

Epsilon Echos DK ductable air/water chillers, heat pumps and condensing units



Technical information manual



Epsilon Echos DK is the range of chillers and ductable air/water heat pumps.

In its standard equipment, the unit is equipped with high pressure axial fans (up to a useful 100Pa), suitable for indoor installations, with the possibility of ducting the intake and air via ducts.

As optional equipment, the version with plug fans featuring brushless EC motors with maximum available pressure up to 350Pa is available. The units in this version also have an adjustable flow plenum (except for sizes 6, 8 and 10) that facilitates the installation and implementation of the ducts. All models are equipped with flat coils, allowing the ducting of air return.

The fans are already equipped with fan rev regulator which, through an evolved control logic, allows **Epsilon Echos DK** to perform the control for condensation and evaporation and to self-adapt to load losses in the duct constantly optimising operating conditions and maximizing the over-all efficiency of the unit.

The all-out use of motors directly coupled to the fans completely eliminates the need for maintenance, which is mandatory for all units employing centrifugal fans with belt-pulley.

The self-adaptability of the air flow managed directly by the control also eliminates the need for complicated settings during installation of control dampers.

A very compact structure, the possibility to request an integrated hydronic module and inertial tank and a large list of accessories complete **Epsilon Echos DK** making it a versatile and flexible product.



Index

Technical features	4
Technical data	13
Electrical data	17
Dimensional data	18
Operating limits	19
Pressure drop exchangers	21
Static discharge head pumps	21
Sound level	22
Performance data	23
Dimensional drawing	35



Technical features

Epsilon Echos

Water chillers and air/water heat pumps with axial or radial fans of high static pressure.

Epsilon Echos DK/LE

Condensing unit and reversible condensing unit with axial or radial fans of high static pressure.

Structure

In galvanised sheet steel and painted with polyester powders RAL 7035 at 180 °C, which confer high resistance to atmospheric agents. The panels can be removed easily to allow access to the inertial components.

Compressor

Sizes 6 and 8: rotary vane compressors with thermal circuitbreakers in the motor windings, and rubber anti-vibration mounts.

Sizes 10 to 41: hermetic scroll compressors with circuitbreaker protection included in the motor windings, sump heater and rubber anti-vibration mounts.

Fans

The axial fans of high static pressure are designed for a useful static pressure of up to 100Pa (80Pa for models 6 to 18). The balancing and angle of the vanes was designed to maximize the useful static pressure while minimizing consumption.

Each fan has a safety grille.

The RF units use EC radial fans instead of axial ones: the fan is equipped with integrated power and control electronics. The result is a compact. Highly efficient ventilation system with incorporated electronic control.

Salient features: low energy consumption, no electromagnetic noise produced by the motor, 0 to 100% speed control.

The fans have IP54 protection.

Source side exchanger

This comprises a battery with copper pipes and aluminium gills with large exchange surface. A metal mesh protects the finned core.

User side exchanger

Exchanger with AISI 316 stainless steel braze-welded plates, insulated with a closed cell foam coating.

The heat exchanger has a temperature probe for anti-freeze protection and a blade flow meter as per standard.

Not available in LE version.

Refrigerant circuit

Basic version. Includes: charge connection on the liquid and intake lines, liquid sight-glass, filter/dryer, thermostatic-expansion valve with external pressure equalization, pressure transducer, high and low pressure gauges and safety valve (except on sizes 6, 8 and 10).



LE version: Includes: charge intake on the liquid and intake lines, liquid sight-glass, filter/dryer, pressure transducer, high and low pressure gauges and safety valve (except on sizes 6, 8 and 10). The LE units do not have a user side exchanger.

Electrical control board

With general isolating device, protection of the power and auxiliary circuits, compressors remote control switch. Microprocessor management of the unit with main functions shown on display.

The electrical control board is made up from:

- Automatic circuit breakers protecting the auxiliary circuits and power circuits (sizes 6, 8 and 10)
- Main isolating switch and fuses protecting the auxiliary circuits and power circuits (sizes 14 to 41)
- Compressor remote control switch
- Condensation/evaporation control with fan rev. regulator
- Pump relay or motor protector and contactor (sizes 14 to 41, versions ST1P – ST1PS)
- Potential-free contacts for general alarm
- Microprocessor for control of the following functions:
 - Water temperature regulation with inlet control
 - Anti-freeze protection
 - Compressor timing
 - High pressure pre-alarm management (to prevent unit block in many cases)
 - Alarm signals
 - Alarm reset
 - Self-adaptable regulation to permit optimal operation when there is low water content in the plant
 - Digital output for outdoor ON-OFF
- Display of:
 - Temperature of the outlet water
 - Condensation temperature
 - Set temperature and differentials set-point
 - Description of the alarms
 - Compressor and pump timer functioning

Checks and safety devices

- Chilled water temperature probe (at evaporator inlet)
- Anti-freeze sensor at evaporator outlet connected to anti-freeze alarm (automatic reset, with limited thresholds)
- High pressure switch (with manual reset)
- Low pressure switch (with automatic reset at limited intervals)
- Mechanical flow meter with vanes supplied as per standard
- Condensation/evaporation pressure control with rev. regulator
- High pressure safety valve (except sizes 6, 8 and 10)
- Compressor over-heating protection



Inspection

Base and HP version

The units are inspected in the factory and supplied complete with oil and refrigerant fluid.

LE version

The units are inspected at the factory and delivered with refrigerant circuit loaded with nitrogen.

Versions

/HP: reversible heat pump

The unit includes, in addition to the components of the basic version, a 4-way reversing valve, liquid receiver, check valves, additional thermostatic valve.

/LE/HP: reversible condensing unit (heat pump)

The unit includes, in addition to the components of the /LE version, a 4-way reversing valve, liquid receiver, check valves, additional thermostatic valve.

/RF: unit with EC radial fans

The unit uses radial instead of axial fans and is equipped with a conveyor for expelling air. The conveyor for sizes 14 to 41 can be installed in such a way as to expel the air at the top or at the side, while the conveyor for sizes 6 to 10 expels the air only from the side.

Hydronic module options

/ST 1P: unit with pump

The unit is equipped with a circulator (sizes 6 to 18) or a circulation pump (sizes 20 to 41), an expansion tank, a water circuit drainage valve and a safety valve set at 6 bars (maximum allowable operating pressure).

/ST 1PS: unit with pump and tank

In addition to the components of the /ST 1P version, the unit includes an insulated storage tank.

Standard equipment

- General isolating device
- Compressor fuses
- Meter
- Pack protection grid
- Microprocessor control
- Condensation control (and evaporation control, for the HP version) with fan rev. regulator.
- Self-adaptable regulation logic
- Flowmeter (provided as standard)
- Certification in accordance with Directive 97/23 EEC (PED)



- Digital output for Summer/Winter selection (enabled by the control under the responsibility of the customer)
- Remote On/Off from digital input
- Condensate drip tray (standard for sizes 6 to 18)
- Phase monitor

Accessories

Refrigerant circuit accessories

- Liquid line cock
- Liquid line solenoid valve
- Electronic thermostatic valve
- Brine kit

Hydraulic circuit accessories

- Filling system with manometer (ST 1P-1PS version)
- Anti-freeze heater (except for the ST version)
- Anti-freeze heater (except for the ST 1P version)
- Anti-freeze heater (except for the ST 1PS version)
- Additional heaters (for /HP/ST 1PS versions)
- Waterfilter

Electric accessories

- 230/1/50 power supply
- 240/1/50 power supply
- 400/3+N/50 power supply
- 415/3+N/50 power supply
- RS485 serial interface
- Remote user terminal
- User interface
- Individual potential-free contacts
- Electronic soft-starter
- Compensation of the set-point depending on the external air temperature
- Unit shutdown due to temperatures lower than the functioning limit
- Maximum and minimum voltage relay
- Smartlink

Various accessories

- Rubber anti-vibration mounts (for basic version – ST 1P)
- Rubber anti-vibration mounts (for version ST 1PS)
- Condensing coil in pre-painted aluminium
- Condenser pack treated with anti-corrosion paint
- Wooden cage packaging
- Condensate drip tray



Description of standard equipment

Condensation/evaporation with fan rev. regulator

The microprocessor control monitors all the operating parameters of the unit and constantly regulates the speed of the fans by means of a rev. regulator to optimize the operating conditions and efficiency of the unit.

As a result, the unit also runs much more quietly. The control device typically modulates the speed of the fans at night and during half-season. The machine therefor minimizes fan speed and the level of noise at every given opportunity.

Self-adaptable regulation logic

This function enables the unit control to dynamically adjust the outlet water set-point according to the work and shutdown cycles of the machine: in practice, by increasing and reducing the water outlet temperature, the control prevents the compressor from starting up too frequently in too short period of time, while decreasing the number of peaks and protecting the components of the unit.

Remote On/Off from digital input

All the units come with this function as standard. It consists of a remote contact for turning the machine on and off by means of a signal that can be taken inside the building by a Building Management System (BMS).

Summer/Winter selection from digital input

This function is standard for all heat pumps. When you switch on the unit, you need to set either heat pump or chiller mode. The remote contact makes it possible to change the work mode even inside the building and without direct access to the microprocessor control.

Description of the accessories

Refrigerant circuit accessories

Electronic thermostatic valve

This accessory is recommended for units that have to tolerate highly variable refrigeration load or variable working conditions, for example when managing both air conditioning and the production of water at a high temperature. Use of the electronic thermostatic valve makes it possible to:

- Maximise the heat exchange to the evaporator
- Minimise time of response to variations in load and working conditions
- Optimise the regulation of over-heating
- Guarantee maximum energy efficiency

Brine kit

This accessory is required when the outlet temperature of the evaporator is within the range of +3°C and -8°C. It consists of extra thermal insulation of the exchanger and tubes, specific calibration of the low pressure gauges and anti-freeze alarm, and testing of the size of the mechanical thermostatic valve.



Hydraulic circuit accessories

Filling system with manometer

This accessory enables automatic loading of the hydraulic system and correct adjustment of the working pressure shown on the manometer, and maintains the level of pressure in the hydraulic system refilling the system with water when necessary.

Anti-freeze heaters

These heaters are fitted on the exchanger, pump and tank (depending on machine configuration) to prevent damage to the hydraulic components due to the formation of ice when the machine is out of use.

The control device monitors the outlet probe of the exchanger (even when the unit is in standby) and when this registers a water temperature of 5°C or less (or 2°C below the set-point temperature, with a differential of 1°C) it triggers the anti-freeze heater. When the temperature of the outlet water reaches 4°C (or 3°C below the set-point), it also triggers the anti-freeze alarm that stops the compressor without however disabling the heaters.

Additional heater

This is an electrical heater installed in the inertia storage tank of the ST 1PS module that helps the heat pump reach the set-point temperature when the power supplied by the machine is not sufficient for the load.

This accessory is available only for version /HP/ST 1PS

Electrical accessories

RS485 serial interface

The increasing use of home automation and Building Management System (BMS) systems has led to the need for a single comprehensive system for all the various components. The unit can, therefore, be equipped with a serial board that permits perfect integration of the machine within the “building-system” with MODBUS or CAREL communication protocols.

Remote user terminal

Intended for a professional user, this accessory consists of a faithful reproduction of the control panel at which you can fully configure the unit and view its parameters on the display screen. The insertion of passwords is required to access the parameters at different levels.

The type of terminal depends on the control installed on the unit.

The CAREL protocol is required to use the accessory with an RS 485 serial interface.

User interface

This accessory consists of a terminal with a simple, intuitive interface for carrying out the following main functions:

- Switching the unit on and off
- Switching between summer/winter mode
- Enabling the sleep function (timed standby)
- Managing automatic start-up / shutdown of the unit with a programmable weekly timer
- Viewing the temperature of the water produced by the unit

Electronic soft-starter

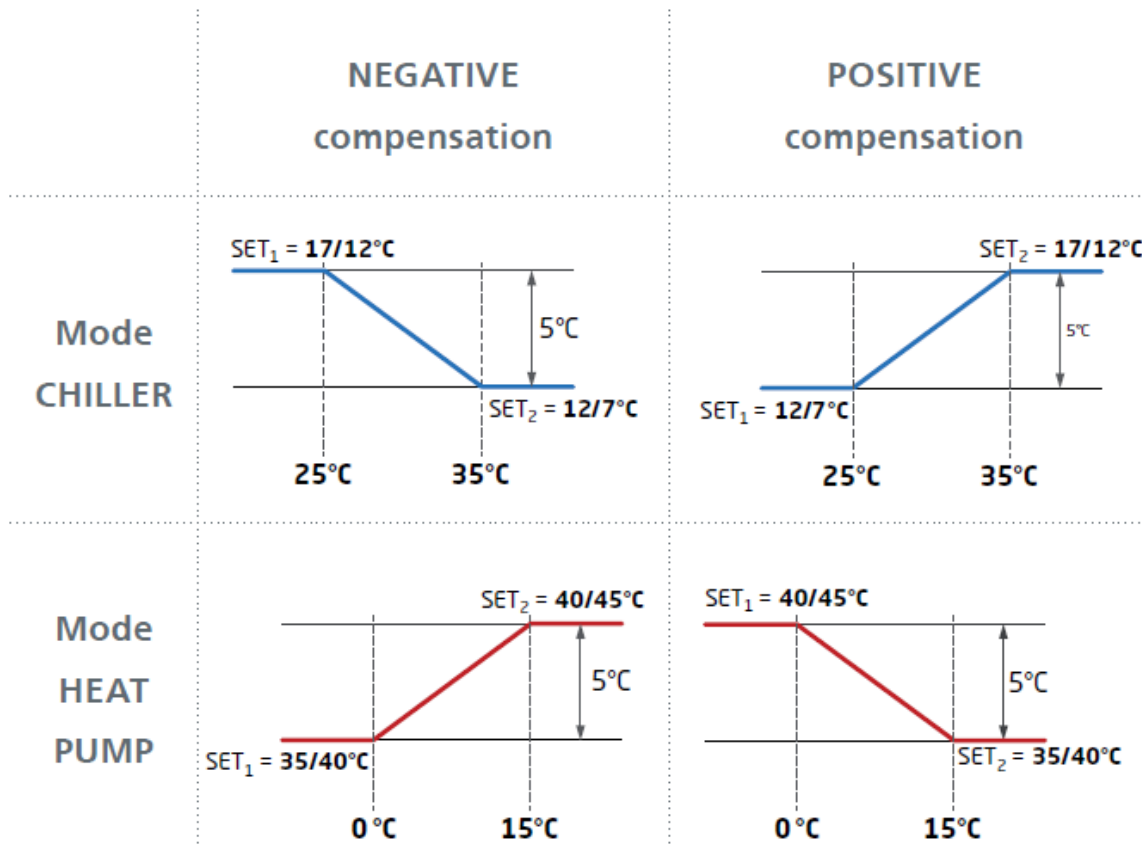
The units are equipped with the technology to minimize peak current, however the unit can also be fitted with a soft-starter unit as a further precaution. It is an electronic control device that monitors the start-up of the electric motors and reduces the normal breakaway starting current of the compressor by 40%.

Compensation of the set-point depending on the external temperature

Units equipped with this microprocessor control accessory can compensate the set-point according to external air temperature. The compensation can be positive or negative: with positive compensation, the summer set-point increases in relation to the external air temperature, while with negative compensation the set-point decreases in relation to the external air temperature.

Both the summer set-point and the winter set-point can be compensated.

Unless specified otherwise in the order, standard programming involves negative compensation (for both set-points) as shown in the diagrams below. All the settings can be modified directly by the control system.



Unit shutdown due to temperatures lower than the functioning limit

This accessory is available for the /HP and /LE/HP units. It stops the compressor of the unit when this is in heat pump mode and the external air temperature falls below a minimum set temperature: the controller stops the compressors before the unit triggers the low pressure alarm, avoiding the need to manually restart the machine.

This accessory is particularly useful when the heat pump is installed in an area where the external air temperature is almost bound to fall below the minimum temperature threshold (in accordance with the set-point).

When the external air temperature returns above the set temperature threshold, the unit restarts automatically without the need for any manual intervention.

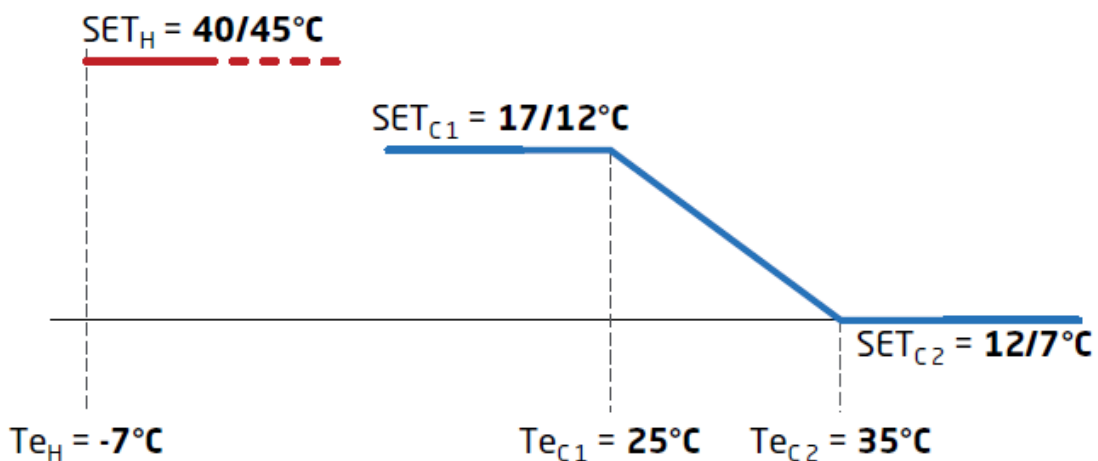
For units with integrated pump, the latter is kept running to prevent the formation of ice and to ensure correct operation of the temperature probes and anti-freeze safety devices.

The shutdown temperature has to be configured in relation to the set-point temperature and the operating restrictions of the machine.

This accessory must be used in conjunction with the “Compensation of the set-point depending on the external air temperature” accessory.

If not specified otherwise in the order, the default settings of the unit are:

- Summer set-point at 12°C for the return temperature with negative summer compensation (see diagram)
- Winter set-point set at 40°C for the return temperature
- Shutdown of the unit when the external air temperature falls below -7°C (see diagram)



It is possible to configure a shutdown temperature other than the default one providing it is compatible with the unit's operating restrictions.



Maximum and minimum voltage relay

This device monitors the supply voltage of the unit to ensure it remains within a permissible range. When the voltage goes outside the range, the device stops the unit to avoid damage to the electric motors.

The device also monitors phase sequence.

Individual potential-free contacts

The terminal block in the control box is fitted with potential-free contacts that receive the signal indicating the compressor is running.

