

*Air cooled reversible full inverter
heat pump for outdoor
installation*

SHEEN EVO 2.0

WiSAN-YSE1 10.1 ÷ 55.2 RANGE



TECHNICAL BULLETIN



SIZE - EXCELLENCE	10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	43.2	45.2		
Cooling capacity kW	24,1	26,6	30,3	43,8	49,7	56,8	70,1	80,2	94,6	107		
Heating capacity kW	24,3	28,8	34,2	50,5	54,7	63,4	74,9	85,2	98,2	107		
SIZE - PREMIUM	10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	40.2	45.2	50.2	55.2
Cooling capacity kW	25,2	27,6	32,2	45,7	52,1	60,7	74,3	86,2	94,2	111	121	129
Heating capacity kW	27,0	29,8	35,7	52,5	57,9	66,6	78,5	91,2	102	117,1	129	138

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Clivet participates in the ECP Programme for "Liquid Chillers and Hydronic Heat Pumps".
Check ongoing validity of certificate on www.eurovent-certification.com

Features and benefits

SHEEN EVO 2.0 is the new air cooled and heat pump, equipped with Full DC Inverter technology and R-32 refrigerant with low environmental impact, designed for outdoor installation.

WiSAN-YSE1

Air cooled heat pump with Full DC Inverter technology and R-32 refrigerant

- Range 24 ÷ 128 kW
- Seasonal efficiency (SCOP) up to 4,65
- Seasonal efficiency (SEER) up to 4,95
- Operating with 48°C of outdoor air temperature in cooling
- Operating with -20°C of outdoor air temperature in heating
- Hot water production up to 60°C
- Copper/aluminum condensing coil
- Plate exchanger
- 1 refrigeration circuit



SHEEN EVO 2.0 series is available from 24 kW up to 128 kW in two different versions:

EXCELLENCE (EXC) with outstanding efficiency levels both in cooling and heating, able to provide high leaving water temperature and suitable for colder climate thanks to the wide operating range, keeping a quieter operation.

PREMIUM (PRM) most effective and valuable solution both in terms of capital investment and running cost thanks to competitive efficiency and enhanced delivered capacity by each size.

Energy Efficiency

EXCELLENCE

SCOP up to 4,65 (W35) / **SCOP** up to 3,42 (W55)

SEER up to 4,95 (W7)

PREMIUM

SCOP up to 4,29 (W35)

SEER up to 4,67 (W7)

Capacity modulation from 30% to 100%.

Wide operating range

EXCELLENCE

Outdoor temperature	Max	Min
heating	44°C	-20°C
Domestic hot water	44°C	-20°C
Cooling	48°C	-10°C

Water temperature production	Max	Min
heating	60°C	25°C
Domestic hot water	60°C	25°C
Cooling	20°C	0°C

PREMIUM

Outdoor temperature	Max	Min
heating	44°C	-15°C
Domestic hot water	44°C	-15°C
Cooling	48°C	-10°C

Water temperature production	Max	Min
heating	55°C	25 °C
Domestic hot water	55°C	25 °C
Cooling	20°C	0°C

Mode

- Management and production of domestic hot water up to 60°C
- Climatic compensation with external temperature
- Double set-point management
- Auxiliary generator management
- SG Ready
- EVU lock ready (remote on/off)
- Demand limit

Acoustic configuration

Two sound configurations levels of silence:

- Standard acoustic configuration
- Super-silenced acoustic configuration (-3 dB(A) up to -6 dB(A) depending on selected size)

Application Versatility

All the main system components are integrated in the unit, assuring the best reliability and an easy installation:

- Hydronic assembly with 1 inverter pump
- Hydronic assembly with 1 on/off pump
- Hydronic assembly with 2 inverter pumps (only for size 43.2-55.2 EXC/PRM)
- Hydronic assembly with 2 on/off pump (only for size 43.2-55.2 EXC/PRM)
- 3-way valve for the domestic hot water production
- System storage tank: 145 liters (size 10.1 ÷ 14.1), 160 liters (size 16.2 ÷ 22.2) or 275 liters (30.2 ÷ 40.2), 300 liters (size 45.2-55.2 PRM), 500 liters (size 43.2-45.2 EXC)
- Drain-tray with electric heater

Cascade management

SHEEN EVO 2.0 was designed to connect up to 16 units in a local network, reaching a maximum capacity of 1470 kW. The combinations can also take place with units of different capacity.

Standard unit technical features

Compressor

Size from 10.1 to 22.2

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. The compressor is wrapped in a sound-absorbing hood, that reduces its sound emissions.

its sound emissions. A crankcase heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops

Size from 30.2 to 55.2

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 it is equipped with oil charge. The compressor is wrapped in a sound-absorbing hood, that reduces its sound emissions and it thermally insulates it. A crankcase heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops

Structure

Structure and base made entirely of sturdy sheet steel, thickness of 12/10, hot dip galvanized and painted, for the parts in view, with polyester powder RAL 9001 that guarantees excellent mechanical characteristics and high corrosion strength over time.

Panelling

External paneling made of sheet steel, thickness 12/10, hot dip galvanized and painted with polyester powder RAL 9001 that guarantees excellent mechanical characteristics and high corrosion strength over time. The panels can be easily removed to fully access internal components.

Internal exchanger

Direct expansion heat exchanger, braze-welded AISI 316 stainless steel plates, in pack without seals using copper as the brazing material, with low refrigerant charge and large exchange surface, complete with:

- external thermal insulation no-condensation, thickness 17 mm, in expanded polypropylene (EPP);
- antifreeze heater to protect the water side exchanger, preventing the formation of frost if the water temperature falls below a set value.

The water connections of the exchanger are quick-release with splined joint (Victaulic).

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 hydrophilic treatment. They are appropriately distanced to ensure the maximum heat exchange efficiency. A particular refrigerant circuit prevents the formation of frost on the base of the exchanger during winter operation.

Fan

Helical fans with 4 profiled blades made of reinforced plastic, directly coupled to the DC brushless motor with electronic control, IP 54 execution up to the sizes 40.2, IP44 for the sizes 45.2-55.2. 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. Both fans and prevention guards are designed with CFD technology. Supplied with variable speed control.

Refrigeration circuit

The refrigeration circuit is complete with:

- electronic expansion valve;
- 4-way reverse cycle valve;
- High pressure safety pressure switch
- Low pressure safety switch
- liquid receiver;
- liquid separator;
- oil separator;
- High pressure transducer
- safety thermostat against compressor drain overheating;
- Temperature sensors
- Low pressure safety valve
- Economizer exchanger (only for size 30.2 ÷ 40.2).

Electrical panel

The Power Section includes:

- general protection fuses;
- main disconnecting switch;
- Auxiliary components protection fuse
- AC filter on power supply
- Power supply phase sequence protection
- Protection for compressor overload
- Sensor malfunction protection
- EMC residential compliancy
- phase monitor (size 16.2 ÷ 40.2).

The control section includes:

- compressor timing and protection;
- Relay for remote cumulative fault signal
- Defrosting cycle optimization
- Condenser control
- Potential-free contact for remote on-off control
- dry contact for remote HEAT/COOL mode control.
- dry contact for auxiliary generator management;

The control keypad includes:

- wired controller with dot-matrix display;
- Multifunction keys for ON/OFF control
- Cold, hot and auto operation mode
- Display and alarm reset
- Daily or weekly schedule
- separated power adaptor for remote use;
- Serial port with Modbus (RS485) output for remote communication

Water circuit

- safety valve 6 bar (on units with pumps kit);
- flow switch;
- antifreeze heaters to protect the water side exchanger to prevent ice from forming if the water temperature drops below the pre-set value;
- drain valve;
- temperature sensors;
- low pressure safety switch;
- relief valve (on units with pumps kit).

Test

Unit subjected to factory-tested in specific steps and test pressure of the piping of the refrigerant circuit (with nitrogen and hydrogen), before shipping them.

Unit equipment with low outdoor temperatures

MINIMUM OUTDOOR AIR TEMPERATURE		OPERATING UNIT		UNIT IN STAND-BY ⁽⁵⁾ (fed unit)	UNIT IN STORAGE (unit not fed)
		COOLING*	HEATING*		
+11°C	1	✓STANDARD UNIT	✓STANDARD UNIT (PRM VERSION)	✓STANDARD UNIT	✓STANDARD UNIT ⁽⁶⁾
+2°C	2				
-5°C	4				
-7°C	3				
-10°C	4	NOT POSSIBLE	✓STANDARD UNIT (EXC VERSION)	✓WATER EMPTY UNIT OR WITH AN APPROPRIATE GLYCOL PERCENTAGE	NOT POSSIBLE
From -10°C to -15°C					
From -15°C to -20°C					
Between -20°C and -30°C		NOT POSSIBLE	NOT POSSIBLE	✓WATER EMPTY UNIT OR WITH AN APPROPRIATE GLYCOL PERCENTAGE ✓ PUMPS WITH REGULATION ON BOARD INVERTER ✗ NOT SUITABLE: ON/OFF PUMPS ON BOARD	NOT POSSIBLE

Data referred to the following conditions:

*production of chilled water:

internal exchanger water = 12/7°C

**Production of hot water:

internal exchanger water = 30/35 °C

1. Part load unit and air speed equal to 1 m/s.
2. Part load unit and air speed equal to 0.5 m/s.
3. Part load unit and outdoor air temperature at rest.
4. Unit at full load and outdoor air temperature at rest.

⁽⁵⁾ The water pumping unit must be fed and connected to the unit according to the manual.

⁽⁶⁾ Unit without water or containing water with an appropriate quantity of glycol.

At the unit start-up the water temperature or water with glycol must be inside the operating range indicated in the "Operating range" graph.

To know the water freezing temperature on varying the glycol percentage refer to the specific 'Correction factors for glycol use' table.

⚠ Air conditions which are at rest are defined as the absence of air flowing towards the unit. Weak winds can induce air to flow through the exchanger and air-levels which can cause a reduction in the operating range.

In the presence of predominant winds it is necessary to use suitable windbreak barriers.

⚠ The unit, with an average external air temperature below -10 °C, can be stored for a maximum of 1 month.

Unit configuration

WiSAN-YSE1	10	.1/ .2	PRM	SC	CCHY	VENDC	=	=	=
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

(1) Range

WiSAN = Air cooled reversible full inverter heat pump

(2) Size

10 = Nominal compressor capacity (HP)

(3) Compressors

.1/.2 = Compressor quantity

(4) Energy version

PRM = PREMIUM Version (Standard)

EXC = EXCELLENCE Version

(5) Acoustic configuration

SC = Acoustic configuration with compressor soundproofing (Standard)

EN = Super Silenced acoustic configuration

(6) Condensing coil

CCHY = Copper / aluminium condenser coil with hydrophilic treatment (Standard)

CCCA = Copper / aluminium condenser coil with acrylic lining

CCCA1 = Copper / aluminium condensing coils with Aluminium Energy Guard DCC treatment

(7) Fans

VENDC = DC high efficiency fan (Standard)

(8) Pumping unit

(-) Not required (standard)

HYG1 - Hydronic assembly with 1 ON/OFF pump

HYGU1V - User side hydronic assembly with 1 inverter pump (only for sizes 43.2 ÷ 55.2 EXC/PRM)

HYGU1VI - User side hydronic group with 1 inverter pumps (only for size 10.1 ÷ 40.2)

HYGU2 - Hydronic group with 2 ON/OFF pumps (only for sizes 43.2 ÷ 55.2 EXC/PRM)

HYGU2V - hydronic group with 2 inverter pumps (only for sizes 43.2 ÷ 55.2 EXC/PRM)

(9) Storage tank

(-) not required (Standard)

ACC = Storage tank

(10) Domestic hot water valve

(-) Not required (Standard)

VACS = DHW switching valve

ACC

Storage tank

Steel storage tank complete with double layer covering with closed-cell insulation, stainless steel anti-freeze immersion resistance, bleed valve, draw off cock, cast-iron shut-off butterfly valve with quick connections and activation lever with a mechanical calibration lock at the evaporator output, quick connections with insulated casing.

The storage tank capacity is 145 liters for size 10.1, 12.1 and 14.1.

The storage tank capacity is 160 liters for size 16.2, 18.2 and 22.2.

The storage tank capacity is 275 liters for size 30.2, 35.2 and 40.2.

The storage tank capacity is 300 liters for size 45.2, 50.2 and 55.2 PRM.

The storage tank capacity is 500 liters for size 43.2 and 45.2 EXC.

VACS

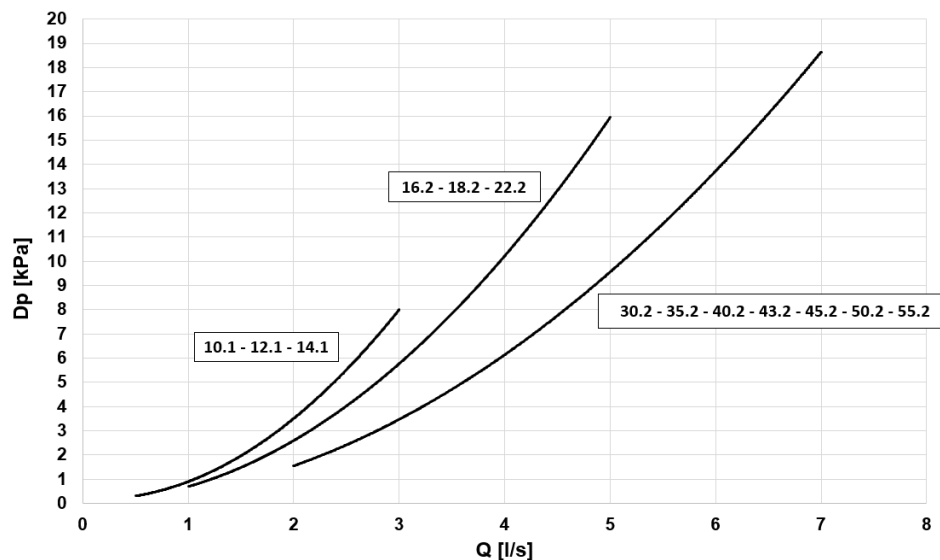
DHW switching valve

The switching valve that diverts the water flow to a heating water tank for domestic water is installed on the unit. If the DHW temperature falls below the set-point, SHEEN EVO 2.0 switches to DHW production mode (priority over other operating modes can be set).

The unit controller closes a digital output driving the flow deviation valve from the storage system until it reaches the DHW set-point set on the user interface.

The water connections are 2" Victaulic.

DHW switching valve pressure drop



Q = Water flow rate [l/s]

DP = Water side pressure drops [kPa]

⚠ The maximum nominal pressure of the unit with the 3-way valve option is 6bar

CCCA

Copper/aluminium condenser coil with acrylic lining

Coils with copper pipes and aluminium fins with acrylic coating. They can be used in environments containing airborne concentrations of salt and other moderately aggressive agents.

The treatment entails:

Capacity variation -2.7%.

Compressor power input variation +4.2%.

Operating range reduction -2.1°C.

CCCA1

Condenser coil with Energy Guard DCC Aluminum

This treatment provides excellent and guaranteed thermal exchange over time and protects finned coil exchangers from corrosion. They can be used in environments containing airborne concentrations of salt and other very aggressive chemicals while maintaining coil performance over time.

PGFC

Finned coil protection grilles

The grilles protect the external coil from accidental contact with objects or persons. Ideal for installation in places where persons can pass from, such as car parks, terraces, etc.

Built-in options

TCDC

Drain tray with electric heater

The drain tray made of steel AISI 316 allows the collection and discharge of the condensate

The two trays, located under the coils, are equipped with Mylar antifreeze electric heaters applied to the bottom and a drain located on the rear part, on the water connection side.

The electric heaters are thermostatically controlled and are activated according to the external air temperature ($T_a < +5^{\circ}\text{C}$).

REMAU

Additional board for advanced functions management

Multifunction board installed in the electrical panel of the unit for the advanced functions management.

The available digital contacts allow the following remote functions:

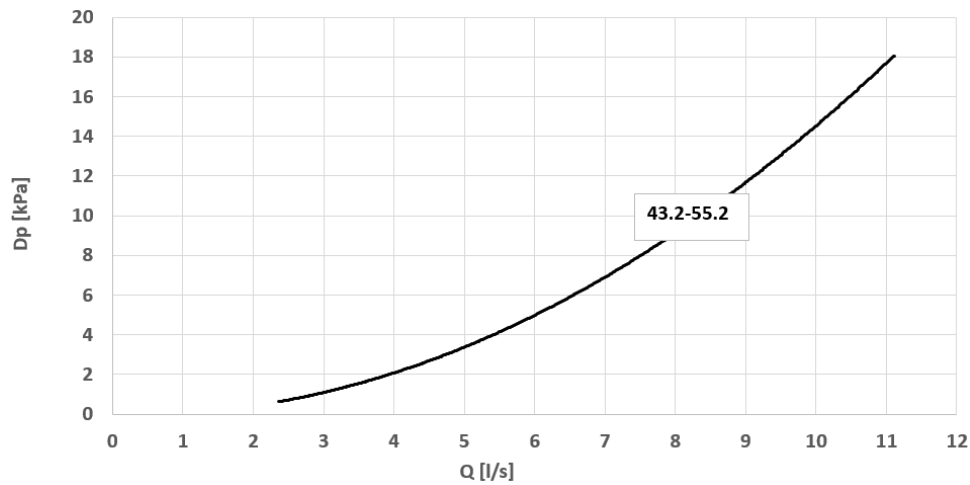
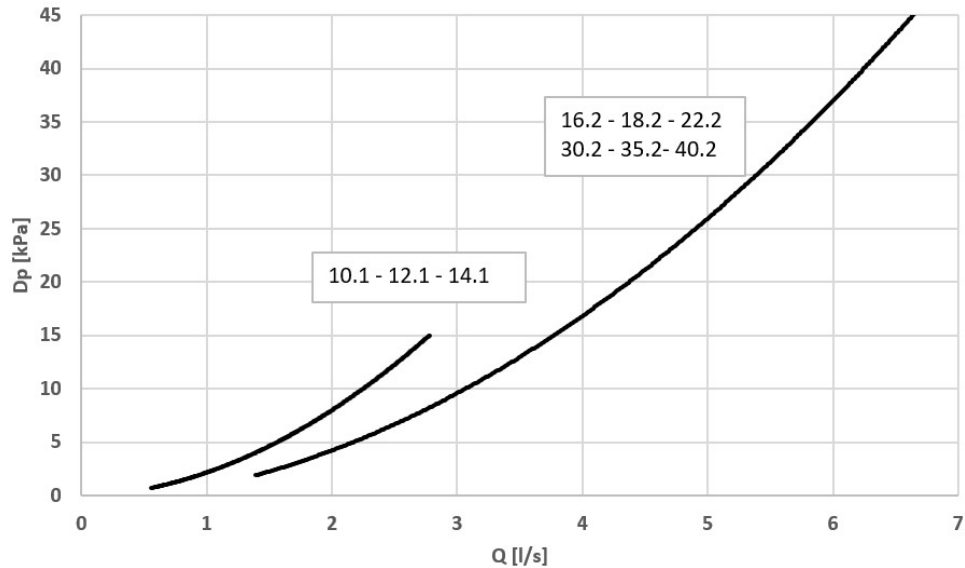
- remote on/off
- heat/cool (summer/winter switch)
- DHW production
- Double set-point management
- Sgready function
- EVUlock function
- Demand limit
- Activation of super-silenced acoustic version (selectable on the user interface)

The additional board does not allow the simultaneous use of digital inputs and Modbus signal.

IFWX**Steel mesh strainer on the water side**

The device stops the exchanger from being clogged by any impurities which are in the hydraulic circuit. The mechanical steel mesh strainer must be placed on the water input line. It can be easily dismantled for periodical maintenance and cleaning.

Filter fittings are Victaulic type by 1"1/2 for sizes 10.1-14.1 and 2" for sizes 16.2-40.2.

Steel mesh strainer pressure drops

Q = Water flow rate [l/s]

DP = Water side pressure drops [kPa]

Options separately supplied

AVIBX

Anti-vibration mount support

The rubber antivibration mounts are attached in special housing on the support frame and serve to smooth the vibrations produced by the unit thus reducing the noise transmitted to the support structure.

AMMSX

Anti-seismic spring antivibration mounts

The anti-seismic spring antivibration mounts must be fastened in special housings on the supporting metal struts. The containment structure is designed to ensure high resistance multidirectional forces acting on the surface of the unit in the presence of wind and / or telluric movements.

The antivibration mounts have been tested according to ANSI/ASHRAE 171-2008 standard (Method of Testing Seismic Restraint devices for HVAC&R Equipment). The performance levels and the test methodology have been validated and certified by Lloyd's Register.

⚠ Installation provided by the Customer.

CMSC13X

Serial communication module ModBus TCP/IP, BACnet/IP, BACnet MS/TP

This enables the serial connection of the supervision system, using ModBus TCP/IP, BACnet/IP, BACnet MS/TP as the communication protocol. It enables access to the complete list of operational variables, commands and alarms. Using this accessory every unit can dialogue with the main supervision systems.

⚠ The configuration and management activities for the BACnet networks are the responsibility of the client

⚠ The total length of each individual serial line must not exceed 1000 m and the line must be connected in bus type (input/output).

VACSX

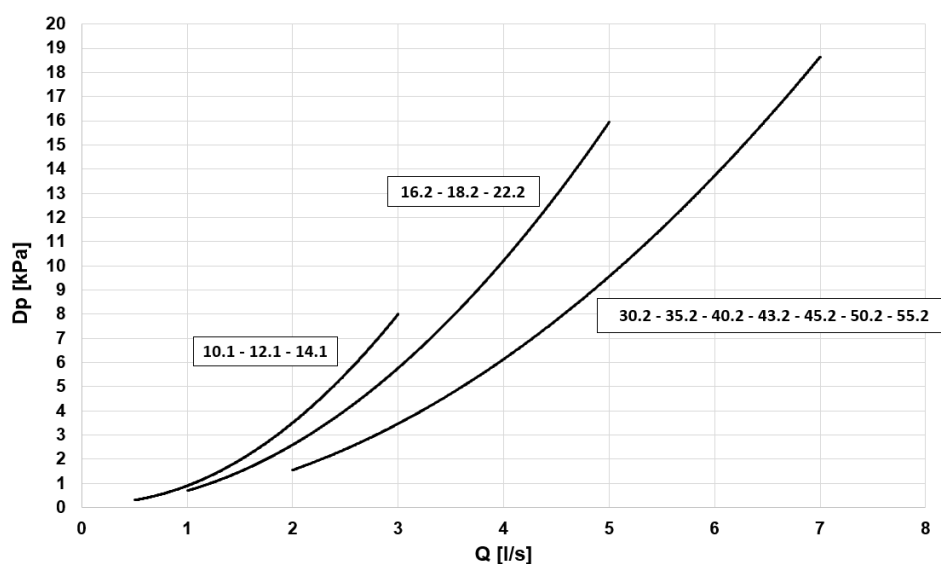
DHW switching valve

The switching valve that diverts the water flow to a heating water tank for domestic water is installed on the unit. If the DHW temperature falls below the set-point, SHEEN EVO 2.0 switches to DHW production mode (priority over other operating modes can be set).

The unit controller closes a digital output driving the flow deviation valve from the storage system until it reaches the DHW set-point set on the user interface.

The water connections are 2" Victaulic.

DHW switching valve pressure drop



Q = Water flow rate [l/s]

DP = Water side pressure drops [kPa]

⚠ The maximum nominal pressure of the unit with the 3-way valve option is 6bar

IOTX

IoT industrial module for cloud based interoperability & services

This device allows the monitoring and the remote control the unit via Clivet Eye, the supervision cloud system for Clivet units.

With IoT module (i-LINK) it will be possible to monitor and manage the unit through the mobile app Clivet Eye and the dedicated web page.

Among the main functions, for all monitored units they allow to:

- display the main working parameters;
- display the alarms;
- switch on/off the unit;
- change the setpoint;
- change the operating mode;
- set the daily/weekly start-up or power-off programming of the unit;
- create charts of main system parameters trend (via web interface);
- display in a map the units monitored by Clivet Eye (via web interface).

Web interface at www.cliveteye.com.

Clivet Eye app available in Google Play and Apple Store



- ⚠ IoT module to be provided for each unit to be remotely monitored.
- ⚠ Internet ethernet connection in charge of customer.
- ⚠ Clivet Eye management is alternative to an external BMS supervision system.
- ⚠ Installation provided by the Customer.

General technical data

Performance - Excellence

Acoustic configuration with compressor soundproofing (SC)

Size			10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	43.2	45.2
Radiant panels												
heating												
Heating capacity (EN 14511:2022)	1	kW	26,1	30,5	37,0	51,5	55,5	64,1	78,6	87,5	101	111
COP (EN 14511:2022)	2	-	4,48	4,33	4,22	4,54	4,33	4,15	4,31	3,95	4,15	4,10
ErP Space Heating Energy Class - AVERAGE Climate - W35	7	-	A+++	A+++	A+++	A+++	A+++	A++	A++	A++	-	-
SCOP - MEDIUM Climate - W35	8	-	4,54	4,49	4,44	4,46	4,46	4,41	4,33	4,29	4,65	4,60
$\eta_{s,h}$ - MEDIUM climate - W35	9	%	179	177	175	175	175	173	170	169	183	181
Cooling												
Cooling capacity (EN 14511:2022)	4	kW	29,9	34,6	38,9	59,1	65,8	77,7	95,0	103,0	126	138
EER (EN 14511:2022)	5	-	4,31	3,97	3,63	4,11	3,68	3,35	4,03	3,61	3,80	3,65
Water flow-rate	4	l/s	1,43	1,66	1,87	2,83	3,15	3,73	4,55	4,94	6,03	6,58
User side exchanger pressure drops	4	kPa	44,6	56,8	69,3	43,3	51,6	67,9	55,6	64,4	42,4	50
Terminal units												
heating												
Heating capacity (EN 14511:2022)	3	kW	24,3	28,8	34,2	50,5	54,7	63,4	74,9	85,2	98,2	107
COP (EN 14511:2022)	2	-	3,33	3,27	3,20	3,55	3,51	3,32	3,48	3,23	3,37	3,34
Cooling												
Cooling capacity (EN 14511:2022)	6	kW	24,1	26,6	30,3	43,8	49,7	56,8	70,1	80,2	94,6	107
EER (EN 14511:2022)	5	-	3,21	2,93	2,87	3,10	3,03	2,85	3,06	2,86	3,12	3,06
SEER	8	-	4,81	4,65	4,53	4,32	4,32	4,25	4,24	4,23	4,95	4,93
$\eta_{s,c}$	10	%	189	183	178	170	170	167	167	166	195	194,2
Water flow-rate	6	l/s	1,14	1,27	1,44	2,09	2,36	2,70	3,34	3,82	4,52	5,08
User side exchanger pressure drops	6	kPa	30,7	36,4	45,2	26,2	32,1	40,1	31,9	40,6	21,0	26,8
Radiators												
heating												
Heating capacity (EN 14511:2022)	11	kW	23,0	27,7	32,6	46,5	51,9	56,7	75,7	86,1	96,2	105,0
COP (EN 14511:2022)	2	-	2,54	2,40	2,33	2,71	2,68	2,70	2,54	2,44	2,78	2,70
ErP Space Heating Energy Class - AVERAGE Climate - W55	7	-	A++	A++	A++	A++	A++	A++	A++	A+	-	-
SCOP - MEDIUM Climate - W55	8	-	3,24	3,23	3,19	3,24	3,21	3,19	3,20	3,19	3,42	3,38
$\eta_{s,h}$ - MEDIUM Climate - W55	9	%	127	126	125	127	125	125	125	123	134	132

The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤ 70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)
Contains fluorinated greenhouse gases (GWP 675)

1. Entering/leaving water temperature user side 30/35 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2022) Heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2022. 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 23/18 °C, Entering external exchanger air temperature 35 °C
5. EER (EN 14511:2022) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2022. 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.
6. Entering/leaving water temperature user side 12/7 °C, Entering external exchanger air temperature 35 °C
7. Seasonal Space Heating Energy Efficiency Class according to Commission delegated Regulation (EU) No 811/2013. W = Water outlet temperature (°C)
8. Data calculated in compliance with EN 14825:2022.
9. Seasonal energy efficiency in heating EN 14825:2022.
10. Seasonal energy efficiency in cooling EN 14825:2022.
11. Entering/leaving water temperature user side 50/55 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)

Performances - Premium

Acoustic configuration with compressor soundproofing (SC)

Size			10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	40.2	45.2	50.2	55.2
Radiant panels														
heating														
Heating capacity (EN 14511:2022)	1	kW	27,9	32,3	38,0	54,4	58,7	67,1	84,8	94,2	101	119	131	139,0
COP (EN 14511:2022)	2	-	4,36	4,01	3,70	4,30	4,06	3,98	4,01	3,67	3,64	3,78	3,70	3,63
ErP Space Heating Energy Class - AVE-RAGE Climate - W35	7	-	A++	A++	A++	A++	A++	A++	A++	A++	A++	-	-	-
SCOP - MEDIUM Climate - W35	8	-	4,29	4,23	4,11	4,22	4,19	4,17	4,12	4,08	4,13	4,11	4,07	4,04
$\eta_{s,h}$ - MEDIUM climate - W35	9	%	169	166	161	166	165	164	162	160	162	161	160	159
Cooling														
Cooling capacity (EN 14511:2022)	4	kW	33,2	37,2	41,9	63,7	70,0	79,8	98,4	111	117	125,0	131,0	137,0
EER (EN 14511:2022)	5	-	3,89	3,68	3,39	3,93	3,66	3,38	3,78	3,47	3,35	3,50	3,40	3,34
Water flow-rate	4	l/s	1,59	1,78	2,01	3,05	3,35	3,83	4,72	5,31	5,59	6,0	6,3	6,5
User side exchanger pressure drops	4	kPa	53,1	64,1	78,3	48,9	57,1	70,9	59,2	73,0	80,2	41,7	45,2	49,2
Terminal units														
heating														
Heating capacity (EN 14511:2022)	3	kW	27,0	29,8	35,7	52,5	57,9	66,6	78,5	91,2	102	117	129	138
COP (EN 14511:2022)	2	-	3,21	3,20	3,15	3,33	3,29	3,14	3,34	3,05	2,88	3,21	3,18	3,15
Cooling														
Cooling capacity (EN 14511:2022)	6	kW	25,2	27,6	32,2	45,7	52,1	60,7	74,3	86,2	94,2	111	121	128
EER (EN 14511:2022)	5	-	3,03	2,75	2,74	2,96	2,88	2,75	2,91	2,73	2,63	2,71	2,61	2,51
SEER	8	-	4,50	4,40	4,24	4,04	4,09	4,07	3,96	3,91	3,87	4,67	4,54	4,42
$\eta_{s,c}$	10	%	177	173	167	159	161	160	155	153	152	-	-	-
Water flow-rate	6	l/s	1,20	1,32	1,53	2,17	2,48	2,89	3,54	4,10	4,49	5,28	5,78	6,13
User side exchanger pressure drops	6	kPa	33,3	38,7	50,0	28,0	34,8	44,7	35,4	46,2	54,2	32,8	38,7	43,2

The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤ 70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

Contains fluorinated greenhouse gases (GWP 675)

1. Entering/leaving water temperature user side 30/35 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2022) Heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2022. 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 23/18 °C, Entering external exchanger air temperature 35 °C
5. EER (EN 14511:2022) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2022. 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.
6. Entering/leaving water temperature user side 12/7 °C, Entering external exchanger air temperature 35 °C
7. Seasonal Space Heating Energy Efficiency Class according to Commission delegated Regulation (EU) No 811/2013. W = Water outlet temperature (°C)
8. Data referred to unit operation with inverter frequency optimized for this application.
9. Data calculated in compliance with EN 14825:2022.
10. Seasonal energy efficiency in heating EN 14825:2022.
11. Seasonal energy efficiency in cooling EN 14825:2022.

General technical data

Performance - Excellence

Super Silenced acoustic configuration (EN)

Size			10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	43.2	45.2
Radiant panels												
heating												
Heating capacity (EN 14511:2022)	1,8	kW	21,5	24,3	26,9	44,8	48,7	53,4	65,4	72,7	92,9	98,4
COP (EN 14511:2022)	2	-	4,52	4,40	4,35	4,51	4,35	4,32	4,22	4,07	4,21	4,16
ErP Space Heating Energy Class - AVERA-GE Climate - W35	7	-	A++	A++	A++	A++	A++	A++	A++	A++	-	-
SCOP - MEDIUM Climate - W35	9	-	4,41	4,38	4,35	4,34	4,33	4,30	4,24	4,20	4,66	4,59
$\eta_{s,h}$ - MEDIUM climate - W35	10	%	173	172	171	171	170	169	167	165	183	181
Cooling												
Cooling capacity (EN 14511:2022)	4,8	kW	24,7	28,5	31,3	51,5	56,8	64,7	78,6	84,0	121	126
EER (EN 14511:2022)	5	-	4,25	4,34	3,98	4,12	3,63	3,56	4,12	3,79	3,83	3,71
Water flow-rate	4	l/s	1,18	1,37	1,50	2,46	2,72	3,10	3,77	4,02	5,8	6,0
User side exchanger pressure drops	4	kPa	32,5	41,2	48,1	34,4	40,4	50,2	39,7	44,6	39	42
Terminal units												
heating												
Heating capacity (EN 14511:2018)	3	kW	19,1	21,6	24,9	41,9	46,2	50,3	61,3	69,1	90,2	95,2
COP (EN 14511:2018)	2	-	3,33	3,25	3,25	3,51	3,55	3,59	3,79	3,68	3,44	3,41
Cooling												
Cooling capacity (EN 14511:2018)	6	kW	19,9	21,9	24,4	38,3	42,8	47,3	58,0	65,3	90,0	96,5
EER (EN 14511:2018)	5	-	3,18	3,21	3,15	3,14	3,00	3,02	3,12	3,00	3,06	3,05
SEER	9	-	4,70	4,55	4,50	4,21	4,21	4,15	4,18	4,13	4,84	4,82
$\eta_{s,c}$	11	%	185	179	177	165	165	163	164	162	191	190
Water flow-rate	6	l/s	0,95	1,04	1,16	1,82	2,04	2,25	2,76	3,11	4,3	4,6
User side exchanger pressure drops	6	kPa	22,3	26,2	31,3	20,9	25,2	29,7	22,8	28,1	22,5	25,6
Radiators												
heating												
Heating capacity (EN 14511:2018)	12	kW	17,6	19,7	21,8	37,0	41,5	45,9	60,0	68,7	88,9	94,0
EER (EN 14511:2018)	2	-	2,62	2,56	2,64	2,79	2,72	2,75	2,71	2,65	2,80	2,73
ErP Space Heating Energy Class - AVERA-GE Climate - W35	7	-	A++	A++	A++	A++	A++	A++	A++	A++	-	-
SCOP - MEDIUM Climate - W55	9	-	3,24	3,23	3,22	3,24	3,24	3,25	3,22	3,20	3,40	3,37
$\eta_{s,h}$ - MEDIUM Climate - W55	10	%	127	126	126	127	127	127	126	125	133	132

The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤ 70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

Contains fluorinated greenhouse gases (GWP 675)

1. Entering/leaving water temperature user side 30/35 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2018) Heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2018. 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 23/18 °C, Entering external exchanger air temperature 35 °C
5. EER (EN 14511:2018) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2018. 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.
6. Entering/leaving water temperature user side 12/7 °C, Entering external exchanger air temperature 35 °C
7. Seasonal Space Heating Energy Efficiency Class according to Commission delegated Regulation (EU) No 811/2013. W = Water outlet temperature (°C)
8. Data referred to unit operation with inverter frequency optimized for this application.
9. Data calculated in compliance with EN 14825:2018.
10. Seasonal energy efficiency in heating EN 14825:2018.
11. Seasonal energy efficiency in cooling EN 14825:2018.
12. Entering/leaving water temperature user side 50/55 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)

Performances - Premium

Super Silenced acoustic configuration (EN)

Size			10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	40.2	45.2	50.2	55.2
Radiant panels														
heating														
Heating capacity (EN 14511:2018)	1,8	kW	21,1	24,6	27,5	46,3	51,2	55,3	68,6	76,1	81,9	99,5	106	114,0
COP (EN 14511:2018)	2	-	4,35	4,24	4,22	4,41	4,31	4,25	4,16	4,01	4,04	3,82	3,77	3,74
ErP Space Heating Energy Class - AVERAGE Climate - W35	7	-	A++	A++	A++	A++	A++	A++	A++	A++	A++	-	-	-
SCOP - MEDIUM Climate - W35	9	-	4,18	4,12	4,05	4,15	4,11	4,10	4,10	4,06	4,05	4,07	4,02	4,01
η _{s,h} - MEDIUM climate - W35	10	%	164	162	159	163	161	161	161	159	159	160	158	157
Cooling														
Cooling capacity (EN 14511:2018)	4,8	kW	29,1	32,6	34,4	54,3	60,5	64,6	79,0	89,5	93,8	106	109	112
EER (EN 14511:2018)	5	-	4,00	4,12	3,74	4,04	3,78	3,66	3,95	3,73	3,62	3,50	3,40	3,43
Water flow-rate	4	l/s	1,39	1,56	1,65	2,60	2,90	3,10	3,78	4,29	4,49	5,1	5,2	5,4
User side exchanger pressure drops	4	kPa	44,0	52,8	57,8	36,9	44,2	49,4	40,6	50,6	54,9	30,8	32,2	34,1
Terminal units														
heating														
Heating capacity (EN 14511:2018)	3	kW	21,4	23,8	26,9	46,4	51,6	54,4	66,5	75,1	80,6	98,4	105	113
COP (EN 14511:2018)	2	-	3,22	3,15	3,11	3,42	3,35	3,35	3,54	3,46	3,47	3,24	3,21	3,18
Cooling														
Cooling capacity (EN 14511:2018)	6	kW	22,1	24,2	26,5	39,1	45,0	49,1	59,6	69,7	75,7	93,0	99,1	104,0
EER (EN 14511:2018)	5	-	3,11	3,09	3,04	3,06	2,97	2,97	3,03	2,94	2,85	2,71	2,63	2,55
SEER	9	-	4,60	4,52	4,36	4,20	4,20	4,15	4,10	4,00	3,95	4,49	4,47	4,44
η _{s,c}	11	%	181	178	171	165	165	163	161	157	155	176,6	175,8	175
Water flow-rate	6	l/s	1,05	1,15	1,26	1,86	2,14	2,34	2,84	3,32	3,61	4,4	4,7	5,0
User side exchanger pressure drops	6	kPa	27,9	32,3	37,6	21,2	26,7	30,9	24,5	32,3	37,3	23,9	26,8	29,3

The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤ 70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)
Contains fluorinated greenhouse gases (GWP 675)

1. Entering/leaving water temperature user side 30/35 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2018) Heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2018. 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 23/18 °C, Entering external exchanger air temperature 35 °C
5. EER (EN 14511:2018) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2018. 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.
6. Entering/leaving water temperature user side 12/7 °C, Entering external exchanger air temperature 35 °C
7. Seasonal Space Heating Energy Efficiency Class according to Commission delegated Regulation (EU) No 811/2013. W = Water outlet temperature (°C)
8. Data referred to unit operation with inverter frequency optimized for this application.
9. Data calculated in compliance with EN 14825:2018.
10. Seasonal energy efficiency in heating EN 14825:2018.
11. Seasonal energy efficiency in cooling EN 14825:2018.

