Technical Bulletin

BT14F008GB-00

ELFOEnergy Extended Inverter

Air cooled inverter heat pump for outdoor installation

WSAN-XIN 21-171 RANGE

PREMIUM Version

Nominal heating capacity **(A7/W45) from 5 to 32 kW**
Nominal cooling capacity **(A35/W7) from 4 to 29 kW**

EXCELLENCE Version

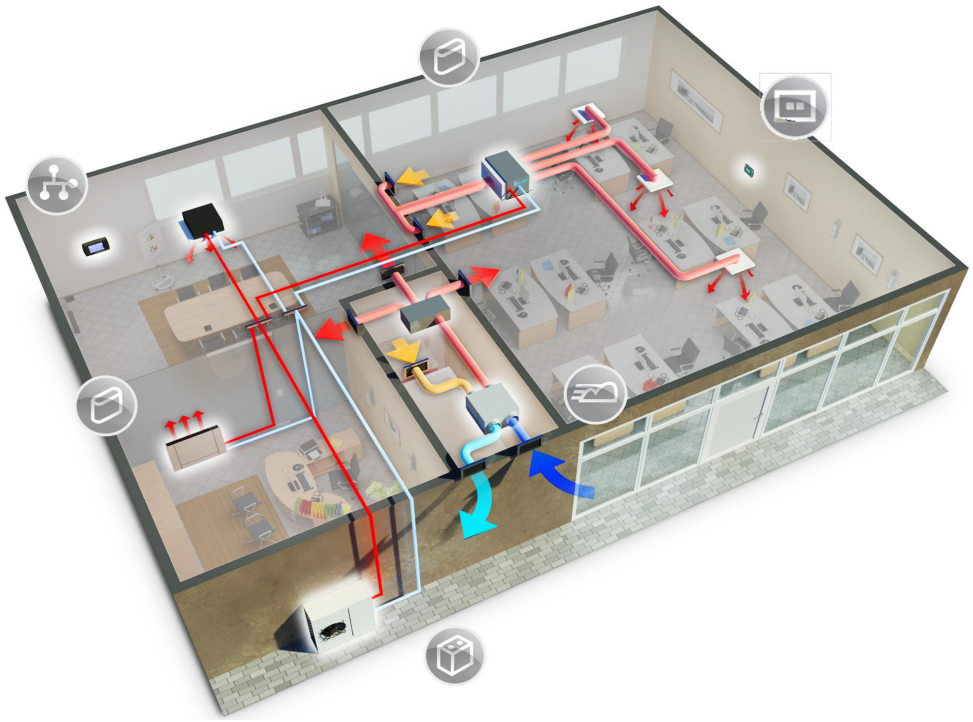
Nominal heating capacity **(A7/W45) from 5 to 49 kW**
Nominal cooling capacity **(A35/W7) from 4 to 49 kW**

- **HIGH SEASONAL EFFICIENCY**
- **INVERTER DC TECHNOLOGY**
- **100% SILENT OPERATION**
- **COMPACT DIMENSIONS**

Clivet is taking part in the EUROVENT certification programme up to 1.500 kW. The products concerned appear in the certified products list of the EUROVENT www.eurovent-certification.com site.

ELFOSystem OFFICE

ELFOEnergy Extended Inverter is the heart of ELFOSystem that Clivet has designed for light commercial



System values

Energy efficiency and Confort

A single system that guarantees comfort all year round:

- high energy efficiency at partial load with inverter technology
- high room comfort levels with air renewal and purification
- use resources suited to the building's requirements;

Complete management of the system

Single control that interacts with all the components installed by checking the operating conditions of each device, thereby optimizing consumption to reach the desired comfort.

Simpler system

- industrialised solution for quick and expert installation
- Installation and adjustment errors exclusion
- Wirings and connections are clear and preconfigured
- Maintenance easiness

Application flexibility

Flexible system, since it can be adapted to systems with radiant panels, terminal units or mixed systems

A single smart system

A single, intelligent system with all the elements for year-round comfort

- Heating
- Cooling
- Fresh air renewal and purification

System components

ELFOEnergy Extended Inverter

- Heat pump at high seasonal efficiency
- Inverter technology
- 100% silent operation
- Compact dimensions

ELFOControl²

- Advanced control system to manage the operation of the whole flat
- Optimisation of performance and operation
- Simply to use and complete system management

ELFOFresh²

- Energy-recovery based room ventilation and purification
- Active thermodynamic recovery
- Electronic filtering
- Summer dehumidification
- FREE-COOLING

Fan coil units

- Wide range of room terminals to adapt to any installation requirement, with temperature control per room
- Compact design and small size
- Continuous speed variation
- Homogenous temperature
- Reduced consumptions

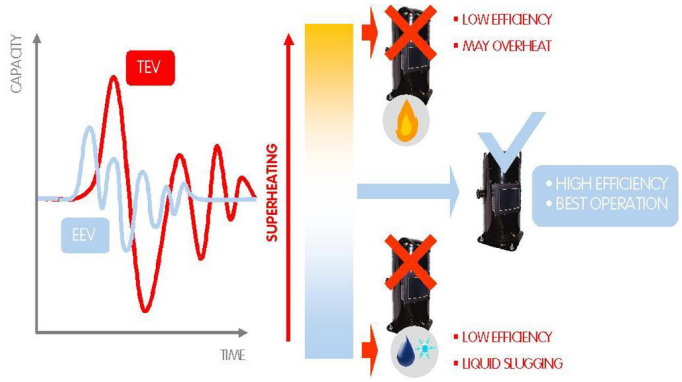
Advanced technology and benefits

Inverter compressor

The inverter compressor can continuously modulate the cooling capacity from 40% to 100%.

This allows the delivered capacity to be set according to the demand on the system. Very high efficiency values can be achieved, especially under load staging conditions that coincide with most of the operating time.

Thermostatic electronics



The thermostatic electronic expansion valve (TEE) adapts quickly and precisely to the effective load required for use, permitting a stable and accurate adjustment and optimal operation of the compressor.

There is also an additional increase in efficiency in comparison to traditional thermostatic mechanical valves (TEM) and a longer compressor life.

Domestic hot water production

ELFOEnergy Extended Inverter heat pumps can produce domestic hot water up to outdoor temperatures of -10°C. The temperature of the water produced can reach 55°C even during the summer when outdoor temperatures reach 40°C. This allows using heat pumps throughout the year and to perfectly be adapted either to configurations of systems with radiant panels and terminal units or to new or renovated buildings.

To ensure a better production efficiency and so reduced operation costs, thanks to the experience on the monitored systems, Clivet recommends defining the set point of the domestic hot water between 48-50°C.

Small size and simplified maintenance

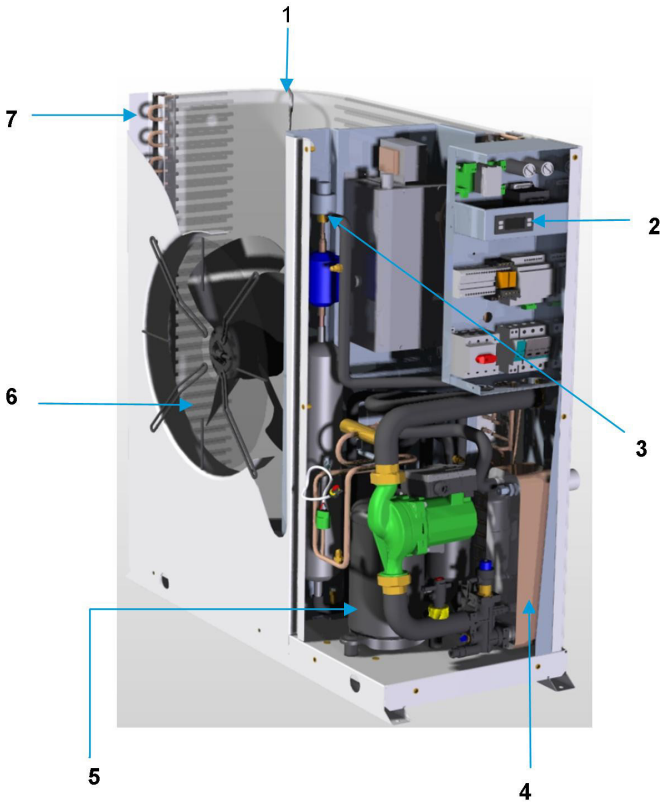
For ideal operational flexibility

Positioning outdoor units is always a critical aspect when installing systems in terms of comfort. Units with a compact size are essential to contain their aesthetic impact and increase their adaptability.

ELFOEnergy Extended Inverter is a compact unit with a simple design and takes up very little space: it is specifically designed to adapt to the aesthetic features of any building while still allowing easy access to all its internal components, thereby simplifying maintenance.

Special design features

1. The outdoor air probe allows setting the ideal climate in relation to environmental conditions
2. The built-in display shows all the operating parameter settings
3. The Electronic Thermostat Optimises the operation conditions of the refrigeration circuit
4. The plate heat exchanger maximises the thermal efficiency thanks to large exchange surfaces
5. The Inverter DC Compressor allows high seasonal efficiency thanks to the modulation
6. The optimized fan profile guarantees extremely quiet operation in every operating mode. The fan varies its speed according to the conditions, increasing its quiet operation.
7. The Hydrophilic Battery ensures a better cleaning maintaining thermal exchange efficiency and reduced defrost time



100% silent operation

For a superior comfort

Beyond increasing the efficiency of the unit, the special constructive features of ELFOEnergy Extended Inverter minimise the sound level making it particularly silent.

Thanks to the automatic modulation of the power capacity, the Inverter DC Compressor provides only the heat energy required by the system, therefore when the need decreases silence increases.

This advantage is greater during the night, when the energy requirement is minimal but silence is essential.

Thanks to the dynamic modulation of the speed in relation to the conditions, the fan reduces electric consumptions and optimises the operation of the refrigeration circuit in all use conditions, further increasing its silence.

Intelligent energy management

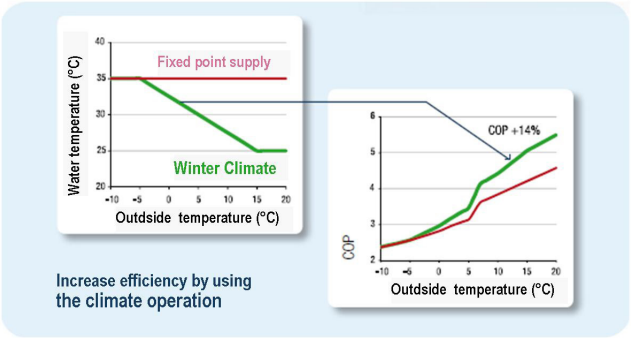
The Extended Inverter electronic control allows producing energy in the required quantity and in the most efficient and effective way in relation to the outdoor conditions and requirements of the building.

Everything IS UNDER CONTROL

The electronic control with built-in display the unit allows defining the operation parameters with maximum simplicity. Once set, the control manages automatically the operation of the unit.

- setting the supply water set point
- climate compensation
- time schedule
- summer/winter operating mode management
- auxiliary heater management
- domestic hot water control (with CMACSX option)

Outdoor climatic compensation



The water temperature for the system is adjusted automatically in relation to the real requirements of the building and outdoor air temperature, increasing the seasonal energy efficiency.

Remote control

The RCTX remote control, equipped with an easy to read wide display, allows to program the plant supply temperature in a simple way, using only 4 buttons.

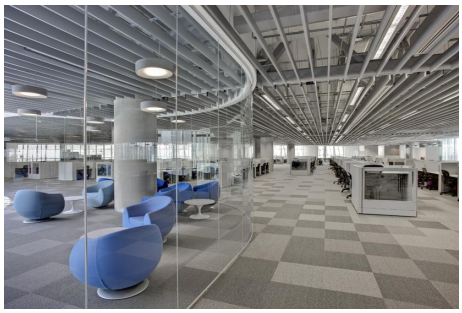
- The device can also:
  - control the unit's operation
  - activate the circulation of the system's water
  - set the unit set point water temperature according to time bands
- The RCTX also works in "remote control", making it even easier to configure and control the unit's operation. It can:
  - set the ON/OFF control and mode change (heating/cooling)
  - read the information detected by the device installed on board the unit, as the operation status, parameters and alarms.

PREMIUM and EXCELLENCE Version

Business oriented

All ELFOEnergy Extended Inverter models are featured by high energy performance at partial load and then by high seasonal efficiency.

With two versions available, the PREMIUM and the EXCELLENCE, the best solution can be selected, considering the initial investment cost and the system's entire life cycle.



Version: Premium

The PREMIUM version provides excellent performance at partial load thanks to the modulation of the capacity supplied with the inverter technology applied to the compressor. This means it is economically competitive with heat pumps with ON/OFF technology.

It is mainly designed, therefore, for installations focusing on the initial investment.

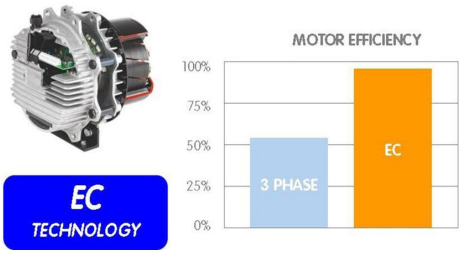
Version: Excellence

The EXCELLENCE Version differs from the PREMIUM Version as it employs DC circulators and fans, thereby allowing for extremely high energy seasonal efficiency.

Fans and circulators are both operated by EC motors, which automatically adjust their capacity as the system's load changes. This ensures optimal efficiency in every operating mode and saves up to 20% of the annual energy needs.

This allows for:

- Maximum savings on running and maintenance costs.
- Upgrade of the building's energy class and, therefore, increased value
- Effective use in applications with a highly variable power demand (offices, industrial and process applications).



EXCELLENCE Version Size 21-71: DC circulator

EXCELLECE Version Size 81-121: DC circulator + Ecobreeze fan

EXCELLENCE Version Size 131-171: ON/OFF pump + Ecobreeze fan

Standard unit technical specifications

Compressor

Size 21-31-41

Inverter controlled rotary-type hermetic compressor equipped with a motor protection device for overheating, overcurrents and excessive temperatures of the supply gas. It is installed on anti-vibration mounts and it is equipped with oil charge.

An oil heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops.

Size 51-171

Inverter controlled scroll-type hermetic compressor equipped with a motor protection device for overheating, overcurrents and excessive temperatures of the supply gas. It is installed on anti-vibration mounts and is equipped with oil charge.

An oil heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops.

Structure

Supporting structure made with zinc-magnesium sheet metal that ensures excellent mechanical features and high long-term resistance against corrosion.

base made from galvanized steel plate painted with polyester powder paint, RAL 9001.

Panelling

Zinc-magnesium external panelling that ensures superior resistance to corrosion for outdoor installation and eliminates the need for periodical painting. The panels can be easily removed to fully access internal components and are lined with sound-proof material on the inside to contain the unit's sound levels.

Internal exchanger

Direct expansion heat exchanger with braze welded stainless steel INOX AISI 316 plates and complete with external thermal/anti-condensation insulation.

The exchanger is complete with:

- antifreeze heater to protect the water side exchanger, preventing the formation of frost if the water temperature falls below a set value.

External exchanger

Direct expansion finned coil exchanger made with copper pipes placed on staggered rows mechanically expanded to better adhere to the fin collar. The fins are made from aluminium with a hydrophilic treatment and a corrugated surface. They are appropriately distanced to ensure the maximum heat exchange efficiency.

For PREMIUM Version Size 21-141 and EXCELLENCE Version Size 21-121, the unit is fitted as standard with coil protection grills.

Fan

PREMIUM Version Size 21-141 and EXCELLENCE Version Size 21-71:

Propeller fans with aluminium pressure die-cast blades, directly driven by single-phase external rotor electric motor complying with VDE 0530/12.84, complete with thermal protection, IP 54 class according to DIN 40 050 norm. The impellers are housed in aerodynamically shaped nozzles to increase the efficiency and minimize the sound level, and protected by fan guards.

EXCELLENCE Version Size 81-171:

Axial fans with sickle profile blades terminating with "Winglets", directly coupled to the electronic controlled motor (IP54), driven by the magnetic switching of the stator. The brushless technology and the special supply increase both the life expectancy and the efficiency. As a result the electric consumption is reduced up to 50%. Fans are housed in aerodynamically shaped structures to increase efficiency and reduce noise level. The assembly is protected by accident prevention guards. Supplied with variable speed control.

Hydronic assembly

PREMIUM Version Size 21-141:

Circulator with cast-iron body and impeller, equipped with single-phase electric motor with IP44-protection complete with thermoformed insulated casing. All connections are screwed.

EXCELLENCE Version Size 21-121:

Circulator with cast-iron body and impeller, equipped with direct current Brushless motor with IP44-protection complete with thermoformed insulated casing. All connections are screwed.

EXCELLENCE Version Size 131-171:

Centrifuge electropump, with AISI-type 304 stainless steel body and impeller. The electropump is equipped with three-phase electric motor with IP55-protection and complete with thermoformed insulated casing. For size 131-141-151 the connections are screwed. For size 161-171 the connections are Victaulic type.

Refrigeration circuit

Refrigeration circuit with:

- electronic expansion valve
- 4-way reverse cycle valve
- filter dryer
- liquid receiver
- inlet liquid separator
- pressure probes
- low pressure safety
- high pressure safety

Drain pan

PREMIUM Version Size 21-141 and EXCELLENCE Version Size 21-121

Thermoformed ABS condensate collection tray provided with drain circuit and anti-freeze electric resistance prevents the ice from forming inside; it activates automatically in relation to the outdoor air temperature.

Electrical panel

The capacity section includes:

- fans and auxiliary circuit fuse
- compressor fuses
- isolating transformer for auxiliary circuit power supply

The control section includes:

- compressor overload protection and timer
- relay for remote cumulative fault signal
- defrosting cycle optimization
- condenser control
- Set point compensation with outdoor temperature
- double set-point management
- auxiliary generator control

The control keypad includes:

- Multifunction keys for ON/OFF control, cold and hot operation mode, display and alarm reset, daily or weekly schedule.
- Display

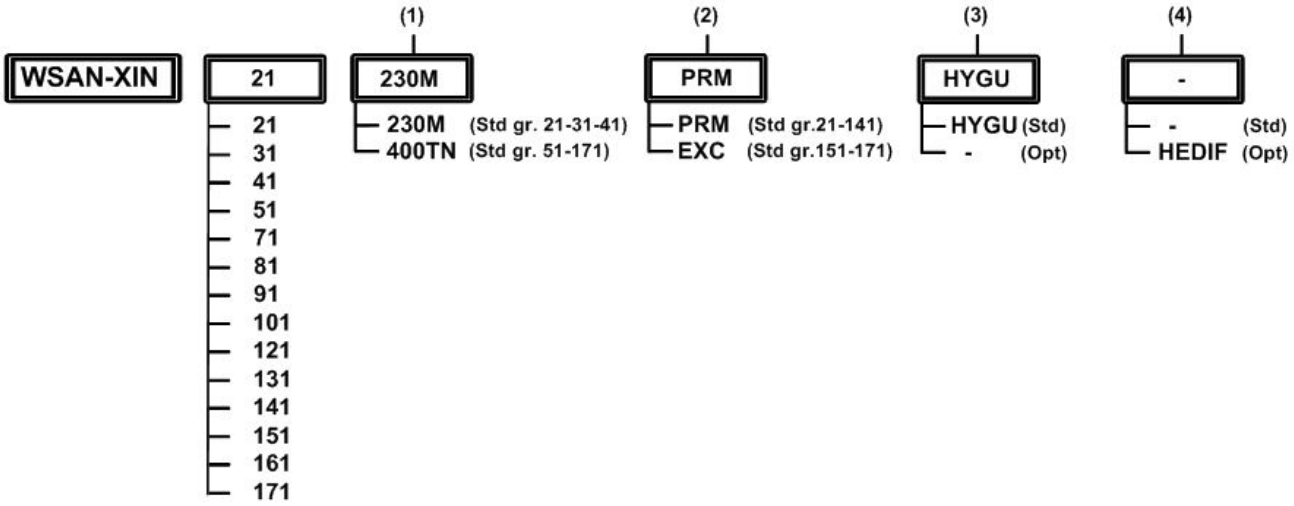
Water circuit

- water side safety valve
- drain valve
- Steel mesh strainer
- flow switch (Size 21-71)
- differential pressure switch (Size 81-171)

Accessories

- AMRX - Rubber antivibration mounts
- RCTX - Remote control
- CMACSX - Domestic hot water module
- CMSC2X - Serial communication module with RS485 serial converter kit
- KTFLX - Hose kit for connection to the chiller/heat pump
- ACS500X - 500-litre domestic hot water storage tank
- ACS300X - 300-litre domestic hot water storage tank
- ACS5SX - 500-litre domestic hot water storage tank with solar coil
- ACS3SX - 300-litre domestic hot water storage tank with solar coil
- 3DHWX - 3-way valve for domestic hot water
- KSAX - 100-litre circuit breaker
- KG4UP - Management kit up to 4 units in parallel
- PGFCX - Finned coil protection grill

Unit configuration



1) Voltage
Power supply 230/1/50 (230M)
From Size 21 to 41

Standard

From Size 51 to 71:
Optional

Supply voltage 400/3/50+N (400TN)
From Size 51 to 171:

Standard

2) Version

Version PREMIUM (PRM)
From Size 21 to 141

ON/OFF circulator and fan with phase cutting

Version EXCELLENCE (EXC)
From Size 21 to 71:

DC circulator

From Size 81 to 121:
DC circulator and Ecobreeze fan

From Size 131 to 171:
ON/OFF pump and Ecobreeze fan

3) Utility side hydronic unit

User side hydronic assembly (HYGU)

Standard

User side hydronic assembly: not required (-)

4) Type of fans

Standard fan (-)

Diffuser for high efficiency axial fan (HEDIF)
From Size 131 to 171

Only for EXCELLENCE Version

Seasonal efficiency in accordance with EN 14825

To evaluate the benefits of the heat pump in terms of lower consumption of primary energy, CO2 emissions and operating costs, the seasonal coefficients of performance must be considered (SCOP and SEER).

Unlike the COP and EER values, which are normally provided by the manufacturers, and relate only to precise and specific operate conditions, the seasonal coefficients of performance summarize the unit performance in a single value considering the temperature variations of the fresh air, the produced water and the degree of partialisation of the compressor.

EN 14825, defines the calculation method for the heat pumps.

The seasonal heating efficiency SCOP for an air-water heat pump, according to EN14825, is based on four variables:

Project temperature:
the standard divides the European territory into 3 climatic zones Colder, Average and Warmer and has defined a representative city for each of them: Helsinki, Strasbourg and Athens, each characterised by a design temperature of –22°C, -10°C, 2°C, respectively.

User side water temperature:
the standard defines 3 types of distribution characterised by different user side water temperatures:

- Radiant panel (Twater at a fixed point equal to 35°C or variable based on the fresh air temperature)
- Fan coil (constant Twater = 45°C or variable according to the outdoor air temperature)
- Radiators (Twater at a fixed point equal to 55°C or variable based on the fresh air temperature)

DEGREE OF COMPRESSOR PARTIALISATION
the standard uses suitable corrective coefficients to account for the inefficiencies at partial loads in the case of heat pump "On-Off" operation

Outdoor air temperature occurrence frequency
the number of hours of occurrence for each outdoor air temperature value, in degrees, during the heating season.

The SCOP is calculated using the Bin Method, as an weighted average efficiency (COP) of the heat pump, based on the occurency frequency of the fresh air temperature. The standard foresees that the calculation must be made for all climatic zones and for all climatic zones for all types of distribution defined by the standard.

Due to the variation in temperature of the produced water based on the temperature of the fresh air and DC inverter technology, ELFOEnergy Extended Inverter is able to modulate its capacity, adapting itself to the real requirement of the building and the resulting increase of efficiency at partial loads.

The following table shows the seasonal coefficient of performance (SCOP) for **ELFOEnergy Extended Inverter PREMIUM Version** referred to the climatic zones and the type of distribution, according to the standard proposal EN 14825:

				SCOP		
Climatic zone	**Place**	**T°C Project**	**Size**	**Radiant panels**	**Terminal units**	**Radiators**
Average	**Strasbourg**	-10	21	3,72	3,25	–
			31	3,62	3,22	–
			41	3,68	3,30	–
			51	3,80	3,36	–
			71	3,88	3,37	–
			81	3,21	2,7	2,01
			91	3,36	2,89	2,17
			101	3,61	2,9	2,17
			121	2,97	2,59	1,91
			131	3,25	2,73	2,09
			141	3,49	2,79	2,07
Warmer	**Athens**	2	21	4,92	4,48	4,09
			31	4,79	4,43	4,06
			41	4,81	4,47	4,15
			51	5,02	4,59	4,24
			71	5,19	4,58	4,35
			81	3,96	3,25	2,42
			91	4,08	3,4	2,54
			101	4,27	3,42	2,56
			121	3,65	3,13	2,28
			131	3,92	3,27	2,42
			141	4,14	3,41	2,54

Seasonal efficiency in accordance with EN 14825

The seasonal efficiency (SEER) in cooling mode of an air-water heat pump depends on four variables:

Project temperature:
the EN 14825 standard takes into account just one sample location.

User side water temperature:
the standard defines 2 types of distribution with different water temperatures on the user side

- Radiant panel (constant Twater = 18°C).
- Fan coil (constant Twater = 45°C or variable according to the outdoor air temperature)

DEGREE OF COMPRESSOR PARTIALISATION
the EN 14825 standard takes into account partial load inefficiencies with suitable corrective coefficients if the heat pumps operate in "On-Off" mode.

Outdoor air temperature occurrence frequency
the number of hours of occurrence for each outdoor air temperature value, in degrees, during the heating season.

The SEER is calculated based on the "Bin Method", as the weighted average of the chiller's efficiency (EER) on the occurrence frequency of the outdoor air temperature. According to the standard, the calculation must be made for both types of distribution defined by the standard itself.

The following table shows the seasonal coefficient of performance (SEER) for **ELFOEnergy Extended Inverter PREMIUM Version.**

	Size										
SEER	**21**	**31**	**41**	**51**	**71**	**81**	**91**	**101**	**121**	**131**	**141**
Radiant panels	4,49	4,90	5,02	5,39	5,44	5,01	5,33	5,53	4,96	5,01	5,45
Terminal units	3,35	3,35	3,43	3,81	3,83	4,06	4,07	4,06	3,65	3,76	3,92

The seasonal efficiency values defined in EN 14825 allow for a quick assessment of the unit's performance.

For example, let us assume that a 200 m2 house in Milan, with an annual heating requirement of 50 kWh/m2 (equal to 10,000 kWh/year), uses a size 41 ELFOEnergy Extended Inverter with a SCOP of 3.68. This means that the overall power consumption during winter will be 10,000 kWh / 3.68 = 2,717 kWh.

PREMIUM VERSION

General technical data

Size			21	31	41	51	71	81	91	101	121	131	141
Radiant panels													
Heating													
Heating capacity	1	kW	5,41	6,81	8,70	11,9	14,3	16,5	18,4	19,6	23,8	26,4	30,3
COP (EN 14511:2011)	2		4,00	3,98	3,93	3,98	3,96	3,72	3,70	3,76	3,58	3,67	3,65
Cooling													
Cooling capacity	5	kW	4,25	6,34	8,07	10,3	13,0	15,9	17,6	19,4	25,4	28,3	32,1
EER (EN 14511:2011)	6		3,73	3,65	3,73	3,67	3,72	3,52	3,62	3,53	3,43	3,43	3,34
ESEER	7		5,14	5,53	5,55	5,28	6,02	5,48	5,73	5,89	5,22	5,24	5,74
Water flow-rate	5	l/s	0,20	0,30	0,39	0,49	0,62	0,76	0,84	0,93	1,21	1,35	1,53
Useful pump discharge head	5	kPa	53	43	48	42	45	70	65	60	55	46	32
ELFORoom and ELFOSpace terminal units													
Heating													
Heating capacity	3	kW	5,19	6,54	8,25	11,5	13,8	16,2	18,5	20,4	25,8	28,2	31,5
COP (EN 14511:2011)	2		3,12	3,14	3,11	3,15	3,12	2,98	2,97	2,85	2,89	2,88	2,77
Cooling													
Cooling capacity	8	kW	3,88	5,24	6,11	8,84	11,7	15,5	16,8	19,5	24,0	26,6	29,1
EER (EN 14511:2011)	6		2,55	2,57	2,63	2,64	2,63	2,62	2,64	2,33	2,33	2,32	2,18
ESEER	9		3,82	3,71	3,47	4,06	4,43	4,17	4,36	4,3	3,84	4,03	4,23
Water flow-rate	8	l/s	0,19	0,25	0,29	0,42	0,56	0,74	0,80	0,93	1,15	1,27	1,39
Useful pump discharge head	8	kPa	54	48	59	51	57	70	67	60	59	51	43
Radiators													
Heating													
Heating capacity	4	kW	5,05	6,39	8,03	11,0	13,3	15,2	17,7	19,9	24,0	26,6	29,9
COP (EN 14511:2011)	2		2,52	2,55	2,47	2,50	2,47	2,31	2,34	2,25	2,17	2,25	2,18
Water flow-rate	5	l/s	0,12	0,15	0,19	0,26	0,32	0,36	0,42	0,48	0,57	0,64	0,71
Useful pump discharge head	5	kPa	58	56	64	64	95	86	84	81	83	81	79
Compressor													
Type of compressors			Rotary inverter dc			Scroll inverter DC							
Refrigerant			R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
No. of compressors		No	1	1	1	1	1	1	1	1	1	1	1
Oil charge		l	0,35	0,35	0,87	1,70	1,70	1,90	1,90	1,90	1,90	1,90	1,90
Refrigerant Charge		Kg	2,0	2,1	2,0	3,4	4,6	6,0	6,0	6,0	8,7	8,7	8,7
User side exchanger													
Type of internal exchanger	10		PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water content		l	0,56	0,64	0,64	1,14	1,80	2,37	2,37	2,37	3,13	3,13	3,13
External Section Fans													
Type of fans	11		AX	AX	AX	AX	AX	AX	AX	AX	AX	AX	AX
No. of fans		No	1	1	1	2	2	1	1	1	2	2	2
Standard airflow		l/s	653	1028	1028	2056	1996	2222	2306	2444	2778	3056	3172
Installed unit power		kW	0,12	0,15	0,15	0,15	0,15	0,45	0,41	0,40	0,50	0,47	0,44
Water circuit													
Maximum water side pressure		kPa	550	550	550	550	550	550	550	550	550	550	550
Safety valve calibration		kPa	600	600	600	600	600	600	600	600	600	600	600
Min. installation water contents		l	17	20	25	33	40	50	53	57	63	68	74
Power supply													
Standard power supply			230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N

1. Entering/leaving water temperature user side 30/35°C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2013) heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2013. The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit
3. Entering/leaving water temperature user side 40/45°C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
4. Entering/leaving water temperature user side 45/55°C, Entering external exchanger air temperature 7°C (R.H. = 85%)
5. Entering/leaving water temperature user side 23/18°C, external exchanger entering air 35°C
6. EER (EN 14511:2013) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2013.The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit.
7. ESEER calculated by Clivet for radiant systems with water produced at 18°C by taking into account the load conditions and source water temperature as defined by EUROVENT for water at 7°C
8. User side entering/leaving water temperature 12/7 °C, external exchanger entering air 35°C
9. ESEER calculated by EUROVENT, for systems featuring terminal units with water produced at 7°C
10. PHE = plate exchanger
11. AX = axial fan

The heads are intended as available at the unit connections

The pressure drops of the steel mesh strainer, supplied with the unit, have been already taken into consideration

EXCELLENCE VERSION

General technical data

Size			21	31	41	51	71	81	91	101	121	131	141	151	161	171
Radiant panels																
Heating																
Heating capacity	1	kW	5,41	6,81	8,70	11,9	14,3	16,6	18,5	19,7	23,7	28,8	32,9	37,2	43,9	50,2
COP (EN 14511:2011)	2		4,19	4,12	4,09	4,05	4,07	4,08	3,95	3,91	4,13	4,08	3,95	3,80	3,80	3,74
Cooling																
Cooling capacity	5	kW	4,25	6,34	8,07	10,4	13,0	15,9	17,6	19,4	25,4	30,8	35,0	39,8	45,4	50,9
EER (EN 14511:2011)	6		3,73	3,64	3,82	3,62	3,76	3,83	3,82	3,65	3,90	3,69	3,91	3,77	3,82	3,68
ESEER	7		5,99	6,14	6,15	5,49	6,56	6,73	6,76	6,48	7,12	5,44	5,33	4,83	4,84	4,64
Water flow-rate	5	l/s	0,20	0,30	0,39	0,50	0,62	0,76	0,84	0,93	1,21	1,46	1,66	1,89	2,15	2,42
Useful pump discharge head	5	kPa	57	51	44	49	54	51	49	47	71	171	161	154	144	132
ELFORoom and ELFOSpace terminal units																
Heating																
Heating capacity	3	kW	5,19	6,54	8,25	11,5	13,8	16,2	18,6	20,5	25,8	27,2	31,9	36,7	43,0	49,3
COP (EN 14511:2011)	2		3,24	3,23	3,21	3,19	3,19	3,21	3,14	2,93	3,21	3,17	3,23	3,20	3,17	3,14
Cooling																
Cooling capacity	8	kW	3,88	5,24	6,10	8,84	11,7	15,4	16,8	19,4	24,1	28,2	32,5	38,2	43,6	49,2
EER (EN 14511:2011)	6		2,58	2,55	2,61	2,57	2,57	2,79	2,77	2,38	2,56	2,74	2,67	2,66	2,69	2,58
ESEER	9		4,41	4,07	3,86	4,17	4,81	5,01	5,14	4,70	5,13	4,14	4,00	3,69	3,66	3,55
Water flow-rate	8	l/s	0,19	0,25	0,29	0,42	0,56	0,74	0,80	0,93	1,15	1,33	1,54	1,81	2,07	2,34
Useful pump discharge head	8	kPa	58	54	51	53	56	53	51	48	74	125	146	131	116	98
Radiators																
Heating																
Heating capacity	4	kW	5,05	6,39	8,03	11,0	13,3	15,2	17,7	19,9	24,0	25,0	30,3	34,2	40,1	46,7
COP (EN 14511:2011)	2		2,60	2,61	2,54	2,53	2,52	2,46	2,44	2,31	2,35	2,39	2,55	2,51	2,49	2,52
Water flow-rate	4	l/s	0,24	0,31	0,38	0,53	0,64	0,73	0,85	0,95	1,15	0,60	0,73	0,82	0,96	1,12
Useful pump discharge head	4	kPa	55	50	44	47	54	56	54	51	74	167	179	176	171	165
Compressor																
Type of compressors			ROTARY INVERTER DC			SCROLL INVERTER DC										
Refrigerant			R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A	R410-A
No. of compressors		No	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Oil charge		l	0,35	0,35	0,87	1,70	1,70	1,90	1,90	1,90	1,90	1,90	3.30	3.30	3,60	3,60
Refrigerant Charge		kg	2,0	2,1	2,0	3,4	4,6	6,0	6,0	6,0	8,7	8,7	8,7	11	11	11
User side exchanger																
Type of internal exchanger	10		PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water content		l	0,56	0,64	0,64	1,14	1,80	2,37	2,37	2,37	3,13	3,13	3,13	3,13	4,27	4,27
External Section Fans																
Type of fans	11		AX	AX	AX	AX	AX	EC	EC	EC	EC	EC	EC	EC	EC	EC
No. of fans		No	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Standard airflow		l/s	653	1028	1028	2056	1996	2222	2306	2444	2778	4694	4694	5648	6672	6861
Installed unit power		kW	0,12	0,15	0,15	0,15	0,15	0,19	0,23	0,27	0,20	0,63	0,63	1,02	1,38	1,50
Water circuit																
Maximum water side pressure		kPa	550	550	550	550	550	550	550	550	550	550	550	550	550	550
Safety valve calibration		kPa	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Min. installation water contents		l	17	20	25	33	40	50	53	57	63	68	87	99	113	137
Power supply																
Standard power supply			230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N

1. Entering/leaving water temperature user side 30/35°C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2013) heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2013. The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit
3. Entering/leaving water temperature user side 40/45°C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
4. Entering/leaving water temperature user side 45/55°C, Entering external exchanger air temperature 7°C (R.H. = 85%)
5. Entering/leaving water temperature user side 23/18°C, external exchanger entering air 35°C
6. EER (EN 14511:2013) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2013.The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit.
7. ESEER calculated by Clivet for radiant systems with water produced at 18°C by taking into account the load conditions and source water temperature as defined by EUROVENT for water at 7°C
8. User side entering/leaving water temperature 12/7 °C, external exchanger entering air 35°C
9. ESEER calculated by EUROVENT, for systems featuring terminal units with water produced at 7°C
10. PHE = plate exchanger
11. AX = axial-flow fan, EC = axial-flow fan + EC

The heads are intended as available at the unit connections

The pressure drops of the steel mesh strainer, supplied with the unit, have been already taken into consideration

PREMIUM VERSION

Electrical data

Supply voltage 230/1/50

Size			21	31	41	51	71
F.L.A. - Full load current at max admissible conditions							
F.L.A. - Pump		[A]	0,58	0,58	0,95	0,95	1,24
F.L.A. - Total		[A]	11,99	15,13	18,98	24,91	29,48
F.L.I. - Full load power input at max admissible conditions							
F.L.I. - Pump		[kW]	0,132	0,132	0,20	0,20	0,26
F.L.A. - Total		[kW]	2,75	3,48	4,34	5,74	6,75

Power supply 230/1/50 Hz +/-10%
The pump is included in the total values calculation
for non standard voltage please contact Clivet technical office
The units are compliant with the provisions of European standards CEI EN 60204 and CEI EN 60335.

Supply voltage 400/3/50+N

Size			51	71	81	91	101	121	131	141
F.L.A. - Full load current at max admissible conditions										
F.L.A. - Pump		[A]	0,95	1,24	1,90	1,90	1,90	1,90	1,90	1,90
F.L.A. - Total		[A]	10,02	11,48	25,82	26,12	26,92	31,64	33,64	34,64
F.L.I. - Full load power input at max admissible conditions										
F.L.I. - Pump		[kW]	0,20	0,26	0,39	0,39	0,39	0,39	0,39	0,39
F.L.I. - Total		[kW]	5,74	6,75	7,47	8,47	10,07	12,65	14,95	15,95

Power supply 400/3/50 (+ NEUTRAL) +/- 10%
Maximum Phase Unbalance: 2%
The pump is included in the total values calculation
for non standard voltage please contact Clivet technical office
The units are compliant with the provisions of European standards CEI EN 60204 and CEI EN 60335.

Sound levels

Size	Sound power level								Sound pressure level	Sound power level
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
21	73	73	70	65	63	59	51	36	49	64
31	76	70	65	60	58	53	46	48	49	64
41	76	71	66	61	59	54	47	49	49	64
51	76	71	69	66	63	58	50	39	53	68
71	77	71	69	67	63	59	50	40	54	69
81	83	77	69	61	63	67	60	61	56	72
91	84	79	70	62	64	67	60	61	56	72
101	86	81	72	62	65	67	60	61	57	73
121	81	73	67	61	63	67	61	61	55	71
131	85	76	70	61	64	67	61	61	56	72
141	86	79	72	63	65	68	61	62	57	73

Sound levels refer to units with full load under nominal test conditions.
The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field.
Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2)
Data referred to the following conditions:
entering / leaving exchanger water temperature user side 12/7°C
entering / leaving exchanger water temperature source side 30/35°C

EXCELLENCE VERSION

Electrical data

Supply voltage 230/1/50

Size			21	31	41	51	71
F.L.A. - Full load current at max admissible conditions							
F.L.A. - Pump		[A]	0,58	0,58	0,58	1,30	1,30
F.L.A. - Total		[A]	11,99	15,13	18,61	23,30	29,54
F.L.I. - Full load power input at max admissible conditions							
F.L.I. - Pump		[kW]	0,07	0,07	0,07	0,14	0,14
F.L.A. - Total		[kW]	2,68	3,42	4,21	5,68	6,63

power supply 230/1/50 Hz +/-10%
The pump is included in the total values calculation
for non standard voltage please contact Clivet technical office
The units are compliant with the provisions of European standards CEI EN 60204 and CEI EN 60335.

Supply voltage 400/3/50+N

Size			51	71	81	91	101	121	131	141	151	161	171
F.L.A. - Full load current at max admissible conditions													
F.L.A. - Pump		[A]	1,30	1,30	1,37	1,37	1,37	1,37	1,40	1,80	1,80	1,80	1,80
F.L.A. - Total		[A]	10,37	11,54	25,00	25,27	26,07	30,47	32,80	30,32	31,05	34,56	37,66
F.L.I. - Full load power input at max admissible conditions													
F.L.I. - Pump		[kW]	0,14	0,14	0,31	0,31	0,31	0,31	0,68	1,00	1,00	1,00	1,00
F.L.I. - Total		[kW]	5,68	6,63	7,31	8,31	9,91	12,41	14,71	19,16	19,38	21,03	23,29

Power supply 400/3/50 (+ NEUTRAL) +/- 10%
Maximum Phase Unbalance: 2%
The pump is included in the total values calculation
for non standard voltage please contact Clivet technical office
The units are compliant with the provisions of European standards CEI EN 60204 and CEI EN 60335.