TECHNICAL DATA EPSILON ECHOS DK

Unit Size			6	8	10	14	16	18	21	25	28	31	37	41
Cooling (Gross values)														
Nominal cooling capacity	(1)	kW	5,2	6,6	8,7	12,4	15,3	17,6	18,5	22,7	25,9	28,5	33,3	38,1
Total power input for cooling	(1),(2)	kW	2,6	3,0	3,5	5,1	6,1	6,8	7,4	9,3	10,6	11,7	12,2	14,6
EER	(1)		2,04	2,21	2,44	2,45	2,53	2,61	2,49	2,43	2,45	2,45	2,72	2,61
ESEER			2,74	3,01	3,34	3,30	3,30	3,37	3,14	3,14	3,18	3,18	3,59	3,40
Efficiency class			E	D	C	C	B	B	C	C	C	C	A	B
Cooling (EN 14511 values)														
Nominal cooling capacity	(1),(8)	kW	5,2	6,6	8,6	12,3	15,1	17,5	18,3	22,5	25,7	28,3	33,0	37,8
EER	(1),(8)		2,15	2,31	2,53	2,52	2,57	2,64	2,58	2,48	2,49	2,50	2,77	2,63
ESEER	(8)		2,93	3,17	3,49	3,43	3,38	3,43	3,28	3,22	3,25	3,27	3,67	3,44
Efficiency class			D	C	B	B	B	B	B	C	C	B	A	B
Heating (Gross values)														
Nominal heating capacity	(3)	kW	6,5	8,1	10,3	14,2	17,2	19,5	20,3	26,0	29,8	32,9	36,5	41,3
Total power input for heating	(2),(3)	kW	2,6	3,0	3,6	5,2	5,9	6,6	7,3	9,2	10,4	11,5	11,9	13,6
COP	(3)		2,51	2,67	2,82	2,74	2,90	2,95	2,77	2,81	2,86	2,87	3,08	3,04
Efficiency class			D	C	B	C	B	B	C	B	B	B	A	A
Heating (EN 14511 values)														
Nominal heating capacity	(3),(8)	kW	6,5	8,1	10,3	14,3	17,3	19,7	20,4	26,2	30,0	33,1	36,8	41,6
COP	(3),(8)		2,67	2,80	2,94	2,87	3,01	3,04	2,92	2,92	2,96	2,98	3,18	3,12
Efficiency class			C	B	B	B	A	A	B	B	B	B	A	A
Compressors														
Type			Rotary Vane type				Scroll							
Quantity/Refrigerant circuits		n°/n°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Fans														
Type			Axial high prevalence											
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2	2
Nominal available discharge head		Pa	50	50	50	50	50	50	50	50	50	50	50	50
Max available discharge head		Pa	80	80	80	80	80	80	100	100	100	100	100	100
Air flow		m ³ /h	3.500	3.500	3.500	7.000	7.000	7.000	10.000	10.000	10.000	12.000	12.000	12.000
User-side heat exchanger														
Type			Plate type											
Quantity		n°	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate	(1)	l/h	899	1140	1488	2138	2633	3032	3173	3899	4461	4908	5720	6559
Pressure drop	(1)	kPa	5	8	6	45	50	49	31	45	44	41	44	57
Hydraulic module														
Standard pump type			P1	P1	P1	P2	P2	P2	P3	P3	P3	P3	P4	P4
Available pump pressure	(1)	kPa	53	48	47	45	41	38	150	110	92	75	132	101
Storage tank capacity		l	40	40	40	70	70	70	85	85	85	140	140	140
Expansion vessel		l	2	2	2	2	2	2	5	5	5	5	5	5
Sound level														
Sound power value (standard unit)	(4)	dB(A)	71	72	72	74	74	75	83	83	84	77	77	78
Sound pressure value (standard unit)	(5)	dB(A)	63	64	64	66	66	67	75	75	76	69	69	70

(1) Ambient air temperature 35°C; evaporator inlet/outlet water temperature 12-7 °C

(2) Total power input is sum of compressors and fans power input

(3) Ambient air temperature 7°C DB, 6°C WB; condenser inlet/outlet water temperature 40-45 °C

(4) Sound power values calculate in compliance with ISO 3744

(5) Sound pressure values measured at 1 meters from the unit in free field conditions and directional factor Q=2

(8) Values in compliance with EN 14511-3:2011

This datasheet gives the characteristic data of the basic and standard versions of the series; for details refer to the specific documentation

TECHNICAL DATA EPSILON ECHOS DK/RF

Unit size			6	8	10	14	16	18	21	25	28	31	37	41
Cooling (Gross values)														
Nominal cooling capacity	(1)	kW	5,2	6,6	8,7	12,4	15,3	17,6	18,5	22,7	25,9	28,5	33,3	38,1
Total power input for cooling	(1),(2)	kW	2,5	3,0	3,5	5,4	6,4	7,1	7,4	9,3	10,6	11,2	11,8	14,2
EER	(1)		2,05	2,23	2,45	2,31	2,41	2,50	2,50	2,44	2,46	2,54	2,82	2,68
ESEER			2,77	3,03	3,35	3,08	3,11	3,20	3,16	3,16	3,20	3,33	3,74	3,52
Efficiency class			E	D	C	C	C	C	B	C	C	B	A	B
Cooling (EN 14511 values)														
Nominal cooling capacity	(1),(8)	kW	5,2	6,6	8,6	12,3	15,1	17,5	18,3	22,5	25,7	28,3	33,0	37,8
EER	(1),(8)		2,17	2,32	2,54	2,37	2,44	2,53	2,60	2,49	2,50	2,60	2,87	2,71
ESEER	(8)		2,97	3,20	3,50	3,19	3,18	3,25	3,31	3,24	3,27	3,43	3,84	3,56
Efficiency class			D	C	B	C	C	B	B	C	C	B	A	A
Heating (Gross values)														
Nominal heating capacity	(3)	kW	6,5	8,1	10,3	14,2	17,2	19,5	20,3	26,0	29,8	32,9	36,5	41,3
Total power input for heating	(2),(3)	kW	2,5	3,0	3,6	5,5	6,2	6,9	7,3	9,2	10,3	11,0	11,4	13,2
COP	(3)		2,54	2,69	2,83	2,59	2,76	2,82	2,78	2,83	2,88	2,98	3,20	3,14
Efficiency class			D	C	B	D	C	B	C	B	B	B	A	A
Heating (EN 14511 values)														
Nominal heating capacity	(3),(8)	kW	6,5	8,1	10,3	14,3	17,3	19,7	20,4	26,2	30,0	33,1	36,8	41,6
COP	(3),(8)		2,70	2,83	2,95	2,71	2,86	2,90	2,93	2,93	2,97	3,09	3,31	3,22
Efficiency class			C	B	B	C	B	B	B	B	B	A	A	A
Compressors														
Type			Rotary Vane type					Scroll						
Quantity/Refrigerant circuits		n° / n°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Fans														
Type			Plug Fun											
Quantity		n°	1	1	1	1	1	1	1	1	1	1	1	1
Nominal available discharge head		Pa	50	50	50	50	50	50	50	50	50	50	50	50
Max available discharge head		Pa	250	250	350	350	350	350	280	280	280	300	300	300
Air flow		m ³ /h	3.500	3.500	3.500	7.000	7.000	7.000	10.000	10.000	10.000	12.000	12.000	12.000
User-side heat exchanger														
Type			Plate type											
Quantity		n°	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate	(1)	l/h	899	1140	1488	2138	2.633	3.032	3.173	3.899	4.461	4.908	5.720	6.559
Pressure drop	(1)	kPa	5	8	6	45	50	49	31	45	44	41	44	57
Hydraulic module														
Standard pump type			P1	P1	P1	P2	P2	P2	P3	P3	P3	P3	P4	P4
Available pump pressure	(1)	kPa	53	48	47	45	41	38	150	110	92	75	132	101
Storage tank capacity		l	40	40	40	70	70	70	85	85	85	140	140	140
Expansion vessel		l	2	2	2	2	2	2	5	5	5	5	5	5
Sound level														
Sound power value (standard unit)	(4)	dB(A)	80	80	81	86	86	87	83	83	83	78	78	78
Sound pressure value (standard unit)	(5)	dB(A)	72	72	73	78	78	79	75	75	75	70	70	70

(1) Ambient air temperature 35°C; evaporator inlet/outlet water temperature 12-7 °C

(2) Total power input is sum of compressors and fans power input

(3) Ambient air temperature 7°C DB, 6°C WB; condenser inlet/outlet water temperature 40-45 °C

(4) Sound power values calculate in compliance with ISO 3744

(5) Sound pressure values measured at 1 meters from the unit in free field conditions and directional factor Q=2

(8) Values in compliance with EN 14511-3:2011

This datasheet gives the characteristic data of the basic and standard versions of the series; for details refer to the specific documentation

TECHNICAL DATA EPSILON ECHOS DK/LE

Unit Size			6	8	10	14	16	18	21	25	28	31	37	41
Cooling (A35°C; W7,5°C)														
Nominal cooling capacity	(1)	kW	6,5	8,1	10,7	14,6	18,4	21,2	21,3	26,8	30,5	33,7	39,1	44,6
Cooling power input	(1), (2)	kW	2,6	3,0	3,6	5,1	6,3	7,0	7,6	9,7	11,0	12,1	12,8	15,4
EER	(1), (2)		2,48	2,69	2,97	2,85	2,93	3,05	2,80	2,75	2,76	2,77	3,06	2,89
Heating (A7°C; W40°C) (only LE/HP version)														
Nominal heating capacity	(3)	kW	6,4	8,3	10,4	14,2	17,4	19,9	20,5	26,3	30,3	33,2	37,4	41,9
Heating power	(3), (2)	kW	2,1	2,5	3,0	4,3	5,0	5,7	6,4	8,0	9,0	9,9	10,0	11,6
COP	(3), (2)		3,00	3,27	3,48	3,31	3,46	3,48	3,20	3,29	3,37	3,35	3,73	3,61
Compressors														
Type			Rotary Vane type					Scroll						
Quantity/Refrigerant circuits		n° / n°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Fans														
Type			Axial high prevalence											
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2	2
Nominal available discharge head		Pa	50	50	50	50	50	50	50	50	50	50	50	50
Max available discharge head		Pa	80	80	80	80	80	80	100	100	100	100	100	100
Air flow		m ³ /h	3.500	3.500	3.500	7.000	7.000	7.000	10.000	10.000	10.000	12.000	12.000	12.000
Sound level														
Sound power value (standard unit)	(4)	dB(A)	71	72	72	74	74	75	83	83	84	77	77	78
Sound pressure value (standard unit)	(5)	dB(A)	63	64	64	66	66	67	75	75	76	69	69	70

(1) Ambient air temperature 35°C; evaporation temperature 7.5°C

(2) Total power input is sum of compressors and fans power input

(3) Ambient air temperature 7°C BS, 6°C BU; condensation temperature 40°C

(4) Sound power values calculate in compliance with ISO 3744

(5) Sound pressure values measured at 1 meters from the unit in free field conditions and directional factor Q=2

This datasheet gives the characteristic data of the basic and standard versions of the series; for details refer to the specific documentation

TECHNICAL DATA EPSILON ECHOS DK/RF/LE

Unit Size			6	8	10	14	16	18	21	25	28	31	37	41
Cooling (A35°C; W7,5°C)														
Nominal cooling capacity	(1)	kW	6,5	8,1	10,7	14,6	18,4	21,2	21,3	26,8	30,5	33,7	39,1	44,6
Cooling power input	(1), (2)	kW	2,6	3,0	3,6	5,4	6,6	7,3	7,6	9,7	11,0	11,7	12,3	15,0
EER	(1), (2)		2,50	2,71	2,98	2,69	2,80	2,92	2,82	2,77	2,77	2,88	3,17	2,97
Heating (A7°C; W40°C) (only LE/HP version)														
Nominal heating capacity	(3)	kW	6,4	8,3	10,4	14,2	17,4	19,9	20,5	26,3	30,3	33,2	37,4	41,9
Heating power	(3), (2)	kW	2,1	2,5	3,0	4,6	5,3	6,0	6,4	8,0	8,9	9,5	9,6	11,2
COP	(3), (2)		3,03	3,30	3,49	3,09	3,26	3,30	3,22	3,31	3,39	3,50	3,90	3,75
Compressors														
Type			Rotary Vane type					Scroll						
Quantity/Refrigerant circuits		n° / n°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Fans														
Tipo			Plug Fun											
Quantità		n°	1	1	1	1	1	1	1	1	1	1	1	1
Prevalenza utile nominale		Pa	50	50	50	50	50	50	50	50	50	50	50	50
Prevalenza utile massima		Pa	250	250	350	350	350	350	280	280	280	300	300	300
Portata aria		m ³ /h	3.500	3.500	3.500	7.000	7.000	7.000	10.000	10.000	10.000	12.000	12.000	12.000
Sound level														
Sound power value (standard unit)	(4)	dB(A)	80	80	81	86	86	87	83	83	83	78	78	78
Sound pressure value (standard unit)	(5)	dB(A)	72	72	73	78	78	79	75	75	75	70	70	70

(1) Ambient air temperature 35°C; evaporation temperature 7.5°C

(2) Total power input is sum of compressors and fans power input

(3) Ambient air temperature 7°C BS, 6°C BU; condensation temperature 40°C

(4) Sound power values calculate in compliance with ISO 3744

(5) Sound pressure values measured at 1 meters from the unit in free field conditions and directional factor Q=2

This datasheet gives the characteristic data of the basic and standard versions of the series; for details refer to the specific documentation



ELECTRICAL DATA EPSILON ECHOS DK

Basic version, HP, LE and LE/HP			6	8	10	14	16	18	21	25	28	31	37	41
Max. absorbed power	(1)	kW	3,4	4,2	5,2	7,1	8,5	9,8	11,3	13,3	14,8	16,5	17,2	19,7
Max. absorbed current	(2)	A	18,1	21,1	10,4	14,6	16,8	19,1	18,8	22,0	24,9	28,0	36,0	39,0
Max. starting current	(3)	A	63	84	69	70	71	77	77	100	100	101	145	179
Max. starting current with soft-starter (option)	(3)	A	39	51	42	44	44	48	48	62	62	63	89	109
Additional heater(option)	(4)	kW	3	3	3	6	6	6	6	6	6	9	9	9
ST1P or ST1PS version			6	8	10	14	16	18	21	25	28	31	37	41
Max. absorbed power	(1)	kW	3,6	4,4	5,4	7,3	8,7	10,0	11,7	13,8	15,3	17,0	18,1	20,6
Max. absorbed current	(2)	A	19,1	22,1	11,4	15,8	18,0	20,3	21,6	24,8	27,7	30,7	38,6	41,6
Max. starting current	(3)	A	64	85	70	71	72	78	80	103	103	104	148	182
Max. starting current with soft-starter (option)	(3)	A	40	52	43	45	46	49	50	64	64	65	92	112
Additional heater (option)	(4)	kW	3	3	3	6	6	6	6	6	6	9	9	9
Power supply			6	8	10	14	16	18	21	25	28	31	37	41
Electric power supply standard		V/Phz	230/1~/50				400/3N~/50							
Electric power supply optional	(4)	V/Phz	400/3N~/50		230/1~/50		-							

All data shown are with standard power supply unit

(1) Mains power supply to allow unit operation

(2) Maximum current before safety cut-outs stop the unit. This value is never exceeded and must be used to size the electrical supply cables and relevant safety devices (refer to electrical wiring diagram supplied with the unit)

(3) The maximum peak current is calculated considering the starting of the compressor and the maximum current absorbed of all other devices

(4) To be requested during the order

ELECTRICAL DATA EPSILON ECHOS DK/RF

Basic version, HP, LE and LE/HP			6	8	10	14	16	18	21	25	28	31	37	41
Max. absorbed power	(1)	kW	3,7	4,5	5,7	8,2	9,6	10,9	11,6	13,7	15,2	16,8	17,5	20,0
Max. absorbed current	(2)	A	19,5	22,5	10,1	13,4	15,6	17,9	19,1	22,3	25,2	27,2	35,2	38,2
Max. starting current	(3)	A	65	86	69	69	70	76	77	100	100	100	144	178
Max. starting current with soft-starter (option)	(3)	A	40	53	42	43	43	47	48	62	62	62	88	109
Additional heater (option)	(4)	kW	3	3	3	6	6	6	6	6	6	9	9	9
ST1P or ST1PS version			6	8	10	14	16	18	21	25	28	31	37	41
Max. absorbed power	(1)	kW	3,9	4,7	5,9	8,4	9,8	11,1	12,1	14,1	15,6	17,3	18,4	20,9
Max. absorbed current	(2)	A	20,5	23,5	11,0	14,5	16,7	19,0	21,9	25,1	28,0	30,0	37,8	40,8
Max. starting current	(3)	A	65	86	70	70	71	77	80	103	103	103	147	181
Max. starting current with soft-starter (option)	(3)	A	41	54	43	44	44	48	51	65	65	65	91	111
Additional heater (option)	(4)	kW	3	3	3	6	6	6	6	6	6	9	9	9
Power supply			6	8	10	14	16	18	21	25	28	31	37	41
Electric power supply standard		V/Phz	230/1~/50				400/3N~/50							
Electric power supply optional	(4)	V/Phz	400/3N~/50		230/1~/50		-							

All data shown are with standard power supply unit

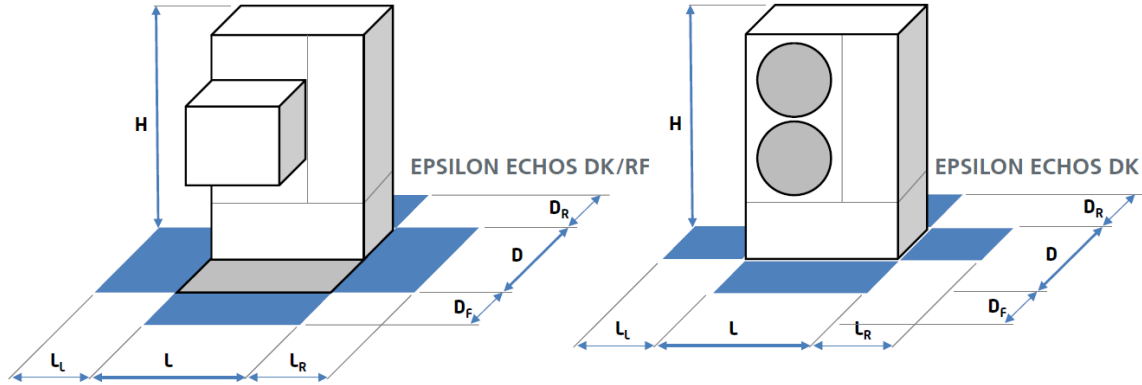
(1) Mains power supply to allow unit operation

(2) Maximum current before safety cut-outs stop the unit. This value is never exceeded and must be used to size the electrical supply cables and relevant safety devices (refer to electrical wiring diagram supplied with the unit)

(3) The maximum peak current is calculated considering the starting of the compressor and the maximum current absorbed of all other devices

(4) To be requested during the order

DIMENSIONAL DATA EPSILON ECHOS DK AND DK/RF



EPSILON ECHOS DK															
Basic version, CH, LE, LE HP e ST1P				6	8	10	14	16	18	21	25	28	31	37	41
L	Width		[mm]	926			926			1.105			1.306		
D	Depth		[mm]	376			376			506			506		
H	Height		[mm]	700			1.350			1.385			1.585		
W	Operating weight	(1)	[kg]	74	82	89	119	136	148	180	192	226	326	328	339

ST1PS version															
Basic version, CH, LE, LE HP e ST1P				6	8	10	14	16	18	21	25	28	31	37	41
L	Width		[mm]	926			926			1.105			1.306		
D	Depth		[mm]	394			394			524			524		
H	Height		[mm]	1.049			1.699			1.850			2.050		
W	Operating weight	(1)	[kg]	188	198	206	253	270	282	422	448	462	557	564	572

EPSILON ECHOS DK/RF															
Basic version, CH, LE, LE HP e ST1P				6	8	10	14	16	18	21	25	28	31	37	41
L	Width		[mm]	926			926			1.105			1.306		
D	Depth		[mm]	820			920			1.071			1.121		
H	Height		[mm]	700			1.350			1.385			1.585		
W	Operating weight	(1)	[kg]	97	105	112	153	170	182	223	235	269	358	360	371