General technical data

Sound level - Excellence

Acoustic configuration with compressor soundproofing (SC)

SIZE	Sound power level - Octave band (Hz)								Sound pressure level	Sound power level
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
10.1	61	62	62	69	70	65	60	50	57	73
12.1	58	61	65	68	72	66	59	50	58	74
14.1	54	61	66	69	73	67	60	49	59	75
16.2	76	75	70	71	73	65	60	50	58	75
18.2	52	63	65	72	73	66	59	50	58	76
22.2	76	75	68	72	76	69	62	52	61	78
30.2	59	71	71	74	74	70	69	61	60	78
35.2	59	67	70	75	79	73	68	60	63	81
43.2	81	86	83	77	76	74	74	69	64	82
45.2	82	87	84	78	77	75	75	70	65	83

Acoustic configuration: super-silenced (EN)

SIZE	Sound power level - Octave band (Hz)								Sound pressure level	Sound power level
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
10.1	46	60	60	65	66	61	56	48	53	69
12.1	59	60	60	67	68	63	58	48	55	71
14.1	56	59	63	66	70	64	57	48	56	72
16.2	50	62	67	67	69	62	57	48	54	71
18.2	50	62	67	67	69	62	57	48	54	71
22.2	73	72	67	68	70	62	57	47	55	72
30.2	54	67	67	70	67	65	65	57	55	73
35.2	56	69	69	72	69	67	67	59	57	75
43.2	65	70	69	75	72	71	67	61	59	77
45.2	66	71	69	76	73	67	72	62	60	78

Sound levels refer to units with nominal 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 in Heating:

- internal exchanger water = 30/35° C

- ambient temperature 7/6° C

Data referred to the following conditions in cooling:

- internal exchanger water = 12/7° C

- ambient temperature 35° C

Sound levels - Premium

Acoustic configuration with compressor soundproofing (SC)

SIZE	Sound power level - Octave band (Hz)								Sound pressure level	Sound power level
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
10.1	63	64	64	71	72	67	62	52	59	75
12.1	60	63	67	70	74	68	61	52	60	76
14.1	56	63	68	71	75	69	62	51	61	77
16.2	78	77	72	73	75	67	62	52	60	77
18.2	79	78	73	74	76	68	63	53	61	78
22.2	78	77	70	74	78	71	64	54	63	80
30.2	61	73	73	76	76	72	71	63	62	80
35.2	61	69	72	77	81	75	70	62	65	83
40.2	61	69	72	77	81	75	70	62	65	83
45.2	71	72	73	77	80	79	71	66	66	84
50.2	71	72	74	78	81	80	71	66	67	85
55.2	71	72	74	78	81	80	72	66	67	85

Acoustic configuration: super-silenced (EN)

SIZE	Sound power level - Octave band (Hz)								Sound pressure level	Sound power level
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
10.1	49	63	63	68	69	64	59	51	56	72
12.1	61	62	62	69	70	65	60	50	57	73
14.1	61	62	62	69	70	65	60	50	57	73
16.2	52	64	69	69	71	64	59	50	57	73
18.2	52	64	69	69	71	64	59	50	57	73
22.2	75	74	69	70	72	64	59	49	57	74
30.2	57	70	70	73	70	68	68	60	58	76
35.2	58	70	70	73	73	69	68	60	59	77
40.2	59	71	71	74	74	70	69	61	60	78
45.2	57	67	69	75	73	72	67	61	62	79
50.2	58	67	69	76	74	73	67	61	62	80
55.2	58	67	70	76	74	73	67	61	62	80

Sound levels refer to units with nominal 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 in Heating:

- internal exchanger water = 30/35° C

- ambient temperature 7/6° C

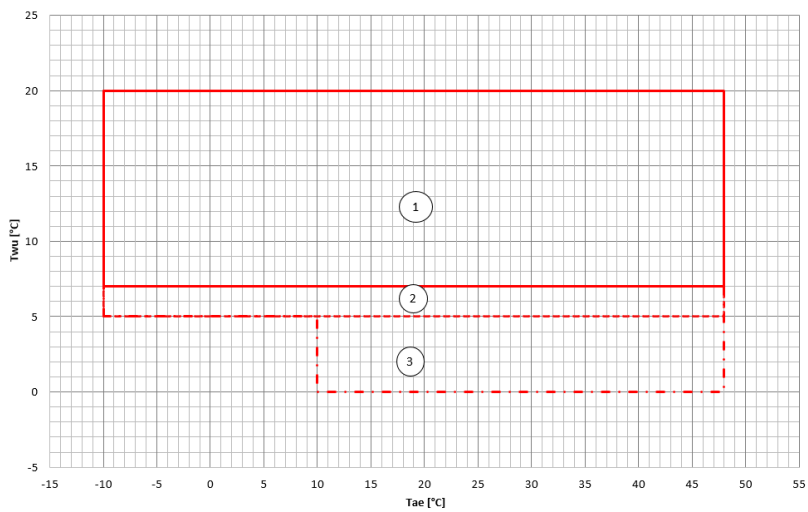
Data referred to the following conditions in cooling:

- internal exchanger water = 12/7° C

- ambient temperature 35° C

Operating range - Excellence

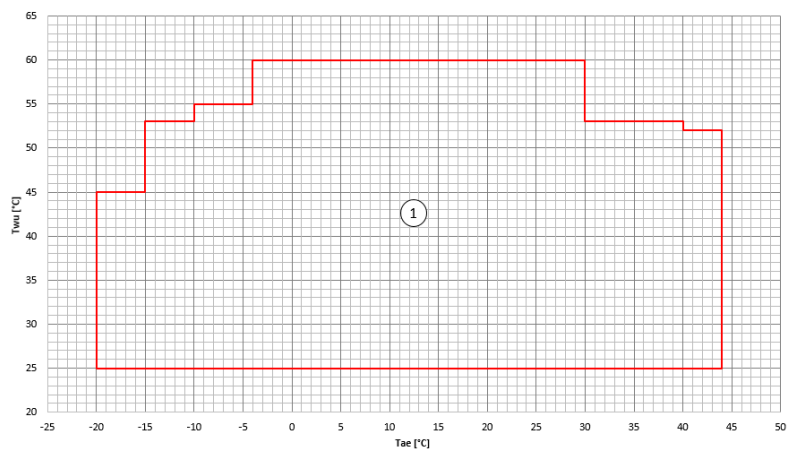
Cooling



T_{wu} [°C] = Leaving exchanger water temperature
 T_{ae} [°C] = External exchanger inlet air temperature

1. Normal operating range
2. Low water temperature operating range in which the use of only water as the operating fluid is allowed.
3. Low water temperature operating range where the use of ethylene or propylene glycol is mandatory, depending on the temperature of the leaving fluid from the user side exchanger to prevent ice formation.

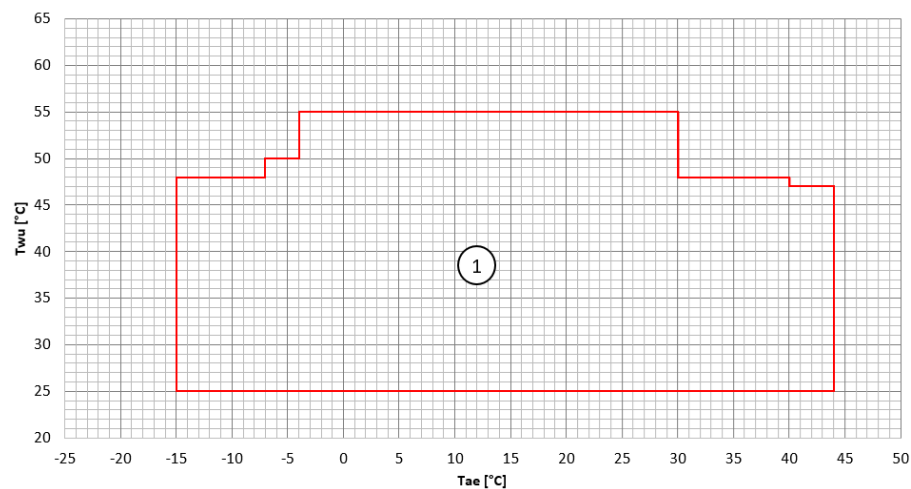
Heating / DHW production size 10.1 ÷ 35.2 EXC



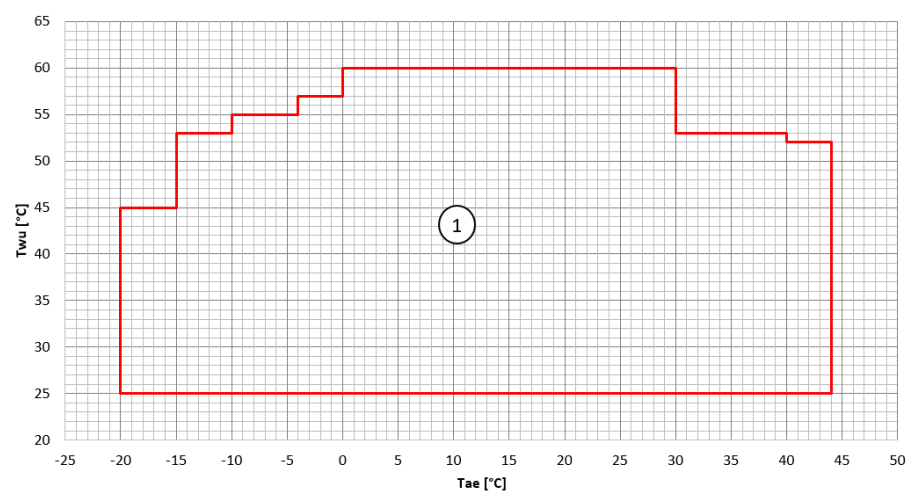
T_{wu} [°C] = Leaving exchanger water temperature
 T_{ae} [°C] = External exchanger inlet air temperature

1. Normal operating range.

Heating / DHW production size 10.1-40.2 PRM



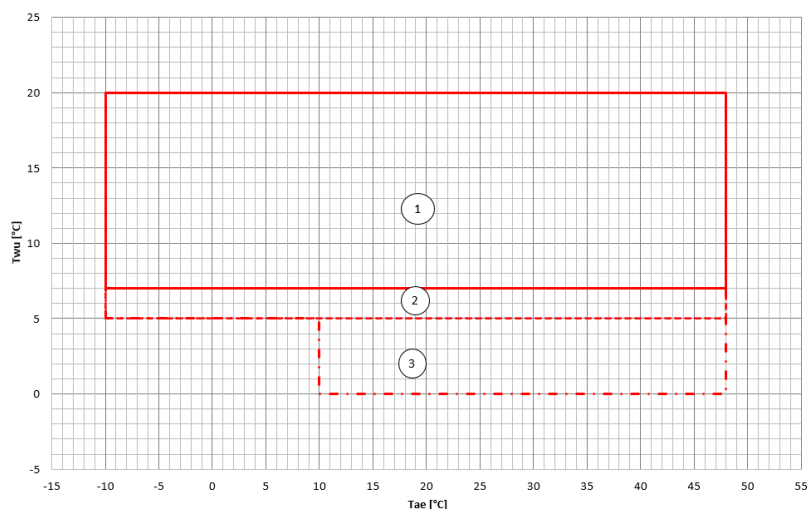
Heating / DHW production size 43.2 ÷ 45.2 EXC



General technical data

Operating range - Premium

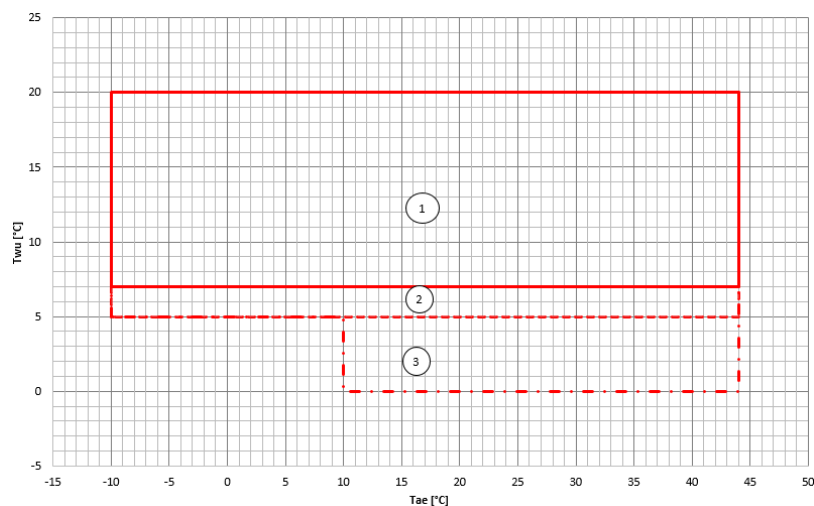
Cooling size 10.2 ÷ 40.2



Twu [°C] = Leaving exchanger water temperature
Tae [°C] = External exchanger inlet air temperature

1. Normal operating range
2. Low water temperature operating range in which the use of only water as the operating fluid is allowed.
3. Low water temperature operating range where the use of ethylene or propylene glycol is mandatory, depending on the temperature of the leaving fluid from the user side exchanger to prevent ice formation.

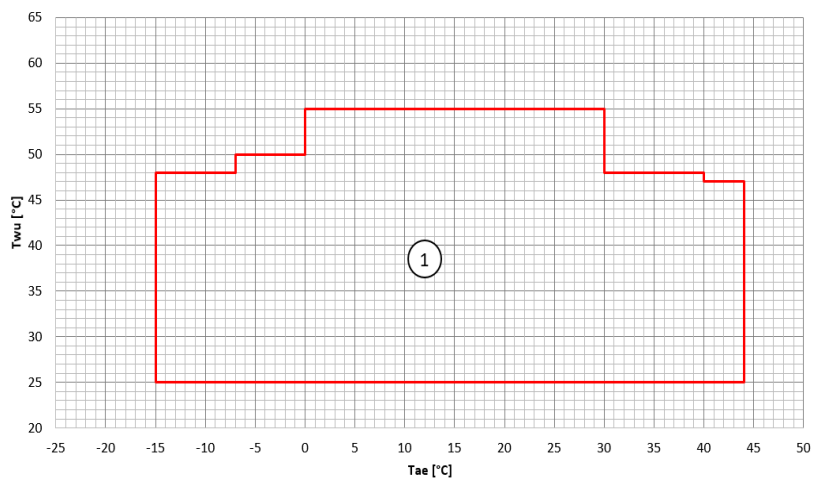
Cooling size 45.2 - 55.2



Twu [°C] = Leaving exchanger water temperature
Tae [°C] = External exchanger inlet air temperature

1. Normal operating range
2. Low water temperature operating range in which the use of only water as the operating fluid is allowed.
3. Low water temperature operating range where the use of ethylene or propylene glycol is mandatory, depending on the temperature of the leaving fluid from the user side exchanger to prevent ice formation.

Heating / DHW production size 45.2-55.2 PRM



Twu [°C] = Leaving exchanger water temperature
Tae [°C] = External exchanger inlet air temperature

1. Normal operating range.

Construction - Excellence

SIZE			10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	43.2	45.2
Compressor												
Type of compressors			Rotary Inverter						Scroll Inverter			
Refrigerant			R32									
No. of compressors		Nr	1						2			
Oil charge		l	2,3			4,6			6		6,6	
Refrigerant Charge		kg	7,9			14			17,5		26,5	
No. of circuits		Nr	1									
User side exchanger												
Type of internal exchanger	1		PHE									
N. of internal exchanger		No.										
Water content		l	2,44			5,17			7,80		1,1	
External exchanger												
Type of internal exchanger	2		CCHY									
Number of coils		No.	2									
External Section Fans												
Type of fans	3		AX									
No. of fans		No.	1			2			3			
Type of motor			Brushless DC									
Standard airflow EXC-SC		m³/h	12250	13500	13500	24500	27000	27000	36750	40500	65700	65700
Standard airflow EXC-EN		m³/h	8500	10250	10250	17000	20500	20500	30750	30750	44600	44600
Installed unit power		kW	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	1,5	1,5
Water circuit												
Water fittings			1" 1/2	1" 1/2	1" 1/2	2"	2"	2"	2"	2"	2 1/2"	2 1/2"
Maximum water side pressure		kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Minimum system water content in heating		l	200	200	200	400	400	400	650	650	850	850
Minimum system water content in cooling		l	80	80	80	150	150	150	200	200	300	300
Total internal water volume		l	5,44	5,44	5,44	10,3	10,3	10,3	15,6	15,6	28.8	28,8
Power supply												
Standard power supply			400/3/50+N									
Electrical data												
F.L.A. - Total		A	18,5	19,0	20,0	37,5	38,5	40,5	57,0	59,0	62,0	71,0
F.L.I. - Total		kW	12,0	12,4	13,0	24,4	25,1	26,4	37,1	38,4	39,0	46,0
M.I.C. - Value	4	A	10,0	10,0	10,0	20,3	20,3	20,3	31,0	31,0	43,8	43,8

1. PHE = Plate exchanger
2. CCHY = Copper / aluminium condenser coil with hydrophilic treatment
3. AX = Axial fan
4. M.I.C.=Maximum unit starting current. The M.I.C. value is obtained adding the max. compressor starting current of the highest size to the power input at max. admissible conditions (F.L.A.) of the remaining electric components.

Voltage unbalance between phases: max 2 %

Voltage variation: max +/- 10%

Electrical data refer to standard units; according to the installed accessories, the data can suffer some variations.

General technical data

Construction - Premium

SIZE			10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	40.2	45.2	50.2	55.2
Compressor														
Type of compressors			Rotary Inverter						Scroll Inverter					
Refrigerant			R32											
No. of compressors		No.	1						2					
Oil charge		l	2,3			4,6			6			4,6		
Refrigerant Charge		kg	7,9			14			17,5			17,5		
No. of circuits		No.	1											
User side exchanger														
Type of internal exchanger	1		PHE											
N. of internal exchanger		No.	1											
Water content		l	2,44			5,17			7,80			1,1		
External exchanger														
Type of internal exchanger	2		CCHY											
Number of coils		No.	2											
External Section Fans														
Type of fans	3		AX											
No. of fans		No.	1			2			3			2		
Type of motor			Brushless DC											
Standard airflow PRM-SC		m³/h	13500	13500	14000	27000	27000	28000	40500	40500	42000	50000	50000	50000
Standard airflow PRM-EN		m³/h	10250	10250	12250	20500	20500	24500	30750	30750	36750	35100	35100	35100
Installed unit power		kW	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	1,5	1,5	1,5
Water circuit														
Water fittings			1" 1/2	1" 1/2	1" 1/2	2"	2"	2"	2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
Maximum water side pressure		kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Minimum system water content in heating		l	200	200	200	400	400	400	650	650	650	850	850	850
Minimum system water content in cooling		l	80	80	80	150	150	150	200	200	200	300	300	300
Total internal water volume		l	5,44	5,44	5,44	10,3	10,3	10,3	15,6	15,6	15,6	22	22	22
Power supply														
Standard power supply			400/3/50+N											
Electrical data														
F.L.A. - Total		A	18,5	19,0	20,0	37,5	38,5	40,5	57,0	59,0	62,0	80,0	90,5	100
F.L.I. - Total		kW	12,0	12,4	13,0	24,4	25,1	26,4	37,1	38,4	40,4	51,0	58,0	64,0
M.I.C. - Value	4	A	10,0	10,0	10,0	20,3	20,3	20,3	31,0	31,0	31,0	50,0	50,0	50,0

1. PHE = Plate exchanger
2. CCHY = Copper / aluminium condenser coil with hydrophilic treatment
3. AX = Axial fan
4. M.I.C.=Maximum unit starting current. The M.I.C. value is obtained adding the max. compressor starting current of the highest size to the power input at max. admissible conditions (F.L.A.) of the remaining electric components.

Voltage unbalance between phases: max 2 %

Voltage variation: max +/- 10%

Electrical data refer to standard units; according to the installed accessories, the data can suffer some variations.

Correction factors for ethylene glycol use - Heating

% ethylene glycol by weight		0%	10%	20%	30%	40%	50%
Freezing point	°C	0	-4	-9	-16	-23	-37
Correction factor for unit heating capacity	°C	1	0,997	0,993	0,990	0,986	0,983
Correction factor for flow rate	Nr	1	1,032	1,068	1,107	1,151	1,199
Correction factor for system pressure drop	Nr	1	1,032	1,072	1,122	1,180	1,248

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.

Correction factors for propylene glycol use - Heating

% propylene glycol by weight		0%	10%	20%	30%	40%	50%
Freezing point	°C	0	-3	-7	-12	-20	-33
Correction factor for unit heating capacity	°C	1	0,992	0,982	0,971	0,959	0,945
Correction factor for flow rate	Nr	1	1,035	1,068	1,107	1,151	1,207
Correction factor for system pressure drop	Nr	1	1,098	1,213	1,347	1,499	1,669

I fattori di correzione riportati si riferiscono a miscele di acqua e glicole etilenico utilizzate per prevenire la formazione di ghiaccio negli scambiatori collegati al circuito idraulico durante la fermata invernale.

Correction factors for ethylene glycol use - Cooling

% ethylene glycol by weight		0%	10%	20%	30%	40%	50%
Freezing point	°C	0	-4	-9	-16	-23	-37
Correction factor for unit cooling capacity	°C	1	0,994	0,986	0,976	0,964	0,950
Correction factor for flow rate	Nr	1	1,036	1,076	1,120	1,170	1,225
Correction factor for system pressure drop	Nr	1	1,035	1,080	1,135	1,200	1,275

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 cold water production.

Correction factors for propylene glycol use - Cooling

% propylene glycol by weight		0%	10%	20%	30%	40%	50%
Freezing point	°C	0	-3	-7	-12	-20	-33
Correction factor for unit cooling capacity	°C	1	0,990	0,976	0,960	0,939	0,916
Correction factor for flow rate	Nr	1	1,038	1,076	1,120	1,170	1,231
Correction factor for system pressure drop	Nr	1	1,058	1,133	1,224	1,332	1,457

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 cold water production.

General technical data

Fouling Correction Factors

INTERNAL EXCHANGER (EVAPORATOR)

M2C/W	F1	FK1
0,44x10 (-4)	1	1
0,88x10 (-4)	0,96	0,99
1,76x10 (-4)	0,93	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

Exchanger operating range

INTERNAL EXCHANGER

		DPR	DPW
Plate exchanger	PED (CE)	4500	1000

DPr = Maximum operating pressure on refrigerant side in kPa

DPw = Maximum operating pressure on water side in kPa

Overload and control device calibrations

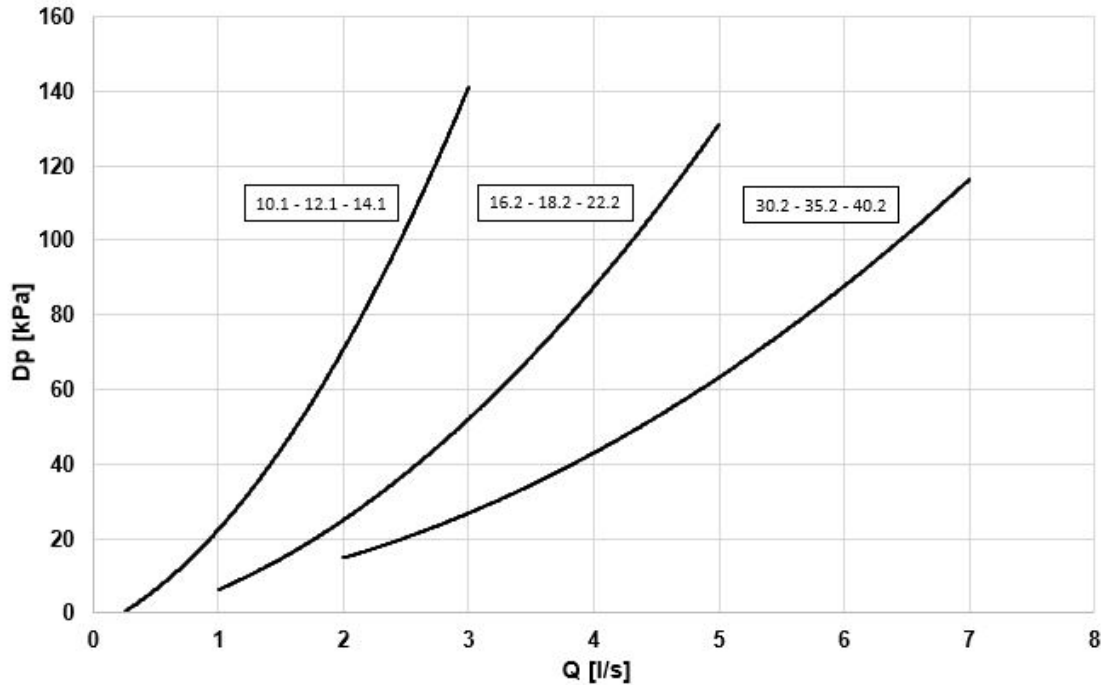
		OPEN	CLOSE	VALUE (10.1 - 22.2)	VALUE (30.2 - 40.2)	VALUE (43.2 - 55.2)
Refrigerant side						
High pressure safety pressure switch (1)	bar	42	33	-	-	-
Low pressure safety pressure switch (1)	kPa	140	300	-	-	-
Gas-liquid separator safety valve	bar	-	-	34	30	34
Safety thermostat against compressor drain overheating (1)	°C	75	115	-	-	-
Water side						
Antifreeze protection (1)	°C	7	4	-	-	-
High pressure safety valve	bar	-	-	6	6	6

(1): valid for the entire series

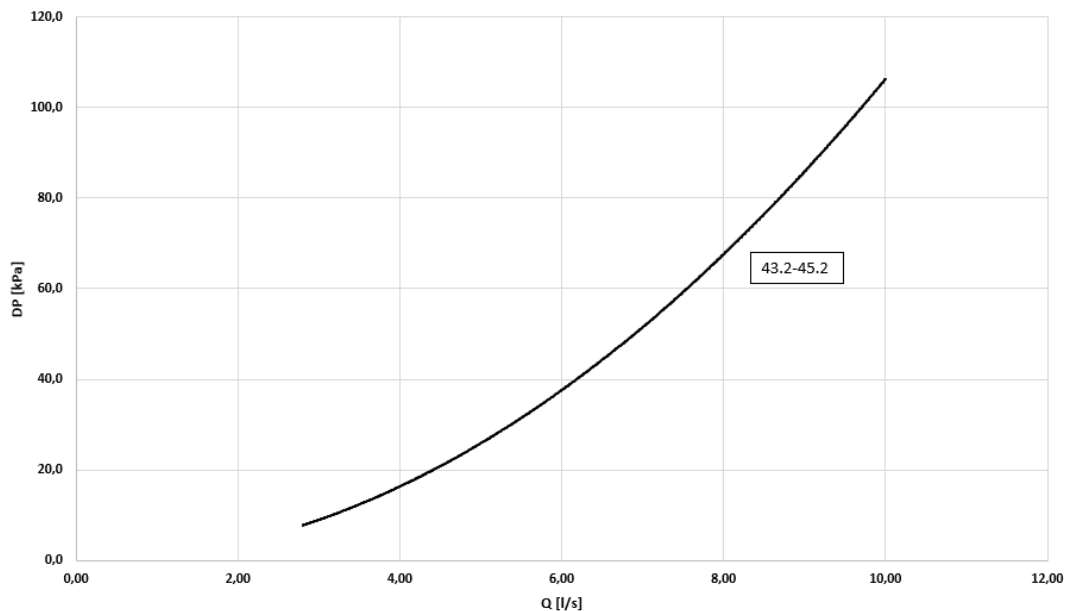
Plate exchanger pressure drops

For the sizes 10.1, 12.1 and 14.1 the water connections are Victaulic type by 1 1/2".
For the sizes 16.2, 18.2, 22.2, 30.2, 35.2 and 40.2 the water connections are 2" Victaulic.
For the sizes EXC 43.2-45.2 and PRM 45.2-55.2 the water connections are 2 1/2" Victaulic.

Internal exchanger pressure drop curves - Size 10.1 ÷ 40.2



Internal exchanger pressure drop curves - Size 43.2 ÷ 45.2 EXC



The pressure drops on the water side are calculated by considering an average water temperature at 7°C.

Q = Water flow rate [l/s]

DP = Pressure drops [kPa]

The water flow rate must be calculated with the following formula:

$Q [l/s] = kWf / (4,186 \times DT)$

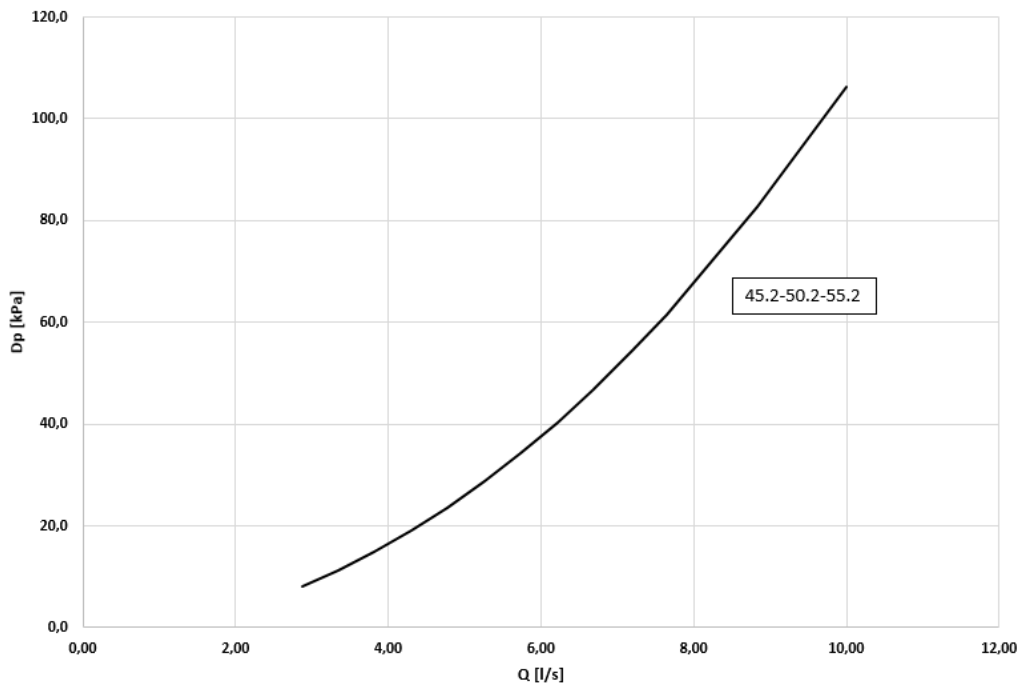
kWf = Cooling capacity in kW

DT = Temperature difference between entering / leaving water

⚠ To the internal exchanger pressure drops must be added the pressure drops of the steel mesh mechanical filter that must be placed on the water input line. It is a device compulsory for the correct unit operation, and it is provided by Clivet

General technical data

Internal exchanger pressure drop curves - Size 45.2 ÷ 55.2 PRM



The pressure drops on the water side are calculated by considering an average water temperature at 7°C.

Q = Water flow rate [l/s]

DP = Pressure drops [kPa]

The water flow rate must be calculated with the following formula:

$Q \text{ [l/s]} = \text{kWf} / (4,186 \times \text{DT})$

kWf = Cooling capacity in kW

DT = Temperature difference between entering / leaving water

⚠ To the internal exchanger pressure drops must be added the pressure drops of the steel mesh mechanical filter that must be placed on the water input line. It is a device compulsory for the correct unit operation, and it is provided by Clive

Admissible water flow rates

Min. (Qmin) and max. (Qmax) water flow-rates admissibles for the correct unit operation.

SIZE		10.1	12.1	14.1	16.2	18.2	22.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2
Qmin	l/s	0,9	0,9	0,9	1,8	1,8	1,8	2,9	2,9	2,9	2,4	2,4	2,4	2,4
Qmax	l/s	2,6	2,6	2,6	5,0	5,0	5,0	6,4	6,4	6,4	10,0	10,0	10,0	10,0

D - Partial energy recovery

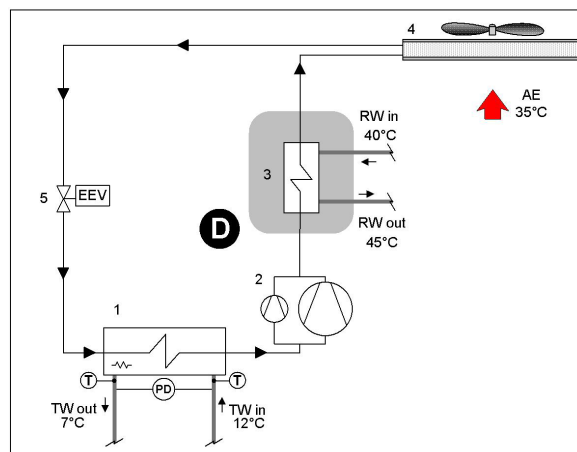
A configuration which enables the production of hot water free-of-charge while operating in the cooling mode, thanks to the partial recovery of condensation heat that would otherwise be disposed of into the external heat source.

This option is also known as “desuperheater”. It is made up of a Inox 316 stainless steel brazed plate heat exchangers, suitable for recovering a part of the capacity dispersed by the unit (the dispersed heating capacity is equal to the sum of the cooling capacity and the electrical input capacity of the compressors).

The partial recovery device is considered to be operating when it is powered by the water flow which is to be heated. This condition improves the unit performance, since it reduces the condensation temperature.

When the temperature of water to be heated is particularly low, it is necessary to control the flow-rate to maintain the outlet temperature at recovery above 35°C and prevent condensation of the refrigerant in the partial energy recovery device.

The water connections of the partial energy recovery device are 1” 1/2 for all sizes.

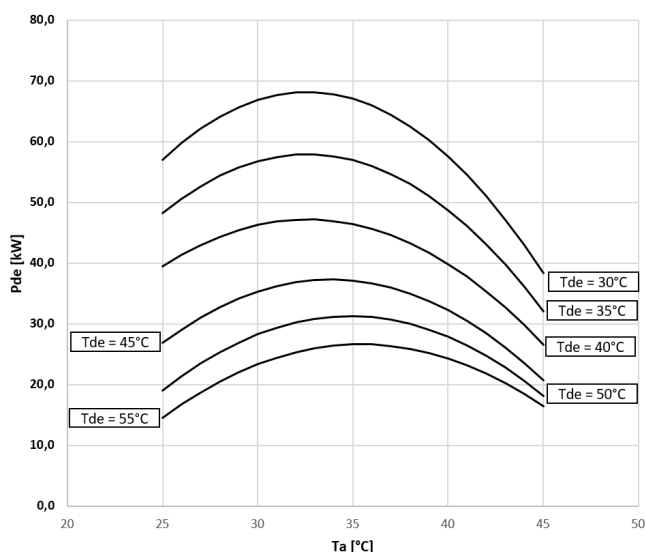


D - Partial recovery device

- 1 - Internal exchanger
- 2 - Compressors
- 3 - Recovery exchanger
- 4 - External exchanger
- 5 - Electronic expansion valve

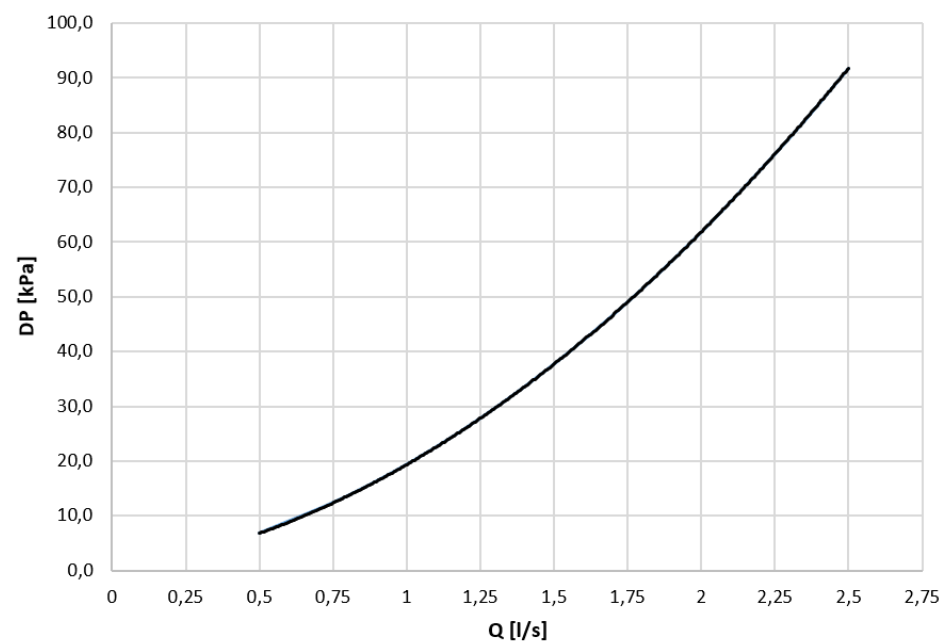
TW in chilled water inlet
 TW out chilled water outlet
 RW in - Ingresso acqua recupero
 RW out - Uscita acqua recupero
 T - Temperature probe
 PD - Differential pressure switch
 AE Aria esterna

Partial recovery heating capacity ($\Delta T_w = 10K$)



Pde = Heat recovered / Condenser heating capacity [kW]
 Tde = Desuperheater water outlet temperature [°C]

Partial energy recovery exchanger pressure drops



Q = Water flow-rate[l/s]
DP = Water side pressure drops [kPa]

Admissible water flow-rates

Minimum (Qmin) and maximum (Qmax) admissible water flow rates for correct operation of the unit.