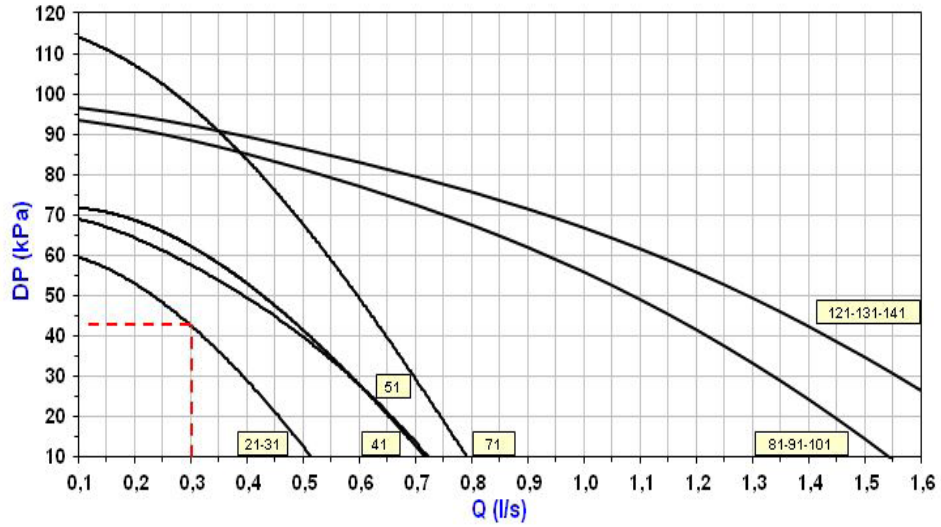
Sound levels

Size	Sound power level								Sound pressure level	Sound power level
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
21	73	73	70	65	63	59	51	36	49	64
31	76	70	65	60	58	53	46	48	49	64
41	76	71	66	61	59	54	47	49	49	64
51	76	71	69	66	63	58	50	39	53	68
71	77	71	69	67	63	59	50	40	54	69
81	83	77	69	61	63	67	60	61	56	72
91	84	79	70	62	64	67	60	61	56	72
101	86	81	72	62	65	67	60	61	57	73
121	81	73	67	61	63	67	61	61	55	71
131	85	83	75	70	78	69	63	64	63	80
141	85	83	80	79	83	75	72	61	69	85
151	88	86	81	80	84	75	72	61	70	86
161	93	91	85	85	87	78	75	65	73	89
171	94	84	85	85	87	78	75	65	73	90

Sound levels refer to units with full load under nominal test conditions.
The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field.
Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2)
Data referred to the following conditions:
entering / leaving exchanger water temperature user side 12/7°C
entering / leaving exchanger water temperature source side 30/35°C

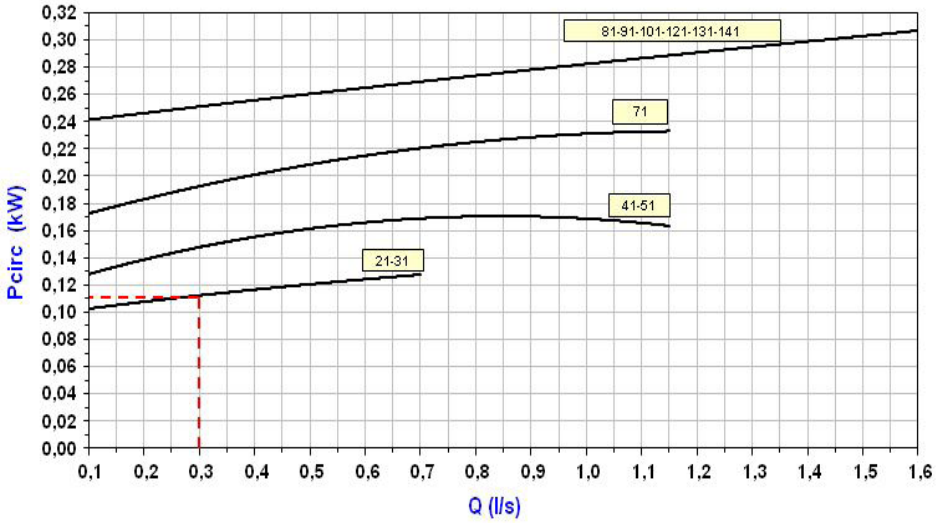
PREMIUM VERSION

Pump performance



Available pressure curves with hydronic assembly
DP [kPa] = Available pressure
Q [l/s] = water flow-rate
The heads are intended as available at the unit connections
The pressure drops of the steel mesh strainer, supplied with the unit, have been already taken into consideration

Pump absorption curves

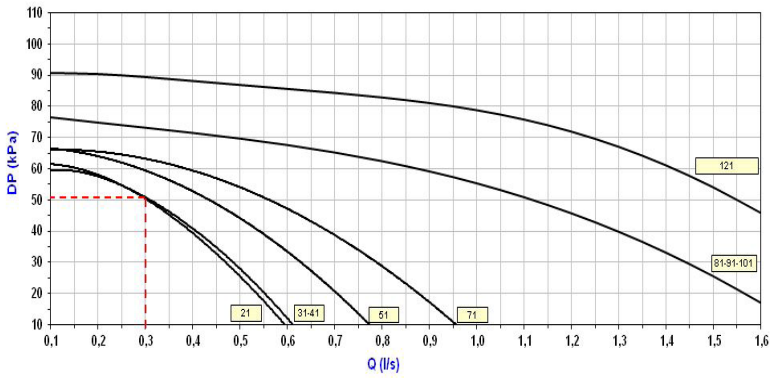


Pcirc[kW] = circulator absorbed power

Q [l/s] = water flow-rate

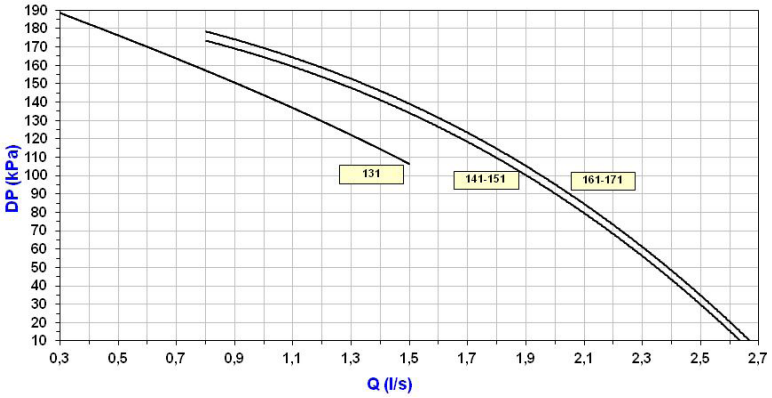
EXCELLENCE VERSION

Pump available pressure curves Size 21-121



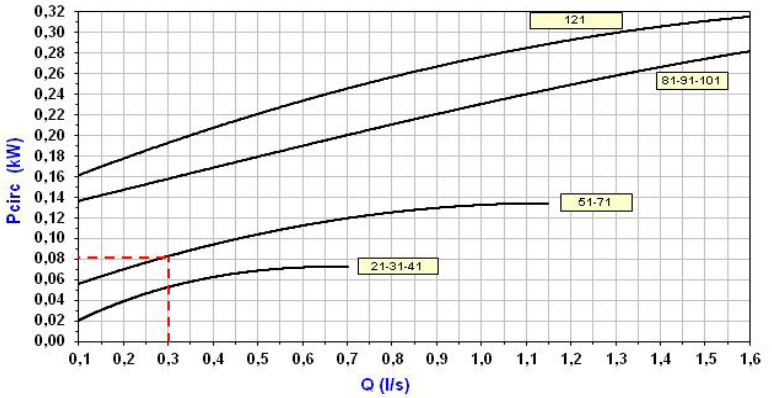
Available pressure curves with hydronic assembly
DP [kPa] = Available pressure
Q [l/s] = water flow-rate
the heads are intended as available at the unit connections
The pressure drops of the steel mesh strainer, supplied with the unit, have been already taken into consideration

Pump available pressure curves Size 131-171



Available pressure curves with hydronic assembly
DP [kPa] = Available pressure
Q [l/s] = water flow-rate
the heads are intended as available at the unit connections
The pressure drops of the steel mesh strainer, supplied with the unit, have been already taken into consideration

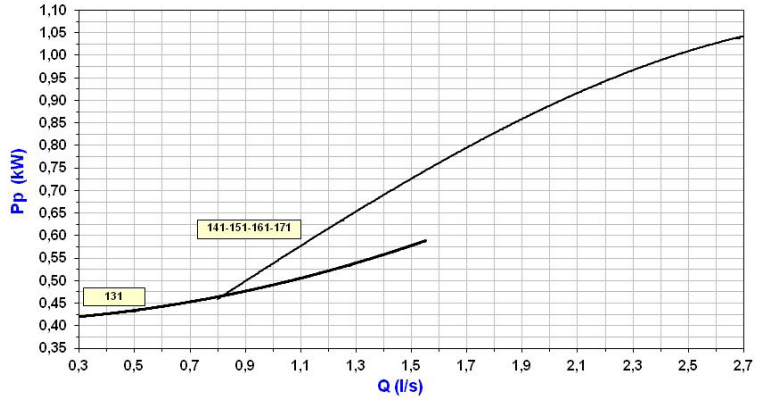
Pump absorbtion curves Size 21-121



Pcirc[kW] = circulator absorbed power

Q [l/s] = water flow-rate

Pump absorbtion curves Size 131-171



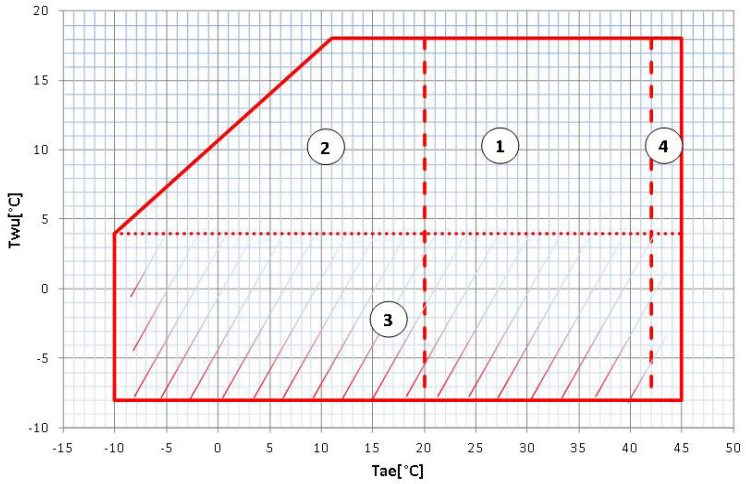
Pp[kW] = electropump absorbed power

Q [l/s] = water flow-rate

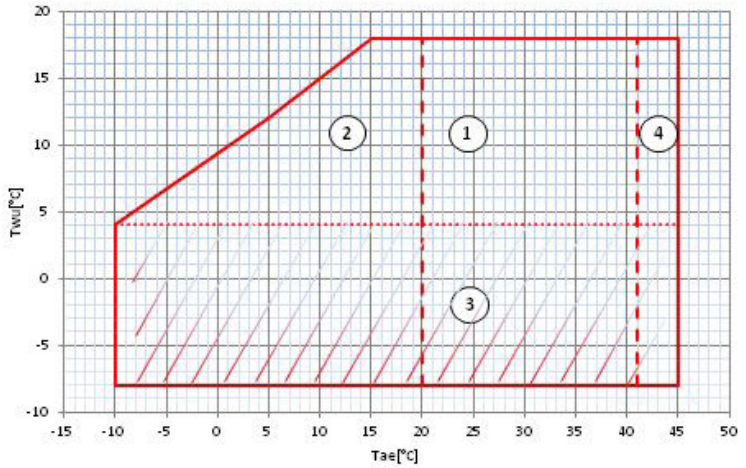
Operating range

Cooling

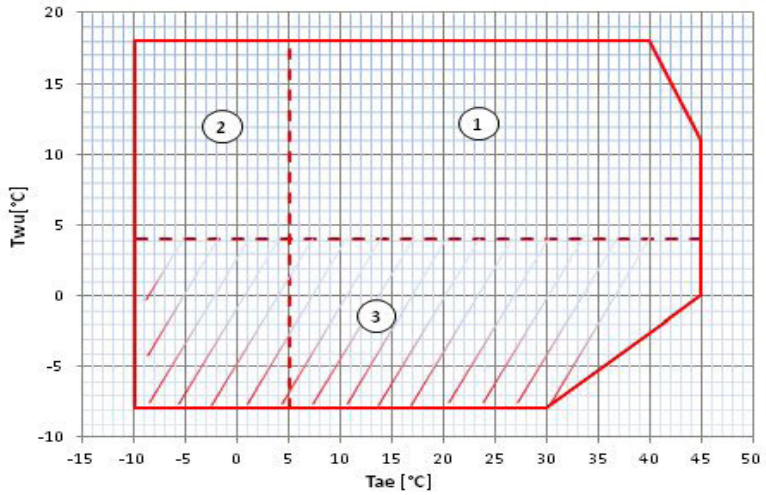
ELFOEnergy Extended Inverter 21 - 31 - 41 - EXCELLENCE/PREMIUM



ELFOEnergy Extended Inverter 51-141 - PREMIUM, 51-131 EXCELLENCE



ELFOEnergy Extended Inverter 141-171 - EXCELLENCE



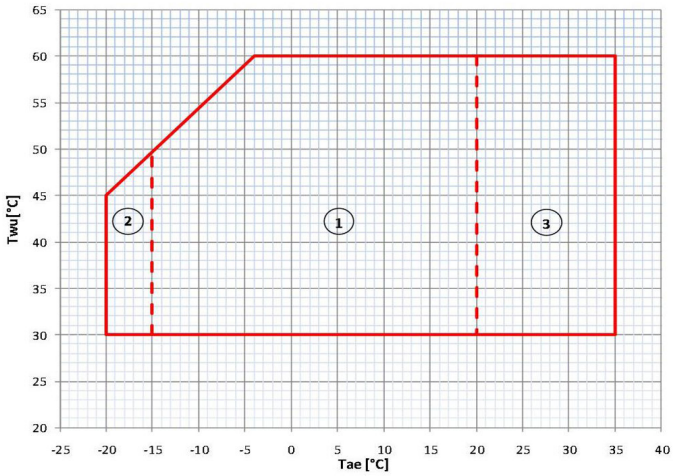
Twu[°C] = leaving exchanger water temperature
Tae [°C]: external exchanger inlet air temperature

1. Normal operating range
2. Operating range with modulating fans
3. Operating range where the use of ethylene glycol is mandatory in relation to the temperature of the water at the outlet of the user side exchanger
4. Operating range with modulating compressor

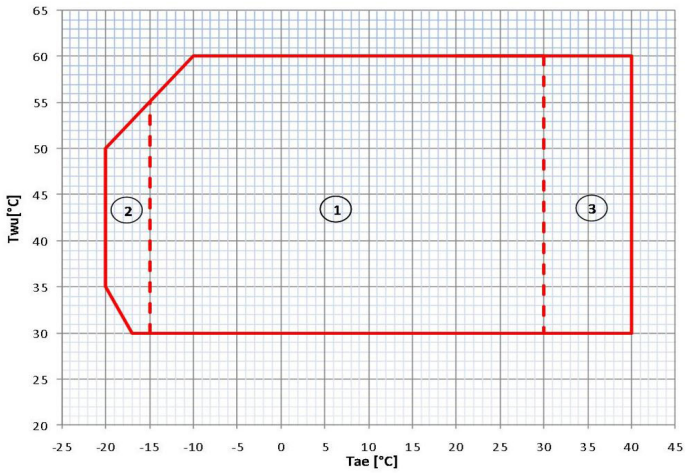
Operating range

Heating

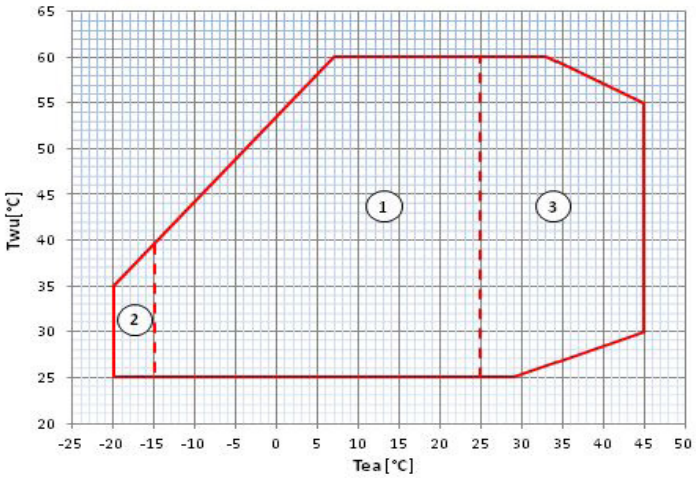
ELFOEnergy Extended Inverter 21 - 31 - 41 - EXCELLENCE/PREMIUM



ELFOEnergy Extended Inverter 51-141 - PREMIUM, 51-131 EXCELLENCE



ELFOEnergy Extended Inverter 141-171- EXCELLENCE



Twu [°C] = leaving exchanger water temperature
Tae [°C]: external exchanger inlet air temperature

1. Normal operating range
2. Operating range, with modulating compressor
3. Operating range with modulating fans and compressor

Admissible water flow rates

Size		21	31	41	51	71	81	91	101	121	131	141	151	161	171
Minimum flow	[l/s]	0,15	0,18	0,18	0,23	0,34	0,35	0,35	0,35	0,42	0,42	0,42	0,42	0,48	0,48
Maximum flow-rate	[l/s]	0,90	0,90	0,90	1,10	1,50	1,95	1,95	1,95	2,70	2,70	2,70	2,70	2,70	2,70

Correction factors for glycol use

% ethylene glycol by weight			5%	10%	15%	20%	25%	30%	35%	40%
Freezing temperature		°C	-2,0	-3,9	-6,5	-8,9	-11,8	-16,6	-19,0	-23,4
Safety temperature		°C	3	1	-1	-4	-6	-10	-14	-19
Cooling Capacity Factor		No	0,995	0,990	0,985	0,981	0,977	0,974	0,971	0,968
Compressor power input Factor		No	0,997	0,993	0,990	0,988	0,986	0,984	0,982	0,981
Internal exchanger glycol solution flow factor		No	1,003	1,010	1,020	1,033	1,050	1,072	1,095	1,124
Pressure drop Factor		No	1,029	1,060	1,090	1,118	1,149	1,182	1,211	1,243

The correction factors shown refer to water and glycol ethylene mixes used to prevent the formation of frost on the exchangers in the water circuit during inactivity in winter.

Fouling Correction Factors

	Internal exchanger	
m^2C/W	**F1**	**FK1**
0,44x10(-4)	1,00	1
0,44x10(-4)	0,97	0,99
0,44x10(-4)	0,94	0,98

The cooling performance values provided in the tables are based on the external exchanger having clean plates (fouling factor 1). For different fouling factor values, multiply the performance by the coefficients shown in the table.
F1 = Cooling capacity correction factors
FK1 = Compressor power input correction factor

Control

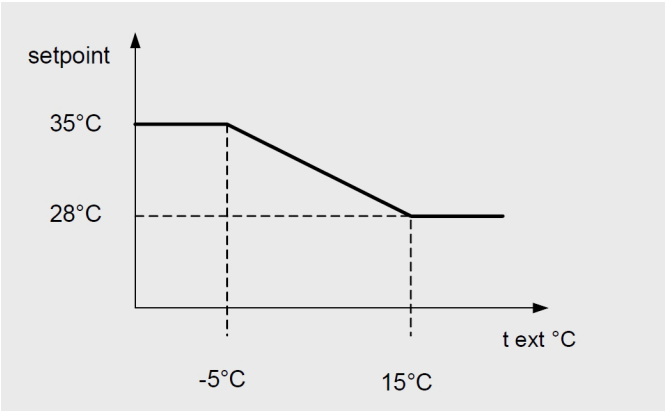
Climatic compensation with ambient temperature

The needs of building heat capacity decreases at the fresh air temperature increasing.

Power supply is not necessary for the terminal units always at the same temperature; for each kind of terminal unit it is better to have a water temperature that changes according with ambient temperature, with linear trend (what is commonly defined climatic control) for a high seasonal energy efficiency.

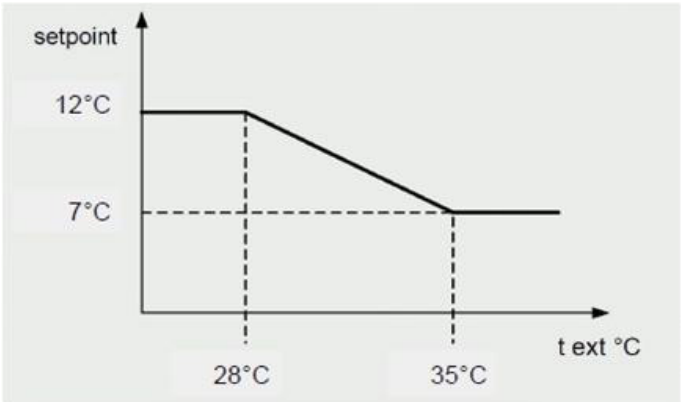
The following graph shows an example of climatic control on the water supply temperature.

Climatic curve in Heating



With a increase ambient temperature, the climatic function decreasing the supply water set point:
Set point = 35°C
compensated setpoint = 28°C

Climatic curve in Cooling



With a decreasing ambient temperature, the climatic function increases the supply water set point
Set point = 7°C
Compensated set point = 12°C

Management of the auxiliary generator

The Extended Inverter units can manage (on/off) an auxiliary generator (boiler).

The configuration of the system involves an auxiliary generator connected in parallel in relation to the heat pump and controlled via a dedicated digital output (see diagram 1).

The auxiliary generator is always managed as a replacement for the heat pump.

Management of the auxiliary generator to produce only for the system

The configuration of the system involves 1 3-way diverting valve (E) between the heat pump and the auxiliary generator.

The heat pump acts as the main generator and is activated whenever there is a request from the system.

If the System set point has not been reached yet and the outdoor air temperature drops below the selected set point, the heat pump stops, switches the 3-way valve (E) and, after a 120-second delay, it activates the auxiliary generator with its own set point.

If the outdoor air temperature remains below the selected set point, the auxiliary generator operates until it reaches the System's set point.

If the air temperature rises above the selected set point, the control stops the auxiliary generator, switches the 3-way valve (E) and activates the heat pump until it reaches the System's set point.

Management of the auxiliary generator to produce for the system and DHW

The system configuration consists of:

- 1 module to manage domestic hot water (CMACSX)
- 1 3-way diverting valve (E) between the heat pump and the auxiliary generator
- 1 3-way valve (D) to divert the flow towards the DHW storage tank

The heat pump acts as the main generator and is activated whenever there is a request from the system or a DHW request.

If the domestic hot water temperature drops below a set value, the CMACSX module sends the request to produce DHW to the heat pump and controls the switching of the 3-way valve (D), so that it diverts the flow from the system to the DHW storage tank.

The heat pump switches the set point from the system's value to the DHW value and produces DHW.

If the DHW set point has not been reached yet and the outdoor air temperature drops below the selected set point, the heat pump stops, switches the 3-way valve (E) and, after a 120-second delay, it activates the auxiliary generator to produce DHW.

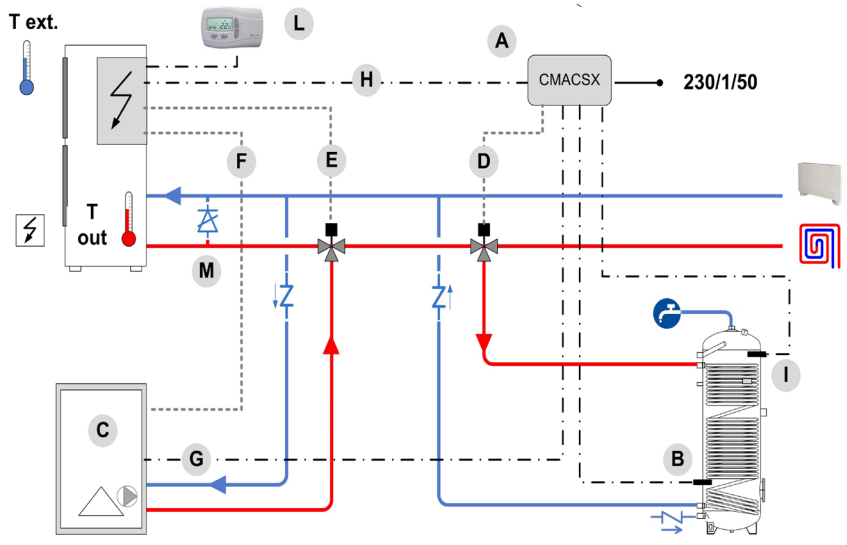
Via the CMACSX module, the heat pump switches the set point of the auxiliary generator from System production to DHW production through a potential-free contact.

If the auxiliary generator is not designed to manage a double set point, set the DHW production value as a set point and provide for a downstream mixing system to reach the correct system supply temperature.

If the outdoor air temperature remains below the selected set point, the auxiliary generator operates until it reaches the DHW set point.

If the air temperature rises above the selected set point, the control stops the auxiliary generator, switches the 3-way valve (E) and activates the heat pump until it reaches the DHW set point.

In this system configuration, the anti-Legionella function is carried out by the auxiliary generator and not via the electric heater inside the storage tank.



A - Domestic hot water module
B - Temperature probe domestic hot water
C - Boiler
D - 3-way DHW valve
E - 3-way Boiler valve
F - Setpoint control system
G - Setpoint control system
H - max 100 mt
I - Safety probe
L - Room keypad
M - Bypass

PREMIUM

WSAN-XIN 21 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	1,82	1,65	1,22	0,74	0,50	1,55	1,56	1,58	1,60	1,61
	-10/-10,5	2,96	2,70	2,03	1,28	0,91	2,49	2,50	2,52	2,50	2,44
	-7/8	3,30	3,01	2,30	1,53	1,14	2,76	2,78	2,81	2,82	2,78
	0/-0,6	4,02	3,63	2,89	2,17	1,82	3,32	3,36	3,45	3,53	3,56
	2/1,1	4,30	3,92	3,06	2,15	1,69	3,54	3,59	3,68	3,76	3,79
	7/6	5,47	4,93	3,84	2,75	2,21	4,47	4,54	4,68	4,82	4,87
	10/8,2	5,80	5,25	4,10	2,91	2,32	4,71	4,78	4,95	5,10	5,15
	15/13	6,61	6,00	4,67	3,27	2,58	5,33	5,43	5,65	5,84	5,91
	18/14	7,10	6,45	5,00	3,49	2,73	5,70	5,82	6,07	6,30	6,38
35	-20/-20,1	1,80	1,62	1,18	0,71	0,47	1,42	1,43	1,45	1,48	1,49
	-10/-10,5	2,93	2,66	1,98	1,23	0,86	2,27	2,28	2,30	2,29	2,25
	-7/8	3,27	2,96	2,24	1,47	1,08	2,51	2,53	2,56	2,58	2,55
	0/-0,6	3,99	3,58	2,82	2,10	1,74	3,00	3,04	3,12	3,21	3,24
	2/1,1	4,27	3,86	2,98	2,07	1,61	3,19	3,23	3,33	3,42	3,45
	7/6	5,41	4,86	3,76	2,67	2,12	4,00	4,06	4,20	4,33	4,39
	10/8,2	5,75	5,17	3,99	2,80	2,21	4,22	4,29	4,45	4,61	4,67
	15/13	6,56	5,91	4,55	3,15	2,46	4,79	4,89	5,09	5,29	5,37
	18/14	7,05	6,36	4,88	3,36	2,60	5,13	5,24	5,47	5,70	5,80
45	-20/-20,1	1,81	1,60	1,14	0,67	0,43	1,31	1,32	1,33	1,34	1,33
	-10/-10,5	2,85	2,55	1,85	1,12	0,76	1,91	1,92	1,94	1,94	1,90
	-7/8	3,17	2,82	2,09	1,33	0,95	2,08	2,09	2,13	2,14	2,13
	0/-0,6	3,83	3,38	2,59	1,88	1,52	2,38	2,41	2,49	2,56	2,60
	2/1,1	4,10	3,64	2,74	1,85	1,41	2,52	2,56	2,64	2,72	2,77
	7/6	5,19	4,64	3,54	2,45	1,90	3,12	3,17	3,28	3,40	3,46
	10/8,2	5,52	4,88	3,68	2,52	1,94	3,61	3,67	3,79	3,91	3,95
	15/13	6,26	5,54	4,16	2,81	2,13	4,01	4,08	4,25	4,40	4,47
	18/14	6,70	5,94	4,45	2,98	2,25	4,24	4,33	4,51	4,70	4,77
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/8	3,10	2,77	2,04	1,28	0,90	1,76	1,77	1,80	1,81	1,79
	0/-0,6	3,74	3,31	2,53	1,80	1,44	1,96	1,98	2,04	2,10	2,13
	2/1,1	3,99	3,56	2,68	1,77	1,32	2,06	2,09	2,15	2,22	2,26
	7/6	5,05	4,50	3,40	2,31	1,76	2,52	2,56	2,65	2,75	2,80
	10/8,2	5,35	4,76	3,57	2,40	1,81	2,63	2,67	2,77	2,89	2,95
	15/13	6,08	5,41	4,05	2,68	2,00	2,89	2,95	3,08	3,23	3,31
	18/16	6,51	5,80	4,33	2,85	2,11	3,04	3,11	3,26	3,43	3,53
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	3,64	3,23	2,47	1,73	1,37	1,65	1,67	1,72	1,78	1,80
	2/1,1	3,89	3,48	2,61	1,71	1,26	1,73	1,75	1,81	1,87	1,90
	7/6	4,92	4,37	3,28	2,20	1,66	2,09	2,13	2,20	2,29	2,35
	10/8,2	5,18	4,62	3,46	2,30	1,72	2,04	2,07	2,16	2,26	2,33
	15/13	5,90	5,26	3,93	2,57	1,90	2,23	2,28	2,38	2,52	2,61
	18/14	6,33	5,65	4,21	2,74	2,00	2,34	2,39	2,51	2,66	2,77

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 21 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	4,66	4,17	3,60	2,78	2,29	1,80	3,99	4,03	4,12	4,17	4,21	4,25
	25	4,40	3,95	3,41	2,65	2,19	1,73	3,40	3,44	3,52	3,58	3,63	3,67
	30	4,14	3,72	3,23	2,52	2,10	1,67	2,92	2,96	3,04	3,09	3,14	3,18
	35	3,88	3,50	3,04	2,39	2,00	1,61	2,55	2,59	2,67	2,71	2,75	2,79
	40	3,63	3,27	2,86	2,26	1,90	1,55	2,11	2,14	2,22	2,26	2,30	2,34
	45	3,37	3,05	2,67	2,13	1,81	1,48	1,74	1,78	1,85	1,89	1,93	1,96
10	20	3,89	3,48	3,00	2,32	1,91	1,50	4,79	4,82	4,87	4,78	4,68	4,54
	25	3,69	3,31	2,87	2,23	1,85	1,47	4,05	4,09	4,16	4,11	4,06	3,99
	30	3,49	3,14	2,73	2,14	1,79	1,43	3,46	3,50	3,57	3,55	3,53	3,50
	35	3,30	2,97	2,59	2,05	1,72	1,40	2,94	2,98	3,06	3,05	3,05	3,04
	40	3,10	2,80	2,46	1,96	1,66	1,36	2,52	2,56	2,64	2,65	2,65	2,66
	45	2,90	2,63	2,32	1,87	1,60	1,33	2,13	2,17	2,25	2,27	2,28	2,30
12	20	5,45	4,88	4,21	3,26	2,68	2,11	4,67	4,77	4,94	5,05	5,14	5,21
	25	5,14	4,61	4,00	3,11	2,59	2,05	3,95	4,03	4,19	4,29	4,38	4,47
	30	4,83	4,35	3,78	2,97	2,49	2,00	3,36	3,44	3,59	3,67	3,76	3,84
	35	4,54	4,09	3,58	2,84	2,39	1,95	2,85	2,91	3,04	3,12	3,19	3,26
	40	4,23	3,83	3,37	2,70	2,30	1,89	2,43	2,49	2,61	2,68	2,74	2,80
	45	3,93	3,57	3,15	2,56	2,20	1,84	2,08	2,14	2,25	2,30	2,36	2,40
15	20	5,92	5,30	4,58	3,54	2,92	2,30	5,15	5,28	5,51	5,64	5,76	5,85
	25	5,58	5,01	4,35	3,39	2,82	2,25	4,24	4,35	4,56	4,69	4,81	4,92
	30	5,25	4,72	4,11	3,24	2,72	2,19	3,54	3,64	3,82	3,94	4,04	4,16
	35	4,93	4,45	3,90	3,11	2,63	2,15	3,00	3,08	3,24	3,34	3,43	3,53
	40	4,59	4,17	3,67	2,96	2,53	2,10	2,54	2,62	2,76	2,84	2,92	2,99
	45	4,26	3,88	3,44	2,82	2,44	2,06	2,16	2,23	2,36	2,43	2,50	2,56
18	20	6,41	5,74	4,96	3,84	3,17	2,49	5,42	5,58	5,87	6,04	6,20	6,34
	25	6,06	5,44	4,72	3,69	3,07	2,45	4,51	4,65	4,90	5,07	5,22	5,37
	30	5,71	5,14	4,49	3,54	2,98	2,41	3,81	3,93	4,15	4,29	4,42	4,56
	35	5,35	4,84	4,25	3,40	2,88	2,37	3,42	3,53	3,73	3,84	3,95	4,05
	40	5,00	4,54	4,01	3,25	2,79	2,34	2,74	2,83	3,00	3,10	3,19	3,28
	45	4,64	4,24	3,77	3,11	2,70	2,30	2,33	2,42	2,57	2,65	2,73	2,80

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 31 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	2,23	2,02	1,59	1,03	0,73	1,77	1,77	1,76	1,73	1,67
	-10/-10,5	3,69	3,36	2,71	1,80	1,32	2,64	2,66	2,67	2,64	2,56
	-7/-8	4,13	3,76	3,02	2,07	1,57	2,87	2,89	2,92	2,91	2,86
	0/-0,6	5,07	4,57	3,58	2,65	2,20	3,29	3,33	3,41	3,48	3,49
	2/1,1	5,42	4,92	3,93	2,79	2,21	3,48	3,54	3,63	3,71	3,72
	7/6	6,87	6,18	4,81	3,45	2,77	4,33	4,41	4,54	4,67	4,70
	10/8,2	7,30	6,60	5,22	3,73	2,97	4,60	4,69	4,86	5,00	5,04
	15/13	8,31	7,53	5,98	4,23	3,34	5,25	5,37	5,59	5,78	5,83
	18/14	8,93	8,09	6,43	4,53	3,56	5,63	5,77	6,03	6,26	6,32
35	-20/-20,1	2,31	2,08	1,62	1,03	0,73	1,66	1,67	1,66	1,64	1,59
	-10/-10,5	3,72	3,37	2,66	1,75	1,27	2,44	2,45	2,46	2,44	2,37
	-7/-8	4,14	3,75	2,96	2,00	1,51	2,64	2,66	2,69	2,69	2,65
	0/-0,6	5,03	4,51	3,47	2,54	2,09	3,02	3,06	3,13	3,19	3,21
	2/1,1	5,38	4,85	3,81	2,67	2,10	3,20	3,25	3,33	3,41	3,42
	7/6	6,81	6,12	4,74	3,36	2,68	3,98	4,05	4,18	4,30	4,33
	10/8,2	7,24	6,51	5,06	3,57	2,82	4,21	4,29	4,44	4,58	4,62
	15/13	8,25	7,43	5,79	4,05	3,18	4,77	4,88	5,08	5,26	5,31
	18/14	8,85	7,98	6,23	4,34	3,39	5,10	5,23	5,46	5,68	5,74
45	-20/-20,1	2,31	2,05	1,54	0,96	0,66	1,39	1,39	1,39	1,37	1,34
	-10/-10,5	3,62	3,24	2,47	1,58	1,12	1,97	1,99	2,00	1,99	1,94
	-7/-8	4,02	3,59	2,73	1,80	1,33	2,13	2,15	2,17	2,18	2,15
	0/-0,6	4,85	4,29	3,18	2,27	1,83	2,41	2,45	2,50	2,56	2,58
	2/1,1	5,18	4,61	3,49	2,38	1,83	2,55	2,58	2,65	2,72	2,73
	7/6	6,54	5,86	4,48	3,12	2,44	3,14	3,19	3,30	3,40	3,43
	10/8,2	6,97	6,19	4,63	3,18	2,47	3,31	3,37	3,49	3,61	3,65
	15/13	7,90	7,02	5,27	3,59	2,76	3,64	3,72	3,88	4,04	4,09
	18/14	8,45	7,52	5,66	3,84	2,94	3,83	3,92	4,11	4,29	4,36
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	3,92	3,51	2,70	1,76	1,28	1,80	1,81	1,84	1,84	1,82
	0/-0,6	4,72	4,19	3,13	2,21	1,76	2,00	2,02	2,07	2,12	2,13
	2/1,1	5,04	4,51	3,44	2,33	1,77	2,10	2,13	2,19	2,24	2,26
	7/6	6,39	5,71	4,34	2,97	2,29	2,55	2,60	2,68	2,77	2,80
	10/8,2	6,77	6,03	4,56	3,10	2,37	2,66	2,71	2,81	2,91	2,95
	15/13	7,68	6,85	5,19	3,50	2,66	2,92	2,98	3,11	3,25	3,30
	18/14	8,22	7,34	5,57	3,74	2,83	3,06	3,14	3,29	3,44	3,51
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	4,72	4,20	3,16	2,21	1,75	2,00	2,02	2,06	2,10	2,10
	2/1,1	5,04	4,52	3,47	2,33	1,76	2,10	2,12	2,18	2,22	2,22
	7/6	6,39	5,70	4,31	2,93	2,24	2,55	2,59	2,67	2,74	2,75
	10/8,2	6,77	6,04	4,59	3,10	2,36	2,66	2,71	2,80	2,88	2,89
	15/13	7,68	6,86	5,23	3,51	2,64	2,92	2,98	3,10	3,21	3,24
	18/14	8,22	7,35	5,62	3,75	2,81	3,06	3,14	3,27	3,40	3,44

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 31 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	6,25	5,35	4,54	3,63	2,99	2,35	4,05	4,13	4,19	4,26	4,30	4,33
	25	5,91	5,06	4,30	3,46	2,86	2,27	3,41	3,48	3,55	3,62	3,67	3,72
	30	5,56	4,78	4,07	3,29	2,73	2,18	2,90	2,97	3,03	3,10	3,15	3,20
	35	5,24	4,51	3,85	3,12	2,61	2,10	2,57	2,64	2,69	2,76	2,81	2,85
	40	4,90	4,23	3,63	2,96	2,49	2,01	2,09	2,16	2,21	2,28	2,33	2,37
	45	4,56	3,95	3,40	2,79	2,36	1,93	1,78	1,84	1,90	1,97	2,01	2,05
10	20	5,81	4,97	4,22	3,38	2,79	2,19	4,78	4,87	4,93	4,97	4,95	4,91
	25	5,51	4,73	4,02	3,24	2,69	2,13	4,02	4,11	4,18	4,23	4,25	4,26
	30	5,22	4,49	3,83	3,10	2,59	2,07	3,41	3,50	3,57	3,64	3,66	3,70
	35	4,93	4,25	3,64	2,97	2,49	2,02	2,91	2,99	3,06	3,13	3,17	3,21
	40	4,63	4,01	3,45	2,83	2,39	1,96	2,48	2,56	2,63	2,70	2,74	2,79
	45	4,33	3,77	3,26	2,70	2,30	1,90	2,12	2,20	2,27	2,34	2,38	2,44
12	20	7,26	6,22	5,27	4,22	3,49	2,75	4,78	4,94	5,08	5,22	5,31	5,37
	25	6,88	5,91	5,03	4,05	3,36	2,67	4,02	4,16	4,29	4,43	4,53	4,61
	30	6,50	5,59	4,78	3,87	3,24	2,60	3,41	3,54	3,66	3,79	3,88	3,96
	35	6,12	5,29	4,54	3,71	3,12	2,53	2,90	3,02	3,13	3,25	3,33	3,40
	40	5,73	4,98	4,29	3,53	3,00	2,46	2,46	2,57	2,67	2,78	2,85	2,92
	45	5,35	4,66	4,04	3,36	2,88	2,40	2,10	2,20	2,29	2,40	2,46	2,52
15	20	7,86	6,73	5,71	4,58	3,78	2,98	5,15	5,36	5,55	5,75	5,87	5,95
	25	7,46	6,41	5,46	4,40	3,66	2,92	4,27	4,46	4,63	4,81	4,94	5,05
	30	7,06	6,08	5,20	4,23	3,54	2,86	3,59	3,76	3,91	4,08	4,19	4,31
	35	6,65	5,76	4,95	4,05	3,43	2,80	3,03	3,18	3,32	3,47	3,57	3,67
	40	6,23	5,42	4,69	3,88	3,31	2,73	2,57	2,71	2,83	2,96	3,05	3,14
	45	5,81	5,09	4,43	3,70	3,19	2,68	2,19	2,31	2,43	2,55	2,63	2,71
18	20	8,65	7,41	6,29	5,04	4,17	3,29	5,53	5,80	6,05	6,31	6,47	6,60
	25	8,21	7,05	6,01	4,85	4,04	3,23	4,64	4,88	5,09	5,33	5,49	5,64
	30	7,76	6,69	5,73	4,67	3,92	3,17	3,93	4,14	4,33	4,55	4,69	4,83
	35	7,31	6,34	5,46	4,48	3,80	3,11	3,46	3,65	3,82	4,01	4,13	4,25
	40	6,86	5,98	5,18	4,30	3,68	3,06	2,83	3,00	3,15	3,31	3,42	3,53
	45	6,40	5,62	4,91	4,13	3,58	3,02	2,41	2,57	2,71	2,86	2,96	3,05