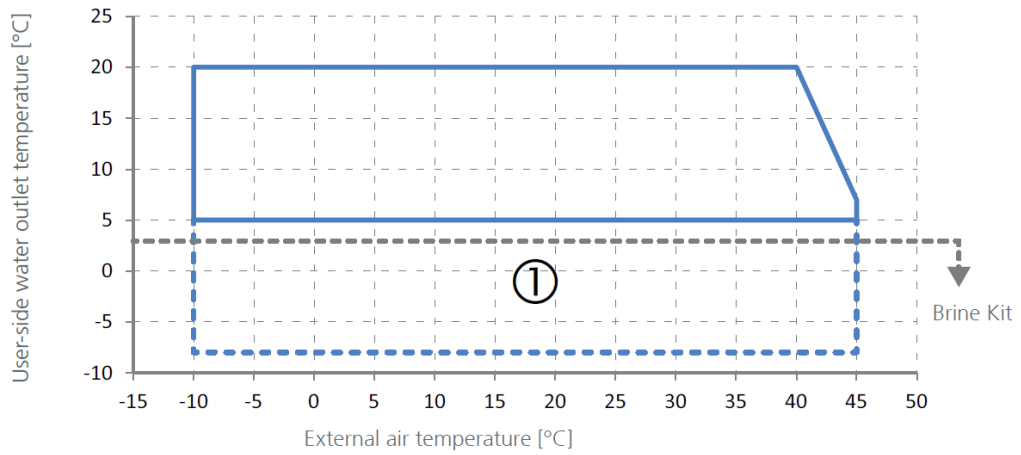
ST1PS version															
Basic version, CH, LE, LE HP e ST1P				6	8	10	14	16	18	21	25	28	31	37	41
L	Width		[mm]	926			926			1.105			1.306		
D	Depth		[mm]	394			394			524			524		
H	Height		[mm]	1.049			1.699			1.850			2.050		
W	Operating weight	(1)	[kg]	221	231	239	302	319	331	485	511	525	614	621	629

Space required															
Basic version, CH, LE, LE HP e ST1P				6	8	10	14	16	18	21	25	28	31	37	41
L _L	Left side	(2)	[mm]	600			600			600			600		
L _R	Right side	(2)	[mm]	600			600			600			800		
D _F	Front	(2)	[mm]	300			300			300			300		
D _R	Back	(2)	[mm]	300			300			300			300		

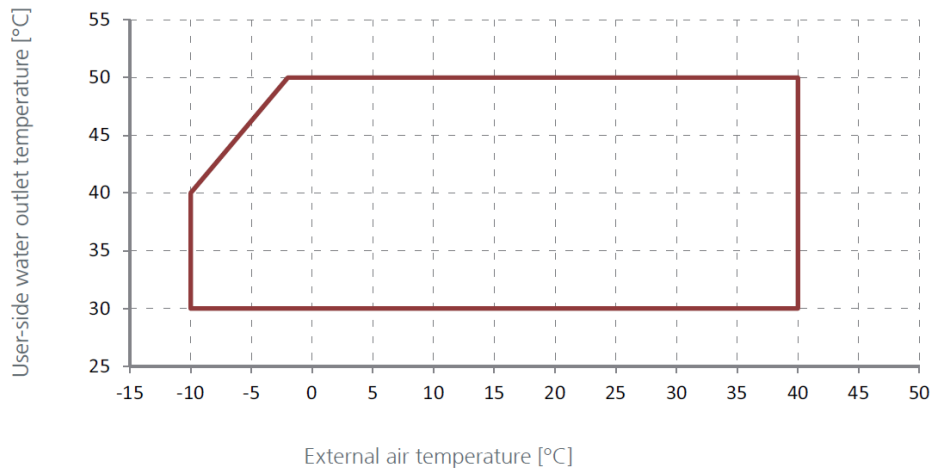
(1) The mentioned weight is approximate and may vary depending on the unit layout
 (2) The space required are given considering the fan's side in the front

OPERATING LIMITS BASIC VERSION AND /HP

Cooling

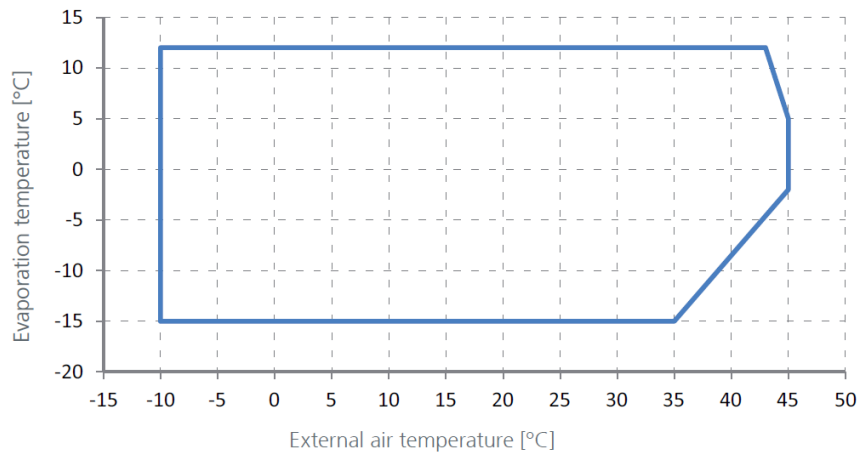


Heating

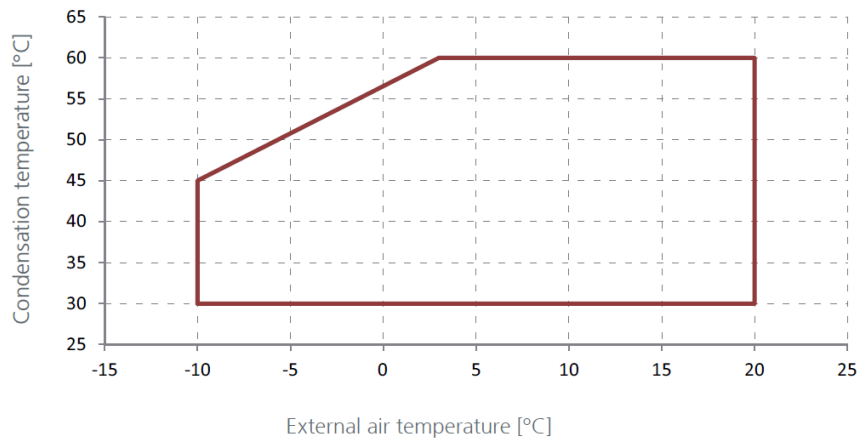


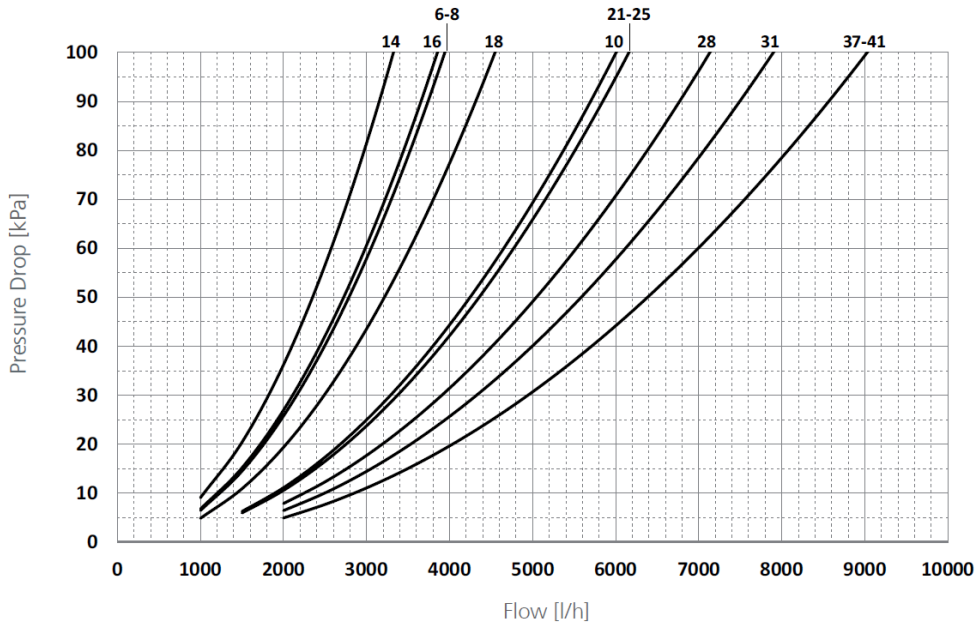
NOTE:
The thermal head to the heat exchanger user side must be between 4 °C and 7 °C
①: in this area the unit can only operate with glycolated water evaporator side.

Cooling

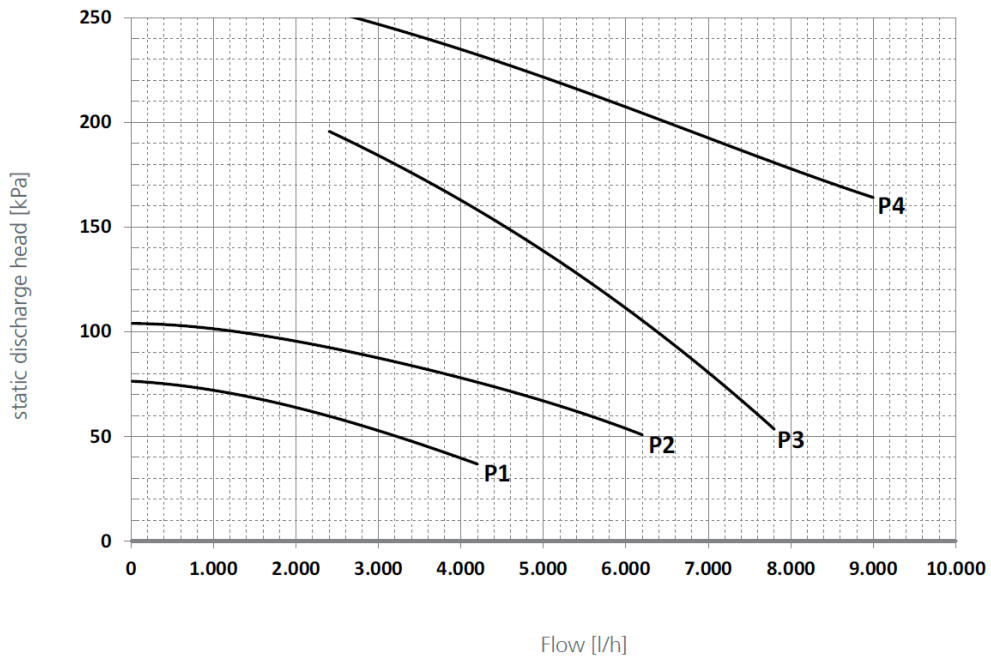


Heating





STATIC DISCHARGE HEAD PUMPS





SOUND LEVEL EPSILON ECHOS DK

MODEL	Octave bands [dB]														Total [dB(A)]			
	63 Hz		125 Hz		250 Hz		500 Hz		1000 Hz		2000 Hz		4000 Hz		8000 Hz		Lw	Lp
6	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	71	57
8	76	68	76	68	75	67	70	62	64	56	58	50	51	43	43	35	72	58
10	77	69	76	68	76	68	71	63	64	56	60	52	52	44	43	35	72	58
14	78	70	79	71	76	68	73	65	67	59	61	53	55	47	44	36	74	59
16	78	70	79	71	76	68	74	66	67	59	62	54	55	47	45	37	74	59
18	79	71	79	71	77	69	74	66	68	60	62	54	56	48	45	37	75	60
21	88	80	87	79	87	79	80	72	76	68	70	62	61	53	54	46	83	68
25	89	81	87	79	88	80	80	72	76	68	71	63	61	53	55	47	83	68
28	89	81	87	79	89	81	81	73	76	68	71	63	62	54	55	47	84	69
31	83	75	81	73	82	74	73	65	70	62	66	58	59	51	52	44	77	61
37	83	75	81	73	82	74	73	65	71	63	66	58	59	51	52	44	77	61
41	84	76	82	74	82	74	74	66	71	63	67	59	60	52	52	44	78	62

Lw: sound power values measured in free field calculated according to standard ISO 3744; nominal working conditions.
Lp: sound pressure levels measured at 1 metre from the unit in free field under nominal operating conditions, according to ISO 3744.

SOUND LEVEL EPSILON ECHOS DK/RF

MODEL	Octave bands [dB]														Total [dB(A)]			
	63 Hz		125 Hz		250 Hz		500 Hz		1000 Hz		2000 Hz		4000 Hz		8000 Hz		Lw	Lp
6	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	80	66
8	64	56	67	59	76	68	76	68	77	69	72	64	64	56	58	50	80	66
10	64	56	68	60	76	68	77	69	77	69	72	64	64	56	59	51	81	67
14	65	57	70	62	76	68	77	69	78	70	72	64	65	57	60	52	81	67
16	67	59	66	58	77	69	79	71	81	73	78	70	80	72	72	64	86	71
18	67	59	66	58	78	70	79	71	81	73	78	70	81	73	73	65	86	71
21	67	59	67	59	78	70	80	72	82	74	78	70	81	73	73	65	87	72
25	74	66	76	68	77	69	79	71	78	70	75	67	71	63	65	57	83	67
28	74	66	76	68	77	69	79	71	78	70	75	67	71	63	65	57	83	67
31	75	67	76	68	77	69	80	72	79	71	75	67	72	64	65	57	83	67
37	72	64	74	66	74	66	75	67	73	65	70	62	67	59	60	52	78	62
41	73	65	74	66	74	66	76	68	73	65	70	62	67	59	60	52	78	62
	73	65	75	67	75	67	76	68	73	65	70	62	68	60	61	53	78	62

Lw: sound power values measured in free field calculated according to standard ISO 3744; nominal working conditions.
Lp: sound pressure levels measured at 1 metre from the unit in free field under nominal operating conditions, according to ISO 3744.

Size	T ₀ [°C]	External air temperature [°C]									
		25		30		35		40		45	
		P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}
6	5	5,5	1,6	5,2	1,9	4,9	2,1	4,6	2,4	4,4	2,7
	6	5,7	1,6	5,4	1,9	5,1	2,1	4,8	2,4	4,5	2,7
	7	5,8	1,6	5,5	1,9	5,2	2,1	4,9	2,4	4,6	2,7
	8	6,0	1,6	5,7	1,9	5,4	2,1	5,1	2,4	*	*
	9	6,2	1,6	5,9	1,9	5,5	2,1	5,2	2,4	*	*
	10	6,3	1,7	6,0	1,9	5,7	2,1	5,3	2,4	*	*
	13	6,9	1,7	6,6	1,9	6,2	2,2	5,8	2,4	*	*
	14	7,1	1,7	6,7	1,9	6,4	2,2	6,0	2,4	*	*
	15	7,3	1,7	6,9	1,9	6,5	2,2	6,1	2,5	*	*
	16	7,5	1,7	7,1	1,9	6,7	2,2	6,3	2,5	*	*
8	5	7,2	2,0	6,7	2,3	6,3	2,5	5,7	2,9	5,2	3,2
	6	7,4	2,0	6,9	2,3	6,5	2,5	5,9	2,9	5,3	3,2
	7	7,6	2,0	7,1	2,3	6,6	2,6	6,1	2,9	5,5	3,2
	8	7,8	2,0	7,3	2,3	6,8	2,6	6,3	2,9	*	*
	9	8,0	2,0	7,5	2,3	7,0	2,6	6,5	2,9	*	*
	10	8,2	2,0	7,7	2,3	7,2	2,6	6,7	2,9	*	*
	13	8,8	2,0	8,3	2,3	7,8	2,6	7,2	2,9	*	*
	14	9,0	2,1	8,5	2,3	8,0	2,6	7,4	2,9	*	*
	15	9,2	2,1	8,7	2,3	8,2	2,6	7,6	2,9	*	*
	16	9,4	2,1	8,9	2,3	8,4	2,6	7,8	2,9	*	*
10	5	9,2	2,4	8,7	2,7	8,2	3,1	7,5	3,5	6,8	3,9
	6	9,5	2,4	9,0	2,7	8,4	3,1	7,8	3,5	7,0	3,9
	7	9,8	2,4	9,2	2,7	8,7	3,1	8,0	3,5	7,3	3,9
	8	10,0	2,4	9,5	2,7	8,9	3,1	8,2	3,5	*	*
	9	10,3	2,4	9,8	2,8	9,2	3,1	8,5	3,5	*	*
	10	10,6	2,4	10,0	2,8	9,4	3,1	8,7	3,5	*	*
	13	11,4	2,5	10,8	2,8	10,2	3,1	9,5	3,5	*	*
	14	11,7	2,5	11,1	2,8	10,4	3,1	9,7	3,5	*	*
	15	11,9	2,5	11,3	2,8	10,7	3,1	10,0	3,5	*	*
	16	12,2	2,5	11,6	2,8	10,9	3,1	10,2	3,5	*	*
	17	12,4	2,5	11,8	2,8	11,2	3,2	10,4	3,5	*	*
	18	12,7	2,5	12,1	2,8	11,4	3,2	10,7	3,5	*	*

P_f: Refrigeration capacity [kW]

P_{comp}: Total absorbed power (compressor + fan) [kW]

T₀: User-side exchanger outlet water temperature[°C]

Size	T ₀ [°C]	External air temperature [°C]									
		25		30		35		40		45	
		P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}
14	5	13,3	3,3	12,6	3,7	11,7	4,2	10,8	4,7	9,8	5,3
	6	13,7	3,3	12,9	3,7	12,1	4,2	11,1	4,7	10,1	5,3
	7	14,1	3,3	13,3	3,7	12,4	4,2	11,5	4,7	10,4	5,3
	8	14,5	3,3	13,7	3,7	12,8	4,2	11,8	4,7	*	*
	9	14,8	3,3	14,0	3,7	13,1	4,2	12,2	4,7	*	*
	10	15,2	3,3	14,4	3,7	13,5	4,2	12,5	4,7	*	*
	13	16,3	3,3	15,5	3,8	14,5	4,2	13,5	4,7	*	*
	14	16,7	3,4	15,8	3,8	14,9	4,2	13,9	4,8	*	*
	15	17,1	3,4	16,2	3,8	15,2	4,2	14,2	4,8	*	*
	16	17,4	3,4	16,5	3,8	15,6	4,3	14,5	4,8	*	*
17	17,8	3,4	16,9	3,8	15,9	4,3	14,8	4,8	*	*	
18	18,1	3,4	17,2	3,8	16,2	4,3	15,1	4,8	*	*	
16	5	16,2	4,2	15,4	4,6	14,5	5,1	13,5	5,6	12,3	6,2
	6	16,6	4,2	15,8	4,6	14,9	5,1	13,9	5,7	12,7	6,2
	7	17,1	4,2	16,2	4,7	15,3	5,2	14,3	5,7	13,1	6,3
	8	17,6	4,2	16,7	4,7	15,8	5,2	14,7	5,7	*	*
	9	18,1	4,3	17,2	4,7	16,2	5,2	15,2	5,8	*	*
	10	18,6	4,3	17,7	4,8	16,7	5,3	15,6	5,8	*	*
	13	20,2	4,4	19,2	4,8	18,1	5,3	17,0	5,9	*	*
	14	20,7	4,4	19,7	4,9	18,6	5,4	17,4	5,9	*	*
	15	21,3	4,4	20,2	4,9	19,1	5,4	17,9	6,0	*	*
	16	21,8	4,5	20,7	4,9	19,6	5,4	18,4	6,0	*	*
17	22,4	4,5	21,2	5,0	20,1	5,5	18,9	6,0	*	*	
18	23,0	4,5	21,8	5,0	20,6	5,5	19,3	6,1	*	*	
18	5	18,7	4,8	17,7	5,3	16,7	5,8	15,5	6,3	14,1	6,9
	6	19,2	4,8	18,2	5,3	17,1	5,8	16,0	6,4	14,6	6,9
	7	19,7	4,9	18,7	5,3	17,6	5,9	16,4	6,4	15,1	7,0
	8	20,3	4,9	19,3	5,4	18,1	5,9	16,9	6,4	*	*
	9	20,9	4,9	19,8	5,4	18,7	5,9	17,4	6,5	*	*
	10	21,5	4,9	20,4	5,4	19,2	5,9	17,9	6,5	*	*
	13	23,3	5,0	22,1	5,5	20,8	6,0	19,5	6,6	*	*
	14	23,9	5,1	22,7	5,5	21,4	6,1	20,0	6,6	*	*
	15	24,5	5,1	23,2	5,6	21,9	6,1	20,6	6,7	*	*
	16	25,2	5,1	23,8	5,6	22,5	6,1	21,1	6,7	*	*
17	25,8	5,1	24,5	5,6	23,1	6,2	21,6	6,7	*	*	
18	26,5	5,2	25,1	5,7	23,7	6,2	22,2	6,7	*	*	