SIZE		45.2	50.2	55.2
Qmin	[l/s]	0,5	0,5	0,5
Qmax	[l/s]	2,5	2,5	2,5

Unit with 1 ON/OFF pump (HYGU1)

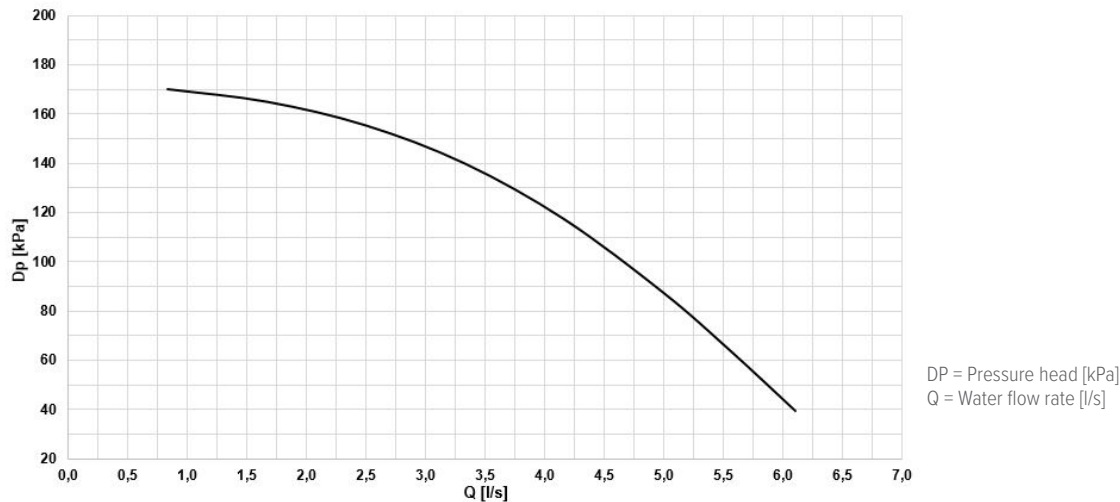
Configuration with 1 centrifugal electric pump, with housing and impeller made with AISI 304. The electric pump is equipped with three-phase electric motor with IP55-protection and complete with thermoformed insulated casing (only for size 16.2-40.2).

For the sizes 10.1, 12.1 and 14.1 the water connections are Victaulic type by 1 1/2".

For the sizes 16.2, 18.2, 22.2, 30.2, 35.2 e 40.2 water fittings are Victaulic type by 2".

for the sizes EXC 43.2-45.2 and PRM 45.2-55.2 water fittings are Victaulic type by 2 1/2"

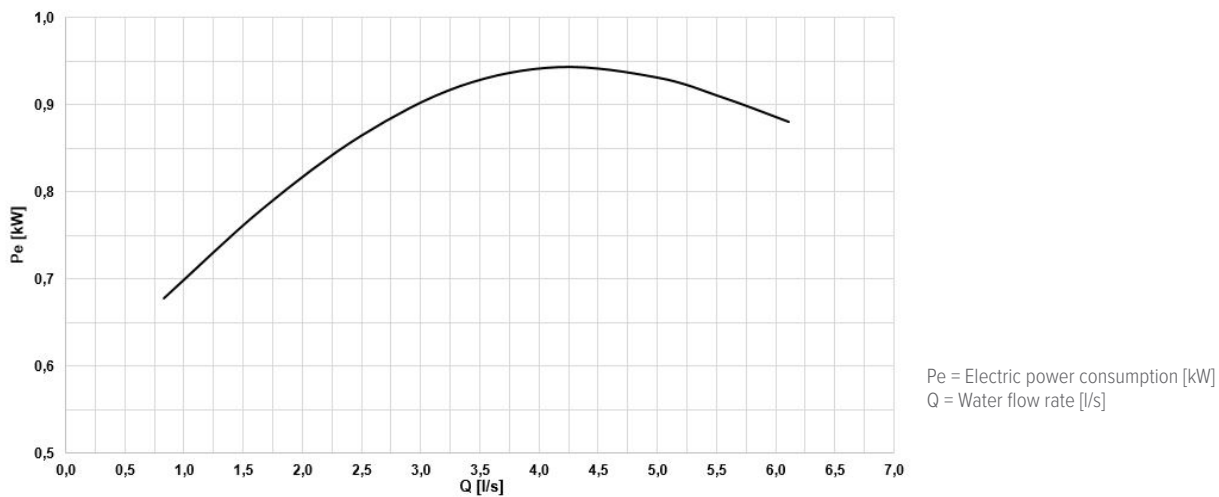
Head - Size 10.2 - 22.2



⚠ Caution: to obtain the available pressure values, you need to subtract the following from the head values represented in these diagrams:

- User side exchanger pressure drops
- IFVX accessory –Steel mesh filter on the water side (where applicable)

Power input - Size 10.2 - 22.2

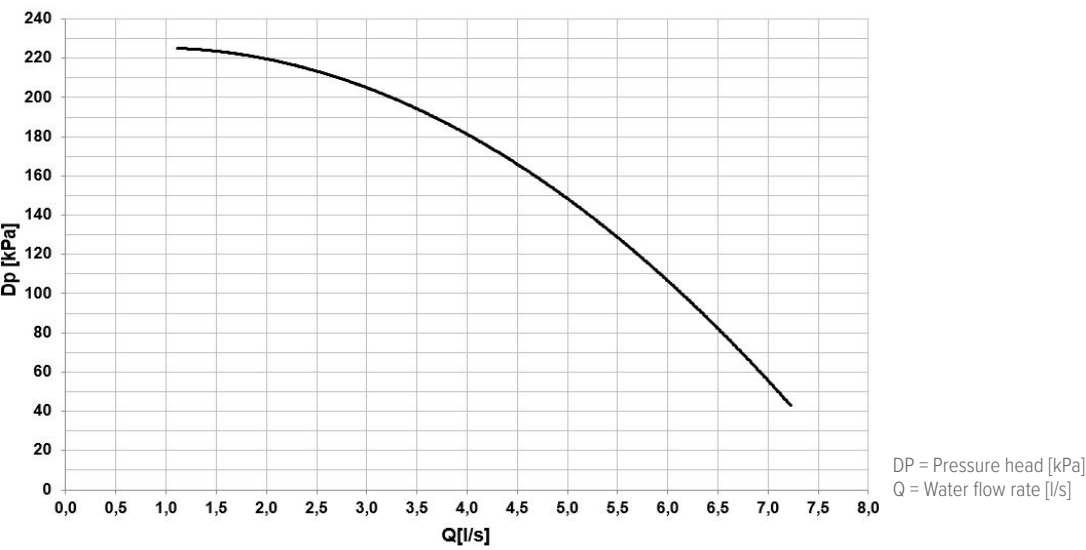


Electrical data

SIZE		10.1	12.1	14.1	16.2	18.2	22.2
F.L.A.	A	1,90	1,90	1,90	1,90	1,90	1,90
F.L.I.	kW	0,75	0,75	0,75	0,75	0,75	0,75

Unit with 1 ON/OFF pump (HYGU1)

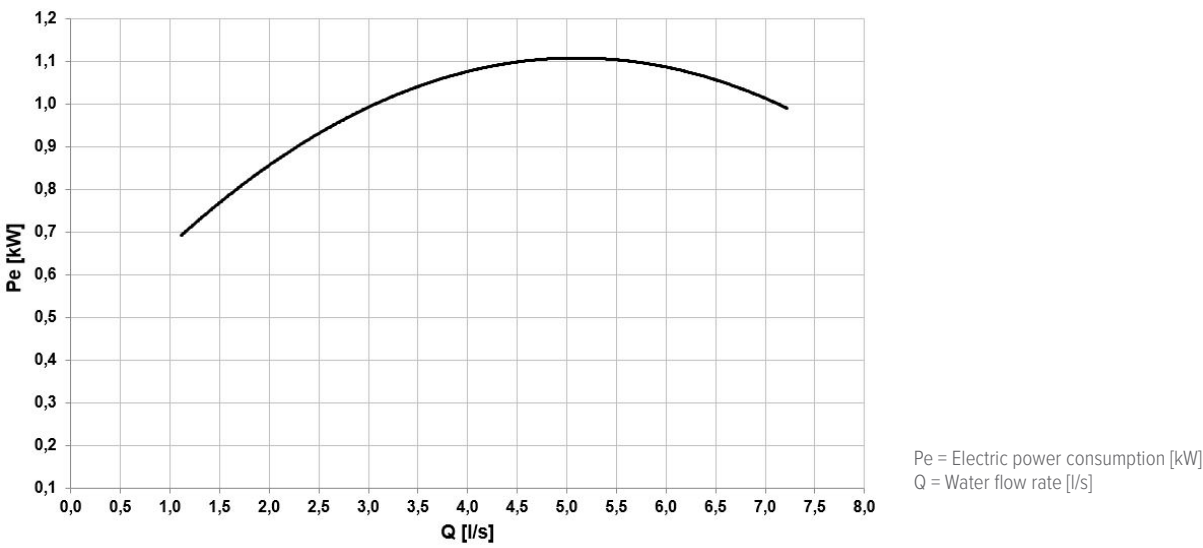
Head - Size 30.2 - 35.2 - 40.2



⚠ Caution: to obtain the available pressure values, you need to subtract the following from the head values represented in these diagrams:

- User side exchanger pressure drops
- IFVX accessory –Steel mesh filter on the water side (where applicable)

Power input - Size 30.2 - 35.2 - 40.2

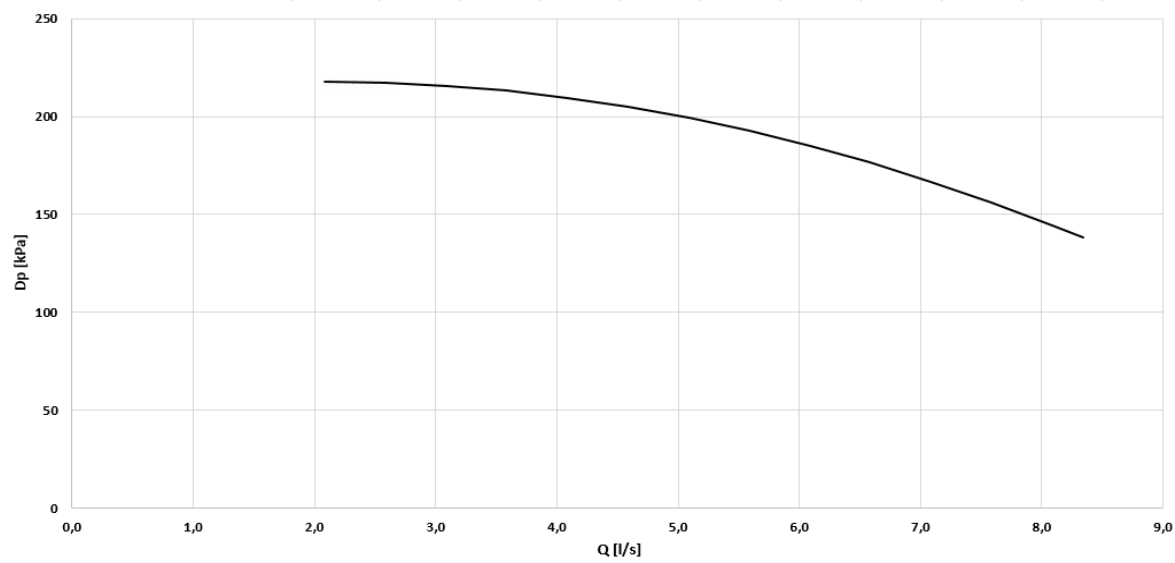


Electrical data

SIZE		30.2	35.2	40.2
F.L.A.	A	2,5	2,5	2,5
F.L.I.	kW	1,1	1,1	1,1

Unit with 1 ON/OFF pump (HYGU1)

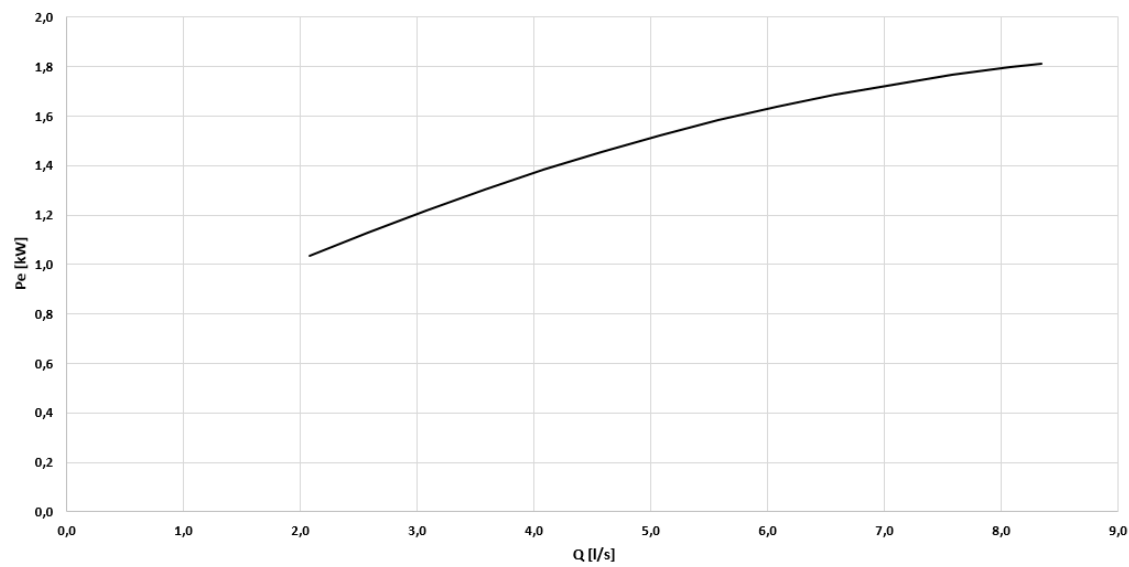
Head - Size EXC 43.2-45.2 / PRM 45.2-55.2



⚠ Caution: to obtain the available pressure values, you need to subtract the following from the head values represented in these diagrams:

- User side exchanger pressure drops
- IFVX accessory –Steel mesh filter on the water side (where applicable)

Power input - Size EXC 43.2-45.2 / PRM 45.2-55.2



Electrical data

SIZE		43.2	45.2	55.2
F.L.A.	A	4,27	4,27	4,27
F.L.I.	kW	1,85	1,85	1,85

Hydronic group

Unit with 1 inverter pump (HYGU1VI)

This configuration provides for one inverter-controlled electric centrifugal pump with body and impeller in AISI 304 steel and components listed in the key of the included water diagram. The electric pump is equipped with three-phase electric motor with IP55-protection and complete with thermoformed insulated casing.

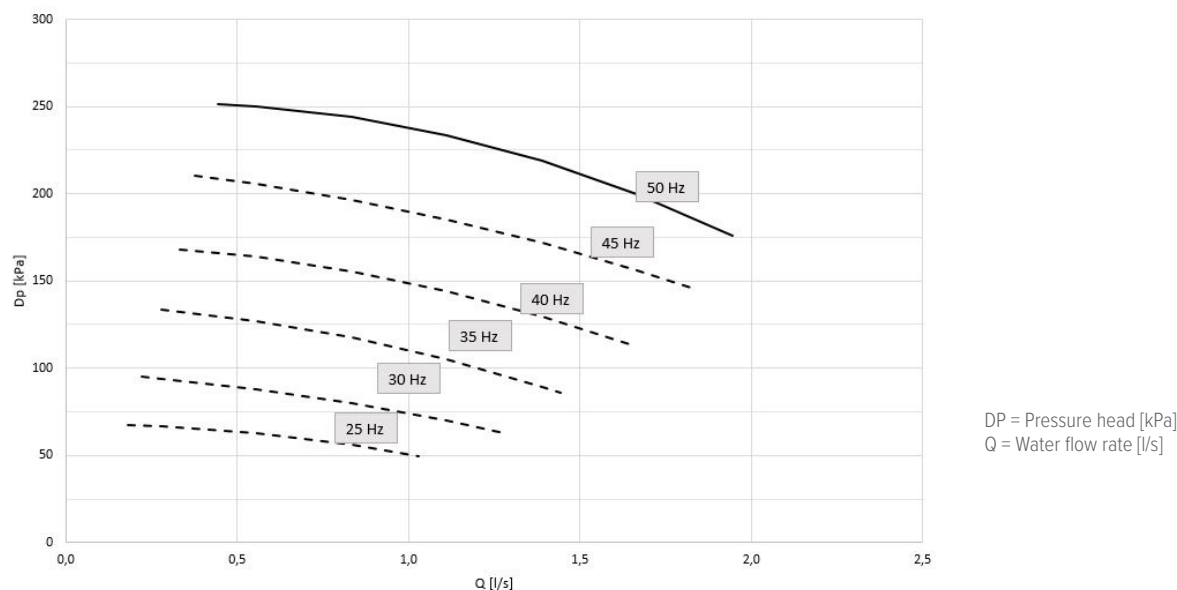
During the installation phase it is possible to choose the most suitable head curve for system requirements by setting the inverter frequency.

The pump will always work at fixed flow.

In case of maximum frequency derating the pump will work at fixed flowrate. Otherwise if not limited, the pump will modulate the flow according to the unit logic basing on thermal head.

Water connections are 1 1/2" Victaulic on size 10.1 ÷ 14.1 and 2" Victaulic on size 16.2-40.2.

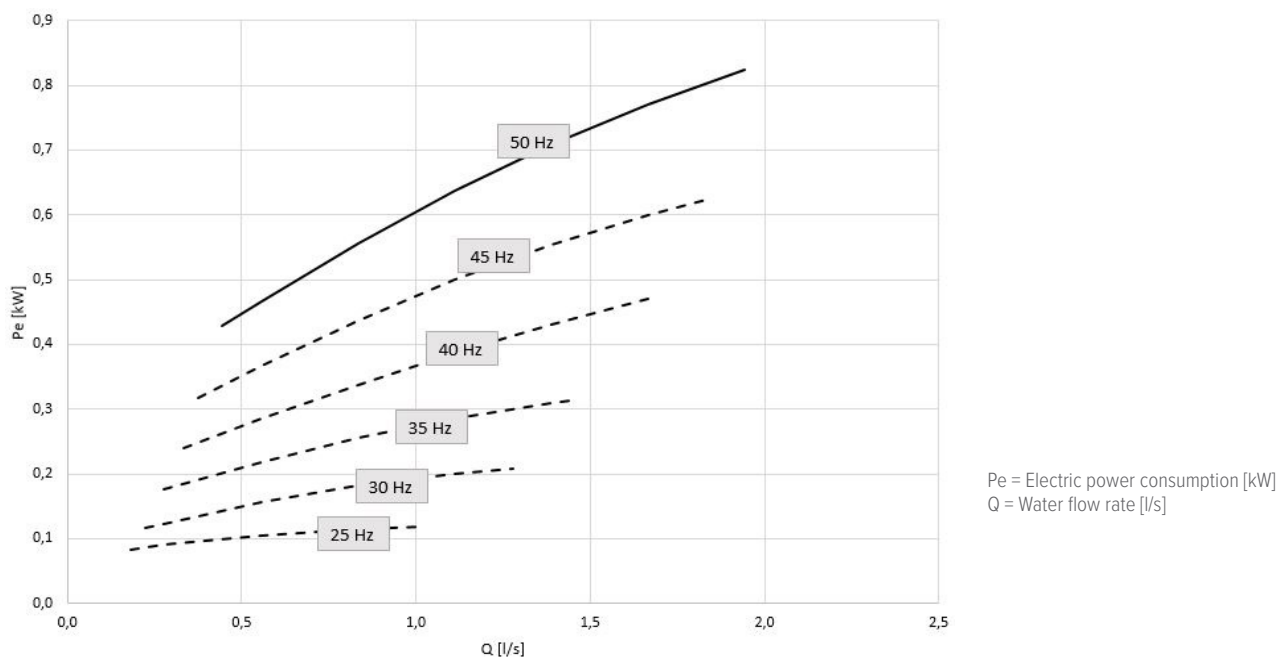
Head - Size 10.1 - 12.1 - 14.1



⚠ Caution: to obtain the available pressure values, you need to subtract the following from the head values represented in these diagrams:

- User side exchanger pressure drops
- IFVX accessory –Steel mesh filter on the water side (where applicable)

Power input - Size 10.1 - 12.1 - 14.1

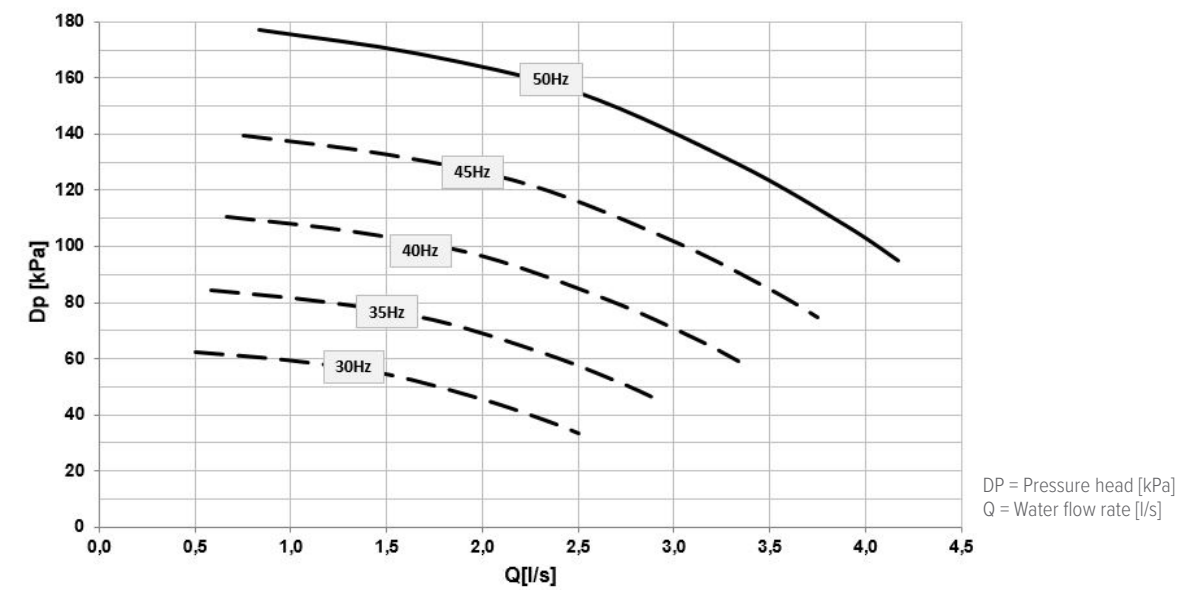


Electrical data

SIZE		10.1	12.1	14.1
F.L.A.	A	2,2	2,2	2,2
F.L.I.	kW	1,1	1,1	1,1

Unit with 1 inverter pump (HYGU1VI)

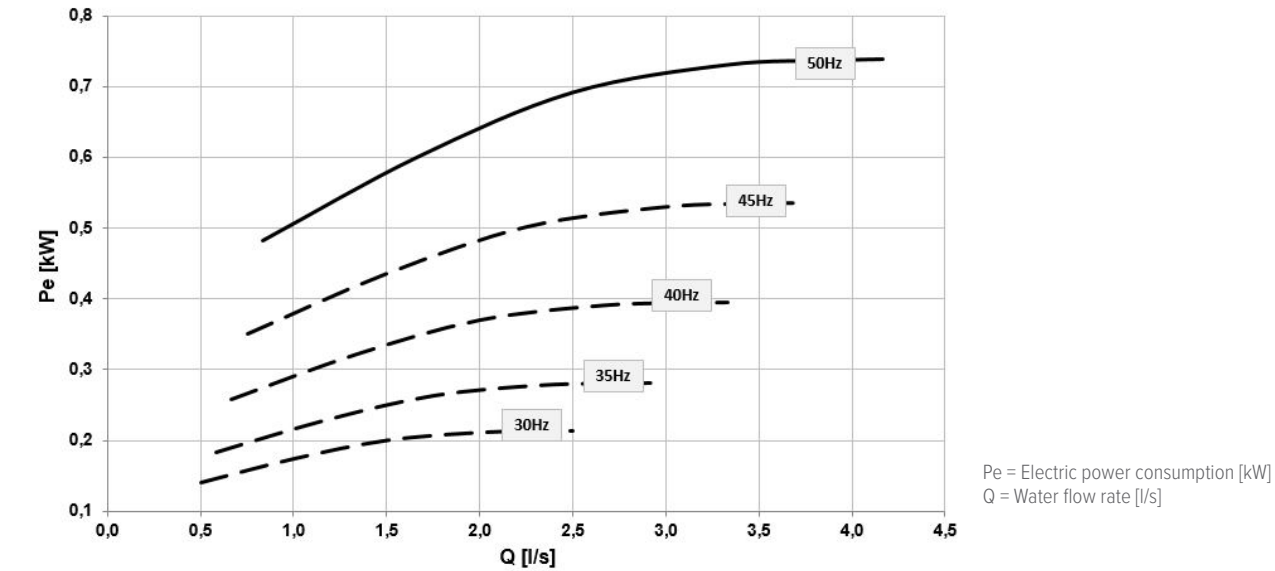
Head - Size 16.2 - 18.2 - 22.2



⚠ Caution: to obtain the available pressure values, you need to subtract the following from the head values represented in these diagrams:

- User side exchanger pressure drops
- IFVX accessory –Steel mesh filter on the water side (where applicable)

Power input - Size 16.2 - 18.2 - 22.2

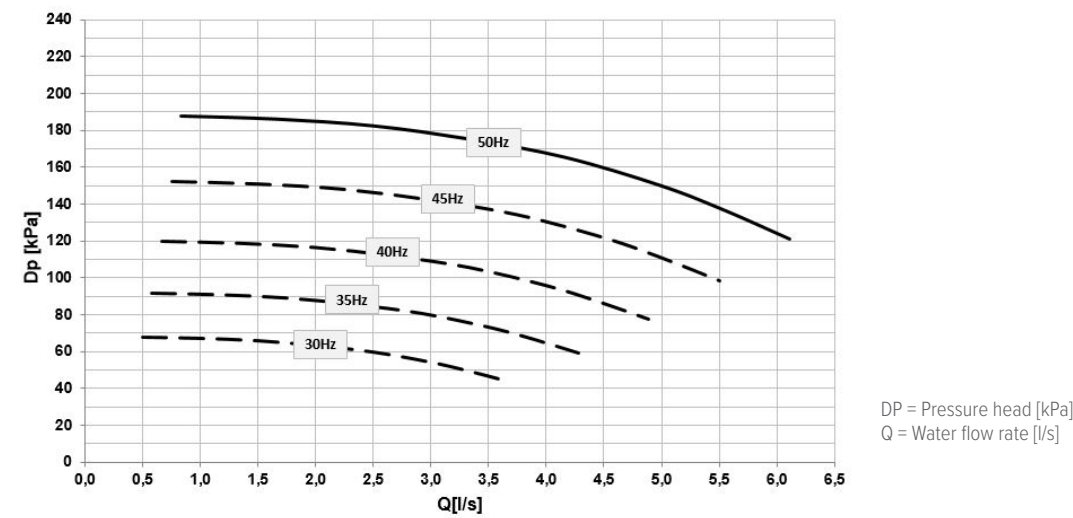


Electrical data

SIZE		16.2	18.2	22.2
F.L.A.	A	4,6	4,6	4,6
F.L.I.	kW	2,2	2,2	2,2

Unit with 1 inverter pump (HYGU1VI)

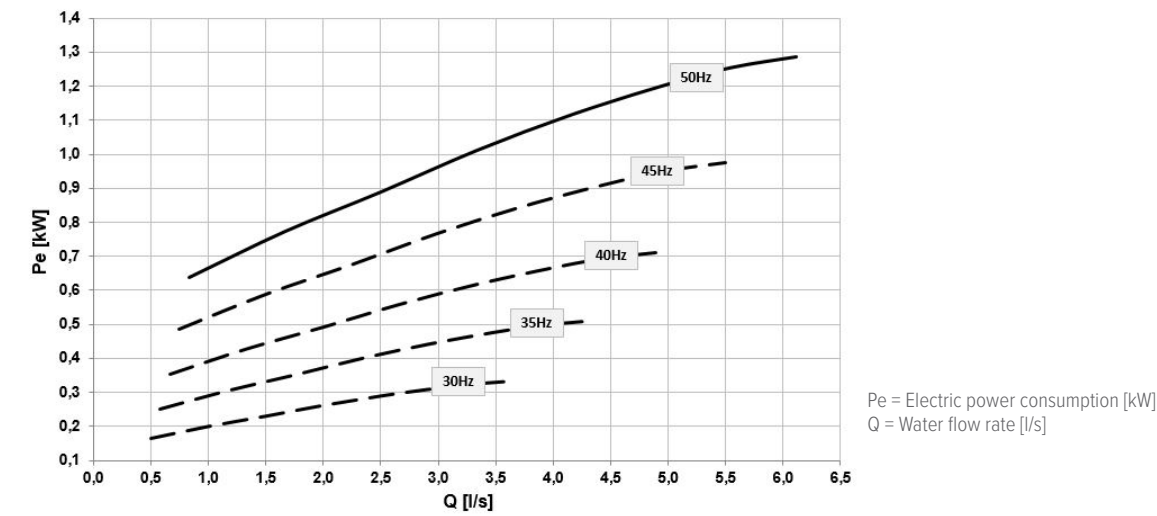
Head - Size 30.2 - 35.2 - 40.2



⚠ Caution: to obtain the available pressure values, you need to subtract the following from the head values represented in these diagrams:

- User side exchanger pressure drops
- IFVX accessory –Steel mesh filter on the water side (where applicable)

Power input - Size 30.2 - 35.2 - 40.2



Electrical data

SIZE		30.2	35.2	40.2
F.L.A.	A	4,6	4,6	4,6
F.L.I.	kW	2,2	2,2	2,2

Unit with 1 inverter pump (HYGU1V)

This configuration provides for one inverter-controlled electric centrifugal pump with body and impeller in AISI 304 steel and components listed in the key of the included water diagram. The electric pump is equipped with three-phase electric motor with IP55-protection.

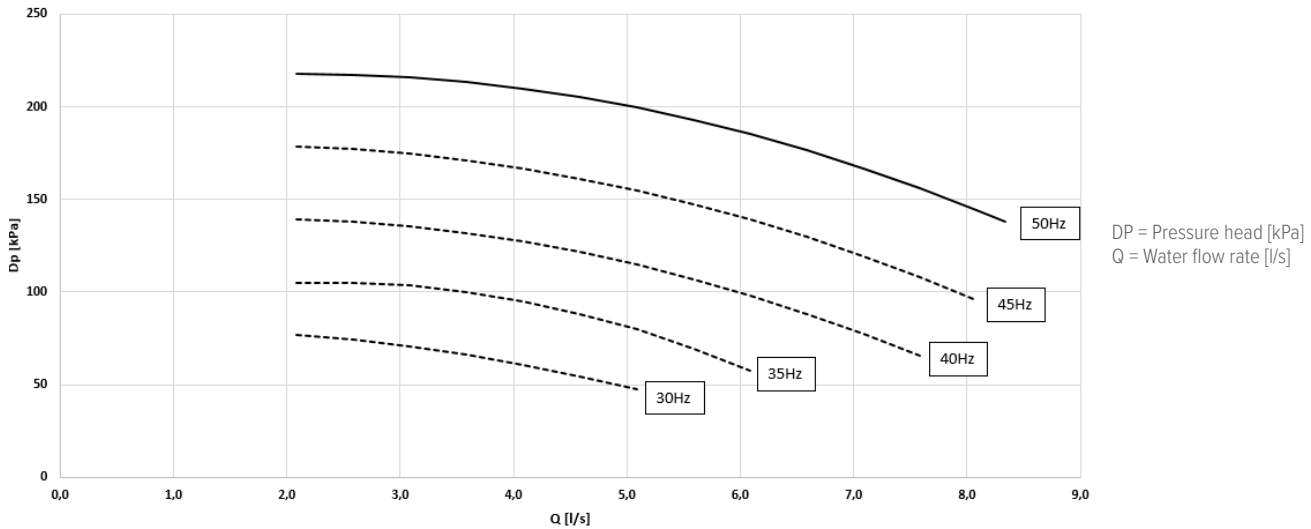
During the installation phase it is possible to choose the most suitable head curve for system requirements by setting the inverter frequency.

The pump will always work at fixed flow.

In case of maximum frequency derating the pump will work at fixed flowrate. Otherwise if not limited, the pump will modulate the flow according to the unit logic basing on thermal head.

Water fittings are Victaulic type by 2 1/2".

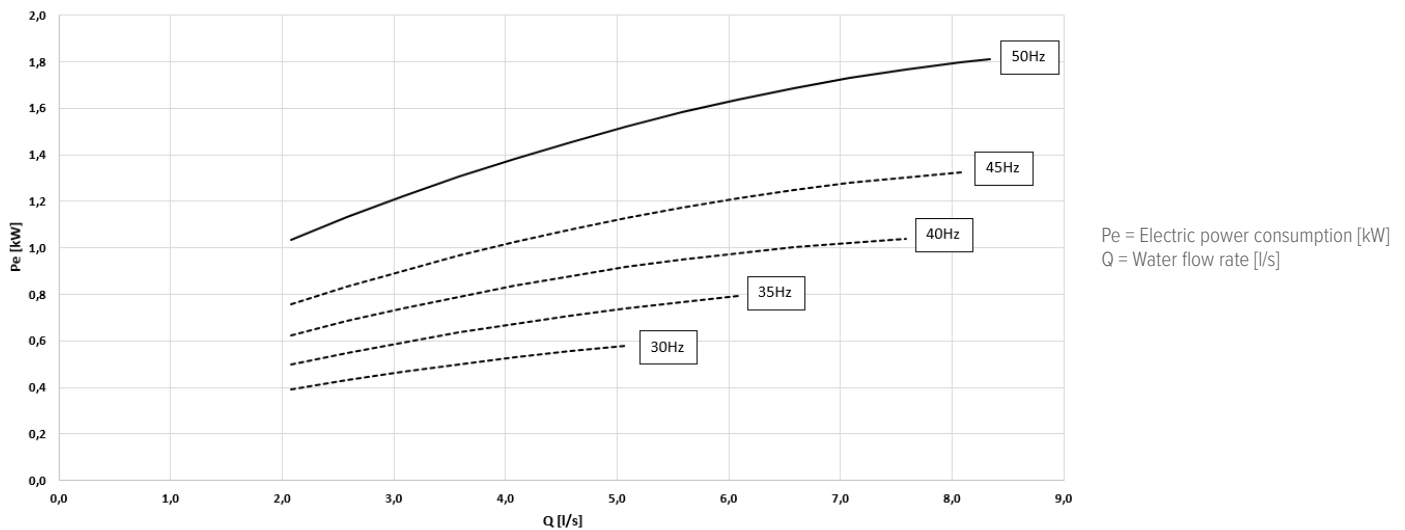
Head - Size EXC 43.2-45.2 / PRM 45.2-55.2



⚠ Caution: to obtain the available pressure values, you need to subtract the following from the head values represented in these diagrams:

- User side exchanger pressure drops
- IFVX accessory –Steel mesh filter on the water side (where applicable)

Power input - Size EXC 43.2-45.2 / PRM 45.2-55.2



Electrical data

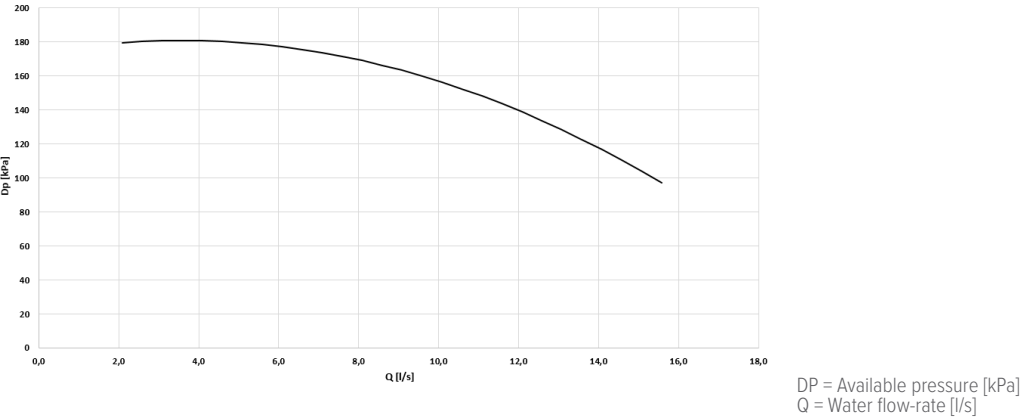
SIZE		EXC 43.2	EXC 45.2	PRM 45.2	PRM 50.2	PRM 55.2
F.L.A.	A	4,27	4,27	4,27	4,27	4,27
F.L.I.	kW	1,85	1,85	1,85	1,85	1,85

Hydronic group

Hydronic assembly - Unit with 2 ON/OFF pumps (HYGU2) (only for size 45.2-55.2)

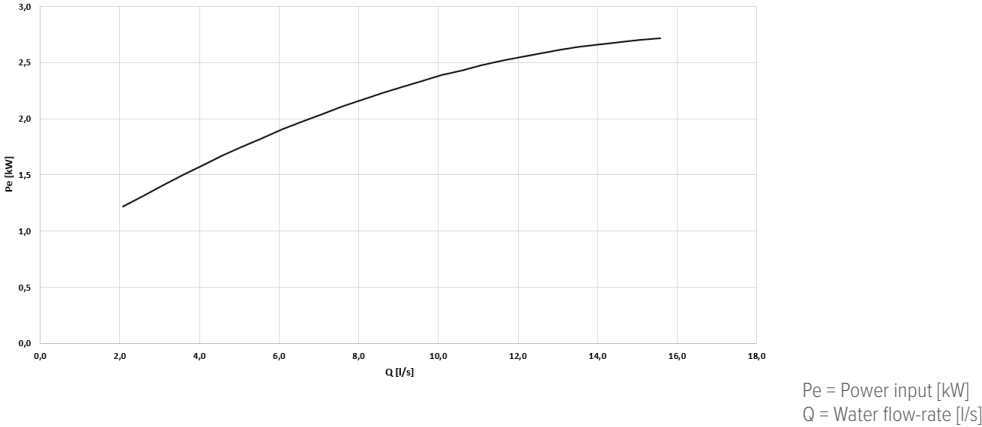
Hydronic unit made of 2 centrifugal electric pumps body and propeller made in AISI 304 steel. The electric pump is equipped with a three-phase electric motor with IP55 protection. The water connection are 2 1/2" Victaulic.

Head - Size EXC 43.2-45.2 / PRM 45.2-55.2



- ⚠ Caution: in order to obtain useful head values, the head represented in these diagrams must be lowered by:
- User side exchanger pressure drops
 - IFWX - Steel mesh strainer on the water side" accessory (where present).