To = Leaving internal exchanger water temperature (°C)
Tae[°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 41 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	3,36	3,04	2,16	1,28	0,85	1,78	1,80	1,89	2,06	2,30
	-10/-10,5	5,09	4,63	3,36	2,09	1,46	2,57	2,60	2,69	2,82	2,94
	-7/-8	5,60	5,11	3,80	2,50	1,85	2,79	2,83	2,94	3,09	3,21
	0/-0,6	6,69	6,04	4,85	3,66	3,07	3,22	3,28	3,44	3,65	3,79
	2/1,1	7,10	6,46	4,97	3,48	2,74	3,41	3,48	3,66	3,92	4,12
	7/6	8,87	7,98	6,22	4,46	3,59	4,24	4,34	4,60	4,94	5,19
	10/8,2	9,36	8,48	6,57	4,67	3,72	4,45	4,56	4,84	5,21	5,49
	15/13	10,48	9,51	7,31	5,11	4,02	4,97	5,10	5,44	5,90	6,24
	18/14	11,16	10,13	7,75	5,38	4,20	5,28	5,43	5,81	6,33	6,71
35	-20/-20,1	3,31	2,97	2,10	1,23	0,80	1,68	1,70	1,78	1,94	2,16
	-10/-10,5	4,98	4,51	3,25	1,99	1,37	2,41	2,43	2,52	2,64	2,74
	-7/-8	5,49	4,96	3,67	2,38	1,74	2,61	2,64	2,74	2,88	3,00
	0/-0,6	6,54	5,86	4,67	3,49	2,90	2,99	3,05	3,20	3,39	3,52
	2/1,1	6,95	6,27	4,80	3,32	2,59	3,17	3,23	3,40	3,64	3,82
	7/6	8,70	7,81	6,05	4,29	3,41	3,93	4,02	4,24	4,56	4,78
	10/8,2	9,19	8,26	6,36	4,46	3,52	4,13	4,23	4,48	4,83	5,08
	15/13	10,33	9,30	7,10	4,91	3,81	4,60	4,73	5,04	5,46	5,78
	18/14	11,01	9,92	7,54	5,17	3,99	4,88	5,02	5,37	5,85	6,21
45	-20/-20,1	3,09	2,73	1,90	1,08	0,66	1,44	1,46	1,52	1,63	1,81
	-10/-10,5	4,69	4,17	2,96	1,76	1,16	2,00	2,02	2,09	2,19	2,27
	-7/-8	5,17	4,60	3,35	2,11	1,49	2,15	2,18	2,26	2,38	2,47
	0/-0,6	6,18	5,44	4,27	3,10	2,51	2,42	2,47	2,59	2,75	2,86
	2/1,1	6,57	5,84	4,39	2,95	2,23	2,55	2,60	2,73	2,93	3,09
	7/6	8,25	7,37	5,61	3,86	2,99	3,11	3,18	3,35	3,59	3,77
	10/8,2	8,72	7,71	5,84	3,98	3,05	3,25	3,33	3,52	3,81	4,04
	15/13	9,84	8,71	6,55	4,39	3,32	3,56	3,65	3,90	4,25	4,54
	18/14	10,52	9,31	6,97	4,64	3,48	3,74	3,84	4,11	4,51	4,84
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	4,99	4,46	3,22	1,98	1,36	1,79	1,81	1,87	1,95	2,01
	0/-0,6	5,99	5,30	4,11	2,92	2,33	1,97	2,00	2,09	2,21	2,29
	2/1,1	6,37	5,68	4,23	2,78	2,06	2,06	2,09	2,19	2,34	2,46
	7/6	8,03	7,14	5,38	3,63	2,75	2,47	2,52	2,65	2,84	2,98
	10/8,2	8,50	7,55	5,66	3,77	2,83	2,57	2,62	2,77	2,98	3,15
	15/13	9,54	8,48	6,31	4,14	3,06	2,76	2,83	3,00	3,26	3,47
	18/14	10,17	9,04	6,70	4,36	3,20	2,87	2,94	3,13	3,42	3,67
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	5,99	5,31	4,09	2,87	2,27	1,97	2,00	2,07	2,17	2,23
	2/1,1	6,37	5,70	4,21	2,74	2,00	2,06	2,09	2,17	2,29	2,37
	7/6	8,03	7,13	5,34	3,55	2,66	2,47	2,52	2,64	2,79	2,90
	10/8,2	8,50	7,56	5,63	3,71	2,75	2,57	2,62	2,75	2,92	3,05
	15/13	9,54	8,50	6,28	4,07	2,97	2,76	2,82	2,98	3,19	3,35
	18/14	10,17	9,06	6,67	4,29	3,10	2,87	2,94	3,11	3,35	3,54

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 41 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	7,16	6,53	5,41	4,29	3,50	2,69	3,92	4,01	4,18	4,41	4,67	5,08
	25	6,81	6,22	5,18	4,13	3,39	2,64	3,37	3,44	3,58	3,78	3,98	4,30
	30	6,46	5,91	4,94	3,97	3,28	2,58	2,92	2,97	3,09	3,25	3,41	3,65
	35	6,11	5,60	4,70	3,81	3,16	2,52	2,63	2,68	2,78	2,91	3,03	3,20
	40	5,75	5,28	4,46	3,64	3,05	2,46	2,16	2,20	2,28	2,39	2,48	2,60
	45	5,39	4,97	4,22	3,47	2,93	2,40	1,86	1,90	1,97	2,05	2,12	2,21
10	20	7,33	6,68	5,54	4,40	3,59	2,77	4,85	4,95	5,16	5,42	5,66	6,08
	25	6,99	6,39	5,33	4,26	3,50	2,74	4,13	4,22	4,39	4,61	4,82	5,16
	30	6,66	6,10	5,11	4,13	3,42	2,72	3,55	3,63	3,77	3,95	4,12	4,38
	35	6,32	5,80	4,90	3,99	3,34	2,69	3,05	3,11	3,24	3,38	3,51	3,71
	40	5,98	5,51	4,68	3,85	3,25	2,66	2,62	2,67	2,77	2,89	2,98	3,13
	45	5,63	5,21	4,46	3,71	3,17	2,63	2,25	2,30	2,39	2,48	2,56	2,66
12	20	8,65	7,88	6,54	5,20	4,24	3,28	4,76	4,89	5,16	5,53	5,90	6,51
	25	8,24	7,53	6,29	5,04	4,15	3,25	4,07	4,18	4,40	4,70	4,99	5,45
	30	7,84	7,18	6,03	4,88	4,06	3,23	3,51	3,60	3,79	4,02	4,24	4,57
	35	7,43	6,82	5,77	4,72	3,96	3,21	3,03	3,10	3,25	3,43	3,60	3,82
	40	7,01	6,46	5,51	4,55	3,87	3,18	2,60	2,66	2,78	2,92	3,04	3,20
	45	6,58	6,10	5,24	4,39	3,77	3,16	2,24	2,30	2,40	2,51	2,60	2,70
15	20	9,32	8,49	7,05	5,61	4,58	3,54	5,30	5,46	5,79	6,22	6,66	7,34
	25	8,89	8,13	6,79	5,46	4,50	3,54	4,45	4,58	4,84	5,19	5,53	6,05
	30	8,47	7,76	6,54	5,30	4,42	3,54	3,78	3,89	4,10	4,37	4,63	5,00
	35	8,03	7,39	6,27	5,15	4,35	3,54	3,23	3,31	3,49	3,70	3,89	4,14
	40	7,58	7,01	6,00	4,99	4,26	3,54	2,76	2,83	2,97	3,13	3,27	3,44
	45	7,13	6,62	5,73	4,83	4,19	3,55	2,38	2,44	2,55	2,68	2,78	2,89
18	20	10,19	9,30	7,73	6,15	5,02	3,89	5,75	5,94	6,33	6,85	7,37	8,18
	25	9,72	8,89	7,44	5,98	4,94	3,90	4,87	5,02	5,34	5,74	6,15	6,75
	30	9,24	8,48	7,15	5,82	4,86	3,91	4,16	4,29	4,54	4,86	5,16	5,58
	35	8,76	8,07	6,87	5,66	4,79	3,93	3,62	3,73	3,93	4,18	4,39	4,68
	40	8,28	7,66	6,58	5,50	4,73	3,96	3,06	3,15	3,31	3,50	3,65	3,84
	45	7,79	7,25	6,30	5,35	4,67	3,99	2,64	2,71	2,85	2,99	3,10	3,23

To = Leaving internal exchanger water temperature (°C)
Tae[°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 51 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	7,02	6,36	4,92	3,47	2,75	2,77	2,80	2,88	2,97	3,05
	-7/-8	7,48	6,84	5,44	4,04	3,34	2,88	2,92	3,00	3,11	3,19
	0/-0,6	9,18	8,44	6,83	5,21	4,41	3,35	3,33	3,26	3,13	3,03
	2/1,1	9,72	8,94	7,23	5,52	4,66	3,53	3,58	3,71	3,87	4,00
	7/6	12,07	11,22	9,36	7,50	6,58	4,36	4,43	4,60	4,81	4,97
	10/8,2	12,77	11,85	9,82	7,80	6,79	4,59	4,67	4,85	5,08	5,25
	15/13	14,60	13,50	11,09	8,70	7,50	5,21	5,30	5,52	5,80	6,02
	18/14	15,70	14,49	11,85	9,23	7,92	5,57	5,67	5,92	6,24	6,48
35	-20/-20,1	3,88	3,50	2,64	1,79	1,37	1,50	1,52	1,59	1,67	1,75
	-10/-10,5	6,55	5,94	4,59	3,24	2,57	2,36	2,40	2,47	2,55	2,61
	-7/-8	7,35	6,72	5,34	3,96	3,28	2,60	2,64	2,73	2,82	2,90
	0/-0,6	9,06	8,33	6,73	5,14	4,35	3,06	3,05	3,01	2,89	2,80
	2/1,1	9,58	8,81	7,12	5,44	4,60	3,23	3,28	3,41	3,56	3,68
	7/6	11,88	11,05	9,22	7,39	6,47	3,98	4,06	4,23	4,43	4,58
	10/8,2	12,56	11,65	9,66	7,67	6,68	4,19	4,27	4,46	4,67	4,83
	15/13	14,27	13,19	10,84	8,50	7,33	4,73	4,82	5,05	5,30	5,49
	18/14	15,29	14,12	11,55	8,99	7,72	5,05	5,15	5,39	5,67	5,89
45	-20/-20,1	4,11	3,70	2,80	1,90	1,45	1,28	1,31	1,38	1,48	1,58
	-10/-10,5	6,46	5,86	4,53	3,20	2,53	1,89	1,93	2,02	2,11	2,20
	-7/-8	7,17	6,56	5,21	3,87	3,20	2,06	2,11	2,20	2,31	2,40
	0/-0,6	8,67	7,97	6,45	4,92	4,16	2,39	2,40	2,39	2,32	2,26
	2/1,1	9,19	8,45	6,83	5,22	4,41	2,53	2,59	2,72	2,86	2,99
	7/6	11,46	10,66	8,89	7,13	6,25	3,15	3,22	3,38	3,58	3,72
	10/8,2	12,15	11,27	9,35	7,42	6,46	3,32	3,40	3,58	3,79	3,95
	15/13	13,77	12,73	10,46	8,20	7,07	3,72	3,80	4,01	4,25	4,45
	18/14	14,74	13,61	11,13	8,67	7,44	3,94	4,04	4,26	4,53	4,74
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	6,44	5,83	4,51	3,18	2,52	1,54	1,56	1,61	1,67	1,73
	-7/-8	7,08	6,48	5,15	3,82	3,16	1,67	1,70	1,76	1,83	1,88
	0/-0,6	8,44	7,77	6,28	4,79	4,05	1,94	1,93	1,90	1,82	1,77
	2/1,1	8,92	8,21	6,63	5,07	4,28	2,04	2,07	2,15	2,24	2,31
	7/6	11,05	10,27	8,57	6,87	6,02	2,50	2,54	2,64	2,76	2,84
	10/8,2	11,66	10,82	8,97	7,13	6,21	2,62	2,66	2,77	2,89	2,99
	15/13	13,15	12,17	10,00	7,84	6,76	2,90	2,95	3,08	3,22	3,33
	18/14	14,05	12,97	10,62	8,27	7,10	3,07	3,12	3,26	3,41	3,54
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	6,42	5,82	4,50	3,17	2,52	1,40	1,42	1,46	1,50	1,53
	-7/-8	7,04	6,44	5,12	3,80	3,14	1,53	1,54	1,59	1,63	1,67
	0/-0,6	8,33	7,66	6,20	4,73	4,00	1,77	1,75	1,71	1,63	1,57
	2/1,1	8,79	8,08	6,53	4,99	4,22	1,85	1,87	1,93	1,99	2,04
	7/6	10,84	10,07	8,40	6,74	5,90	2,25	2,28	2,35	2,43	2,49
	10/8,2	11,42	10,59	8,78	6,98	6,08	2,35	2,38	2,46	2,54	2,61
	15/13	12,85	11,88	9,77	7,66	6,61	2,60	2,63	2,72	2,82	2,89
	18/14	13,71	12,68	10,42	8,17	7,05	2,74	2,78	2,89	3,02	3,12

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 51 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	85%	75%	60%	50%	40%	100%	85%	75%	60%	50%	40%
7	20	10,34	8,99	8,02	6,66	5,75	4,84	3,87	4,22	4,51	5,02	5,60	6,64
	25	9,87	8,55	7,60	6,27	5,38	4,49	3,37	3,63	3,84	4,20	4,60	5,30
	30	9,38	8,11	7,20	5,92	5,06	4,21	2,95	3,13	3,28	3,54	3,81	4,27
	35	8,84	7,65	6,79	5,59	4,79	3,99	2,64	2,77	2,87	3,05	3,24	3,53
	40	8,23	7,15	6,38	5,29	4,57	3,84	2,20	2,30	2,37	2,50	2,63	2,82
	45	7,60	6,66	5,98	5,04	4,40	3,77	1,89	1,97	2,03	2,13	2,23	2,37
10	20	11,22	9,65	8,52	6,94	5,89	4,83	4,21	4,62	4,97	5,60	6,37	7,91
	25	10,71	9,17	8,07	6,53	5,50	4,46	3,65	3,94	4,20	4,65	5,18	6,21
	30	10,17	8,70	7,64	6,16	5,17	4,18	3,18	3,39	3,57	3,89	4,25	4,92
	35	9,58	8,20	7,21	5,83	4,90	3,97	2,76	2,91	3,03	3,26	3,50	3,92
	40	8,94	7,69	6,79	5,52	4,68	3,84	2,37	2,48	2,57	2,73	2,90	3,17
	45	8,27	7,17	6,38	5,27	4,53	3,79	2,03	2,12	2,20	2,32	2,45	2,65
12	20	11,87	10,21	9,01	7,34	6,23	5,11	4,40	4,83	5,20	5,88	6,69	8,34
	25	11,32	9,70	8,54	6,90	5,81	4,72	3,82	4,14	4,40	4,88	5,45	6,54
	30	10,75	9,19	8,08	6,51	5,47	4,42	3,34	3,56	3,75	4,09	4,48	5,18
	35	10,13	8,67	7,63	6,16	5,18	4,20	2,90	3,06	3,19	3,43	3,69	4,14
	40	9,46	8,13	7,18	5,85	4,95	4,06	2,49	2,61	2,71	2,88	3,06	3,35
	45	8,76	7,59	6,76	5,58	4,80	4,01	2,14	2,24	2,32	2,45	2,59	2,80
15	20	12,71	11,04	9,84	8,16	7,03	5,90	4,81	5,29	5,69	6,39	7,21	8,72
	25	12,13	10,49	9,32	7,67	6,57	5,47	4,13	4,48	4,76	5,27	5,83	6,85
	30	11,51	9,94	8,81	7,23	6,18	5,12	3,58	3,82	4,03	4,38	4,77	5,44
	35	10,85	9,38	8,32	6,84	5,85	4,86	3,08	3,26	3,41	3,65	3,91	4,34
	40	10,15	8,80	7,84	6,50	5,60	4,70	2,64	2,77	2,88	3,06	3,24	3,52
	45	9,41	8,23	7,39	6,21	5,42	4,63	2,26	2,37	2,46	2,60	2,74	2,95
18	20	16,44	14,37	12,89	10,80	9,40	8,00	8,61	9,50	10,21	11,34	12,55	14,55
	25	14,56	12,67	11,32	9,42	8,15	6,87	5,66	6,18	6,60	7,30	8,06	9,37
	30	12,62	10,96	9,77	8,11	7,00	5,88	3,92	4,22	4,47	4,89	5,35	6,13
	35	11,90	10,35	9,24	7,67	6,63	5,59	3,44	3,67	3,85	4,15	4,47	4,99
	40	11,15	9,74	8,72	7,30	6,35	5,40	2,92	3,09	3,22	3,44	3,67	4,02
	45	10,36	9,12	8,23	6,99	6,15	5,32	2,51	2,65	2,76	2,94	3,11	3,37

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 71 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	8,44	7,78	6,10	4,32	3,36	2,74	2,82	2,92	2,99	3,04
	-7/-8	8,98	8,25	6,57	4,85	3,92	2,85	2,93	3,04	3,13	3,18
	0/-0,6	11,06	10,31	8,39	6,35	5,26	3,32	3,49	3,56	3,42	3,29
	2/1,1	11,70	10,90	8,87	6,72	5,56	3,51	3,59	3,73	3,87	3,97
	7/6	14,49	13,03	10,54	8,34	7,17	4,35	4,48	4,68	4,85	4,96
	10/8,2	15,31	13,88	11,25	8,83	7,53	4,59	4,77	5,00	5,19	5,31
	15/13	17,48	15,89	12,83	9,95	8,41	5,27	5,50	5,80	6,02	6,16
	18/14	18,79	17,10	13,79	10,63	8,93	5,68	5,95	6,28	6,52	6,68
35	-20/-20,1	4,69	4,29	3,30	2,26	1,70	1,47	1,50	1,57	1,65	1,72
	-10/10,5	7,87	7,25	5,68	4,02	3,12	2,32	2,38	2,47	2,55	2,59
	-7/-8	8,83	8,10	6,44	4,75	3,85	2,56	2,63	2,73	2,82	2,88
	0/-0,6	10,86	10,10	8,22	6,22	5,15	3,03	3,17	3,24	3,12	3,01
	2/1,1	11,49	10,69	8,69	6,58	5,45	3,20	3,26	3,39	3,53	3,63
	7/6	14,28	12,90	10,47	8,29	7,12	3,96	4,09	4,28	4,46	4,57
	10/8,2	15,11	13,68	11,07	8,69	7,41	4,18	4,32	4,54	4,73	4,85
	15/13	17,18	15,59	12,58	9,76	8,24	4,73	4,92	5,19	5,41	5,55
	18/14	18,43	16,75	13,48	10,39	8,73	5,06	5,27	5,57	5,82	5,97
45	-20/-20,1	4,88	4,45	3,41	2,34	1,76	1,23	1,25	1,31	1,40	1,46
	-10/10,5	7,76	7,12	5,57	3,94	3,06	1,86	1,89	1,97	2,07	2,12
	-7/-8	8,63	7,89	6,26	4,62	3,74	2,03	2,07	2,16	2,27	2,33
	0/-0,6	10,46	9,70	7,87	5,96	4,93	2,37	2,46	2,53	2,47	2,40
	2/1,1	11,08	10,28	8,34	6,31	5,22	2,51	2,54	2,65	2,80	2,90
	7/6	13,80	12,59	10,30	8,16	7,01	3,12	3,23	3,42	3,62	3,73
	10/8,2	14,62	13,19	10,65	8,36	7,13	3,30	3,38	3,57	3,77	3,89
	15/13	16,57	14,99	12,06	9,36	7,90	3,70	3,81	4,04	4,27	4,41
	18/14	17,74	16,07	12,91	9,95	8,36	3,94	4,06	4,31	4,56	4,72
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	7,81	7,12	5,53	3,91	3,04	1,53	1,55	1,60	1,66	1,70
	-7/-8	8,57	7,78	6,14	4,53	3,67	1,65	1,68	1,74	1,81	1,85
	0/-0,6	10,14	9,34	7,53	5,70	4,72	1,91	1,97	2,01	1,94	1,87
	2/1,1	10,73	9,88	7,97	6,04	4,99	2,01	2,03	2,10	2,19	2,24
	7/6	13,32	11,96	9,66	7,65	6,57	2,47	2,53	2,65	2,76	2,83
	10/8,2	14,09	12,62	10,13	7,96	6,79	2,60	2,66	2,78	2,89	2,97
	15/13	15,85	14,23	11,39	8,83	7,46	2,89	2,97	3,11	3,25	3,33
	18/14	16,90	15,20	12,14	9,36	7,87	3,06	3,15	3,31	3,45	3,54
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	7,84	7,11	5,51	3,90	3,03	1,40	1,42	1,46	1,50	1,52
	-7/-8	8,54	7,72	6,07	4,48	3,63	1,51	1,53	1,58	1,62	1,65
	0/-0,6	9,99	9,16	7,37	5,58	4,61	1,73	1,78	1,80	1,72	1,65
	2/1,1	10,56	9,68	7,79	5,90	4,88	1,82	1,83	1,88	1,94	1,98
	7/6	13,09	11,65	9,35	7,40	6,36	2,23	2,27	2,34	2,42	2,46
	10/8,2	13,83	12,34	9,87	7,75	6,61	2,34	2,39	2,47	2,55	2,60
	15/13	15,49	13,86	11,05	8,57	7,24	2,59	2,65	2,75	2,85	2,90
	18/14	16,49	14,77	11,76	9,07	7,62	2,73	2,81	2,92	3,02	3,08

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 71 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	80%	75%	60%	50%	40%	100%	80%	75%	60%	50%	40%
7	20	13,93	11,52	10,91	9,08	7,65	6,21	3,81	4,27	4,40	4,86	5,26	5,96
	25	13,19	10,94	10,34	8,56	7,17	5,78	3,32	3,68	3,78	4,10	4,38	4,87
	30	12,46	10,35	9,78	8,08	6,75	5,42	2,91	3,19	3,26	3,48	3,68	4,01
	35	11,69	9,74	9,21	7,62	6,37	5,13	2,63	2,85	2,90	3,06	3,19	3,41
	40	10,90	9,11	8,63	7,18	6,04	4,90	2,15	2,33	2,37	2,48	2,58	2,73
	45	10,10	8,48	8,06	6,77	5,77	4,77	1,84	1,99	2,02	2,12	2,20	2,33
10	20	15,01	12,47	11,77	9,65	8,00	6,35	4,07	4,66	4,82	5,36	5,85	6,74
	25	14,22	11,83	11,15	9,10	7,50	5,89	3,53	3,99	4,11	4,49	4,84	5,46
	30	13,43	11,20	10,55	8,59	7,06	5,52	3,07	3,45	3,53	3,80	4,04	4,45
	35	12,62	10,55	9,94	8,10	6,67	5,23	2,65	2,95	3,01	3,20	3,36	3,65
	40	11,78	9,88	9,32	7,64	6,33	5,02	2,27	2,51	2,56	2,70	2,82	3,02
	45	10,93	9,22	8,72	7,23	6,06	4,89	1,94	2,15	2,19	2,30	2,41	2,57
12	20	15,86	13,17	12,43	10,20	8,46	6,71	4,29	4,92	5,10	5,67	6,20	7,15
	25	15,02	12,50	11,78	9,62	7,93	6,23	3,73	4,23	4,36	4,77	5,14	5,80
	30	14,18	11,83	11,14	9,07	7,46	5,84	3,26	3,66	3,75	4,04	4,29	4,74
	35	13,33	11,15	10,50	8,56	7,05	5,53	2,82	3,14	3,20	3,40	3,58	3,88
	40	12,46	10,45	9,86	8,09	6,70	5,31	2,42	2,68	2,73	2,87	3,00	3,22
	45	11,57	9,76	9,23	7,65	6,42	5,18	2,07	2,29	2,33	2,46	2,57	2,74
15	20	17,00	14,23	13,47	11,20	9,42	7,64	4,58	5,31	5,51	6,15	6,73	7,74
	25	16,11	13,50	12,77	10,56	8,83	7,10	3,93	4,51	4,65	5,10	5,51	6,21
	30	15,21	12,78	12,07	9,96	8,31	6,65	3,40	3,86	3,95	4,28	4,56	5,04
	35	14,31	12,05	11,39	9,41	7,86	6,31	2,93	3,30	3,37	3,59	3,79	4,12
	40	13,38	11,31	10,71	8,89	7,48	6,05	2,51	2,81	2,86	3,03	3,17	3,40
	45	12,45	10,57	10,03	8,43	7,17	5,91	2,15	2,40	2,44	2,59	2,71	2,89
18	20	18,40	15,37	14,59	12,23	10,38	8,53	4,87	5,69	5,93	6,69	7,38	8,58
	25	17,44	14,59	13,83	11,53	9,73	7,93	4,22	4,88	5,05	5,60	6,10	6,94
	30	16,47	13,81	13,08	10,88	9,16	7,43	3,68	4,20	4,33	4,73	5,08	5,66
	35	15,49	13,02	12,34	10,28	8,66	7,04	3,28	3,72	3,81	4,11	4,36	4,77
	40	14,53	12,26	11,63	9,74	8,26	6,77	2,75	3,09	3,16	3,38	3,56	3,86
	45	13,56	11,49	10,93	9,25	7,94	6,63	2,36	2,65	2,71	2,90	3,05	3,30

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER values calculated according to EN 14511:2011

PREMIUM

WSAN-XIN 81 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	10,01	8,97	6,90	4,84	3,81	2,45	2,48	2,56	2,67	2,77
	-7/-8	10,58	9,59	7,61	5,64	4,66	2,59	2,63	2,71	2,81	2,90
	0/-0,6	12,31	11,23	9,09	6,95	5,88	3,02	3,06	3,16	3,28	3,39
	2/1,1	13,12	11,98	9,69	7,41	6,27	3,23	3,27	3,38	3,51	3,62
	7/6	16,57	15,32	12,82	10,32	9,08	4,09	4,16	4,30	4,48	4,61
	10/8,2	17,53	16,16	13,44	10,72	9,36	4,34	4,41	4,56	4,76	4,90
	15/13	20,36	18,71	15,41	12,12	10,48	5,05	5,14	5,33	5,58	5,76
	18/14	18,66	17,12	14,04	10,96	9,43	4,63	4,70	4,87	5,09	5,26
35	-20/-20,1	6,60	5,87	4,41	2,95	2,22	1,52	1,55	1,63	1,76	1,90
	-10/-10,5	9,67	8,67	6,67	4,68	3,68	2,21	2,24	2,31	2,39	2,46
	-7/-8	10,59	9,60	7,62	5,65	4,67	2,41	2,45	2,53	2,62	2,69
	0/-0,6	12,52	11,42	9,24	7,07	5,98	2,83	2,87	2,98	3,09	3,18
	2/1,1	13,27	12,11	9,80	7,49	6,34	2,99	3,05	3,15	3,28	3,37
	7/6	16,54	15,29	12,79	10,30	9,06	3,72	3,79	3,94	4,10	4,23
	10/8,2	17,53	16,16	13,43	10,72	9,36	3,95	4,02	4,17	4,36	4,49
	15/13	20,13	18,50	15,24	11,99	10,36	4,52	4,61	4,80	5,02	5,18
	18/14	18,57	17,03	13,97	10,91	9,38	4,18	4,26	4,43	4,62	4,78
45	-20/-20,1	5,78	5,13	3,86	2,58	1,94	1,14	1,17	1,24	1,34	1,46
	-10/-10,5	9,32	8,36	6,43	4,51	3,55	1,79	1,83	1,90	1,99	2,08
	-7/-8	10,39	9,42	7,48	5,54	4,58	1,98	2,02	2,10	2,20	2,29
	0/-0,6	12,65	11,54	9,34	7,14	6,04	2,36	2,41	2,52	2,65	2,75
	2/1,1	13,27	12,11	9,80	7,49	6,34	2,47	2,52	2,64	2,77	2,88
	7/6	16,19	14,97	12,52	10,09	8,87	2,98	3,05	3,19	3,36	3,48
	10/8,2	16,97	15,64	13,01	10,37	9,06	3,12	3,19	3,34	3,52	3,65
	15/13	19,47	17,89	14,73	11,59	10,02	3,55	3,63	3,81	4,03	4,20
	18/14	20,97	19,23	15,77	12,32	10,59	3,81	3,90	4,10	4,33	4,52
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	9,06	8,12	6,25	4,38	3,45	1,44	1,46	1,51	1,56	1,61
	-7/-8	9,86	8,94	7,10	5,26	4,34	1,55	1,58	1,63	1,69	1,74
	0/-0,6	11,53	10,52	8,51	6,51	5,51	1,78	1,81	1,87	1,94	2,00
	2/1,1	12,20	11,13	9,01	6,89	5,83	1,87	1,90	1,97	2,04	2,11
	7/6	15,16	14,02	11,73	9,45	8,31	2,31	2,35	2,44	2,53	2,60
	10/8,2	16,04	14,79	12,30	9,81	8,57	2,43	2,48	2,57	2,67	2,75
	15/13	18,23	16,75	13,80	10,85	9,39	2,74	2,79	2,89	3,02	3,11
	18/14	19,54	17,92	14,70	11,48	9,87	2,92	2,97	3,09	3,22	3,33
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	8,93	8,01	6,16	4,32	3,40	1,28	1,29	1,32	1,36	1,39
	-7/-8	9,60	8,70	6,91	5,12	4,23	1,36	1,38	1,41	1,45	1,48
	0/-0,6	10,97	10,01	8,10	6,19	5,24	1,54	1,56	1,60	1,64	1,68
	2/1,1	11,66	10,65	8,61	6,59	5,57	1,63	1,65	1,69	1,74	1,78
	7/6	14,65	13,54	11,33	9,13	8,03	2,03	2,06	2,12	2,18	2,23
	10/8,2	15,58	14,37	11,94	9,53	8,32	2,15	2,18	2,25	2,32	2,37
	15/13	17,61	16,18	13,33	10,49	9,07	2,41	2,44	2,52	2,60	2,66
	18/14	18,83	17,27	14,16	11,06	9,51	2,56	2,60	2,67	2,77	2,84

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 81 Performances in heating

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	18,44	16,89	14,22	11,92	10,36	8,80	4,05	4,27	4,67	5,06	5,37	5,84
	25	17,49	15,99	13,40	11,16	9,65	8,14	3,50	3,65	3,94	4,21	4,43	4,76
	30	16,54	15,11	12,64	10,50	9,06	7,61	3,04	3,15	3,34	3,54	3,68	3,90
	35	15,47	14,14	11,84	9,85	8,51	7,17	2,62	2,69	2,83	2,96	3,06	3,21
	40	14,20	13,00	10,94	9,17	7,96	6,76	2,21	2,26	2,36	2,46	2,53	2,63
	45	12,99	11,95	10,16	8,61	7,57	6,52	1,86	1,91	2,00	2,07	2,13	2,21
10	20	20,18	18,31	15,08	12,29	10,41	8,52	4,28	4,52	4,99	5,46	5,85	6,51
	25	19,14	17,33	14,21	11,51	9,69	7,86	3,71	3,88	4,21	4,54	4,82	5,27
	30	18,10	16,37	13,40	10,83	9,09	7,34	3,22	3,35	3,58	3,81	4,00	4,30
	35	16,85	15,25	12,49	10,11	8,50	6,88	2,75	2,84	3,00	3,15	3,28	3,48
	40	15,50	14,06	11,57	9,43	7,98	6,52	2,33	2,40	2,51	2,63	2,71	2,85
	45	14,26	12,99	10,80	8,92	7,64	6,36	1,98	2,04	2,14	2,23	2,30	2,41
12	20	21,30	19,40	16,13	13,30	11,39	9,47	4,54	4,81	5,31	5,82	6,23	6,90
	25	20,20	18,36	15,19	12,46	10,60	8,74	3,93	4,12	4,48	4,84	5,13	5,59
	30	19,10	17,35	14,32	11,71	9,95	8,17	3,42	3,55	3,80	4,05	4,25	4,57
	35	17,82	16,19	13,38	10,96	9,32	7,68	2,96	3,05	3,23	3,40	3,54	3,74
	40	16,41	14,94	12,41	10,23	8,75	7,27	2,49	2,56	2,69	2,81	2,91	3,05
	45	15,14	13,85	11,62	9,70	8,40	7,09	2,11	2,17	2,28	2,39	2,46	2,58
15	20	23,09	21,15	17,79	14,89	12,92	10,95	4,72	5,01	5,55	6,11	6,56	7,26
	25	21,90	20,01	16,75	13,94	12,03	10,12	4,08	4,29	4,68	5,08	5,39	5,88
	30	20,70	18,90	15,79	13,10	11,29	9,47	3,55	3,70	3,98	4,25	4,47	4,80
	35	19,21	17,55	14,68	12,20	10,52	8,84	3,02	3,13	3,32	3,51	3,66	3,88
	40	17,81	16,30	13,70	11,46	9,94	8,42	2,59	2,67	2,81	2,95	3,06	3,21
	45	16,57	15,23	12,93	10,95	9,61	8,26	2,23	2,29	2,42	2,53	2,62	2,74
18	20	24,85	22,83	19,35	16,34	14,30	12,26	4,90	5,24	5,88	6,53	7,04	7,86
	25	23,51	21,55	18,18	15,26	13,29	11,31	4,24	4,48	4,95	5,41	5,78	6,35
	30	22,17	20,30	17,09	14,31	12,43	10,55	3,68	3,85	4,19	4,52	4,78	5,17
	35	20,64	18,91	15,93	13,36	11,62	9,88	3,15	3,28	3,52	3,75	3,93	4,20
	40	19,16	17,60	14,90	12,57	11,00	9,42	2,70	2,80	2,98	3,15	3,28	3,47
	45	18,00	16,60	14,20	12,13	10,72	9,32	2,34	2,43	2,59	2,73	2,84	3,00

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 91 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	11,25	10,25	7,76	5,48	4,34	2,47	2,51	2,60	2,71	2,81
	-7/-8	11,88	10,90	8,50	6,30	5,21	2,61	2,65	2,74	2,86	2,95
	0/-0,6	14,24	13,16	10,45	7,97	6,74	3,13	3,18	3,30	3,44	3,56
	2/1,1	15,04	13,89	11,03	8,42	7,12	3,31	3,36	3,49	3,64	3,76
	7/6	18,60	17,20	14,13	11,32	9,92	4,10	4,17	4,34	4,54	4,68
	10/8,2	19,62	18,15	14,81	11,76	10,23	4,33	4,42	4,60	4,81	4,97
	15/13	22,51	20,78	16,79	13,16	11,35	4,97	5,08	5,30	5,56	5,76
	18/14	24,24	22,36	17,98	14,00	12,01	5,35	5,47	5,72	6,01	6,23
35	-20/-20,1	8,01	7,25	5,36	3,64	2,78	1,65	1,69	1,78	1,91	2,05
	-10/-10,5	10,96	9,98	7,55	5,33	4,22	2,24	2,27	2,36	2,45	2,53
	-7/-8	11,84	10,85	8,46	6,28	5,19	2,41	2,45	2,55	2,65	2,73
	0/-0,6	13,66	12,61	10,02	7,64	6,46	2,75	2,80	2,92	3,04	3,14
	2/1,1	14,57	13,45	10,68	8,15	6,89	2,93	2,98	3,11	3,25	3,36
	7/6	18,42	17,07	14,02	11,23	9,84	3,70	3,77	3,95	4,13	4,27
	10/8,2	19,66	18,17	14,83	11,77	10,25	3,94	4,02	4,21	4,41	4,57
	15/13	22,25	20,52	16,59	13,00	11,21	4,44	4,53	4,76	5,00	5,18
	18/14	20,69	19,08	15,35	11,95	10,25	4,14	4,23	4,43	4,65	4,82
45	-20/-20,1	7,34	6,64	4,91	3,33	2,54	1,28	1,31	1,40	1,51	1,64
	-10/-10,5	10,82	9,85	7,45	5,26	4,17	1,83	1,86	1,96	2,06	2,15
	-7/-8	11,87	10,87	8,48	6,29	5,20	1,98	2,02	2,13	2,24	2,34
	0/-0,6	14,06	12,97	10,30	7,86	6,65	2,29	2,34	2,47	2,60	2,72
	2/1,1	14,88	13,73	10,91	8,32	7,04	2,42	2,47	2,60	2,75	2,87
	7/6	18,51	17,17	14,10	11,30	9,90	2,97	3,05	3,22	3,41	3,55
	10/8,2	19,59	18,10	14,77	11,72	10,21	3,13	3,20	3,39	3,59	3,75
	15/13	22,13	20,41	16,49	12,92	11,14	3,50	3,59	3,80	4,04	4,23
	18/14	23,65	21,79	17,53	13,64	11,71	3,72	3,81	4,05	4,31	4,51
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	10,52	9,57	7,26	5,14	4,08	1,46	1,48	1,54	1,61	1,67
	-7/-8	11,54	10,56	8,25	6,14	5,08	1,58	1,61	1,68	1,75	1,81
	0/-0,6	13,66	12,60	10,02	7,67	6,49	1,84	1,87	1,95	2,03	2,11
	2/1,1	14,39	13,27	10,56	8,07	6,83	1,92	1,95	2,03	2,12	2,20
	7/6	17,67	16,35	13,45	10,80	9,47	2,34	2,38	2,49	2,60	2,69
	10/8,2	18,59	17,17	14,03	11,16	9,73	2,45	2,49	2,61	2,73	2,83
	15/13	20,77	19,15	15,51	12,17	10,51	2,70	2,76	2,89	3,03	3,14
	18/14	22,08	20,33	16,39	12,78	10,98	2,85	2,91	3,05	3,21	3,33
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	10,63	9,66	7,32	5,19	4,12	1,32	1,34	1,38	1,43	1,47
	-7/-8	11,61	10,62	8,30	6,17	5,11	1,44	1,46	1,50	1,55	1,60
	0/-0,6	13,66	12,59	10,01	7,66	6,48	1,66	1,69	1,74	1,80	1,85
	2/1,1	14,39	13,26	10,55	8,07	6,83	1,74	1,76	1,83	1,89	1,94
	7/6	17,69	16,34	13,44	10,79	9,47	2,13	2,16	2,24	2,32	2,38
	10/8,2	18,62	17,18	14,04	11,17	9,73	2,23	2,27	2,35	2,44	2,50
	15/13	20,80	19,16	15,52	12,18	10,52	2,47	2,51	2,60	2,71	2,78
	18/14	22,11	20,34	16,40	12,79	10,99	2,61	2,65	2,75	2,86	2,95

