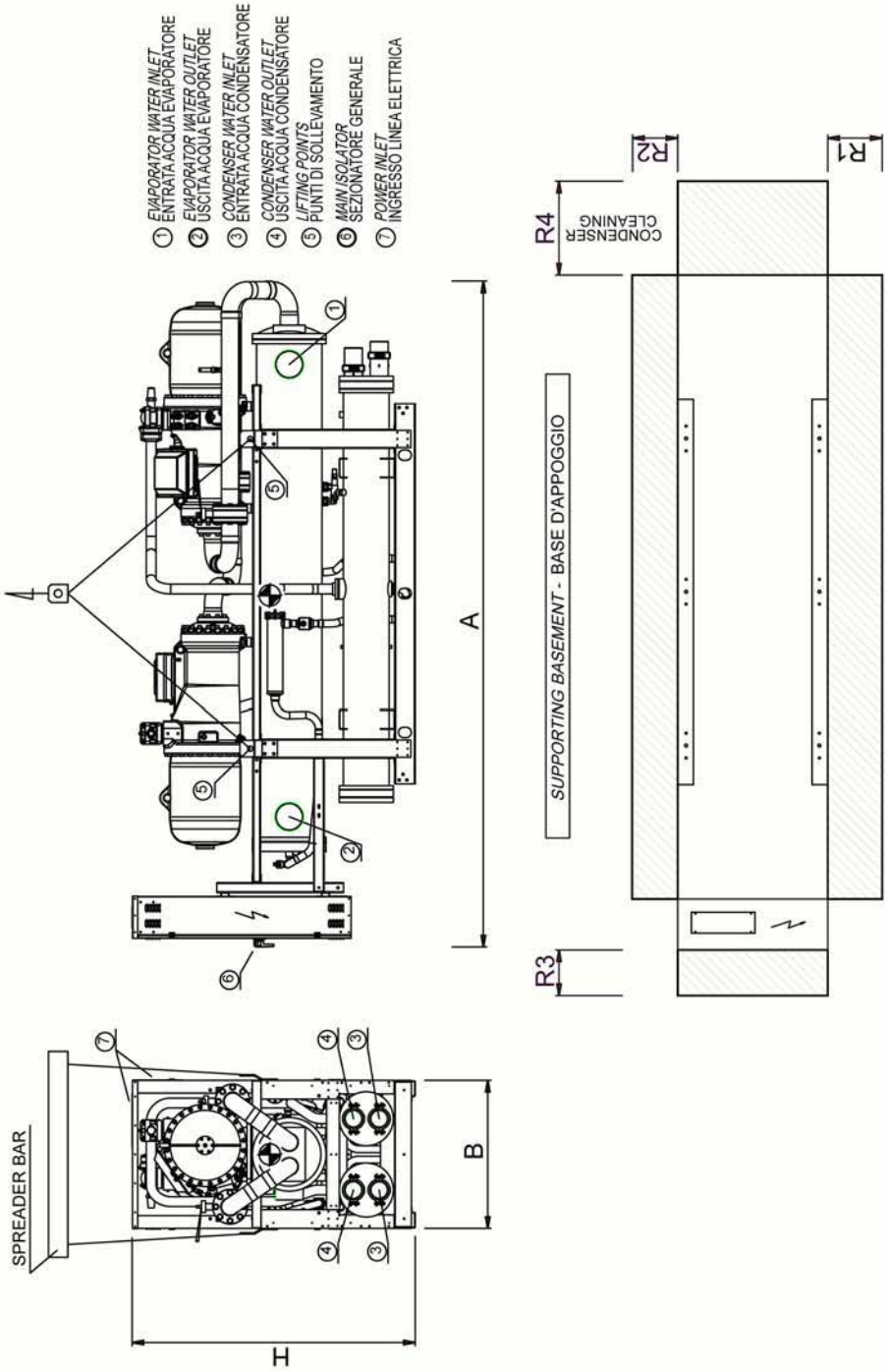
FOCS2-W /R /CA-E
2802 - 3602



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /R /CA-E 2802	4600	1285	2300	6340	900	900	1500	3000	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"
FOCS2-W /R /CA-E 3202	4950	1285	2300	7450	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"
FOCS2-W /R /CA-E 3602	5200	1285	2430	7950	900	900	1500	2750	FLEXIBLE JOINT	8"	FLEXIBLE JOINT	5"	FLEXIBLE JOINT	5"