P_f: Refrigeration capacity [kW]

P_{comp}: Total absorbed power (compressor + fan) [kW]

T₀: User-side exchanger outlet water temperature[°C]

Size	T ₀ [°C]	External air temperature [°C]									
		25		30		35		40		45	
		P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}
21	5	19,5	4,8	18,5	5,3	17,4	5,8	16,2	6,3	14,9	6,9
	6	20,0	4,8	19,0	5,3	17,9	5,8	16,7	6,3	15,4	6,9
	7	20,6	4,9	19,6	5,3	18,5	5,8	17,2	6,4	15,9	6,9
	8	21,2	4,9	20,1	5,4	19,0	5,9	17,7	6,4	*	*
	9	21,8	4,9	20,7	5,4	19,5	5,9	18,2	6,4	*	*
	10	22,4	5,0	21,2	5,4	20,1	5,9	18,8	6,5	*	*
	13	24,3	5,1	23,0	5,5	21,7	6,0	20,3	6,6	*	*
	14	24,9	5,1	23,6	5,6	22,3	6,1	20,9	6,6	*	*
	15	25,5	5,1	24,2	5,6	22,8	6,1	21,4	6,7	*	*
	16	26,2	5,1	24,8	5,6	23,4	6,1	22,0	6,7	*	*
17	26,9	5,2	25,5	5,7	24,0	6,2	22,5	6,7	*	*	
18	27,6	5,2	26,1	5,7	24,6	6,2	23,1	6,8	*	*	
25	5	23,8	6,2	22,6	6,9	21,5	7,6	20,3	8,5	19,2	9,5
	6	24,5	6,2	23,2	6,9	22,1	7,7	20,9	8,6	19,7	9,6
	7	25,1	6,3	23,9	7,0	22,7	7,7	21,5	8,6	20,3	9,6
	8	25,9	6,3	24,6	7,0	23,3	7,8	22,1	8,7	*	*
	9	26,6	6,3	25,3	7,1	24,0	7,9	22,7	8,8	*	*
	10	27,3	6,4	26,0	7,1	24,6	7,9	23,3	8,8	*	*
	13	29,6	6,5	28,1	7,3	26,7	8,1	25,2	9,1	*	*
	14	30,4	6,6	28,9	7,3	27,4	8,2	25,9	9,1	*	*
	15	31,2	6,6	29,7	7,4	28,1	8,2	26,6	9,2	*	*
	16	32,0	6,7	30,4	7,5	28,9	8,3	27,3	9,3	*	*
17	32,9	6,8	31,2	7,5	29,6	8,4	28,0	9,3	*	*	
18	33,7	6,8	32,1	7,6	30,4	8,5	28,7	9,4	*	*	
28	5	27,3	7,2	25,9	8,0	24,6	8,9	23,2	9,9	22,0	11,0
	6	28,0	7,3	26,6	8,0	25,2	8,9	23,9	10,0	22,5	11,1
	7	28,8	7,3	27,3	8,1	25,9	9,0	24,5	10,0	23,3	11,1
	8	29,6	7,3	28,1	8,1	26,7	9,1	25,2	10,1	*	*
	9	30,4	7,4	28,9	8,2	27,4	9,1	25,9	10,2	*	*
	10	31,3	7,4	29,7	8,3	28,2	9,2	26,6	10,3	*	*
	13	33,9	7,6	32,2	8,5	30,5	9,5	28,8	10,6	*	*
	14	34,8	7,7	33,0	8,5	31,3	9,5	29,6	10,6	*	*
	15	35,7	7,7	33,9	8,6	32,1	9,6	30,3	10,7	*	*
	16	36,6	7,8	34,8	8,7	33,0	9,7	31,1	10,8	*	*
17	37,6	7,9	35,7	8,8	33,8	9,8	31,9	10,9	*	*	
18	38,5	8,0	36,6	8,9	34,7	9,9	32,7	11,0	*	*	

P_f: Refrigeration capacity [kW]

P_{comp}: Total absorbed power (compressor + fan) [kW]

T₀: User-side exchanger outlet water temperature[°C]

Size	T ₀ [°C]	External air temperature [°C]									
		25		30		35		40		45	
		P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}
31	5	30,0	7,9	28,5	8,8	27,0	9,7	25,6	10,8	24,2	12,1
	6	30,8	8,0	29,3	8,8	27,8	9,8	26,3	10,9	24,8	12,2
	7	31,7	8,0	30,1	8,9	28,5	9,9	27,0	11,0	25,5	12,3
	8	32,6	8,0	31,0	8,9	29,4	9,9	27,8	11,1	*	*
	9	33,5	8,1	31,8	9,0	30,2	10,0	28,6	11,2	*	*
	10	34,4	8,1	32,7	9,0	31,0	10,1	29,3	11,3	*	*
	13	37,3	8,3	35,5	9,2	33,6	10,3	31,8	11,5	*	*
	14	38,3	8,4	36,4	9,3	34,5	10,4	32,6	11,6	*	*
	15	39,4	8,4	37,4	9,4	35,4	10,5	33,5	11,7	*	*
	16	40,4	8,5	38,4	9,5	36,4	10,6	34,4	11,8	*	*
	17	41,5	8,6	39,4	9,6	37,3	10,7	35,3	11,9	*	*
18	42,6	8,7	40,4	9,6	38,3	10,7	36,2	12,0	*	*	
37	5	35,5	8,3	33,6	9,2	31,5	10,3	29,1	11,5	26,6	12,8
	6	36,5	8,4	34,5	9,3	32,4	10,4	30,0	11,6	27,4	12,9
	7	37,5	8,4	35,5	9,4	33,3	10,4	30,8	11,6	28,2	13,0
	8	38,5	8,5	36,5	9,5	34,2	10,5	31,7	11,7	*	*
	9	39,6	8,6	37,5	9,5	35,2	10,6	32,6	11,8	*	*
	10	40,7	8,7	38,5	9,6	36,1	10,7	33,5	11,9	*	*
	13	44,0	9,0	41,7	9,9	39,1	11,0	36,2	12,2	*	*
	14	45,2	9,0	42,8	10,0	40,1	11,1	37,1	12,3	*	*
	15	46,3	9,1	43,8	10,1	41,1	11,2	38,1	12,4	*	*
	16	47,5	9,2	44,9	10,2	42,1	11,3	39,0	12,5	*	*
	17	48,7	9,3	46,1	10,3	43,2	11,4	40,0	12,6	*	*
18	49,9	9,5	47,2	10,4	44,2	11,5	41,0	12,7	*	*	
41	5	40,7	10,4	38,5	11,4	36,1	12,6	33,6	13,9	30,8	15,4
	6	41,8	10,5	39,5	11,5	37,1	12,7	34,5	14,0	31,6	15,5
	7	42,9	10,6	40,6	11,7	38,1	12,8	35,4	14,1	32,5	15,6
	8	44,1	10,7	41,8	11,8	39,2	13,0	36,4	14,3	*	*
	9	45,3	10,8	42,9	11,9	40,2	13,1	37,4	14,4	*	*
	10	46,5	10,9	44,0	12,0	41,3	13,2	38,4	14,5	*	*
	13	50,2	11,3	47,5	12,4	44,6	13,6	41,4	15,0	*	*
	14	51,4	11,4	48,7	12,6	45,7	13,8	42,4	15,1	*	*
	15	52,7	11,5	49,9	12,7	46,8	13,9	43,5	15,2	*	*
	16	54,0	11,7	51,1	12,8	47,9	14,1	44,5	15,4	*	*
	17	55,3	11,8	52,3	13,0	49,1	14,2	45,6	15,6	*	*
18	56,6	11,9	53,5	13,1	50,2	14,4	46,7	15,7	*	*	

P_f: Refrigeration capacity [kW]
P_{comp}: Total absorbed power (compressor + fan) [kW]
T₀: User-side exchanger outlet water temperature[°C]

Size	T _a [°C]	HR [%]	User-side exchanger outlet water temperature [°C]							
			35		40		45		50	
			P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}
6	-10	70	4,4	1,7	4,5	2,0	*	*	*	*
	-7	73	4,6	1,7	4,8	1,9	*	*	*	*
	-5	75	4,8	1,7	4,9	1,9	5,1	2,2	*	*
	-2	80	5,2	1,7	5,3	1,9	5,4	2,2	5,6	2,5
	0	80	5,4	1,7	5,5	1,9	5,6	2,2	5,7	2,5
	2	84	5,7	1,7	5,8	1,9	5,8	2,2	6,0	2,5
	5	85	6,1	1,7	6,1	1,9	6,2	2,1	6,3	2,4
	7	87	6,4	1,6	6,4	1,9	6,5	2,1	6,5	2,4
	10	88	6,8	1,6	6,8	1,9	6,8	2,1	6,9	2,4
	12	89	7,1	1,6	7,1	1,8	7,1	2,1	7,2	2,4
8	-10	70	5,3	2,1	5,3	2,4	*	*	*	*
	-7	73	5,8	2,1	5,8	2,4	*	*	*	*
	-5	75	6,1	2,1	6,1	2,4	6,0	2,7	*	*
	-2	80	6,6	2,1	6,6	2,4	6,6	2,7	6,5	3,0
	0	80	7,0	2,1	6,9	2,3	6,8	2,7	6,8	3,0
	2	84	7,3	2,1	7,2	2,3	7,2	2,6	7,1	3,0
	5	85	7,8	2,1	7,8	2,3	7,7	2,6	7,6	2,9
	7	87	8,3	2,0	8,2	2,3	8,1	2,6	8,0	2,9
	10	88	8,8	2,0	8,8	2,3	8,6	2,6	8,5	2,9
	12	89	9,3	2,0	9,2	2,3	9,1	2,5	8,9	2,9
10	-10	70	6,7	2,6	6,7	3,0	*	*	*	*
	-7	73	7,3	2,6	7,3	2,9	*	*	*	*
	-5	75	7,7	2,6	7,6	2,9	7,6	3,3	*	*
	-2	80	8,3	2,6	8,3	2,9	8,3	3,3	8,3	3,7
	0	80	8,8	2,6	8,7	2,9	8,7	3,3	8,6	3,7
	2	84	9,2	2,5	9,2	2,9	9,1	3,3	9,0	3,7
	5	85	9,9	2,5	9,9	2,8	9,8	3,2	9,7	3,6
	7	87	10,5	2,5	10,4	2,8	10,3	3,2	10,2	3,6
	10	88	11,2	2,5	11,1	2,8	11,0	3,2	10,9	3,6
	12	89	11,7	2,5	11,6	2,8	11,5	3,1	11,4	3,5
20	90	13,9	2,4	13,7	2,7	13,6	3,1	13,3	3,4	

P_t: Heating capacity [kW]
P_{comp}: power absorbed by the compressor [kW]
T_a: External air temperature with dry bulb [°C]
HR: Relative humidity [%]

Size	T _a [°C]	HR [%]	User-side exchanger outlet water temperature [°C]							
			35		40		45		50	
			P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}
14	-10	70	9,2	3,5	9,2	3,9	*	*	*	*
	-7	73	10,0	3,5	10,0	3,9	*	*	*	*
	-5	75	10,6	3,4	10,5	3,9	10,5	4,5	*	*
	-2	80	11,5	3,4	11,4	3,9	11,4	4,4	11,3	5,0
	0	80	12,1	3,4	12,0	3,9	11,9	4,4	11,8	5,0
	2	84	12,8	3,4	12,6	3,8	12,5	4,3	12,4	4,9
	5	85	13,8	3,4	13,6	3,8	13,5	4,3	13,3	4,9
	7	87	14,5	3,3	14,4	3,8	14,2	4,3	14,0	4,8
	10	88	15,5	3,3	15,4	3,7	15,1	4,2	14,9	4,8
	12	89	16,3	3,3	16,1	3,7	15,9	4,2	15,6	4,7
20	90	19,3	3,2	18,9	3,6	18,5	4,1	18,2	4,6	
16	-10	70	11,5	3,9	11,3	4,3	*	*	*	*
	-7	73	12,4	4,0	12,2	4,4	*	*	*	*
	-5	75	13,0	4,0	12,9	4,4	12,6	4,9	*	*
	-2	80	14,0	4,0	13,9	4,4	13,7	4,9	13,4	5,4
	0	80	14,7	4,0	14,6	4,5	14,4	4,9	14,1	5,5
	2	84	15,5	4,1	15,4	4,5	15,2	5,0	14,9	5,5
	5	85	16,6	4,1	16,5	4,5	16,3	5,0	16,0	5,5
	7	87	17,4	4,1	17,3	4,5	17,2	5,0	16,9	5,5
	10	88	18,7	4,1	18,6	4,5	18,4	5,0	18,2	5,6
	12	89	19,6	4,1	19,5	4,6	19,3	5,0	19,0	5,6
20	90	23,6	4,1	23,3	4,6	23,0	5,1	22,7	5,6	
18	-10	70	13,2	4,6	12,9	5,0	*	*	*	*
	-7	73	14,2	4,6	14,0	5,1	*	*	*	*
	-5	75	15,0	4,6	14,7	5,1	14,4	5,6	*	*
	-2	80	16,1	4,7	15,9	5,1	15,6	5,6	15,2	6,2
	0	80	16,9	4,7	16,7	5,2	16,5	5,6	16,0	6,2
	2	84	17,8	4,7	17,6	5,2	17,3	5,7	16,8	6,2
	5	85	19,0	4,7	18,8	5,2	18,6	5,7	18,2	6,3
	7	87	20,0	4,8	19,8	5,2	19,5	5,7	19,2	6,3
	10	88	21,4	4,8	21,2	5,2	20,9	5,8	20,6	6,3
	12	89	22,4	4,8	22,2	5,3	21,9	5,8	21,6	6,3
20	90	27,0	4,8	26,6	5,3	26,2	5,8	25,8	6,4	

P_t: Heating capacity [kW]

P_{comp}: power absorbed by the compressor [kW]

T_s: External air temperature with dry bulb [°C]

HR: Relative humidity [%]

Size	T _a [°C]	HR [%]	User-side exchanger outlet water temperature [°C]							
			35		40		45		50	
			P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}
21	-10	70	14,0	4,6	13,7	5,0	*	*	*	*
	-7	73	14,8	4,6	14,6	5,1	*	*	*	*
	-5	75	15,4	4,6	15,2	5,1	14,8	5,6	*	*
	-2	80	16,5	4,7	16,4	5,1	16,1	5,6	15,7	6,2
	0	80	17,4	4,7	17,3	5,2	17,0	5,7	16,5	6,2
	2	84	18,3	4,7	18,2	5,2	17,8	5,7	17,4	6,2
	5	85	19,5	4,7	19,4	5,2	19,2	5,7	18,9	6,3
	7	87	20,6	4,8	20,4	5,2	20,3	5,7	19,8	6,3
	10	88	22,0	4,8	21,9	5,2	21,7	5,8	21,5	6,3
	12	89	23,2	4,8	23,0	5,3	22,8	5,8	22,5	6,3
20	90	27,9	4,8	27,6	5,3	27,4	5,8	27,1	6,3	
25	-10	70	19,3	7,2	19,0	7,4	*	*	*	*
	-7	73	20,2	7,0	19,9	7,3	*	*	*	*
	-5	75	20,9	6,8	20,6	7,2	20,5	7,6	*	*
	-2	80	22,0	6,7	21,8	7,1	21,7	7,6	21,7	8,3
	0	80	22,8	6,6	22,6	7,0	22,5	7,6	22,6	8,3
	2	84	23,8	6,5	23,6	7,0	23,5	7,6	23,5	8,4
	5	85	25,2	6,4	25,0	7,0	24,9	7,6	24,9	8,4
	7	87	26,4	6,3	26,1	6,9	26,0	7,6	26,0	8,5
	10	88	28,1	6,3	27,9	6,9	27,7	7,7	27,6	8,5
	12	89	29,5	6,3	29,2	6,9	29,0	7,7	28,9	8,6
20	90	35,5	6,2	35,0	7,0	34,6	7,8	34,3	8,7	
28	-10	70	22,2	8,3	21,8	8,5	*	*	*	*
	-7	73	23,2	8,0	22,8	8,4	*	*	*	*
	-5	75	23,9	7,9	23,6	8,3	23,5	8,8	*	*
	-2	80	25,2	7,7	24,9	8,2	24,8	8,8	24,9	9,5
	0	80	26,2	7,6	25,9	8,1	25,8	8,8	25,8	9,6
	2	84	27,3	7,5	27,0	8,0	26,9	8,8	26,9	9,6
	5	85	28,9	7,3	28,6	8,0	28,5	8,8	28,5	9,7
	7	87	30,3	7,3	30,0	8,0	29,8	8,8	29,8	9,7
	10	88	32,3	7,2	31,9	8,0	31,7	8,8	31,7	9,8
	12	89	34,0	7,2	33,5	8,0	33,2	8,8	33,1	9,9
20	90	40,8	7,2	40,2	8,0	39,7	9,0	39,3	10,0	

P_t: Heating capacity [kW]
P_{comp}: power absorbed by the compressor [kW]
T_a: External air temperature with dry bulb [°C]
HR: Relative humidity [%]