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 91 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	20,03	18,29	15,63	12,97	11,08	9,19	4,08	4,30	4,70	5,15	5,51	6,10
	25	19,03	17,38	14,80	12,21	10,37	8,54	3,53	3,70	3,98	4,30	4,55	4,97
	30	18,03	16,48	14,01	11,53	9,77	8,01	3,07	3,20	3,40	3,62	3,80	4,07
	35	16,81	15,38	13,08	10,78	9,15	7,52	2,64	2,73	2,87	3,02	3,14	3,33
	40	15,43	14,15	12,09	10,02	8,56	7,09	2,22	2,30	2,40	2,51	2,60	2,72
	45	14,14	13,00	11,20	9,40	8,12	6,85	1,88	1,95	2,03	2,13	2,20	2,30
10	20	21,89	19,94	16,73	13,52	11,24	8,95	4,30	4,56	5,01	5,54	5,98	6,79
	25	20,73	18,89	15,79	12,68	10,48	8,27	3,70	3,90	4,22	4,59	4,91	5,46
	30	19,57	17,85	14,90	11,93	9,84	7,73	3,20	3,36	3,58	3,84	4,06	4,43
	35	18,24	16,66	13,91	11,16	9,21	7,26	2,75	2,87	3,03	3,21	3,35	3,60
	40	16,76	15,33	12,86	10,38	8,62	6,86	2,33	2,42	2,53	2,66	2,77	2,93
	45	15,45	14,17	11,98	9,79	8,24	6,69	1,98	2,06	2,16	2,26	2,35	2,48
12	20	23,08	21,09	17,83	14,57	12,25	9,93	4,47	4,76	5,25	5,81	6,28	7,12
	25	21,89	20,01	16,85	13,68	11,44	9,20	3,91	4,13	4,48	4,88	5,21	5,79
	30	20,69	18,92	15,91	12,89	10,75	8,61	3,42	3,60	3,85	4,13	4,36	4,75
	35	19,28	17,66	14,86	12,05	10,07	8,08	2,94	3,08	3,25	3,45	3,61	3,86
	40	17,75	16,28	13,76	11,23	9,44	7,65	2,49	2,60	2,73	2,87	2,98	3,16
	45	16,41	15,09	12,86	10,62	9,04	7,46	2,12	2,21	2,32	2,44	2,53	2,67
15	20	25,22	23,13	19,75	16,37	13,97	11,56	4,78	5,12	5,67	6,30	6,82	7,71
	25	23,78	21,81	18,56	15,29	12,97	10,65	4,09	4,35	4,74	5,18	5,55	6,16
	30	22,34	20,51	17,41	14,31	12,11	9,91	3,51	3,71	3,99	4,29	4,55	4,96
	35	20,81	19,13	16,26	13,38	11,34	9,30	3,01	3,17	3,36	3,58	3,75	4,03
	40	19,26	17,73	15,13	12,53	10,69	8,84	2,58	2,71	2,85	3,01	3,13	3,33
	45	17,99	16,61	14,29	11,98	10,34	8,69	2,23	2,34	2,46	2,59	2,70	2,86
18	20	27,00	24,76	21,28	17,78	15,31	12,83	4,96	5,33	5,97	6,70	7,31	8,33
	25	25,53	23,42	20,05	16,66	14,26	11,86	4,28	4,57	5,03	5,55	5,99	6,71
	30	24,06	22,09	18,87	15,64	13,36	11,07	3,70	3,93	4,26	4,64	4,94	5,44
	35	22,46	20,64	17,65	14,65	12,53	10,40	3,19	3,38	3,62	3,89	4,10	4,44
	40	20,75	19,10	16,40	13,70	11,78	9,86	2,72	2,86	3,04	3,24	3,40	3,64
	45	19,56	18,05	15,64	13,21	11,50	9,78	2,36	2,49	2,65	2,82	2,95	3,15

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 101 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	13,08	12,06	9,45	6,68	5,30	2,43	2,51	2,64	2,78	2,92
	-7/-8	13,89	12,76	10,15	7,49	6,16	2,58	2,66	2,80	2,95	3,08
	0/-0,6	16,54	15,40	12,53	9,48	7,96	3,06	3,14	3,30	3,48	3,64
	2/1,1	17,41	16,22	13,19	9,98	8,38	3,23	3,31	3,48	3,68	3,84
	7/6	21,41	19,24	15,55	12,30	10,68	3,96	4,11	4,34	4,57	4,75
	10/8,2	22,53	20,41	16,53	12,97	11,19	4,17	4,35	4,62	4,88	5,08
	15/13	25,68	23,33	18,82	14,58	12,47	4,73	4,97	5,30	5,61	5,86
	18/14	23,79	21,65	17,44	13,43	11,43	4,40	4,62	4,93	5,21	5,44
35	-20/-20,1	8,53	7,78	5,98	4,09	3,15	1,48	1,52	1,61	1,74	1,89
	-10/-10,5	12,74	11,71	9,16	6,47	5,14	2,19	2,25	2,36	2,49	2,61
	-7/-8	14,01	12,83	10,19	7,51	6,18	2,40	2,46	2,59	2,73	2,86
	0/-0,6	16,67	15,48	12,56	9,50	7,98	2,82	2,87	3,02	3,20	3,35
	2/1,1	17,57	16,31	13,24	10,01	8,40	2,97	3,02	3,17	3,36	3,53
	7/6	21,64	19,63	15,98	12,64	10,98	3,63	3,76	3,99	4,23	4,42
	10/8,2	22,79	20,58	16,62	13,04	11,25	3,81	3,95	4,19	4,44	4,64
	15/13	25,96	23,51	18,91	14,65	12,53	4,31	4,48	4,78	5,08	5,33
	18/14	24,05	21,82	17,53	13,50	11,49	4,02	4,18	4,46	4,73	4,96
45	-20/-20,1	8,83	8,05	6,17	4,22	3,25	1,35	1,38	1,46	1,59	1,74
	-10/-10,5	12,20	11,20	8,74	6,18	4,90	1,80	1,84	1,93	2,06	2,19
	-7/-8	13,22	12,08	9,58	7,07	5,81	1,93	1,97	2,08	2,21	2,33
	0/-0,6	15,31	14,19	11,50	8,70	7,30	2,17	2,20	2,32	2,48	2,62
	2/1,1	16,27	15,08	12,22	9,25	7,76	2,30	2,33	2,45	2,63	2,78
	7/6	20,42	18,62	15,22	12,04	10,46	2,85	2,96	3,16	3,38	3,56
	10/8,2	21,71	19,58	15,79	12,39	10,69	3,01	3,09	3,29	3,52	3,71
	15/13	24,43	22,09	17,75	13,76	11,76	3,35	3,46	3,70	3,97	4,19
	18/14	26,07	23,60	18,93	14,58	12,41	3,55	3,68	3,94	4,23	4,48
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	12,12	11,04	8,57	6,06	4,81	1,45	1,47	1,54	1,61	1,69
	-7/-8	13,10	11,89	9,37	6,91	5,69	1,55	1,58	1,65	1,73	1,80
	0/-0,6	15,12	13,92	11,22	8,49	7,12	1,75	1,77	1,84	1,93	2,02
	2/1,1	16,00	14,72	11,87	8,98	7,54	1,83	1,85	1,92	2,03	2,12
	7/6	19,87	17,83	14,39	11,39	9,89	2,25	2,31	2,43	2,56	2,66
	10/8,2	21,01	18,81	15,09	11,83	10,21	2,37	2,43	2,55	2,69	2,80
	15/13	23,45	21,05	16,83	13,04	11,15	2,61	2,69	2,84	3,00	3,12
	18/14	24,92	22,40	17,87	13,76	11,71	2,75	2,84	3,01	3,18	3,32
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	11,89	10,79	8,35	5,90	4,68	1,26	1,28	1,33	1,38	1,43
	-7/-8	13,10	11,84	9,31	6,87	5,65	1,39	1,42	1,47	1,52	1,57
	0/-0,6	15,66	14,35	11,54	8,73	7,33	1,67	1,68	1,74	1,81	1,87
	2/1,1	16,38	15,02	12,07	9,13	7,66	1,70	1,71	1,77	1,84	1,91
	7/6	19,85	17,66	14,16	11,20	9,73	2,05	2,09	2,17	2,26	2,33
	10/8,2	20,72	18,48	14,77	11,59	10,00	2,13	2,18	2,27	2,36	2,44
	15/13	23,15	20,70	16,49	12,78	10,93	2,35	2,41	2,53	2,63	2,72
	18/14	24,61	22,04	17,53	13,50	11,49	2,48	2,55	2,68	2,80	2,89

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 101 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	40%	100%	90%	70%	60%	50%	40%
7	20	23,61	21,75	17,01	15,36	13,18	11,00	3,65	3,85	4,47	4,74	5,14	5,62
	25	22,28	20,58	16,13	14,53	12,41	10,29	3,14	3,31	3,79	3,98	4,27	4,60
	30	20,95	19,39	15,24	13,71	11,69	9,67	2,71	2,86	3,23	3,37	3,56	3,80
	35	19,47	18,05	14,23	12,82	10,94	9,06	2,33	2,44	2,71	2,80	2,94	3,10
	40	17,88	16,59	13,15	11,87	10,18	8,49	1,97	2,07	2,30	2,37	2,47	2,58
	45	16,56	15,37	12,26	11,13	9,64	8,15	1,68	1,77	1,96	2,02	2,10	2,20
10	20	26,11	24,18	18,85	16,82	14,12	11,42	3,80	4,05	4,80	5,12	5,60	6,22
	25	24,62	22,86	17,86	15,89	13,28	10,67	3,27	3,49	4,07	4,30	4,64	5,07
	30	23,13	21,53	16,86	14,98	12,50	10,01	2,83	3,01	3,47	3,63	3,87	4,16
	35	21,45	19,99	15,71	13,97	11,67	9,36	2,41	2,57	2,93	3,04	3,20	3,40
	40	19,77	18,45	14,57	12,99	10,90	8,81	2,06	2,19	2,48	2,56	2,67	2,82
	45	18,45	17,22	13,68	12,27	10,40	8,53	1,77	1,88	2,13	2,20	2,29	2,41
12	20	27,51	25,51	20,03	17,96	15,22	12,48	4,02	4,32	5,18	5,52	6,05	6,70
	25	25,98	24,15	19,00	17,00	14,34	11,67	3,47	3,73	4,40	4,65	5,02	5,47
	30	24,44	22,77	17,97	16,05	13,51	10,97	3,01	3,23	3,76	3,93	4,19	4,51
	35	22,69	21,18	16,76	14,98	12,63	10,27	2,59	2,77	3,19	3,31	3,49	3,71
	40	20,94	19,56	15,56	13,94	11,81	9,67	2,21	2,36	2,70	2,79	2,92	3,07
	45	19,62	18,34	14,67	13,23	11,31	9,40	1,88	2,01	2,29	2,37	2,48	2,61
15	20	29,77	27,66	21,93	19,80	16,97	14,14	4,07	4,42	5,39	5,77	6,34	7,04
	25	28,11	26,18	20,80	18,72	15,98	13,23	3,54	3,84	4,61	4,88	5,28	5,77
	30	26,45	24,68	19,65	17,67	15,05	12,42	3,09	3,34	3,95	4,14	4,43	4,77
	35	24,48	22,89	18,28	16,45	14,03	11,60	2,64	2,85	3,33	3,46	3,66	3,90
	40	22,72	21,26	17,07	15,40	13,19	10,98	2,26	2,45	2,83	2,93	3,08	3,25
	45	21,74	20,35	16,44	14,92	12,91	10,89	2,00	2,16	2,50	2,59	2,71	2,86
18	20	31,97	29,61	23,45	21,26	18,35	15,44	4,25	4,62	5,68	6,12	6,77	7,57
	25	30,16	28,00	22,21	20,08	17,25	14,42	3,70	4,01	4,84	5,16	5,63	6,20
	30	28,34	26,36	20,95	18,92	16,23	13,53	3,22	3,48	4,14	4,37	4,71	5,11
	35	26,18	24,38	19,45	17,57	15,09	12,60	2,75	2,98	3,53	3,69	3,93	4,21
	40	24,46	22,81	18,28	16,56	14,29	12,01	2,39	2,57	2,99	3,12	3,30	3,51
	45	24,01	22,39	18,06	16,46	14,34	12,22	2,15	2,32	2,69	2,81	2,97	3,14

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 121 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	11,19	10,22	7,73	5,26	4,04	1,79	1,83	1,87	1,88	1,90
	-10/10,5	14,97	13,77	10,61	7,49	5,93	2,32	2,37	2,39	2,37	2,35
	-7/-8	16,10	14,75	11,62	8,57	7,05	2,47	2,52	2,56	2,55	2,55
	0/-0,6	19,74	18,36	14,75	11,17	9,38	2,96	3,01	3,06	3,09	3,11
	2/1,1	21,02	19,55	15,70	11,88	9,98	3,14	3,19	3,25	3,28	3,30
	7/6	26,43	23,67	19,24	15,26	13,27	3,90	3,99	4,08	4,13	4,17
	10/8,2	28,14	25,43	20,63	16,22	14,01	4,13	4,26	4,36	4,42	4,46
	15/13	32,00	29,00	23,38	18,15	15,54	4,67	4,83	4,97	5,03	5,08
	18/14	34,33	31,15	25,04	19,31	16,46	4,98	5,17	5,32	5,40	5,45
35	-20/-20,1	7,30	6,64	5,01	3,41	2,62	1,04	1,06	1,08	1,09	1,10
	-10/10,5	13,95	12,79	9,85	6,95	5,50	1,94	1,97	2,00	2,00	1,99
	-7/-8	15,95	14,57	11,46	8,45	6,95	2,20	2,23	2,28	2,29	2,30
	0/-0,6	20,26	18,78	15,06	11,40	9,58	2,74	2,77	2,83	2,88	2,91
	2/1,1	21,35	19,79	15,87	12,02	10,09	2,87	2,90	2,97	3,02	3,06
	7/6	26,26	23,76	19,39	15,38	13,37	3,49	3,58	3,69	3,77	3,83
	10/8,2	27,64	24,89	20,17	15,85	13,70	3,65	3,74	3,85	3,94	4,00
	15/13	31,50	28,44	22,90	17,78	15,23	4,14	4,25	4,39	4,49	4,55
	18/14	29,18	26,40	21,20	16,35	13,94	3,85	3,96	4,09	4,17	4,23
45	-20/-20,1	8,13	7,38	5,57	3,79	2,91	0,97	0,98	1,02	1,05	1,08
	-10/10,5	14,20	13,00	10,00	7,05	5,58	1,66	1,68	1,73	1,76	1,79
	-7/-8	16,03	14,61	11,48	8,47	6,97	1,86	1,89	1,95	1,99	2,03
	0/-0,6	19,93	18,44	14,78	11,19	9,40	2,27	2,29	2,37	2,44	2,50
	2/1,1	20,99	19,42	15,57	11,79	9,90	2,38	2,40	2,48	2,56	2,63
	7/6	25,80	23,47	19,19	15,22	13,24	2,89	2,98	3,11	3,22	3,30
	10/8,2	27,14	24,39	19,75	15,53	13,42	3,03	3,09	3,22	3,33	3,41
	15/13	30,70	27,67	22,27	17,29	14,80	3,39	3,47	3,63	3,75	3,85
	18/14	32,84	29,64	23,78	18,34	15,63	3,60	3,70	3,87	4,01	4,11
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	13,87	12,59	9,66	6,81	5,39	1,30	1,31	1,34	1,36	1,38
	-7/-8	15,38	13,92	10,91	8,04	6,61	1,44	1,46	1,49	1,52	1,54
	0/-0,6	18,59	17,07	13,65	10,33	8,68	1,74	1,75	1,80	1,84	1,87
	2/1,1	19,57	17,97	14,36	10,87	9,13	1,78	1,79	1,84	1,89	1,93
	7/6	24,01	21,47	17,44	13,83	12,03	2,17	2,21	2,28	2,35	2,40
	10/8,2	25,23	22,50	18,17	14,28	12,34	2,27	2,31	2,38	2,45	2,50
	15/13	28,24	25,26	20,27	15,74	13,48	2,51	2,57	2,66	2,73	2,79
	18/14	30,05	26,92	21,54	16,62	14,16	2,65	2,72	2,82	2,90	2,96
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	14,31	12,94	9,91	6,99	5,54	1,23	1,24	1,26	1,27	1,28
	-7/-8	15,57	14,03	10,97	8,09	6,66	1,33	1,34	1,37	1,38	1,39
	0/-0,6	18,17	16,62	13,27	10,04	8,44	1,52	1,53	1,56	1,58	1,61
	2/1,1	19,16	17,53	13,99	10,59	8,90	1,59	1,60	1,63	1,66	1,68
	7/6	23,62	20,93	16,94	13,44	11,69	1,94	1,97	2,02	2,06	2,09
	10/8,2	24,89	22,10	17,81	14,01	12,10	2,04	2,07	2,12	2,17	2,20
	15/13	27,92	24,87	19,92	15,47	13,25	2,30	2,35	2,41	2,46	2,49
	18/14	29,74	26,53	21,19	16,35	13,93	2,47	2,52	2,59	2,64	2,67

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacities and COP calculated in according to the EN 14511:2011 parameters
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 121 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	29,67	27,28	22,91	19,36	16,56	13,75	3,64	3,81	4,14	4,44	4,67	4,88
	25	27,91	25,74	21,67	18,23	15,52	12,80	3,16	3,31	3,57	3,78	3,94	4,08
	30	26,16	24,17	20,40	17,13	14,55	11,96	2,75	2,87	3,08	3,23	3,34	3,43
	35	24,03	22,24	18,82	15,82	13,45	11,08	2,33	2,43	2,58	2,68	2,75	2,81
	40	21,89	20,29	17,22	14,54	12,43	10,31	1,97	2,06	2,19	2,26	2,32	2,36
	45	19,80	18,35	15,64	13,33	11,51	9,69	1,65	1,72	1,84	1,90	1,95	1,99
10	20	32,41	29,95	25,14	20,80	17,38	13,96	3,88	4,09	4,48	4,81	5,06	5,29
	25	30,38	28,15	23,68	19,52	16,23	12,93	3,34	3,52	3,84	4,07	4,24	4,40
	30	28,34	26,32	22,20	18,26	15,15	12,04	2,88	3,04	3,29	3,45	3,57	3,67
	35	26,05	24,24	20,50	16,88	14,02	11,16	2,45	2,59	2,79	2,90	2,97	3,04
	40	23,74	22,11	18,76	15,52	12,96	10,40	2,07	2,18	2,35	2,43	2,48	2,53
	45	21,66	20,19	17,19	14,35	12,11	9,87	1,75	1,85	1,99	2,06	2,11	2,16
12	20	34,33	31,76	26,79	22,35	18,86	15,36	4,08	4,33	4,79	5,15	5,43	5,68
	25	32,15	29,83	25,22	20,95	17,59	14,22	3,54	3,76	4,13	4,38	4,58	4,75
	30	29,97	27,87	23,62	19,59	16,41	13,23	3,08	3,26	3,56	3,74	3,87	3,99
	35	27,62	25,73	21,86	18,15	15,23	12,29	2,62	2,78	3,03	3,15	3,23	3,31
	40	25,14	23,45	19,98	16,67	14,05	11,44	2,20	2,34	2,53	2,62	2,68	2,74
	45	23,12	21,57	18,45	15,53	13,24	10,93	1,89	2,00	2,17	2,25	2,31	2,37
15	20	36,99	34,28	29,09	24,54	20,96	17,36	4,29	4,60	5,14	5,56	5,88	6,18
	25	34,58	32,13	27,33	22,96	19,51	16,05	3,66	3,92	4,36	4,65	4,88	5,10
	30	32,16	29,96	25,54	21,41	18,16	14,90	3,13	3,36	3,71	3,91	4,07	4,21
	35	29,60	27,62	23,61	19,81	16,82	13,83	2,67	2,86	3,15	3,29	3,40	3,50
	40	27,09	25,31	21,70	18,30	15,62	12,93	2,27	2,43	2,67	2,77	2,85	2,92
	45	25,13	23,48	20,22	17,21	14,84	12,46	1,95	2,09	2,29	2,38	2,46	2,53
18	20	40,11	37,04	31,35	26,63	22,91	19,18	4,60	4,91	5,52	6,03	6,43	6,81
	25	37,46	34,69	29,43	24,89	21,31	17,72	3,93	4,20	4,68	5,06	5,34	5,61
	30	34,80	32,30	27,46	23,18	19,81	16,43	3,37	3,60	3,99	4,25	4,45	4,64
	35	32,05	29,80	25,41	21,47	18,37	15,26	2,89	3,10	3,43	3,62	3,76	3,89
	40	29,39	27,36	23,40	19,87	17,08	14,29	2,45	2,62	2,88	3,02	3,13	3,23
	45	27,81	25,90	22,24	19,06	16,55	14,04	2,16	2,31	2,53	2,66	2,76	2,86

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER values calculated according to EN 14511:2011

PREMIUM

WSAN-XIN 131 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	16,80	15,34	12,20	8,56	6,74	2,45	2,52	2,59	2,59	2,59
	-7/-8	18,03	16,40	13,14	9,61	7,85	2,60	2,67	2,76	2,77	2,78
	0/-0,6	23,13	21,37	17,56	13,16	10,97	3,25	3,33	3,43	3,49	3,53
	2/1,1	24,35	22,49	18,48	13,85	11,55	3,41	3,48	3,59	3,66	3,71
	7/6	29,89	26,59	21,17	16,60	14,32	4,12	4,25	4,40	4,48	4,54
	10/8,2	31,43	28,20	22,63	17,59	15,08	4,32	4,48	4,69	4,78	4,84
	15/13	35,73	32,14	25,78	19,80	16,82	4,86	5,08	5,35	5,45	5,52
	18/14	38,31	34,52	27,68	21,12	17,86	5,18	5,42	5,74	5,85	5,93
35	-20/-20,1	8,64	7,81	6,08	4,13	3,16	1,13	1,15	1,19	1,22	1,24
	-10/-10,5	15,88	14,46	11,45	8,03	6,33	2,02	2,06	2,12	2,15	2,17
	-7/-8	18,06	16,38	13,06	9,55	7,80	2,27	2,32	2,40	2,44	2,47
	0/-0,6	22,73	20,93	17,13	12,84	10,70	2,80	2,84	2,92	3,01	3,07
	2/1,1	23,93	22,03	18,03	13,52	11,27	2,93	2,98	3,07	3,15	3,23
	7/6	29,39	26,40	21,28	16,69	14,40	3,56	3,67	3,85	3,96	4,05
	10/8,2	30,91	27,63	22,08	17,17	14,72	3,72	3,83	4,00	4,12	4,21
	15/13	35,19	31,56	25,21	19,36	16,44	4,20	4,35	4,57	4,71	4,81
	18/14	37,77	33,92	27,08	20,67	17,47	4,48	4,66	4,91	5,06	5,18
45	-20/-20,1	12,53	11,30	8,77	5,96	4,56	1,37	1,39	1,44	1,51	1,58
	-10/-10,5	16,53	15,02	11,86	8,32	6,56	1,76	1,79	1,85	1,91	1,96
	-7/-8	17,73	16,05	12,77	9,34	7,63	1,87	1,91	1,98	2,04	2,10
	0/-0,6	21,81	20,04	16,37	12,27	10,23	2,26	2,29	2,36	2,46	2,55
	2/1,1	22,96	21,10	17,23	12,92	10,77	2,37	2,40	2,47	2,58	2,67
	7/6	28,20	25,47	20,67	16,21	13,98	2,88	2,98	3,15	3,29	3,40
	10/8,2	29,65	26,47	21,10	16,41	14,06	3,00	3,08	3,22	3,37	3,48
	15/13	33,54	30,02	23,93	18,38	15,61	3,36	3,46	3,65	3,81	3,94
	18/14	35,88	32,16	25,63	19,56	16,54	3,57	3,69	3,90	4,07	4,22
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	16,20	14,61	11,43	8,02	6,32	1,43	1,46	1,51	1,55	1,59
	-7/-8	17,21	15,46	12,19	8,92	7,28	1,51	1,53	1,58	1,69	1,79
	0/-0,6	20,60	18,78	15,20	11,40	9,50	1,78	1,83	1,94	2,04	2,13
	2/1,1	21,67	19,76	15,99	11,99	9,99	1,85	1,87	1,91	1,97	2,03
	7/6	26,56	23,59	18,75	14,70	12,68	2,25	2,21	2,22	2,40	2,56
	10/8,2	27,90	24,72	19,52	15,18	13,01	2,35	2,40	2,48	2,54	2,59
	15/13	31,22	27,74	21,90	16,82	14,29	2,60	2,67	2,77	2,83	2,88
	18/14	33,21	29,55	23,33	17,81	15,06	2,74	2,83	2,95	3,03	3,10
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	15,50	13,92	10,84	7,60	5,99	1,25	1,26	1,29	1,31	1,33
	-7/-8	18,06	16,16	12,68	9,27	7,57	1,44	1,46	1,50	1,52	1,55
	0/-0,6	19,99	18,16	14,62	10,96	9,14	1,57	1,58	1,61	1,64	1,67
	2/1,1	21,02	19,09	15,37	11,53	9,61	1,64	1,65	1,68	1,72	1,75
	7/6	25,74	22,66	17,81	13,97	12,05	1,99	2,02	2,08	2,13	2,17
	10/8,2	27,02	23,85	18,74	14,57	12,49	2,07	2,12	2,18	2,23	2,28
	15/13	30,06	26,60	20,90	16,05	13,63	2,28	2,34	2,43	2,49	2,53
	18/14	31,88	28,26	22,20	16,94	14,32	2,41	2,48	2,57	2,64	2,68

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 131 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	40%	100%	90%	70%	60%	50%	40%
7	20	32,86	30,80	25,45	21,89	18,60	15,31	3,66	3,87	4,25	4,56	4,84	5,11
	25	30,85	28,97	24,09	20,66	17,48	14,30	3,15	3,33	3,65	3,87	4,07	4,26
	30	28,85	27,11	22,67	19,42	16,40	13,38	2,71	2,86	3,15	3,30	3,44	3,57
	35	26,64	25,06	21,04	18,05	15,26	12,46	2,32	2,45	2,66	2,77	2,86	2,95
	40	24,16	22,74	19,14	16,48	14,00	11,51	1,94	2,04	2,24	2,32	2,39	2,45
	45	21,84	20,56	17,33	15,02	12,89	10,75	1,62	1,70	1,87	1,94	2,00	2,05
10	20	35,66	33,52	28,05	23,78	19,79	15,79	3,80	4,05	4,54	4,90	5,22	5,54
	25	33,51	31,55	26,58	22,47	18,61	14,75	3,27	3,49	3,92	4,17	4,40	4,62
	30	31,36	29,56	25,04	21,14	17,48	13,81	2,83	3,01	3,38	3,56	3,72	3,87
	35	28,76	27,13	23,07	19,50	16,14	12,78	2,39	2,54	2,86	2,98	3,09	3,19
	40	26,27	24,79	21,14	17,94	14,92	11,89	2,03	2,15	2,42	2,51	2,59	2,66
	45	23,87	22,53	19,23	16,43	13,79	11,16	1,70	1,80	2,02	2,10	2,17	2,24
12	20	37,83	35,66	29,93	25,54	21,44	17,33	4,03	4,31	4,91	5,31	5,67	6,02
	25	35,50	33,51	28,32	24,09	20,13	16,17	3,48	3,73	4,24	4,53	4,78	5,03
	30	33,16	31,34	26,63	22,63	18,88	15,11	3,01	3,22	3,67	3,87	4,05	4,22
	35	30,48	28,83	24,59	20,92	17,47	14,01	2,55	2,73	3,10	3,25	3,37	3,48
	40	27,79	26,30	22,49	19,20	16,11	13,01	2,16	2,31	2,62	2,73	2,82	2,90
	45	25,47	24,11	20,64	17,74	15,03	12,32	1,84	1,96	2,22	2,32	2,40	2,47
15	20	40,73	38,54	32,47	27,95	23,73	19,50	4,17	4,49	5,21	5,67	6,09	6,50
	25	38,17	36,17	30,67	26,32	22,25	18,16	3,57	3,85	4,47	4,80	5,10	5,39
	30	35,60	33,77	28,80	24,68	20,82	16,95	3,07	3,31	3,84	4,07	4,28	4,48
	35	32,75	31,09	26,62	22,84	19,29	15,73	2,62	2,82	3,26	3,43	3,57	3,71
	40	29,82	28,33	24,31	20,94	17,77	14,59	2,20	2,37	2,74	2,86	2,97	3,07
	45	24,72	23,49	20,17	17,50	14,99	12,48	1,69	1,81	2,09	2,18	2,27	2,35
18	20	#NUM!	47,17	39,45	34,13	29,19	24,23	-	5,24	6,11	6,74	7,34	7,94
	25	40,90	38,88	32,70	28,19	23,99	19,79	3,72	4,01	4,64	5,03	5,40	5,76
	30	32,02	30,46	25,74	22,16	18,82	15,48	2,69	2,91	3,35	3,58	3,79	4,01
	35	35,04	33,37	28,32	24,42	20,76	17,10	2,72	2,94	3,43	3,64	3,83	4,01
	40	32,12	30,60	26,04	22,53	19,25	15,96	2,31	2,49	2,86	3,02	3,16	3,30
	45	30,58	29,14	24,82	21,63	18,66	15,69	2,04	2,19	2,52	2,66	2,79	2,92

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

PREMIUM

WSAN-XIN 141 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	18,73	17,47	14,18	9,93	7,81	2,37	2,44	2,60	2,62	2,63
	-7/-8	20,24	18,87	15,18	11,03	8,96	2,52	2,61	2,78	2,81	2,84
	0/-0,6	24,91	23,42	19,52	14,52	12,02	3,03	3,15	3,32	3,40	3,46
	2/1,1	26,42	24,83	20,70	15,39	12,74	3,20	3,32	3,49	3,58	3,65
	7/6	32,98	30,70	23,37	18,12	15,51	3,93	4,14	4,41	4,51	4,58
	10/8,2	34,97	31,89	24,79	19,07	16,22	4,13	4,37	4,73	4,83	4,90
	15/13	39,63	36,33	28,44	21,62	18,22	4,63	4,93	5,41	5,53	5,62
	18/14	42,44	39,00	30,64	23,16	19,43	4,92	5,25	5,80	5,94	6,03
35	-20/-20,1	10,88	9,82	7,77	5,29	4,05	1,26	1,29	1,33	1,37	1,41
	-10/10,5	17,97	16,73	13,47	9,43	7,42	2,03	2,07	2,17	2,21	2,26
	-7/-8	20,10	18,71	14,92	10,85	8,81	2,24	2,30	2,40	2,47	2,52
	0/-0,6	24,63	23,10	19,11	14,21	11,76	2,68	2,76	2,85	2,96	3,05
	2/1,1	26,11	24,49	20,25	15,06	12,47	2,83	2,91	3,01	3,12	3,21
	7/6	32,57	30,31	23,64	18,33	15,69	3,48	3,65	3,90	4,05	4,16
	10/8,2	34,52	31,42	24,23	18,63	15,85	3,66	3,83	4,07	4,21	4,32
	15/13	39,20	35,87	27,85	21,17	17,85	4,11	4,33	4,66	4,82	4,95
	18/14	36,39	33,40	26,04	19,68	16,52	3,83	4,04	4,36	4,51	4,62
45	-20/-20,1	14,73	13,27	10,46	7,12	5,46	1,40	1,42	1,46	1,54	1,63
	-10/10,5	18,69	17,39	13,94	9,76	7,68	1,73	1,75	1,82	1,90	1,98
	-7/-8	19,88	18,49	14,69	10,67	8,67	1,82	1,85	1,93	2,02	2,10
	0/-0,6	23,76	22,27	18,34	13,64	11,29	2,13	2,18	2,23	2,36	2,47
	2/1,1	25,21	23,63	19,46	14,47	11,98	2,25	2,30	2,36	2,49	2,60
	7/6	31,51	29,34	23,18	17,98	15,38	2,77	2,90	3,13	3,30	3,44
	10/8,2	33,44	30,41	23,35	17,96	15,27	2,92	3,04	3,21	3,38	3,51
	15/13	37,76	34,52	26,69	20,29	17,11	3,25	3,41	3,64	3,83	3,99
	18/14	40,36	37,00	28,71	21,70	18,20	3,44	3,62	3,89	4,10	4,28
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	18,41	17,06	13,43	9,40	7,39	1,41	1,43	1,47	1,52	1,57
	-7/-8	19,52	18,09	14,10	10,25	8,33	1,48	1,50	1,55	1,61	1,65
	0/-0,6	22,71	21,20	17,14	12,75	10,55	1,69	1,72	1,75	1,82	1,89
	2/1,1	24,04	22,45	18,15	13,49	11,17	1,70	1,74	1,77	1,85	1,92
	7/6	29,90	27,70	21,01	16,29	13,94	2,18	2,26	2,39	2,48	2,56
	10/8,2	31,65	28,67	21,61	16,63	14,14	2,34	2,43	2,55	2,64	2,72
	15/13	35,33	32,18	24,43	18,58	15,66	2,52	2,63	2,79	2,90	2,99
	18/14	37,55	34,29	26,12	19,75	16,57	2,62	2,74	2,92	3,04	3,14
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/10,5	14,85	13,73	10,70	7,49	5,89	1,02	1,04	1,07	1,09	1,11
	-7/-8	16,69	15,43	12,03	8,42	6,62	1,14	1,16	1,20	1,19	1,17
	0/-0,6	18,19	16,81	12,98	9,44	7,67	1,22	1,24	1,21	1,21	1,22
	2/1,1	20,65	19,23	15,40	11,45	9,48	1,38	1,40	1,42	1,46	1,50
	7/6	29,42	27,40	21,93	16,31	13,50	1,94	2,03	2,27	2,24	2,21
	10/8,2	31,18	28,80	21,38	16,58	14,19	2,04	2,16	2,24	2,33	2,40
	15/13	34,92	31,57	23,55	18,12	15,41	2,26	2,34	2,45	2,55	2,63
	18/14	37,18	33,79	25,39	19,31	16,27	2,39	2,48	2,63	2,72	2,80

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
ATTENTION: The data of the heat capacity and COP include defrostings.

PREMIUM

WSAN-XIN 141 Performances in cooling

To	Tae	Heating capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	40%	100%	90%	70%	60%	50%	40%
7	20	35,93	34,16	28,25	24,99	21,20	17,40	3,45	3,76	4,30	4,54	4,88	5,20
	25	33,69	32,02	26,62	23,61	19,95	16,28	2,96	3,22	3,68	3,88	4,12	4,34
	30	31,44	29,89	24,95	22,18	18,71	15,23	2,54	2,76	3,16	3,32	3,48	3,63
	35	29,11	27,67	23,17	20,64	17,43	14,21	2,18	2,37	2,69	2,81	2,92	3,02
	40	26,40	25,09	21,05	18,79	15,94	13,08	1,82	1,96	2,23	2,34	2,42	2,50
	45	23,87	22,68	19,05	17,04	14,58	12,11	1,52	1,62	1,84	1,93	2,00	2,07
10	20	39,27	37,34	31,20	27,67	23,04	18,39	3,60	3,92	4,59	4,90	5,29	5,66
	25	36,78	34,97	29,36	26,11	21,65	17,18	3,08	3,35	3,92	4,18	4,45	4,71
	30	34,28	32,59	27,48	24,50	20,28	16,05	2,64	2,87	3,35	3,57	3,75	3,93
	35	31,61	30,05	25,42	22,71	18,82	14,91	2,25	2,44	2,85	3,02	3,15	3,27
	40	28,81	27,38	23,21	20,78	17,29	13,79	1,90	2,05	2,39	2,53	2,62	2,71
	45	26,20	24,90	21,12	18,95	15,90	12,85	1,60	1,71	1,97	2,09	2,17	2,25
12	20	41,66	39,83	33,47	29,78	24,99	20,19	3,71	4,07	4,83	5,20	5,63	6,06
	25	38,98	37,26	31,47	28,07	23,46	18,84	3,23	3,54	4,20	4,50	4,81	5,11
	30	36,28	34,68	29,42	26,30	21,94	17,57	2,81	3,07	3,64	3,90	4,11	4,31
	35	33,42	31,94	27,18	24,35	20,34	16,31	2,39	2,61	3,09	3,29	3,44	3,58
	40	30,53	29,17	24,87	22,33	18,73	15,11	2,03	2,20	2,60	2,77	2,87	2,97
	45	27,98	26,74	22,81	20,52	17,36	14,19	1,72	1,85	2,16	2,30	2,40	2,49
15	20	45,62	43,94	37,23	33,25	28,19	23,11	4,09	4,51	5,47	5,94	6,45	6,96
	25	42,31	40,75	34,70	31,06	26,23	21,38	3,42	3,77	4,57	4,94	5,31	5,66
	30	38,99	37,54	32,10	28,80	24,27	19,73	2,87	3,16	3,82	4,12	4,37	4,61
	35	35,78	34,45	29,54	26,57	22,41	18,24	2,43	2,67	3,22	3,47	3,64	3,80
	40	32,74	31,52	27,08	24,40	20,67	16,94	2,06	2,25	2,71	2,91	3,03	3,16
	45	30,47	29,33	25,22	22,77	19,46	16,14	1,78	1,92	2,29	2,46	2,58	2,69
18	20	48,04	46,85	39,77	35,41	30,22	25,00	3,96	4,41	5,37	5,85	6,46	7,08
	25	44,89	43,75	37,31	33,30	28,30	23,27	3,41	3,79	4,60	4,99	5,43	5,88
	30	41,68	40,62	34,78	31,11	26,39	21,65	2,93	3,25	3,93	4,25	4,57	4,88
	35	38,33	37,35	32,07	28,75	24,41	20,05	2,49	2,74	3,34	3,61	3,84	4,06
	40	35,29	34,39	29,59	26,58	22,66	18,74	2,13	2,34	2,82	3,03	3,20	3,37
	45	33,30	32,45	27,94	25,15	21,63	18,11	1,86	2,03	2,43	2,61	2,76	2,91

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 21 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	1,82	1,65	1,22	0,74	0,50	1,67	1,70	1,79	2,00	2,31
	-10/-10,5	2,96	2,70	2,03	1,28	0,91	2,65	2,69	2,80	3,01	3,23
	-7/-8	3,30	3,01	2,30	1,53	1,14	2,94	2,98	3,12	3,35	3,55
	0/-0,6	4,02	3,63	2,89	2,17	1,82	3,52	3,60	3,79	4,06	4,26
	2/1,1	4,30	3,92	3,06	2,15	1,69	3,75	3,83	4,05	4,39	4,67
	7/6	5,47	4,93	3,84	2,75	2,21	4,71	4,83	5,12	5,57	5,92
	10/8,2	5,80	5,25	4,10	2,91	2,32	4,95	5,07	5,39	5,88	6,26
	15/13	6,61	6,00	4,67	3,27	2,58	5,60	5,75	6,14	6,73	7,21
	18/14	7,10	6,45	5,00	3,49	2,73	5,98	6,15	6,58	7,24	7,79
35	-20/-20,1	1,80	1,62	1,18	0,71	0,47	1,53	1,55	1,63	1,83	2,12
	-10/-10,5	2,93	2,66	1,98	1,23	0,86	2,41	2,44	2,55	2,74	2,95
	-7/-8	3,27	2,96	2,24	1,47	1,08	2,66	2,70	2,82	3,04	3,24
	0/-0,6	3,99	3,58	2,82	2,10	1,74	3,17	3,24	3,41	3,66	3,85
	2/1,1	4,27	3,86	2,98	2,07	1,61	3,36	3,44	3,63	3,95	4,22
	7/6	5,41	4,86	3,76	2,67	2,12	4,19	4,29	4,56	4,96	5,28
	10/8,2	5,75	5,17	3,99	2,80	2,21	4,42	4,53	4,82	5,27	5,63
	15/13	6,56	5,91	4,55	3,15	2,46	5,01	5,14	5,50	6,04	6,49
	18/14	7,05	6,36	4,88	3,36	2,60	5,35	5,51	5,90	6,51	7,02
45	-20/-20,1	1,81	1,60	1,14	0,67	0,43	1,40	1,41	1,48	1,65	1,90
	-10/-10,5	2,85	2,55	1,85	1,12	0,76	2,02	2,04	2,13	2,29	2,47
	-7/-8	3,17	2,82	2,09	1,33	0,95	2,18	2,22	2,32	2,49	2,67
	0/-0,6	3,83	3,38	2,59	1,88	1,52	2,49	2,55	2,69	2,89	3,05
	2/1,1	4,10	3,64	2,74	1,85	1,41	2,63	2,69	2,85	3,10	3,33
	7/6	5,19	4,64	3,54	2,45	1,90	3,24	3,32	3,52	3,82	4,08
	10/8,2	5,52	4,88	3,68	2,52	1,94	3,76	3,85	4,09	4,45	4,76
	15/13	6,26	5,54	4,16	2,81	2,13	4,17	4,28	4,57	5,00	5,38
	18/14	6,70	5,94	4,45	2,98	2,25	4,40	4,53	4,84	5,33	5,76
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	3,10	2,77	2,04	1,28	0,90	1,84	1,87	1,94	2,07	2,19
	0/-0,6	3,74	3,31	2,53	1,80	1,44	2,04	2,08	2,18	2,33	2,45
	2/1,1	3,99	3,56	2,68	1,77	1,32	2,14	2,18	2,30	2,48	2,65
	7/6	5,05	4,50	3,40	2,31	1,76	2,60	2,66	2,81	3,04	3,23
	10/8,2	5,35	4,76	3,57	2,40	1,81	2,71	2,77	2,94	3,20	3,42
	15/13	6,08	5,41	4,05	2,68	2,00	2,98	3,05	3,25	3,56	3,84
	18/14	6,51	5,80	4,33	2,85	2,11	3,13	3,21	3,43	3,77	4,08
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	3,64	3,23	2,47	1,73	1,37	1,71	1,74	1,82	1,94	2,04
	2/1,1	3,89	3,48	2,61	1,71	1,26	1,79	1,82	1,91	2,06	2,20
	7/6	4,92	4,37	3,28	2,20	1,66	2,15	2,20	2,32	2,50	2,67
	10/8,2	5,18	4,62	3,46	2,30	1,72	2,09	2,14	2,26	2,46	2,63
	15/13	5,90	5,26	3,93	2,57	1,90	2,28	2,34	2,49	2,73	2,94
	18/14	6,33	5,65	4,21	2,74	2,00	2,40	2,46	2,62	2,88	3,12