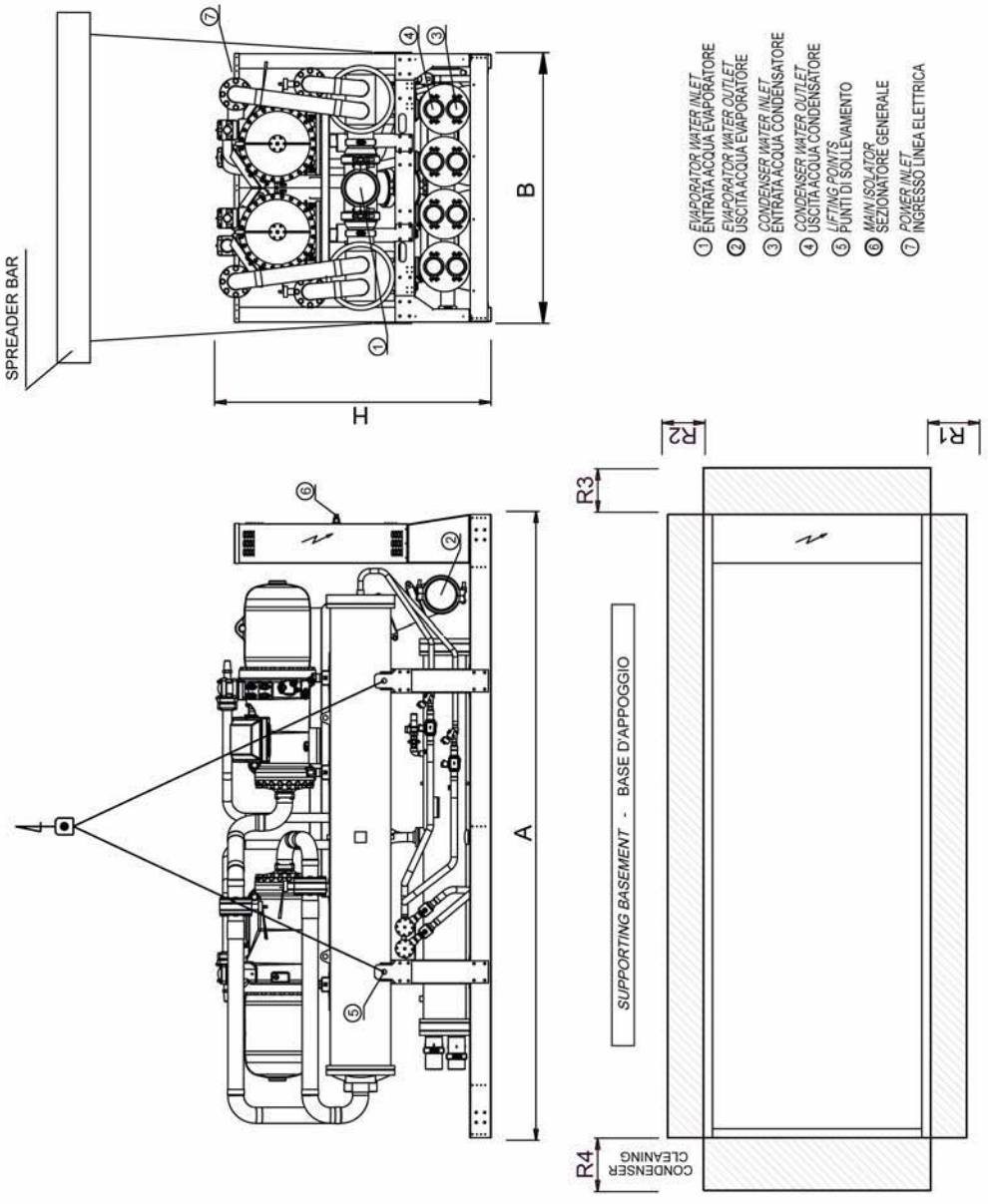
FOCS2-W /CA-E
FOCS2-W /H /CA-E
5402 - 6002



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA-E 5402	5250	1285	2430	8860	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /CA-E 6002	5250	1285	2430	8960	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /H /CA-E 5402	5250	1285	2430	8860	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	6"	-	-
FOCS2-W /H /CA-E 6002	5250	1285	2430	8960	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	6"	-	-

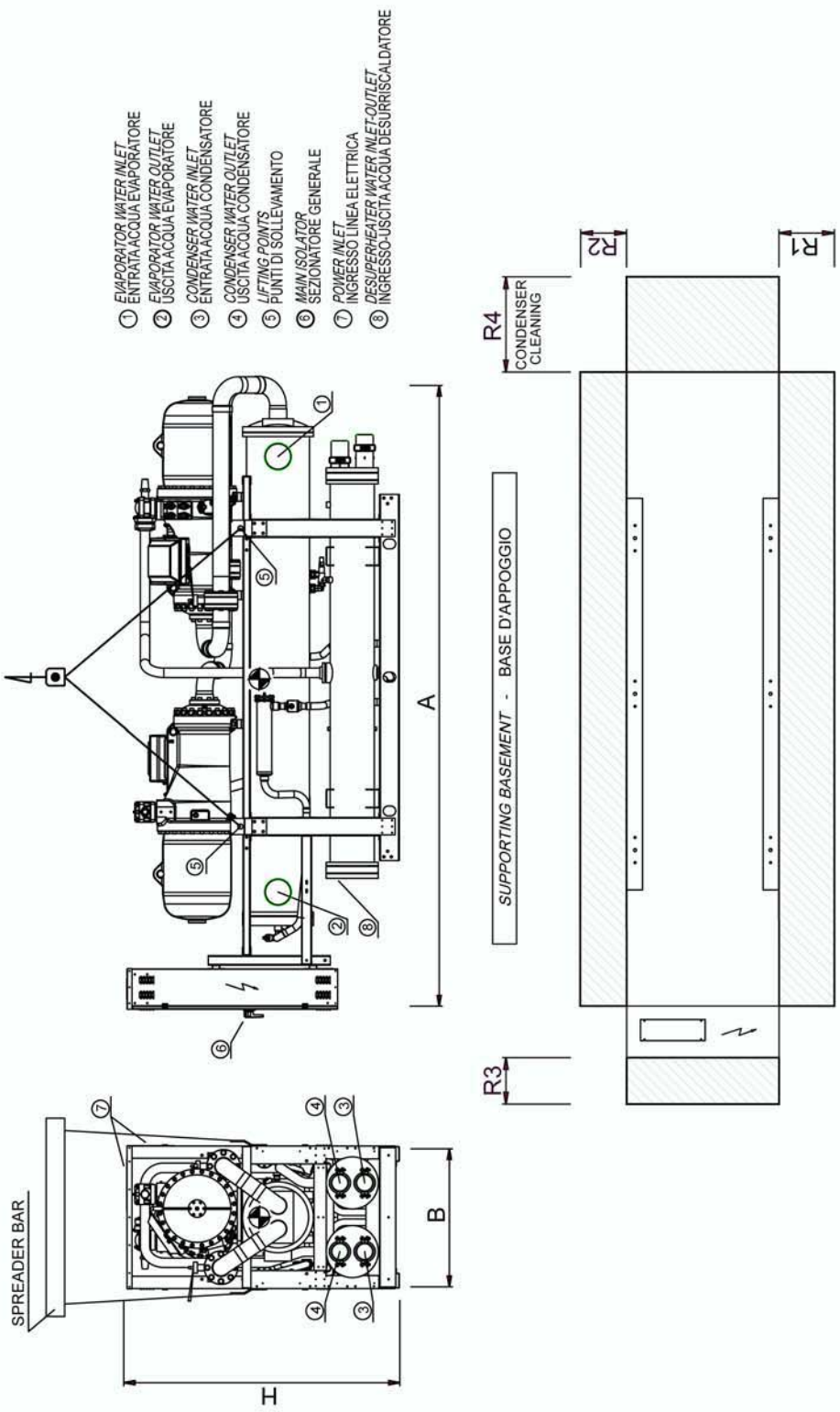
FOCS2-W /CA-E
FOCS2-W /H /CA-E
6004 - 8404