Size	T _a [°C]	HR [%]	User-side exchanger outlet water temperature [°C]							
			35		40		45		50	
			P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}
31	-10	70	24,5	9,1	24,1	9,4	*	*	*	*
	-7	73	25,6	8,8	25,2	9,2	*	*	*	*
	-5	75	26,4	8,7	26,1	9,1	25,9	9,7	*	*
	-2	80	27,8	8,4	27,5	9,0	27,4	9,6	27,5	10,5
	0	80	28,8	8,3	28,6	8,9	28,5	9,6	28,6	10,5
	2	84	30,0	8,2	29,8	8,8	29,7	9,6	29,6	10,6
	5	85	31,8	8,1	31,5	8,8	31,5	9,6	31,5	10,6
	7	87	33,3	8,0	33,0	8,8	32,9	9,7	32,9	10,7
	10	88	35,5	7,9	35,2	8,7	35,0	9,7	35,0	10,8
	12	89	37,2	7,9	36,8	8,7	36,6	9,7	36,5	10,8
20	90	44,8	7,9	44,2	8,8	43,8	9,8	43,5	11,0	
37	-10	70	24,6	7,7	24,5	8,6	*	*	*	*
	-7	73	26,4	7,8	26,4	8,7	*	*	*	*
	-5	75	27,7	7,8	27,7	8,8	27,5	9,8	*	*
	-2	80	29,9	7,9	29,7	8,8	29,6	9,9	29,4	11,0
	0	80	31,4	7,9	31,2	8,9	31,0	9,9	30,8	11,1
	2	84	33,0	8,0	32,8	8,9	32,5	10,0	32,2	11,2
	5	85	35,4	8,0	35,1	9,0	34,8	10,0	34,4	11,2
	7	87	37,5	8,0	37,0	9,0	36,5	10,1	36,1	11,3
	10	88	40,1	8,1	39,7	9,0	39,2	10,1	38,6	11,3
	12	89	42,5	8,1	41,7	9,1	41,1	10,1	40,4	11,4
20	90	51,2	8,4	50,5	9,3	49,6	10,3	48,5	11,5	
41	-10	70	27,6	9,0	27,7	10,2	*	*	*	*
	-7	73	29,7	9,1	29,6	10,2	*	*	*	*
	-5	75	31,1	9,2	31,1	10,2	31,2	11,5	*	*
	-2	80	33,6	9,3	33,5	10,3	33,5	11,5	33,4	13,0
	0	80	35,2	9,3	35,0	10,4	35,0	11,6	34,9	13,0
	2	84	37,3	9,4	37,1	10,4	36,8	11,6	36,6	13,0
	5	85	39,7	9,5	39,4	10,5	39,2	11,7	38,9	13,1
	7	87	42,0	9,6	41,6	10,6	41,3	11,8	41,0	13,1
	10	88	45,1	9,7	44,6	10,7	44,1	11,9	43,6	13,2
	12	89	47,5	9,8	47,0	10,8	46,5	12,0	46,0	13,3
20	90	57,4	10,1	56,7	11,2	55,9	12,3	54,7	13,6	

P_t: Heating capacity [kW]

P_{comp}: power absorbed by the compressor [kW]

T_a: External air temperature with dry bulb [°C]

HR: Relative humidity [%]

Size	T _{ev} [°C]	External air temperature [°C]									
		25		30		35		40		45	
		P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}
6	0	5,82	1,63	5,49	1,86	5,15	2,11	4,8	2,41	4,44	2,73
	2,5	6,3	1,65	5,94	1,87	5,57	2,13	5,19	2,41	4,8	2,74
	5	6,81	1,67	6,42	1,89	6,01	2,14	5,6	2,43	5,17	2,75
	7,5	7,35	1,69	6,92	1,91	6,48	2,16	6,02	2,44	*	*
	10	7,91	1,71	7,44	1,94	6,96	2,18	6,47	2,46	*	*
8	0	7,58	2,01	7,07	2,26	6,53	2,55	5,93	2,86	5,27	3,22
	2,5	8,15	2,03	7,63	2,27	7,07	2,55	6,45	2,86	5,77	3,22
	5	8,72	2,04	8,18	2,29	7,6	2,56	6,97	2,87	6,27	3,21
	7,5	9,27	2,06	8,72	2,3	8,12	2,57	7,47	2,87	*	*
	10	9,81	2,08	9,24	2,32	8,62	2,59	7,96	2,88	*	*
10	0	9,85	2,42	9,24	2,74	8,57	3,09	7,82	3,48	6,98	3,94
	2,5	10,6	2,44	9,97	2,75	9,28	3,1	8,51	3,49	7,65	3,94
	5	11,34	2,46	10,69	2,77	9,97	3,11	9,18	3,5	8,3	3,94
	7,5	12,06	2,48	11,39	2,79	10,65	3,13	9,84	3,51	*	*
	10	12,76	2,51	12,07	2,81	11,32	3,15	10,48	3,53	*	*
14	0	13,58	3,27	12,71	3,69	11,76	4,17	10,71	4,71	9,55	5,32
	2,5	14,6	3,29	13,7	3,71	12,73	4,18	11,66	4,72	10,46	5,32
	5	15,62	3,32	14,69	3,74	13,69	4,2	12,58	4,73	11,36	5,32
	7,5	16,61	3,35	15,66	3,76	14,62	4,23	13,49	4,74	*	*
	10	17,58	3,38	16,59	3,8	15,53	4,25	14,37	4,76	*	*
16	0	16,54	4,19	15,6	4,63	14,59	5,11	13,46	5,62	12,16	6,17
	2,5	17,87	4,26	16,86	4,71	15,79	5,19	14,62	5,71	13,29	6,27
	5	19,28	4,33	18,18	4,78	17,05	5,28	15,82	5,8	14,46	6,36
	7,5	20,76	4,4	19,56	4,86	18,35	5,36	17,06	5,89	*	*
	10	22,3	4,47	21,01	4,94	19,71	5,44	18,35	5,98	*	*
18	0	19,19	4,84	18,06	5,31	16,87	5,8	15,55	6,33	14,04	6,88
	2,5	20,73	4,91	19,52	5,38	18,25	5,89	16,88	6,42	15,34	6,98
	5	22,36	4,98	21,04	5,46	19,69	5,97	18,25	6,51	16,67	7,08
	7,5	24,06	5,05	22,63	5,54	21,19	6,05	19,67	6,6	*	*
	10	25,85	5,13	24,29	5,62	22,74	6,13	21,14	6,68	*	*

P_f: Refrigeration capacity [kW]
P_{comp}: Power absorbed by the compressor [kW]
T_{ev}: evaporation temperature [°C]

Size	T _{ev} [°C]	External air temperature [°C]									
		25		30		35		40		45	
		P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}	P _f	P _{comp}
21	0	19,29	4,8	18,2	5,25	17,04	5,73	15,75	6,25	14,28	6,8
	2,5	20,82	4,88	19,64	5,33	18,41	5,82	17,07	6,35	15,56	6,91
	5	22,43	4,96	21,15	5,42	19,84	5,91	18,43	6,44	16,86	7,01
	7,5	24,11	5,04	22,72	5,51	21,31	6,01	19,82	6,54	*	*
	10	25,85	5,12	24,35	5,59	22,84	6,1	21,26	6,64	*	*
25	0	24,04	6,23	22,71	6,88	21,43	7,63	20,18	8,49	18,96	9,45
	2,5	25,93	6,31	24,5	6,99	23,1	7,78	21,73	8,66	20,39	9,65
	5	27,94	6,41	26,39	7,13	24,87	7,94	23,38	8,85	21,9	9,86
	7,5	30,07	6,55	28,39	7,29	26,75	8,11	25,12	9,04	*	*
	10	32,31	6,72	30,51	7,46	28,73	8,3	26,96	9,24	*	*
28	0	27,44	7,23	25,92	7,99	24,44	8,86	23,01	9,86	21,61	10,98
	2,5	29,58	7,32	27,94	8,12	26,33	9,04	24,76	10,07	23,22	11,23
	5	31,86	7,45	30,09	8,29	28,34	9,23	26,62	10,29	24,92	11,48
	7,5	34,27	7,62	32,35	8,48	30,46	9,44	28,59	10,53	*	*
	10	36,81	7,82	34,74	8,69	32,7	9,67	30,66	10,76	*	*
31	0	30,26	7,93	28,57	8,77	26,94	9,73	25,37	10,82	23,84	12,04
	2,5	32,66	8,02	30,83	8,9	29,05	9,91	27,33	11,04	25,64	12,29
	5	35,2	8,15	33,22	9,07	31,29	10,11	29,41	11,27	27,55	12,55
	7,5	37,89	8,32	35,76	9,26	33,66	10,33	31,61	11,51	*	*
	10	40,74	8,52	38,44	9,48	36,17	10,55	33,94	11,74	*	*
37	0	35,85	8,31	33,73	9,23	31,38	10,27	28,82	11,44	26,06	12,73
	2,5	38,69	8,53	36,39	9,44	33,86	10,49	31,1	11,67	28,13	12,97
	5	41,65	8,76	39,17	9,67	36,44	10,72	33,48	11,91	30,29	13,23
	7,5	44,73	9,01	42,05	9,92	39,12	10,97	35,94	12,16	*	*
	10	47,93	9,28	45,04	10,19	41,89	11,24	38,49	12,43	*	*
41	0	41,11	10,43	38,66	11,45	36,03	12,57	33,21	13,85	30,17	15,32
	2,5	44,26	10,73	41,63	11,77	38,8	12,91	35,77	14,18	32,52	15,63
	5	47,53	11,04	44,7	12,11	41,66	13,26	38,42	14,54	34,94	15,98
	7,5	50,93	11,37	47,87	12,46	44,62	13,63	41,14	14,91	*	*
	10	54,44	11,7	51,15	12,83	47,66	14,02	43,94	15,31	*	*

P_f: Refrigeration capacity [kW]

P_{comp}: Power absorbed by the compressor [kW]

T_{ev}: evaporation temperature [°C]

Size	T _a [°C]	RH %	Condensation temperature [°C]									
			40		45		50		55		60	
			P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}
6	-10	95	4,45	1,8	4,59	2,06	*	*	*	*	*	*
	-5	90	4,93	1,76	5,05	2,01	5,19	2,3	*	*	*	*
	0	90	5,48	1,73	5,58	1,97	5,69	2,24	5,84	2,55	*	*
	5	80	6	1,69	6,07	1,93	6,17	2,2	6,26	2,5	6,4	2,84
	7	87	6,36	1,67	6,4	1,91	6,47	2,17	6,54	2,47	6,65	2,81
	10	70	6,53	1,67	6,57	1,9	6,63	2,16	6,7	2,46	6,81	2,79
8	-10	95	5,41	2,22	5,41	2,52	*	*	*	*	*	*
	-5	90	6,17	2,18	6,15	2,47	6,12	2,81	*	*	*	*
	0	90	7,01	2,14	6,97	2,42	6,93	2,74	6,88	3,11	*	*
	5	80	7,76	2,1	7,71	2,37	7,65	2,68	7,55	3,03	7,46	3,44
	7	87	8,25	2,07	8,17	2,34	8,07	2,64	7,97	2,99	7,86	3,39
	10	70	8,48	2,06	8,4	2,33	8,32	2,62	8,22	2,97	8,11	3,35
10	-10	95	6,82	2,72	6,8	3,1	*	*	*	*	*	*
	-5	90	7,77	2,68	7,75	3,04	7,74	3,46	*	*	*	*
	0	90	8,88	2,62	8,79	2,98	8,75	3,38	8,71	3,85	*	*
	5	80	9,81	2,58	9,75	2,92	9,69	3,31	9,61	3,75	9,48	2,27
	7	87	10,44	2,55	10,35	2,88	10,27	3,26	10,13	3,7	10	4,2
	10	70	10,75	2,53	10,67	2,86	10,57	3,24	10,46	3,67	10,32	4,16
14	-10	95	9,35	3,63	9,33	4,14	*	*	*	*	*	*
	-5	90	10,72	3,57	10,67	4,06	10,59	4,63	*	*	*	*
	0	90	12,24	3,49	12,15	3,97	12,06	4,51	11,96	5,15	*	*
	5	80	13,59	3,43	13,49	3,89	13,35	4,41	13,17	5,03	12,98	5,73
	7	87	14,48	3,38	14,34	3,84	14,12	4,36	13,94	4,95	13,73	5,64
	10	70	14,89	3,37	14,74	3,81	14,58	4,32	14,4	4,91	14,17	5,58
16	-10	95	11,62	4,06	11,39	4,5	*	*	*	*	*	*
	-5	90	13,16	4,1	12,99	4,54	12,71	5,04	*	*	*	*
	0	90	14,85	4,12	14,74	4,57	14,52	5,06	14,19	5,62	*	*
	5	80	16,38	4,14	16,28	4,58	16,11	5,08	15,84	5,64	15,37	6,26
	7	87	17,43	4,14	17,31	4,59	17,12	5,09	16,82	5,64	16,37	6,26
	10	70	17,95	4,14	17,8	4,59	17,63	5,09	17,37	5,65	16,99	6,26
18	-10	95	13,32	4,73	12,99	5,19	*	*	*	*	*	*
	-5	90	15,13	4,77	14,83	5,24	14,44	5,76	*	*	*	*
	0	90	17,11	4,8	16,92	5,27	16,51	5,79	16,05	6,37	*	*
	5	80	18,77	4,82	18,58	5,29	18,31	5,82	17,92	6,39	17,38	7,03
	7	87	19,93	4,82	19,75	5,3	19,47	5,82	19,07	6,4	18,45	7,04
	10	70	20,65	4,82	20,35	5,3	20,05	5,83	19,66	6,4	19,15	7,04

P_t: Heating capacity [kW]
P_{comp}: Evaporator inlet air temperature dry bulb [°C]
T_a: External air temperature with dry bulb [°C]
RH: Relative humidity evaporator inlet air[%]

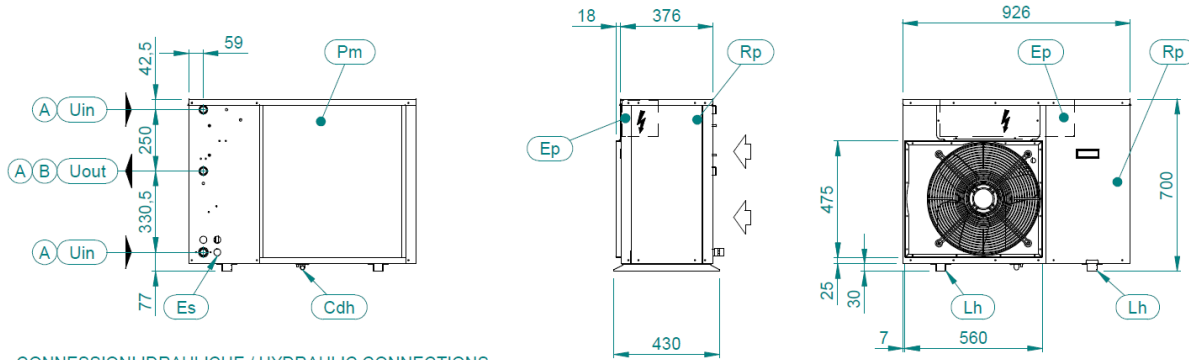
Size	T _a [°C]	RH %	Condensation temperature [°C]									
			40		45		50		55		60	
			P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}
21	-10	95	14,03	4,74	13,6	5,21	*	*	*	*	*	*
	-5	90	15,63	4,78	15,42	5,25	15,01	5,77	*	*	*	*
	0	90	17,77	4,81	17,55	5,28	17,19	5,8	16,71	6,38	*	*
	5	80	19,29	4,82	19,07	5,3	18,85	5,82	18,48	6,4	17,87	7,03
	7	87	20,54	4,82	20,41	5,3	20,21	5,83	19,66	6,4	19,19	7,04
25	-10	95	19,38	7,2	19,07	7,46	*	*	*	*	*	*
	-5	90	20,97	6,89	20,74	7,28	20,67	7,79	*	*	*	*
	0	90	23	6,64	22,8	7,15	22,73	7,77	22,79	8,51	*	*
	5	80	24,98	6,48	24,78	7,07	24,71	7,77	24,76	8,58	24,92	9,5
	7	87	26,32	6,4	26,08	7,03	25,97	7,77	25,99	8,62	26,08	9,57
28	-10	95	22,2	8,3	21,85	8,59	*	*	*	*	*	*
	-5	90	24,03	7,93	23,76	8,39	23,65	8,97	*	*	*	*
	0	90	26,35	7,64	26,11	8,23	26,02	8,95	26,08	9,79	*	*
	5	80	28,66	7,46	28,42	8,14	28,32	8,94	28,37	9,88	28,54	10,93
	7	87	30,25	7,37	29,9	8,1	29,77	8,95	29,76	9,92	29,88	11,01
31	-10	95	24,53	9,11	24,18	9,44	*	*	*	*	*	*
	-5	90	26,56	8,72	26,27	9,22	26,16	9,87	*	*	*	*
	0	90	29,08	8,41	28,85	9,06	28,81	9,85	28,84	10,78	*	*
	5	80	31,47	8,22	31,26	8,96	31,22	9,85	31,34	10,88	31,6	12,05
	7	87	33,2	8,12	32,94	8,92	32,84	9,85	32,9	10,93	33,04	12,13
37	-10	95	24,97	8,04	24,88	8,97	*	*	*	*	*	*
	-5	90	28,11	8,12	28	9,08	27,87	10,16	*	*	*	*
	0	90	31,75	8,17	31,57	9,15	31,31	10,25	31,02	11,48	*	*
	5	80	35,01	8,19	34,74	9,18	34,42	10,29	34,04	11,54	33,56	12,95
	7	87	37,37	8,21	36,87	9,19	36,45	10,3	35,95	11,57	35,3	12,98
41	-10	95	38,63	8,22	38,1	9,19	37,62	10,31	37,09	11,57	36,48	13
	-5	90	28,13	9,44	28,23	10,63	*	*	*	*	*	*
	0	90	31,55	9,51	31,55	10,63	31,62	11,97	*	*	*	*
	5	80	35,61	9,62	35,46	10,69	35,37	11,96	35,35	13,44	*	*
	7	87	39,35	9,73	39,03	10,78	38,79	12	38,59	13,42	38,42	15,08
41	7	87	41,9	9,8	41,58	10,84	41,26	12,04	40,83	13,43	40,42	15,05
	10	70	43,31	9,84	42,98	10,88	42,56	12,07	42,11	13,45	41,63	15,04

P_t: Heating capacity [kW]

P_{comp}: Evaporator inlet air temperature dry bulb [°C]

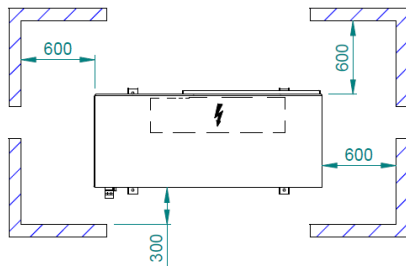
T_a: External air temperature with dry bulb [°C]

HR: Relative humidity evaporator inlet air[%]

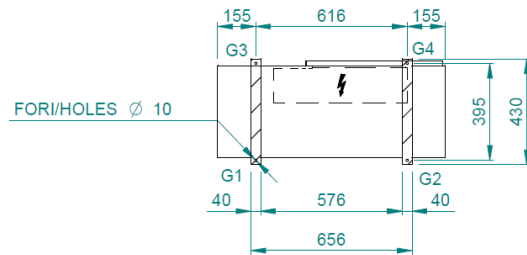


CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO
WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P
HYDRAULIC MODULE ST1P