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 21 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	4,66	4,17	3,60	2,78	2,29	1,80	4,23	4,32	4,49	4,72	4,95	5,31
	25	4,40	3,95	3,41	2,65	2,19	1,73	3,59	3,67	3,81	4,00	4,20	4,48
	30	4,14	3,72	3,23	2,52	2,10	1,67	3,06	3,13	3,27	3,42	3,58	3,80
	35	3,88	3,50	3,04	2,39	2,00	1,61	2,58	2,64	2,75	2,88	3,00	3,17
	40	3,63	3,27	2,86	2,26	1,90	1,55	2,20	2,25	2,36	2,46	2,56	2,69
	45	3,37	3,05	2,67	2,13	1,81	1,48	1,81	1,86	1,96	2,04	2,12	2,22
10	20	3,89	3,48	3,00	2,32	1,91	1,50	5,25	5,36	5,56	5,73	5,89	6,15
	25	3,69	3,31	2,87	2,23	1,85	1,47	4,40	4,50	4,68	4,84	4,99	5,23
	30	3,49	3,14	2,73	2,14	1,79	1,43	3,73	3,82	3,98	4,11	4,24	4,45
	35	3,30	2,97	2,59	2,05	1,72	1,40	3,15	3,23	3,37	3,48	3,59	3,76
	40	3,10	2,80	2,46	1,96	1,66	1,36	2,69	2,76	2,89	2,98	3,07	3,21
	45	2,90	2,63	2,32	1,87	1,60	1,33	2,26	2,32	2,45	2,52	2,60	2,71
12	20	5,45	4,88	4,21	3,26	2,68	2,11	4,94	5,09	5,38	5,70	6,04	6,54
	25	5,14	4,61	4,00	3,11	2,59	2,05	4,15	4,29	4,53	4,79	5,06	5,45
	30	4,83	4,35	3,78	2,97	2,49	2,00	3,53	3,64	3,85	4,06	4,27	4,57
	35	4,54	4,09	3,58	2,84	2,39	1,95	2,97	3,07	3,24	3,41	3,58	3,79
	40	4,23	3,83	3,37	2,70	2,30	1,89	2,53	2,62	2,77	2,90	3,03	3,19
	45	3,93	3,57	3,15	2,56	2,20	1,84	2,16	2,24	2,38	2,48	2,58	2,70
15	20	5,92	5,30	4,58	3,54	2,92	2,30	5,44	5,64	6,00	6,38	6,78	7,36
	25	5,58	5,01	4,35	3,39	2,82	2,25	4,45	4,61	4,91	5,22	5,54	5,99
	30	5,25	4,72	4,11	3,24	2,72	2,19	3,70	3,84	4,09	4,33	4,58	4,91
	35	4,93	4,45	3,90	3,11	2,63	2,15	3,12	3,24	3,44	3,63	3,82	4,07
	40	4,59	4,17	3,67	2,96	2,53	2,10	2,64	2,74	2,92	3,07	3,21	3,39
	45	4,26	3,88	3,44	2,82	2,44	2,06	2,24	2,33	2,49	2,61	2,72	2,85
18	20	6,41	5,74	4,96	3,84	3,17	2,49	5,71	5,94	6,36	6,80	7,27	7,94
	25	6,06	5,44	4,72	3,69	3,07	2,45	4,73	4,92	5,27	5,62	5,99	6,51
	30	5,71	5,14	4,49	3,54	2,98	2,41	3,97	4,13	4,42	4,70	4,98	5,37
	35	5,35	4,84	4,25	3,40	2,88	2,37	3,35	3,49	3,73	3,95	4,17	4,45
	40	5,00	4,54	4,01	3,25	2,79	2,34	2,84	2,96	3,17	3,33	3,50	3,70
	45	4,64	4,24	3,77	3,11	2,70	2,30	2,41	2,52	2,70	2,83	2,96	3,11

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 31 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	2,23	2,02	1,59	1,03	0,73	1,89	1,91	1,95	2,03	2,11
	10/-10,50	3,69	3,36	2,71	1,80	1,32	2,78	2,82	2,89	3,01	3,08
	-7/-8	4,13	3,76	3,02	2,07	1,57	3,01	3,06	3,15	3,29	3,39
	0/-0,6	5,07	4,57	3,58	2,65	2,20	3,43	3,50	3,66	3,87	4,01
	2/1,1	5,42	4,92	3,93	2,79	2,21	3,63	3,71	3,88	4,13	4,31
	7/6	6,87	6,18	4,81	3,45	2,77	4,49	4,60	4,84	5,18	5,40
	10/8,2	7,30	6,60	5,22	3,73	2,97	4,77	4,89	5,16	5,53	5,78
	15/13	8,31	7,53	5,98	4,23	3,34	5,43	5,59	5,92	6,38	6,68
	18/14	8,93	8,09	6,43	4,53	3,56	5,83	6,00	6,38	6,89	7,24
35	-20/-20,1	2,31	2,08	1,62	1,03	0,73	1,77	1,78	1,82	1,91	1,99
	10/-10,50	3,72	3,37	2,66	1,75	1,27	2,55	2,59	2,65	2,76	2,84
	-7/-8	4,14	3,75	2,96	2,00	1,51	2,76	2,80	2,89	3,02	3,12
	0/-0,6	5,03	4,51	3,47	2,54	2,09	3,14	3,20	3,35	3,54	3,67
	2/1,1	5,38	4,85	3,81	2,67	2,10	3,32	3,39	3,55	3,78	3,94
	7/6	6,81	6,12	4,74	3,36	2,68	4,12	4,22	4,44	4,74	4,95
	10/8,2	7,24	6,51	5,06	3,57	2,82	4,35	4,46	4,71	5,05	5,28
	15/13	8,25	7,43	5,79	4,05	3,18	4,92	5,06	5,37	5,78	6,06
	18/14	8,85	7,98	6,23	4,34	3,39	5,26	5,42	5,76	6,23	6,55
45	-20/-20,1	2,31	2,05	1,54	0,96	0,66	1,46	1,47	1,50	1,58	1,65
	10/-10,50	3,62	3,24	2,47	1,58	1,12	2,05	2,08	2,14	2,23	2,29
	-7/-8	4,02	3,59	2,73	1,80	1,33	2,21	2,24	2,31	2,42	2,50
	0/-0,6	4,85	4,29	3,18	2,27	1,83	2,49	2,54	2,66	2,81	2,92
	2/1,1	5,18	4,61	3,49	2,38	1,83	2,63	2,68	2,81	2,99	3,12
	7/6	6,54	5,86	4,48	3,12	2,44	3,23	3,30	3,47	3,70	3,86
	10/8,2	6,97	6,19	4,63	3,18	2,47	3,40	3,49	3,68	3,94	4,13
	15/13	7,90	7,02	5,27	3,59	2,76	3,73	3,84	4,07	4,39	4,62
	18/14	8,45	7,52	5,66	3,84	2,94	3,92	4,04	4,30	4,66	4,91
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	10/-10,50	–	–	–	–	–	–	–	–	–	–
	-7/-8	3,92	3,51	2,70	1,76	1,28	1,86	1,89	1,94	2,02	2,08
	0/-0,6	4,72	4,19	3,13	2,21	1,76	2,05	2,09	2,18	2,30	2,38
	2/1,1	5,04	4,51	3,44	2,33	1,77	2,15	2,20	2,29	2,43	2,53
	7/6	6,39	5,71	4,34	2,97	2,29	2,61	2,67	2,80	2,98	3,11
	10/8,2	6,77	6,03	4,56	3,10	2,37	2,72	2,78	2,93	3,13	3,27
	15/13	7,68	6,85	5,19	3,50	2,66	2,98	3,06	3,24	3,48	3,65
	18/14	8,22	7,34	5,57	3,74	2,83	3,13	3,22	3,41	3,68	3,87
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	10/-10,50	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	4,72	4,20	3,16	2,21	1,75	2,05	2,09	2,17	2,27	2,33
	2/1,1	5,04	4,52	3,47	2,33	1,76	2,15	2,19	2,28	2,40	2,48
	7/6	6,39	5,70	4,31	2,93	2,24	2,61	2,67	2,79	2,95	3,05
	10/8,2	6,77	6,04	4,59	3,10	2,36	2,72	2,78	2,91	3,09	3,21
	15/13	7,68	6,86	5,23	3,51	2,64	2,98	3,06	3,22	3,43	3,58
	18/14	8,22	7,35	5,62	3,75	2,81	3,13	3,21	3,39	3,63	3,80

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 31 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	6,25	5,35	4,54	3,63	2,99	2,35	4,22	4,34	4,46	4,65	4,83	5,08
	25	5,91	5,06	4,30	3,46	2,86	2,27	3,54	3,65	3,76	3,92	4,07	4,28
	30	5,56	4,78	4,07	3,29	2,73	2,18	3,00	3,09	3,19	3,34	3,46	3,64
	35	5,24	4,51	3,85	3,12	2,61	2,10	2,55	2,63	2,72	2,85	2,95	3,09
	40	4,90	4,23	3,63	2,96	2,49	2,01	2,15	2,24	2,32	2,43	2,52	2,63
	45	4,56	3,95	3,40	2,79	2,36	1,93	1,83	1,91	1,98	2,08	2,16	2,25
10	20	5,81	4,97	4,22	3,38	2,79	2,19	5,04	5,20	5,36	5,57	5,74	6,00
	25	5,51	4,73	4,02	3,24	2,69	2,13	4,21	4,36	4,50	4,69	4,85	5,09
	30	5,22	4,49	3,83	3,10	2,59	2,07	3,56	3,69	3,82	3,99	4,12	4,34
	35	4,93	4,25	3,64	2,97	2,49	2,02	3,02	3,14	3,26	3,41	3,52	3,70
	40	4,63	4,01	3,45	2,83	2,39	1,96	2,57	2,68	2,78	2,91	3,01	3,17
	45	4,33	3,77	3,26	2,70	2,30	1,90	2,19	2,30	2,40	2,52	2,60	2,73
12	20	7,26	6,22	5,27	4,22	3,49	2,75	4,96	5,18	5,41	5,71	5,98	6,33
	25	6,88	5,91	5,03	4,05	3,36	2,67	4,16	4,35	4,54	4,80	5,03	5,32
	30	6,50	5,59	4,78	3,87	3,24	2,60	3,52	3,69	3,85	4,07	4,26	4,50
	35	6,12	5,29	4,54	3,71	3,12	2,53	2,99	3,13	3,28	3,46	3,62	3,81
	40	5,73	4,98	4,29	3,53	3,00	2,46	2,53	2,66	2,79	2,95	3,07	3,22
	45	5,35	4,66	4,04	3,36	2,88	2,40	2,15	2,27	2,39	2,53	2,64	2,75
15	20	7,86	6,73	5,71	4,58	3,78	2,98	5,34	5,62	5,91	6,28	6,60	7,02
	25	7,46	6,41	5,46	4,40	3,66	2,92	4,41	4,65	4,89	5,20	5,47	5,82
	30	7,06	6,08	5,20	4,23	3,54	2,86	3,70	3,90	4,10	4,37	4,59	4,87
	35	6,65	5,76	4,95	4,05	3,43	2,80	3,12	3,30	3,47	3,69	3,87	4,09
	40	6,23	5,42	4,69	3,88	3,31	2,73	2,64	2,80	2,95	3,13	3,28	3,45
	45	5,81	5,09	4,43	3,70	3,19	2,68	2,24	2,38	2,52	2,68	2,81	2,94
18	20	8,65	7,41	6,29	5,04	4,17	3,29	5,72	6,07	6,42	6,86	7,25	7,75
	25	8,21	7,05	6,01	4,85	4,04	3,23	4,78	5,08	5,37	5,75	6,07	6,48
	30	7,76	6,69	5,73	4,67	3,92	3,17	4,04	4,30	4,55	4,86	5,13	5,46
	35	7,31	6,34	5,46	4,48	3,80	3,11	3,42	3,64	3,85	4,11	4,33	4,58
	40	6,86	5,98	5,18	4,30	3,68	3,06	2,90	3,09	3,27	3,50	3,67	3,87
	45	6,40	5,62	4,91	4,13	3,58	3,02	2,46	2,64	2,81	3,00	3,15	3,30

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 41 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	3,36	3,04	2,16	1,28	0,85	1,88	1,92	2,09	2,57	3,52
	-10/-10,5	5,09	4,63	3,36	2,09	1,46	2,70	2,75	2,93	3,34	3,88
	-7/-8	5,60	5,11	3,80	2,50	1,85	2,92	2,98	3,19	3,58	4,03
	0/-0,6	6,69	6,04	4,85	3,66	3,07	3,36	3,45	3,69	4,06	4,36
	2/1,1	7,10	6,46	4,97	3,48	2,74	3,56	3,65	3,94	4,43	4,92
	7/6	8,87	7,98	6,22	4,46	3,59	4,43	4,56	4,93	5,54	6,09
	10/8,2	9,36	8,48	6,57	4,67	3,72	4,65	4,79	5,18	5,84	6,45
	15/13	10,48	9,51	7,31	5,11	4,02	5,19	5,36	5,83	6,62	7,38
	18/14	11,16	10,13	7,75	5,38	4,20	5,52	5,70	6,22	7,10	7,96
35	-20/-20,1	3,31	2,97	2,10	1,23	0,80	1,78	1,81	1,97	2,41	3,31
	-10/-10,5	4,98	4,51	3,25	1,99	1,37	2,52	2,57	2,74	3,11	3,62
	-7/-8	5,49	4,96	3,67	2,38	1,74	2,73	2,78	2,97	3,33	3,75
	0/-0,6	6,54	5,86	4,67	3,49	2,90	3,12	3,21	3,42	3,77	4,05
	2/1,1	6,95	6,27	4,80	3,32	2,59	3,30	3,39	3,65	4,10	4,56
	7/6	8,70	7,81	6,05	4,29	3,41	4,09	4,21	4,53	5,08	5,59
	10/8,2	9,19	8,26	6,36	4,46	3,52	4,30	4,42	4,78	5,39	5,97
	15/13	10,33	9,30	7,10	4,91	3,81	4,79	4,95	5,37	6,11	6,82
	18/14	11,01	9,92	7,54	5,17	3,99	5,09	5,26	5,73	6,54	7,35
45	-20/-20,1	3,09	2,73	1,90	1,08	0,66	1,52	1,55	1,67	2,02	2,79
	-10/-10,5	4,69	4,17	2,96	1,76	1,16	2,09	2,13	2,26	2,56	3,00
	-7/-8	5,17	4,60	3,35	2,11	1,49	2,24	2,28	2,43	2,72	3,09
	0/-0,6	6,18	5,44	4,27	3,10	2,51	2,51	2,58	2,75	3,03	3,27
	2/1,1	6,57	5,84	4,39	2,95	2,23	2,64	2,71	2,91	3,28	3,67
	7/6	8,25	7,37	5,61	3,86	2,99	3,21	3,30	3,54	3,96	4,36
	10/8,2	8,72	7,71	5,84	3,98	3,05	3,36	3,46	3,73	4,21	4,69
	15/13	9,84	8,71	6,55	4,39	3,32	3,68	3,79	4,11	4,69	5,29
	18	10,52	9,31	6,97	4,64	3,48	3,86	3,99	4,34	4,97	5,64
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	4,99	4,46	3,22	1,98	1,36	1,85	1,88	1,99	2,19	2,45
	0/-0,6	5,99	5,30	4,11	2,92	2,33	2,03	2,07	2,20	2,40	2,57
	2/1,1	6,37	5,68	4,23	2,78	2,06	2,12	2,17	2,31	2,57	2,85
	7/6	8,03	7,14	5,38	3,63	2,75	2,54	2,60	2,78	3,08	3,38
	10/8,2	8,50	7,55	5,66	3,77	2,83	2,64	2,71	2,90	3,24	3,58
	15/13	9,54	8,48	6,31	4,14	3,06	2,83	2,91	3,14	3,53	3,95
	18/14	10,17	9,04	6,70	4,36	3,20	2,94	3,03	3,27	3,70	4,17
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	5,99	5,31	4,09	2,87	2,27	2,03	2,07	2,18	2,36	2,51
	2/1,1	6,37	5,70	4,21	2,74	2,00	2,12	2,16	2,29	2,51	2,75
	7/6	8,03	7,13	5,34	3,55	2,66	2,54	2,60	2,76	3,03	3,29
	10/8,2	8,50	7,56	5,63	3,71	2,75	2,64	2,70	2,88	3,17	3,47
	15/13	9,54	8,50	6,28	4,07	2,97	2,83	2,91	3,11	3,46	3,81
	18/14	10,17	9,06	6,67	4,29	3,10	2,94	3,02	3,24	3,62	4,02

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 41 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	7,16	6,52	5,41	4,29	3,49	2,69	4,11	4,23	4,49	4,89	5,39	6,35
	25	6,81	6,21	5,17	4,13	3,38	2,64	3,52	3,61	3,82	4,14	4,52	5,21
	30	6,46	5,90	4,94	3,97	3,27	2,58	3,03	3,11	3,28	3,53	3,82	4,30
	35	6,10	5,59	4,70	3,80	3,16	2,52	2,61	2,67	2,81	3,01	3,22	3,55
	40	5,75	5,28	4,46	3,64	3,05	2,46	2,23	2,29	2,40	2,55	2,71	2,94
	45	5,39	4,96	4,22	3,47	2,93	2,39	1,92	1,96	2,06	2,18	2,30	2,45
10	20	7,32	6,68	5,54	4,40	3,58	2,77	5,14	5,29	5,63	6,13	6,72	7,91
	25	6,99	6,39	5,33	4,26	3,50	2,74	4,35	4,47	4,75	5,14	5,59	6,44
	30	6,66	6,10	5,11	4,13	3,42	2,71	3,72	3,82	4,04	4,35	4,68	5,28
	35	6,32	5,80	4,89	3,99	3,34	2,69	3,18	3,27	3,45	3,68	3,92	4,34
	40	5,98	5,50	4,67	3,84	3,25	2,66	2,72	2,79	2,93	3,12	3,29	3,57
	45	5,63	5,20	4,45	3,70	3,17	2,63	2,34	2,40	2,52	2,66	2,79	2,98
12	20	8,64	7,88	6,54	5,20	4,24	3,27	4,98	5,16	5,54	6,12	6,81	8,15
	25	8,24	7,53	6,28	5,04	4,14	3,25	4,24	4,38	4,69	5,14	5,65	6,56
	30	7,83	7,18	6,03	4,88	4,05	3,23	3,65	3,76	4,01	4,35	4,72	5,34
	35	7,42	6,82	5,77	4,72	3,96	3,21	3,13	3,23	3,42	3,68	3,95	4,35
	40	7,00	6,46	5,50	4,55	3,86	3,18	2,68	2,76	2,91	3,11	3,30	3,56
	45	6,58	6,09	5,24	4,38	3,77	3,16	2,31	2,37	2,50	2,65	2,79	2,96
15	20	9,31	8,49	7,05	5,61	4,57	3,54	5,55	5,76	6,22	6,90	7,71	9,26
	25	8,88	8,12	6,79	5,45	4,50	3,54	4,63	4,80	5,15	5,67	6,26	7,29
	30	8,46	7,76	6,53	5,30	4,42	3,54	3,92	4,05	4,33	4,72	5,14	5,82
	35	8,02	7,39	6,27	5,15	4,34	3,54	3,34	3,44	3,66	3,95	4,25	4,68
	40	7,58	7,00	5,99	4,98	4,26	3,54	2,85	2,93	3,11	3,32	3,53	3,81
	45	7,13	6,62	5,72	4,83	4,18	3,54	2,44	2,52	2,66	2,82	2,97	3,14
18	20	10,2	9,29	7,72	6,15	5,02	3,89	6,02	6,26	6,79	7,59	8,52	10,30
	25	9,71	8,88	7,43	5,98	4,94	3,89	5,07	5,26	5,68	6,28	6,94	8,12
	30	9,23	8,47	7,15	5,82	4,86	3,91	4,32	4,47	4,80	5,25	5,72	6,48
	35	8,75	8,07	6,86	5,66	4,79	3,93	3,69	3,82	4,07	4,41	4,74	5,22
	40	8,27	7,66	6,58	5,50	4,73	3,95	3,16	3,26	3,46	3,71	3,93	4,24
	45	7,79	7,25	6,30	5,35	4,67	3,99	2,71	2,80	2,96	3,15	3,31	3,50

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 51 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	7,02	6,36	4,92	3,47	2,75	2,84	2,88	2,99	3,16	3,33
	-7/-8	7,48	6,84	5,44	4,04	3,34	2,95	2,99	3,11	3,28	3,43
	0/-0,6	9,18	8,60	7,34	6,07	5,44	3,41	3,47	3,61	3,80	3,94
	2/1,1	9,72	8,94	7,23	5,52	4,66	3,61	3,67	3,82	4,05	4,24
	7/6	12,1	11,2	9,36	7,50	6,58	4,45	4,52	4,73	5,00	5,20
	10/,8,2	12,8	11,8	9,82	7,80	6,79	4,68	4,77	4,98	5,28	5,51
	15/13	14,6	13,5	11,1	8,70	7,50	5,31	5,41	5,67	6,03	6,32
	18/14	15,7	14,5	11,9	9,23	7,92	5,67	5,79	6,08	6,48	6,80
35	-20/-20,1	3,88	3,50	2,64	1,79	1,37	1,54	1,57	1,66	1,80	1,95
	-10/-10,5	6,55	5,94	4,59	3,24	2,57	2,42	2,46	2,56	2,70	2,83
	-7/-8	7,35	6,72	5,34	3,96	3,28	2,66	2,70	2,82	2,97	3,10
	0/-0,6	9,06	8,49	7,24	5,99	5,37	3,12	3,18	3,33	3,50	3,63
	2/1,1	9,58	8,81	7,12	5,44	4,60	3,29	3,35	3,51	3,71	3,88
	7/6	11,9	11,0	9,22	7,39	6,47	4,05	4,14	4,34	4,59	4,78
	10/,8,2	12,6	11,7	9,66	7,67	6,68	4,27	4,36	4,57	4,84	5,05
	15/13	14,3	13,2	10,8	8,50	7,33	4,81	4,92	5,17	5,49	5,75
	18/14	15,3	14,1	11,6	8,99	7,72	5,13	5,25	5,53	5,88	6,16
45	-20/-20,1	4,11	3,70	2,80	1,90	1,45	1,31	1,34	1,43	1,57	1,74
	-10/-10,5	6,46	5,86	4,53	3,20	2,53	1,93	1,97	2,08	2,21	2,35
	-7/-8	7,17	6,56	5,21	3,87	3,20	2,10	2,15	2,26	2,41	2,54
	0/-0,6	8,67	8,12	6,93	5,73	5,14	2,43	2,49	2,63	2,79	2,91
	2/1,1	9,19	8,45	6,83	5,22	4,41	2,57	2,63	2,78	2,97	3,13
	7/6	11,5	10,7	8,89	7,13	6,25	3,19	3,27	3,46	3,69	3,86
	10/,8,2	12,2	11,3	9,35	7,42	6,46	3,37	3,46	3,66	3,90	4,10
	15/13	13,8	12,7	10,5	8,20	7,07	3,77	3,86	4,10	4,38	4,62
	18/14	14,7	13,6	11,1	8,67	7,44	4,00	4,10	4,35	4,67	4,93
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	6,44	5,83	4,51	3,18	2,52	1,56	1,59	1,65	1,74	1,82
	-7/-8	7,08	6,48	5,15	3,82	3,16	1,70	1,73	1,80	1,89	1,97
	0/-0,6	8,44	7,91	6,75	5,59	5,00	1,96	2,00	2,09	2,18	2,26
	2/1,1	8,92	8,21	6,63	5,07	4,28	2,07	2,10	2,19	2,31	2,40
	7/6	11,0	10,3	8,57	6,87	6,02	2,53	2,57	2,69	2,82	2,93
	10/,8,2	11,7	10,8	8,97	7,13	6,21	2,65	2,70	2,82	2,97	3,08
	15/13	13,2	12,2	10,0	7,84	6,76	2,94	2,99	3,13	3,30	3,43
	18/14	14,1	13,0	10,6	8,27	7,10	3,10	3,16	3,31	3,49	3,64
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	6,42	5,82	4,50	3,17	2,52	1,42	1,44	1,49	1,55	1,61
	-7/-8	7,04	6,44	5,12	3,80	3,14	1,55	1,57	1,62	1,68	1,74
	0/-0,6	8,33	7,81	6,66	5,51	4,94	1,79	1,81	1,87	1,94	1,99
	2/1,1	8,79	8,08	6,53	4,99	4,22	1,87	1,90	1,96	2,04	2,11
	7/6	10,8	10,1	8,40	6,74	5,90	2,28	2,31	2,39	2,49	2,56
	10/,8,2	11,4	10,6	8,78	6,98	6,08	2,38	2,41	2,50	2,60	2,68
	15/13	12,8	11,9	9,77	7,66	6,61	2,62	2,66	2,76	2,88	2,97
	18/14	13,7	12,7	10,4	8,17	7,05	2,77	2,81	2,93	3,08	3,20

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 51 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	40%	100%	90%	70%	60%	50%	40%
7	20	10,3	8,99	8,02	6,65	5,74	4,83	3,88	4,22	4,51	5,00	5,57	6,59
	25	9,88	8,55	7,60	6,26	5,37	4,48	3,38	3,62	3,83	4,18	4,58	5,26
	30	9,38	8,10	7,19	5,91	5,06	4,20	2,95	3,13	3,28	3,52	3,79	4,24
	35	8,84	7,64	6,79	5,59	4,79	3,99	2,57	2,69	2,79	2,96	3,14	3,44
	40	8,23	7,15	6,37	5,29	4,56	3,84	2,20	2,29	2,37	2,49	2,62	2,81
	45	7,60	6,65	5,98	5,03	4,40	3,77	1,89	1,96	2,02	2,12	2,22	2,36
10	20	11,2	9,65	8,52	6,94	5,88	4,82	4,22	4,62	4,96	5,58	6,33	7,84
	25	10,7	9,17	8,07	6,52	5,49	4,46	3,65	3,94	4,19	4,63	5,15	6,16
	30	10,2	8,69	7,64	6,16	5,17	4,18	3,18	3,39	3,57	3,87	4,23	4,88
	35	9,58	8,20	7,21	5,82	4,90	3,97	2,76	2,91	3,03	3,24	3,48	3,90
	40	8,94	7,68	6,78	5,52	4,68	3,83	2,37	2,48	2,57	2,72	2,88	3,16
	45	8,27	7,16	6,37	5,26	4,53	3,78	2,02	2,12	2,19	2,31	2,44	2,64
12	20	11,9	10,2	9,01	7,34	6,22	5,10	4,42	4,84	5,20	5,86	6,66	8,26
	25	11,3	9,70	8,54	6,90	5,81	4,72	3,83	4,14	4,40	4,86	5,42	6,49
	30	10,8	9,19	8,08	6,51	5,46	4,42	3,34	3,56	3,75	4,08	4,45	5,15
	35	10,1	8,67	7,62	6,16	5,18	4,20	2,90	3,06	3,19	3,42	3,67	4,11
	40	9,46	8,13	7,18	5,84	4,95	4,06	2,49	2,61	2,71	2,87	3,04	3,33
	45	8,76	7,59	6,75	5,58	4,79	4,01	2,14	2,24	2,32	2,44	2,58	2,79
15	20	12,7	11,0	9,84	8,15	7,03	5,90	4,83	5,30	5,70	6,38	7,18	8,65
	25	12,1	10,5	9,32	7,67	6,56	5,46	4,15	4,49	4,77	5,25	5,81	6,80
	30	11,5	9,94	8,81	7,23	6,17	5,12	3,59	3,83	4,03	4,37	4,75	5,40
	35	10,9	9,38	8,32	6,84	5,85	4,86	3,09	3,26	3,40	3,64	3,90	4,32
	40	10,1	8,80	7,84	6,49	5,59	4,69	2,64	2,77	2,88	3,05	3,23	3,51
	45	9,41	8,23	7,39	6,20	5,41	4,62	2,26	2,37	2,45	2,59	2,73	2,94
18	20	16,5	14,4	12,9	10,8	9,40	8,00	8,75	9,64	10,32	11,41	12,56	14,49
	25	14,6	12,7	11,3	9,42	8,15	6,87	5,71	6,22	6,63	7,30	8,04	9,31
	30	12,6	11,0	9,78	8,11	6,99	5,88	3,93	4,23	4,48	4,89	5,33	6,09
	35	11,9	10,4	9,24	7,67	6,63	5,58	3,40	3,62	3,80	4,09	4,40	4,90
	40	11,2	9,74	8,72	7,30	6,34	5,39	2,92	3,09	3,22	3,44	3,66	4,00
	45	10,4	9,12	8,23	6,98	6,15	5,32	2,51	2,65	2,76	2,93	3,10	3,36

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 71 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	8,44	7,78	6,10	4,32	3,36	2,84	2,94	3,08	3,25	3,39
	-7/-8	8,98	8,25	6,57	4,85	3,92	2,95	3,05	3,21	3,37	3,50
	0/-0,6	11,1	10,1	8,40	6,86	6,03	3,43	3,54	3,74	3,93	4,07
	2/1,1	11,7	10,9	8,87	6,72	5,56	3,62	3,72	3,90	4,13	4,32
	7/6	14,5	13,0	10,5	8,34	7,17	4,48	4,65	4,91	5,17	5,36
	10/8,2	15,3	13,9	11,3	8,83	7,53	4,73	4,94	5,24	5,53	5,75
	15/13	17,5	15,9	12,8	9,95	8,41	5,44	5,70	6,07	6,42	6,68
	18/14	18,8	17,1	13,8	10,6	8,93	5,86	6,16	6,58	6,97	7,26
35	-20/-20,1	4,69	4,29	3,30	2,26	1,70	1,52	1,57	1,66	1,80	1,95
	-10/-10,5	7,87	7,25	5,68	4,02	3,12	2,40	2,47	2,60	2,75	2,87
	-7/-8	8,83	8,10	6,44	4,75	3,85	2,64	2,72	2,87	3,03	3,15
	0/-0,6	10,9	9,91	8,23	6,72	5,91	3,12	3,21	3,39	3,57	3,70
	2/1,1	11,5	10,7	8,69	6,58	5,45	3,29	3,37	3,54	3,76	3,92
	7/6	14,3	12,9	10,5	8,29	7,12	4,07	4,22	4,47	4,73	4,91
	10/8,2	15,1	13,7	11,1	8,69	7,41	4,30	4,47	4,74	5,02	5,22
	15/13	17,2	15,6	12,6	9,76	8,24	4,86	5,08	5,41	5,75	5,98
	18/14	18,4	16,7	13,5	10,4	8,73	5,20	5,44	5,82	6,18	6,44
45	-20/-20,1	4,88	4,45	3,41	2,34	1,76	1,27	1,29	1,37	1,50	1,62
	-10/-10,5	7,76	7,12	5,57	3,94	3,06	1,91	1,94	2,05	2,20	2,30
	-7/-8	8,63	7,89	6,26	4,62	3,74	2,08	2,13	2,25	2,40	2,51
	0/-0,6	10,5	9,51	7,88	6,43	5,65	2,43	2,48	2,62	2,80	2,92
	2/1,1	11,1	10,3	8,34	6,31	5,22	2,57	2,61	2,75	2,95	3,09
	7/6	13,8	12,6	10,3	8,16	7,01	3,19	3,32	3,55	3,80	3,96
	10/8,2	14,6	13,2	10,7	8,36	7,13	3,38	3,47	3,70	3,96	4,13
	15/13	16,6	15,0	12,1	9,36	7,90	3,78	3,91	4,18	4,48	4,69
	18/14	17,7	16,1	12,9	9,95	8,36	4,02	4,17	4,46	4,80	5,02
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	7,81	7,12	5,53	3,91	3,04	1,56	1,59	1,66	1,75	1,81
	-7/-8	8,57	7,78	6,14	4,53	3,67	1,69	1,72	1,80	1,89	1,96
	0/-0,6	10,1	9,16	7,54	6,16	5,41	1,94	1,98	2,07	2,17	2,24
	2/1,1	10,7	9,88	7,97	6,04	4,99	2,05	2,07	2,16	2,28	2,36
	7/6	13,3	12,0	9,66	7,65	6,57	2,52	2,59	2,73	2,87	2,97
	10/8,2	14,1	12,6	10,1	7,96	6,79	2,65	2,72	2,86	3,01	3,11
	15/13	15,8	14,2	11,4	8,83	7,46	2,94	3,03	3,20	3,38	3,50
	18/14	16,9	15,2	12,1	9,36	7,87	3,12	3,22	3,40	3,59	3,72
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	7,84	7,11	5,51	3,90	3,03	1,43	1,45	1,50	1,57	1,61
	-7/-8	8,54	7,72	6,07	4,48	3,63	1,54	1,57	1,62	1,69	1,74
	0/-0,6	9,99	8,98	7,37	6,02	5,29	1,76	1,78	1,85	1,93	1,97
	2/1,1	10,6	9,68	7,79	5,90	4,88	1,85	1,87	1,93	2,01	2,07
	7/6	13,1	11,7	9,35	7,40	6,36	2,27	2,31	2,41	2,51	2,57
	10/8,2	13,8	12,3	9,87	7,75	6,61	2,38	2,43	2,54	2,65	2,72
	15/13	15,5	13,9	11,1	8,57	7,24	2,63	2,70	2,83	2,95	3,03
	18/14	16,5	14,8	11,8	9,07	7,62	2,78	2,86	3,00	3,13	3,22

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 71 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	80%	75%	60%	50%	40%
7	20	13,9	11,5	10,9	9,05	7,62	6,18	3,93	4,40	4,55	5,05	5,52	6,39
	25	13,2	10,9	10,3	8,53	7,14	5,74	3,41	3,78	3,89	4,24	4,57	5,17
	30	12,5	10,3	9,76	8,05	6,72	5,38	2,97	3,27	3,34	3,59	3,82	4,22
	35	11,7	9,71	9,18	7,58	6,34	5,09	2,57	2,79	2,84	3,01	3,17	3,44
	40	10,9	9,08	8,60	7,14	6,01	4,87	2,18	2,37	2,41	2,53	2,65	2,84
	45	10,1	8,45	8,02	6,74	5,74	4,74	1,86	2,02	2,05	2,16	2,26	2,41
10	20	15,0	12,5	11,8	9,63	7,97	6,31	4,22	4,83	5,00	5,59	6,16	7,29
	25	14,2	11,8	11,1	9,07	7,46	5,86	3,63	4,12	4,24	4,65	5,06	5,83
	30	13,4	11,2	10,5	8,56	7,02	5,49	3,15	3,53	3,62	3,91	4,19	4,72
	35	12,6	10,5	9,91	8,07	6,63	5,20	2,71	3,02	3,08	3,28	3,48	3,83
	40	11,8	9,86	9,29	7,61	6,30	4,98	2,31	2,56	2,60	2,76	2,90	3,14
	45	10,9	9,19	8,69	7,19	6,03	4,86	1,97	2,18	2,22	2,35	2,47	2,66
12	20	15,9	13,2	12,4	10,2	8,42	6,67	4,47	5,12	5,30	5,92	6,53	7,73
	25	15,0	12,5	11,8	9,59	7,89	6,19	3,86	4,37	4,50	4,95	5,37	6,20
	30	14,2	11,8	11,1	9,04	7,42	5,80	3,35	3,76	3,85	4,16	4,46	5,02
	35	13,3	11,1	10,5	8,53	7,01	5,50	2,89	3,21	3,28	3,50	3,71	4,08
	40	12,5	10,4	9,84	8,05	6,66	5,27	2,46	2,73	2,78	2,94	3,09	3,35
	45	11,6	9,73	9,20	7,62	6,38	5,15	2,11	2,33	2,37	2,51	2,63	2,84
15	20	17,1	14,2	13,5	11,2	9,39	7,60	4,79	5,55	5,76	6,44	7,10	8,33
	25	16,1	13,5	12,8	10,5	8,80	7,06	4,08	4,67	4,82	5,30	5,76	6,61
	30	15,2	12,8	12,1	9,94	8,28	6,62	3,50	3,97	4,08	4,42	4,74	5,31
	35	14,3	12,0	11,4	9,38	7,83	6,27	3,00	3,38	3,45	3,69	3,92	4,30
	40	13,4	11,3	10,7	8,86	7,44	6,02	2,56	2,86	2,92	3,10	3,26	3,53
	45	12,4	10,5	10,0	8,39	7,13	5,88	2,18	2,44	2,49	2,64	2,77	2,99
18	20	18,5	15,4	14,6	12,2	10,4	8,49	5,14	5,99	6,23	7,05	7,82	9,24
	25	17,5	14,6	13,8	11,5	9,70	7,89	4,42	5,08	5,26	5,85	6,39	7,39
	30	16,5	13,8	13,1	10,9	9,13	7,40	3,82	4,35	4,48	4,90	5,28	5,97
	35	15,5	13,0	12,3	10,3	8,63	7,01	3,31	3,76	3,85	4,16	4,43	4,91
	40	14,5	12,2	11,6	9,71	8,22	6,74	2,82	3,16	3,23	3,46	3,67	4,01
	45	13,6	11,5	10,9	9,22	7,91	6,59	2,41	2,70	2,77	2,96	3,13	3,40

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 81 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
	-20	-	-	-	-	-	-	-	-	-	-
	-10	10,0	9,01	6,94	4,87	3,83	2,71	2,79	3,00	3,42	3,91
	-7	10,6	9,63	7,65	5,67	4,68	2,87	2,94	3,14	3,50	3,85
	0	12,3	11,3	9,12	6,98	5,91	3,34	3,43	3,66	4,03	4,37
30	2	13,2	12,0	9,73	7,44	6,30	3,57	3,67	3,91	4,31	4,68
	7	16,6	15,4	12,9	10,4	9,11	4,53	4,65	4,95	5,38	5,74
	10	17,6	16,2	13,5	10,8	9,40	4,80	4,93	5,26	5,75	6,15
	15	20,4	18,7	15,4	12,2	10,5	5,59	5,75	6,16	6,79	7,32
	12	18,7	17,2	14,1	11,0	9,47	5,12	5,26	5,64	6,21	6,71
	-20	6,64	5,90	4,43	2,97	2,24	1,68	1,74	1,92	2,33	2,96
	-10	9,71	8,70	6,70	4,70	3,70	2,43	2,50	2,68	3,00	3,37
	-7	10,6	9,64	7,66	5,68	4,69	2,65	2,72	2,91	3,20	3,49
	0	12,6	11,5	9,28	7,10	6,01	3,11	3,19	3,41	3,73	4,02
35	2	13,3	12,1	9,83	7,52	6,37	3,29	3,38	3,61	3,95	4,26
	7	16,6	15,3	12,8	10,3	9,10	4,08	4,20	4,48	4,86	5,16
	10	17,6	16,2	13,5	10,8	9,40	4,33	4,45	4,75	5,17	5,52
	15	20,2	18,5	15,3	12,0	10,4	4,95	5,10	5,47	6,00	6,43
	12	18,6	17,1	14,0	10,9	9,42	4,58	4,72	5,05	5,54	5,95
	-20	5,80	5,16	3,88	2,60	1,96	1,24	1,29	1,42	1,71	2,14
	-10	9,36	8,39	6,46	4,53	3,57	1,94	2,00	2,16	2,42	2,72
	-7	10,4	9,45	7,51	5,57	4,60	2,14	2,21	2,37	2,62	2,86
	0	12,7	11,6	9,38	7,17	6,07	2,55	2,63	2,82	3,10	3,35
45	2	13,3	12,2	9,84	7,53	6,37	2,67	2,75	2,95	3,24	3,50
	7	16,2	15,0	12,6	10,1	8,91	3,21	3,31	3,55	3,86	4,11
	10	17,0	15,7	13,0	10,4	9,10	3,36	3,46	3,71	4,06	4,34
	15	19,5	17,9	14,8	11,6	10,1	3,82	3,95	4,25	4,66	5,01
	18	21,0	19,3	15,8	12,4	10,6	4,09	4,23	4,56	5,02	5,42
	-20	-	-	-	-	-	-	-	-	-	-
	-10	9,10	8,16	6,28	4,41	3,47	1,54	1,58	1,67	1,82	1,99
	-7	9,90	8,98	7,13	5,29	4,37	1,66	1,70	1,79	1,94	2,07
	0	11,6	10,6	8,55	6,54	5,54	1,90	1,94	2,05	2,20	2,33
55	2	12,2	11,2	9,04	6,92	5,86	2,00	2,04	2,16	2,32	2,46
	7	15,2	14,1	11,8	9,48	8,34	2,46	2,52	2,65	2,83	2,97
	10	16,1	14,8	12,3	9,85	8,60	2,59	2,65	2,80	2,99	3,15
	15	18,3	16,8	13,8	10,9	9,42	2,91	2,98	3,15	3,39	3,57
	18	19,6	18,0	14,7	11,5	9,91	3,10	3,18	3,36	3,62	3,83
	-20	-	-	-	-	-	-	-	-	-	-
	-10	8,97	8,04	6,19	4,34	3,42	1,36	1,38	1,45	1,56	1,67
	-7	9,64	8,74	6,94	5,15	4,25	1,45	1,48	1,54	1,64	1,73
	0	11,0	10,0	8,13	6,22	5,27	1,63	1,66	1,73	1,84	1,93
60	2	11,7	10,7	8,65	6,62	5,60	1,73	1,76	1,84	1,95	2,04
	7	14,7	13,6	11,4	9,16	8,06	2,15	2,20	2,29	2,41	2,51
	10	15,6	14,4	12,0	9,56	8,36	2,28	2,32	2,43	2,56	2,67
	15	17,7	16,2	13,4	10,5	9,10	2,55	2,60	2,72	2,88	3,01
	18	18,9	17,3	14,2	11,1	9,55	2,71	2,76	2,89	3,07	3,21