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /CA-E 6004	5000	2250	2305	12350	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 6404	5000	2250	2305	13300	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 6804	5300	2250	2305	13900	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 7204	5300	2250	2305	14000	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 7804	5100	2250	2455	15620	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /CA-E 8404	5100	2250	2455	15800	900	900	1500	3000	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 6004	5000	2250	2305	12350	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 6404	5000	2250	2305	13300	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 6804	5300	2250	2305	13900	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 7204	5300	2250	2305	14000	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 7804	5100	2250	2455	15620	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-
FOCS2-W /H /CA-E 8404	5100	2250	2455	15800	900	900	1500	3000	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	-	-

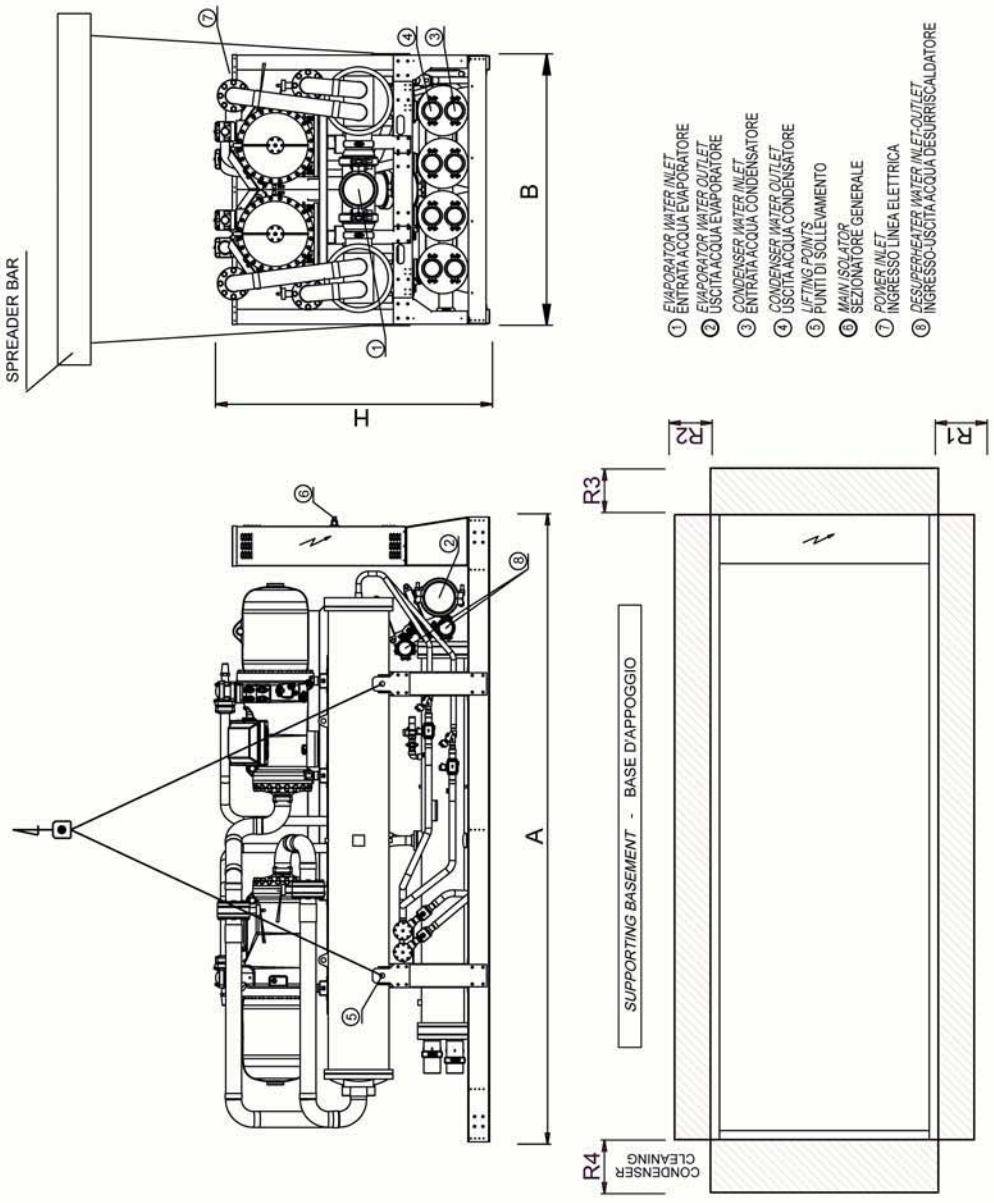
FOCS2-W /D /CA-E
5402 - 6002



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA-E 5402	5250	1285	2430	8860	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 6002	5250	1285	2430	8960	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4

FOCS2-W /D /CA-E
6004 - 7204



"REMARKS:
For installation purposes, please refer to the documentation sent after the purchase-contract. This technical data should be considered as indicative. CLIMAVENETA may modify them at any moment."