SPAZI DI INSTALLAZIONE / CLEARANCES

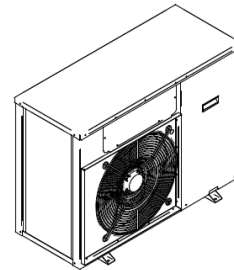


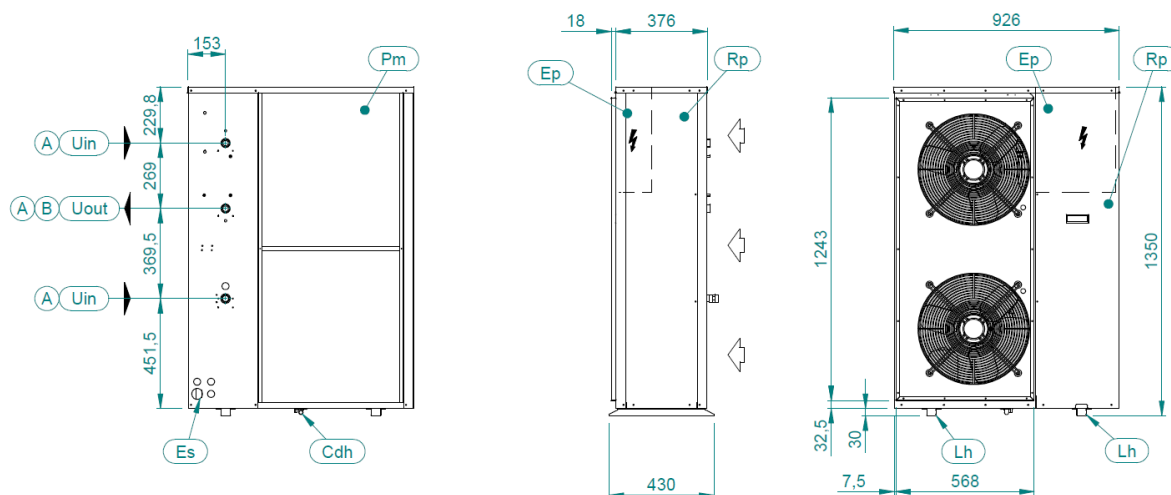
IMPRONTA A TERRA / FOOTPRINT

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
6	74	74
8	82	82
10	89	89
ST1P 6	84	84
ST1P 8	92	92
ST1P 10	99	99
HP 6	86	86
HP 8	91	91
HP 10	95	95
HP ST1P 6	96	96
HP ST1P 8	101	101
HP ST1P 10	105	105

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	430	700

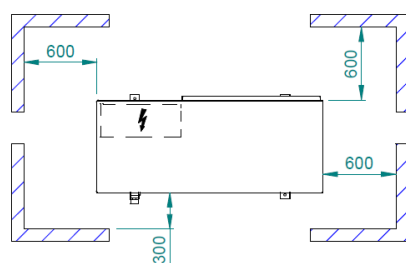
Ep	QUADRO ELETTRICO ELECTRICAL PANEL	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET



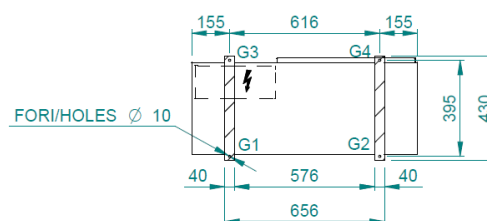


CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO
WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P
HYDRAULIC MODULE ST1P



SPAZI DI INSTALLAZIONE / CLEARANCES



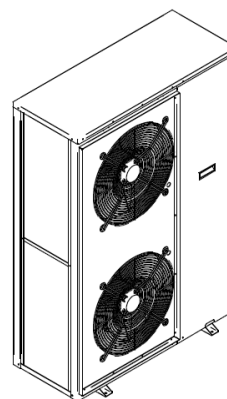
IMPRONTA A TERRA / FOOTPRINT

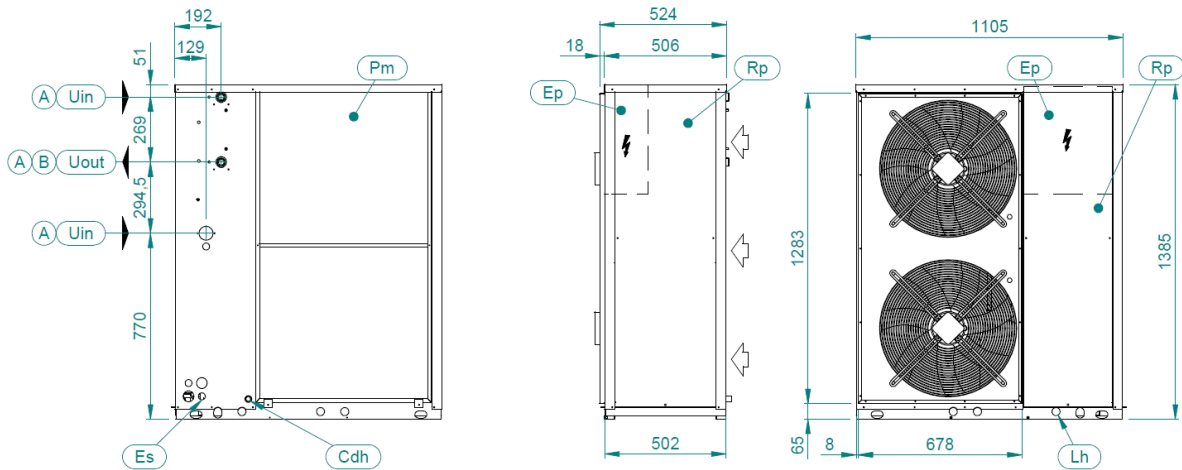
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
14	118	119
16	135	136
18	147	148
ST1P 14	133	134
ST1P 16	150	151
ST1P 18	162	163
HP 14	131	132
HP 16	145	146
HP 18	161	162
HP ST1P 14	146	147
HP ST1P 16	160	161
HP ST1P 18	176	177

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	430	1350

Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	ø18
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" BSPM
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM

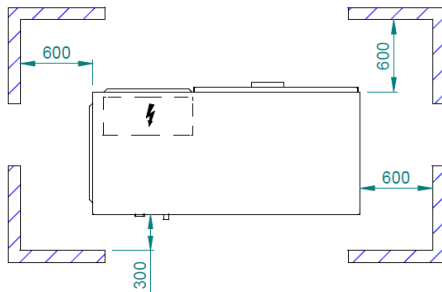
Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	





CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO / WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P / HYDRAULIC MODULE ST1P



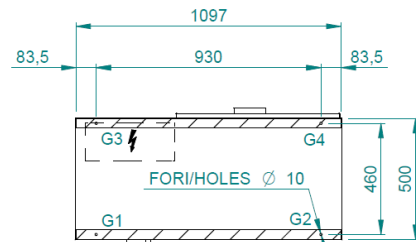
SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO / MODEL	PESO / WEIGHT (kg)	PESO IN FUNZIONE / OPERATING WEIGHT (kg)
21	178	180
25	190	192
28	224	226
ST1P 21	198	200
ST1P 25	210	212
ST1P 28	244	246
HP 21	210	212
HP 25	218	220
HP 28	245	247
HP ST1P 21	230	232
HP ST1P 25	238	240
HP ST1P 28	265	267

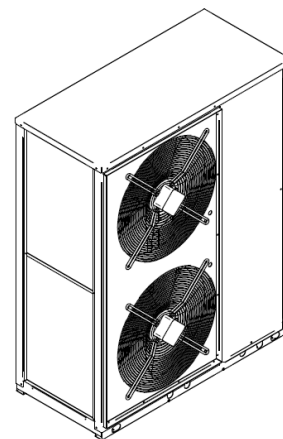
Ep	QUADRO ELETTRICO / ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA / ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO / LIFTING HOLES	ø34

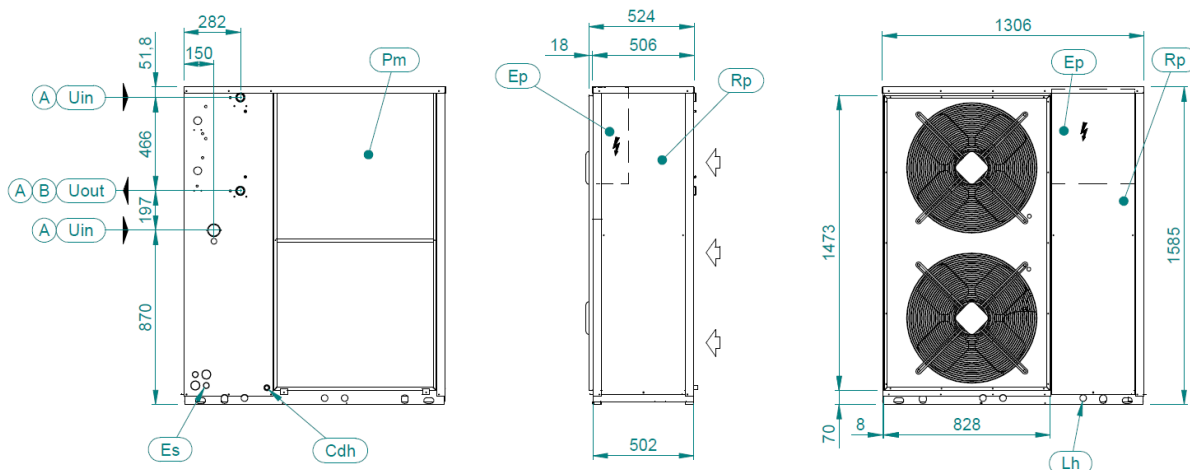
DIMENSIONI - DIMENSIONS		
LUNGHEZZA / WIDTH	PROFONDITA' / DEPTH	ALTEZZA / HEIGHT
1105	524	1385

Pm	GRIGLIE DI PROTEZIONE / PROTECTIVE METAL MESH	
Rp	PANNELLO ASPORTABILE / REMOVABLE PANEL	
Cdh	SCARICO CONDENSATI VERSIONE HP / CONDENSATE DRAIN HP VERSION	OPTIONAL ø22
Uin	INGRESSO ACQUA UTILIZZO / USER WATER INLET	A = 1" BSPM B = 1" 1/4 BSPM
Uout	USCITA ACQUA UTILIZZO / USER WATER OUTLET	A/B = 1" BSPM



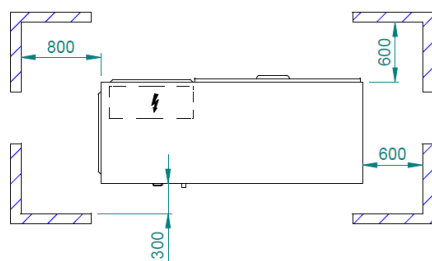
IMPRONTA A TERRA / FOOTPRINT





CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO / WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P / HYDRAULIC MODULE ST1P



SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
31	324	326
37	326	328
41	337	339
ST1P 31	344	346
ST1P 37	351	353
ST1P 41	362	364
HP 31	353	355
HP 37	358	360
HP 41	374	376
HP ST1P 31	373	375
HP ST1P 37	383	385
HP ST1P 41	399	401

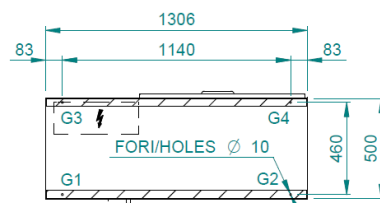
QUADRO ELETTRICO ELECTRICAL PANEL	
Ep	

INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Es	

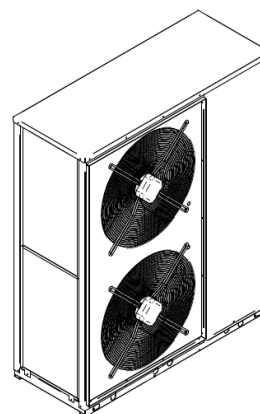
FORI DI SOLLEVAMENTO LIFTING HOLES	
Lh	ø34

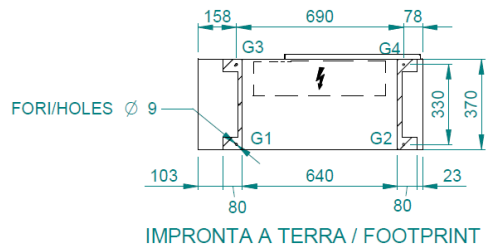
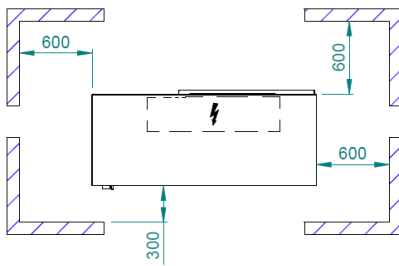
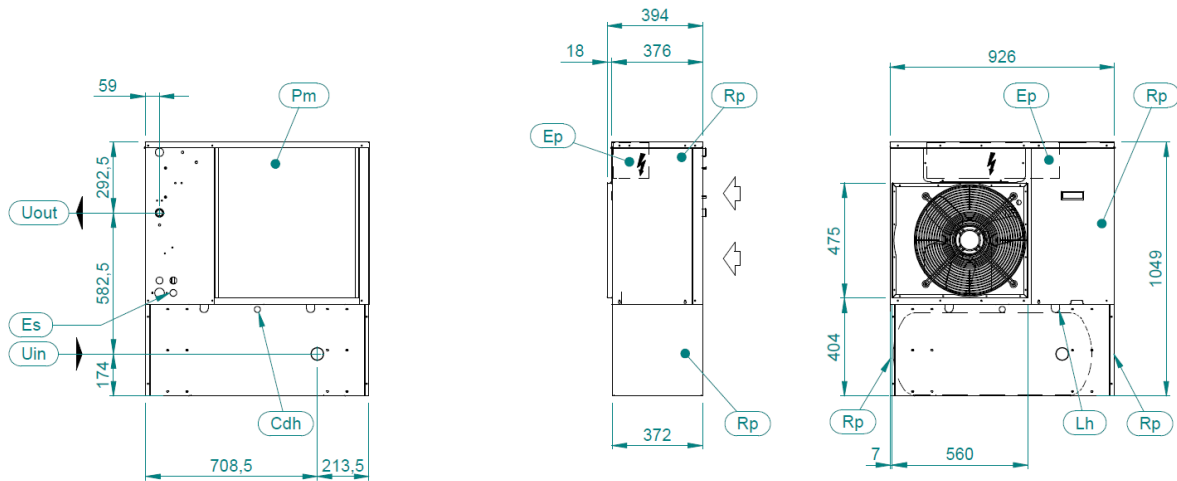
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1306	524	1585

Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" ¼ BSPM
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" ¼ BSPM



IMPRONTA A TERRA / FOOTPRINT



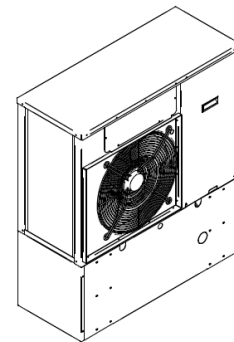


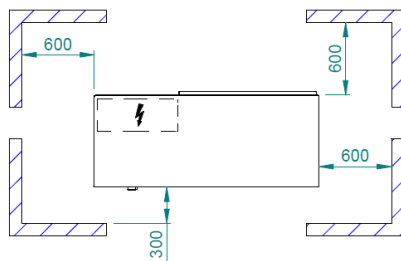
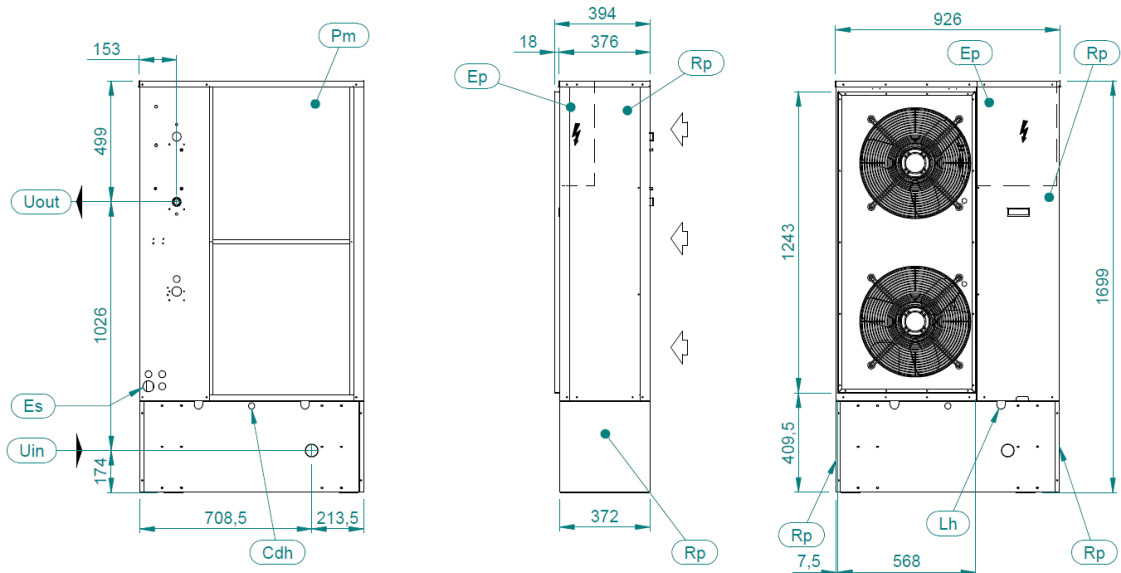
SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 6	153	188
ST1PS 8	163	198
ST1PS 10	171	206
HP ST1PS 6	135	191
HP ST1PS 8	140	201
HP ST1PS 10	144	208

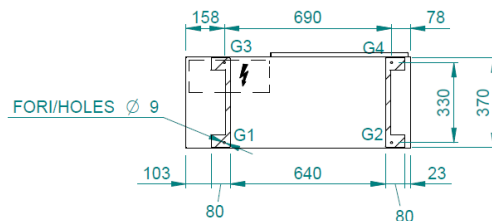
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	394	1049

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET

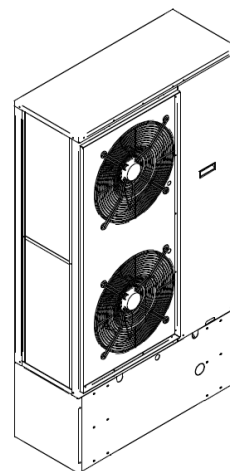




SPAZI DI INSTALLAZIONE / CLEARANCES



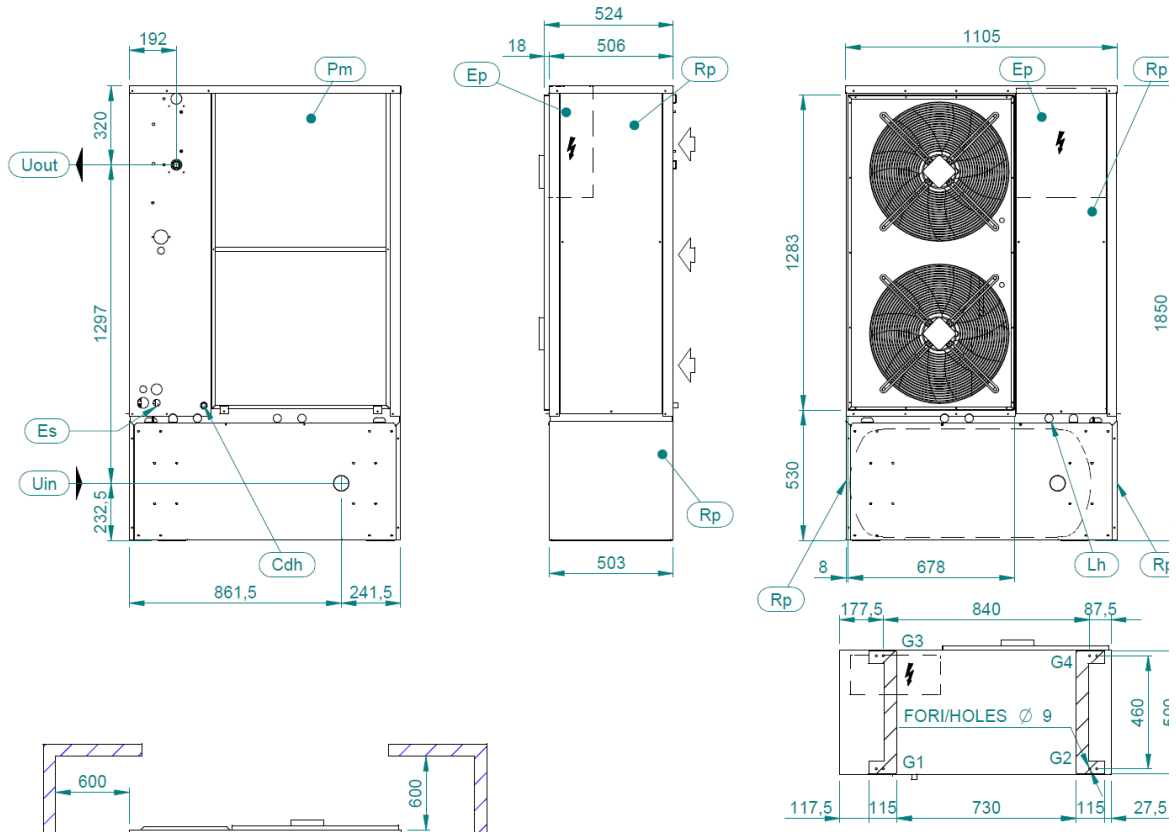
IMPRONTA A TERRA / FOOTPRINT



MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 14	183	253
ST1PS 16	200	270
ST1PS 18	212	282
HP ST1PS 14	196	266
HP ST1PS 16	210	280
HP ST1PS 18	226	296