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 81 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	18,4	16,8	14,2	11,9	10,3	8,76	4,41	4,71	5,32	6,03	6,67	7,80
	25	17,4	15,9	13,4	11,1	9,62	8,10	3,78	3,99	4,42	4,91	5,35	6,10
	30	16,5	15,1	12,6	10,5	9,02	7,58	3,26	3,41	3,71	4,04	4,34	4,84
	35	15,4	14,1	11,8	9,82	8,48	7,14	2,79	2,89	3,10	3,33	3,53	3,85
	40	14,2	13,0	10,9	9,13	7,93	6,73	2,34	2,42	2,57	2,73	2,86	3,07
	45	12,9	11,9	10,1	8,58	7,53	6,49	1,96	2,03	2,15	2,27	2,38	2,53
10	20	20,1	18,3	15,0	12,3	10,4	8,48	4,64	4,98	5,69	6,56	7,43	9,16
	25	19,1	17,3	14,2	11,5	9,65	7,82	3,99	4,23	4,73	5,33	5,92	7,06
	30	18,1	16,3	13,4	10,8	9,05	7,31	3,45	3,62	3,97	4,38	4,78	5,52
	35	16,8	15,2	12,4	10,1	8,46	6,85	2,93	3,05	3,29	3,57	3,83	4,30
	40	15,5	14,0	11,5	9,39	7,94	6,49	2,47	2,56	2,73	2,93	3,11	3,41
	45	14,2	13,0	10,8	8,88	7,60	6,33	2,09	2,16	2,30	2,46	2,59	2,80
12	20	21,3	19,4	16,1	13,3	11,3	9,43	4,93	5,30	6,06	6,97	7,85	9,52
	25	20,2	18,3	15,2	12,4	10,6	8,71	4,24	4,50	5,04	5,67	6,27	7,36
	30	19,1	17,3	14,3	11,7	9,91	8,14	3,66	3,85	4,22	4,66	5,07	5,78
	35	17,8	16,2	13,3	10,9	9,28	7,64	3,15	3,28	3,55	3,84	4,12	4,58
	40	16,4	14,9	12,4	10,2	8,72	7,24	2,64	2,73	2,92	3,13	3,32	3,62
	45	15,1	13,8	11,6	9,66	8,36	7,06	2,23	2,31	2,46	2,62	2,76	2,98
15	20	23,1	21,1	17,7	14,8	12,9	10,9	5,10	5,49	6,29	7,23	8,11	9,70
	25	21,9	20,0	16,7	13,9	12,0	10,1	4,38	4,66	5,23	5,88	6,49	7,53
	30	20,7	18,9	15,7	13,1	11,2	9,43	3,79	3,99	4,39	4,84	5,25	5,94
	35	19,2	17,5	14,6	12,2	10,5	8,80	3,21	3,35	3,63	3,93	4,21	4,65
	40	17,8	16,3	13,7	11,4	9,90	8,39	2,74	2,84	3,05	3,26	3,45	3,75
	45	16,5	15,2	12,9	10,9	9,57	8,23	2,34	2,43	2,60	2,77	2,91	3,13
18	20	24,8	22,8	19,3	16,3	14,3	12,2	5,28	5,72	6,63	7,68	8,66	10,38
	25	23,5	21,5	18,1	15,2	13,2	11,3	4,53	4,85	5,51	6,25	6,92	8,06
	30	22,1	20,3	17,0	14,3	12,4	10,5	3,91	4,14	4,61	5,13	5,59	6,34
	35	20,6	18,9	15,9	13,3	11,6	9,84	3,33	3,50	3,83	4,19	4,50	5,00
	40	19,1	17,6	14,9	12,5	11,0	9,38	2,84	2,97	3,22	3,48	3,70	4,03
	45	18,0	16,6	14,2	12,1	10,7	9,28	2,46	2,57	2,77	2,98	3,15	3,40

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 91 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	11,3	10,3	7,79	5,51	4,36	2,66	2,73	2,92	3,24	3,58
	-7/-8	11,9	10,9	8,53	6,33	5,24	2,82	2,88	3,07	3,36	3,63
	0/-0,6	14,3	13,2	10,5	8,01	6,77	3,38	3,46	3,68	4,00	4,29
	2/1,1	15,1	13,9	11,1	8,46	7,15	3,57	3,65	3,89	4,24	4,55
	7/6	18,6	17,2	14,2	11,4	9,95	4,41	4,53	4,82	5,21	5,52
	10/8,2	19,7	18,2	14,8	11,8	10,3	4,66	4,79	5,11	5,55	5,89
	15/13	22,5	20,8	16,8	13,2	11,4	5,34	5,50	5,90	6,44	6,88
	18/14	24,3	22,4	18,0	14,0	12,0	5,75	5,93	6,37	6,98	7,49
35	-20/-20,1	8,05	7,28	5,39	3,66	2,79	1,78	1,83	2,01	2,33	2,75
	-10/-10,5	11,0	10,0	7,58	5,36	4,25	2,40	2,46	2,63	2,89	3,17
	-7/-8	11,9	10,9	8,50	6,31	5,22	2,58	2,65	2,83	3,07	3,31
	0/-0,6	13,7	12,6	10,1	7,68	6,49	2,95	3,02	3,22	3,49	3,74
	2/1,1	14,6	13,5	10,7	8,19	6,92	3,14	3,22	3,44	3,73	3,99
	7/6	18,5	17,1	14,1	11,3	9,88	3,95	4,06	4,35	4,69	4,97
	10/8,2	19,7	18,2	14,9	11,8	10,3	4,21	4,33	4,64	5,03	5,34
	15/13	22,3	20,6	16,6	13,0	11,2	4,74	4,88	5,25	5,71	6,09
	18/14	20,7	19,1	15,4	12,0	10,3	4,42	4,56	4,89	5,32	5,69
45	-20/-20,1	7,37	6,67	4,94	3,35	2,56	1,36	1,40	1,54	1,79	2,11
	-10/-10,5	10,9	9,89	7,49	5,29	4,19	1,94	1,99	2,14	2,37	2,61
	-7/-8	11,9	10,9	8,51	6,32	5,22	2,10	2,16	2,32	2,54	2,75
	0/-0,6	14,1	13,0	10,3	7,90	6,68	2,43	2,49	2,68	2,92	3,14
	2/1,1	14,9	13,8	10,9	8,36	7,07	2,56	2,62	2,82	3,08	3,31
	7/6	18,6	17,2	14,1	11,3	9,94	3,14	3,23	3,48	3,78	4,02
	10/8,2	19,6	18,1	14,8	11,8	10,2	3,30	3,40	3,66	3,99	4,26
	15/13	22,2	20,4	16,5	13,0	11,2	3,69	3,80	4,11	4,50	4,82
	18/14	23,7	21,8	17,6	13,7	11,7	3,91	4,04	4,38	4,80	5,16
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	10,5	9,59	7,27	5,15	4,09	1,53	1,56	1,66	1,79	1,93
	-7/-8	11,6	10,6	8,26	6,15	5,09	1,66	1,69	1,80	1,93	2,05
	0/-0,6	13,7	12,6	10,0	7,68	6,50	1,92	1,96	2,08	2,22	2,35
	2/1,1	14,4	13,3	10,6	8,08	6,84	2,00	2,04	2,17	2,32	2,45
	7/6	17,7	16,4	13,5	10,8	9,48	2,44	2,50	2,65	2,82	2,96
	10/8,2	18,6	17,2	14,0	11,2	9,74	2,55	2,62	2,78	2,96	3,12
	15/13	20,8	19,2	15,5	12,2	10,5	2,82	2,89	3,07	3,30	3,48
	18/14	22,1	20,3	16,4	12,8	11,0	2,97	3,05	3,25	3,49	3,69
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	10,6	9,67	7,33	5,19	4,12	1,38	1,40	1,47	1,57	1,67
	-7/-8	11,6	10,6	8,31	6,18	5,11	1,50	1,52	1,60	1,69	1,78
	0/-0,6	13,7	12,6	10,0	7,67	6,49	1,73	1,76	1,85	1,95	2,04
	2/1,1	14,4	13,3	10,6	8,08	6,84	1,81	1,84	1,93	2,05	2,14
	7/6	17,7	16,4	13,5	10,8	9,48	2,21	2,26	2,37	2,49	2,59
	10/8,2	18,6	17,2	14,1	11,2	9,74	2,32	2,37	2,48	2,62	2,73
	15/13	20,8	19,2	15,5	12,2	10,5	2,56	2,62	2,75	2,91	3,04
	18/14	22,1	20,4	16,4	12,8	11,0	2,71	2,77	2,91	3,09	3,23

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 91 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	20,0	18,2	15,6	12,9	11,0	9,16	4,35	4,64	5,18	5,87	6,52	7,70
	25	19,0	17,3	14,8	12,2	10,3	8,50	3,74	3,96	4,35	4,83	5,27	6,06
	30	18,0	16,4	14,0	11,5	9,74	7,98	3,24	3,41	3,68	4,01	4,31	4,84
	35	16,8	15,3	13,0	10,7	9,12	7,49	2,77	2,89	3,08	3,30	3,51	3,85
	40	15,4	14,1	12,0	9,98	8,52	7,06	2,32	2,42	2,56	2,72	2,86	3,09
	45	14,1	13,0	11,2	9,36	8,09	6,82	1,96	2,04	2,15	2,28	2,39	2,56
10	20	21,8	19,9	16,7	13,5	11,2	8,92	4,57	4,90	5,52	6,35	7,18	8,90
	25	20,7	18,9	15,8	12,6	10,4	8,24	3,91	4,17	4,60	5,17	5,74	6,88
	30	19,5	17,8	14,9	11,9	9,80	7,70	3,37	3,56	3,87	4,26	4,65	5,39
	35	18,2	16,6	13,9	11,1	9,18	7,23	2,88	3,03	3,24	3,52	3,78	4,25
	40	16,7	15,3	12,8	10,3	8,59	6,83	2,43	2,54	2,70	2,89	3,07	3,38
	45	15,4	14,1	11,9	9,76	8,21	6,66	2,06	2,15	2,28	2,43	2,57	2,80
12	20	23,0	21,0	17,8	14,5	12,2	9,90	4,75	5,11	5,77	6,63	7,49	9,17
	25	21,8	20,0	16,8	13,6	11,4	9,16	4,13	4,41	4,88	5,49	6,08	7,20
	30	20,6	18,9	15,9	12,9	10,7	8,57	3,60	3,82	4,16	4,58	4,98	5,73
	35	19,2	17,6	14,8	12,0	10,0	8,05	3,08	3,25	3,49	3,78	4,05	4,53
	40	17,7	16,2	13,7	11,2	9,40	7,61	2,60	2,73	2,90	3,11	3,30	3,62
	45	16,4	15,0	12,8	10,6	9,01	7,42	2,20	2,31	2,45	2,62	2,77	3,00
15	20	25,2	23,1	19,7	16,3	13,9	11,5	5,07	5,49	6,22	7,16	8,06	9,75
	25	23,7	21,8	18,5	15,2	12,9	10,6	4,31	4,63	5,14	5,79	6,41	7,52
	30	22,3	20,5	17,4	14,3	12,1	9,87	3,69	3,93	4,29	4,73	5,15	5,88
	35	20,8	19,1	16,2	13,3	11,3	9,26	3,15	3,34	3,59	3,90	4,18	4,65
	40	19,2	17,7	15,1	12,5	10,6	8,80	2,69	2,84	3,02	3,24	3,44	3,76
	45	17,9	16,6	14,3	11,9	10,3	8,66	2,31	2,44	2,60	2,78	2,93	3,18
18	20	27,0	24,7	21,2	17,7	15,3	12,8	5,20	5,65	6,47	7,52	8,53	10,39
	25	25,5	23,4	20,0	16,6	14,2	11,8	4,46	4,80	5,40	6,14	6,83	8,08
	30	24,0	22,0	18,8	15,6	13,3	11,0	3,84	4,11	4,53	5,06	5,54	6,37
	35	22,4	20,6	17,6	14,6	12,5	10,4	3,30	3,52	3,82	4,20	4,53	5,08
	40	20,7	19,1	16,4	13,7	11,7	9,83	2,80	2,97	3,19	3,46	3,70	4,07
	45	19,5	18,0	15,6	13,2	11,5	9,75	2,43	2,57	2,76	2,99	3,17	3,46

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 101 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	13,1	12,1	9,49	6,71	5,33	2,53	2,62	2,80	3,05	3,31
	-7/-8	13,9	12,8	10,2	7,52	6,19	2,68	2,79	2,98	3,21	3,44
	0/-0,6	16,6	15,4	12,6	9,51	7,99	3,19	3,28	3,49	3,77	4,02
	2/1,1	17,5	16,3	13,2	10,0	8,41	3,35	3,46	3,68	3,98	4,24
	7/6	21,5	19,3	15,6	12,3	10,7	4,11	4,29	4,60	4,95	5,22
	10/8,2	22,6	20,5	16,6	13,0	11,2	4,33	4,55	4,90	5,29	5,60
	15/13	25,7	23,4	18,9	14,6	12,5	4,91	5,18	5,62	6,09	6,48
	18/14	23,8	21,7	17,5	13,5	11,5	4,56	4,82	5,23	5,66	6,02
35	-20/-20,1	8,56	7,82	6,01	4,11	3,17	1,54	1,59	1,71	1,92	2,19
	-10/-10,5	12,8	11,7	9,19	6,51	5,16	2,28	2,34	2,49	2,71	2,93
	-7/-8	14,1	12,9	10,2	7,55	6,21	2,49	2,57	2,73	2,95	3,16
	0/-0,6	16,7	15,5	12,6	9,54	8,01	2,93	2,99	3,18	3,44	3,67
	2/1,1	17,6	16,4	13,3	10,0	8,44	3,08	3,15	3,34	3,62	3,86
	7/6	21,7	19,7	16,0	12,7	11,0	3,75	3,91	4,21	4,54	4,81
	10/8,2	22,8	20,6	16,7	13,1	11,3	3,94	4,10	4,42	4,77	5,07
	15/13	26,0	23,5	19,0	14,7	12,6	4,45	4,66	5,04	5,47	5,83
	18/14	24,1	21,9	17,6	13,5	11,5	4,15	4,34	4,70	5,10	5,44
45	-20/-20,1	8,87	8,08	6,20	4,25	3,27	1,40	1,43	1,54	1,74	1,98
	-10/-10,5	12,2	11,2	8,78	6,21	4,93	1,86	1,90	2,03	2,22	2,42
	-7/-8	13,3	12,1	9,62	7,10	5,84	1,99	2,04	2,18	2,37	2,55
	0/-0,6	15,3	14,2	11,5	8,73	7,33	2,24	2,28	2,42	2,64	2,83
	2/1,1	16,3	15,1	12,3	9,28	7,80	2,37	2,41	2,56	2,79	3,00
	7/6	20,5	18,7	15,3	12,1	10,5	2,93	3,06	3,31	3,59	3,83
	10/8,2	21,8	19,6	15,8	12,4	10,7	3,09	3,20	3,44	3,75	4,00
	15/13	24,5	22,1	17,8	13,8	11,8	3,44	3,57	3,87	4,22	4,52
	18/14	26,1	23,6	19,0	14,6	12,4	3,64	3,79	4,11	4,50	4,83
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	12,2	11,1	8,61	6,09	4,83	1,49	1,52	1,60	1,71	1,83
	-7/-8	13,1	11,9	9,41	6,95	5,72	1,59	1,62	1,71	1,83	1,93
	0/-0,6	15,2	14,0	11,3	8,52	7,16	1,79	1,82	1,90	2,03	2,15
	2/1,1	16,0	14,8	11,9	9,01	7,57	1,88	1,90	1,99	2,13	2,25
	7/6	19,9	17,9	14,4	11,4	9,93	2,31	2,38	2,53	2,69	2,82
	10/8,2	21,1	18,9	15,1	11,9	10,2	2,42	2,50	2,65	2,82	2,97
	15/13	23,5	21,1	16,9	13,1	11,2	2,67	2,76	2,94	3,15	3,32
	18/14	25,0	22,4	17,9	13,8	11,8	2,82	2,92	3,12	3,34	3,52
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	11,9	10,8	8,39	5,93	4,71	1,30	1,33	1,39	1,47	1,56
	-7/-8	13,1	11,9	9,35	6,90	5,68	1,44	1,47	1,53	1,62	1,70
	0/-0,6	15,7	14,4	11,6	8,76	7,36	1,72	1,74	1,81	1,92	2,00
	2/1,1	16,4	15,1	12,1	9,17	7,70	1,76	1,78	1,85	1,95	2,05
	7/6	19,9	17,7	14,2	11,2	9,76	2,11	2,16	2,27	2,40	2,49
	10/8,2	20,8	18,5	14,8	11,6	10,0	2,20	2,26	2,38	2,51	2,61
	15/13	23,2	20,7	16,5	12,8	11,0	2,43	2,51	2,65	2,80	2,92
	18/14	24,6	22,1	17,6	13,5	11,5	2,56	2,65	2,80	2,97	3,11

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 101 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	40%	100%	90%	70%	60%	50%	40%
7	20	23,6	21,7	17,0	15,3	13,1	11,0	3,75	3,98	4,70	5,04	5,56	6,23
	25	22,2	20,5	16,1	14,5	12,4	10,3	3,22	3,41	3,97	4,20	4,56	5,03
	30	20,9	19,4	15,2	13,7	11,7	9,63	2,78	2,94	3,37	3,53	3,78	4,10
	35	19,4	18,0	14,2	12,8	10,9	9,02	2,38	2,50	2,81	2,92	3,09	3,31
	40	17,8	16,6	13,1	11,8	10,1	8,46	2,01	2,12	2,38	2,46	2,58	2,73
	45	16,5	15,3	12,2	11,1	9,61	8,12	1,71	1,81	2,02	2,09	2,19	2,31
10	20	26,1	24,1	18,8	16,8	14,1	11,4	3,90	4,18	5,04	5,43	6,06	6,94
	25	24,6	22,8	17,8	15,9	13,2	10,6	3,35	3,58	4,25	4,53	4,97	5,57
	30	23,1	21,5	16,8	14,9	12,5	9,97	2,89	3,09	3,61	3,80	4,10	4,52
	35	21,4	20,0	15,7	13,9	11,6	9,33	2,46	2,63	3,03	3,17	3,37	3,65
	40	19,7	18,4	14,5	12,9	10,9	8,78	2,10	2,24	2,55	2,65	2,80	2,99
	45	18,4	17,2	13,6	12,2	10,4	8,50	1,80	1,92	2,19	2,27	2,39	2,54
12	20	27,5	25,5	20,0	17,9	15,2	12,4	4,13	4,46	5,44	5,86	6,55	7,47
	25	25,9	24,1	19,0	17,0	14,3	11,6	3,56	3,83	4,60	4,90	5,38	6,01
	30	24,4	22,7	17,9	16,0	13,5	10,9	3,08	3,31	3,91	4,12	4,45	4,89
	35	22,7	21,1	16,7	14,9	12,6	10,2	2,64	2,84	3,30	3,45	3,68	3,97
	40	20,9	19,5	15,5	13,9	11,8	9,63	2,25	2,41	2,79	2,89	3,06	3,26
	45	19,6	18,3	14,6	13,2	11,3	9,36	1,91	2,05	2,36	2,45	2,58	2,75
15	20	29,8	27,6	21,9	19,8	16,9	14,1	4,18	4,55	5,64	6,10	6,82	7,78
	25	28,1	26,1	20,8	18,7	15,9	13,2	3,63	3,94	4,80	5,13	5,64	6,30
	30	26,4	24,6	19,6	17,6	15,0	12,4	3,15	3,43	4,10	4,33	4,69	5,15
	35	24,4	22,8	18,2	16,4	14,0	11,6	2,69	2,92	3,45	3,61	3,85	4,16
	40	22,7	21,2	17,0	15,4	13,2	10,9	2,30	2,50	2,92	3,04	3,22	3,44
	45	21,7	20,3	16,4	14,9	12,9	10,9	2,04	2,20	2,57	2,67	2,82	3,00
18	20	32,0	29,6	23,4	21,2	18,3	15,4	4,37	4,76	5,93	6,46	7,28	8,37
	25	30,1	28,0	22,2	20,0	17,2	14,4	3,79	4,11	5,04	5,41	6,00	6,76
	30	28,3	26,3	20,9	18,9	16,2	13,5	3,29	3,56	4,29	4,56	4,98	5,51
	35	26,1	24,3	19,4	17,5	15,0	12,6	2,80	3,05	3,65	3,84	4,13	4,50
	40	24,4	22,8	18,2	16,5	14,2	12,0	2,43	2,62	3,09	3,23	3,45	3,71
	45	24,0	22,4	18,0	16,4	14,3	12,2	2,19	2,36	2,77	2,90	3,08	3,30

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 121 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	14,9	13,7	10,6	7,47	5,91	2,69	2,80	3,01	3,33	3,67
	-7/-8	16,1	14,7	11,6	8,55	7,03	2,86	2,98	3,19	3,50	3,79
	0/0,6	19,7	18,3	14,7	11,1	9,36	3,41	3,52	3,77	4,12	4,45
	2/1,1	21,0	19,5	15,7	11,9	9,96	3,61	3,73	3,99	4,37	4,72
	7/6	26,4	23,6	19,2	15,2	13,2	4,48	4,69	5,03	5,47	5,83
	10/8,2	28,1	25,4	20,6	16,2	14,0	4,74	5,00	5,38	5,86	6,26
	15/13	32,0	29,0	23,3	18,1	15,5	5,34	5,66	6,12	6,70	7,21
	18/14	34,3	31,1	25,0	19,3	16,4	5,69	6,05	6,56	7,21	7,77
35	-20/-20,1	7,28	6,63	5,00	3,41	2,61	1,20	1,23	1,34	1,53	1,78
	-10/-10,5	13,9	12,8	9,83	6,93	5,49	2,22	2,29	2,45	2,71	2,97
	-7/-8	15,9	14,5	11,4	8,43	6,93	2,51	2,59	2,78	3,04	3,29
	0/0,6	20,2	18,7	15,0	11,4	9,56	3,11	3,18	3,41	3,73	4,02
	2/1,1	21,3	19,8	15,8	12,0	10,1	3,26	3,34	3,57	3,91	4,22
	7/6	26,2	23,7	19,4	15,3	13,3	3,95	4,13	4,45	4,84	5,16
	10/8,2	27,6	24,9	20,1	15,8	13,7	4,14	4,31	4,65	5,07	5,42
	15/13	31,5	28,4	22,9	17,7	15,2	4,67	4,89	5,30	5,80	6,23
	18/14	29,2	26,4	21,2	16,3	13,9	4,35	4,56	4,94	5,41	5,82
45	-20/-20,1	8,11	7,37	5,56	3,78	2,90	1,09	1,12	1,22	1,40	1,63
	-10/-10,5	14,2	13,0	9,98	7,04	5,57	1,86	1,90	2,05	2,27	2,51
	-7/-8	16,0	14,6	11,5	8,45	6,95	2,08	2,13	2,30	2,53	2,75
	0/0,6	19,9	18,4	14,8	11,2	9,38	2,53	2,57	2,77	3,04	3,30
	2/1,1	21,0	19,4	15,5	11,8	9,88	2,65	2,70	2,90	3,19	3,46
	7/6	25,8	23,4	19,2	15,2	13,2	3,21	3,35	3,63	3,97	4,26
	10/8,2	27,1	24,4	19,7	15,5	13,4	3,36	3,48	3,76	4,12	4,43
	15/13	30,7	27,6	22,2	17,3	14,8	3,75	3,91	4,24	4,66	5,03
	18/14	32,8	29,6	23,7	18,3	15,6	3,98	4,16	4,52	4,98	5,39
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	13,8	12,6	9,64	6,80	5,38	1,41	1,44	1,53	1,66	1,79
	-7/-8	15,4	13,9	10,9	8,03	6,60	1,57	1,61	1,70	1,83	1,96
	0/0,6	18,6	17,0	13,6	10,3	8,66	1,90	1,92	2,03	2,19	2,33
	2/1,1	19,5	17,9	14,3	10,9	9,11	1,94	1,96	2,08	2,24	2,38
	7/6	24,0	21,4	17,4	13,8	12,0	2,35	2,43	2,59	2,77	2,92
	10/8,2	25,2	22,5	18,1	14,3	12,3	2,46	2,54	2,70	2,89	3,06
	15/13	28,2	25,2	20,2	15,7	13,5	2,72	2,82	3,00	3,23	3,42
	18/14	30,0	26,9	21,5	16,6	14,1	2,88	2,98	3,19	3,43	3,64
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	14,3	12,9	9,89	6,98	5,52	1,34	1,36	1,43	1,53	1,62
	-7/-8	15,5	14,0	11,0	8,08	6,64	1,44	1,47	1,55	1,64	1,73
	0/0,6	18,1	16,6	13,2	10,0	8,42	1,66	1,68	1,76	1,86	1,95
	2/1,1	19,1	17,5	14,0	10,6	8,88	1,73	1,75	1,83	1,95	2,04
	7/6	23,6	20,9	16,9	13,4	11,7	2,12	2,17	2,28	2,41	2,52
	10/8,2	24,9	22,1	17,8	14,0	12,1	2,22	2,29	2,41	2,55	2,66
	15/13	27,9	24,8	19,9	15,4	13,2	2,51	2,60	2,74	2,91	3,05
	18/14	29,7	26,5	21,2	16,3	13,9	2,69	2,79	2,95	3,13	3,29

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 121 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	75%	60%	50%	40%	100%	90%	75%	60%	50%	40%
7	20	29,7	27,3	23,0	19,4	16,6	13,8	4,12	4,38	4,95	5,59	6,24	7,14
	25	28,0	25,8	21,7	18,3	15,5	12,8	3,54	3,75	4,20	4,65	5,10	5,72
	30	26,2	24,2	20,4	17,1	14,6	12,0	3,05	3,23	3,57	3,89	4,20	4,62
	35	24,1	22,3	18,8	15,8	13,5	11,1	2,56	2,70	2,95	3,16	3,37	3,64
	40	21,9	20,3	17,2	14,6	12,4	10,3	2,15	2,27	2,48	2,63	2,78	2,97
	45	19,8	18,4	15,7	13,3	11,5	9,69	1,79	1,88	2,05	2,18	2,29	2,44
10	20	32,4	30,0	25,2	20,8	17,4	14,0	4,33	4,65	5,34	6,09	6,88	8,07
	25	30,4	28,2	23,7	19,5	16,3	13,0	3,70	3,97	4,50	5,02	5,56	6,37
	30	28,4	26,4	22,2	18,3	15,2	12,1	3,17	3,39	3,81	4,17	4,54	5,09
	35	26,1	24,3	20,5	16,9	14,0	11,2	2,68	2,86	3,19	3,43	3,69	4,05
	40	23,8	22,1	18,8	15,5	13,0	10,4	2,25	2,40	2,65	2,83	3,01	3,26
	45	21,7	20,2	17,2	14,4	12,1	9,89	1,89	2,02	2,22	2,37	2,51	2,70
12	20	34,3	31,8	26,8	22,4	18,9	15,4	4,54	4,92	5,70	6,50	7,34	8,57
	25	32,2	29,9	25,2	21,0	17,6	14,2	3,92	4,23	4,84	5,41	5,99	6,83
	30	30,0	27,9	23,7	19,6	16,4	13,3	3,38	3,65	4,13	4,52	4,93	5,50
	35	27,7	25,8	21,9	18,2	15,3	12,3	2,87	3,09	3,46	3,74	4,01	4,39
	40	25,2	23,5	20,0	16,7	14,1	11,5	2,39	2,57	2,86	3,06	3,25	3,51
	45	23,2	21,6	18,5	15,6	13,3	11,0	2,04	2,19	2,43	2,60	2,75	2,95
15	20	36,9	34,3	29,1	24,6	21,0	17,4	4,75	5,19	6,10	6,98	7,88	9,14
	25	34,6	32,1	27,4	23,0	19,5	16,1	4,03	4,39	5,09	5,70	6,31	7,16
	30	32,2	30,0	25,6	21,4	18,2	14,9	3,42	3,73	4,26	4,69	5,10	5,68
	35	29,6	27,6	23,6	19,8	16,9	13,9	2,91	3,16	3,58	3,87	4,16	4,55
	40	27,1	25,3	21,7	18,3	15,6	13,0	2,46	2,67	3,00	3,21	3,42	3,69
	45	25,2	23,5	20,3	17,2	14,9	12,5	2,10	2,27	2,55	2,73	2,90	3,10
18	20	40,0	37,0	31,4	26,7	22,9	19,2	5,02	5,52	6,53	7,56	8,60	10,03
	25	37,4	34,7	29,4	24,9	21,3	17,8	4,30	4,69	5,46	6,19	6,90	7,88
	30	34,8	32,3	27,5	23,2	19,8	16,5	3,67	3,99	4,58	5,09	5,59	6,25
	35	32,1	29,8	25,4	21,5	18,4	15,3	3,13	3,41	3,90	4,27	4,62	5,07
	40	29,4	27,4	23,4	19,9	17,1	14,3	2,65	2,87	3,24	3,50	3,75	4,07
	45	27,8	25,9	22,3	19,1	16,6	14,1	2,33	2,51	2,83	3,05	3,26	3,52

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 131 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	16,3	14,9	11,7	8,90	6,97	2,66	2,67	2,63	2,58	2,38
	-7/-8	17,6	16,2	12,7	9,64	7,54	2,83	2,88	2,84	2,78	2,57
	0/-0,6	21,4	17,7	15,6	11,2	9,33	3,38	3,08	3,44	3,20	3,18
	2/1,1	22,9	18,9	16,7	12,0	10,0	3,60	3,34	3,71	3,44	3,41
	7/6	29,0	26,7	21,0	16,2	12,8	4,50	4,57	4,57	4,59	4,36
	10/8,2	30,7	28,4	22,4	17,2	13,8	4,73	4,82	4,87	4,90	4,71
	15/13	35,1	32,5	25,7	19,7	15,7	5,39	5,52	5,65	5,76	5,53
	18/14	37,8	34,9	27,7	21,3	16,9	5,78	5,94	6,12	6,30	6,03
35	-20/-20,1	13,2	11,8	8,97	6,76	5,43	2,04	2,01	1,92	1,87	1,78
	-10/-10,5	16,3	15,0	11,6	8,76	6,84	2,44	2,48	2,43	2,38	2,21
	-7/-8	17,6	16,2	12,6	9,50	7,43	2,61	2,65	2,61	2,56	2,39
	0/-0,6	21,3	17,5	15,4	11,0	9,17	3,09	2,80	3,13	2,94	2,93
	2/1,1	22,7	18,7	16,4	11,8	9,85	3,28	3,03	3,38	3,16	3,14
	7/6	28,8	26,6	20,7	15,9	12,6	4,08	4,16	4,15	4,19	4,00
	10/8,2	30,5	28,1	22,1	16,9	13,5	4,29	4,37	4,43	4,48	4,31
	15/13	34,9	32,1	25,2	19,3	15,5	4,87	4,98	5,05	5,18	5,03
	18/14	37,5	34,6	27,0	20,7	16,6	5,20	5,33	5,42	5,61	5,47
45	-20/-20,1	13,2	11,8	8,93	6,36	4,88	1,73	1,65	1,58	1,47	1,35
	-10/-10,5	15,9	14,6	11,2	8,20	6,40	1,95	1,98	1,93	1,86	1,74
	-7/-8	17,0	15,6	12,1	8,94	7,02	2,07	2,09	2,07	2,02	1,91
	0/-0,6	20,3	16,8	14,7	10,4	8,64	2,42	2,21	2,48	2,32	2,35
	2/1,1	21,6	17,9	15,7	11,1	9,26	2,56	2,39	2,67	2,50	2,52
	7/6	27,2	25,1	19,6	14,9	11,8	3,17	3,24	3,26	3,28	3,21
	10/8,2	28,7	26,5	20,9	15,9	12,7	3,33	3,41	3,45	3,50	3,46
	15/13	32,6	30,1	23,9	18,1	14,4	3,73	3,83	3,92	3,98	3,86
	18/14	34,9	32,3	25,7	19,4	15,4	3,97	4,08	4,20	4,27	4,09
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	15,1	13,9	10,6	7,72	6,09	1,51	1,54	1,50	1,45	1,38
	-7/-8	16,1	14,8	11,4	8,37	6,59	1,60	1,63	1,60	1,56	1,48
	0/-0,6	18,9	15,7	13,7	9,57	7,91	1,84	1,69	1,89	1,76	1,76
	2/1,1	20,0	16,7	14,6	10,2	8,44	1,94	1,82	2,03	1,88	1,87
	7/6	25,0	23,1	18,1	13,5	10,6	2,39	2,44	2,47	2,45	2,34
	10/8,2	26,4	24,6	19,3	14,5	11,5	2,51	2,59	2,61	2,61	2,52
	15/13	29,7	27,8	21,8	16,4	13,0	2,80	2,90	2,92	2,94	2,84
	18/14	31,7	29,8	23,3	17,6	14,0	2,97	3,08	3,10	3,14	3,04
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	15,0	13,6	10,3	7,42	5,82	1,37	1,37	1,33	1,27	1,21
	-7/-8	16,1	14,6	11,1	7,96	6,25	1,45	1,45	1,42	1,36	1,29
	0/-0,6	18,7	15,2	13,1	8,99	7,40	1,65	1,49	1,67	1,51	1,51
	2/1,1	19,7	16,2	13,9	9,56	7,87	1,74	1,61	1,77	1,61	1,60
	7/6	24,5	22,6	17,4	12,6	9,86	2,13	2,17	2,20	2,08	1,99
	10/8,2	26,1	23,8	18,5	13,4	10,6	2,26	2,29	2,29	2,22	2,13
	15/13	29,3	26,8	21,0	15,3	12,1	2,51	2,54	2,57	2,51	2,42
	18/14	31,3	28,5	22,4	16,4	13,0	2,65	2,69	2,73	2,68	2,59

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 131 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	80%	60%	50%	30%	100%	90%	80%	60%	50%	30%
7	20	33,2	31,0	28,5	22,6	19,6	12,3	4,25	4,59	4,87	5,40	7,93	9,74
	25	31,5	29,4	27,0	21,4	18,6	11,6	3,66	3,93	4,12	4,56	6,37	7,63
	30	29,6	27,8	25,6	20,4	17,5	11,0	3,14	3,38	3,55	3,93	5,22	6,16
	35	28,2	25,5	23,4	19,0	16,4	10,3	2,74	2,83	2,95	3,32	4,34	5,04
	40	24,6	23,1	21,5	17,2	15,0	9,5	2,17	2,34	2,47	2,73	3,51	3,99
	45	22,1	20,5	19,0	15,5	13,6	8,4	1,76	1,87	1,97	2,24	2,89	3,10
10	20	36,0	33,7	31,0	24,7	21,4	13,4	4,54	4,94	5,21	5,91	8,83	11,07
	25	34,3	31,9	29,4	23,5	20,3	12,7	3,90	4,19	4,43	4,99	7,04	8,53
	30	32,1	30,1	27,7	22,2	19,2	12,0	3,33	3,59	3,79	4,24	5,76	6,82
	35	30,5	27,7	25,4	20,7	18,0	11,3	2,9	3,02	3,15	3,59	4,74	5,55
	40	26,8	25,2	23,2	18,7	16,3	10,5	2,3	2,5	2,62	2,92	3,80	4,47
	45	24,1	22,6	20,8	16,9	14,8	9,3	1,9	2,0	2,13	2,40	3,10	3,42
12	20	38,2	35,6	32,8	26,2	22,7	14,1	4,75	5,17	5,50	6,29	9,44	12,02
	25	36,1	33,6	31,2	24,9	21,5	13,4	4,06	4,37	4,67	5,28	7,47	9,14
	30	33,8	31,6	29,3	23,5	20,4	12,7	3,46	3,74	3,97	4,46	6,11	7,26
	35	32,3	29,3	26,8	21,8	19,0	12,0	3,0	3,15	3,30	3,76	5,01	5,88
	40	28,2	26,6	24,5	19,8	17,3	11,1	2,4	2,6	2,74	3,09	4,00	4,75
	45	25,7	24,0	22,0	17,8	15,7	9,8	2,0	2,1	2,23	2,51	3,24	3,59
15	20	41,1	38,5	35,5	28,4	24,6	15,3	5,03	5,49	5,86	6,88	10,42	13,76
	25	38,8	36,4	33,7	26,9	23,4	14,5	4,27	4,65	4,99	5,68	8,23	10,11
	30	36,3	34,1	31,5	25,4	22,1	13,8	3,65	3,94	4,19	4,82	6,61	7,92
	35	34,7	31,5	28,9	23,6	20,6	13,0	3,17	3,32	3,50	4,03	5,38	6,35
	40	30,4	28,6	26,5	21,5	18,7	12,0	2,54	2,76	2,92	3,32	4,27	5,15
	45	28,1	25,8	24,0	19,2	16,9	10,9	2,13	2,23	2,39	2,65	3,43	4,08
18	20	44,2	41,1	38,0	30,4	26,3	16,3	5,28	5,73	6,22	7,31	11,25	15,17
	25	41,5	38,7	35,9	28,8	25,0	15,5	4,46	4,85	5,21	6,08	8,85	11,08
	30	38,9	36,5	33,5	27,2	23,6	14,6	3,81	4,16	4,39	5,11	7,01	8,44
	35	37,0	33,7	30,8	25,1	21,9	13,8	3,32	3,50	3,69	4,24	5,67	6,74
	40	32,5	30,6	28,4	22,9	19,9	12,8	2,66	2,91	3,08	3,49	4,52	5,42
	45	30,3	28,0	25,7	20,5	17,9	11,6	2,23	2,41	2,53	2,80	3,59	4,31