SIZE	DIMENSIONS AND WE				CLEARANCE				PLANT SIDE HEAT EXCHANGER		SOURCE SIDE HEAT EXCHANGER		AUXILIARY SIDE HEAT EXCHANGER	
	A	B	H	PESO	R1	R2	R3	R4	IN/OUT		IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø	TYPE	Ø
FOCS2-W /D /CA-E 6004	5000	2250	2305	12350	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 6404	5000	2250	2305	13300	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 6804	5300	2250	2305	13900	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4
FOCS2-W /D /CA-E 7204	5300	2250	2305	14000	900	900	1500	3500	FLEXIBLE JOINT	10"	FLEXIBLE JOINT	5"	GAS	1"1/4

DIMENSIONAL DRAWINGS

LEGEND OF PIPE CONNECTIONS

UNI ISO 228/1
Pipe threads where pressure-tight joints are not made on the threads - Designation, dimensions and tolerances
Used terminology:
G: Pipe threads where pressure-tight joints are not made on the threads
A: Close tolerance class for external pipe threads where pressure-tight joints are not made on the threads
B: Wider tolerance class for external pipe threads where pressure-tight joints are not made on the threads
Internal threads: G letter followed by thread mark (only tolerance class)
External threads: G letter followed by thread mark and by A letter for A class external threads or by B letter for B class external threads.

UNI ISO 7/1
Pipe threads where pressure-tight joints are made on the threads - Designation, dimensions and tolerances
Used terminology:
Rp: Internal cylindrical threads where pressure-tight joints are made on the threads
Rc: Internal conical threads where pressure-tight joints are made on the threads
R: External conical threads where pressure-tight joints are made on the threads
Internal cylindrical threads: R letter followed by p letter
Internal conical threads: R letter followed by c letter
External conical threads: R letter

Designation	Description
UNI ISO 7/1 - Rp 1 1/2	Internal cylindrical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 1 1/2”
UNI ISO 7/1 - Rp 2 1/2	Internal cylindrical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 2 1/2”
UNI ISO 7/1 - Rp 3	Internal cylindrical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 3”
UNI ISO 7/1 - R 3	External conical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 3”
UNI ISO 228/1 - G 4 B	External cylindrical threads where pressure-tight joints are not made on the threads, defined by standard UNI ISO 228/1 Tolerance class B for external thread Conventional ø 4”
DN 80 PN 16	Flange Nominal Diameter: 80 mm Nominal Pressure: 16 bar

Notes:

Conventional diameter value [in inches] identifies short thread designation, based upon the relative standard.
All relative values are defined by standards.
As example, here below some values:

	UNI ISO 7/1	UNI ISO 228/1
Conventional ø	1"	1"
Pitch	2.309 mm	2.309 mm
External ø	33.249 mm	33.249 mm
Core ø	30.291 mm	30.291 mm
Thread height	1.479 mm	1.479 mm

10. CONDENSATION CONTROL DEVICES

PRESSOSTATIC VALVE

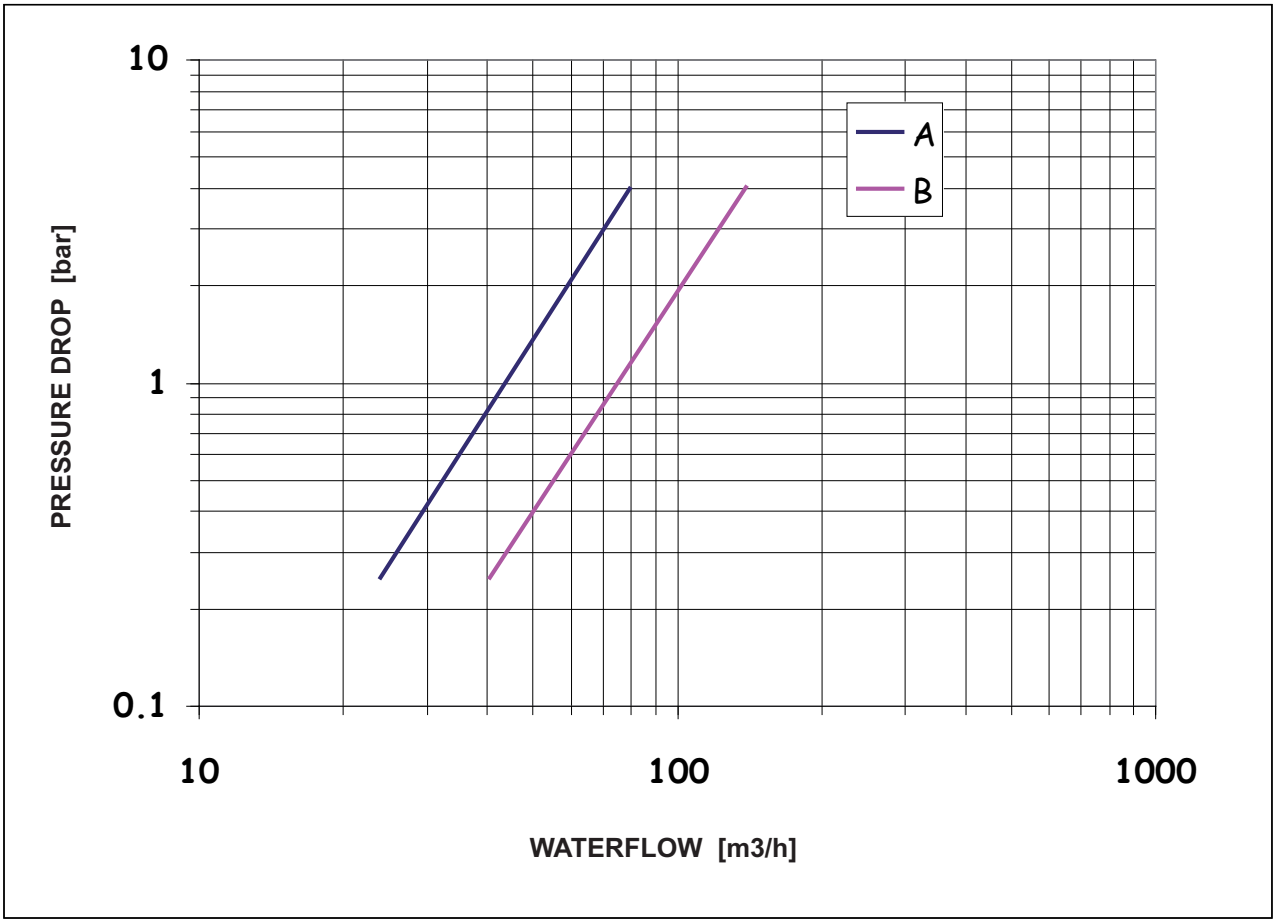
Pressostatic valve with grey cast iron body.
It's used for regulating the flow of water as a function of the condensing pressure, maintaining it constant during operation.
When the refrigeration plant is stopped, the cooling water flow is shut off automatically.
The valve is selected for a thermic drop of 10°C and tested by Climaveneta during the unit's test.