Power input - Size EXC 43.2-45.2 / PRM 45.2-55.2



Electrical data

SIZE		EXC 43.2	EXC 45.2	PRM 45.2	PRM 50.2	PRM 55.2
F.L.A.	A	4,27	4,27	4,27	4,27	4,27
F.L.I.	kW	1,85	1,85	1,85	1,85	1,85

Hydronic assembly - Unit with 2 inverter pumps (HYGU2V)

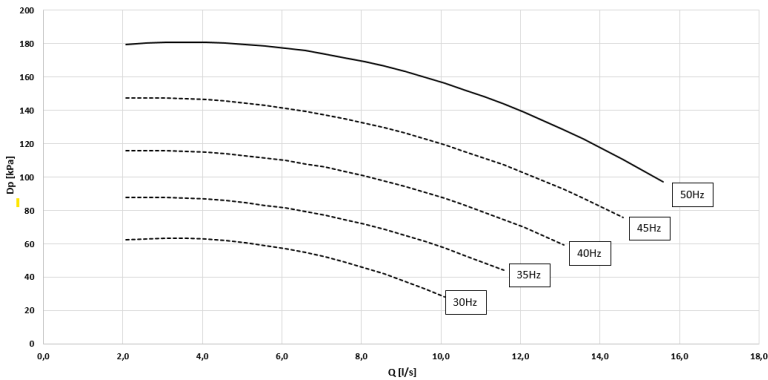
Hydronic unit made of 2 centrifugal electric pump, adjusted by way of inverter, body and propeller made in AISI 304 steel. The electric pump is equipped with three-phase electric motor with IP55 protection.

In case of maximum frequency derating the pump will work at fixed flowrate. Otherwise if not limited, the pump will modulate the flow according to the unit logic basing on thermal head.

The option is only available for installations up to maximum temperatures of 40 °C.

The water connection are 2 1/2" Victaulic.

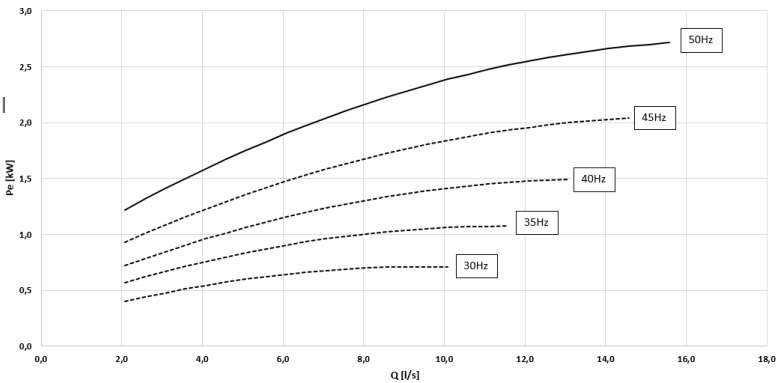
Head - Size EXC 43.2-45.2 / PRM 45.2-55.2



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

- ⚠ Caution: in order to obtain useful head values, the head represented in these diagrams must be lowered by:
- User side exchanger pressure drops
 - IFWX - Steel mesh strainer on the water side" accessory (where present).

Power input - Size EXC 43.2-45.2 / PRM 45.2-55.2



Pe = Power input [kW]
Q = Water flow-rate [l/s]

Electrical data

SIZE		EXC 43.2	EXC 45.2	PRM 45.2	PRM 50.2	PRM 55.2
F.L.A.	A	7	7	7	7	7
F.L.I.	kW	3	3	3	3	3

Performance

Cooling - Size 10.1 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 10.1 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 12.1 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 12.1 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 14.1 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 14.1 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 16.2 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 16.2 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 18.2 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 18.2 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 22.2 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 22.2 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 /-8	-5 /-6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 30.2 - EXC - SC

		Cooling capacity							EER						
To	Tae	Compressor power percentage							Compressor power percentage						
°C	°C	100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
7	15	80,4	76,1	71,8	65,8	60,1	52,7	48,2	5,19	5,34	5,49	5,64	5,80	5,94	6,32
	20	77,5	73,3	69,1	63,3	57,7	50,5	46,1	4,58	4,73	4,88	5,05	5,22	5,39	5,67
	25	75,3	70,9	66,4	60,8	55,3	48,2	43,9	4,05	4,17	4,29	4,44	4,61	4,77	4,94
	30	72,7	68,4	64,1	58,4	52,9	46,0	41,8	3,54	3,65	3,75	3,88	4,00	4,13	4,22
	35	70,2	65,9	61,7	56,1	50,6	43,8	39,7	3,10	3,17	3,26	3,35	3,44	3,53	3,55
	40	66,7	62,7	58,7	53,3	48,2	41,6	37,5	2,65	2,72	2,79	2,85	2,93	2,98	2,96
	44	-	-	-	-	46,3	39,8	35,8	-	-	-	-	2,57	2,59	2,54
10	15	87,5	82,8	78,0	71,5	65,2	57,2	52,2	5,56	5,73	5,91	6,09	6,28	6,44	6,83
	20	84,3	79,8	75,2	68,9	62,7	54,8	49,9	4,91	5,08	5,25	5,44	5,64	5,84	6,12
	25	81,2	76,8	72,3	66,2	60,2	52,4	47,6	4,30	4,46	4,62	4,79	4,98	5,16	5,33
	30	78,1	73,9	69,5	63,6	57,7	50,1	45,4	3,75	3,89	4,03	4,18	4,33	4,48	4,56
	35	75,0	70,9	66,7	60,9	55,2	47,8	43,2	3,26	3,37	3,49	3,61	3,73	3,83	3,84
	40	71,9	68,0	63,9	58,3	52,7	45,5	41,0	2,82	2,92	3,01	3,10	3,19	3,24	3,21
	44	-	-	-	-	50,8	43,6	39,2	-	-	-	-	2,80	2,83	2,76
12	15	92,4	87,5	82,4	75,5	68,9	60,3	54,9	5,81	6,01	6,20	6,41	6,63	6,82	7,22
	20	89,2	84,4	79,5	72,8	66,2	57,8	52,6	5,14	5,33	5,52	5,73	5,95	6,17	6,45
	25	85,9	81,3	76,5	70,0	63,6	55,3	50,2	4,51	4,69	4,86	5,05	5,26	5,45	5,62
	30	82,7	78,3	73,6	67,3	61,1	52,9	48,0	3,94	4,09	4,24	4,41	4,58	4,73	4,82
	35	79,5	75,2	70,7	64,6	58,5	50,6	45,7	3,43	3,56	3,68	3,81	3,95	4,06	4,06
	40	76,3	72,2	67,8	61,9	56,0	48,2	43,4	2,98	3,08	3,18	3,28	3,37	3,44	3,39
	44	-	-	-	-	54,0	46,4	41,7	-	-	-	-	2,97	3,00	2,93
15	15	100	94,8	89,4	81,9	74,2	65,2	59,3	6,22	6,45	6,69	6,94	7,13	7,44	7,88
	20	96,7	91,6	86,3	79,0	71,8	62,6	56,9	5,51	5,73	5,96	6,21	6,47	6,73	7,03
	25	93,5	88,4	83,2	76,1	69,1	60,1	54,4	4,86	5,05	5,25	5,47	5,72	5,95	6,12
	30	90,1	85,2	80,2	73,3	66,4	57,6	52,1	4,26	4,43	4,60	4,79	4,99	5,18	5,25
	35	86,7	82,1	77,2	70,4	63,8	55,1	49,7	3,71	3,86	4,00	4,15	4,31	4,44	4,43
	40	83,4	78,9	74,2	67,7	61,2	52,7	47,4	3,24	3,35	3,46	3,58	3,69	3,77	3,71
	44	-	-	-	-	50,8	45,6	41,7	-	-	-	-	-	3,30	3,21
18	15	109	103	96,9	88,8	80,5	70,6	64,0	6,67	6,95	7,22	7,54	7,72	8,17	8,60
	20	105	99,4	93,7	85,7	77,9	67,9	61,5	5,94	6,19	6,46	6,76	7,08	7,39	7,72
	25	102	96,1	90,5	82,7	75,1	65,2	59,0	5,25	5,48	5,71	5,97	6,26	6,55	6,73
	30	98,0	92,8	87,3	79,8	72,3	62,6	56,6	4,61	4,81	5,01	5,23	5,47	5,71	5,77
	35	95,3	89,5	84,2	76,9	69,6	60,1	54,2	4,14	4,21	4,37	4,55	4,74	4,90	4,88
	40	91,2	86,3	81,1	74,0	66,9	57,6	51,8	3,54	3,67	3,80	3,94	4,07	4,17	4,09
	44	-	-	-	-	55,7	50,0	45,7	-	-	-	-	-	3,66	3,55
20	15	115	109	101	93,7	85,5	74,4	67,4	7,01	7,29	7,51	8,00	8,18	8,76	9,12
	20	111	105	98,8	90,5	80,4	71,6	64,3	6,25	6,54	6,83	7,17	7,36	7,92	8,14
	25	107	102	95,6	87,4	79,3	68,9	62,3	5,54	5,80	6,06	6,35	6,68	7,01	7,21
	30	104	98,1	92,4	84,4	76,5	66,2	59,8	4,89	5,10	5,33	5,58	5,85	6,12	6,18
	35	100	94,8	89,2	81,4	73,7	63,6	57,4	4,29	4,47	4,66	4,86	5,07	5,25	5,22
	40	96,6	91,5	86,1	78,5	71,0	61,1	55,0	3,76	3,92	4,06	4,21	4,37	4,48	4,39
	44	-	-	-	-	59,2	53,2	48,2	-	-	-	-	-	3,93	3,81

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 30.2 - EXC - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 35.2 - EXC - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	92,1	87,7	83,4	75,6	68,6	61,1	53,7	4,85	4,97	5,10	5,36	5,57	5,74	5,91
	20	88,8	84,6	80,4	72,8	66,0	58,7	51,4	4,28	4,40	4,50	4,76	4,98	5,17	5,37
	25	85,9	81,4	77,3	70,0	63,4	56,2	49,1	3,77	3,87	3,93	4,18	4,38	4,56	4,74
	30	82,9	78,7	74,3	67,2	60,8	53,8	46,8	3,31	3,40	3,43	3,64	3,82	3,96	4,11
	35	80,4	75,8	71,6	64,4	58,2	51,4	44,5	2,91	2,97	2,98	3,14	3,29	3,40	3,50
	40	76,1	72,2	68,2	61,6	55,5	48,9	42,2	2,49	2,56	2,56	2,70	2,81	2,89	2,95
	44	-	-	-	-	-	47,0	40,4	-	-	-	-	-	2,53	2,53
10	15	100	95,5	90,7	82,2	74,5	66,3	58,2	5,18	5,33	5,46	5,76	6,02	6,22	6,41
	20	96,7	92,1	87,5	79,2	71,8	63,7	55,7	4,58	4,73	4,82	5,12	5,37	5,59	5,81
	25	93,1	88,7	84,2	76,2	69,0	61,1	53,3	4,03	4,16	4,22	4,50	4,73	4,93	5,14
	30	89,6	85,4	81,0	73,3	66,2	58,6	50,9	3,52	3,64	3,68	3,92	4,12	4,29	4,45
	35	86,1	82,0	77,8	70,3	63,5	56,0	48,5	3,07	3,17	3,20	3,40	3,56	3,69	3,80
	40	82,5	78,6	74,6	67,4	60,8	53,5	46,1	2,67	2,76	2,77	2,93	3,05	3,15	3,21
	44	-	-	-	-	-	51,5	44,6	-	-	-	-	-	2,76	2,78
12	15	106	101	95,9	86,8	78,7	70,0	61,4	5,42	5,58	5,71	6,05	6,33	6,56	6,78
	20	102	97,4	92,5	83,7	75,8	67,3	58,8	4,80	4,96	5,05	5,38	5,66	5,90	6,15
	25	98,5	93,9	89,1	80,6	72,9	64,6	56,3	4,22	4,37	4,43	4,73	4,98	5,21	5,43
	30	94,9	90,5	85,8	77,6	70,1	62,0	53,8	3,70	3,83	3,87	4,13	4,35	4,54	4,71
	35	91,2	87,0	82,5	74,6	67,3	59,4	51,4	3,23	3,34	3,36	3,58	3,76	3,90	4,03
	40	87,6	83,5	79,2	71,5	64,5	56,8	49,0	2,82	2,91	2,92	3,09	3,23	3,33	3,41
	44	-	-	-	-	-	54,7	46,0	-	-	-	-	-	2,93	2,86
15	15	110	105	99,6	90,3	81,9	73,0	64,2	5,69	5,87	6,00	6,40	6,73	6,76	7,02
	20	106	101	96,2	87,2	78,9	70,3	61,1	5,05	5,23	5,32	5,70	6,02	6,33	6,59
	25	103	97,9	93,0	84,1	76,0	67,6	58,6	4,46	4,62	4,69	5,02	5,31	5,59	5,83
	30	99,0	94,4	89,6	81,0	73,2	65,0	56,1	3,92	4,06	4,11	4,40	4,64	4,88	5,06
	35	95,3	91,0	86,3	78,0	70,4	62,4	53,7	3,44	3,56	3,58	3,82	4,02	4,21	4,33
	40	91,8	87,5	83,0	75,0	67,6	59,8	51,3	3,01	3,12	3,12	3,32	3,47	3,60	3,68
	44	-	-	-	-	-	56,1	48,2	-	-	-	-	-	3,07	3,05
18	15	120	114	108	98,9	89,7	80,5	71,2	6,08	6,30	6,44	6,86	7,41	7,55	7,76
	20	116	110	104	94,6	85,7	76,3	66,0	5,42	5,63	5,73	6,17	6,55	6,93	7,26
	25	112	107	101	91,4	82,6	73,5	63,6	4,81	5,01	5,07	5,45	5,80	6,13	6,42
	30	108	103	97,5	88,2	79,7	70,7	61,0	4,25	4,41	4,45	4,79	5,08	5,36	5,59
	35	104	99,2	94,1	85,1	76,8	68,0	58,5	3,71	3,88	3,90	4,18	4,41	4,63	4,79
	40	100	95,5	90,7	82,0	73,9	64,5	56,1	3,29	3,40	3,41	3,64	3,82	3,94	4,07
	44	-	-	-	-	-	62,2	54,1	-	-	-	-	-	3,46	3,56
20	15	126	120	114	103	93,6	83,3	73,1	6,43	6,66	6,81	7,17	7,74	7,82	7,97
	20	122	116	110	99,8	90,4	80,5	70,6	5,70	5,93	6,03	6,52	6,97	7,41	7,92
	25	118	113	107	96,5	87,4	77,6	67,1	5,07	5,28	5,35	5,78	6,17	6,55	6,89
	30	114	109	103	93,4	84,3	74,4	64,5	4,49	4,67	4,71	5,09	5,41	5,70	6,00
	35	110	105	99,6	90,2	81,4	72,1	62,0	3,97	4,12	4,14	4,45	4,71	4,97	5,14
	40	106	101	96,1	87,0	78,2	68,8	59,1	3,50	3,63	3,63	3,88	4,08	4,25	4,35
	44	-	-	-	-	-	64,5	56,7	-	-	-	-	-	3,61	3,76

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 35.2 - EXC - SC

To °C	Tae °C	Heating capacity							COP						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-20	37,7	35,9	34,2	31,2	28,7	26,2	23,6	1,63	1,65	1,69	1,74	1,79	1,85	1,92
	-15	46,9	44,7	42,3	38,6	35,3	31,9	28,5	2,05	2,08	2,15	2,22	2,28	2,36	2,44
	-10	55,8	53,1	50,1	45,6	41,6	37,5	33,3	2,56	2,50	2,58	2,67	2,76	2,86	2,95
	-7	63,3	59,3	56,1	50,9	46,3	41,7	36,9	2,93	2,92	3,02	3,13	3,23	3,34	3,45
	2	75,9	72,0	68,2	61,8	56,0	50,0	43,8	3,36	3,46	3,60	3,75	3,88	3,99	4,09
	7	87,2	83,0	78,7	71,2	64,5	57,5	50,3	4,02	4,04	4,22	4,40	4,55	4,69	4,79
	10	92,3	87,9	83,2	75,2	68,1	60,7	53,0	4,16	4,25	4,44	4,64	4,80	4,94	5,06
	18	107	102	96,2	87,0	78,7	70,0	61,0	4,73	4,84	5,07	5,31	5,51	5,69	5,84
40	-20	36,5	35,0	33,3	30,3	27,4	25,0	-	1,40	1,43	1,47	1,51	1,53	1,58	-
	-15	45,2	42,8	41,3	37,2	34,0	30,7	26,5	1,77	1,78	1,87	1,92	1,98	2,04	2,03
	-10	54,6	51,8	48,8	44,0	40,8	36,5	32,1	2,16	2,19	2,25	2,32	2,43	2,49	2,55
	-7	59,7	56,6	53,4	48,0	43,4	38,7	33,8	2,37	2,40	2,48	2,55	2,62	2,67	2,72
	2	74,6	70,8	67,0	60,4	54,5	48,4	43,1	3,01	3,07	3,19	3,31	3,40	3,47	3,60
	7	86,0	82,5	78,2	70,5	63,7	56,7	49,4	3,55	3,67	3,78	3,93	4,05	4,16	4,22
	10	91,8	87,2	82,6	74,5	67,3	59,8	52,0	3,73	3,82	3,97	4,14	4,27	4,38	4,45
	18	106	101	95,3	86,0	77,6	68,9	60,0	4,22	4,33	4,52	4,73	4,89	5,03	5,16
45	-20	-	-	31,1	28,4	25,3	23,2	-	-	-	1,22	1,26	1,26	1,31	-
	-15	43,7	42,0	40,2	36,2	32,2	29,4	25,6	1,52	1,57	1,62	1,66	1,67	1,74	1,74
	-10	53,7	50,7	47,6	42,9	39,0	35,6	31,0	1,89	1,92	1,96	2,02	2,08	2,16	2,18
	-7	58,5	54,2	52,0	46,4	41,5	36,6	31,6	2,07	2,06	2,15	2,20	2,23	2,25	2,25
	2	72,7	69,8	66,0	59,2	53,2	47,0	41,6	2,63	2,71	2,80	2,89	2,95	2,99	3,07
	7	85,0	82,2	77,9	70,1	63,2	56,1	48,7	3,28	3,27	3,36	3,49	3,58	3,65	3,68
	10	91,4	86,8	82,2	74,0	66,7	59,1	51,3	3,33	3,40	3,53	3,66	3,77	3,84	3,88
	18	105	99,7	94,5	85,2	76,7	68,0	59,3	3,75	3,85	4,00	4,18	4,31	4,41	4,51
50	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	-	-	38,7	34,0	30,9	27,8	24,5	-	-	1,39	1,39	1,42	1,46	1,47
	-10	46,6	46,6	46,6	42,1	37,5	34,2	30,0	1,47	1,58	1,71	1,76	1,77	1,84	1,86
	-7	56,4	52,5	50,7	44,9	39,9	35,8	30,6	1,79	1,79	1,87	1,89	1,90	1,95	1,92
	2	71,0	69,0	65,2	58,3	52,1	45,8	40,3	2,30	2,40	2,47	2,53	2,56	2,58	2,61
	7	86,2	81,3	77,0	69,2	62,3	55,2	47,7	2,75	2,79	2,88	2,98	3,05	3,09	3,09
	10	90,2	85,6	81,1	72,9	65,6	58,1	50,3	2,86	2,92	3,02	3,13	3,20	3,25	3,25
	18	103	98,1	93,0	83,7	75,4	66,7	58,2	3,21	3,29	3,41	3,55	3,65	3,72	3,79
55	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	40,9	36,0	32,0	28,9	-	-	-	1,52	1,51	1,52	1,57
	-7	54,6	51,0	48,6	43,5	38,3	34,1	29,7	1,55	1,55	1,60	1,63	1,62	1,63	1,63
	2	69,4	67,3	63,5	56,4	50,2	43,8	38,9	2,01	2,09	2,14	2,18	2,19	2,17	2,21
	7	85,8	80,3	76,1	68,2	61,2	54,0	46,5	2,47	2,46	2,53	2,60	2,65	2,66	2,64
	10	89,2	84,6	80,2	71,8	64,5	56,9	49,0	2,52	2,57	2,65	2,73	2,78	2,80	2,78
	18	102	96,7	91,8	82,4	74,0	65,5	57,0	2,83	2,90	2,99	3,10	3,17	3,22	3,24
60	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	38,0	-	-	-	-	-	-	1,70
	7	-	-	-	-	-	-	45,5	-	-	-	-	-	-	2,14
	10	-	-	-	-	-	-	48,1	-	-	-	-	-	-	2,27
	18	-	-	-	-	-	-	55,8	-	-	-	-	-	-	2,64

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 /-8	-5 /-6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 43.2 - EXC - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	103	93,1	86,1	79,2	72,2	65,1	57,1	4,59	4,73	4,83	4,95	5,07	5,20	5,45
	20	102	92,2	85,4	78,7	71,7	64,8	56,5	4,15	4,25	4,32	4,41	4,49	4,57	5,00
	25	102	91,4	84,7	78,1	71,3	64,4	56,0	4,09	4,24	4,36	4,47	4,59	4,72	4,84
	30	98,5	89,7	83,3	76,9	70,4	63,7	55,4	3,61	3,74	3,84	3,93	4,02	4,11	4,19
	35	94,8	86,4	80,3	74,1	67,7	61,2	54,8	3,15	3,28	3,36	3,43	3,49	3,54	3,58
	40	91,2	83,1	77,2	71,1	64,9	58,6	54,3	2,78	2,86	2,92	2,96	3,00	3,02	3,03
10	44	88,2	80,4	74,7	68,7	62,7	56,5	53,0	2,50	2,56	2,60	2,63	2,65	2,66	2,67
	15	113	102	94,2	86,5	78,8	71,0	58,2	5,09	5,24	5,37	5,50	5,66	5,83	5,90
	20	112	101	93,4	85,8	78,3	70,6	57,7	4,56	4,68	4,76	4,85	4,95	5,05	5,40
	25	111	99,9	92,5	85,1	77,7	70,2	57,1	4,24	4,38	4,47	4,57	4,68	4,78	5,01
	30	108	97,9	90,9	83,7	76,6	69,3	56,5	3,93	4,08	4,18	4,29	4,41	4,52	4,63
	35	104	94,4	87,6	80,8	73,7	66,6	55,9	3,45	3,57	3,65	3,74	3,81	3,88	3,94
12	40	99,7	90,8	84,2	77,6	70,8	63,8	55,4	3,01	3,11	3,17	3,22	3,27	3,30	3,31
	44	96,5	87,8	81,5	75,1	68,4	61,6	54,1	2,70	2,78	2,82	2,86	2,89	2,91	2,93
	15	120	108	99,9	91,6	83,3	75,1	59,4	5,22	5,38	5,51	5,65	5,81	6,01	6,45
	20	119	107	98,9	90,8	82,7	74,6	58,8	4,62	4,73	4,81	4,90	5,00	5,09	5,70
	25	118	106	98,0	90,1	82,1	74,1	58,2	4,30	4,43	4,53	4,63	4,75	4,85	5,22
	30	114	104	96,1	88,5	80,9	73,1	57,6	3,98	4,13	4,24	4,36	4,49	4,61	4,74
15	35	110	99,9	92,6	85,3	77,9	70,4	57,1	3,48	3,61	3,70	3,78	3,87	3,95	4,02
	40	106	96,1	89,1	82,1	74,8	67,5	56,5	3,04	3,13	3,20	3,26	3,31	3,35	3,37
	44	102	93,0	86,2	79,4	72,3	65,1	55,1	2,72	2,80	2,85	2,89	2,92	2,93	2,95
	15	128	115	106	97,5	88,6	79,7	60,6	5,51	5,69	5,84	6,01	6,20	6,45	6,71
	20	127	114	105	96,7	87,9	79,2	60,0	4,86	4,99	5,09	5,19	5,30	5,43	6,04
	25	126	113	104	95,8	87,2	78,6	59,4	4,48	4,64	4,75	4,87	4,99	5,14	5,53
18	30	121	110	102	94,0	85,7	77,5	58,8	4,10	4,28	4,41	4,54	4,69	4,85	5,02
	35	117	106	98,5	90,6	82,6	74,6	58,2	3,58	3,72	3,82	3,92	4,02	4,12	4,21
	40	113	102	94,8	87,2	79,5	71,6	57,6	3,11	3,22	3,29	3,36	3,43	3,47	3,51
	44	104	99,1	91,8	84,4	76,9	69,1	56,2	2,79	2,88	2,93	2,97	3,01	3,03	3,05
	15	139	125	115	106	95,7	85,9	61,8	6,05	6,26	6,44	6,64	6,88	7,16	7,10
	20	137	124	114	104	94,9	85,3	61,2	5,16	5,27	5,36	5,45	5,54	5,64	6,41
20	25	136	122	113	103	94,0	84,6	60,6	4,78	4,95	5,07	5,20	5,33	5,48	5,98
	30	131	119	110	101	92,4	83,3	60,0	4,41	4,62	4,77	4,94	5,13	5,32	5,55
	35	127	115	106	97,8	89,1	80,3	59,4	3,88	4,00	4,12	4,24	4,36	4,48	4,61
	40	122	111	102	94,1	85,7	77,2	58,8	3,33	3,46	3,54	3,62	3,69	3,76	3,81
	44	107	94,5	86,2	78,0	69,5	61,0	-	3,07	3,16	3,21	3,24	3,27	3,29	-
	15	147	132	121	111	101	90,2	63,0	6,30	6,50	6,65	6,81	7,00	7,30	7,40
20	20	145	130	120	110	99,6	89,5	62,4	5,50	5,63	5,73	5,84	5,95	6,07	6,90
	25	143	129	119	109	98,7	88,7	61,8	5,06	5,24	5,39	5,53	5,69	5,87	6,30
	30	138	125	116	106	96,9	87,3	61,2	4,62	4,86	5,04	5,22	5,43	5,66	5,94
	35	133	121	112	103	93,4	84,1	60,6	4,01	4,19	4,32	4,46	4,59	4,74	4,89
	40	128	116	108	98,9	89,9	80,9	59,9	3,48	3,61	3,70	3,79	3,88	3,95	4,02
	44	109	99,2	90,6	81,8	72,9	63,6	-	3,26	3,31	3,35	3,40	3,42	3,45	-

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 43.2 - EXC - SC

To °C	Tae °C	Heating capacity							COP						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-20	43,7	40,3	36,7	33,1	29,5	25,9	15,0	1,91	1,89	1,87	1,85	1,82	1,79	1,60
	-15	54,5	50,1	46,2	42,4	38,5	34,7	23,1	2,18	2,19	2,18	2,18	2,17	2,17	2,13
	-10	63,2	57,7	53,5	49,3	45,1	40,9	28,4	2,54	2,56	2,58	2,58	2,58	2,57	2,53
	-7	69,8	62,8	58,4	53,9	49,3	44,7	31,0	2,94	2,97	3,01	3,02	3,03	3,03	2,94
	2	89,9	79,5	73,9	68,2	62,4	56,1	38,7	3,51	3,57	3,62	3,64	3,66	3,69	3,77
	7	101	90,6	84,2	77,8	71,2	63,0	42,9	4,19	4,33	4,39	4,46	4,56	4,66	4,86
	10	110	97,5	90,6	83,6	76,5	67,0	45,7	4,51	4,66	4,74	4,82	4,93	5,05	5,28
	18	134	119	110	101	92,5	80,5	54,2	5,04	5,23	5,34	5,44	5,59	5,76	6,06
40	-20	42,4	41,8	38,0	34,2	30,4	26,6	15,2	1,89	1,98	1,94	1,92	1,88	1,85	1,60
	-15	52,9	51,2	47,3	43,3	39,3	35,3	23,4	2,15	2,27	2,26	2,25	2,23	2,22	2,12
	-10	61,4	58,5	54,2	49,9	45,6	41,3	28,5	2,30	2,66	2,66	2,66	2,65	2,63	2,54
	-7	67,8	63,5	58,9	54,3	49,7	45,0	31,0	2,47	2,88	2,88	2,88	2,88	2,89	2,83
	2	89,3	79,6	73,9	68,2	62,4	56,0	38,2	3,42	3,72	3,74	3,75	3,74	3,81	3,87
	7	99,3	88,2	82,0	75,6	69,2	61,3	43,0	3,80	3,92	3,97	4,02	4,07	4,15	4,31
	10	107	93,8	87,2	80,5	73,6	65,1	44,2	4,08	4,32	4,40	4,49	4,59	4,75	5,07
	18	130	114	106	97,5	89,0	78,2	52,4	4,31	4,59	4,70	4,81	4,94	5,16	5,51
45	-20	42,0	43,2	39,2	35,3	31,4	27,4	15,6	1,87	1,84	1,81	1,77	1,73	1,69	1,41
	-15	52,4	52,3	48,2	44,2	40,2	36,2	24,1	2,11	2,10	2,08	2,06	2,04	2,01	1,86
	-10	59,7	52,7	48,8	44,9	41,0	36,8	25,3	2,06	2,07	2,06	2,06	2,05	2,03	1,88
	-7	64,3	57,0	52,9	48,7	44,5	40,3	27,8	2,21	2,23	2,23	2,22	2,22	2,20	2,17
	2	88,8	79,3	73,7	67,9	62,1	55,7	37,9	3,34	3,38	3,39	3,38	3,38	3,48	3,54
	7	98,1	87,7	81,4	75,1	68,7	60,9	41,1	3,40	3,52	3,56	3,59	3,63	3,69	3,82
	10	106	93,1	86,5	79,8	73,0	64,7	43,8	3,67	3,86	3,92	3,97	4,06	4,18	4,43
	18	129	113	105	96,5	88,0	77,4	51,7	3,85	4,09	4,17	4,24	4,35	4,53	4,76
50	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	51,4	50,4	46,5	42,7	38,8	35,0	23,5	1,77	1,76	1,74	1,72	1,70	1,66	1,44
	-10	58,0	50,3	46,6	42,9	39,1	35,1	24,3	1,71	1,72	1,71	1,70	1,69	1,67	1,47
	-7	62,1	54,1	50,2	46,3	42,3	38,4	25,3	1,83	1,84	1,84	1,84	1,83	1,80	1,69
	2	88,6	74,5	69,2	63,8	58,3	52,4	35,6	2,72	2,75	2,77	2,77	2,76	2,75	2,79
	7	97,1	82,3	76,4	70,5	64,4	58,3	38,6	3,02	3,07	3,13	3,15	3,20	3,25	3,33
	10	105	87,3	81,1	74,8	68,4	61,9	40,9	3,21	3,36	3,42	3,46	3,58	3,67	3,86
	18	126	111	103	94,8	86,5	77,1	51,2	3,50	3,67	3,74	3,80	3,95	4,08	4,34
55	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	50,5	54,2	50,0	45,9	41,8	37,6	23,0	1,65	1,65	1,63	1,60	1,57	1,60	1,34
	-10	56,3	53,5	49,5	45,6	41,6	37,4	23,7	1,59	1,61	1,60	1,58	1,56	1,55	1,33
	-7	59,9	57,2	53,1	48,9	44,7	40,7	24,8	1,68	1,73	1,72	1,70	1,68	1,65	1,43
	2	87,7	77,8	72,2	66,6	60,9	54,8	35,1	2,56	2,57	2,57	2,55	2,52	2,61	2,54
	7	96,1	85,6	79,5	73,3	67,1	60,7	38,1	2,80	2,88	2,89	2,89	2,90	2,91	2,95
	10	103	90,7	84,3	77,7	71,1	64,3	40,4	3,01	3,12	3,15	3,17	3,19	3,24	3,38
	18	124	109	101	93,2	85,1	76,7	50,7	3,25	3,41	3,44	3,47	3,51	3,59	3,77
60	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	55,2	49,4	37,6	-	-	-	-	2,33	2,36	2,37
	7	-	-	-	-	60,8	54,3	40,5	-	-	-	-	2,63	2,45	2,66
	10	-	-	-	-	64,4	57,5	42,8	-	-	-	-	2,86	2,87	2,91
	18	-	-	-	-	76,4	68,0	50,0	-	-	-	-	3,12	3,04	3,17

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 45.2 - EXC - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	117	106	96,4	89,2	82,1	74,8	58,2	4,52	4,64	4,77	4,87	4,99	5,12	5,40
	20	116	105	95,5	88,5	81,5	74,3	57,7	4,08	4,18	4,29	4,36	4,45	4,53	4,72
	25	115	104	94,7	87,7	80,9	73,8	57,1	3,81	3,92	4,03	4,12	4,21	4,29	4,47
	30	111	102	92,9	86,3	79,7	72,9	56,5	3,53	3,65	3,78	3,87	3,97	4,06	4,23
	35	107	98,3	89,5	83,2	76,7	70,1	55,9	3,10	3,21	3,31	3,39	3,46	3,52	3,62
	40	103	94,5	86,0	80,0	73,7	67,2	55,4	2,72	2,81	2,89	2,94	2,99	3,02	3,05
10	44	92,6	84,6	78,2	72,1	65,9	59,6	54,1	2,45	2,52	2,59	2,63	2,66	2,67	2,70
	15	128	117	106	97,6	89,6	81,6	59,4	5,00	5,14	5,29	5,42	5,55	5,71	6,16
	20	127	115	105	96,7	88,9	81,1	58,8	4,50	4,61	4,72	4,81	4,90	5,00	5,29
	25	126	114	103	95,8	88,1	80,5	58,2	4,16	4,28	4,42	4,52	4,62	4,73	4,98
	30	121	111	101	94,1	86,7	79,3	57,6	3,82	3,96	4,11	4,22	4,33	4,45	4,67
	35	117	107	97,7	90,7	83,7	76,4	57,1	3,35	3,48	3,60	3,69	3,77	3,85	3,98
12	40	112	103	94,0	87,2	80,4	73,3	56,5	2,94	3,04	3,13	3,20	3,25	3,30	3,34
	44	101	92,4	85,4	78,8	71,9	65,0	55,1	2,65	2,73	2,80	2,85	2,89	2,91	2,94
	15	131	120	108	99,9	91,6	83,3	60,6	5,08	5,26	5,42	5,55	5,70	5,86	6,31
	20	130	118	107	99,0	90,9	82,7	60,0	4,55	4,66	4,77	4,85	4,94	5,04	5,32
	25	129	117	106	98,0	90,1	82,1	59,4	4,20	4,33	4,47	4,57	4,67	4,78	5,05
	30	124	114	104	96,1	88,5	80,9	58,8	3,85	4,01	4,16	4,28	4,40	4,53	4,78
15	35	120	110	99,9	92,7	85,3	77,9	58,2	3,38	3,51	3,64	3,73	3,81	3,90	4,05
	40	115	106	96,1	89,1	82,1	74,9	57,6	2,96	3,06	3,16	3,22	3,29	3,34	3,40
	44	107	97,2	89,7	82,7	75,5	68,2	56,2	2,73	2,80	2,86	2,90	2,93	2,96	2,98
	15	141	128	115	107	97,6	88,6	61,8	5,35	5,55	5,73	5,89	6,06	6,25	6,84
	20	139	126	114	105	96,7	87,9	61,2	4,78	4,90	5,03	5,13	5,23	5,34	5,68
	25	137	125	113	104	95,8	87,2	60,6	4,37	4,52	4,67	4,78	4,91	5,03	5,37
18	30	132	121	110	102	94,0	85,7	60,0	3,95	4,13	4,32	4,44	4,58	4,73	5,06
	35	127	117	106	98,5	90,7	82,6	59,4	3,46	3,60	3,75	3,85	3,95	4,05	4,25
	40	123	113	102	94,8	87,2	79,5	58,8	3,03	3,14	3,25	3,32	3,39	3,45	3,54
	44	109	104	95,5	87,9	80,2	72,4	57,4	2,79	2,88	2,94	2,98	3,02	3,04	3,07
	15	153	139	125	115	106	95,7	63,0	5,91	6,10	6,31	6,49	6,69	6,93	7,73
	20	151	137	124	114	105	94,9	62,4	5,09	5,20	5,32	5,40	5,49	5,59	5,91
20	25	148	135	122	113	103	94,1	61,8	4,66	4,82	4,99	5,11	5,24	5,38	5,75
	30	143	131	119	110	101	92,4	61,2	4,24	4,44	4,66	4,81	4,98	5,17	5,59
	35	139	127	115	106	97,8	89,1	60,6	3,73	3,87	4,03	4,15	4,27	4,39	4,65
	40	133	122	111	102	94,2	85,7	59,9	3,23	3,36	3,48	3,57	3,65	3,72	3,84
	44	112	98,9	89,9	81,4	72,7	-	-	3,05	3,12	3,19	3,23	3,27	-	-
	15	162	147	132	121	111	101	64,3	6,20	6,53	6,78	6,98	7,22	7,50	8,50
22	20	159	145	130	120	110	99,6	63,7	5,42	5,54	5,68	5,78	5,88	6,00	6,40
	25	156	142	129	119	109	98,7	63,0	4,92	5,10	5,29	5,43	5,57	5,74	6,19
	30	151	138	125	116	106	96,9	62,4	4,43	4,66	4,90	5,08	5,26	5,47	5,98
	35	145	133	121	112	103	93,5	61,8	3,87	4,04	4,22	4,36	4,49	4,63	4,93
	40	140	128	116	108	98,9	89,9	61,1	3,37	3,51	3,64	3,73	3,82	3,91	4,05
	44	114	104	94,4	85,4	76,3	-	-	3,23	3,30	3,36	3,41	3,45	-	-