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 141 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	16,1	14,1	11,3	7,86	5,99	2,32	2,26	2,26	2,10	1,90
	-10/-10,5	19,2	16,9	13,6	9,73	7,63	2,67	2,63	2,67	2,62	2,50
	-7/-8	20,5	18,1	14,7	10,6	8,36	2,83	2,78	2,86	2,83	2,73
	0/-0,6	24,8	20,4	17,7	12,5	10,3	3,30	3,06	3,36	3,28	3,31
	2/1,1	26,5	21,8	18,9	13,4	11,1	3,49	3,21	3,56	3,49	3,54
	7/6	33,5	29,6	24,0	17,6	14,2	4,32	4,29	4,46	4,54	4,47
	10/8,2	35,3	31,4	25,7	18,8	15,2	4,50	4,50	4,72	4,84	4,80
	15/13	40,1	35,8	29,3	21,6	17,4	4,96	4,98	5,26	5,53	5,59
	18/14	43,0	38,4	31,4	23,3	18,8	5,21	5,26	5,58	5,95	6,07
35	-20/-20,1	16,4	14,2	11,3	8,03	6,33	2,18	2,09	2,05	1,90	1,75
	-10/-10,5	19,3	17,0	13,6	9,73	7,71	2,47	2,43	2,45	2,37	2,26
	-7/-8	20,4	18,0	14,6	10,5	8,41	2,60	2,56	2,62	2,57	2,48
	0/-0,6	24,5	20,4	17,6	12,4	10,3	3,02	2,82	3,08	2,99	3,01
	2/1,1	26,1	21,7	18,8	13,3	11,1	3,20	2,96	3,26	3,17	3,22
	7/6	32,9	29,4	23,7	17,4	14,1	3,95	3,95	4,07	4,13	4,07
	10/8,2	35,1	31,1	25,4	18,6	15,1	4,16	4,14	4,31	4,38	4,33
	15/13	39,8	35,5	28,9	21,4	17,3	4,58	4,60	4,81	4,99	4,99
	18/14	42,6	38,1	31,1	23,1	18,6	4,83	4,86	5,10	5,35	5,39
45	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	20,2	18,0	14,6	10,6	8,49	2,14	2,12	2,14	2,06	1,97
	0/-0,6	23,9	20,0	17,2	12,2	10,2	2,48	2,31	2,50	2,39	2,38
	2/1,1	25,4	21,2	18,3	13,0	10,8	2,62	2,42	2,65	2,53	2,54
	7/6	31,9	28,4	23,0	17,0	13,7	3,23	3,22	3,29	3,31	3,23
	10/8,2	33,7	30,1	24,5	18,1	14,6	3,38	3,38	3,48	3,52	3,44
	15/13	38,1	34,0	27,9	20,5	16,6	3,74	3,74	3,89	3,94	3,87
	18/14	40,8	36,4	29,9	22,0	17,8	3,95	3,96	4,12	4,19	4,13
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	24,5	20,7	17,9	12,7	10,5	2,08	1,94	2,12	1,99	1,95
	7/6	30,3	27,6	22,2	16,3	13,1	2,55	2,58	2,60	2,58	2,48
	10/8,2	31,8	29,0	23,6	17,3	13,9	2,67	2,70	2,76	2,73	2,65
	15/13	35,7	32,6	26,5	19,4	15,6	2,96	3,00	3,07	3,04	2,94
	18/14	38,1	34,7	28,3	20,7	16,6	3,13	3,18	3,25	3,22	3,12
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	–	–	–	–	–	–	–	–	–	–
	7/6	29,7	26,9	21,7	15,7	12,6	2,27	2,29	2,31	2,24	2,14
	10/8,2	31,3	28,3	22,8	16,6	13,4	2,39	2,40	2,42	2,36	2,28
	15/13	35,0	31,8	25,7	18,7	15,0	2,65	2,67	2,70	2,65	2,54
	18/14	37,1	33,8	27,4	20,0	15,9	2,79	2,83	2,86	2,81	2,70

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 141 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	30%	100%	90%	70%	60%	50%	30%
7	20	38,1	35,1	29,7	25,3	21,7	13,7	3,84	4,06	4,62	4,89	6,73	8,36
	25	36,6	33,8	28,8	24,3	20,8	13,2	3,47	3,65	4,15	4,33	5,72	6,82
	30	34,7	32,3	27,6	23,3	20,0	12,7	3,05	3,26	3,68	3,82	4,88	5,63
	35	32,5	30,2	26,2	22,0	18,9	12,1	2,67	2,82	3,22	3,29	4,13	4,63
	40	30,0	27,8	24,2	20,4	17,5	11,4	2,27	2,39	2,72	2,77	3,35	3,79
	45	28,1	25,9	21,9	18,6	16,0	10,5	1,93	2,01	2,20	2,25	2,71	3,06
10	20	41,4	38,2	32,5	27,7	23,8	15,1	4,04	4,26	4,90	5,24	7,30	9,85
	25	39,6	36,6	31,4	26,6	22,9	14,5	3,63	3,84	4,41	4,63	6,23	7,72
	30	37,7	35,0	30,1	25,5	21,9	14,0	3,23	3,42	3,91	4,09	5,28	6,20
	35	35,2	32,6	28,5	24,1	20,8	13,2	2,81	2,94	3,42	3,54	4,46	5,04
	40	32,6	30,4	26,3	22,4	19,2	12,4	2,41	2,56	2,89	2,98	3,61	4,09
	45	30,9	28,3	24,1	20,4	17,6	11,5	2,11	2,16	2,37	2,42	2,92	3,32
12	20	43,7	40,5	34,4	29,3	25,2	16,0	4,15	4,42	5,09	5,45	7,65	10,94
	25	41,8	38,7	33,2	28,2	24,3	15,4	3,75	3,96	4,59	4,85	6,55	8,45
	30	39,7	36,9	31,8	27,1	23,2	14,8	3,34	3,54	4,06	4,28	5,54	6,59
	35	37,0	34,4	30,1	25,6	22,0	14,0	2,90	3,05	3,56	3,71	4,67	5,32
	40	34,4	31,9	27,8	23,6	20,4	13,2	2,50	2,64	3,02	3,11	3,84	4,32
	45	–	–	–	–	–	–	–	–	–	–	–	–
15	20	47,4	43,9	37,5	31,9	27,4	17,4	4,35	4,62	5,37	5,81	8,25	13,40
	25	45,0	42,0	36,1	30,7	26,4	16,9	3,90	4,16	4,81	5,15	7,02	9,88
	30	42,6	39,8	34,4	29,4	25,2	16,1	3,47	3,69	4,27	4,55	5,95	7,41
	35	40,0	37,3	32,6	27,7	23,9	15,4	3,06	3,23	3,78	3,93	4,98	5,92
	40	37,1	34,5	30,1	25,7	22,2	14,3	2,63	2,79	3,20	3,33	4,10	4,66
	45	–	–	–	–	–	–	–	–	–	–	–	–
18	20	50,9	47,3	40,5	34,5	29,7	18,8	4,49	4,80	5,63	6,13	8,88	16,21
	25	48,5	45,2	38,9	33,2	28,6	18,1	4,06	4,34	5,05	5,47	7,52	11,08
	30	45,6	42,6	37,3	31,7	27,4	17,4	3,60	3,83	4,49	4,80	6,37	8,29
	35	42,7	39,6	35,0	29,9	25,8	16,6	3,16	3,33	3,91	4,15	5,31	6,46
	40	40,0	37,0	32,2	27,7	23,9	15,3	2,74	2,87	3,31	3,53	4,36	4,97
	45	–	–	–	–	–	–	–	–	–	–	–	–

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 151 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	18,1	16,0	12,6	8,90	7,06	2,19	2,13	2,10	1,94	1,78
	-10/-10,5	21,5	19,2	15,1	10,9	8,83	2,52	2,47	2,49	2,39	2,27
	-7/-8	22,9	20,5	16,2	11,8	9,66	2,66	2,62	2,65	2,58	2,48
	0/-0,6	27,6	23,1	19,8	14,1	11,9	3,10	2,86	3,16	3,02	3,01
	2/1,1	29,4	24,6	21,2	15,1	12,8	3,27	3,05	3,32	3,18	3,22
	7/6	37,2	33,6	26,7	19,7	16,3	4,04	4,04	4,17	4,16	4,07
	10/8.2	39,6	35,6	28,4	21,1	17,5	4,25	4,23	4,39	4,43	4,35
	15/13	45,0	40,6	32,6	24,2	20,0	4,69	4,69	4,93	5,03	5,01
	18/14	48,3	43,6	35,1	26,0	21,6	4,93	4,95	5,23	5,38	5,40
35	-20/-20,1	18,2	16,4	12,5	8,99	7,23	2,08	2,05	1,98	1,83	1,69
	-10/-10,5	21,8	19,2	15,1	10,9	8,87	2,39	2,32	2,34	2,24	2,14
	-7/-8	23,1	20,5	16,2	11,8	9,71	2,52	2,46	2,49	2,43	2,34
	0/-0,6	27,7	23,0	19,7	14,0	11,9	2,92	2,69	2,96	2,83	2,83
	2/1,1	29,5	24,6	21,0	15,0	12,7	3,08	2,86	3,11	2,97	3,02
	7/6	37,2	33,1	26,3	19,6	16,2	3,80	3,74	3,86	3,90	3,81
	10/8.2	39,2	35,0	28,1	20,9	17,3	3,96	3,92	4,08	4,12	4,05
	15/13	44,9	40,2	32,1	24,0	19,8	4,40	4,37	4,56	4,67	4,62
	18/14	48,4	43,3	34,5	25,9	21,3	4,65	4,62	4,84	5,00	4,96
45	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	23,3	20,5	16,1	11,8	9,69	2,13	2,06	2,07	1,99	1,90
	0/-0,6	27,6	22,6	19,3	13,7	11,7	2,46	2,23	2,43	2,30	2,29
	2/1,1	29,3	24,0	20,5	14,6	12,5	2,60	2,37	2,55	2,42	2,45
	7/6	36,7	32,1	25,5	19,0	15,7	3,20	3,10	3,17	3,17	3,09
	10/8.2	38,7	34,2	27,2	20,3	16,8	3,34	3,26	3,35	3,36	3,29
	15/13	43,8	38,5	30,8	23,0	19,1	3,70	3,60	3,73	3,75	3,69
	18/14	46,9	41,1	33,0	24,6	20,5	3,90	3,80	3,96	3,99	3,93
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	27,6	23,2	19,9	14,2	12,1	2,05	1,90	2,05	1,92	1,92
	7/6	34,2	31,0	24,5	18,2	15,0	2,51	2,50	2,53	2,50	2,42
	10/8.2	36,0	32,6	26,1	19,3	16,0	2,63	2,62	2,68	2,64	2,58
	15/13	40,3	36,5	29,3	21,7	18,0	2,91	2,90	2,98	2,94	2,87
	18/14	43,0	38,8	31,2	23,1	19,1	3,08	3,06	3,16	3,12	3,04
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	–	–	–	–	–	–	–	–	–	–
	7/6	31,8	30,3	23,9	17,5	14,4	2,13	2,22	2,24	2,18	2,10
	10/8.2	33,7	31,9	25,2	18,5	15,3	2,24	2,33	2,35	2,30	2,23
	15/13	37,5	36,0	28,3	20,9	17,2	2,49	2,61	2,62	2,57	2,49
	18/14	39,9	38,4	30,2	22,3	18,3	2,63	2,78	2,78	2,74	2,64

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 151 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	30%	100%	90%	70%	60%	50%	30%
7	20	43,2	39,9	33,1	28,5	24,4	15,4	3,64	3,84	4,25	4,59	6,61	8,34
	25	41,4	38,4	31,9	27,3	23,5	14,8	3,28	3,47	3,81	4,07	5,70	6,72
	30	39,4	36,5	30,5	26,2	22,5	14,3	2,93	3,09	3,40	3,62	4,92	5,59
	35	38,2	34,3	29,7	24,7	21,3	13,6	2,66	2,72	3,08	3,15	4,12	4,65
	40	34,3	31,5	26,8	23,1	19,8	12,8	2,21	2,31	2,56	2,69	3,40	3,83
	45	31,2	29,3	24,3	21,0	18,0	11,8	1,85	1,97	2,09	2,19	2,73	3,11
10	20	46,6	42,9	35,9	30,7	26,4	16,7	3,80	4,01	4,48	4,83	6,99	9,38
	25	44,6	41,4	34,4	29,6	25,5	16,1	3,44	3,64	4,03	4,33	6,09	7,50
	30	42,3	39,2	32,9	28,3	24,2	15,5	3,07	3,24	3,60	3,84	5,15	6,16
	35	40,9	36,8	32,0	26,8	23,0	14,7	2,78	2,83	3,25	3,35	4,39	5,00
	40	37,1	34,2	28,8	24,8	21,4	13,8	2,35	2,47	2,69	2,84	3,63	4,10
	45	34,0	31,8	26,5	22,6	19,5	12,8	2,00	2,10	2,26	2,32	2,90	3,34
12	20	48,3	44,5	37,2	31,9	27,4	17,4	3,88	4,09	4,59	4,97	7,20	9,99
	25	46,2	42,9	35,8	30,7	26,4	16,8	3,52	3,71	4,14	4,45	6,26	7,90
	30	43,7	40,6	34,2	29,4	25,2	16,2	3,14	3,31	3,69	3,95	5,32	6,45
	35	42,3	38,0	33,2	27,8	23,9	15,3	2,85	2,90	3,33	3,45	4,52	5,20
	40	38,4	35,3	29,9	25,8	22,2	14,4	2,41	2,51	2,77	2,94	3,75	4,24
	45	–	–	–	–	–	–	–	–	–	–	–	–
15	20	53,6	49,5	41,5	35,7	30,8	19,6	4,12	4,34	4,90	5,38	7,93	12,38
	25	51,4	47,5	40,0	34,5	29,6	18,9	3,74	3,97	4,45	4,85	6,84	9,31
	30	48,2	44,8	38,1	32,9	28,3	18,1	3,33	3,52	3,97	4,31	5,85	7,24
	35	46,8	42,0	36,9	30,9	26,7	17,2	3,04	3,10	3,59	3,73	4,95	5,89
	40	42,5	39,0	33,1	28,9	24,9	16,1	2,58	2,68	2,99	3,21	4,13	4,69
	45	–	–	–	–	–	–	–	–	–	–	–	–
18	20	57,9	53,4	44,9	38,7	33,2	21,0	4,27	4,50	5,10	5,68	8,42	14,11
	25	55,1	51,2	43,1	37,3	32,0	20,4	3,88	4,10	4,63	5,11	7,25	10,67
	30	51,6	48,4	41,0	35,5	30,5	19,5	3,45	3,68	4,16	4,54	6,21	8,03
	35	49,9	45,3	39,8	33,4	28,9	18,5	3,16	3,24	3,77	3,96	5,26	6,37
	40	46,1	42,0	35,6	31,0	26,8	17,2	2,73	2,81	3,15	3,39	4,37	5,01
	45	–	–	–	–	–	–	–	–	–	–	–	–

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 161 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	20,9	18,8	14,8	10,8	8,38	2,14	2,12	2,06	1,90	1,73
	-10/-10,5	25,3	22,6	18,2	13,3	10,4	2,51	2,48	2,49	2,37	2,23
	-7/-8	27,0	24,0	19,4	14,4	11,4	2,65	2,62	2,65	2,56	2,43
	0/-0,6	32,6	26,7	23,6	16,4	14,1	3,10	2,84	3,15	2,86	2,97
	2/1,1	34,8	28,5	25,2	17,5	15,2	3,29	2,99	3,33	3,09	3,18
	7/6	43,9	39,2	31,9	24,0	19,5	4,06	4,05	4,16	4,12	4,02
	10/8,2	46,3	41,5	34,2	25,7	20,9	4,24	4,24	4,41	4,39	4,30
	15/13	53,2	47,8	39,0	29,5	23,9	4,72	4,75	4,94	4,99	4,97
	18/14	57,3	51,6	41,9	31,8	25,7	4,99	5,04	5,24	5,35	5,37
35	-20/-20,1	21,7	19,0	15,1	10,9	8,56	2,08	2,01	1,96	1,79	1,63
	-10/-10,5	25,4	22,5	18,1	13,3	10,4	2,36	2,32	2,33	2,22	2,08
	-7/-8	27,2	24,1	19,4	14,4	11,4	2,50	2,46	2,49	2,40	2,29
	0/-0,6	32,6	26,6	23,4	16,3	14,1	2,92	2,65	2,93	2,67	2,78
	2/1,1	34,8	28,4	25,0	17,4	15,1	3,08	2,79	3,10	2,88	2,97
	7/6	43,9	39,0	31,8	23,9	19,3	3,80	3,77	3,89	3,85	3,75
	10/8,2	46,3	41,2	33,7	25,5	20,6	3,97	3,95	4,08	4,08	4,00
	15/13	53,1	47,4	38,7	29,1	23,7	4,42	4,42	4,58	4,61	4,58
	18/14	57,2	51,2	41,7	31,3	25,5	4,67	4,68	4,87	4,91	4,93
45	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	27,4	24,0	19,3	14,4	11,6	2,11	2,05	2,05	1,96	1,87
	0/-0,6	32,4	26,0	23,0	16,0	13,9	2,44	2,18	2,41	2,18	2,25
	2/1,1	34,4	27,6	24,4	17,1	14,8	2,58	2,29	2,54	2,35	2,40
	7/6	43,0	38,1	30,8	23,1	18,7	3,17	3,12	3,18	3,13	3,04
	10/8,2	45,3	39,9	32,8	24,6	20,0	3,31	3,25	3,36	3,31	3,23
	15/13	51,6	45,2	37,1	28,1	22,7	3,69	3,61	3,74	3,72	3,63
	18/14	55,4	48,5	39,8	30,2	24,3	3,90	3,82	3,96	3,96	3,86
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	32,2	26,7	23,6	16,4	14,3	2,02	1,84	2,03	1,85	1,88
	7/6	40,1	36,4	29,4	22,1	17,8	2,49	2,51	2,53	2,47	2,39
	10/8,2	42,0	38,7	31,3	23,4	19,0	2,60	2,65	2,68	2,62	2,54
	15/13	32,2	26,7	23,6	16,4	14,3	2,02	1,84	2,03	1,85	1,88
	18/14	50,4	45,7	37,6	28,1	22,8	3,05	3,08	3,16	3,10	3,00
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	–	–	–	–	–	–	–	–	–	–
	7/6	39,3	35,6	28,7	21,3	17,7	2,22	2,23	2,24	2,16	2,14
	10/8,2	41,6	37,7	30,3	22,6	18,1	2,34	2,35	2,35	2,29	2,19
	15/13	46,4	42,1	34,2	25,5	21,3	2,59	2,60	2,63	2,56	2,56
	18/14	49,3	44,7	36,5	27,2	23,2	2,74	2,75	2,79	2,73	2,78

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 161 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	30%	100%	90%	70%	60%	50%	30%
7	20	49,6	46,0	37,7	33,0	28,2	18,7	3,75	3,96	4,32	4,58	6,77	8,43
	25	47,7	44,0	36,4	31,9	27,2	18,1	3,37	3,56	3,89	4,11	5,82	6,87
	30	45,3	42,0	34,7	30,5	26,0	17,4	3,01	3,18	3,45	3,62	5,00	5,66
	35	43,6	39,5	33,8	28,8	24,7	16,5	2,69	2,78	3,12	3,16	4,20	4,67
	40	39,3	36,6	30,4	26,9	22,8	15,5	2,24	2,38	2,58	2,70	3,42	3,82
	45	36,7	33,7	27,7	24,2	20,9	14,4	1,92	2,00	2,11	2,17	2,76	3,10
10	20	53,5	49,2	40,8	35,8	30,5	20,3	3,92	4,12	4,58	4,88	7,25	9,63
	25	51,2	47,3	39,2	34,4	29,4	19,7	3,52	3,72	4,09	4,35	6,23	7,70
	30	48,7	45,0	37,4	32,9	28,1	18,8	3,15	3,31	3,64	3,83	5,29	6,16
	35	46,8	42,0	36,5	31,2	26,7	17,9	2,82	2,87	3,29	3,37	4,49	5,03
	40	42,0	39,1	32,7	28,8	24,8	16,8	2,35	2,48	2,72	2,84	3,70	4,08
	45	40,3	36,6	30,1	26,3	22,5	15,5	2,07	2,14	2,26	2,33	2,92	3,31
12	20	55,5	51,2	42,4	37,2	31,7	21,1	4,00	4,21	4,69	5,02	7,50	10,28
	25	53,0	49,1	40,7	35,8	30,5	20,5	3,59	3,80	4,20	4,47	6,43	8,15
	30	50,4	46,6	38,8	34,2	29,2	19,6	3,21	3,38	3,74	3,94	5,45	6,46
	35	48,6	43,6	37,9	32,4	27,7	18,7	2,89	2,95	3,39	3,46	4,62	5,28
	40	43,6	40,5	33,9	30,0	25,8	17,4	2,41	2,55	2,79	2,93	3,83	4,22
	45	–	–	–	–	–	–	–	–	–	–	–	–
15	20	61,7	57,0	47,4	41,6	35,5	23,7	4,22	4,48	5,03	5,44	8,31	12,65
	25	58,9	54,6	45,4	40,2	34,3	22,9	3,82	4,05	4,52	4,87	7,08	9,53
	30	55,6	51,5	43,4	38,2	32,7	22,0	3,39	3,58	4,05	4,29	6,01	7,45
	35	53,6	48,4	42,4	36,2	31,0	20,9	3,08	3,17	3,67	3,77	5,07	5,94
	40	48,5	44,9	37,9	33,6	28,7	19,5	2,59	2,72	3,03	3,22	4,15	4,69
	45	–	–	–	–	–	–	–	–	–	–	–	–
18	20	66,4	61,5	51,1	45,2	38,4	25,6	4,36	4,65	5,25	5,75	8,87	15,02
	25	63,6	58,9	49,1	43,5	37,1	24,7	3,97	4,21	4,73	5,17	7,58	10,98
	30	60,1	55,6	46,5	41,4	35,3	23,7	3,56	3,74	4,18	4,56	6,35	8,26
	35	57,4	52,0	45,4	39,0	33,5	22,7	3,21	3,30	3,82	3,96	5,40	6,56
	40	52,5	48,4	40,9	36,2	31,0	21,0	2,73	2,85	3,20	3,38	4,41	5,06
	45	–	–	–	–	–	–	–	–	–	–	–	–

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

EXCELLENCE

WSAN-XIN 171 Performances in heating

To	Tae (°C) DB/WB	Heating capacity EN14511					COP EN14511				
		Percentage of compressor load					Percentage of compressor load				
°C	°C	100%	90%	70%	50%	40%	100%	90%	70%	50%	40%
30	-20/-20,1	24,4	21,6	17,1	12,5	9,72	2,18	2,13	2,08	1,96	1,79
	-10/-10,5	29,1	25,6	20,8	15,3	12,1	2,50	2,44	2,48	2,40	2,27
	-7/-8	31,3	27,5	22,3	16,5	13,2	2,66	2,60	2,64	2,57	2,47
	0/-0,6	37,5	31,0	26,9	19,3	16,2	3,09	2,85	3,11	2,97	2,99
	2/1,1	40,0	33,2	28,7	20,7	17,4	3,26	3,00	3,29	3,20	3,19
	7/6	50,4	44,9	36,6	27,4	22,3	4,01	3,98	4,12	4,12	4,03
	10/8,2	53,7	47,3	38,9	29,4	23,8	4,21	4,16	4,34	4,38	4,29
	15/13	61,5	54,5	44,6	33,7	27,3	4,66	4,64	4,86	4,96	4,91
	18/14	66,2	58,8	48,1	36,3	29,4	4,91	4,91	5,16	5,30	5,28
35	-20/-20,1	24,3	21,5	17,3	12,6	9,89	2,04	1,99	1,99	1,85	1,69
	-10/-10,5	29,4	25,8	20,8	15,2	12,1	2,36	2,31	2,33	2,25	2,13
	-7/-8	31,2	27,5	22,2	16,5	13,2	2,49	2,44	2,48	2,42	2,32
	0/-0,6	37,4	30,9	26,7	19,2	16,2	2,88	2,67	2,90	2,77	2,81
	2/1,1	39,8	33,0	28,5	20,5	17,4	3,04	2,80	3,07	2,98	3,00
	7/6	50,2	44,2	36,2	27,2	22,2	3,74	3,69	3,84	3,85	3,78
	10/8,2	53,3	47,1	38,3	29,1	23,6	3,93	3,88	4,03	4,07	4,00
	15/13	60,3	53,5	43,9	33,3	27,1	4,31	4,29	4,49	4,58	4,57
	18/14	64,5	57,3	47,2	35,8	29,3	4,53	4,52	4,76	4,88	4,90
45	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	31,6	27,3	22,1	16,4	13,2	2,12	2,03	2,06	1,99	1,90
	0/-0,6	37,2	30,3	26,1	18,8	15,9	2,43	2,21	2,39	2,27	2,28
	2/1,1	39,5	32,2	27,8	20,0	17,0	2,56	2,32	2,53	2,44	2,44
	7/6	49,3	43,3	34,9	26,3	21,4	3,14	3,08	3,14	3,14	3,07
	10/8,2	52,2	45,6	37,3	28,0	22,9	3,30	3,21	3,33	3,32	3,26
	15/13	58,7	51,5	42,4	31,9	26,0	3,62	3,55	3,71	3,73	3,66
	18/14	62,5	55,1	45,4	34,3	27,9	3,80	3,75	3,93	3,96	3,90
55	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	37,5	31,1	26,9	19,3	16,3	2,05	1,87	2,03	1,94	1,92
	7/6	46,7	41,5	33,5	25,2	20,3	2,52	2,49	2,53	2,50	2,42
	10/8,2	49,0	43,8	35,7	26,7	21,6	2,63	2,61	2,68	2,65	2,56
	15/13	54,8	49,1	40,1	30,0	24,4	2,91	2,90	2,97	2,94	2,87
	18/14	58,3	52,4	42,7	31,9	26,1	3,07	3,06	3,15	3,12	3,05
60	-20/-20,1	–	–	–	–	–	–	–	–	–	–
	-10/-10,5	–	–	–	–	–	–	–	–	–	–
	-7/-8	–	–	–	–	–	–	–	–	–	–
	0/-0,6	–	–	–	–	–	–	–	–	–	–
	2/1,1	–	–	–	–	–	–	–	–	–	–
	7/6	44,9	40,9	32,6	24,2	19,5	2,21	2,24	2,23	2,19	2,10
	10/8,2	47,2	42,8	34,7	25,7	20,7	2,32	2,34	2,37	2,32	2,23
	15/13	52,6	47,9	38,9	29,0	23,3	2,57	2,59	2,64	2,58	2,49
	18/14	55,9	51,0	41,5	30,9	24,9	2,72	2,74	2,80	2,74	2,65

To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Heating capacity and COP calculated according to EN 14511:2013
The data of the heat capacity and COP include defrostings.

EXCELLENCE

WSAN-XIN 171 Performances in cooling

To	Tae	Cooling Capacity EN14511						EER EN14511					
		Percentage of compressor load						Percentage of compressor load					
°C	°C	100%	90%	70%	60%	50%	30%	100%	90%	70%	60%	50%	30%
7	20	55,6	51,2	42,3	37,3	32,0	20,1	3,52	3,71	4,14	4,42	6,42	8,19
	25	53,4	49,4	40,7	35,9	30,9	19,5	3,19	3,36	3,73	3,98	5,56	6,80
	30	50,4	47,1	40,2	34,4	29,6	18,7	2,83	3,00	3,43	3,53	4,81	5,55
	35	49,2	44,2	38,0	32,4	28,1	17,7	2,58	2,62	3,02	3,06	4,12	4,60
	40	43,2	40,9	34,8	30,2	26,1	16,7	2,09	2,26	2,55	2,63	3,40	3,80
	45	39,9	38,1	31,0	27,5	23,6	15,5	1,79	1,91	2,05	2,15	2,69	3,11
10	20	60,0	55,4	45,8	40,4	34,6	21,9	3,67	3,88	4,37	4,69	6,86	9,25
	25	57,4	53,1	44,0	38,9	33,4	21,2	3,33	3,51	3,93	4,21	5,94	7,55
	30	54,1	50,6	43,4	37,1	31,9	20,2	2,95	3,14	3,62	3,73	5,08	6,08
	35	52,5	47,4	40,8	35,2	30,3	19,3	2,68	2,76	3,17	3,28	4,34	4,99
	40	46,3	43,8	37,6	32,7	28,2	18,1	2,20	2,37	2,70	2,81	3,62	4,08
	45	43,9	41,5	33,8	29,7	25,5	16,7	1,92	2,06	2,22	2,28	2,84	3,32
12	20	62,1	57,6	47,6	42,0	36,0	22,8	3,73	3,96	4,48	4,82	7,06	9,80
	25	59,4	55,1	45,7	40,4	34,7	22,0	3,39	3,59	4,03	4,33	6,12	7,94
	30	56,0	52,4	45,0	38,6	33,2	21,1	3,01	3,20	3,71	3,84	5,24	6,36
	35	54,3	49,1	42,4	36,4	31,4	20,1	2,74	2,82	3,26	3,37	4,46	5,21
	40	48,0	45,5	39,0	34,0	29,2	18,8	2,25	2,42	2,77	2,89	3,72	4,23
	45	–	–	–	–	–	–	–	–	–	–	–	–
15	20	68,8	63,8	53,1	47,0	40,4	25,5	3,92	4,19	4,77	5,20	7,67	11,80
	25	65,7	61,2	50,9	45,2	38,9	24,7	3,56	3,80	4,32	4,67	6,67	9,15
	30	62,2	58,0	50,1	43,1	37,2	23,7	3,20	3,40	3,98	4,16	5,74	7,29
	35	59,9	54,2	47,3	40,7	35,1	22,6	2,90	2,99	3,53	3,64	4,87	5,88
	40	53,4	50,4	43,0	37,8	32,7	21,0	2,42	2,59	2,97	3,13	4,07	4,69
	45	–	–	–	–	–	–	–	–	–	–	–	–
18	20	–	68,9	57,2	50,8	43,7	27,6	-	4,33	4,95	5,46	8,16	13,69
	25	70,4	65,8	55,0	48,8	42,1	26,7	3,68	3,94	4,50	4,91	7,05	10,44
	30	66,3	62,2	53,7	46,7	40,1	25,6	3,30	3,54	4,14	4,39	6,05	8,05
	35	64,2	58,3	50,9	43,8	38,0	24,4	3,02	3,13	3,68	3,84	5,18	6,39
	40	57,7	54,6	46,7	40,7	35,3	22,7	2,54	2,74	3,16	3,30	4,32	5,05
	45	–	–	–	–	–	–	–	–	–	–	–	–

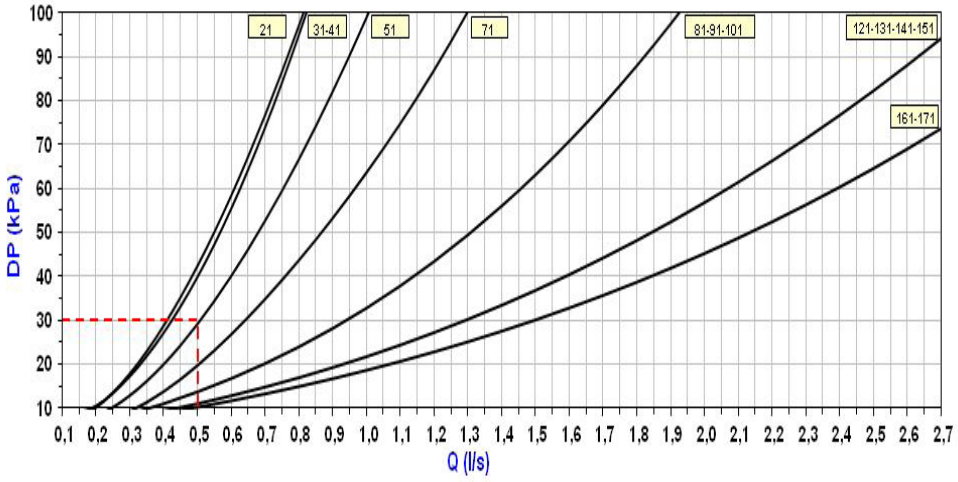
To = Leaving internal exchanger water temperature (°C)
Tae [°C]: external exchanger inlet air temperature
Performances in function of the inlet/outlet water temperature differential = 5°C
Cooling capacity and EER calculated according to EN 14511:2013

Configurations

User side hydronic assembly: not required (-)

The unit can be requested without the hydronic assembly, consisting solely of the circulation pump

Exchanger pressure drop curves + steel mesh filter



Exchanger pressure drop limit + filter
Caution: do not use beyond this limit.

Unit without hydronic system
Dp = pressure drop
Q = water flow

Exchanger pressure drop limit + filter.
Caution: do not use below this limit

HEDIF - Diffuser for high efficiency axial fan

The new AxiTop diffuser creates an ideal air distribution: it aerodynamically decelerates the flow and transforms a big part of its kinetic energy in static pressure.

Obtaining:

- down to –3 dB of silence
- reduction of 3% of the absorbed energy

Since the fans are the unit's main noise source, the benefits are evident especially during the night hours, when the load is reduced but sensitivity to noise is enhanced.

The AxiTop diffuser is available only for EXCELLENCE Version from size 131 to 171.

Sound levels with HEDIF

Size	Sound power level								Sound pressure level	Sound power level
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
131	83	80	74	65	66	67	63	64	57	74
141	83	80	79	79	81	75	72	61	67	84
151	87	84	81	79	81	75	72	61	68	84
161	90	88	84	85	82	77	75	65	70	87
171	91	88	85	85	82	77	75	65	70	87

Sound levels refer to units with full load under nominal test conditions.
The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field.
Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2)
Data referred to the following conditions:
entering / leaving exchanger water temperature user side 12/7°C
entering / leaving exchanger water temperature source side 30/35°C

Accessories separately supplied

Every accessory is marked with a configuration code, for instance CMMBX.

When the letter X is placed at the end, this means that the accessory is supplied separately. If there is no X in the code, the accessory is mounted in the factory.

AMRX - Rubber antivibration mounts

The rubber antivibration mounts reduce the vibrations of compressor during its operation and they are installed at the base toe.

RCTX - Remote control

The RCTX remote control, equipped with an easy to read wide display, allows to program the plant supply temperature in a simple way, using only 4 buttons.

The display can:

- control the unit's operation
- activate the circulation of the system's water
- set the unit set point water temperature according to time bands

The RCTX also works in "remote control", making it even easier to configure and control the unit's operation.

It can:

- set the ON/OFF control and mode change (heating/cooling)
- read the information detected by the built-in device, such as parameters and alarms

The unit is not activated if the room temperature set point has not been reached, but it is activated if the supply water temperature does not reach the set point programmed when setting the daily or weekly operating schedule.

The thermostat can be controlled at a maximum distance of 100 metres.

1. Clock
2. summer/winter/defrosting operating display
3. Ambient temperature
4. Alarm
5. UP + DOWN: operating time band setting
6. ON/OFF button
7. ESC +SET parameter programming
8. fan operating status (active)
9. compressor operating status (not active)
10. circulator operating status (active)

KG4UP - Management kit up to 4 units in parallel

Module that, by the remote activation of the first and second set-point, allows to manage the unit operating in cascade, up to 4 units, balancing the operating hours.

Each unit must be connected to the module that enables its operating by a potential-free contact.

PGFCX - Finned coil protection grill

This accessory is used to protect the external coil from the accidental contact with external things or people.

Ideal for installation in places where persons can pass from, such as car parks, terraces, etc.

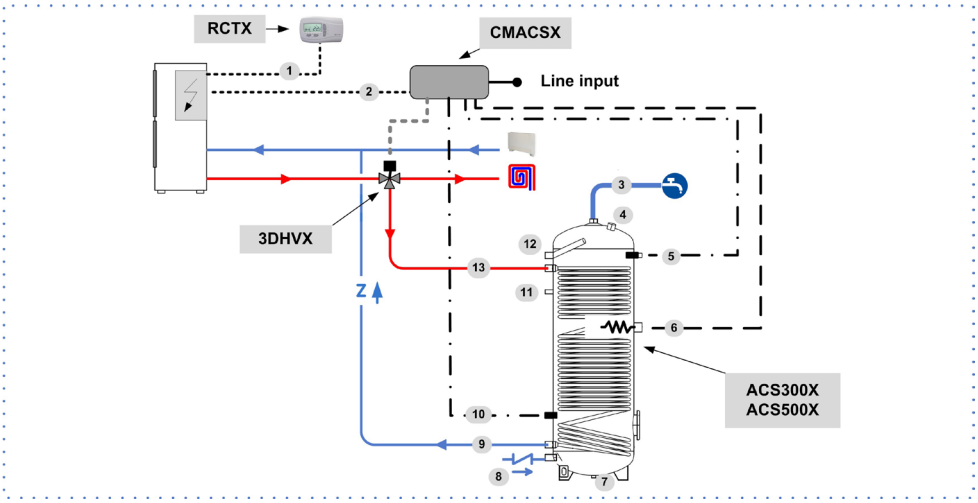
Accessory available only for Excellence version from size 131 to 171.

CMACSX - Domestic hot water module

The CMACSX module allows controlling the temperature of the Domestic Hot Water, by means of the temperature probe placed inside the storage tank. The control allows the production of Domestic Hot Water to a specific set-point that can be defined in 4 daily intervals and 3 user profiles. If the temperature of the Domestic Hot Water drops below a preset value (generally 40°C), the unit performs the "mode change" between system and Domestic Hot Water production, driving a diverter valve that switches the flow from the system to the storage tank. The request of DHW production has always the priority over the system and ends if the configured set-point has been reached or the set time for the production of DHW has elapsed. The Anti-legionella function allows removing the Legionella bacteria, which reside in the water storage tank. These bacteria are removed if the water temperature exceeds 60°C for at least 30 consecutive minutes. The anti-legionella function is managed by a different set-point, which is independent from that set for the Domestic Hot Water. This function can be scheduled daily, weekly, at different time intervals.

The adjustment module is provided with:

- a water temperature probe
- a power circuit and resistor control (the resistor is not supplied by Clivet)
- a 15 m length Twisted and Shielded connection cable for RS485 AGW22/24 networks
- an installation box.



1. ACS
2. Anode
3. ST-safety probe
4. Electric heater
5. Blind connection for fasting
6. Waterworks water inlet
7. Return
8. BT7 probe
9. Domestic hot water recirculation
10. Supply
11. ACS

A. Room keypad (accessory RCTX)
B. Max. = 100 mt.
Cable section: Min. 0,35 Max.1 mm2
C. Electric heater provided by the customer
D. 3-way valve (accessory 3DHWX)

A+B max 100 mt

CMSC2X - Serial communication module with RS485 serial converter kit

It is a serial communication module (MODBUS) designed to be connected to a supervisor with the standard MODBUS protocol.

Up to 127 units can be connected to a single supervision system.

The serial communication module fitted with the supervisor (MODBUS) is required if the unit is connected to ELFOControl.

Use an RS 485 BUS to connect it to a PC.

KTFLX - Hose kit for connection to the chiller/heat pump

The kit is made up of: no. 2 of flexible pipes, length 300 mm, necessary for the connection of the unit to the installation.

For size from 21 to 71 the diameter is 1".

For size from 81 to 151 the diameter is 1"1/4.

For size from 161 to 171 the diameter is 1"1/2.

KSAX - 100-litre circuit breaker

Storage tank Fe360b and anti-corrosion treatment with organic enamelling, external insulation with polyurethane and polyethylene mat, thickness 50 mm maximum of operation 6 bar.

Diameter 500 mm Height 900 mm 8 connections.

Suitable for all WSAN-XIN sizes.

ACS500X - 500-litre domestic hot water storage tank

Carbon steel storage tank, glass lining process in accordance with DIN 4753.3, external 50 mm rigid polyurethane insulation, 6 sq m exchange coil suitable for heat pumps (max. 25 kW), maximum working pressure 6 bar, equipped with anodic protection and 3 kW electric heater (single phase) with safety thermostat. Controller not included.

Suitable for sizes 21-101 WSAN-XIN

Size of the 500-litre boiler: 750x1690mm

Control not included, see CMACSX option

ACS300X - 300-litre domestic hot water storage tank

Carbon steel storage tank, glass lining process in accordance with DIN 4753.3, external 50 mm rigid polyurethane insulation, 4 sq m exchange coil suitable for heat pumps (max. 10 kW), maximum operating pressure 6 bar, equipped with anodic protection and 2 kW electric heater (single phase) with safety thermostat. Controller not included.

Suitable for sizes 21-51 WSAN-XIN

Size of the 300-litre boiler: 600x1615mm

Control not included, see CMACSX option

ACS5SX - 500-litre domestic hot water storage tank with solar coil

Carbon steel storage tank, glass lining process in accordance with DIN 4753.3, external 50 mm rigid polyurethane insulation, upper 4,9 sq m exchange coil suitable for heat pumps (max. kW), lower 1,8 sq m exchange coil for thermal solar panels, maximum working pressure 6 bar, equipped with anodic protection and 3 kW electric heater (single phase) with safety thermostat. Controller not included.

Suitable for sizes 21-101 WSAN-XIN

Size of the 500-litre boiler: 750x1690mm

Control not included, see CMACSX option

ACS3SX - 300-litre domestic hot water storage tank with solar coil

Carbon steel storage tank, glass lining process in accordance with DIN 4753.3, external 50 mm rigid polyurethane insulation, upper 3,7 sq m exchange coil suitable for heat pumps (max. 10 kW), lower 1,2 sq m exchange coil for thermal solar panels, maximum operating pressure 6 bar, equipped with anodic protection and 2 kW electric heater (single phase) with safety thermostat.