Recommended for applications with low temperature water, for example groundwater, where it's request the condensation pressure's control and it's possible to work with variable flow on the rejection circuit.

On the graph below:

FOCS2-W/CA 1301-9604
Line (A) shows the pressure drops on the pressostatic valve for FOCS2-W/CA sizes 1301-1401-1601-2802-3202.
Line (B) refers to all other sizes.

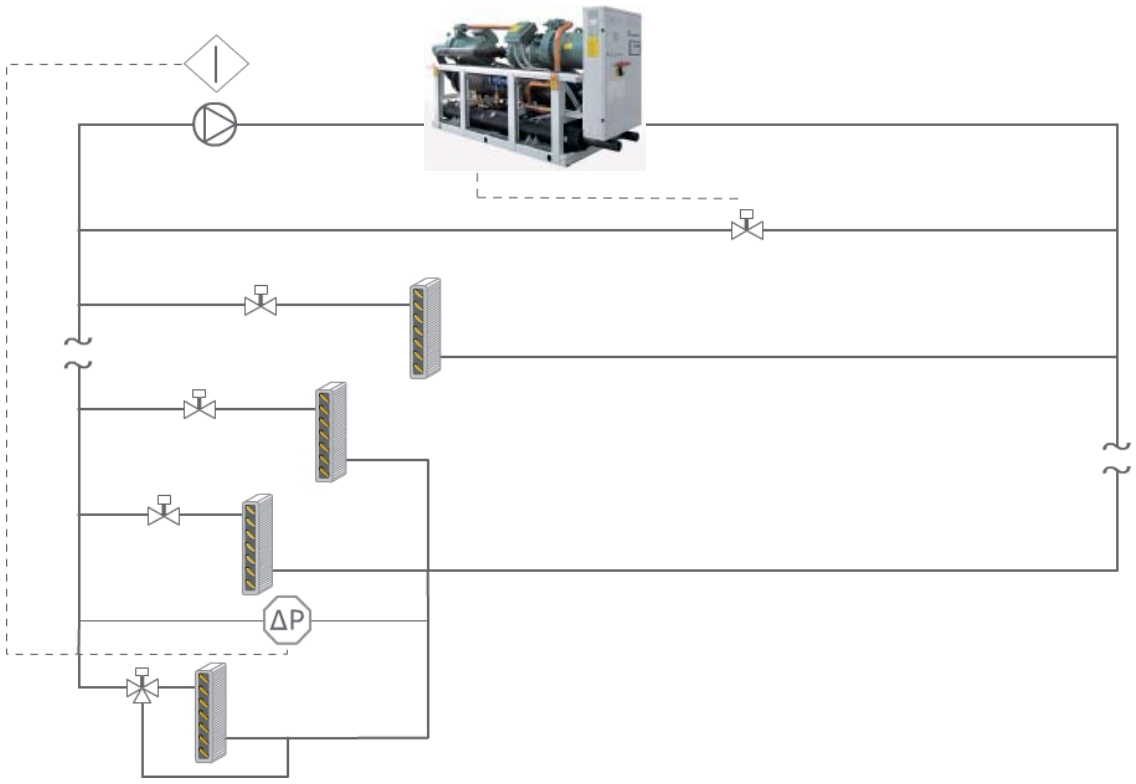
FOCS2-W/CA-E 1301-8404
Line (A) shows the pressure drops on the pressostatic valve for FOCS2-W/CA-E 1301-1401-1601-2802-3202-6004-6404-6804 (circuits with 160HP compressors);
Line (B) refers to FOCS2-W/CA-E 1801-2101-2401-2701-3001-3602-4202-4802-5402-6002-6804 (circuits with 180HP compressors) -7204-7804-8404;