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 45.2 - EXC - SC

To °C	Tae °C	Heating capacity							COP						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-20	50,7	47,7	41,1	37,4	33,7	30,0	15,5	1,88	1,84	1,82	1,80	1,77	1,73	1,55
	-15	61,3	58,1	51,0	47,1	43,1	39,2	23,7	2,15	2,16	2,15	2,15	2,14	2,13	2,09
	-10	69,5	66,4	58,7	54,5	50,1	45,9	28,9	2,49	2,54	2,55	2,55	2,54	2,53	2,50
	-7	75,3	72,0	64,0	59,4	54,9	50,2	31,5	2,90	2,75	2,76	2,77	2,77	2,75	2,69
	2	96,0	91,1	81,0	75,2	69,4	63,5	39,2	3,41	3,55	3,59	3,61	3,62	3,66	3,73
	7	111	104	92,2	85,7	79,1	72,4	43,4	4,15	4,25	4,38	4,45	4,52	4,59	4,72
	10	114	112	99,3	92,2	85,1	77,8	46,2	4,04	4,57	4,72	4,80	4,90	4,97	5,13
	18	139	136	121	112	103	94,1	54,7	4,29	5,10	5,30	5,41	5,56	5,64	5,84
40	-20	49,2	49,1	42,2	38,4	34,6	30,7	15,8	1,86	1,94	1,92	1,89	1,85	1,80	1,57
	-15	59,5	59,1	51,8	47,8	43,7	39,7	23,9	2,13	2,26	2,25	2,24	2,22	2,20	2,10
	-10	67,5	66,9	59,1	54,8	50,4	46,1	29,0	2,29	2,65	2,66	2,65	2,64	2,62	2,52
	-7	73,1	72,3	64,1	59,6	54,9	50,2	31,5	2,45	2,85	2,87	2,88	2,87	2,87	2,81
	2	95,4	90,6	80,5	74,7	68,9	63,0	38,7	3,40	3,66	3,72	3,73	3,74	3,74	3,87
	7	110	100	89,2	82,8	76,4	69,9	43,5	3,72	3,80	3,91	3,97	4,06	4,13	4,23
	10	113	108	94,8	88,1	81,3	74,4	44,7	3,98	4,08	4,31	4,40	4,57	4,65	4,82
	18	138	131	115	107	98,5	89,9	52,9	4,19	4,31	4,59	4,70	4,93	5,01	5,21
45	-20	48,7	50,8	43,6	39,7	35,7	31,7	16,1	1,85	1,80	1,77	1,73	1,69	1,64	1,38
	-15	58,9	60,4	52,9	48,7	44,7	40,6	24,6	2,10	2,08	2,07	2,04	2,02	1,99	1,84
	-10	65,1	60,4	53,3	49,3	45,4	41,4	25,9	2,05	2,06	2,06	2,05	2,03	1,98	1,86
	-7	69,9	65,0	57,6	53,4	49,2	45,0	28,3	2,19	2,21	2,22	2,22	2,20	2,19	2,15
	2	94,2	90,3	80,2	74,4	68,6	62,7	38,5	3,30	3,33	3,37	3,38	3,37	3,36	3,53
	7	107	99,7	88,6	82,3	75,9	69,4	41,6	3,37	3,43	3,52	3,55	3,62	3,66	3,73
	10	113	107	94,1	87,4	80,7	73,8	44,3	3,59	3,67	3,85	3,92	4,03	4,09	4,21
	18	138	130	114	106	97,5	88,9	52,2	3,77	3,86	4,08	4,16	4,33	4,35	4,48
50	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	57,9	61,0	53,4	49,2	45,1	41,1	24,1	1,73	1,71	1,69	1,66	1,63	1,60	1,42
	-10	64,0	60,4	53,3	49,3	45,4	41,4	24,8	1,69	1,68	1,67	1,66	1,63	1,59	1,44
	-7	69,6	64,7	57,3	53,1	49,0	44,8	25,8	1,80	1,81	1,80	1,79	1,77	1,75	1,66
	2	93,1	88,9	78,9	73,2	67,5	61,7	36,1	2,69	2,72	2,72	2,71	2,69	2,74	2,72
	7	105	98,0	87,1	80,9	74,6	68,2	39,1	3,01	3,07	3,09	3,11	3,12	3,14	3,18
	10	113	105	92,4	85,9	79,2	72,4	41,4	3,21	3,27	3,40	3,43	3,46	3,50	3,57
	18	137	127	112	104	95,3	87,0	51,7	3,49	3,56	3,73	3,77	3,83	3,84	3,92
55	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	56,8	62,9	55,0	50,8	46,6	42,5	23,5	1,50	1,64	1,61	1,59	1,57	1,53	1,32
	-10	62,8	61,6	54,3	50,3	46,3	42,3	24,3	1,51	1,59	1,58	1,57	1,55	1,52	1,31
	-7	68,4	65,6	58,1	53,9	49,7	45,5	25,3	1,60	1,69	1,69	1,68	1,67	1,64	1,41
	2	92,0	89,1	79,1	73,4	67,7	61,9	35,6	2,48	2,50	2,51	2,51	2,50	2,47	2,48
	7	105	97,9	87,0	80,8	74,5	68,1	38,6	2,72	2,77	2,81	2,83	2,86	2,89	2,92
	10	112	105	92,1	85,6	79,0	72,2	40,9	2,90	2,94	3,06	3,08	3,17	3,21	3,25
	18	136	126	111	103	94,7	86,4	51,2	3,14	3,19	3,33	3,37	3,49	3,49	3,58
60	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	62,3	50,2	38,2	-	-	-	-	2,23	2,31	2,32
	7	-	-	-	-	68,3	55,2	41,1	-	-	-	-	2,51	2,40	2,60
	10	-	-	-	-	72,2	58,4	43,5	-	-	-	-	2,74	2,80	2,84
	18	-	-	-	-	86,0	69,0	50,8	-	-	-	-	3,00	2,97	3,10

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 /-8	-5 /-6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 10.1 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 10.1 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 12.1 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 12.1 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 /-8	-5 /-6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 14.1 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 14.1 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 16.2 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 16.2 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 18.2 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 18.2 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 22.2 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 22.2 - PRM - SC

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

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 30.2 - PRM - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	81,6	77,3	72,8	66,8	61,0	53,5	48,9	5,11	5,26	5,41	5,56	5,72	5,86	6,23
	20	79,8	75,5	71,2	65,2	59,4	52,0	47,4	4,37	4,51	4,66	4,81	4,98	5,14	5,40
	25	78,3	73,7	69,1	63,2	57,5	50,2	45,7	3,86	3,98	4,09	4,24	4,39	4,55	4,72
	30	76,3	71,9	67,3	61,3	55,6	48,3	43,9	3,38	3,48	3,58	3,70	3,82	3,94	4,03
	35	74,4	69,9	65,4	59,4	53,6	46,4	42,0	2,95	3,03	3,11	3,20	3,29	3,37	3,39
	40	70,0	65,9	61,6	55,9	50,6	43,7	39,4	2,53	2,60	2,66	2,72	2,80	2,85	2,82
10	44	-	-	-	-	47,0	40,4	36,3	-	-	-	-	2,53	2,55	2,50
	15	88,8	84,0	79,2	72,6	66,2	58,0	52,9	5,47	5,65	5,82	6,00	6,19	6,35	6,74
	20	86,8	82,2	77,4	70,9	64,6	56,4	51,4	4,68	4,85	5,01	5,19	5,38	5,57	5,83
	25	84,4	79,9	75,2	68,8	62,6	54,5	49,5	4,11	4,26	4,41	4,57	4,75	4,93	5,09
	30	81,6	77,2	72,7	66,4	60,3	52,3	47,4	3,58	3,71	3,84	3,99	4,13	4,27	4,35
	35	78,8	74,5	70,1	64,0	57,9	50,1	45,3	3,11	3,22	3,33	3,44	3,56	3,66	3,67
12	40	75,1	71,0	66,8	60,9	55,1	47,5	42,8	2,69	2,78	2,87	2,96	3,04	3,10	3,06
	44	-	-	-	-	51,5	44,3	39,8	-	-	-	-	2,76	2,78	2,72
	15	93,8	88,8	83,6	76,7	69,9	61,2	55,7	5,73	5,92	6,11	6,31	6,53	6,72	7,11
	20	91,8	86,9	81,8	74,9	68,2	59,5	54,1	4,90	5,08	5,27	5,46	5,68	5,88	6,15
	25	88,9	84,1	79,2	72,5	65,8	57,3	52,0	4,30	4,47	4,63	4,82	5,01	5,20	5,36
	30	86,0	81,4	76,6	70,0	63,5	55,0	49,9	3,76	3,90	4,05	4,20	4,37	4,52	4,60
15	35	83,1	78,6	73,9	67,5	61,1	52,8	47,7	3,27	3,39	3,51	3,64	3,77	3,87	3,87
	40	79,3	75,1	70,6	64,4	58,2	50,1	45,2	2,84	2,94	3,03	3,13	3,22	3,28	3,24
	44	-	-	-	-	54,8	47,1	42,3	-	-	-	-	2,93	2,96	2,89
	15	102	96,3	90,7	83,1	75,3	66,2	60,2	6,13	6,36	6,59	6,84	7,02	7,33	7,77
	20	99,1	93,9	88,4	81,0	73,6	64,2	58,3	5,23	5,44	5,66	5,89	6,14	6,38	6,67
	25	96,3	91,1	85,7	78,4	71,2	61,9	56,1	4,60	4,77	4,96	5,17	5,40	5,62	5,79
18	30	93,2	88,2	83,0	75,8	68,8	59,6	53,9	4,02	4,18	4,35	4,53	4,72	4,89	4,96
	35	90,2	85,3	80,2	73,3	66,3	57,3	51,7	3,51	3,65	3,78	3,92	4,07	4,20	4,19
	40	86,3	81,7	76,8	70,0	63,3	54,5	49,1	3,06	3,17	3,27	3,38	3,49	3,57	3,51
	44	-	-	-	-	51,6	46,3	41,6	-	-	-	-	3,21	3,25	3,16
	15	110	104	98,3	90,1	81,7	71,7	65,0	6,57	6,85	7,11	7,43	7,61	8,05	8,47
	20	107	101	95,5	87,4	79,5	69,2	62,8	5,63	5,87	6,13	6,41	6,72	7,02	7,33
20	25	104	98,5	92,7	84,8	77,0	66,8	60,5	4,96	5,18	5,39	5,64	5,91	6,18	6,36
	30	101	95,6	89,9	82,2	74,5	64,5	58,3	4,34	4,53	4,71	4,92	5,15	5,37	5,42
	35	98,7	92,7	87,2	79,6	72,1	62,2	56,1	3,88	3,95	4,10	4,26	4,44	4,59	4,57
	40	93,9	88,8	83,5	76,2	68,9	59,3	53,4	3,33	3,45	3,57	3,70	3,83	3,93	3,85
	44	-	-	-	-	56,5	50,8	45,1	-	-	-	-	-	3,60	3,50
	15	116	110	103	95,1	86,8	75,5	68,4	6,91	7,19	7,40	7,88	8,06	8,63	8,99
20	20	113	107	101	92,3	82,0	73,1	65,6	5,93	6,20	6,48	6,81	6,98	7,52	7,72
	25	110	104	98,0	89,6	81,3	70,6	63,9	5,23	5,48	5,73	6,00	6,31	6,63	6,81
	30	107	101	95,2	86,9	78,8	68,2	61,6	4,60	4,80	5,01	5,24	5,50	5,75	5,81
	35	104	98,2	92,4	84,4	76,4	65,9	59,4	4,02	4,20	4,37	4,55	4,75	4,93	4,90
	40	99,5	94,3	88,6	80,9	73,1	62,9	56,7	3,54	3,68	3,82	3,96	4,11	4,22	4,13
	44	-	-	-	-	60,0	54,0	48,0	-	-	-	-	-	3,88	3,76

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 30.2 - PRM - SC

		Heating capacity							COP						
To	Tae	Compressor power percentage							Compressor power percentage						
°C	°C	100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-15	44,5	42,2	39,9	37,1	34,1	30,6	28,1	2,05	2,09	2,13	2,18	2,24	2,32	2,44
	-10	53,4	50,9	48,1	44,6	40,9	36,4	33,3	2,49	2,49	2,55	2,62	2,69	2,78	2,93
	-7	60,5	56,3	53,1	49,1	45,0	39,9	36,5	2,82	2,88	2,95	3,02	3,11	3,21	3,38
	2	73,6	69,8	65,8	60,5	55,2	48,5	43,9	3,32	3,38	3,46	3,55	3,64	3,74	3,94
	7	84,6	79,1	74,8	68,8	62,7	55,0	50,1	4,07	4,08	4,15	4,26	4,37	4,48	4,78
	10	88,1	83,3	78,4	72,1	65,6	57,5	52,3	4,17	4,27	4,37	4,49	4,61	4,72	5,04
	18	101	95,4	89,8	82,5	75,0	65,6	59,6	4,75	4,88	5,01	5,16	5,30	5,45	5,82
40	-15	43,5	41,0	38,9	36,1	32,7	29,5	27,1	1,79	1,82	1,86	1,91	1,93	2,01	2,09
	-10	52,2	49,1	46,6	43,1	39,7	35,0	31,9	2,18	2,21	2,27	2,33	2,40	2,45	2,55
	-7	57,8	54,8	51,7	47,6	43,4	38,2	34,7	2,41	2,47	2,52	2,58	2,64	2,70	2,81
	2	71,5	67,5	63,4	58,1	52,7	46,2	41,9	2,97	3,04	3,10	3,17	3,23	3,29	3,44
	7	80,7	76,4	72,2	65,8	60,5	53,1	47,9	3,60	3,67	3,73	3,80	3,93	4,02	4,20
	10	85,2	80,4	76,1	70,3	63,6	55,7	50,6	3,74	3,83	3,94	4,07	4,14	4,23	4,47
	18	99,0	93,5	87,9	80,6	73,1	63,8	57,8	4,31	4,42	4,53	4,66	4,78	4,89	5,15
45	-15	42,5	40,3	37,9	35,0	31,6	28,6	26,1	1,59	1,62	1,65	1,68	1,69	1,76	1,81
	-10	50,6	47,7	45,3	41,4	38,4	33,6	30,8	1,92	1,96	2,01	2,04	2,11	2,13	2,21
	-7	56,3	52,8	50,5	46,2	41,9	36,6	33,2	2,15	2,17	2,25	2,29	2,32	2,34	2,40
	2	69,7	65,7	61,5	56,2	51,1	44,6	39,9	2,65	2,70	2,74	2,79	2,84	2,87	2,93
	7	78,3	74,1	70,5	63,8	58,8	51,0	46,0	3,38	3,39	3,37	3,37	3,48	3,50	3,62
	10	82,9	78,2	74,2	67,9	61,6	53,4	48,9	3,32	3,40	3,51	3,58	3,65	3,67	3,86
	18	96,8	91,8	86,2	79,0	71,5	61,4	56,0	3,85	3,97	4,06	4,16	4,25	4,26	4,47
50	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	55,1	51,7	49,6	45,3	40,9	35,7	32,2	1,87	1,90	1,97	1,99	2,01	2,01	2,03
	2	68,8	64,7	60,5	55,0	50,1	43,5	39,0	2,33	2,37	2,40	2,42	2,47	2,46	2,50
	7	76,5	72,9	69,1	62,9	57,9	49,2	44,6	2,69	2,75	2,83	2,86	2,95	2,90	2,97
	10	81,9	77,2	73,4	67,2	60,3	52,1	47,9	2,85	2,91	3,00	3,06	3,08	3,07	3,20
	18	94,7	90,4	83,9	76,7	69,5	59,7	54,6	3,26	3,38	3,41	3,49	3,55	3,55	3,69
55	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	68,0	63,9	59,6	54,1	48,7	42,6	38,0	2,05	2,08	2,10	2,11	2,11	2,11	2,11
	7	79,1	71,4	67,5	61,7	56,7	48,0	43,4	2,45	2,39	2,45	2,49	2,54	2,47	2,51
	10	80,9	76,1	72,2	66,0	59,5	50,5	46,7	2,50	2,54	2,62	2,66	2,67	2,60	2,70
	18	93,4	89,1	82,5	75,4	68,1	58,5	53,3	2,85	2,95	2,97	3,03	3,06	3,04	3,12

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 /-8	-5 /-6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 35.2 - PRM - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	94,4	89,9	85,5	77,5	70,3	62,6	55,1	4,73	4,85	4,97	5,23	5,44	5,61	5,77
	20	92,8	88,4	84,0	76,1	69,0	61,3	53,7	4,08	4,20	4,29	4,54	4,75	4,93	5,12
	25	90,6	85,9	81,6	73,8	66,9	59,3	51,8	3,60	3,69	3,76	3,99	4,18	4,35	4,53
	30	88,3	83,8	79,1	71,6	64,8	57,3	49,8	3,16	3,24	3,27	3,48	3,65	3,78	3,92
	35	86,4	81,5	77,0	69,2	62,5	55,2	47,8	2,78	2,83	2,85	3,00	3,14	3,25	3,35
	40	81,1	76,9	72,6	65,6	59,1	52,1	45,0	2,38	2,44	2,44	2,58	2,69	2,76	2,82
	44	-	-	-	-	-	47,7	41,0	-	-	-	-	-	2,49	2,49
10	15	103	97,9	93,0	84,2	76,4	68,0	59,7	5,06	5,21	5,33	5,63	5,87	6,07	6,26
	20	101	96,3	91,4	82,8	75,0	66,6	58,2	4,38	4,51	4,60	4,89	5,13	5,34	5,55
	25	98,3	93,6	88,9	80,4	72,8	64,5	56,2	3,84	3,97	4,03	4,29	4,52	4,71	4,91
	30	95,4	90,9	86,3	78,0	70,5	62,4	54,2	3,36	3,48	3,52	3,75	3,94	4,10	4,25
	35	92,5	88,2	83,6	75,6	68,3	60,2	52,1	2,93	3,03	3,05	3,24	3,40	3,53	3,64
	40	87,8	83,8	79,4	71,8	64,7	57,0	49,1	2,55	2,63	2,64	2,80	2,92	3,00	3,07
	44	-	-	-	-	-	52,3	45,2	-	-	-	-	-	2,72	2,74
12	15	108	103	98,3	89,0	80,7	71,8	62,9	5,29	5,45	5,57	5,91	6,18	6,41	6,62
	20	107	102	96,7	87,5	79,2	70,3	61,5	4,58	4,73	4,82	5,13	5,40	5,63	5,86
	25	104	99,1	94,0	85,1	77,0	68,2	59,4	4,03	4,17	4,23	4,52	4,76	4,97	5,19
	30	101	96,3	91,4	82,6	74,7	66,1	57,3	3,53	3,66	3,70	3,94	4,15	4,34	4,50
	35	98,1	93,5	88,7	80,1	72,3	63,8	55,2	3,09	3,19	3,22	3,42	3,59	3,73	3,85
	40	93,2	88,9	84,3	76,2	68,7	60,5	52,1	2,69	2,78	2,79	2,96	3,09	3,18	3,26
	44	-	-	-	-	-	55,6	46,7	-	-	-	-	-	2,88	2,82
15	15	113	108	102	92,6	83,9	74,8	65,8	5,55	5,73	5,86	6,25	6,57	6,60	6,85
	20	111	106	101	91,1	82,5	73,5	63,8	4,86	5,03	5,12	5,49	5,80	6,10	6,35
	25	108	103	98,1	88,7	80,2	71,3	61,8	4,29	4,45	4,52	4,84	5,12	5,39	5,61
	30	105	101	95,4	86,3	78,0	69,2	59,7	3,78	3,92	3,96	4,24	4,47	4,71	4,88
	35	102	97,8	92,7	83,8	75,7	67,0	57,7	3,31	3,44	3,46	3,69	3,88	4,06	4,18
	40	97,7	93,2	88,3	79,9	72,0	63,7	54,6	2,90	3,00	3,01	3,20	3,35	3,47	3,54
	44	-	-	-	-	-	57,0	48,9	-	-	-	-	-	3,02	3,01
18	15	123	117	111	101	91,9	82,5	73,0	5,94	6,15	6,29	6,70	7,23	7,37	7,58
	20	121	115	109	98,8	89,5	79,7	69,0	5,22	5,42	5,52	5,94	6,31	6,68	6,99
	25	118	112	107	96,4	87,2	77,5	67,1	4,63	4,82	4,88	5,25	5,58	5,91	6,19
	30	115	109	104	94,0	84,9	75,3	65,0	4,09	4,25	4,29	4,61	4,89	5,16	5,38
	35	111	106	101	91,3	82,4	73,0	62,8	3,57	3,73	3,75	4,02	4,24	4,45	4,60
	40	107	102	96,6	87,3	78,7	68,7	59,7	3,17	3,28	3,29	3,51	3,68	3,80	3,92
	44	-	-	-	-	-	63,1	55,0	-	-	-	-	-	3,41	3,51
20	15	130	123	117	106	95,9	85,4	74,9	6,28	6,50	6,65	7,00	7,55	7,64	7,78
	20	128	122	115	104	94,5	84,1	73,8	5,49	5,71	5,81	6,28	6,71	7,13	7,63
	25	125	119	113	102	92,2	81,9	70,8	4,88	5,09	5,15	5,57	5,94	6,32	6,63
	30	122	116	110	99,4	89,8	79,2	68,7	4,33	4,50	4,54	4,90	5,22	5,50	5,78
	35	118	113	107	96,7	87,3	77,4	66,5	3,81	3,96	3,98	4,28	4,53	4,77	4,94
	40	113	108	102	92,6	83,3	73,3	63,0	3,37	3,50	3,50	3,74	3,93	4,09	4,19
	44	-	-	-	-	-	65,4	57,5	-	-	-	-	-	3,56	3,71

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 35.2 - PRM - SC

To	Tae	Heating capacity							COP						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
35	-15	48,3	46,0	43,6	39,7	36,3	32,9	29,4	1,92	1,95	2,01	2,08	2,14	2,21	2,28
	-10	58,6	55,7	52,7	47,9	43,7	39,4	35,0	2,38	2,32	2,39	2,48	2,57	2,65	2,74
	-7	67,1	62,9	59,5	53,9	49,1	44,2	39,1	2,77	2,76	2,86	2,96	3,06	3,16	3,26
	2	81,3	77,1	73,0	66,1	59,9	53,5	46,9	3,13	3,22	3,35	3,49	3,61	3,71	3,80
	7	93,9	89,4	84,7	76,6	69,4	62,0	54,1	3,74	3,76	3,93	4,10	4,24	4,37	4,46
	10	98,8	94,0	89,0	80,5	72,9	65,0	56,7	3,87	3,96	4,13	4,32	4,46	4,60	4,71
	18	113	108	102	92,2	83,4	74,2	64,6	4,40	4,50	4,71	4,94	5,12	5,29	5,43
40	-15	46,6	44,1	42,6	38,4	35,0	31,7	27,3	1,65	1,67	1,75	1,80	1,85	1,91	1,90
	-10	57,3	54,4	51,3	46,2	42,8	38,3	33,7	2,03	2,06	2,12	2,18	2,29	2,35	2,40
	-7	63,3	59,9	56,6	50,9	46,0	41,0	35,9	2,23	2,26	2,33	2,40	2,46	2,52	2,56
	2	79,5	75,4	71,4	64,4	58,1	51,6	45,9	2,83	2,88	2,99	3,10	3,19	3,26	3,38
	7	92,3	88,6	83,9	75,7	68,4	60,9	53,0	3,33	3,44	3,54	3,68	3,80	3,89	3,96
	10	97,7	92,9	87,9	79,3	71,7	63,7	55,4	3,50	3,58	3,73	3,88	4,00	4,11	4,18
	18	112	107	101	91,1	82,2	73,0	63,6	3,98	4,08	4,26	4,45	4,61	4,74	4,86
45	-15	45,0	43,3	41,4	37,3	33,2	30,3	26,4	1,42	1,47	1,52	1,56	1,56	1,62	1,63
	-10	56,3	53,2	50,0	45,0	41,0	37,3	32,5	1,79	1,81	1,85	1,91	1,97	2,05	2,06
	-7	62,0	57,5	55,1	49,1	44,0	38,8	33,5	1,97	1,96	2,04	2,09	2,12	2,14	2,14
	2	77,4	74,4	70,3	63,1	56,7	50,1	44,3	2,49	2,57	2,65	2,74	2,80	2,83	2,91
	7	90,9	88,0	83,3	75,0	67,6	60,1	52,1	3,09	3,09	3,17	3,29	3,38	3,45	3,48
	10	97,3	92,4	87,5	78,8	71,0	63,0	54,6	3,15	3,22	3,34	3,47	3,57	3,64	3,67
	18	111	106	100	90,3	81,3	72,1	62,8	3,57	3,66	3,80	3,97	4,10	4,20	4,28
50	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	58,7	54,6	52,7	46,7	41,4	37,2	31,8	1,69	1,69	1,77	1,79	1,80	1,84	1,81
	2	74,2	72,1	68,1	60,9	54,4	47,8	42,1	2,16	2,26	2,32	2,38	2,41	2,43	2,46
	7	90,1	84,9	80,4	72,3	65,1	57,7	49,9	2,59	2,63	2,71	2,80	2,87	2,91	2,91
	10	94,3	89,5	84,8	76,2	68,6	60,7	52,5	2,69	2,75	2,84	2,94	3,01	3,06	3,06
	18	107	102	96,8	87,1	78,4	69,3	60,5	3,04	3,12	3,23	3,36	3,46	3,52	3,58
55	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	71,8	69,7	65,7	58,4	51,9	45,3	40,2	1,89	1,97	2,01	2,05	2,06	2,04	2,08
	7	88,8	83,1	78,7	70,6	63,3	55,9	48,2	2,32	2,31	2,38	2,45	2,49	2,51	2,48
	10	92,4	87,6	83,0	74,3	66,8	58,9	50,7	2,37	2,42	2,49	2,57	2,62	2,63	2,61
	18	105	99,6	94,5	84,9	76,3	67,5	58,7	2,65	2,71	2,80	2,90	2,97	3,02	3,04

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 40.2 - PRM - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	100	95,3	90,6	82,1	74,5	66,4	58,4	4,54	4,66	4,77	5,02	5,22	5,38	5,53
	20	98,8	94,1	89,5	81,0	73,4	65,3	57,2	3,93	4,05	4,13	4,38	4,58	4,75	4,93
	25	97,4	92,3	87,7	79,4	71,9	63,8	55,7	3,47	3,56	3,62	3,85	4,03	4,20	4,37
	30	95,8	90,9	85,9	77,7	70,3	62,1	54,1	3,05	3,13	3,16	3,35	3,52	3,65	3,78
	35	94,5	89,1	84,1	75,6	68,3	60,3	52,3	2,68	2,74	2,75	2,90	3,03	3,14	3,23
	40	88,0	83,4	78,7	71,1	64,2	56,5	48,8	2,30	2,36	2,36	2,49	2,59	2,66	2,72
	44	-	-	-	-	-	48,4	41,7	-	-	-	-	-	2,46	2,45
10	15	108	103	97,6	88,4	80,2	71,4	62,6	4,85	4,99	5,11	5,39	5,63	5,82	6,00
	20	107	102	96,4	87,3	79,1	70,3	61,5	4,22	4,35	4,43	4,71	4,94	5,14	5,34
	25	105	99,7	94,6	85,6	77,5	68,7	59,9	3,70	3,83	3,89	4,14	4,35	4,54	4,73
	30	103	97,8	92,8	83,9	75,8	67,1	58,3	3,24	3,35	3,39	3,61	3,80	3,95	4,10
	35	100	95,7	90,7	82,0	74,1	65,4	56,6	2,83	2,92	2,95	3,13	3,28	3,40	3,51
	40	94,4	90,0	85,4	77,1	69,6	61,3	52,8	2,46	2,54	2,55	2,70	2,81	2,90	2,96
	44	-	-	-	-	-	53,0	45,9	-	-	-	-	-	2,68	2,70
12	15	113	108	103	93,0	84,3	75,0	65,7	5,10	5,24	5,36	5,69	5,95	6,17	6,38
	20	112	106	101	91,4	82,8	73,5	64,2	4,41	4,55	4,64	4,94	5,20	5,42	5,65
	25	110	105	99,2	89,7	81,2	71,9	62,7	3,88	4,02	4,07	4,35	4,58	4,79	5,00
	30	108	103	97,3	88,0	79,5	70,4	61,0	3,41	3,53	3,56	3,80	4,00	4,18	4,34
	35	105	100	95,3	86,2	77,8	68,6	59,4	2,98	3,08	3,10	3,30	3,46	3,59	3,71
	40	99,3	94,7	89,8	81,1	73,2	64,4	55,5	2,59	2,68	2,69	2,85	2,97	3,07	3,14
	44	-	-	-	-	-	56,4	47,4	-	-	-	-	-	2,84	2,78
15	15	116	111	105	95,3	86,4	77,0	67,8	5,35	5,52	5,64	6,01	6,33	6,36	6,60
	20	115	110	104	94,3	85,4	76,0	66,1	4,70	4,87	4,95	5,31	5,61	5,90	6,14
	25	113	108	103	92,7	83,8	74,5	64,6	4,15	4,30	4,38	4,68	4,95	5,21	5,43
	30	111	106	101	91,0	82,2	73,0	63,0	3,66	3,79	3,83	4,10	4,33	4,55	4,72
	35	109	104	98,8	89,3	80,6	71,4	61,4	3,21	3,33	3,35	3,57	3,76	3,93	4,05
	40	103	98,3	93,2	84,2	76,0	67,2	57,6	2,81	2,91	2,91	3,09	3,24	3,36	3,43
	44	-	-	-	-	-	57,8	49,7	-	-	-	-	-	2,98	2,96
18	15	126	120	113	104	94,2	84,5	74,8	5,71	5,92	6,05	6,44	6,96	7,10	7,29
	20	124	119	112	102	92,2	82,1	71,0	5,05	5,24	5,33	5,75	6,10	6,46	6,76
	25	122	116	110	99,8	90,2	80,2	69,4	4,48	4,67	4,72	5,08	5,40	5,71	5,98
	30	120	114	108	98,2	88,7	78,7	67,9	3,96	4,11	4,15	4,46	4,73	5,00	5,21
	35	117	112	106	96,2	86,8	76,9	66,1	3,45	3,61	3,63	3,89	4,10	4,31	4,45
	40	111	106	101	91,2	82,3	71,8	62,4	3,06	3,18	3,18	3,39	3,56	3,67	3,80
	44	-	-	-	-	-	64,1	55,8	-	-	-	-	-	3,36	3,46
20	15	133	127	120	109	98,3	87,5	76,8	6,04	6,26	6,40	6,73	7,27	7,35	7,48
	20	131	125	119	107	97,3	86,6	76,0	5,31	5,52	5,62	6,08	6,49	6,90	7,38
	25	129	123	117	105	95,4	84,7	73,3	4,72	4,92	4,98	5,39	5,75	6,11	6,42
	30	127	121	115	104	93,9	82,8	71,8	4,19	4,36	4,40	4,74	5,05	5,32	5,59
	35	125	119	113	102	92,0	81,5	70,1	3,69	3,84	3,85	4,14	4,38	4,62	4,78
	40	118	113	107	96,8	87,0	76,6	65,8	3,26	3,38	3,39	3,62	3,80	3,96	4,05
	44	-	-	-	-	-	66,4	58,4	-	-	-	-	-	3,51	3,66

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 40.2 - PRM - SC

		Heating capacity							COP						
To	Tae	Compressor power percentage							Compressor power percentage						
°C	°C	100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-15	49,0	46,7	44,2	40,3	36,9	33,4	29,8	1,89	1,92	1,98	2,05	2,11	2,18	2,25
	-10	60,9	58,0	54,8	49,8	45,4	41,0	36,4	2,33	2,27	2,34	2,43	2,51	2,59	2,68
	-7	70,1	65,7	62,1	56,4	51,3	46,1	40,8	2,71	2,70	2,79	2,89	2,99	3,09	3,19
	2	85,7	81,3	77,0	69,7	63,2	56,5	49,4	3,06	3,14	3,27	3,41	3,52	3,62	3,71
	7	100	95,4	90,4	81,8	74,1	66,1	57,7	3,71	3,69	3,85	4,02	4,15	4,28	4,37
	10	104	99,2	93,9	84,9	76,9	68,5	59,8	3,78	3,87	4,04	4,22	4,36	4,49	4,60
40	18	118	112	107	96,3	87,1	77,5	67,5	4,29	4,39	4,60	4,82	5,00	5,17	5,30
	-15	47,3	44,7	43,2	38,9	35,5	32,1	27,7	1,63	1,65	1,73	1,77	1,82	1,88	1,88
	-10	60,2	57,1	53,8	48,5	44,9	40,2	35,4	1,94	1,97	2,02	2,08	2,19	2,24	2,29
	-7	67,1	63,5	60,0	53,9	48,7	43,4	38,0	2,13	2,16	2,23	2,29	2,35	2,41	2,45
	2	84,2	80,0	75,7	68,2	61,5	54,7	48,7	2,70	2,75	2,85	2,96	3,04	3,11	3,23
	7	102	97,4	92,3	83,3	75,2	67,0	58,3	3,19	3,29	3,39	3,52	3,63	3,73	3,78
45	10	104	98,5	93,2	84,1	76,0	67,5	58,7	3,28	3,36	3,49	3,64	3,75	3,85	3,92
	18	117	111	106	95,2	85,9	76,3	66,5	3,75	3,84	4,01	4,19	4,34	4,47	4,58
	-15	45,7	44,0	42,0	37,9	33,7	30,8	26,8	1,40	1,44	1,50	1,53	1,54	1,60	1,61
	-10	59,2	55,9	52,5	47,3	43,1	39,2	34,2	1,67	1,68	1,72	1,77	1,83	1,90	1,91
	-7	65,7	60,9	58,4	52,1	46,7	41,2	35,5	1,83	1,82	1,90	1,94	1,97	1,99	1,99
	2	82,1	78,8	74,5	66,9	60,1	53,1	47,0	2,27	2,35	2,42	2,50	2,55	2,59	2,66
50	7	102	98,7	93,5	84,2	75,9	67,4	58,4	2,93	2,93	3,01	3,12	3,20	3,27	3,29
	10	103	97,9	92,8	83,5	75,3	66,8	57,9	2,88	2,94	3,05	3,17	3,26	3,32	3,36
	18	116	110	105	94,3	85,0	75,3	65,6	3,33	3,41	3,55	3,71	3,82	3,92	4,00
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	59,6	55,5	53,5	47,4	42,1	37,8	32,3	1,69	1,68	1,76	1,78	1,79	1,83	1,80
55	2	75,3	73,2	69,1	61,8	55,3	48,6	42,7	2,15	2,25	2,31	2,37	2,40	2,41	2,45
	7	91,4	86,2	81,7	73,4	66,1	58,5	50,6	2,58	2,61	2,70	2,79	2,85	2,90	2,90
	10	95,7	90,8	86,0	77,3	69,6	61,6	53,3	2,68	2,74	2,83	2,93	3,00	3,04	3,05
	18	109	104	98,2	88,4	79,6	70,4	61,4	3,02	3,10	3,21	3,34	3,44	3,50	3,56
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	72,9	70,7	66,7	59,3	52,7	46,0	40,8	1,88	1,96	2,00	2,04	2,05	2,03	2,07
	7	90,2	84,4	79,9	71,6	64,3	56,8	48,9	2,31	2,30	2,37	2,44	2,48	2,49	2,47
	10	93,7	88,9	84,2	75,5	67,8	59,8	51,5	2,36	2,41	2,48	2,56	2,60	2,62	2,60
	18	107	101	95,9	86,2	77,4	68,5	59,6	2,64	2,70	2,78	2,88	2,95	3,00	3,02

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 45.2 - PRM - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	126	116	102	88,0	73,8	66,6	55,5	4,34	4,48	4,78	5,11	5,50	5,48	5,59
	20	122	112	98,7	85,1	71,2	64,1	54,9	3,70	3,82	4,03	4,14	4,38	4,60	4,99
	25	120	110	97,3	84,5	71,1	63,1	54,4	3,54	3,71	3,95	3,92	4,35	4,50	4,74
	30	115	108	95,9	83,8	71,0	62,0	53,9	3,12	3,27	3,48	3,70	3,91	3,99	4,08
	35	111	103	92,3	80,6	68,2	60,0	53,3	2,74	2,87	3,05	3,22	3,37	3,43	3,48
	40	106	99	88,6	77,4	65,3	59,1	52,8	2,42	2,52	2,67	2,80	2,90	2,92	2,99
10	44	89	85	75,3	64,4	54,7	-	-	2,3	2,44	2,52	2,55	2,60	-	-
	15	137	126	111	95,4	79,8	71,9	55,0	4,50	4,70	4,85	5,41	5,86	5,88	5,90
	20	132	122	107	92,2	77,0	69,2	54,5	3,94	4,01	4,09	4,39	4,67	4,93	5,20
	25	131	120	106	91,7	76,2	68,1	53,9	3,78	3,98	4,07	4,19	4,46	4,65	4,84
	30	126	117	105	91,2	75,0	67,0	53,4	3,34	3,50	3,75	3,99	4,25	4,36	4,47
	35	121	113	101	87,7	74,2	65,5	52,8	2,94	3,08	3,28	3,47	3,66	3,73	3,80
12	40	116	108	96,7	84,4	71,2	64,3	52,3	2,59	2,70	2,87	3,02	3,13	3,18	3,23
	44	92,2	88,5	78,2	66,1	55,7	-	-	2,4	2,63	2,72	2,76	2,80	-	-
	15	146	135	118	101	84,6	76,1	54,3	4,60	5,37	5,72	6,20	6,79	6,80	6,76
	20	141	130	114	98,0	81,7	73,4	53,8	4,34	4,58	4,82	5,03	5,41	5,70	6,04
	25	140	128	113	97,6	80,8	72,4	53,2	4,09	4,31	4,67	4,97	5,35	5,55	5,76
	30	134	125	112	97,2	80,0	71,5	52,7	3,60	3,79	4,06	4,35	4,64	4,81	4,91
15	35	129	121	107	93,5	79,1	70,0	52,2	3,17	3,33	3,56	3,78	3,99	4,08	4,16
	40	124	116	103	89,9	76,3	68,5	51,6	2,79	2,92	3,10	3,27	3,37	3,42	3,47
	44	94,8	91,1	80,4	67,4	-	-	-	2,6	2,89	2,97	3,01	-	-	-
	15	150	138	121	104	86,1	77,5	53,8	4,70	5,54	6,11	6,59	7,12	7,13	7,09
	20	145	134	117	100	83,2	74,7	53,3	4,44	4,72	5,15	5,35	5,67	5,98	6,34
	25	144	131	116	100	82,5	73,9	52,7	4,17	4,53	4,93	5,21	5,55	5,76	5,97
18	30	139	129	115	99,0	81,9	73,2	52,2	3,69	4,09	4,41	4,65	4,91	5,10	5,20
	35	133	124	111	96,3	81,3	71,3	51,7	3,23	3,56	3,80	3,98	4,14	4,24	4,32
	40	128	119	106	92,5	78,0	70,5	51,2	2,97	3,18	3,31	3,42	3,52	3,58	3,60
	44	98,9	94,9	83,9	68,3	-	-	-	2,9	2,98	3,04	3,08	-	-	-
	15	141	130	113	96,8	80,1	-	-	4,88	5,70	6,51	6,99	7,45	-	-
	20	136	125	110	93,6	77,4	-	-	4,62	4,86	5,49	5,67	5,93	-	-
20	25	136	124	109	91,5	76,9	-	-	4,35	4,75	5,19	5,45	5,75	-	-
	30	131	122	108	91,3	76,6	-	-	4,07	4,40	4,76	4,96	5,19	-	-
	35	126	117	104	89,1	76,3	-	-	3,56	3,79	4,05	4,18	4,30	-	-
	40	121	112	100	87,1	-	-	-	3,27	3,44	3,51	3,57	-	-	-
	44	92,3	88,5	78,2	-	-	-	-	3,02	3,08	3,12	-	-	-	-
	15	145	133	116	99,0	81,6	-	-	5,03	6,30	7,19	7,23	7,60	-	-
22	20	140	129	112	95,7	78,8	-	-	4,94	5,38	6,07	5,86	6,06	-	-
	25	140	127	112	93,9	78,6	-	-	4,85	5,33	5,41	5,70	5,85	-	-
	30	135	126	111	91,9	78,4	-	-	4,22	4,59	4,94	5,22	5,33	-	-
	35	130	121	107	90,8	76,8	-	-	3,67	3,95	4,10	4,37	4,43	-	-
	40	125	115	103	89,7	-	-	-	3,40	3,50	3,67	3,74	-	-	-
	44	93,7	89,8	79,4	-	-	-	-	3,08	3,15	3,22	-	-	-	-