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	394	1690

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET



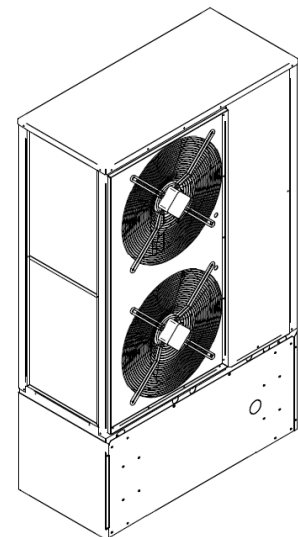
IMPRONTA A TERRA / FOOTPRINT

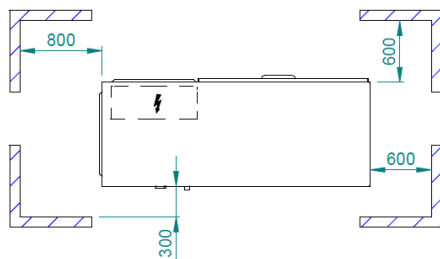
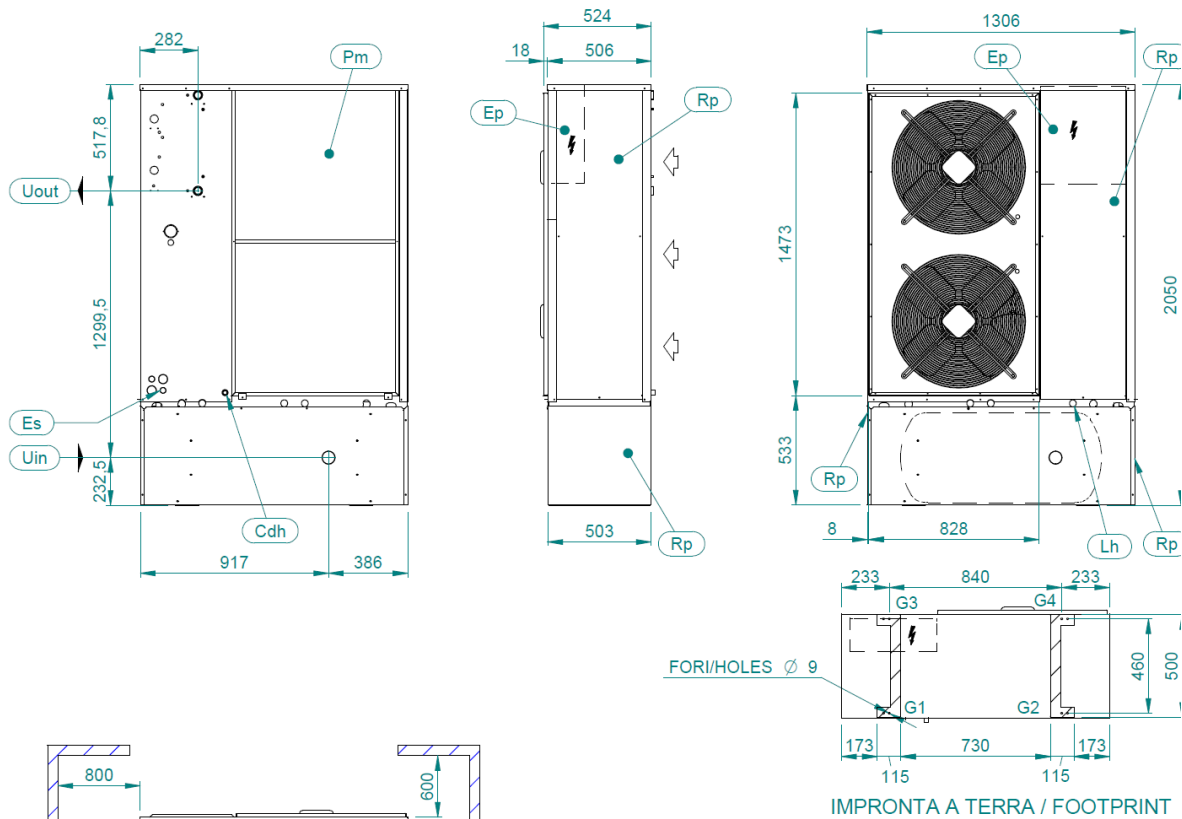
SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 21	280	422
ST1PS 25	333	448
ST1PS 28	347	462
HP ST1PS 21	295	425
HP ST1PS 25	331	461
HP ST1PS 28	339	469

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	524	1850

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Cdh	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" ¼ BSPF
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM





SPAZI DI INSTALLAZIONE / CLEARANCES

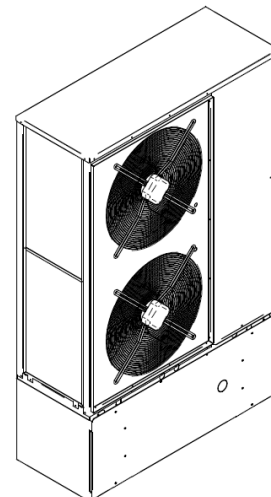
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 31	417	557
ST1PS 37	424	564
ST1PS 41	432	572
HP ST1PS 31	446	586
HP ST1PS 37	456	596
HP ST1PS 41	472	612

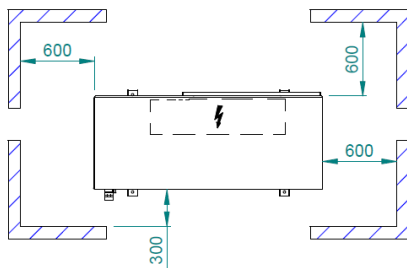
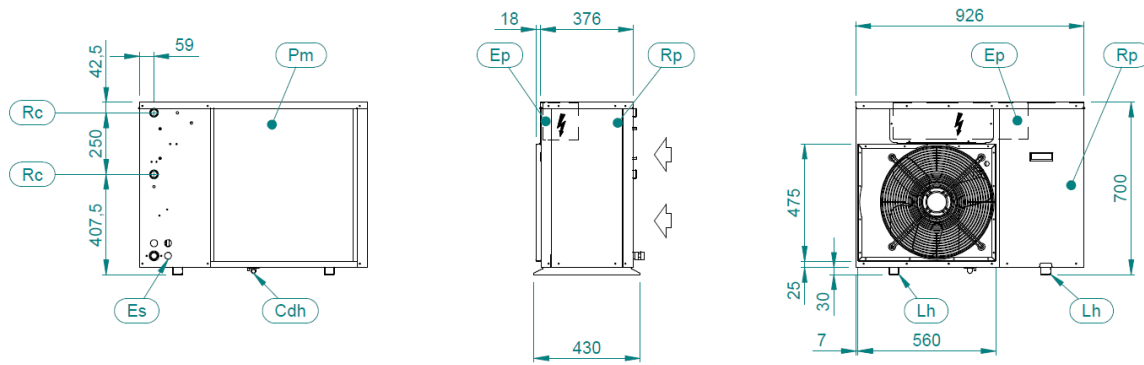
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1306	524	2050

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET

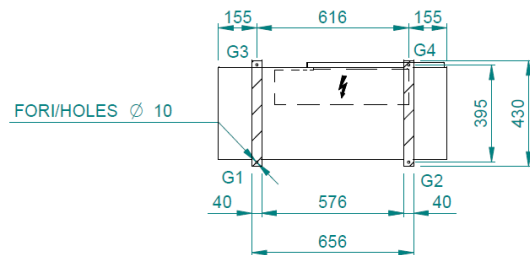
Optional: ø22

Water inlet/outlet: 1" ¼ BSPF / 1" ¼ BSPM





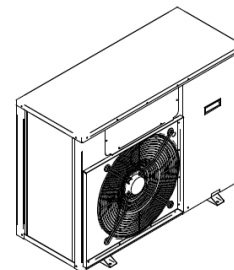
SPAZI DI INSTALLAZIONE / CLEARANCES

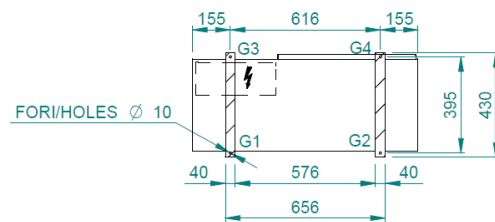
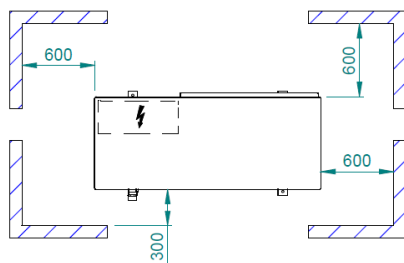
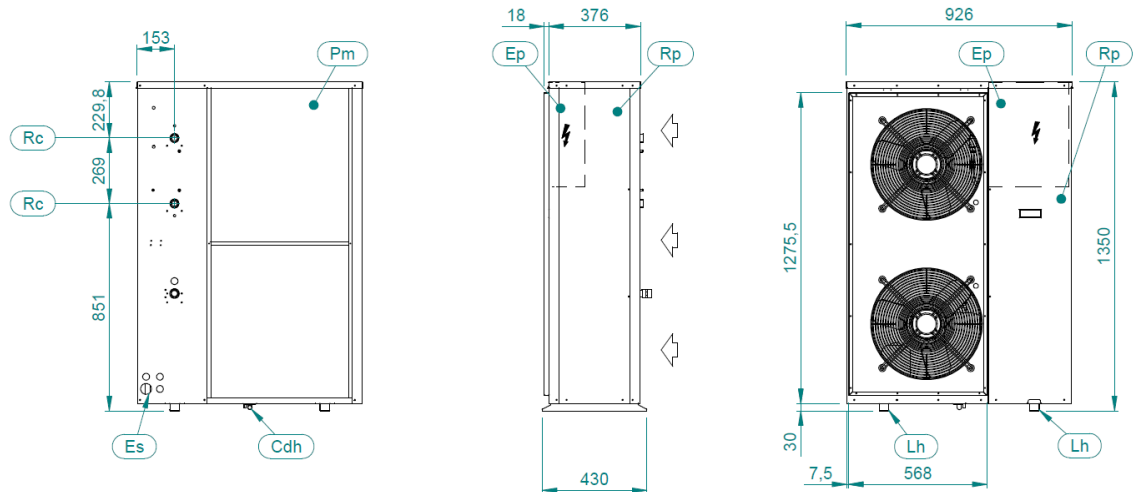


IMPRONTA A TERRA / FOOTPRINT

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
			LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
LE 6	71	71	926	430	700
LE 8	78	78			
LE 10	85	85			
LE/HP 6	83	83			
LE/HP 8	87	87			
LE/HP 10	91	91			

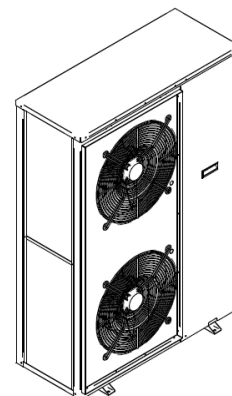
Ep	QUADRO ELETTRICO ELECTRICAL PANEL		
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION \varnothing 18



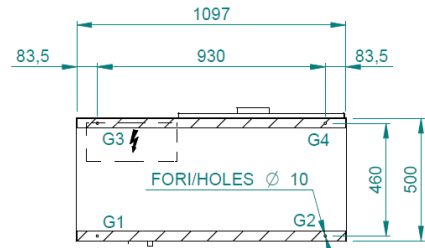
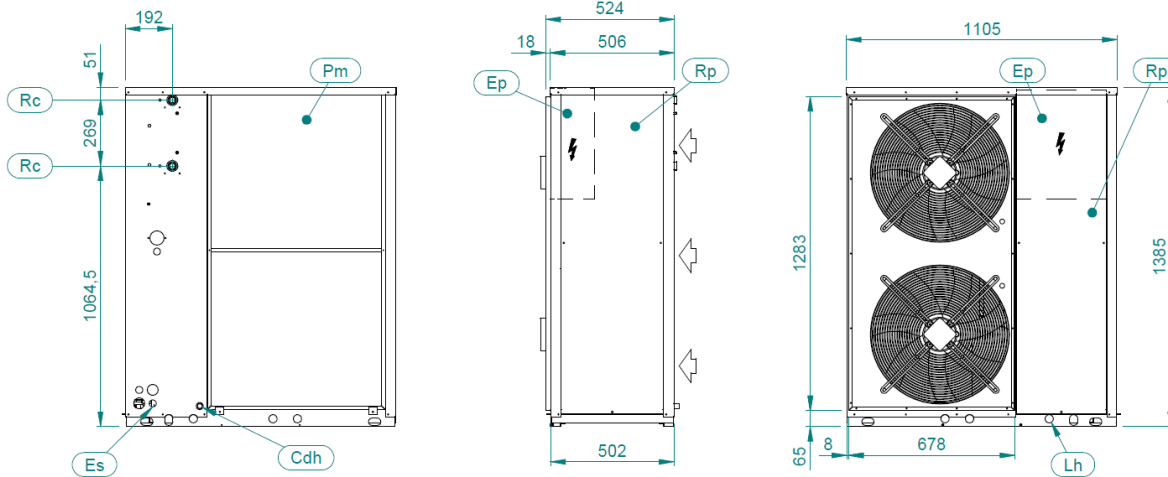


SPAZI DI INSTALLAZIONE / CLEARANCES

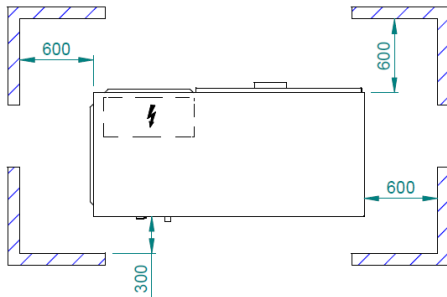
IMPRONTA A TERRA / FOOTPRINT



MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
			LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
LE 14	114	114	926	430	1350
LE 16	131	131			
LE 18	142	142			
LE/HP 14	127	127			
LE/HP 16	141	141			
LE/HP 18	156	156			
Ep	QUADRO ELETTRICO ELECTRICAL PANEL				
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET		Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES		Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH		Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	
				ø18	



IMPRONTA A TERRA / FOOTPRINT



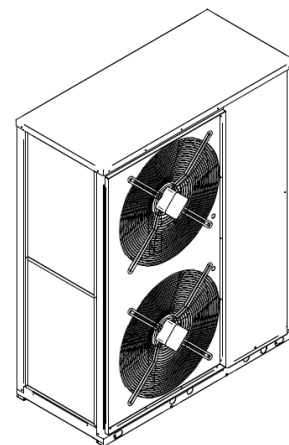
SPAZI DI INSTALLAZIONE / CLEARANCES

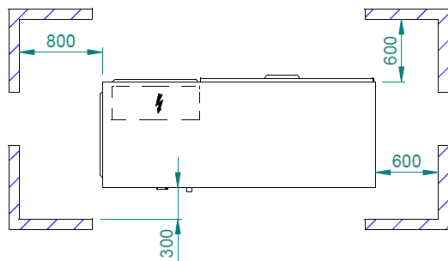
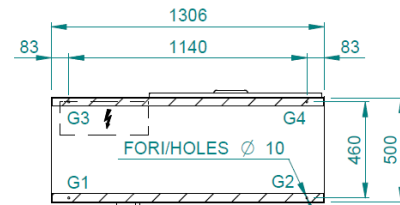
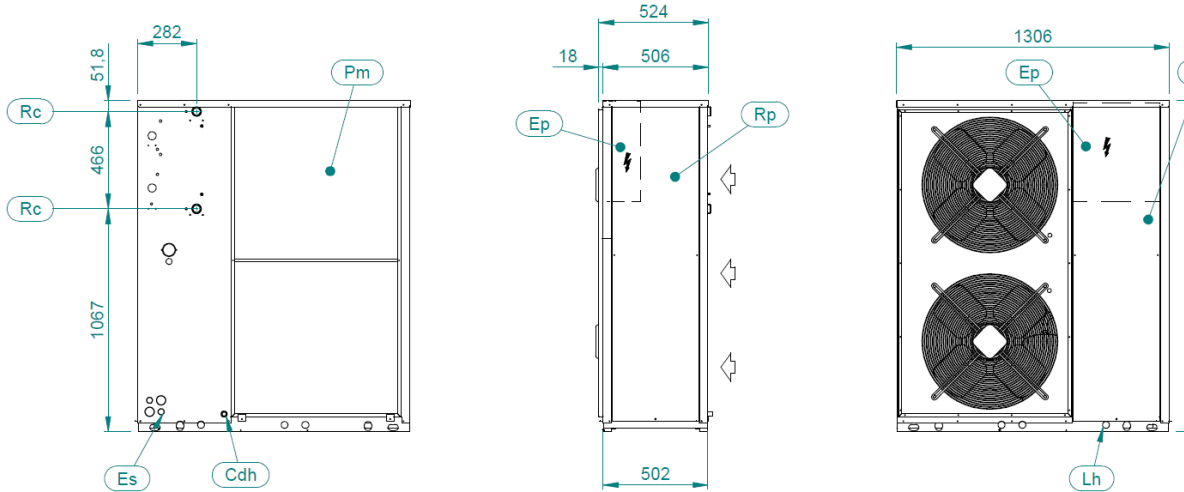
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
LE 21	171	171
LE 25	183	183
LE 28	216	216
LE/HP 21	203	203
LE/HP 25	211	211
LE/HP 28	237	237

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	524	1385

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø34
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS	
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22