11. VARIABLE FLOW HYDRONIC GROUP (optional)

11.1 VPF systems: plants designed with a single variable flow hydraulic circuit

The energy consumption associated with fluid circulation weighs heavily on the total operating costs of a large Installation, especially when the units work at part load, and even more, when they are in stand-by. Under these conditions, although the power absorbed by the compressors and fans is reduced, the power consumed for water circulation remains high.
The FOCS2-W permits reduction in system power consumption using pumps with continuous ow control by inverter. Energy savings are considerable and immediately evident, to the extent that an Δx reduction of the ow of water to be delivered to the system amounts to a proportional reduction of $(\Delta x)^3$ in the power absorbed. High or low head accessory pumps controlled by inverter can be installed. In the most advanced systems (see the simplified model shown in the diagram below), these become the pumps for the entire hydraulic circuit, and this eliminates the need to detach the primary from the secondary circuit for the purpose of water circulation throughout the entire system.
Previously this was the only choice possible in traditional systems, and imposed primarily by the need for the chiller to work with constant water flows through the evaporator.
Now, thanks to the FOCS2-W units, designers need no longer worry about this limitation.
The unit has been designed to work at maximum eficiency even with variable flows to the evaporator and independently adjust itself in order to keep the outlet water temperature constantly at the set-point entered by the user. This simplifies the design and realisation of variable flow systems and offers advantages in terms of both reductions in consumption and hydraulic circuit sizing.
In short, in addition to energy saving and consequently lower running costs, this innovative solution enables simplification in design that ensures substantial savings in initial investment costs.



Typical scheme of a variable primary flow system
(differential pressure transducer and by-pass valve at customer charge)

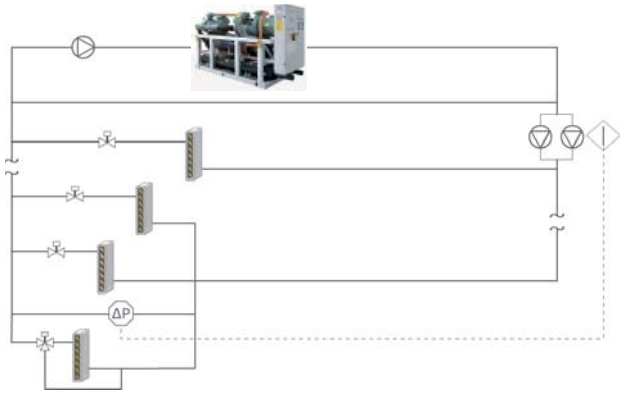
The “system VPF” option comprises:
- extensions on the controller to read the system’s pressure transducer signals (4-20 mA) and the consequent management of pumps and bypass valve (0-10 V signal)
- additional pressure transducer as extra safety device.

Pressure transducer, pumps and bypass valve at client responsability.

VARIABLE FLOW HYDRONIC GROUP (optional)

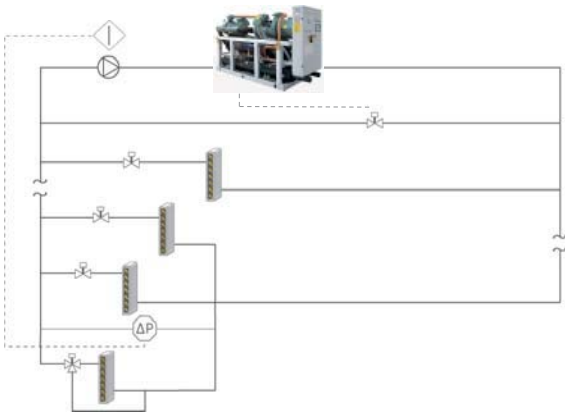
Working logic of “smart” plant with an only one variable primary flow circuit

Traditional plant



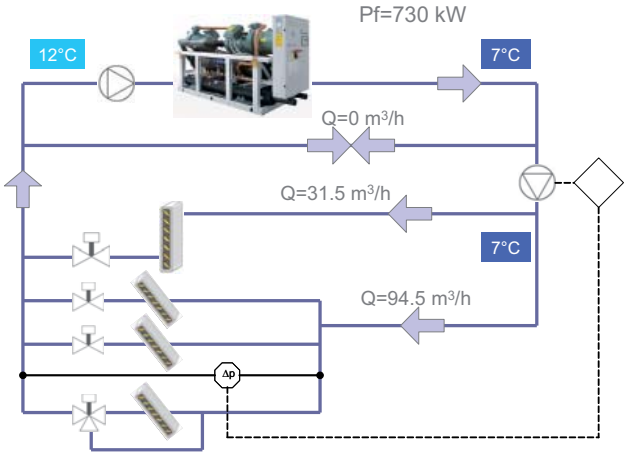
It is necessary to have a “decuple” system, which uses constant water flow through each chiller evaporator and variable water flow through each cooling coil to satisfy space loads. As each two-way valve adjusts the ow of chilled water through the coil to satisfy the existing load, the distribution pump responds by regulating the amount of chilled water delivered. Water flows through the bypass in either direction as needed to balance the system.

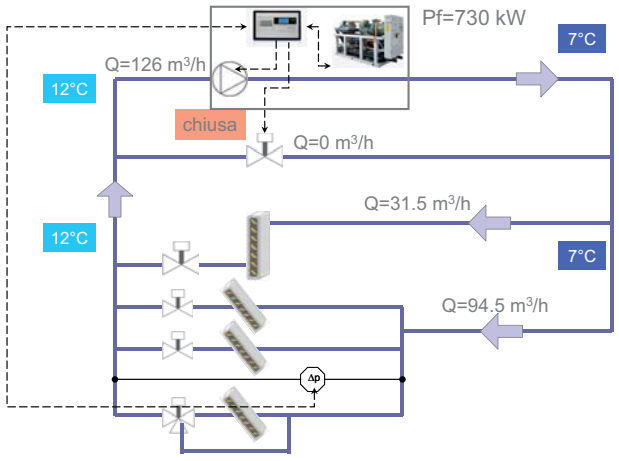
“Smart” plant



There is an only one variable primary flow circuit, which varies water flow throughout the entire system – that is, through the evaporator of the operating chiller as well as through the cooling coils. Two-way control valves and a bypass valve are required; the bypass valve ensures that the amount of the flow that returns to the operating chiller(s) never falls below the minimum limit.