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 45.2 - PRM - SC

To °C	Tae °C	Heating capacity							COP						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-15	62,6	54,9	48,5	42,1	35,9	31,0	23,3	2,34	2,42	2,46	2,51	2,55	3,00	3,27
	-10	72,8	64,3	57,3	50,2	43,2	36,8	28,4	2,66	2,77	2,85	2,92	3,02	3,46	3,81
	-7	79,4	70,4	63,0	55,4	47,3	40,4	31,3	2,86	3,00	3,11	3,20	3,27	3,75	4,16
	2	103	91,6	81,7	71,6	61,2	52,8	40,8	3,62	3,81	3,94	4,08	4,21	4,83	5,43
	7	119	105	93,5	81,9	69,9	59,9	46,3	3,83	4,01	4,18	4,34	4,50	5,24	6,06
	10	127	113	101	88,0	75,0	64,5	49,7	4,05	4,30	4,49	4,68	4,87	5,68	6,64
	18	133	118	106	92,4	78,8	67,7	52,2	4,26	4,53	4,72	4,93	5,12	5,97	7,05
40	-15	62,4	54,6	48,3	42,0	35,7	30,6	23,3	2,11	2,16	2,19	2,22	2,24	2,56	2,70
	-10	72,6	64,1	57,1	50,0	42,9	37,0	28,4	2,40	2,50	2,56	2,61	2,66	3,03	3,22
	-7	79,2	70,2	62,7	55,2	47,4	40,4	31,3	2,61	2,72	2,80	2,88	2,93	3,28	3,54
	2	103	91,4	81,4	71,2	60,8	52,3	40,8	3,30	3,46	3,57	3,67	3,76	4,24	4,69
	7	117	104	92,9	81,2	69,2	59,2	46,3	3,45	3,64	3,77	3,90	4,00	4,58	5,19
	10	126	112	99,8	87,2	74,3	63,7	49,7	3,67	3,89	4,04	4,19	4,32	4,95	5,66
	18	132	118	105	91,6	78,0	66,8	52,2	3,87	4,09	4,26	4,41	4,55	5,15	6,05
45	-15	61,9	54,2	48,0	41,7	35,6	30,5	23,3	1,88	1,92	1,95	1,96	1,96	2,19	2,24
	-10	72,2	63,9	56,9	49,8	42,7	37,4	28,4	2,17	2,24	2,29	2,32	2,34	2,66	2,71
	-7	78,9	70,0	62,5	54,8	47,1	40,7	31,3	2,35	2,44	2,50	2,55	2,58	2,89	3,01
	2	102	90,9	81,0	71,1	60,6	52,0	40,8	2,98	3,12	3,20	3,30	3,33	3,71	4,00
	7	117	104	92,5	80,8	68,8	58,8	46,3	3,24	3,28	3,38	3,48	3,54	3,99	4,41
	10	125	111	99,2	86,7	73,7	63,1	49,7	3,31	3,49	3,62	3,73	3,80	4,29	4,77
	18	131	117	104,2	91,0	77,4	66,3	52,2	3,49	3,68	3,81	3,92	4,00	4,47	5,11
50	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	78,6	69,7	62,2	54,6	47,0	41,2	31,3	2,13	2,19	2,24	2,26	2,28	2,55	2,54
	2	101	90,3	80,3	70,2	60,7	52,1	40,8	2,69	2,79	2,86	2,91	2,96	3,24	3,40
	7	116	104	92,3	80,6	68,6	58,6	46,3	2,82	2,95	3,04	3,10	3,13	3,46	3,72
	10	124	111	98,8	86,3	73,4	62,8	49,7	2,99	3,14	3,23	3,31	3,35	3,71	4,02
	18	113	101	89,0	77,1	65,0	55,3	52,2	2,87	2,97	3,03	3,12	3,16	3,59	4,80
55	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	65,6	61,0	52,3	40,8	-	-	-	2,64	2,63	2,85	2,89
	7	-	-	-	73,9	68,7	58,6	46,3	-	-	-	2,77	2,76	3,01	3,13
	10	-	-	-	78,9	73,3	62,7	49,7	-	-	-	2,95	2,95	3,21	3,37
	18	-	-	-	69,6	64,5	54,9	52,2	-	-	-	2,73	2,73	3,04	3,93

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 50.2 - PRM - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	140	127	118	103	89,0	74,7	56,1	4,23	4,32	4,54	4,68	4,82	5,02	5,42
	20	135	123	114	99,8	86,1	72,0	55,5	3,61	3,73	4,01	4,12	4,30	4,52	4,90
	25	131	120	111	98,4	85,4	71,5	54,9	3,40	3,62	3,80	3,84	4,04	4,45	4,68
	30	126	117	109	97,0	84,7	71,0	54,4	3,00	3,19	3,35	3,56	3,79	3,86	3,95
	35	121	112	105	93,3	81,5	68,9	53,8	2,64	2,82	2,94	3,12	3,30	3,36	3,41
	40	108	101	90,4	78,9	66,6	60,3	53,3	2,3	2,47	2,57	2,71	2,84	2,86	2,93
	44	89,6	86,7	76,0	65,0	55,6	-	-	2,2	2,39	2,43	2,47	2,55	-	-
10	15	152	139	128	112	96,4	80,7	55,6	4,44	4,61	4,77	4,98	5,07	5,55	5,62
	20	147	134	124	108	93,2	77,8	55,0	3,88	3,97	4,02	4,20	4,46	4,91	5,17
	25	143	131	121	107	91,8	77,0	54,4	3,63	3,87	3,80	4,02	4,28	4,63	4,82
	30	138	127	119	106	90,5	76,2	53,9	3,20	3,42	3,59	3,84	4,09	4,35	4,46
	35	132	122	114	102	88,7	75,0	53,4	2,83	3,01	3,15	3,36	3,56	3,73	3,79
	40	118	111	98,6	86,1	72,6	65,6	52,8	2,5	2,64	2,75	2,92	3,05	3,09	3,14
	44	92,8	89,8	78,7	67,0	57,1	-	-	2,3	2,57	2,61	2,67	2,73	-	-
12	15	161	146	135	118	101	84,6	54,8	4,49	4,78	4,86	5,07	5,08	5,82	6,28
	20	155	141	130	114	98,0	81,7	54,3	4,24	4,43	4,58	4,82	5,03	5,66	6,00
	25	151	138	128	113	97,0	81,0	53,8	3,82	4,09	4,31	4,67	4,97	5,35	5,55
	30	146	134	125	112	96,0	80,3	53,2	3,37	3,60	3,79	4,06	4,35	4,64	4,74
	35	140	129	121	107	93,5	79,1	52,7	2,98	3,17	3,33	3,56	3,78	3,99	4,06
	40	126	118	105	91,7	80,7	72,5	52,2	2,6	2,78	2,91	3,08	3,19	3,24	3,29
	44	96,7	93,6	82,0	68,3	-	-	-	2,4	2,75	2,78	2,84	-	-	-
15	15	166	150	138	121	104	86,1	54,3	4,58	4,79	5,03	5,19	5,29	6,05	6,54
	20	160	145	134	117	100	83,2	53,8	4,32	4,61	4,76	4,97	5,20	5,86	6,21
	25	156	142	132	116	99,9	82,6	53,3	3,88	4,39	4,59	4,81	5,11	5,50	5,71
	30	150	139	129	115	98,0	82,0	52,7	3,44	3,92	4,19	4,42	4,68	4,99	5,10
	35	144	133	124	111	96,3	81,3	52,2	3,03	3,43	3,65	3,82	3,99	4,21	4,30
	40	130	127	109	94,4	82,8	73,3	51,7	2,8	3,07	3,17	3,31	3,43	3,49	3,51
	44	101	98,6	85,6	69,3	-	-	-	2,8	2,88	2,91	2,97	-	-	-
18	15	152	138	127	111	95,0	-	-	4,71	4,81	5,20	5,30	5,50	-	-
	20	147	133	122	107	92,9	-	-	4,45	4,79	4,93	5,12	5,37	-	-
	25	144	131	121	107	91,9	-	-	4,20	4,70	4,88	4,95	5,25	-	-
	30	137	126	118	105	89,3	-	-	3,92	4,24	4,59	4,78	5,01	-	-
	35	132	121	114	101	87,7	-	-	3,47	3,70	3,96	4,09	4,21	-	-
	40	123	119	102	88,5	-	-	-	3,18	3,35	3,44	3,55	-	-	-
	44	93,9	91,7	79,6	-	-	-	-	2,94	3,00	3,05	-	-	-	-
20	15	153	139	128	112	97,1	-	-	4,81	5,25	5,38	5,89	6,07	-	-
	20	149	137	126	110	94,3	-	-	4,73	4,90	5,29	5,50	5,77	-	-
	25	145	132	122	108	92,8	-	-	4,54	4,77	5,15	5,32	5,46	-	-
	30	138	127	119	105	89,9	-	-	4,06	4,41	4,61	5,11	5,22	-	-
	35	132	124	115	101	88,3	-	-	3,60	3,87	4,02	4,29	4,34	-	-
	40	125	121	105	90,3	-	-	-	3,33	3,43	3,59	3,67	-	-	-
	44	95,0	92,8	81,0	-	-	-	-	3,02	3,09	3,16	-	-	-	-

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 50.2 - PRM - SC

To	Tae	Heating capacity							COP						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-15	68,5	62,6	54,0	45,7	38,5	31,0	23,3	2,31	2,34	2,42	2,48	2,53	3,00	3,27
	-10	78,9	72,8	63,3	54,2	46,4	36,8	28,4	2,61	2,66	2,78	2,88	3,00	3,46	3,81
	-7	86,0	79,4	69,3	60,0	50,8	40,4	31,3	2,80	2,86	3,01	3,16	3,24	3,75	4,16
	2	111	103	90,2	77,4	65,7	52,8	40,8	3,52	3,62	3,83	4,00	4,15	4,83	5,43
	7	131	118	103	88,6	75,1	59,9	46,3	3,76	3,79	4,04	4,25	4,43	5,24	6,06
	10	137	127	111	95,3	80,7	64,5	49,7	3,91	4,05	4,33	4,57	4,79	5,68	6,64
	18	144	133	117	100	84,7	67,7	52,2	4,04	4,21	4,52	4,84	5,16	6,36	7,05
	-15	68,2	62,4	53,7	45,6	38,4	30,6	23,3	2,09	2,11	2,17	2,21	2,23	2,56	2,70
40	-10	78,7	72,6	63,2	54,1	46,0	37,0	28,4	2,36	2,40	2,51	2,58	2,65	3,03	3,22
	-7	85,8	79,2	69,2	59,4	50,5	40,4	31,3	2,55	2,61	2,73	2,83	2,89	3,28	3,54
	2	111	103	90,0	77,1	65,3	52,3	40,8	3,21	3,30	3,48	3,62	3,72	4,24	4,69
	7	130	117	103	87,9	74,4	59,2	46,3	3,43	3,45	3,66	3,83	3,96	4,58	5,19
	10	136	126	110	94,5	79,9	63,7	49,7	3,56	3,67	3,91	4,11	4,27	4,95	5,66
	18	143	132	116	99,2	83,9	66,8	52,2	3,80	3,93	4,18	4,39	4,57	5,29	6,05
	-15	67,6	61,9	53,3	45,3	38,2	30,5	23,3	1,86	1,88	1,93	1,95	1,96	2,19	2,24
	-10	78,3	72,2	62,9	53,9	45,8	37,4	28,4	2,13	2,17	2,24	2,31	2,33	2,66	2,71
45	-7	85,5	78,9	68,9	59,2	50,4	40,7	31,3	2,31	2,35	2,45	2,53	2,57	2,89	3,01
	2	111	102	89,5	76,6	64,8	52,0	40,8	2,91	2,98	3,13	3,24	3,30	3,71	4,00
	7	129	117	102	87,5	74,0	58,8	46,3	3,22	3,12	3,29	3,43	3,52	3,99	4,41
	10	135	125	110	93,9	79,3	63,1	49,7	3,21	3,31	3,51	3,67	3,77	4,29	4,77
	18	142	131	115	98,6	83,3	66,3	52,2	3,44	3,55	3,76	3,92	4,04	4,60	5,11
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	85,1	78,6	68,6	59,0	50,3	41,2	31,3	2,08	2,13	2,19	2,26	2,28	2,55	2,54
50	2	110	102	89,3	76,4	64,6	52,1	40,8	2,64	2,70	2,82	2,90	2,93	3,24	3,40
	7	126	116	102	87,3	73,8	58,6	46,3	2,75	2,82	2,97	3,07	3,12	3,46	3,72
	10	135	124	109	93,5	79,0	62,8	49,7	2,92	2,99	3,15	3,27	3,34	3,71	4,02
	18	123	113	99,1	84,0	70,2	55,3	52,2	2,82	2,87	2,98	3,07	3,15	3,59	4,80
	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	67,6	53,9	40,8	-	-	-	-	2,59	2,79	2,75
55	7	-	-	-	-	76,1	60,4	46,3	-	-	-	-	2,72	2,95	2,98
	10	-	-	-	-	80,4	63,9	49,7	-	-	-	-	2,92	3,18	3,27
	18	-	-	-	-	71,0	56,0	52,2	-	-	-	-	2,70	3,01	3,81

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Performance

Cooling - Size 55.2 - PRM - SC

To	Tae	Cooling capacity							EER						
		Compressor power percentage							Compressor power percentage						
		100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
°C	°C														
7	15	151	140	127	118	103,4	89,0	56,6	4,15	4,30	4,52	4,61	4,76	4,90	5,32
	20	145	135	123	113	99,8	86,1	56,0	3,54	3,71	3,98	4,06	4,24	4,41	4,81
	25	140	131	120	111	98,4	85,4	55,5	3,27	3,46	3,68	3,73	3,93	4,37	4,60
	30	134	126	117	109	97,0	84,7	54,9	2,89	3,05	3,25	3,40	3,62	3,85	3,93
	35	129	121	112	105	93,3	81,5	54,4	2,55	2,69	2,86	2,99	3,17	3,35	3,40
	40	111	103	92,2	80,5	68,0	61,5	53,8	2,25	2,36	2,50	2,60	2,73	2,75	2,81
	44	90,9	88,0	77,2	67,3	56,9	-	-	2,09	2,29	2,36	2,36	2,45	-	-
10	15	165	152	139	128	112	96,4	56,1	4,24	4,51	4,69	4,85	5,06	5,21	5,55
	20	159	147	134	124	108	93,2	55,5	3,86	3,88	3,99	4,09	4,46	4,66	4,91
	25	153	143	131	121	107	92,7	55,0	3,47	3,69	3,71	3,87	4,18	4,41	4,66
	30	147	138	127	119	106	92,2	54,4	3,07	3,26	3,47	3,65	3,90	4,16	4,27
	35	141	132	122	114	102	88,7	53,9	2,71	2,87	3,06	3,21	3,41	3,61	3,68
	40	121	113	101	87,8	74,0	66,9	53,4	2,39	2,52	2,67	2,78	2,93	2,97	3,02
	44	93,4	90,4	79,3	69,1	58,4	-	-	2,22	2,45	2,53	2,55	2,62	-	-
12	15	174	161	146	135	118	102	55,4	4,33	4,60	4,79	4,95	5,02	5,32	5,87
	20	168	156	142	130	114	98,2	54,8	4,09	4,25	4,44	4,59	4,83	5,04	5,34
	25	162	152	138	128	113	97,8	54,3	3,60	3,83	4,10	4,31	4,68	4,98	5,17
	30	155	146	135	126	112	97,4	53,7	3,18	3,38	3,61	3,80	4,07	4,35	4,45
	35	149	140	129	121	108	93,7	53,2	2,81	2,98	3,18	3,34	3,56	3,78	3,86
	40	129	120	107	93,5	82,3	73,9	52,7	2,47	2,62	2,78	2,89	3,01	3,06	3,10
	44	98,7	95,5	83,7	72,9	-	-	-	2,30	2,59	2,65	2,66	-	-	-
15	15	180	166	151	139	121	104	54,9	4,41	4,69	4,87	5,04	5,26	5,45	6,20
	20	173	160	146	134	117	100	54,3	4,16	4,32	4,52	4,67	4,91	5,12	5,43
	25	167	157	142	132	116	100	53,8	3,65	3,88	4,16	4,38	4,75	5,06	5,25
	30	160	151	139	129	115	100	53,3	3,24	3,44	3,68	3,87	4,15	4,44	4,53
	35	154	145	134	125	111	96,5	52,7	2,87	3,04	3,25	3,41	3,64	3,86	3,94
	40	133	129	111	96,3	84,7	76,1	52,2	2,63	2,78	2,96	3,08	3,20	3,26	3,28
	44	103	101	87,3	76,1	-	-	-	2,45	2,75	2,82	2,84	-	-	-
18	15	161	148	134	123	108	-	-	4,63	4,73	5,11	5,21	5,41	-	-
	20	155	143	130	119	104	-	-	4,38	4,71	4,85	5,03	5,25	-	-
	25	149	140	127	118	104	-	-	4,13	4,62	4,80	4,85	5,09	-	-
	30	144	135	124	116	103	-	-	3,86	4,17	4,51	4,70	4,92	-	-
	35	138	129	120	111	99,2	-	-	3,41	3,63	3,90	4,02	4,14	-	-
	40	125	126	104	90,0	-	-	-	3,13	3,30	3,38	3,49	-	-	-
	44	95,4	95,0	80,9	-	-	-	-	2,83	2,95	3,00	-	-	-	-
20	15	166	153	138	127	110	-	-	4,71	5,16	5,27	5,77	5,89	-	-
	20	160	148	134	123	107	-	-	4,63	4,80	5,18	5,43	5,58	-	-
	25	154	145	131	121	106	-	-	4,45	4,67	5,05	5,22	5,35	-	-
	30	148	139	128	119	106	-	-	3,99	4,34	4,51	5,01	5,12	-	-
	35	142	134	123	115	102	-	-	3,53	3,79	3,94	4,20	4,25	-	-
	40	126	127	106	90,9	-	-	-	3,26	3,36	3,52	3,59	-	-	-
	44	96,3	96,0	82,6	-	-	-	-	2,94	3,02	3,09	-	-	-	-

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Heating - Size 55.2 - PRM - SC

		Heating capacity							COP						
To	Tae	Compressor power percentage							Compressor power percentage						
°C	°C	100	90	80	70	60	50	Minimum	100	90	80	70	60	50	Minimum
35	-15	71,5	68,5	62,6	51,5	44,2	33,7	23,3	2,28	2,31	2,34	2,46	2,51	2,95	3,27
	-10	82,4	78,9	72,8	60,1	52,2	39,9	28,4	2,55	2,61	2,66	2,80	2,90	3,39	3,81
	-7	90,1	86,0	79,4	66,4	57,6	43,8	31,3	2,75	2,80	2,86	3,07	3,17	3,67	4,16
	2	116	111	103	85,9	74,5	57,2	40,8	3,45	3,52	3,62	3,88	4,03	4,79	5,43
	7	139	128	118	98,3	85,2	64,9	46,3	3,69	3,68	3,81	4,10	4,29	5,13	6,06
	10	143	137	127	106	91,7	69,5	49,7	3,87	3,91	4,05	4,41	4,62	5,50	6,64
	18	150	144	133	111	96,2	73,0	52,2	4,01	4,04	4,21	4,59	4,89	6,12	7,05
40	-15	71,2	68,2	62,4	51,4	44,1	33,4	23,3	2,07	2,09	2,11	2,20	2,23	2,54	2,70
	-10	82,1	78,7	72,6	59,6	51,7	39,7	28,4	2,32	2,36	2,40	2,51	2,58	2,97	3,22
	-7	89,8	85,8	79,2	66,4	57,8	43,6	31,3	2,51	2,55	2,61	2,78	2,86	3,24	3,54
	2	116	111	103	85,7	74,1	56,7	40,8	3,16	3,21	3,30	3,52	3,64	4,17	4,69
	7	138	127	117	97,7	84,5	64,2	46,3	3,45	3,35	3,45	3,71	3,86	4,48	5,19
	10	142	136	126	105	90,9	68,9	49,7	3,53	3,56	3,67	3,98	4,15	4,91	5,66
	18	149	143	132	110	95,4	72,3	52,2	3,73	3,80	3,93	4,26	4,43	5,23	6,05
45	-15	70,5	67,6	61,9	51,1	43,9	33,2	23,3	1,85	1,86	1,88	1,96	1,97	2,19	2,24
	-10	81,6	78,3	72,2	59,1	50,8	39,4	28,4	2,09	2,13	2,17	2,24	2,27	2,57	2,71
	-7	89,4	85,5	78,9	66,2	57,5	43,3	31,3	2,27	2,31	2,35	2,50	2,56	2,82	3,01
	2	116	111	102	85,2	73,6	56,2	40,8	2,87	2,91	2,98	3,16	3,26	3,66	4,00
	7	138	127	117	97,3	84,1	63,8	46,3	3,20	3,04	3,13	3,34	3,45	3,94	4,41
	10	141	135	125	104	90,3	68,4	49,7	3,18	3,21	3,31	3,57	3,70	4,25	4,77
	18	148	142	131	110	94,8	71,8	52,2	3,37	3,44	3,55	3,83	3,96	4,54	5,11
50	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	88,2	85,1	78,6	65,4	56,8	42,9	31,3	2,01	2,08	2,13	2,22	2,26	2,44	2,54
	2	116	110	101	84,6	73,1	55,7	40,8	2,59	2,64	2,69	2,84	2,90	3,20	3,40
	7	131	126	116	97,1	84,0	63,6	46,3	2,69	2,75	2,82	3,00	3,08	3,44	3,72
	10	141	135	124	104,06	89,9	68,2	49,7	2,86	2,92	2,99	3,19	3,29	3,67	4,02
	18	130	123	113	93,1	78,9	57,2	52,2	2,77	2,82	2,87	2,89	3,09	3,38	4,80
55	-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	69,5	60,3	40,8	-	-	-	-	2,62	2,83	2,70
	7	-	-	-	-	78,3	67,5	46,3	-	-	-	-	2,74	2,98	2,92
	10	-	-	-	-	81,2	70,3	49,7	-	-	-	-	2,92	2,99	3,24
	18	-	-	-	-	71,7	58,9	52,2	-	-	-	-	2,70	2,68	3,78

To = Internal exchanger outlet water temperature (°C)

Tae [°C] = External exchanger inlet air temperature

Performances calculated with inlet/outlet water temperature differential = 5°C*

*Always check the actual temperature differential in the configurator as this is related to the minimum or maximum flow rate limits of the exchanger

Integrated heating capacities

External exchanger inlet air temperature °C (D.B. / W.B.)	-7 / -8	-5 / -6	0 / -1	2 / 1	Other
Heating capacity multiplication coefficient	0,93	0,93	0,93	0,93	0,93

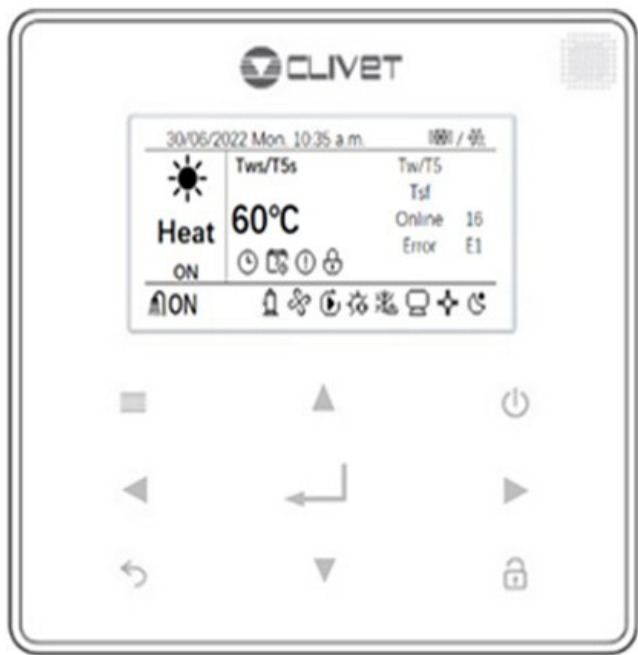
The integrated heating capacity is the actual heating capacity, including the impact of any defrosting cycles.

To obtain the integrated heating capacity multiply the heating performance value in kWt (shown in the heating performance tables) by the coefficients indicated in the table.

In case of below zero outdoor air temperature with a long period of heat pump operating mode it is necessary to help the evacuation of the water produced during the defrost cycle this to avoid the formation of ice in the unit basement. Pay attention that the evacuation will not create inconveniences to things or persons.

Features and options

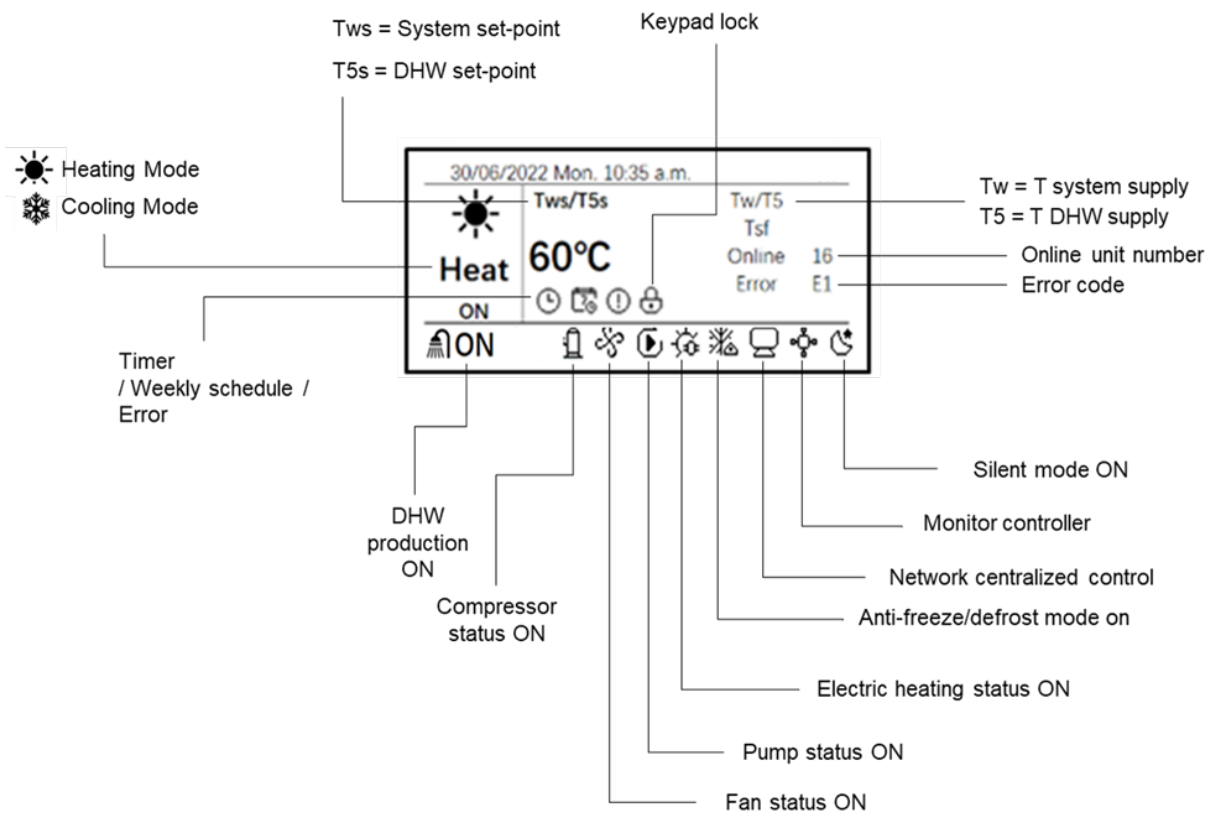
User interface (HMI)



Resolution	1°C	
Temperature sensor	NTC 5k 1%	
Power input	< 1 W	
Storage temperature	-20÷50°C	
Communication	RS485	
Wiring	Type	Shielded cable
	MAX Length	40 m

The unit is equipped with a user interface (HMI) installed on board, to be used for managing the functions and equipped with an integrated temperature probe.

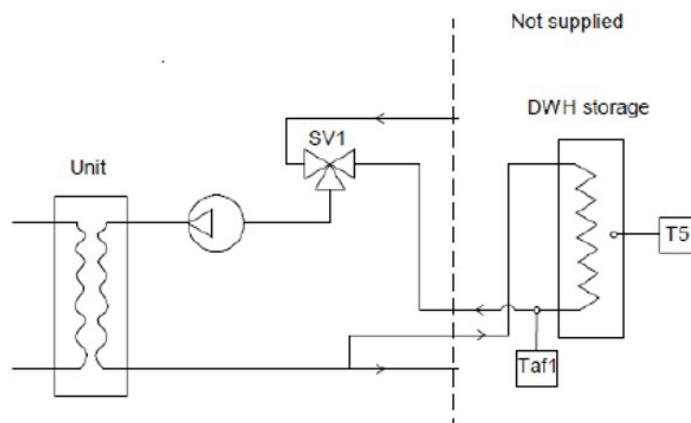
The user interface comes standard with 22 selectable languages: Italian / English / French / Spanish / Polish / Portuguese / German / Dutch / Romanian / Russian / Turkish / Greek / Swedish / Slovenian / Czech / Slovakian / Bulgarian / Serbian / Danish / Ukrainian / Hungarian / Croatian



DHW management

The following components are required for DHW management:

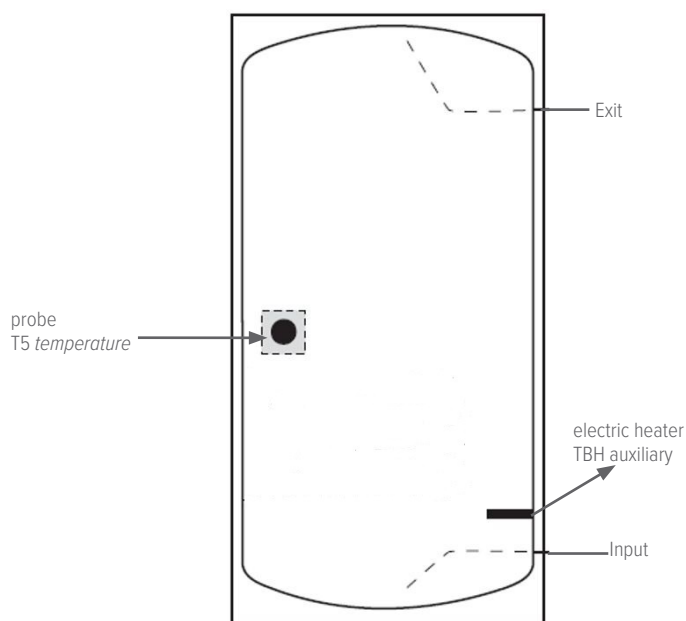
- SV1: 3-way valve
- Taf1: temperature probe, for DHW antifreeze protection
- T5: Temperature probe, for temperature control and switch between system and DHW



DHW tank connection

As an option, the unit can be connected to a DHW storage tank of suitable volume, by fitting the system with a 3-way diverter valve controlled by the unit. It is advisable to connect the DHW tank at a distance of no more than 10 m from the unit, and preferably as close as possible to the unit. The sizing of the connecting pipes and their thermal insulation must always be considered with care, especially in the case of long distances between the unit and the storage tank.

The standard boiler must have these characteristics:



It is recommended to select one with sacrificial anode and integrated auxiliary electric heater, which will be managed by the unit. Make sure that the coil or the intermediate exchanger are suitably sized to ensure correct heat exchange.

Double Set-Point function

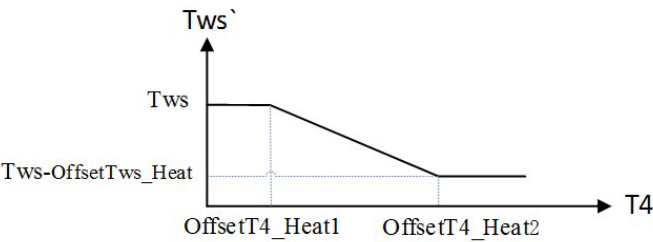
It allows to enable the Double setpoint function with HMI. Once enabled, you need to configure the first target water temperature (SetPoint1) and second target water temperature (SetPoint2). At this point the unit detects the closed status of the Double_SP door (normally open). If the contact is open, the unit will operate at the first target water temperature; otherwise, it will operate at the second target temperature.

Set-Point compensation function based on the outside air temperature

Allows to enable the temperature compensation function via HMI. Once the function has been enabled, it is necessary to set:

- The two offset points for the external air temperature (OffsetT4_1 ; OffsetT4_2), which will define the external air temperature field on which the set-point variation will take place;
- The offset point for the water production temperature (OffsetTws) which represents the maximum variation of the set-point allowed.

Example of temperature compensation in heating



- When the external air temperature (T_4) is lower than the offset one ($T_4 < \text{OffsetT4_Heat1}$) the set-point remains unchanged
- When the external air temperature (T_4) is between the two offset temperatures ($\text{OffsetT4_Heat1} \leq T_4 < \text{OffsetT4_Heat2}$), the set-point is reduced in direct proportion to the increase in external air temperature.
- When the outside air temperature (T_4) is higher than the highest offset temperature ($T_4 \geq \text{OffsetT4_Heat2}$) there will be the maximum reduction in the set-point temperature.

ENEMON function

Through the HMI it is possible to access the display of the main energy parameters of the unit and in detail

Power Output = instantaneous power produced in kW
Power Input = instantaneous power absorbed in kW
Current efficiency = instantaneous efficiency represents the EER or the COP
Current efficiency = instantaneous efficiency represents the EER or the COP
Total energy production is the cumulative energy produced in MWh

STATE QUERY	
POWER OUTPUT	100 KW
POWER INPUT	50 KW
CURRENT EFFICIENCY	2
TOTAL ENERGY OUTPUT	10 MWh
TOTAL ENERGY INPUT	3 MWh
BACK	2/2 ▲▼▶◀

All energy meter display items are available via Modbus, on addresses from 232+(Circuit adress)*100 a 236+(Circuit adress)*100.

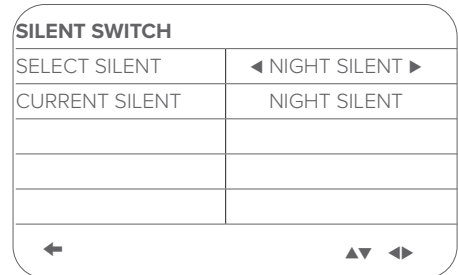
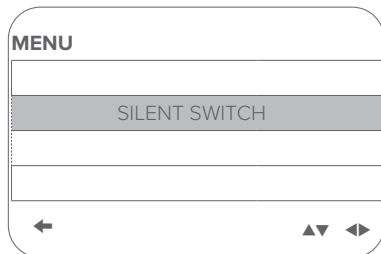
SILENCED function

The function allows to select up to four acoustic modes, for maximum sound configurability of the units.

For two of these modes, Standard, Silent and Supersilent, the heating/cooling capacity, efficiencies and sound levels of all sizes are shown in the general technical data section of the bulletin, as well as on the navigator.

The Night Mode configuration, on the other hand, allows for a further reduction in the sound level of up to 3 dB(A) compared to the supersilent mode, for an even lower acoustic impact of the unit.

To select the mode of interest, simply set it from the HMI through the User menu as shown in the following screen.



Smart Grid & EVU functions (REMAU option required)

The unit is certified Smart Grid Ready and is equipped with logic for connection to devices that balance the loads connected to the electric grid and optimize general electricity consumption. The connection is optional, the function can be enabled from the REMAU and is linked to the ON/OFF SG input, which receives a status signal from the electrical network.

The unit is also set up to store free thermal energy in the DHW tank. The function is activated by the REMAU enabling the Smart Grid function and is linked to the ON/OFF EVU input, which receives a signal from the energy meter which indicates to the unit when free energy overproduction is available.

The regulation logic of the two contacts is:

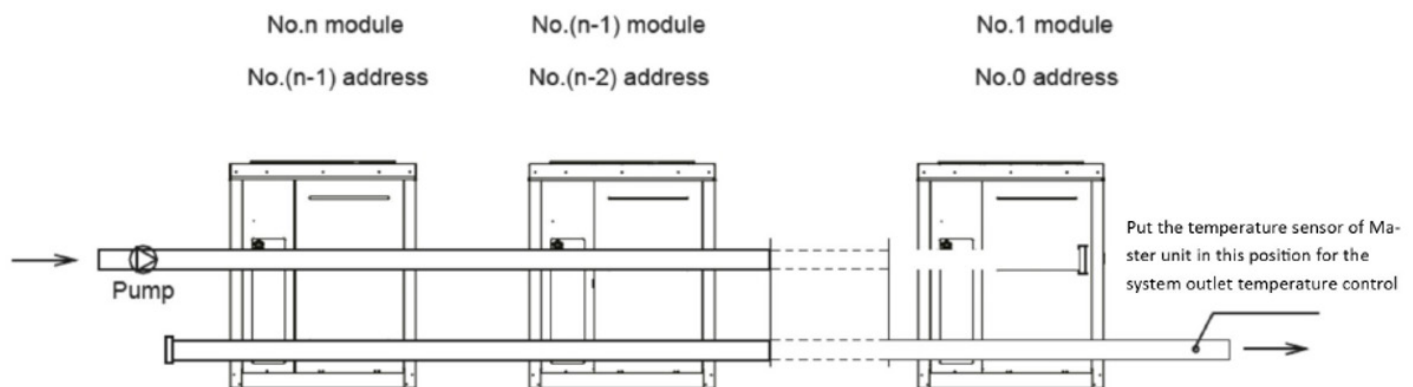
CONTACT		OPERATION	
SG	EVU	SYSTEM	DHW
ON	ON	DHW forced	Forced DHW operation with set point T5S = 60°C Once the DHW set-point is reached, the Heat Pump returns to work on the system
OFF	ON	OFF forced	OFF forced
OFF	OFF	Standard	Standard
ON	OFF	Standard	Standard

Modularity and management of cascade units

Modularity

Many applications require drives to be installed as back-up to the main system or have loads that can change significantly during annual operation.