Suitable for sizes 21-51 WSAN-XIN

Size of the 300-litre boiler: 600x1615mm

Control not included, see CMACSX option

3DHWX - 3-way valve for domestic hot water

The 3-way switching valve for the deviation of the water flow to a DHW heating storage tank is separately supplied.

If the DHW temperature does not reach the set-point, the CMACSX module sends a signal to the unit to produce domestic hot water.

The unit controller closes a digital output to control the flow diverter valve from the installation to the tank till the achievement of the DHW Set-point set in the CMACSX module.

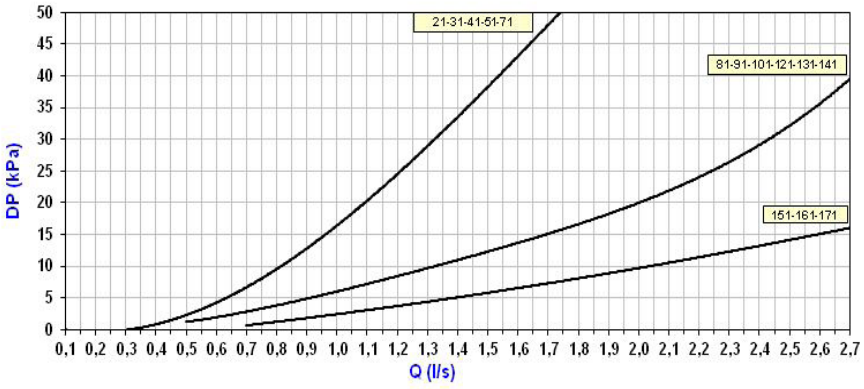
For sizes from 21 to 71 the 3-way valve is of 1"

For size from 81 to 151 the 3-way valve is 1"1/4

For size from 161 to 171 the 3-way valve is 1"1/2

It is therefore compulsory for the DHW call management to select the CMACSX option in combination with this option.

3-way valve pressure drop

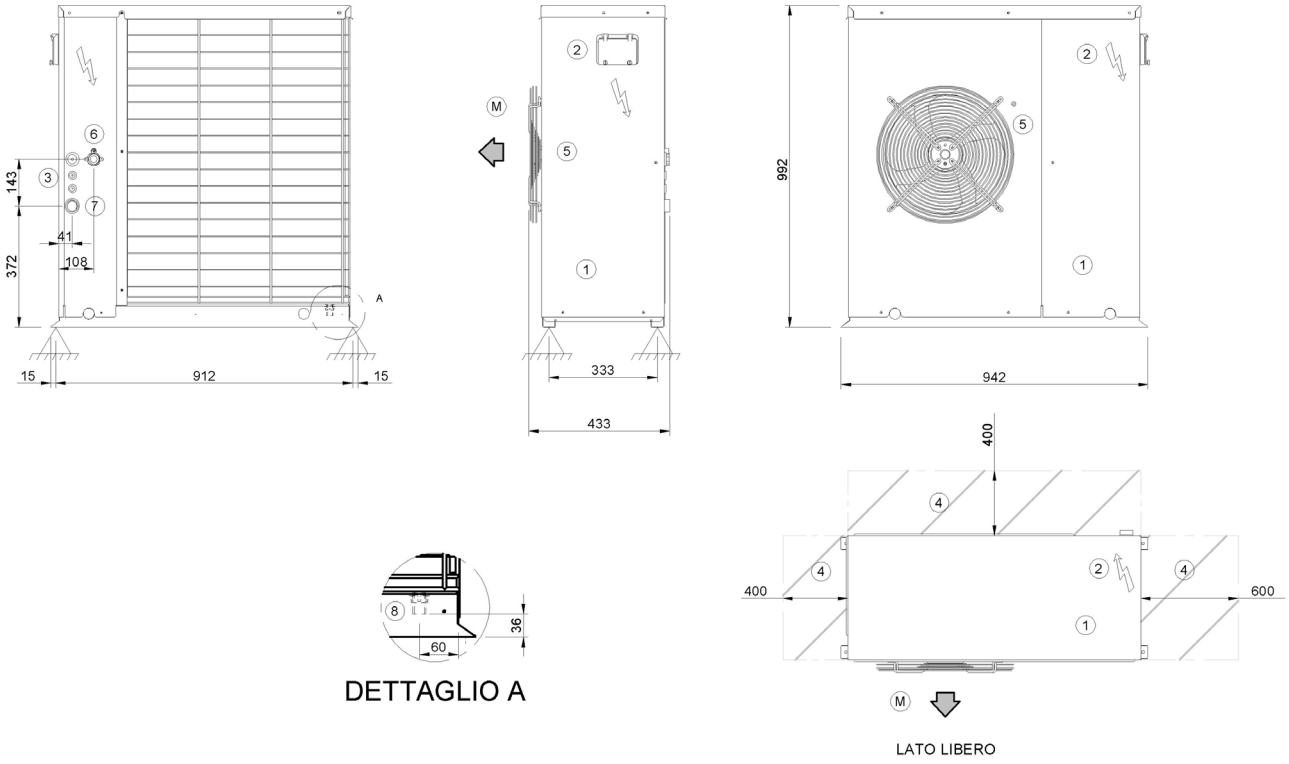


DP [kPa] = Available pressure
Q [l/s] = water flow-rate

Dimensional drawings - PREMIUM Version

ELFOEnergy Extended Inverter 21 - 31 - 41

DAAR921 REV03
Data: 14/03/2014



1. Compressor compartment
2. Electrical panel
3. Power input
4. Functional spaces
5. Electric fan (Supply)
6. internal exchanger water inlet (GAS F 1")
7. internal exchanger water outlet (GAS F 1")
8. Condensate drain

(M) Air supply

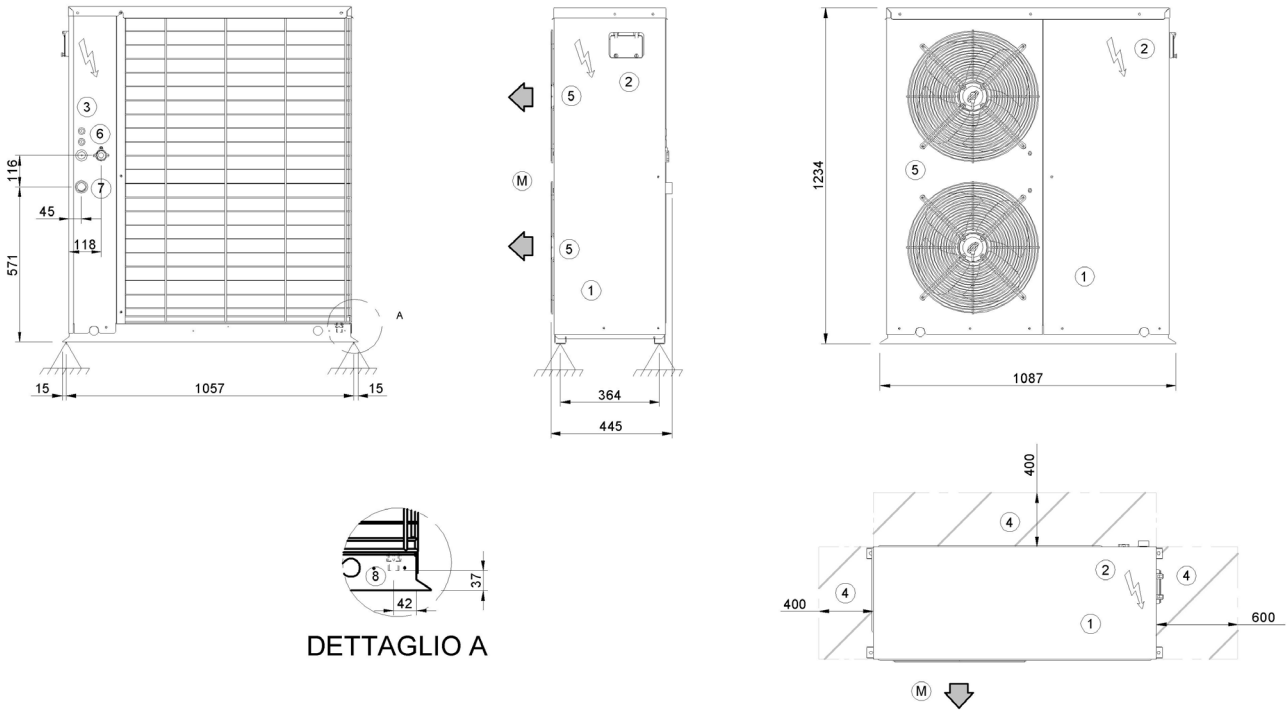
Size		21	31	41
Length	mm	942	942	942
Depth	mm	433	433	433
Height	mm	992	992	992
W1	kg	37	38	40
W2	kg	17	18	20
W3	kg	39	40	42
W4	kg	19	20	22
Operating weight	kg	112	116	124
Shipping weight	kg	114	118	126

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - PREMIUM Version

ELFOEnergy Extended Inverter 51 - 71

DAAR951 REV03
Data: 14/03/2014



1. Compressor compartment
2. Electrical panel
3. Power input
4. Functional spaces
5. Electric fan (Supply)
6. internal exchanger water inlet (GAS F 1")
7. internal exchanger water outlet (GAS F 1")
8. Condensate drain

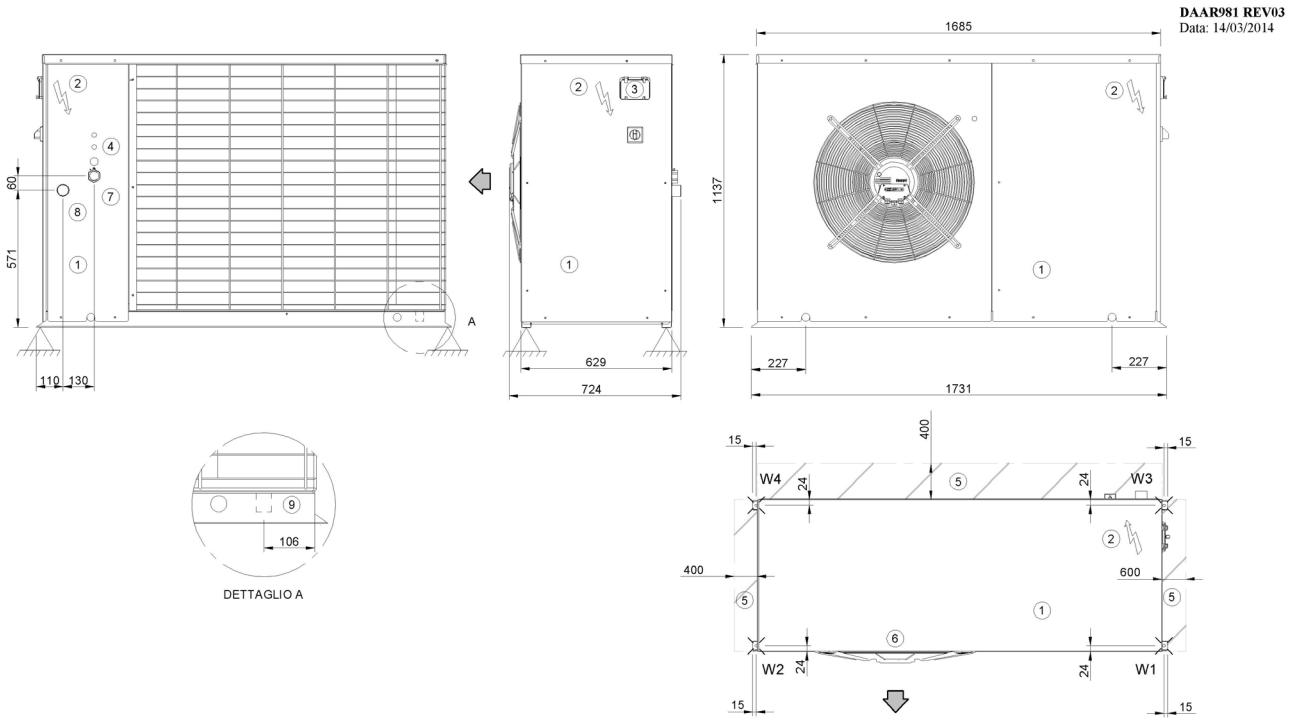
(M) Air supply

Size			51	71
Length		mm	1087	1087
Depth		mm	445	445
Height		mm	1234	1234
W1		kg	51	53
W2		kg	32	33
W3		kg	53	55
W4		kg	34	34
Operating weight		kg	170	175
Shipping weight		kg	172	177

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - PREMIUM Version

ELFOEnergy Extended Inverter 81 - 91 - 101



1. Compressor compartment
2. Electrical panel
3. Unit control keypad
4. Power input
5. Functional spaces
6. Electric fan (supply - return)
7. Internal exchanger water inlet (GAS F 1 1/4")
8. Internal exchanger water outlet (GAS F 1 1/4")
9. Condensate drain

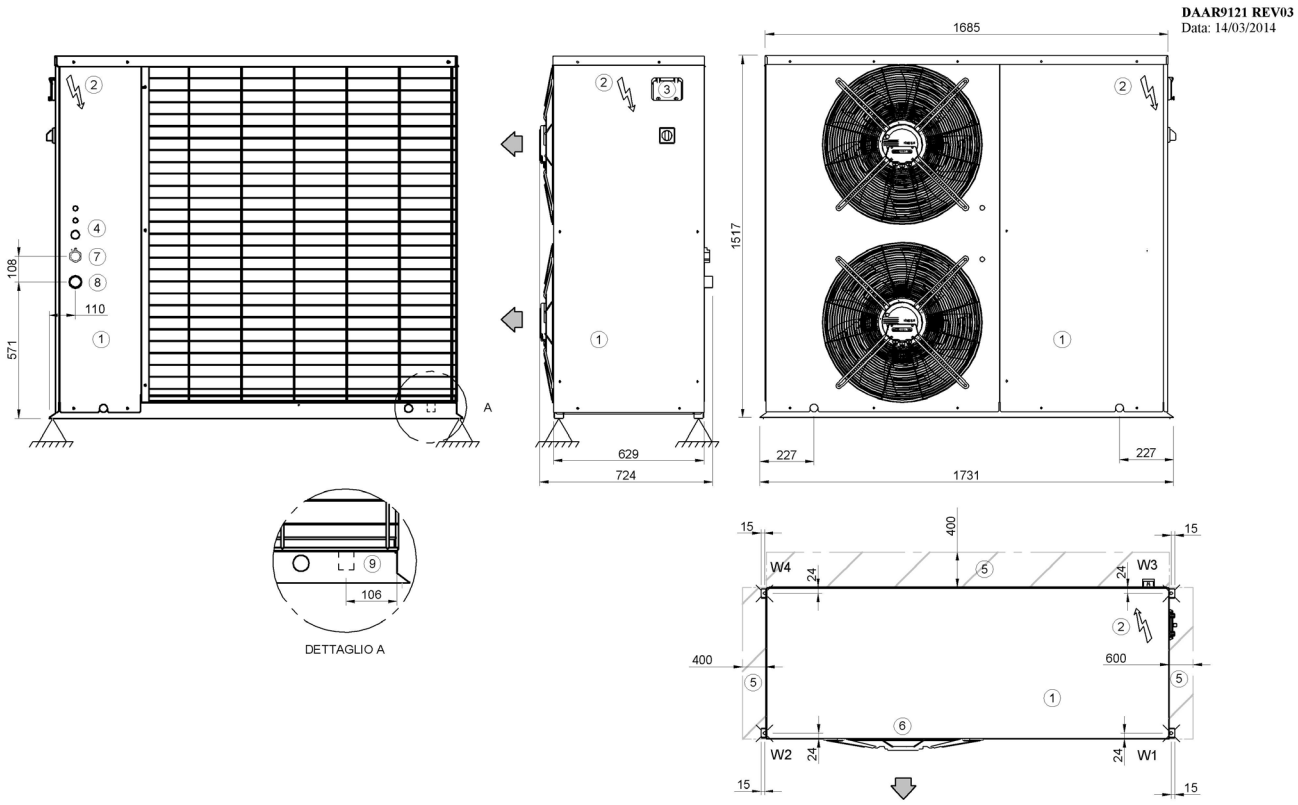
(M) Air supply

Size			81	91	101
Length		mm	1731	1731	1731
Depth		mm	724	724	724
Height		mm	1137	1137	1137
W1		kg	60	60	60
W2		kg	35	35	35
W3		kg	80	80	80
W4		kg	55	55	55
Operating weight		kg	230	230	230
Shipping weight		kg	240	240	240

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - PREMIUM Version

ELFOEnergy Extended Inverter 121 - 131 - 141



1. Compressor compartment
2. Electrical panel
3. Unit control keypad
4. Power input
5. Functional spaces
6. Electric fan (supply - return)
7. Internal exchanger water inlet (GAS F 1 1/4")
8. Internal exchanger water outlet (GAS F 1 1/4")
9. Condensate drain

(M) Air supply

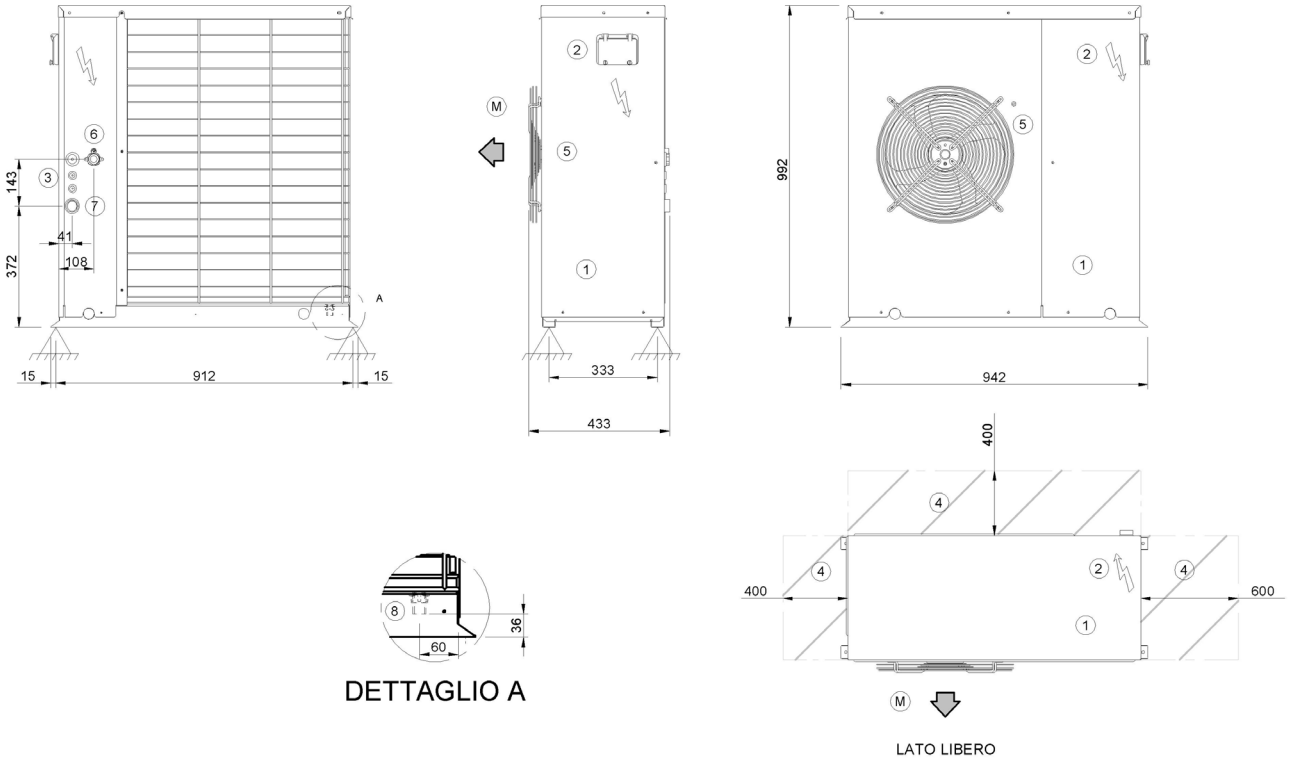
Size			121	131	141
Length		mm	1731	1731	1731
Depth		mm	724	724	724
Height		mm	1517	1517	1517
W1		kg	65	65	65
W2		kg	35	35	35
W3		kg	85	85	85
W4		kg	55	55	55
Operating weight		kg	240	240	240
Shipping weight		kg	250	250	250

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - EXCELLENCE Version

ELFOEnergy Extended Inverter 21 - 31 - 41

DAAR921 REV03
Data: 14/03/2014



1. Compressor compartment
2. Electrical panel
3. Power input
4. Functional spaces
5. Electric fan (Supply)
6. internal exchanger water inlet (GAS F 1")
7. internal exchanger water outlet (GAS F 1")
8. Condensate drain

(M) Air supply

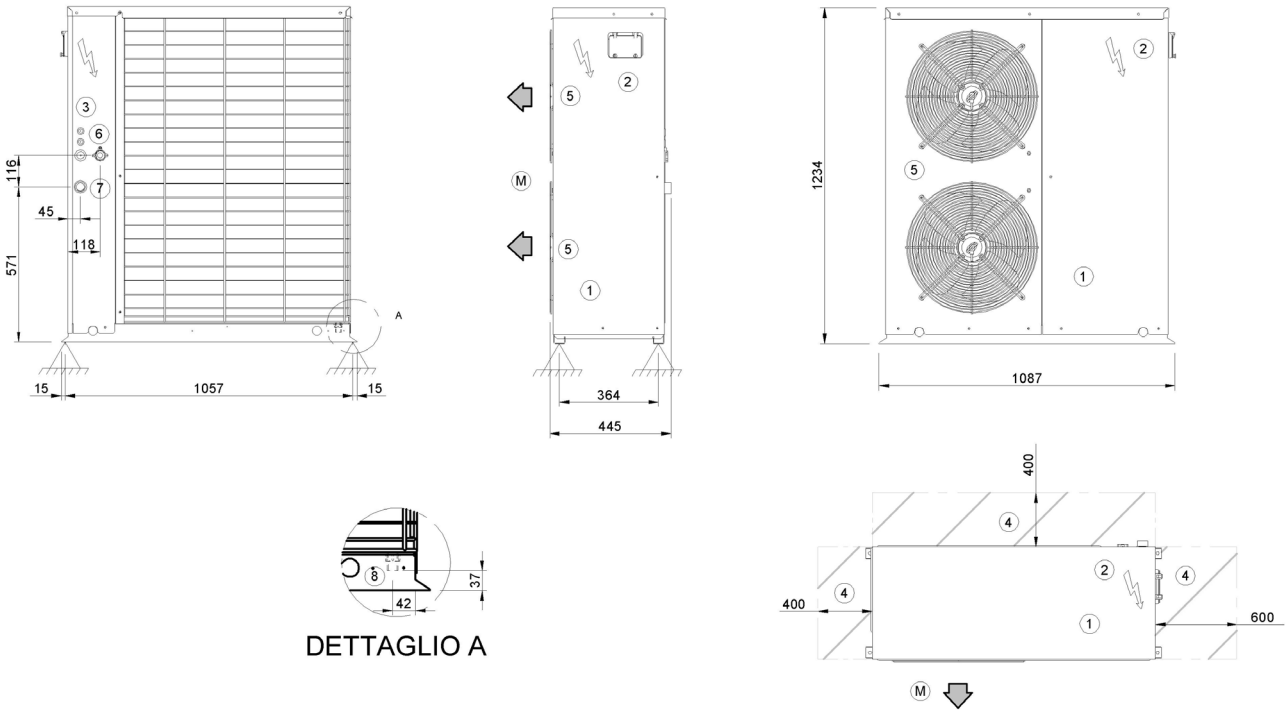
Size		21	31	41
Length	mm	942	942	942
Depth	mm	433	433	433
Height	mm	992	992	992
W1	kg	37	38	40
W2	kg	17	18	20
W3	kg	39	40	42
W4	kg	19	20	22
Operating weight	kg	112	116	124
Shipping weight	kg	114	118	126

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - EXCELLENCE Version

ELFOEnergy Extended Inverter 51 - 71

DAAR951 REV03
Data: 14/03/2014



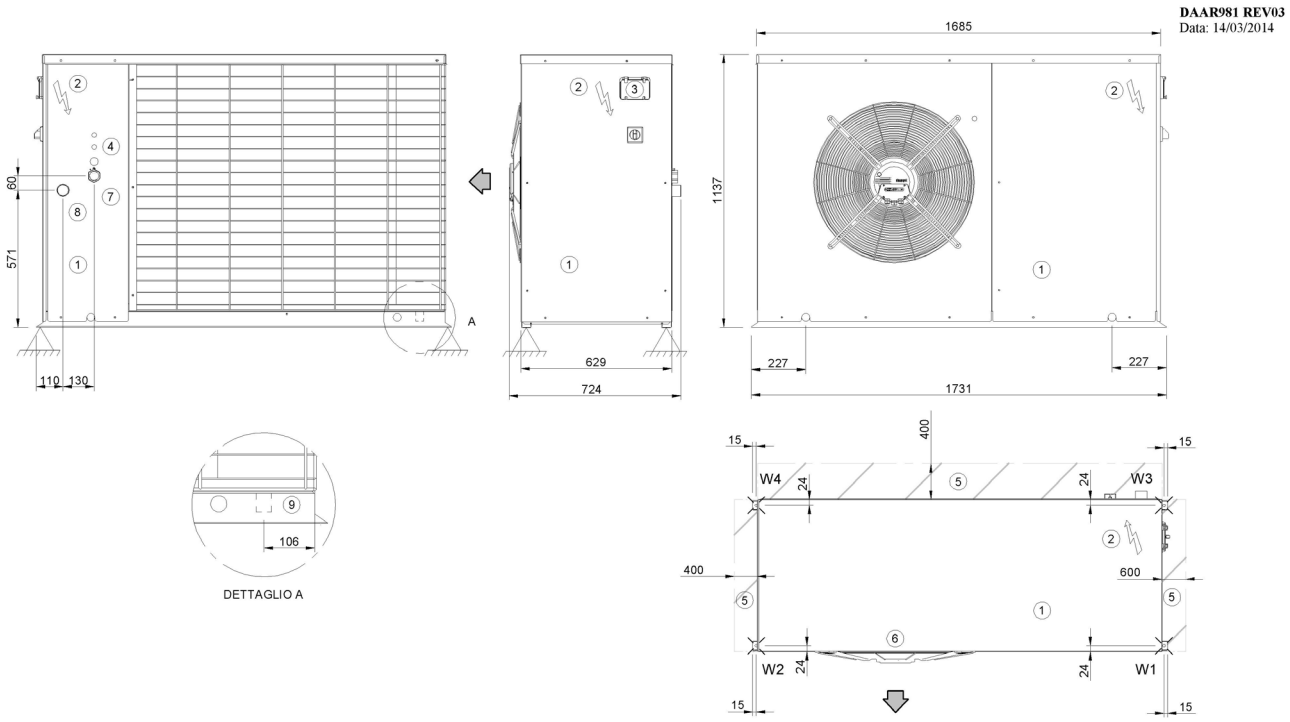
1. Compressor compartment
2. Electrical panel
3. Power input
4. Functional spaces
5. Electric fan (Supply)
6. internal exchanger water inlet (GAS F 1")
7. internal exchanger water outlet (GAS F 1")
8. Condensate drain

(M) Air supply

Size			51	71
Length		mm	1087	1087
Depth		mm	445	445
Height		mm	1234	1234
W1		kg	51	53
W2		kg	32	33
W3		kg	53	55
W4		kg	34	34
Operating weight		kg	170	175
Shipping weight		kg	172	177

Dimensional drawings - EXCELLENCE Version

ELFOEnergy Extended Inverter 81 - 91 - 101



1. Compressor compartment
2. Electrical panel
3. Unit control keypad
4. Power input
5. Functional spaces
6. Electric fan (supply - return)
7. Internal exchanger water inlet (GAS F 1 1/4")
8. Internal exchanger water outlet (GAS F 1 1/4")
9. Condensate drain

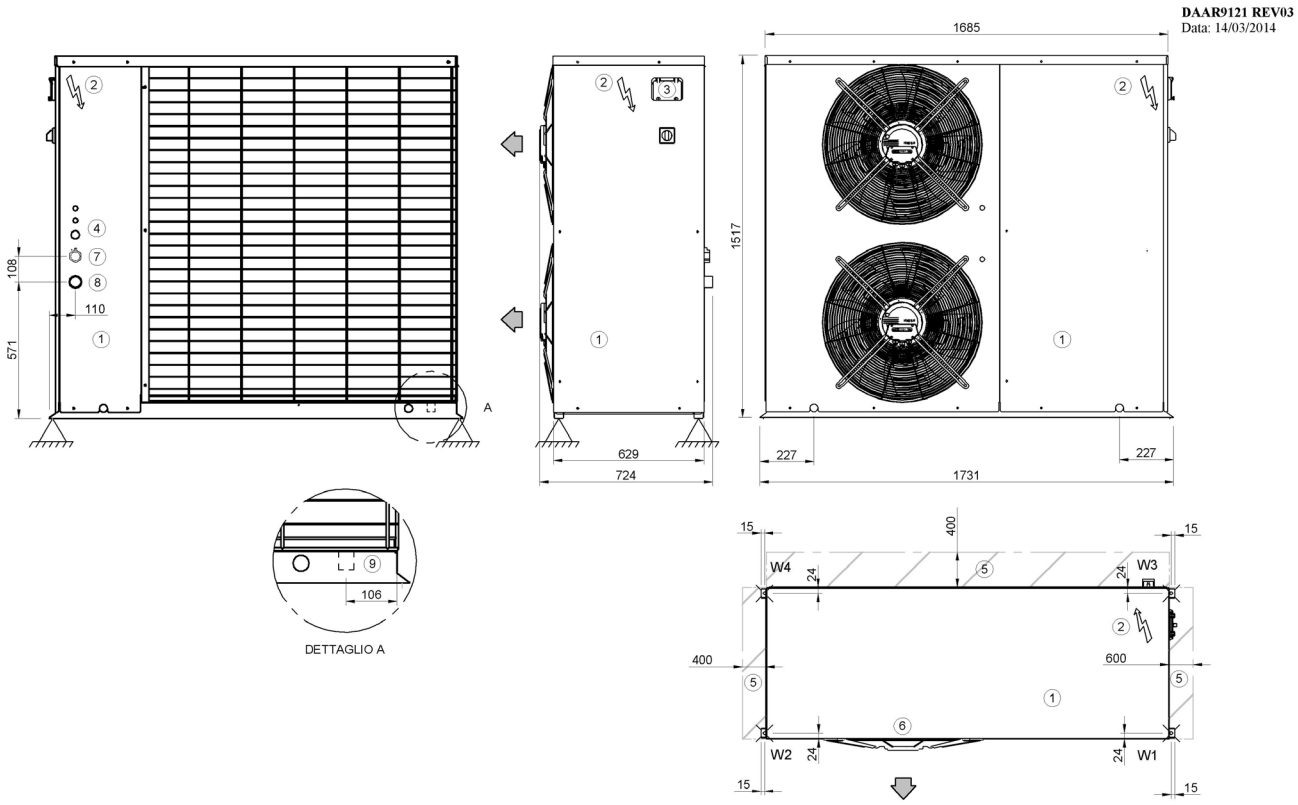
(M) Air supply

Size			81	91	101
Length		mm	1731	1731	1731
Depth		mm	724	724	724
Height		mm	1137	1137	1137
W1		kg	65	65	65
W2		kg	35	35	35
W3		kg	85	85	85
W4		kg	55	55	55
Operating weight		kg	240	240	240
Shipping weight		kg	250	250	250

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - EXCELLENCE Version

ELFOEnergy Extended Inverter 121



1. Compressor compartment
2. Electrical panel
3. Unit control keypad
4. Power input
5. Functional spaces
6. Electric fan (supply - return)
7. Internal exchanger water inlet (GAS F 1 1/4")
8. Internal exchanger water outlet (GAS F 1 1/4")
9. Condensate drain

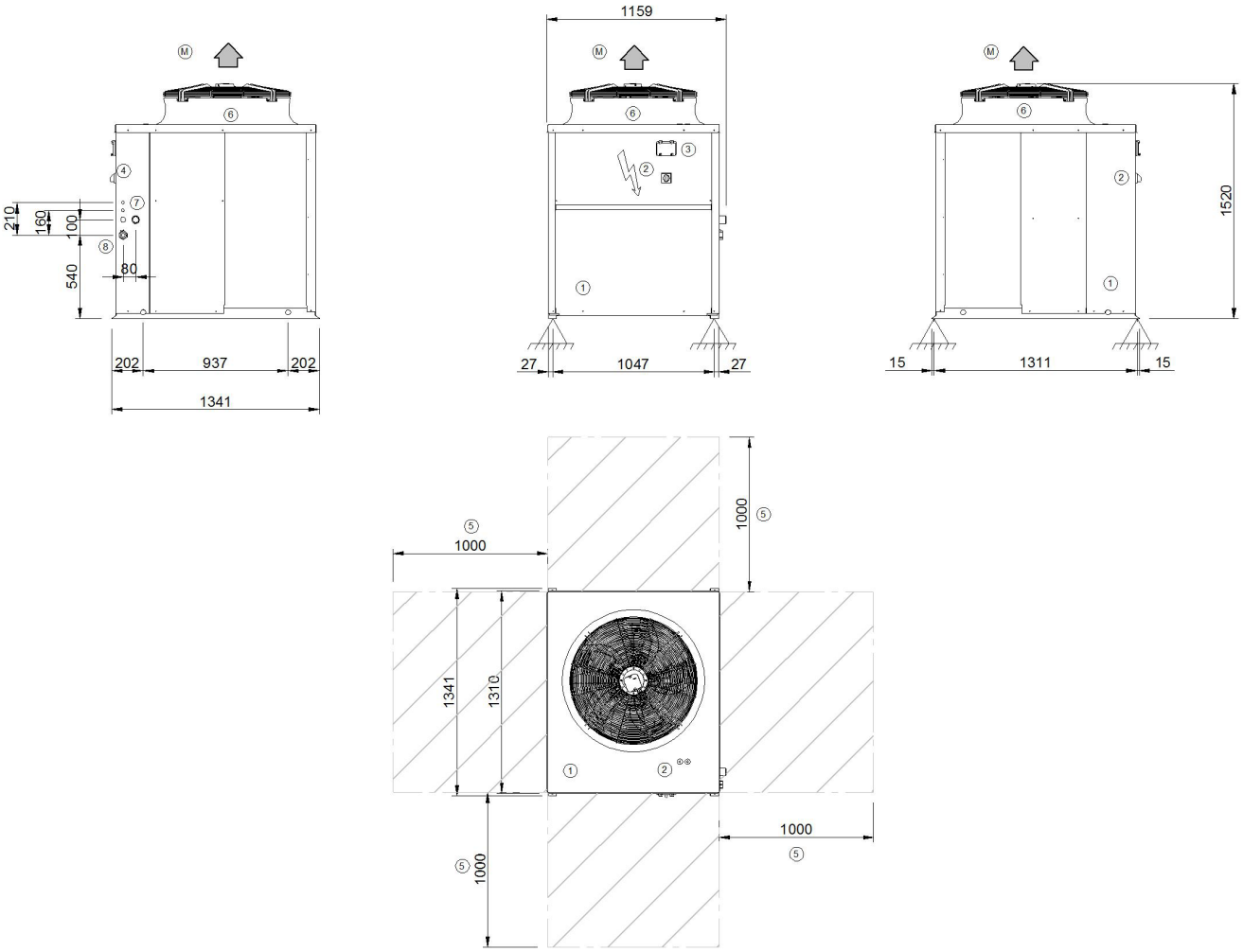
(M) Air supply

Size			121
Length		mm	1731
Depth		mm	724
Height		mm	1517
W1		kg	70
W2		kg	55
W3		kg	110
W4		kg	75
Operating weight		kg	310
Shipping weight		kg	320

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - EXCELLENCE Version

ELFOEnergy Extended Inverter 131 - 141 - 151



1. Compressor compartment
2. Electrical panel
3. Unit control keypad
4. Power input
5. Functional spaces
6. Electric fan (supply - return)
7. Internal exchanger water inlet (GAS F 1 1/4")
8. Internal exchanger water outlet (GAS F 1 1/4")

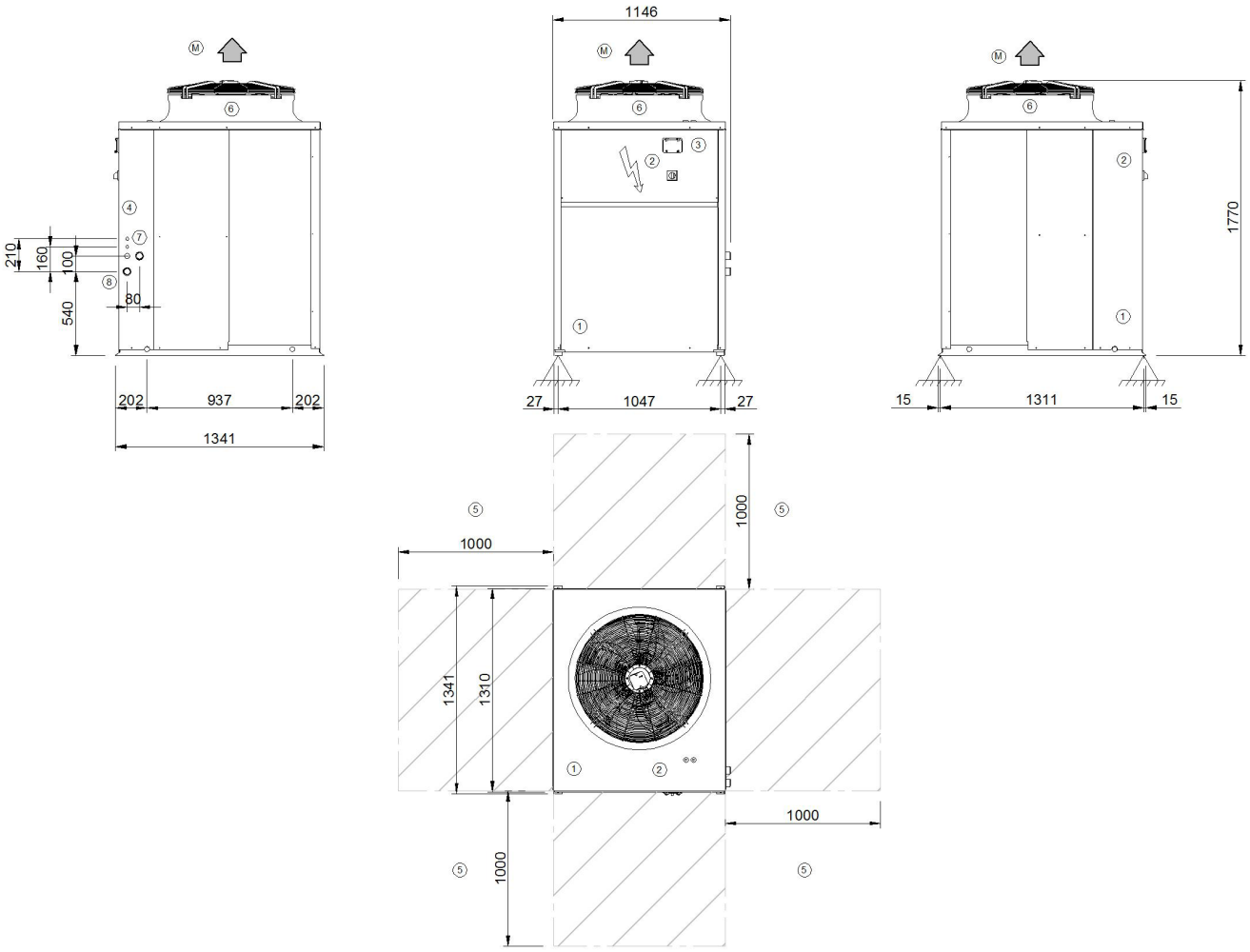
(M) Supply Air

Size			131	141	151
Length		mm	1159	1159	1159
Depth		mm	1341	1341	1341
Height		mm	1520	1520	1520
Operating weight		kg	340	345	355
Shipping weight		kg	350	355	365

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings - EXCELLENCE Version

ELFOEnergy Extended Inverter 161 - 171



1. Compressor compartment
2. Electrical panel
3. Unit control keypad
4. Power input
5. Functional spaces
6. Electric fan (supply - return)
7. Internal exchanger water inlet (GAS Victaulic 1 1/2")
8. Internal exchanger water outlet (GAS Victaulic 1 1/2")

(M) Supply Air

Size			161	171
Length		mm	1146	1146
Depth		mm	1341	1341
Height		mm	1770	1770
Operating weight		kg	390	390
Shipping weight		kg	400	400

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

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