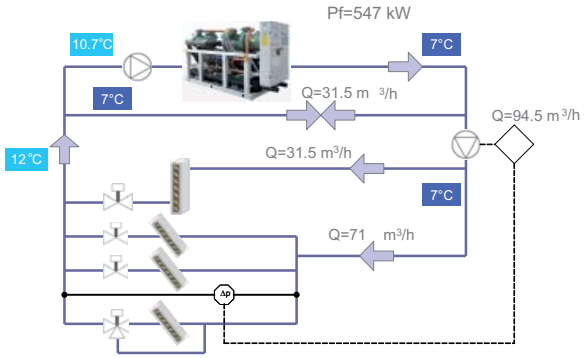
Situation 1. 100% cooling capacity

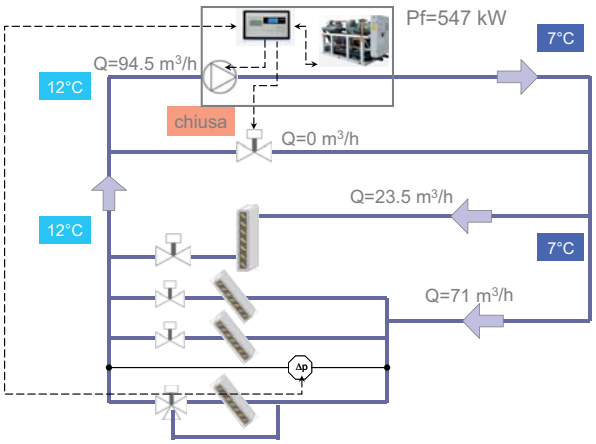




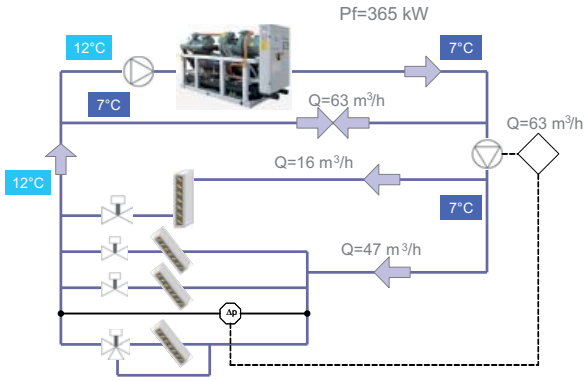
VARIABLE FLOW HYDRONIC GROUP (optional)