Through this function, without the aid of further accessories, it is possible to operate with up to 16 units hydraulically connected in parallel. From the user interface of the unit defined as Master, the other units are electrically connected in series through the dedicated terminals P, Q and E. Each connected module is identified by an address, from 0 to 15: the Master unit is identified as 0. Complete control of the system (including ancillary elements such as external pumping system and auxiliary heater) is handled by the Master unit.

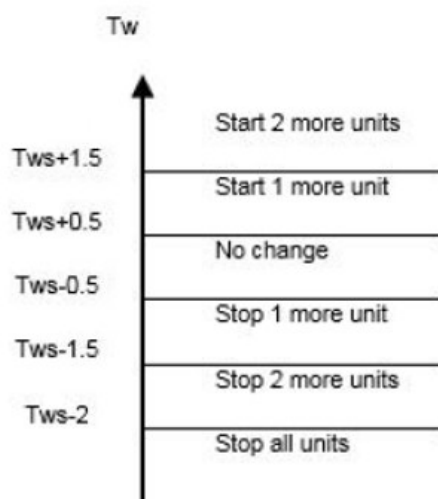


Operation

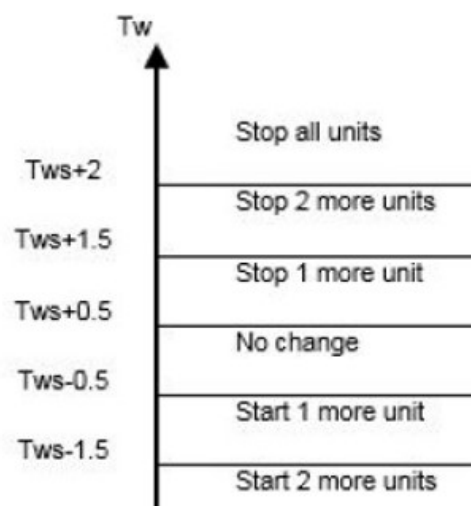
The Master unit calculates the required heating/cooling capacity of the system based on the water delivery temperature and the temperature set-point. Instead, each individual unit calculates its required heating/cooling capacity based on the delivery and return temperatures. The activation of the units takes place according to the last in first out logic (the last unit to be activated will also be the first to be deactivated) and is indicated in the following two figures.

- T_w = Water supply temperature
- T_{ws} = Water supply temperature set-point

Cooling mode



Heating mode



In cooling mode, if $T_w \geq T_{ws} - 10^\circ\text{C}$ 50% of the units in the system are activated.

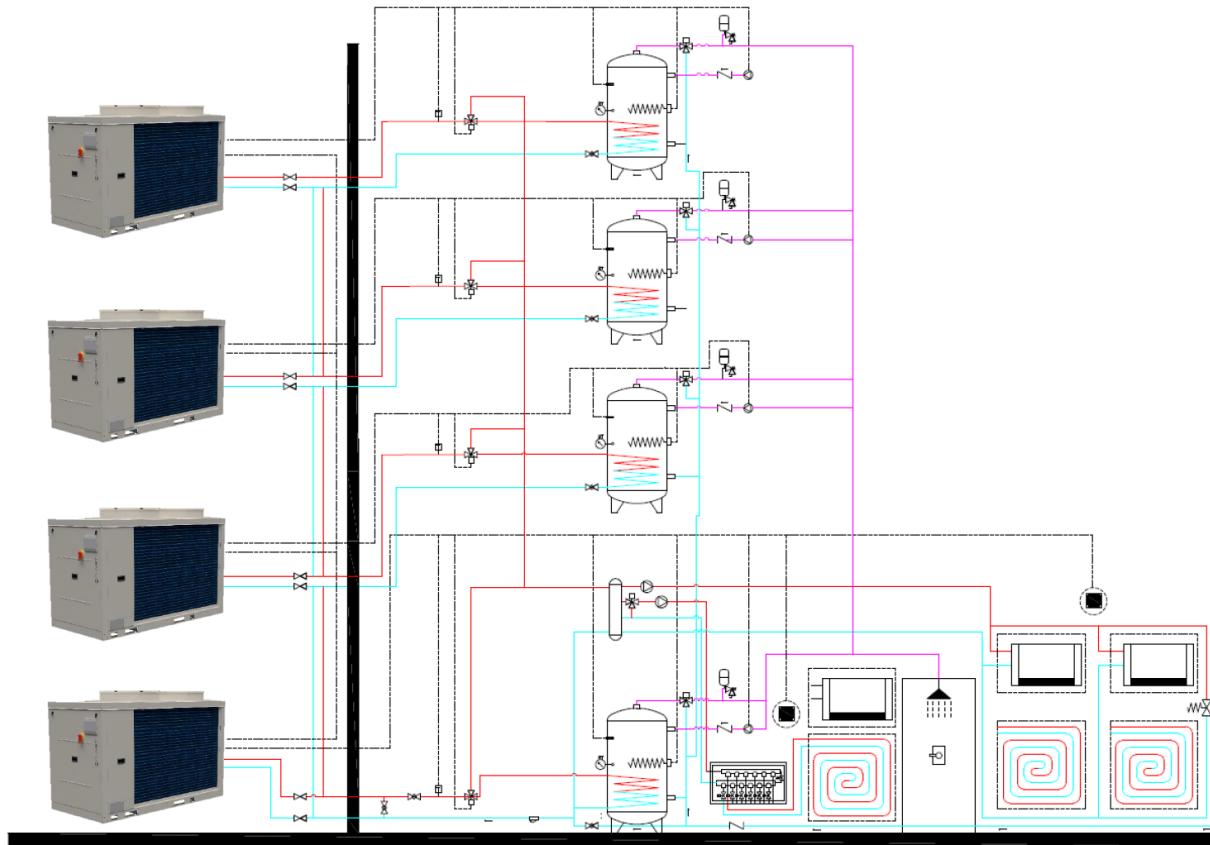
In heating mode, if $T_w \leq T_{ws} - 10^\circ\text{C}$ 50% of the system units are activated.

After having satisfied the system load and having deactivated the units, at the next start-up the first unit to have been deactivated will be the first to be started, in order to guarantee the correct balancing of the operating hours.

Modularity and management of cascade units

Applications may require different management mode. Through the modular system it is possible to configure the system in different modes, here below one example:

- A. Configuration with independent operation: in this configuration it is necessary to have a DHW tank for each unit and a DHW three-way valve for each unit. The operation of each unit is independent from the others, each unit manages its own DHW production request.

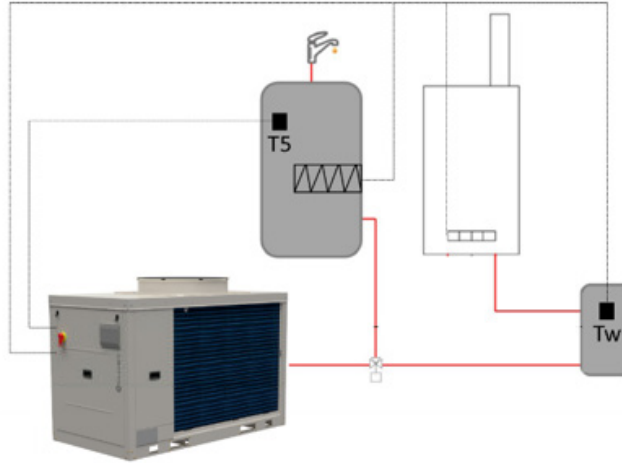


Management of auxiliary heat sources

The optimal configuration solution of the auxiliary heat source involves the positioning of the electric heater in derivation on a DHW tank and the positioning of the boiler on the system.

The electric heater must be positioned into the DHW tank and its operation is linked to a dedicated T5 able to detect the DHW tank temperature

The boiler must be installed in parallel with the heat pump and acts on the system: it is installed on a hydraulic separator, where the TW probe must also be positioned



The setting must be completed during installation, by selecting the boiler operating mode using the unit keyboard.

The auxiliary heater source can perform the function of integration to the heat pump. To activate the functions of the heat pump integration heater, make sure that Dip-Switch S6-1 is in the ON position (upwards) and you must have activated Heat1 from the HMI; as regards the other parameters, they must be configured according to your needs once you understand their function which is described below.

Within 2 minutes of switching on the pump, the auxiliary heater control is kept OFF and the following cases may arise:

- A. Operation of the auxiliary heater in place of the heat pump: When the heat pump cannot operate due to a fault or is in protection mode (compressors not limited): in this case the auxiliary heater intervenes in place of the heat pump when the water temperature is less than 3K compared to the set point and switches off once the water temperature has exceeded the set point by 2K (adjustable value from the HMI).
- B. Heat 1 activation forcing: In this mode, manual operation of the auxiliary heater will be started. Once the set point is reached the auxiliary heater will switch off. The manual command is valid only once therefore even if the water temperature drops below the setpoint it will not start automatically and will need a new manual command to start.
- C. Operation of the auxiliary heater at low air temperature: In case the unit is operating in heat pump mode with an air temperature lower than 5°C (Value adjustable from the HMI) but does not reach the set point within 90 min (value adjustable from the HMI), then the auxiliary heater integrates with the heat pump.
- D. Activation of the auxiliary heater in integration with the heat pump: If the set point is higher than the maximum set point of the unit envelope, then the auxiliary heater is activated in integration with the heat pump.

Title	Effect	Predetermined Area	Default
Heat1 Enable	System auxiliary heater	No/Yes	No
T_Heat1_Delay	Activation time	60.....240 min	90 min
DT_Heat1_OFF	ΔT off as compared to set point	2.....10°C	5°C
T4_Heat1_ON	Air temperature below which Heat1 intervenes	-5..... 13°C	5°C

Management of auxiliary heat sources

A further HEAT2 function is also available, useful for controlling the auxiliary heater for DHW storage.

This function must also be enabled from the HMI and requires the installation of a T5 probe which makes possible the DHW auxiliary heater management very similar to the ones already explained previously. Only one differs substantially and is the intervention of the auxiliary generator during the disinfection process of the domestic hot water storage, which takes place as described below:

Intervention of the auxiliary heater in the DHW storage disinfection process. Once the function has been enabled from the HMI, this sends the disinfection cycle request:

If the unit is in stand-by/cooling or heating mode, it enters DHW mode and starts the disinfection cycle;

If the unit is performing a defrost cycle, the cycle is completed first and then the disinfection function is activated.

In this process, the permanence of the DHW storage tank temperature T5 above 69°C is evaluated. whenever the temperature drops below 69°C.

At the beginning of the disinfection cycle, on the other hand, a second Timer2 time count starts.

Based on the two time parameters above, the disinfection cycle ends if the domestic hot water storage tank has maintained a temperature equal to or higher than 69°C for at least twenty minutes, or if the disinfection cycle has lasted at least 60 minutes

The unit therefore allows the hybrid version solution in combination with an external boiler supplied by Clivet "Factory made" or a third-party generator, thanks to the control of the auxiliary generator via the HEAT1/HEAT2 contact as previously reported.

The "Factory made" hybrid heat pumps are equipped with a matching boiler which is selected in order to optimize system operation.

The boilers available are for Heating only and are set up for operation with Natural Gas (G20-G25) or LPG (G30-G31) fuel by regulating or applying a reducer to the nozzle on site. There are three "Factory made" boilers available: Gas Boiler 70.2, Gas Boiler 115.2, Gas Boiler 200F.2.

Some simplified functional diagrams are shown below with different combinations of unit and boiler: these diagrams are proposed by way of example.

Boilers for centralized systems

MODEL				UC 70.2	UC 115.2	UC 200F.2	
Performance in heating							
Modulation ratio	-	-	-	1 : 7	1 : 5,8	1 : 10	
Nominal heat capacity (Qn)	-	Maximum	[kW]	67,5	115,0	199,0	
		Minimum	[kW]	9,6	20,0	20,0	
Heating capacity (Pn)	60/80°C	Maximum	[kW]	65,7	111,9	195,0	
		Minimum	[kW]	9,1	19,2	19,1	
	30/50°C	Maximum	[kW]	68,7	120,3	206,0	
		Minimum	[kW]	10,3	21,4	21,2	
Efficiency	60/80°C	Maximum	%	97,3	97,3	97,9	
		Minimum	%	94,9	95,9	95,6	
	30/50°C	Maximum	%	101,7	104,3	104,0	
		Minimum	%	107,6	107,1	106,0	
	30% di Pn		-	%	107,3	107,2	108,9
	Reduced load		%	98,3	98,3	98,2	
Combustion efficiency	Nominal load		%	97,4	97,7	98,0	
Water content	-	-	[l]	3,9	9,0	22,0	
Operating pressure	PMS	Maximum	[bar]	6	6	6	
	-	Minimum	[bar]	0,5	0,5	0,5	
Expansion tank	Volume	-	[l]				
	Precharge	-	[bar]				
ErP Data							
"Seasonal eff.	heating	ηs	%	93	92	93	
Average climate"		Energy class	-	A	A	A	
Sound power level		Lwa	[dB(A)]	63	-	-	
Thermal losses and discharge of flue gas							
Casing losses	burner ON	Qn	%	0,09	0,41	0,14	
		Qmin	%	3,44	2,36	2,60	
Flue loss	burner ON	Pmax	%	2,62	2,27	2,00	
		Pmin	%	1,66	1,74	1,80	
"Flue gas temperature (TF-TA)"	-	Pmax	[°C]	51,3	46,1	40	
		Pmin	[°C]	34	33,4	34	
Flue gas flow rate	-	Pmax	[g/s]	111,4	184,7	319,57	
	-	Pmin	[g/s]	15,9	34,3	34,3	
Nitrogen oxide (NOX) emissions		Class	-	6	5	6	
		-	[mg/kWh]	59	47	68	

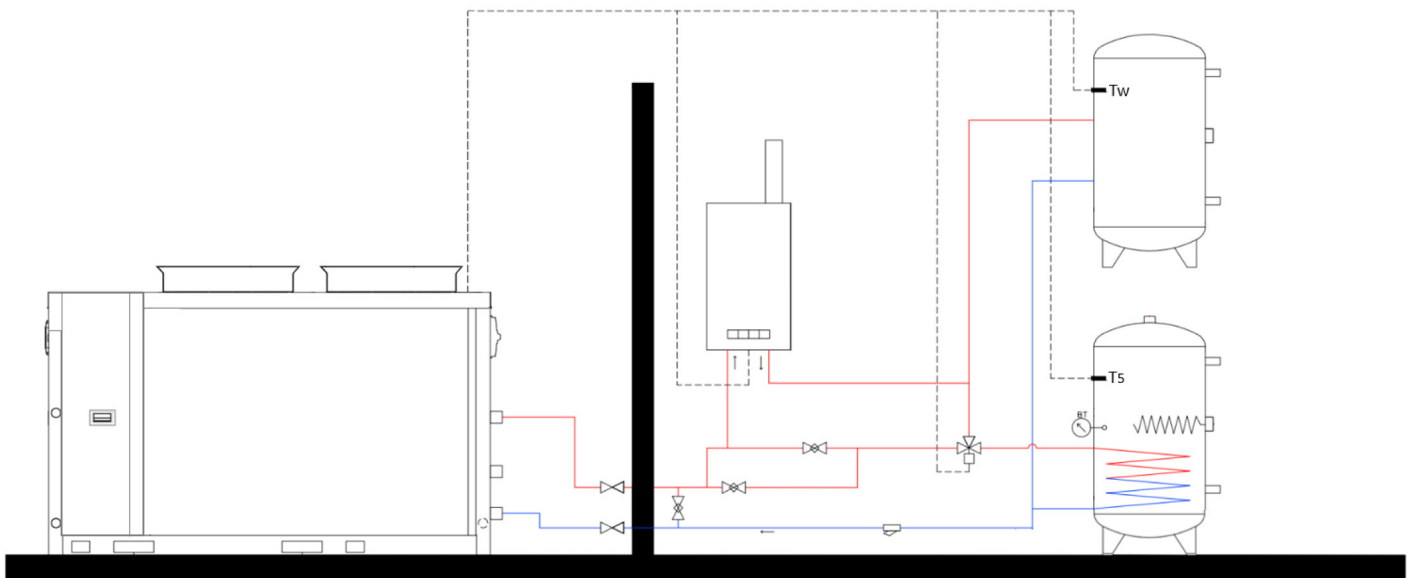
Hybrid combinations

Combination	Heat pumps				Compatible boiler		
	Size	Energy Version	Acoustic Version	Capacity	70.2	115.2	200F.2
1 unit	10.1	PRM	SC	kW 27,9	x	x	x
	12.1	PRM	SC	kW 32,3	x	x	x
	14.1	PRM	SC	kW 38,0	-	x	x
	16.2	PRM	SC	kW 54,4	-	x	x
	18.2	PRM	SC	kW 58,7	-	-	x
	22.2	PRM	SC	kW 67,1	-	-	x
	30.2	PRM	SC	kW 84,8	-	-	x
	35.2	PRM	SC	kW 94,2	-	-	x
	40.2	PRM	SC	kW 101	-	-	-
	10.1	PRM	EN	kW 21,1	x	x	x
	12.1	PRM	EN	kW 24,6	x	x	x
	14.1	PRM	EN	kW 27,5	x	x	x
	16.2	PRM	EN	kW 46,3	-	x	x
	18.2	PRM	EN	kW 51,2	-	x	x
	22.2	PRM	EN	kW 55,3	-	x	x
	30.2	PRM	EN	kW 68,6	-	-	x
	35.2	PRM	EN	kW 76,1	-	-	x
	40.2	PRM	EN	kW 81,9	-	-	x
	10.1	EXC	SC	kW 26,1	x	x	x
	12.1	EXC	SC	kW 30,5	x	x	x
	14.1	EXC	SC	kW 37,0	-	x	x
	16.2	EXC	SC	kW 51,5	-	x	x
	18.2	EXC	SC	kW 55,5	-	x	x
	22.2	EXC	SC	kW 64,1	-	-	x
	30.2	EXC	SC	kW 78,6	-	-	x
	35.2	EXC	SC	kW 87,5	-	-	x
	10.1	EXC	EN	kW 21,5	x	x	x
	12.1	EXC	EN	kW 24,3	x	x	x
	14.1	EXC	EN	kW 26,9	x	x	x
	16.2	EXC	EN	kW 44,8	-	x	x
	18.2	EXC	EN	kW 48,7	-	x	x
	22.2	EXC	EN	kW 53,4	-	x	x
	30.2	EXC	EN	kW 65,4	-	-	x
	35.2	EXC	EN	kW 72,7	-	-	x
2 units (cascade)	10.1 + 10.1	PRM	SC	kW 55,8	-	-	x
	12.1 + 12.1	PRM	SC	kW 64,6	-	-	x
	14.1 + 14.1	PRM	SC	kW 76,0	-	-	x
	10.1 + 10.1	PRM	EN	kW 42,2	-	x	x
	12.1 + 12.1	PRM	EN	kW 49,2	-	x	x
	14.1 + 14.1	PRM	EN	kW 55,0	-	x	x
	16.2 + 16.2	PRM	EN	kW 92,6	-	-	x
	10.1 + 10.1	EXC	SC	kW 52,2	-	x	x
	12.1 + 12.1	EXC	SC	kW 61,0	-	-	x
	14.1 + 14.1	EXC	SC	kW 74,0	-	-	x
	10.1 + 10.1	EXC	EN	kW 43,0	-	x	x
	12.1 + 12.1	EXC	EN	kW 48,6	-	x	x
	14.1 + 14.1	EXC	EN	kW 53,8	-	x	x
	16.2 + 16.2	EXC	EN	kW 89,6	-	-	x
	18.2 + 18.2	EXC	EN	kW 97,4	-	-	x
3 units (cascade)	10.1 + 10.1 + 10.1	PRM	SC	kW 83,7	-	-	x
	12.1 + 12.1 + 12.1	PRM	SC	kW 96,9	-	-	x
	10.1 + 10.1 + 10.1	PRM	EN	kW 63,3	-	-	x
	12.1 + 12.1 + 12.1	PRM	EN	kW 73,8	-	-	x
	14.1 + 14.1 + 14.1	PRM	EN	kW 82,5	-	-	x
	10.1 + 10.1 + 10.1	EXC	SC	kW 78,3	-	-	x
	12.1 + 12.1 + 12.1	EXC	SC	kW 91,5	-	-	x
	10.1 + 10.1 + 10.1	EXC	EN	kW 64,5	-	-	x
	12.1 + 12.1 + 12.1	EXC	EN	kW 72,9	-	-	x
4 units (cascade)	14.1 + 14.1 + 14.1	EXC	EN	kW 80,7	-	-	x
	10.1 + 10.1 + 10.1 + 10.1	PRM	EN	kW 84,4	-	-	x
	10.1 + 10.1 + 10.1 + 10.1	EXC	EN	kW 86,0	-	-	x
4 units (cascade)	12.1 + 12.1 + 12.1 + 12.1	EXC	EN	kW 97,2	-	-	x

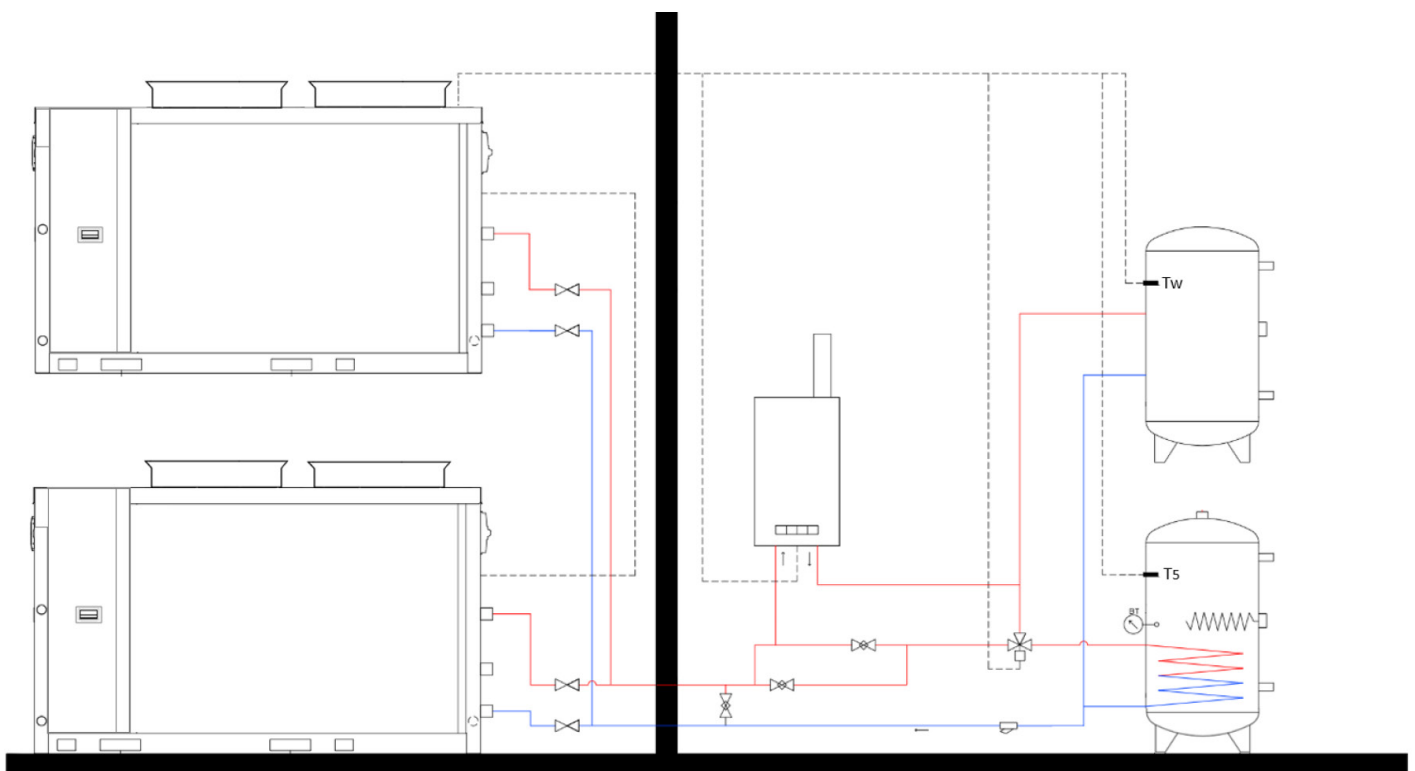
Management of auxiliary heat sources

In a multi-zone configuration with one or more heat pump units in cascade, and a single gas boiler, the auxiliary heat generator will be activated when the heat pump or the heat pump cascade system is not sufficient to satisfy the demand of the system.

Single heat pump and single gas boiler



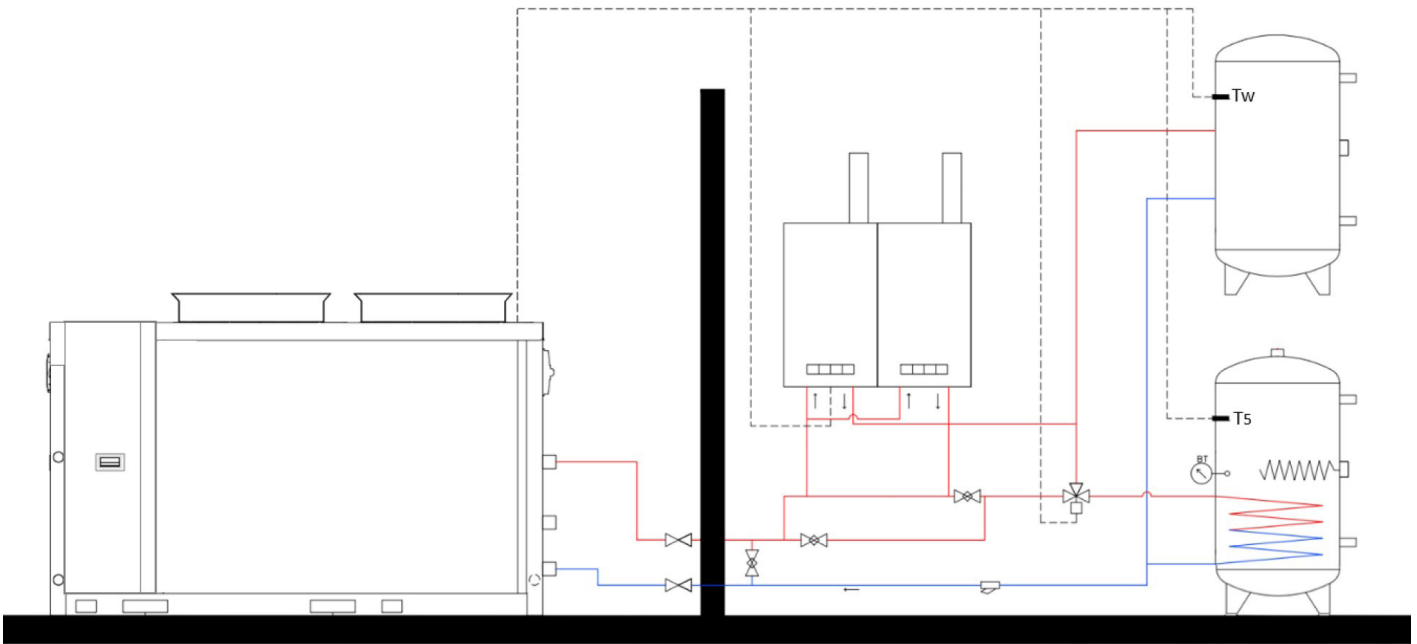
Single heat pump and cascade gas boiler



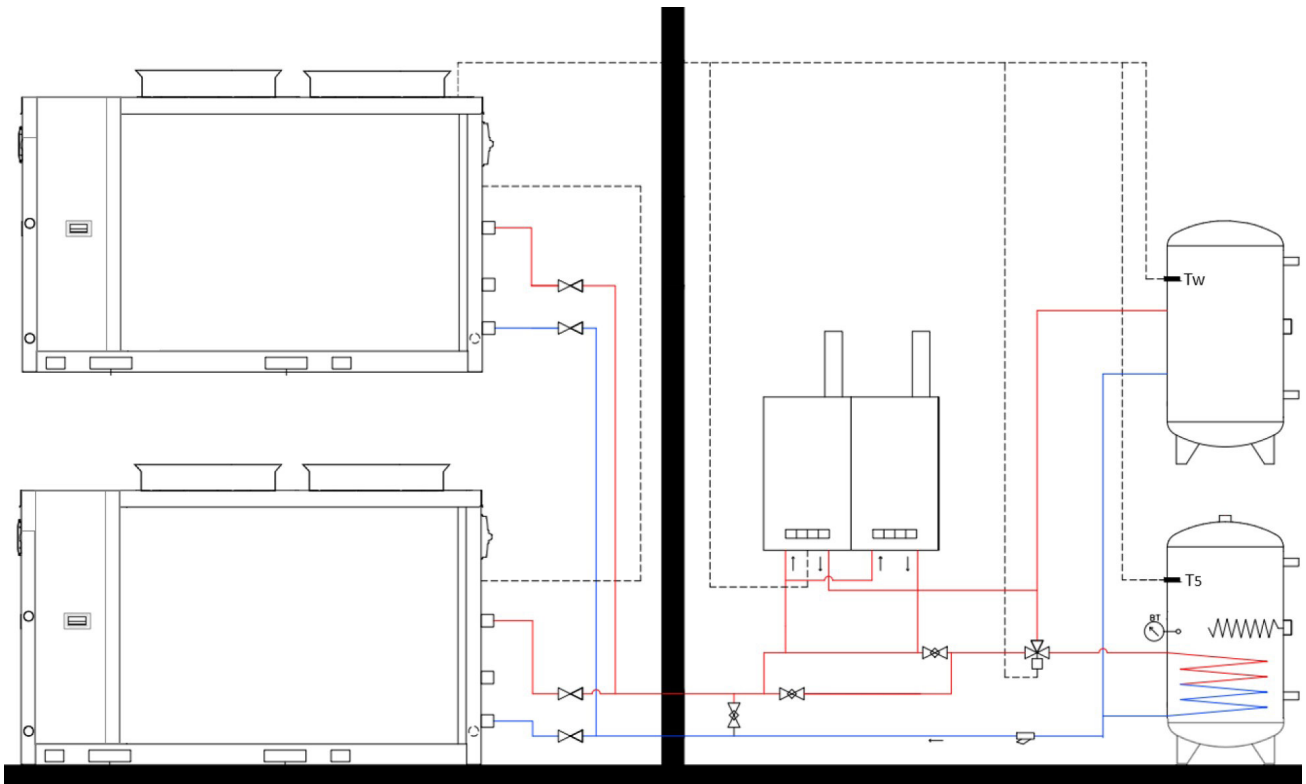
Management of auxiliary heat sources

In a multi-zone configuration with one or more heat pump units in cascade, and Gas Boiler system in cascade, the auxiliary heat generator is activated when the heat pump or the heat pump cascade system in cascade is not sufficient to satisfy the system request. When even the first auxiliary heat generator is not sufficient to satisfy the request, the second generator will also be activated for integration.

Single heat pump and cascade gas boiler



System with cascade heat pumps and cascade gas boiler

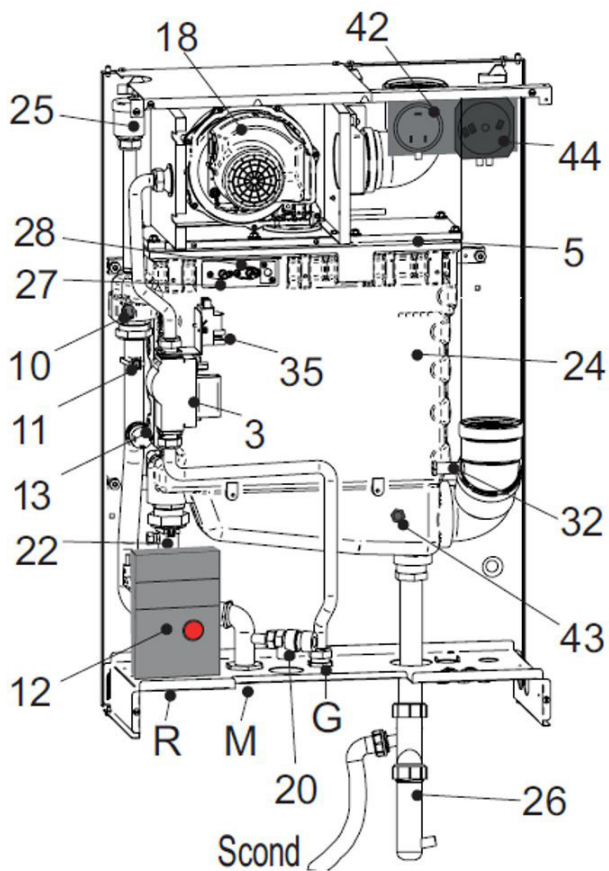


Management of auxiliary heat sources

Centralized systems

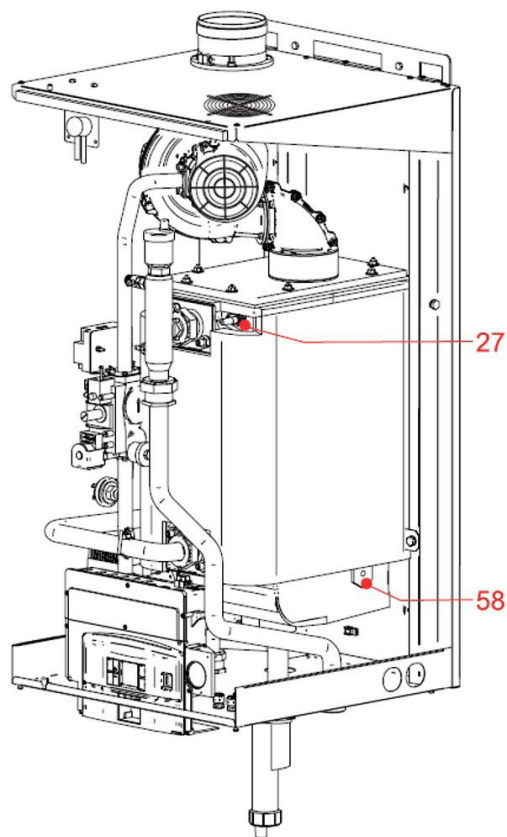
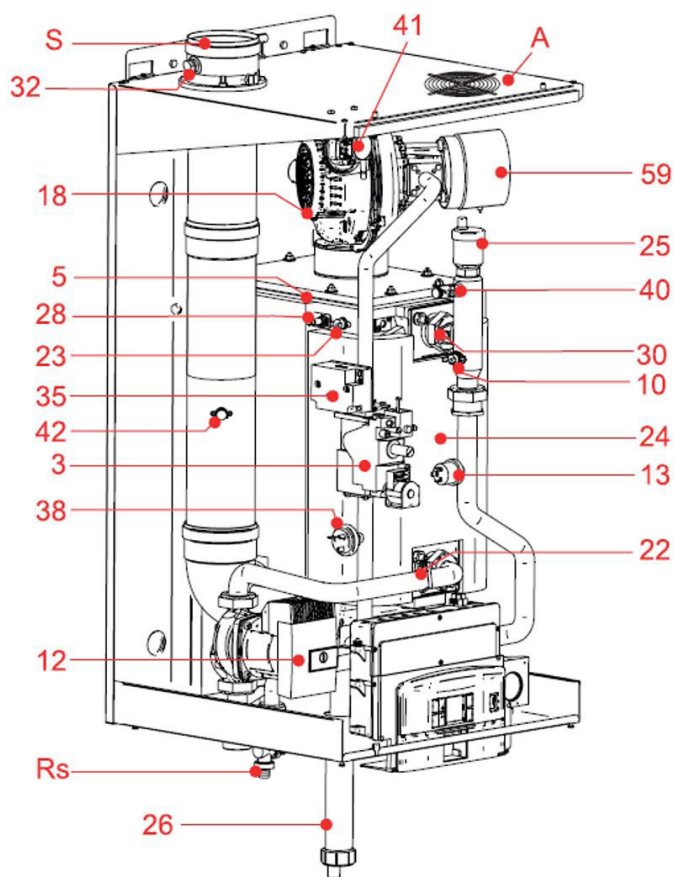
The boilers available are for heating only and can be made to operate with Natural Gas (G20-G25) or LPG (G30-G31) by adjusting or applying a reducer to the nozzle on site.

- Gas Boiler UC 70.2



	DESCRIPTION
3	Gas valve
5	Burner
10	Safety thermostat
11	Water temperature sensor - supply
12	Modulating circulator
13	Low water pressure switch
18	Modulating fan
20	Safety valve
22	Water temperature sensor - return
24	Aluminium exchanger / condenser
25	Vent valve
26	Condensate drain trap
27	Detection electrode
28	Ignition electrode
32	Flue gas inspection point
35	Ignition transformer
42	Flue gas maximum pressure switch
43	Condensate level sensor
44	Flue gas minimum pressure switch

• Gas Boiler UC 115.2

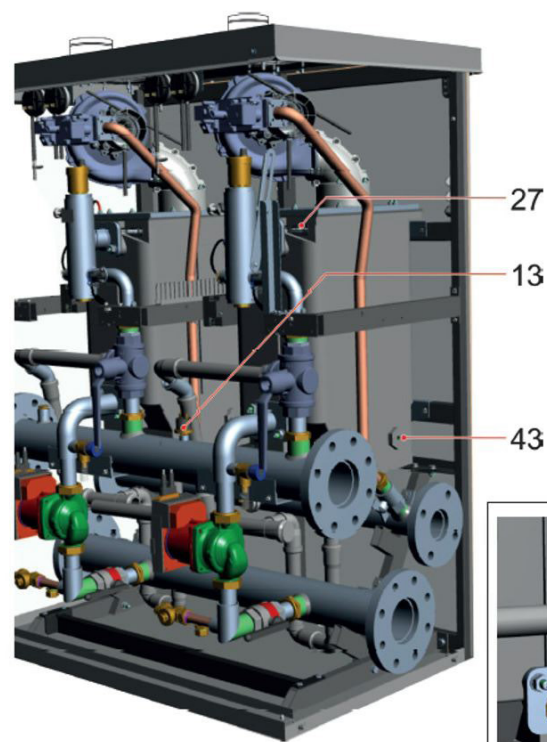
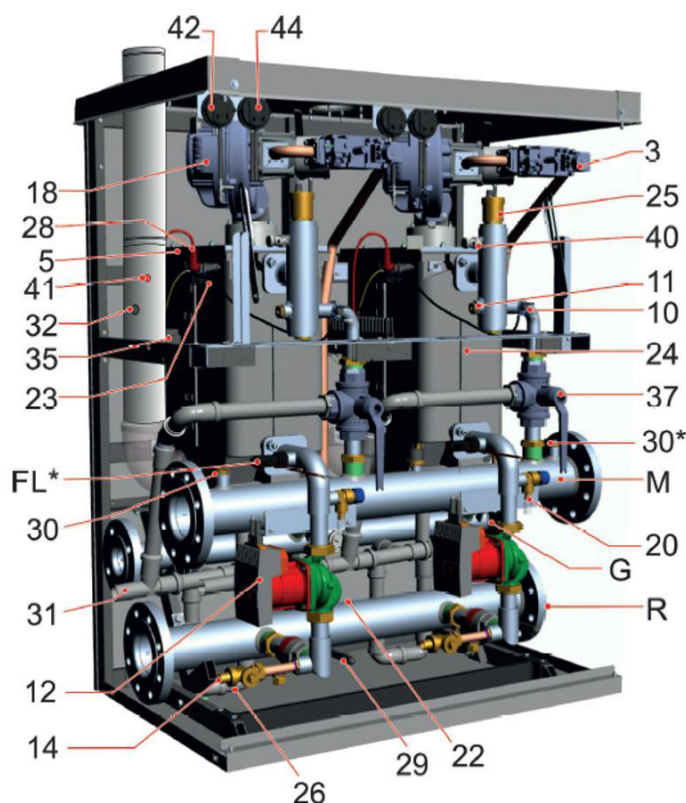


DESCRIPTION

3	Gas valve
5	Burner
10	Safety thermostat
12	Modulating circulator
13	Low water pressure switch
18	Modulating fan
22	Water temperature sensor - return
23	Unit body safety thermostat
24	Aluminium exchanger / condenser
25	Vent valve
26	Condensate drain trap
27	Detection electrode
28	Ignition electrode
30	Water temperature sensor - supply
32	Flue gas inspection point
35	Ignition transformer
38	Flue gas minimum pressure switch
40	Manual vent valve
41	Fan pressure switch
42	Flue thermostat
58	Level sensor
59	Pipe with intake grille

Management of auxiliary heat sources

• Gas Boiler UC 200F.2



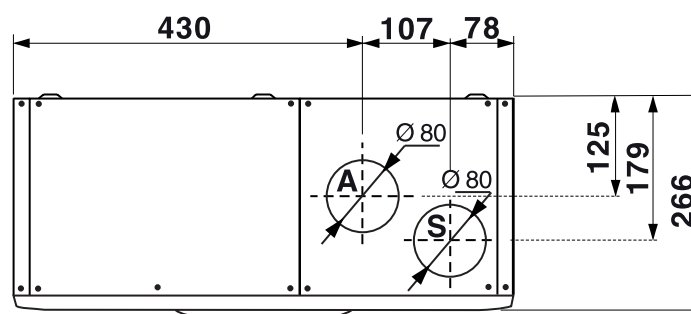
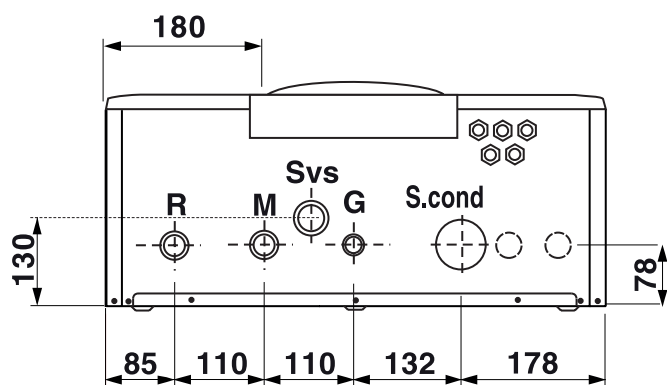
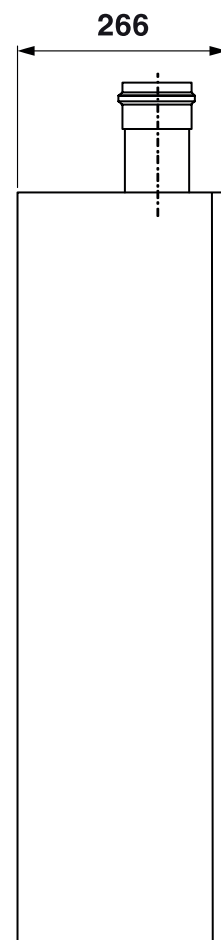
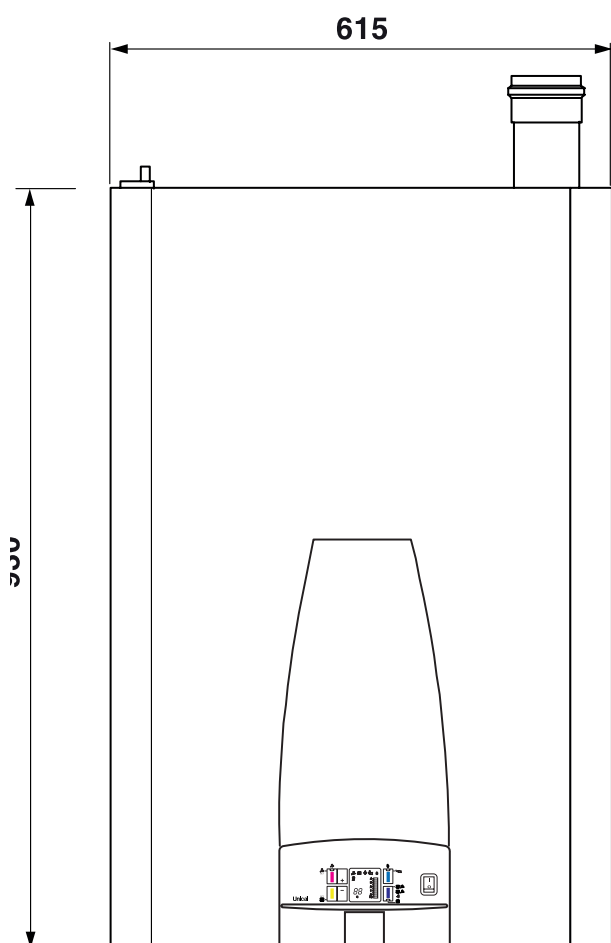
DESCRIPTION

3	Gas valve
5	Burner
10	Safety thermostat
11	Heating temperature sensor
12	Modulating circulator
13	Low water pressure switch
14	Drain valve
18	Modulating fan
20	Safety valve
22	Water temperature sensor - return
23	Unit body safety thermostat
24	Aluminium exchanger / condenser
25	Vent valve
26	Condensate drain trap
27	Detection electrode

DESCRIPTION

28	Ignition electrode
29	3-way shut-off valve - return
30/30*	Water temperature sensor - supply <i>Probe can be positioned in 30*</i>
31	Condensate drain
32	Flue gas inspection point
35	Ignition transformer
37	3-way shut-off valve - supply
38	Gas minimum pressure switch
40	Manual vent valve
41	Flue thermostat
42	Flue gas maximum pressure switch
43	Condensate level sensor
44	Flue gas minimum pressure switch
FL*	Vane flow switch

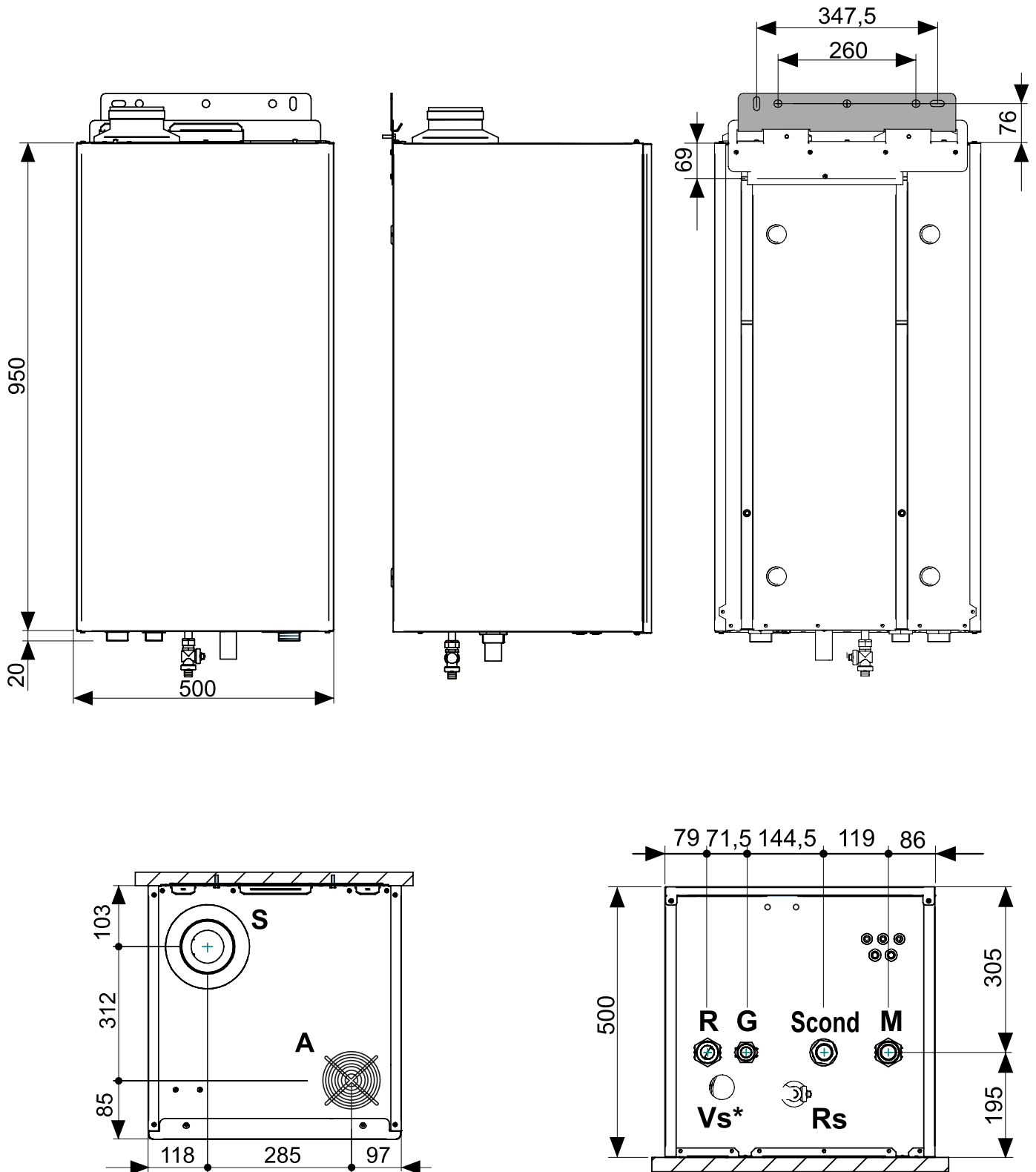
Gas Boiler UC 70.2



R = Ø 1/4" heating system return
M = Ø 1/4" heating system supply
G = Ø 3/4" gas inlet
Scond = Ø 18.1 mm condensate drain
A = Ø 80 mm air intake
S = Ø 80 mm flue gas drain
Svs = pressure relief valve

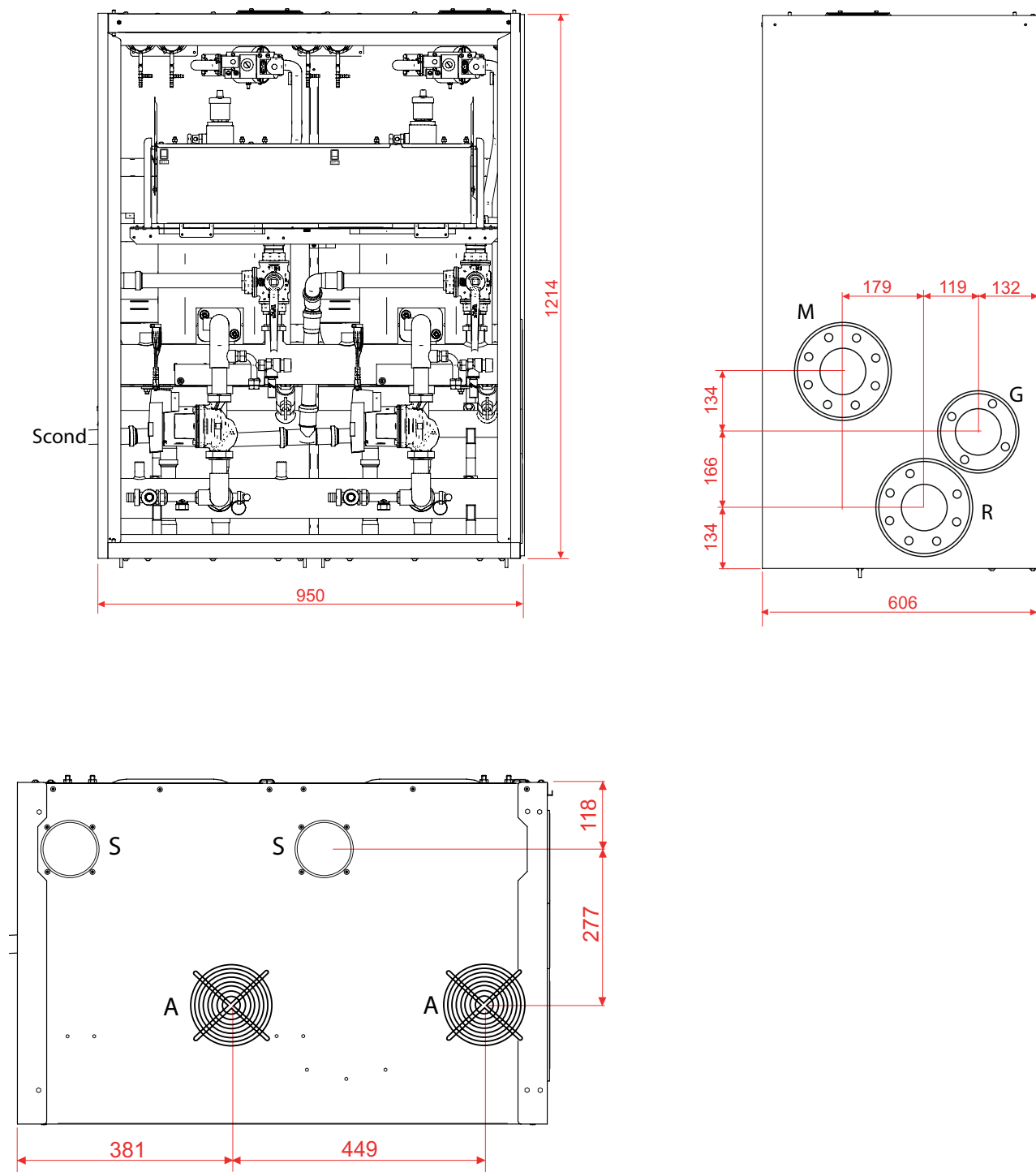
Gas boiler: technical details

Gas Boiler UC 115.2



R = Ø 1" 1/4 heating system return
 M = Ø 1" 1/4 heating system supply
 G = Ø 1" gas inlet
 Scond = Ø 32 mm condensate drain
 A = Ø 80 mm air intake (Ø 100 mm grille)
 S = Ø 100 mm flue gas drain
 Vs = pressure relief valve
 Rs = drain valve

Gas Boiler UC 200F.2

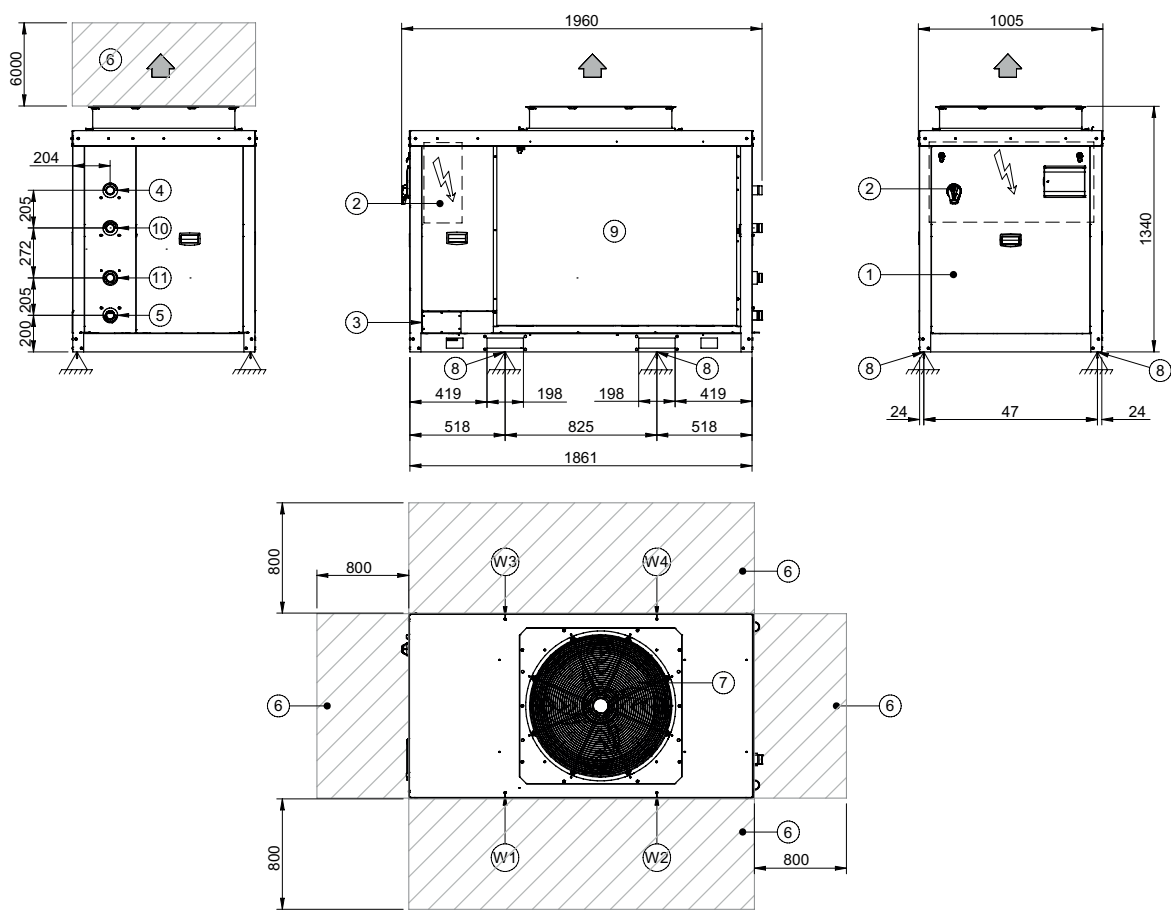


R = Ø 88.9 mm heating system return manifold
M = Ø 88.9 mm heating system supply manifold
G = Ø 60.3 mm gas inlet manifold
Scond = Ø 32 mm condensate drain
A = Ø 80 mm air intake (Ø 100 mm grille)
S = Ø 100 mm flue gas drain

Dimensional drawings

SIZE 10.1 ÷ 14.1

DAABU0002_10.1-14.1
DATA/DATE 06/03/2023



1. Compressor compartment

2. Electrical panel

3. Power input

4. Inlet water connection Victaulic 1" 1/2

5. Outlet water connection Victaulic 1" 1/2

6. Functional clearances

7. Fan
8. Unit fixing holes

9. External exchanger

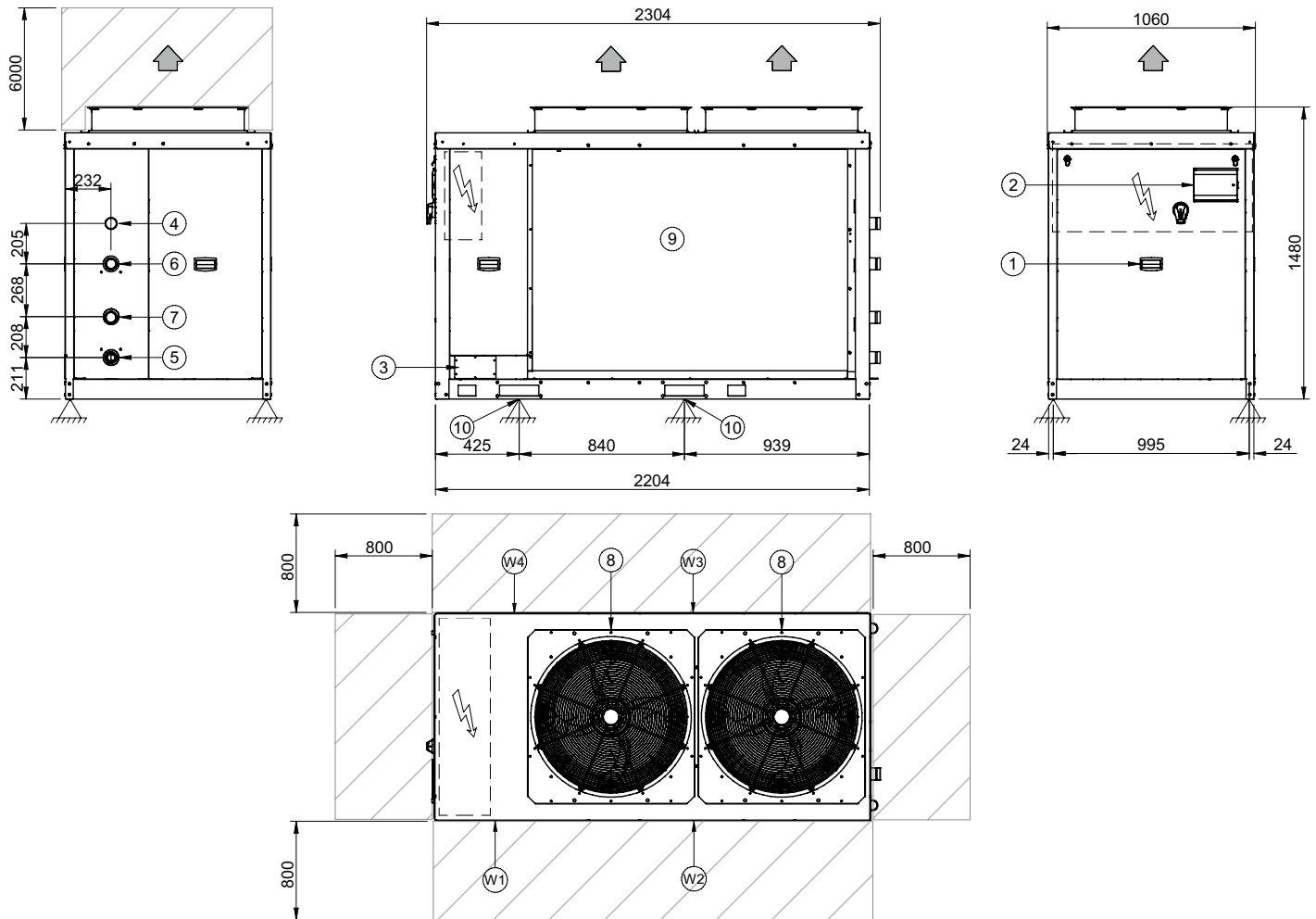
10. DHW inlet (optional) Victaulic 1 1/2"

11. DHW outlet (optional) Victaulic 1 1/2"

SIZE		10.1	12.1	14.1
Length	mm	1960	1960	1960
Depth	mm	1005	1005	1005
Height	mm	1340	1340	1340
W1 Support point	kg	90	90	90
W2 Support point	kg	71	71	71
W3 Support point	kg	91	91	91
W4 Support point	kg	71	71	71
Operation weight	kg	323	323	323
Operating weight	kg	333	333	333

SIZE 16.2 ÷ 22.2

DAABU0003_6.2-22.2
DATA/DATE 06/03/2023



1. Compressor compartment
2. Electrical panel
3. Power input
4. Inlet water connection Victaulic 2"
5. Outlet water connection Victaulic 2"
6. Inlet DHW connection Victaulic 2"
7. Outlet DHW connection Victaulic 2"

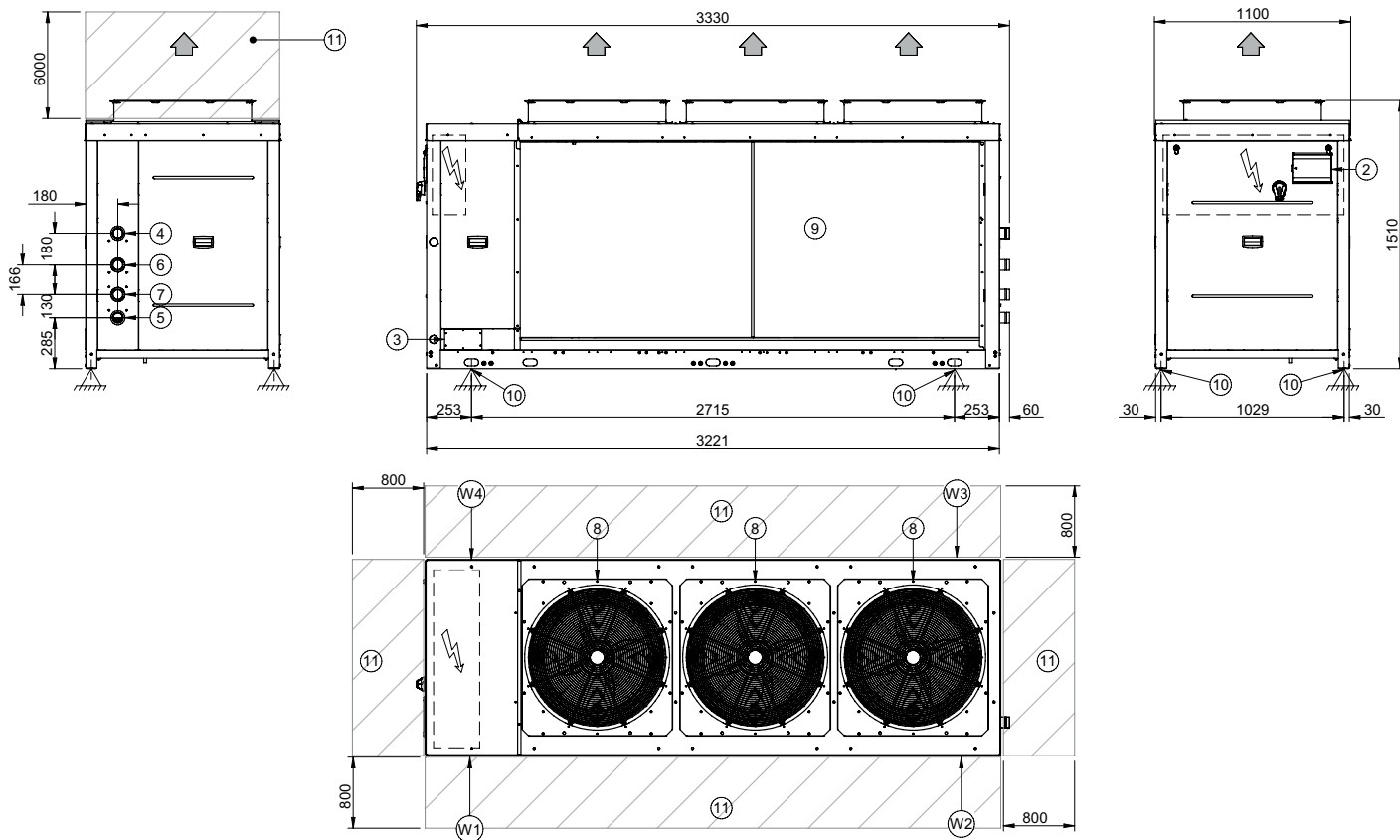
8. Fan
9. External exchanger
10. Unit fixing holes
11. Functional clearances

SIZE		16.2	18.2	22.2
Length	mm	2304	2304	2304
Depth	mm	1060	1060	1060
Height	mm	1480	1480	1480
W1 Support point	kg	170	170	170
W2 Support point	kg	87	87	87
W3 Support point	kg	163	163	163
W4 Support point	kg	80	80	80
Operation weight	kg	500	500	500
Operating weight	kg	513	513	513

Dimensional drawings

SIZE 30.2 ÷ 40.2

DAABU0001_30.2-35.2
DATA/DATE 26/07/2022



1. Compressor compartment
2. Electrical panel
3. Power input
4. Inlet water connection Victaulic 2"
5. Outlet water connection Victaulic 2"
6. Inlet DHW connection Victaulic 2"
7. Outlet DHW connection Victaulic 2"

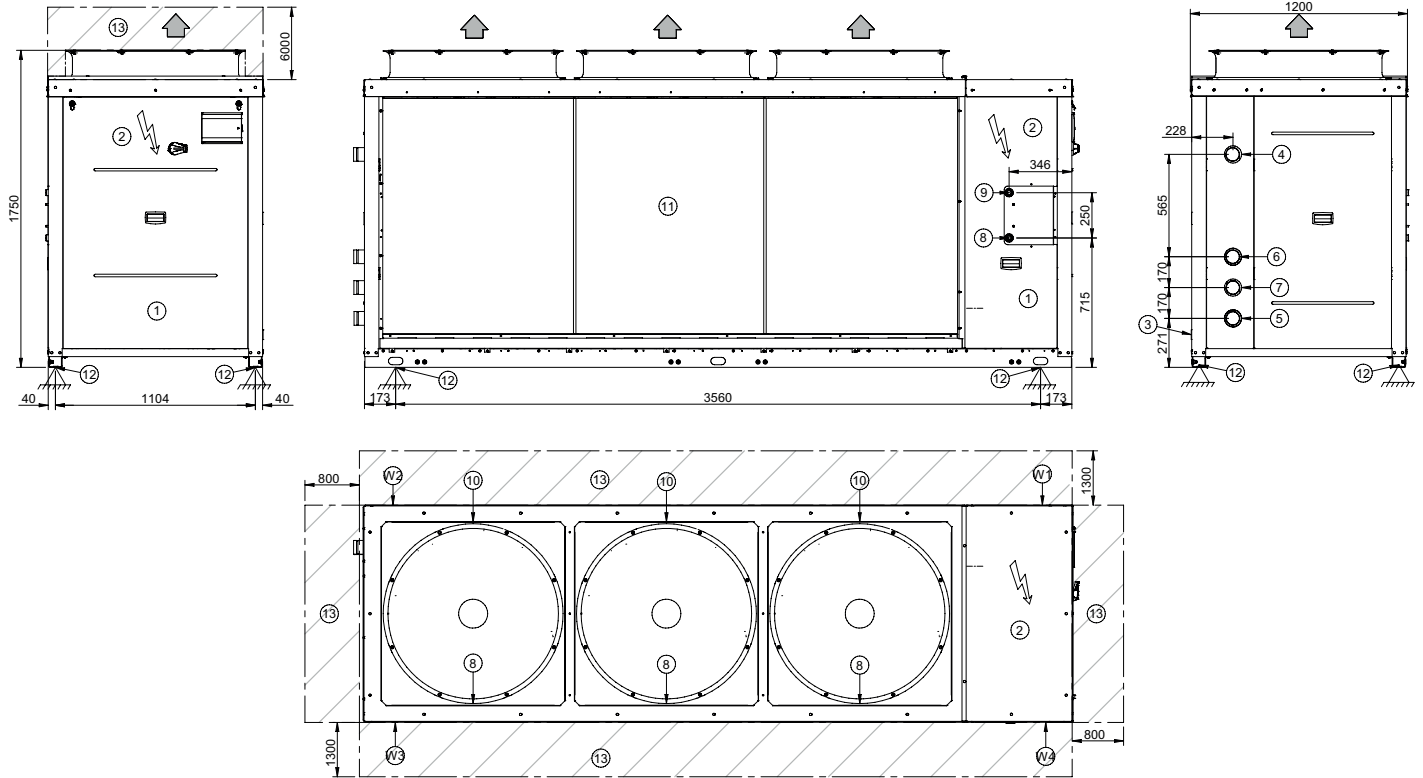
8. Fan
9. External exchanger
10. Unit fixing holes
11. Functional clearances

SIZE		30.2	35.2	40.2*
Length	mm	3330	3330	3330
Depth	mm	1100	1100	1100
Height	mm	1510	1510	1510
W1 Support point	kg	280	280	280
W2 Support point	kg	135	135	135
W3 Support point	kg	135	135	135
W4 Support point	kg	280	280	280
Operation weight	kg	830	830	830
Operating weight	kg	830	830	830

*Size 40.2 available only in PRM version

SIZE 43.2 ÷ 45.2 EXC

DAABU0004_00
DATA/DATE 20/04/2023



1. Compressor compartment
2. Electrical panel
3. Power input
4. Inlet water connection Victaulic 2" 1/2
5. Outlet water connection Victaulic 2" 1/2
6. Inlet DHW connection Victaulic 2" 1/2
7. Outlet DHW connection Victaulic 2" 1/2

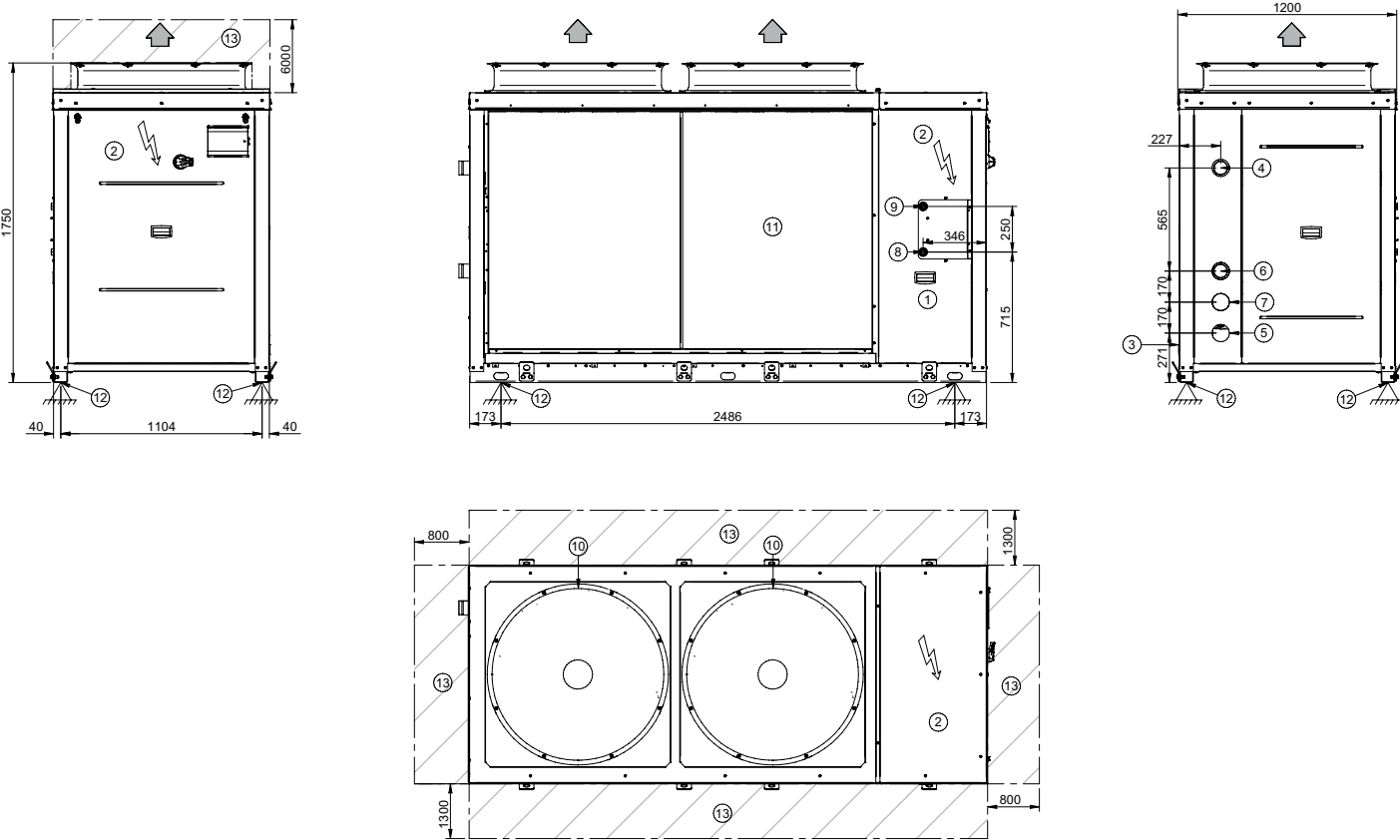
8. Inlet desuperheater water connection 2" 1/2
9. Outlet desuperheater water connection 2" 1/2
10. Fan
11. Source exchanger
12. Unit fixing holes
13. Functional clearances

SIZE		43.2	45.2
Length	mm	3906	3906
Depth	mm	1184	1184
Height	mm	1750	1750
W1 Support point	kg	385	385
W2 Support point	kg	221	221
W3 Support point	kg	191	191
W4 Support point	kg	345	345
Operation weight	kg	1143	1143
Operating weight	kg	1114	1114

Dimensional drawings

SIZE 45.2 ÷ 55.2 PRM

DAABU0004_00
DATA/DATE 20/04/2023



1. Compressor compartment

2. Electrical panel

3. Power input

4. Inlet water connection Victaulic 2" 1/2

5. Outlet water connection Victaulic 2" 1/2

6. Inlet DHW connection Victaulic 2" 1/2

7. Outlet DHW connection Victaulic 2" 1/2
8. Inlet desuperheater water connection 2" 1/2

9. Outlet desuperheater water connection 2" 1/2

10. Fan

11. Source exchanger

12. Unit fixing holes

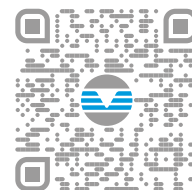
13. Functional clearances

SIZE		45.2	50.2	55.2
Length	mm	2832	2832	2832
Depth	mm	1184	1184	1184
Height	mm	1750	1750	1750
W1 Support point	kg	271	271	271
W2 Support point	kg	187	187	187
W3 Support point	kg	162	162	162
W4 Support point	kg	242	242	242
Operation weight	kg	862	862	862
Operating weight	kg	877	877	877

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