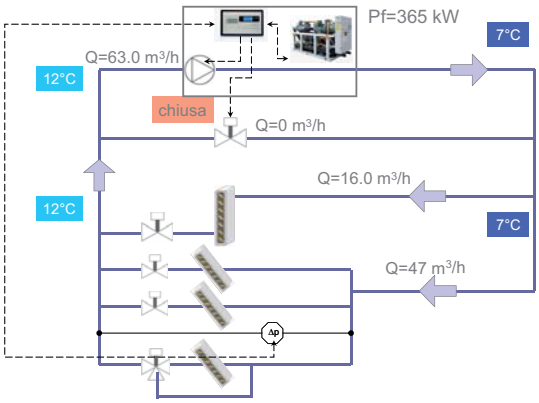
Situation 2. 75% cooling capacity



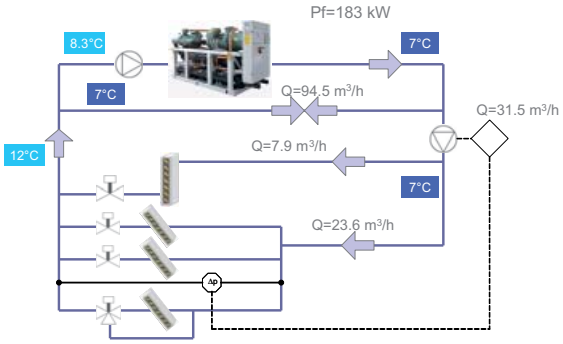


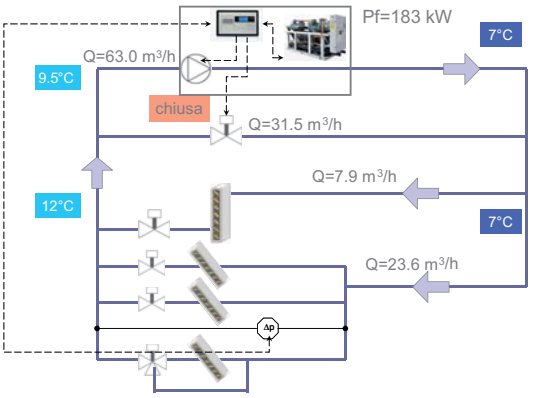
Situation 3. 50% cooling capacity





Situation 4. 25% cooling capacity



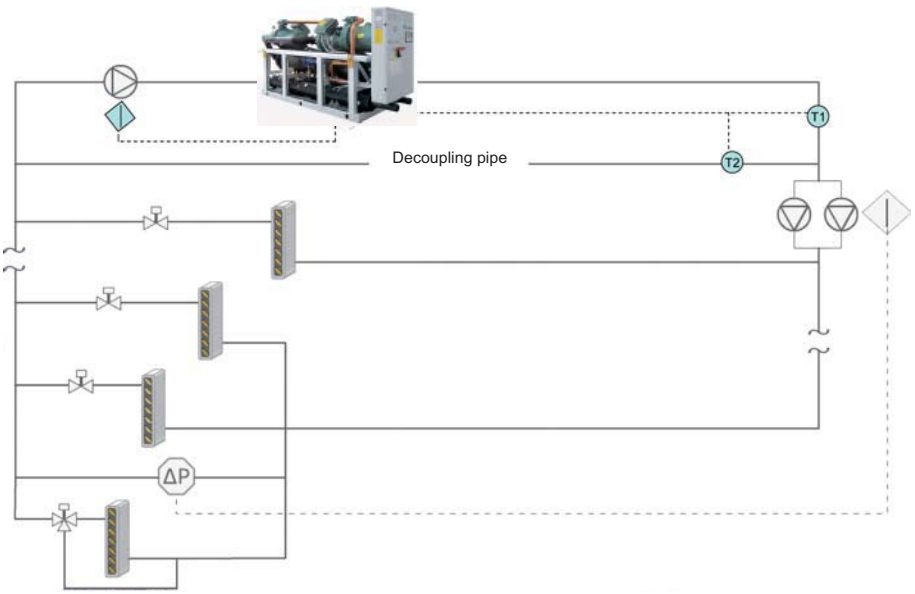


VARIABLE FLOW HYDRONIC GROUP (optional)

11.2 VPF.D systems: plants designed for variable flow, decoupled, primary and secondary circuits

Even in that cases in which is not possible to work with a single variable primary flow circuit, or in that situations in which is preferible to mantain decoupled the primary circuit (to the units) and the secondary circuit (to the plants), it's possible the primary flow on pumps controlled by the unit.
The energy savings are lower than the solution with a unique VPF system, but still important expecially when the units are in stand-by where it's possible to reduce the waterflow through the unit up to 50%.
The VPF.D systems can be easily adopted in retrofit application, where the chiller is supposed to be replaced but the plant isn't.

The regulation is up to the unit's controller, detecting the delta temperature at the primary heat exchanger: when the building's load decreases, waterflow is reduced in order to mantain a fixed delta T between the exchanger's inlet and outlet.
The VPF.D system by Climaveneta assures even the waterflow balancing between primary and secondary circuit, in order to avoid the flow inversion in the decoupling pipe.



Typical scheme of a system with decoupled variable flow primary and secondary circuits
[Temperature probes separately supplied]

VARIABLE FLOW HYDRONIC GROUP (optional)

11.3 For VPF system: indications for the bypass pipe sizing

Differential pressure transducer on the farest pipe of the plant and by-pass valve are at customer charge.
Climaveneta provides only some indications for the plants design, as a function of the minimum waterflow on the primary heat exchanger.

Minimum waterflow to technical bulletin [m3/h]	Kvs	Recommended valve	∅ Valve	Valve motor	∅ ByPass
Da 19 a 30	40	VVG41.50	DN50	SKB60	DN50 (2”)
fino a 37	49	VVF31.65	DN65	SKB60	DN65 (2"½)
fino a 60	78	VVF31.80	DN80	SKB60	DN80 (3“)
fino a 95	124	VVF31.90	DN100	SKC60	DN100 (4“)
fino a 150	200	VVF31.91	DN125	SKC60	DN125 (5“)
fino a 230	300	VVF31.92	DN150	SKC60	DN150 (6”)

2-way valve and minimum recommended bypass pipe diameter as a function of the minimum waterflow.

11.4 For VPF.D system: indications for the decoupling pipe sizing

Climaveneta provides in the table below some indications for the plants design, as a function of the nominal waterflow on the primary heat exchanger.
NOTE: temperature probes are separately supplied

Minimum waterflow to technical bulletin [m3/h]	∅ Decoupling pipe
Da 25 a 40	2"½
fino a 60	3"
fino a 100	4"
fino a 150	5"
fino a 225	6"
fino a 375	8"

Minimum decoupling pipe diameter as a function of the minimum waterflow

Climaveneta S.p.A.
Via Sarson 57/c
36061 Bassano del Grappa (VI)
Italy
Tel +39 0424 509 500
Fax +39 0424 509 509
info@climaveneta.com
www.climaveneta.com

Climaveneta France
3, Village d'Entreprises
ZA de la Couronne des Prés
Avenue de la Mauldre
78680 Epône
France
Tel +33 (0)1 30 95 19 19
Fax +33 (0)1 30 95 18 18
info@climaveneta.fr
www.climaveneta.fr

Climaveneta Deutschland GmbH
Lyrenstraße 13
44866 Bochum
Germany
Tel +49 2327-95428-0
Fax +49 2327-95428-99
info@climaveneta.de
www.climaveneta.de

Climaveneta España - Top Clima
Londres 67, 1 4
08036 Barcelona
Spain
Tel +34 934 195 600
Fax +34 934 195 602
topclima@topclima.com
www.climaveneta.com

Climaveneta Chat Union Refrig. Equipment Co Ltd
88 Bai Yun Rd, Pudong Xinghuo
New dev. zone 201419 Shanghai
China
Tel 008 621 575 055 66
Fax 008 621 575 057 97

Climaveneta Polska Sp. z o.o.
Ul. Sienkiewicza 13A,
05-120 Legionowo,
Poland
Tel +48 22 766 34 55-57
Fax +48 22 784 39 09
info@climaveneta.pl
www.climaveneta.pl

Climaveneta Climate Technologies (P) Ltd
#3487, 14th Main, HAL 2nd stage,
Indiranagar, Bangalore 560008
India
Tel:+91-80-42466900 - 949,
Fax: +91-80-25203540
sales@climaveneta.in

Climaveneta Powermaster ltd
Unit 6, St Clare Business Park
Holly Road – Hampton Hill
Middlesex – TW12 1PZ
U.K.
Tel: +44 (0) 20 8783 1008
Fax: +44 (0) 20 8783 1009
response@climaveneta.co.uk
www.climaveneta.co.uk