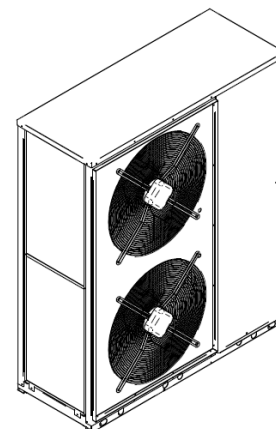


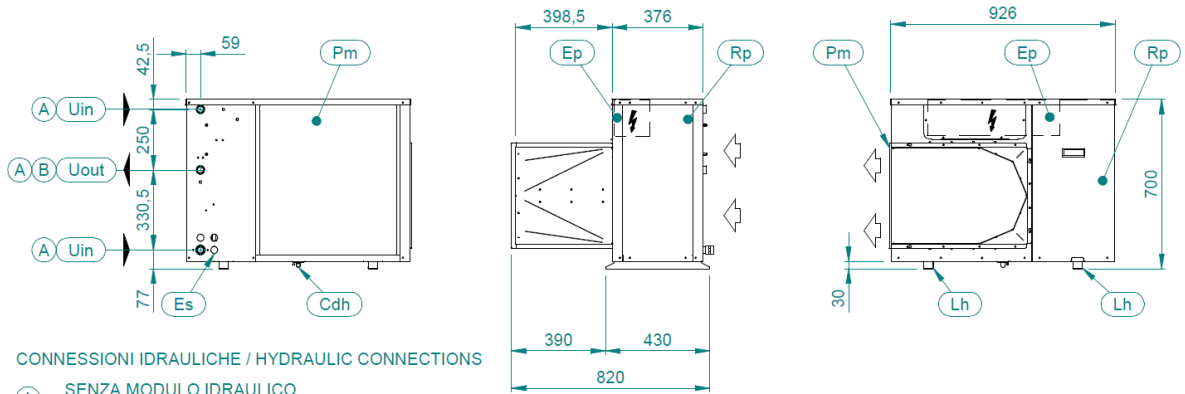
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
LE 31	312	312
LE 37	318	318
LE 41	323	323
LE/HP 31	341	341
LE/HP 37	344	344
LE/HP 41	360	360

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1306	524	1585

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø34
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

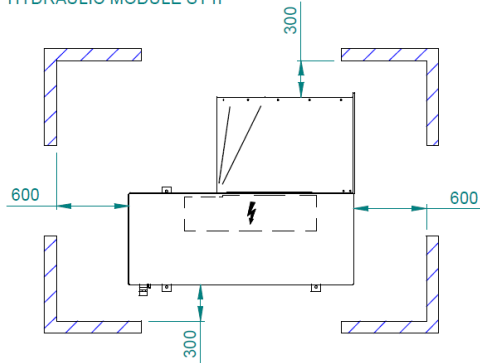
Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS	
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22



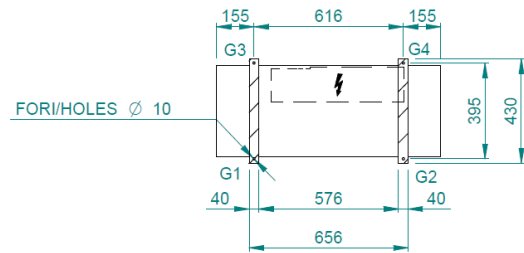


CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO
WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P
HYDRAULIC MODULE ST1P

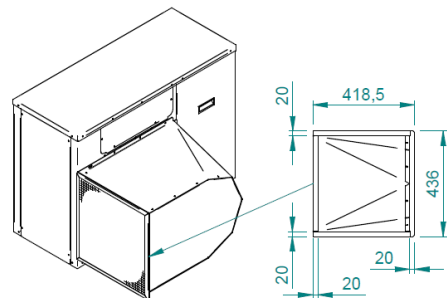


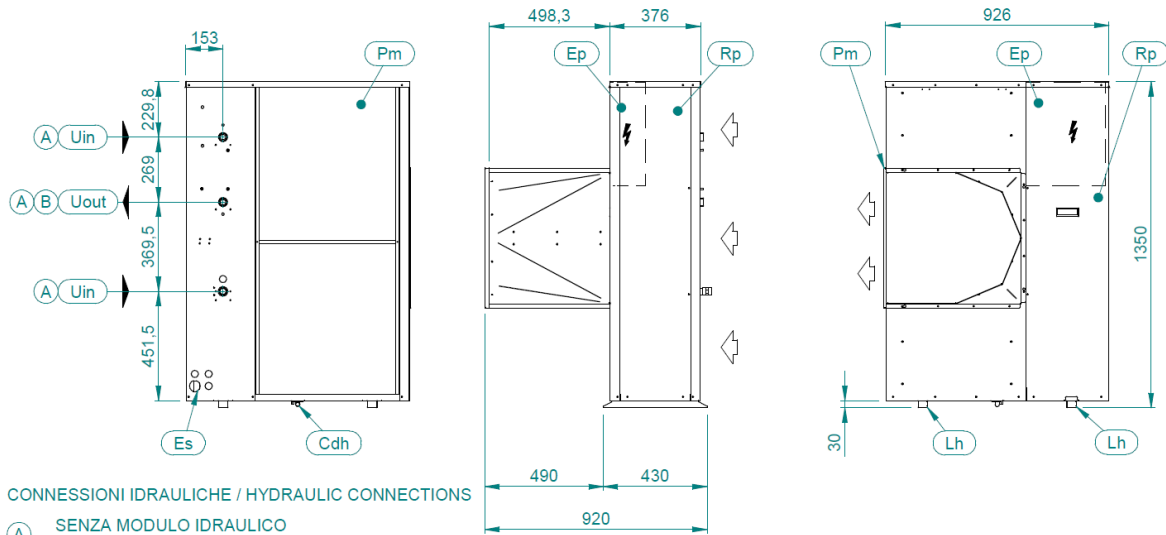
SPAZI DI INSTALLAZIONE / CLEARANCES



IMPRONTA A TERRA / FOOTPRINT

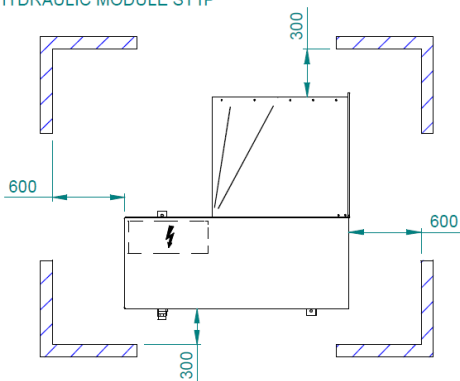
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
			LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
6	97	97	926	820	700
8	105	105			
10	112	112			
HP 6	109	109			
HP 8	114	114			
HP 10	118	118			
Ep	QUADRO ELETTRICO ELECTRICAL PANEL		Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET		Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	ø18
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES		Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH		Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	



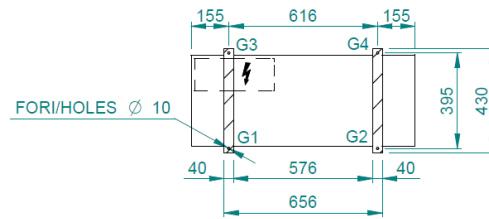


CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO / WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P / HYDRAULIC MODULE ST1P



SPAZI DI INSTALLAZIONE / CLEARANCES



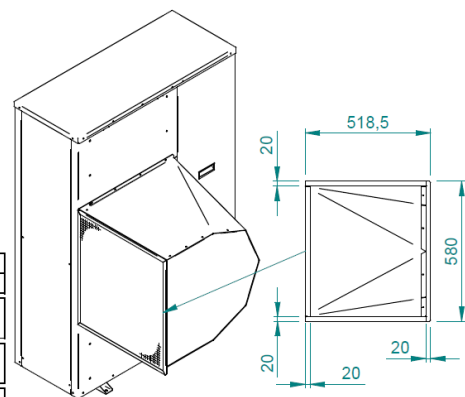
IMPRONTA A TERRA / FOOTPRINT

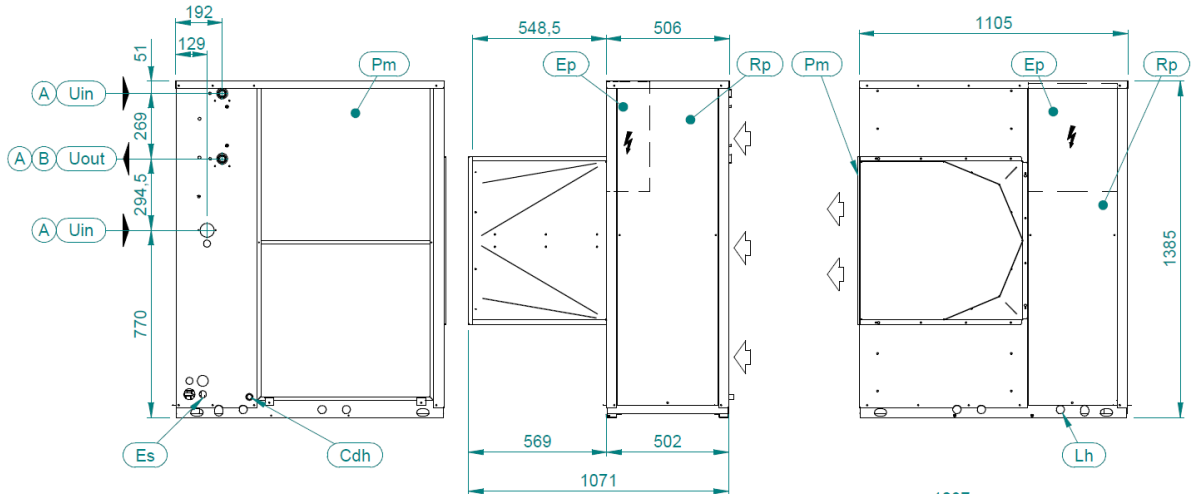
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
14	152	153
16	169	170
18	181	182
HP 14	165	166
HP 16	179	180
HP 18	195	196

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	920	1350

Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

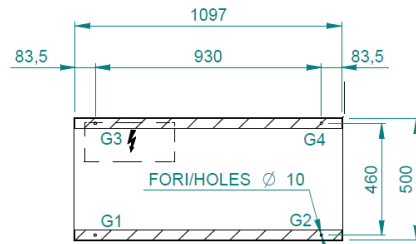
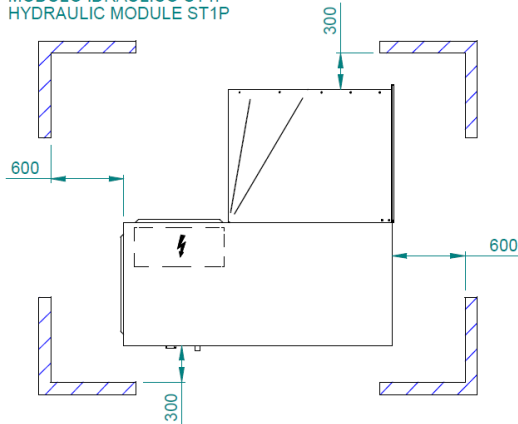
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	\varnothing 18
	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" BSPM
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM



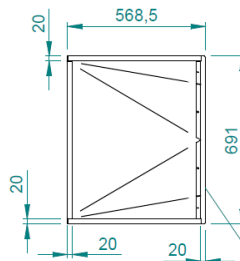


CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO
WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P
HYDRAULIC MODULE ST1P



IMPRONTA A TERRA / FOOTPRINT



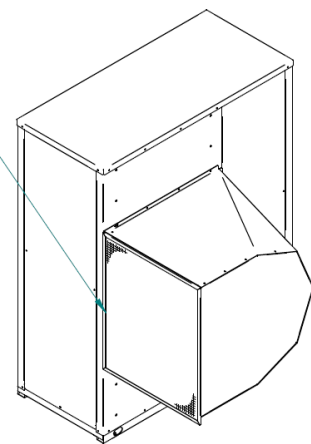
SPAZI DI INSTALLAZIONE / CLEARANCES

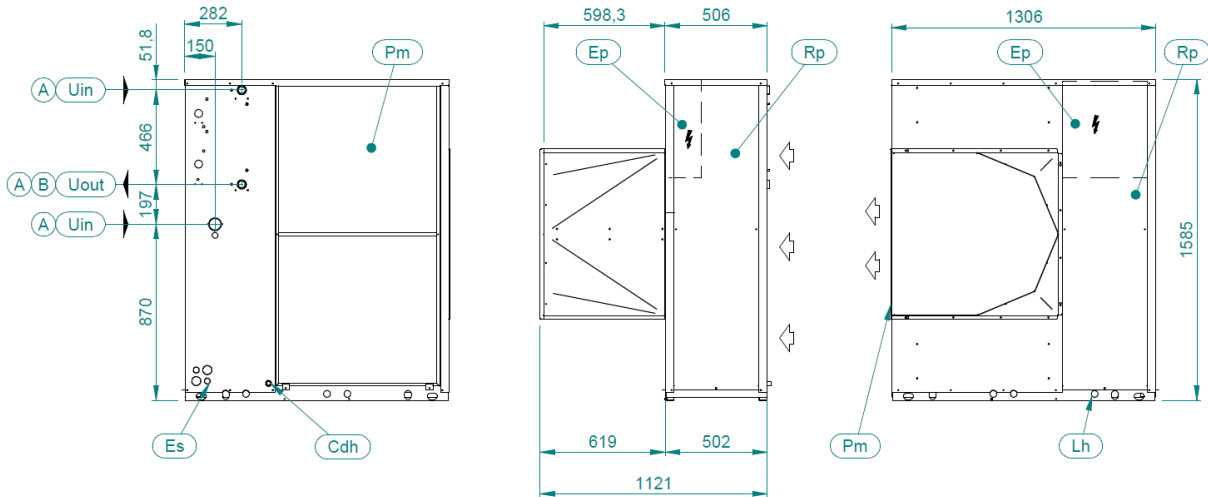
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
21	221	223
25	233	235
28	267	269
HP 21	253	255
HP 25	261	263
HP 28	288	290

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	1071	1385

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø34
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

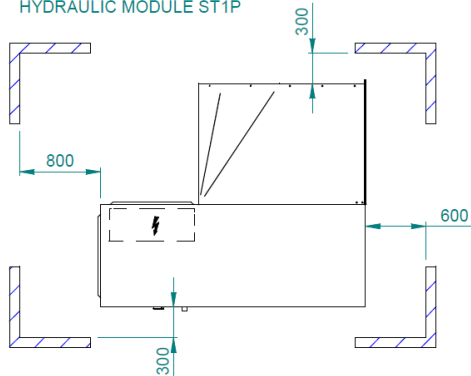
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	A = 1" BSPM B = 1" 1/4 BSPM
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	A/B = 1" BSPM





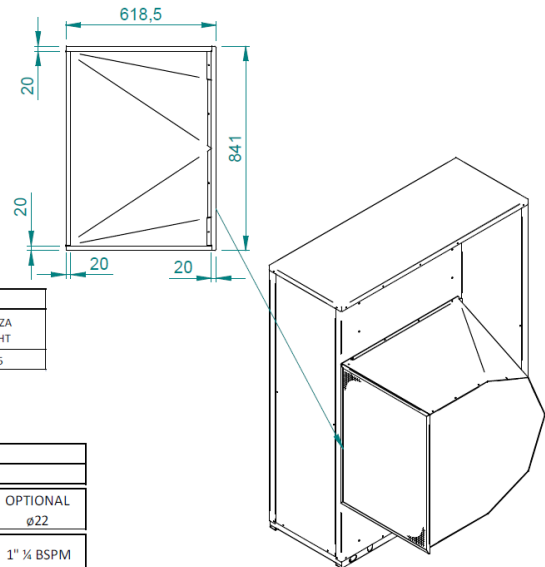
CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

- (A) SENZA MODULO IDRAULICO
WITHOUT HYDRAULIC MODULE
- (B) MODULO IDRAULICO ST1P
HYDRAULIC MODULE ST1P



SPAZI DI INSTALLAZIONE / CLEARANCES

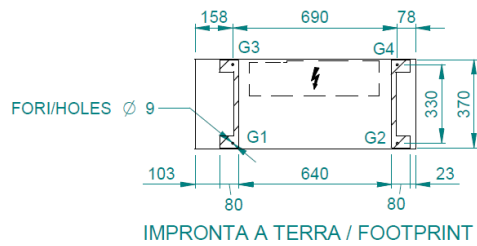
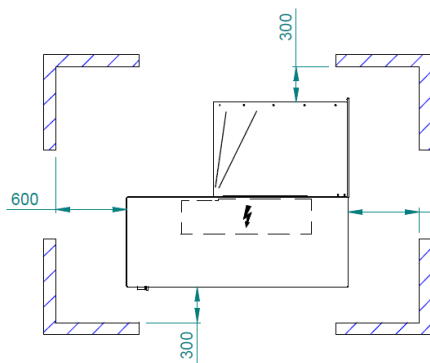
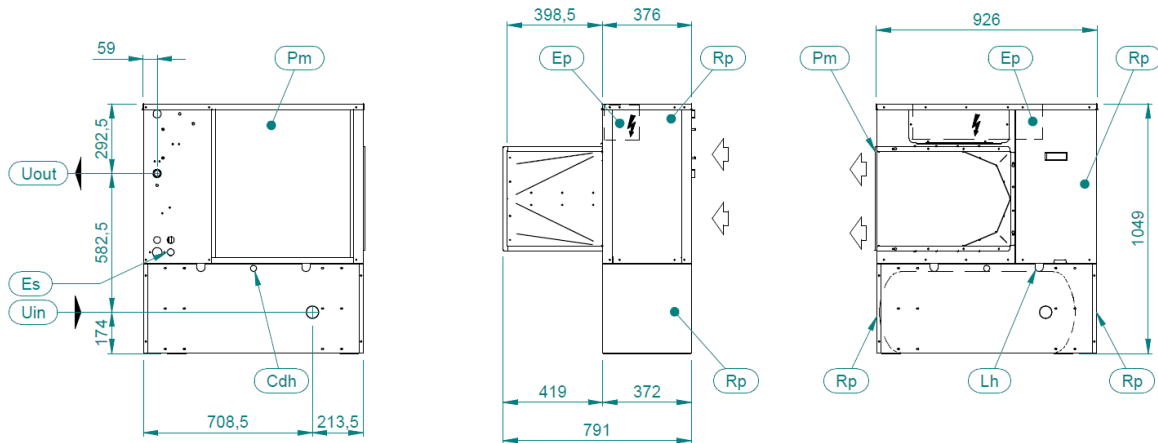
IMPRONTA A TERRA / FOOTPRINT



MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
31	358	360
37	360	362
41	371	373
HP 31	387	389
HP 37	392	394
HP 41	408	410

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1306	1121	1585

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET
			OPTIONAL ø22
			1" ¼ BSPM
			1" ¼ BSPM



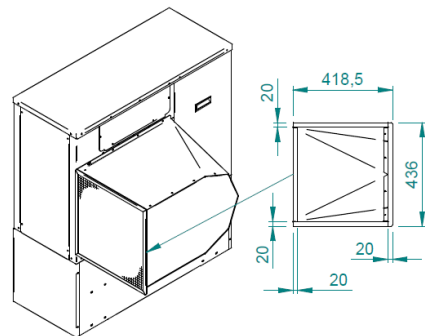
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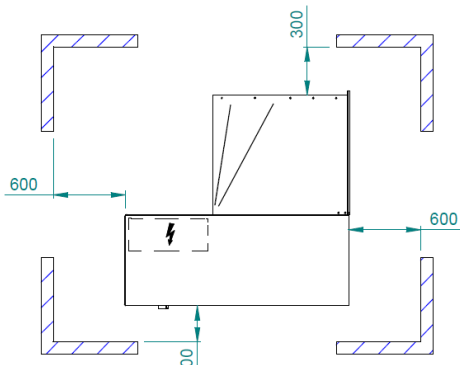
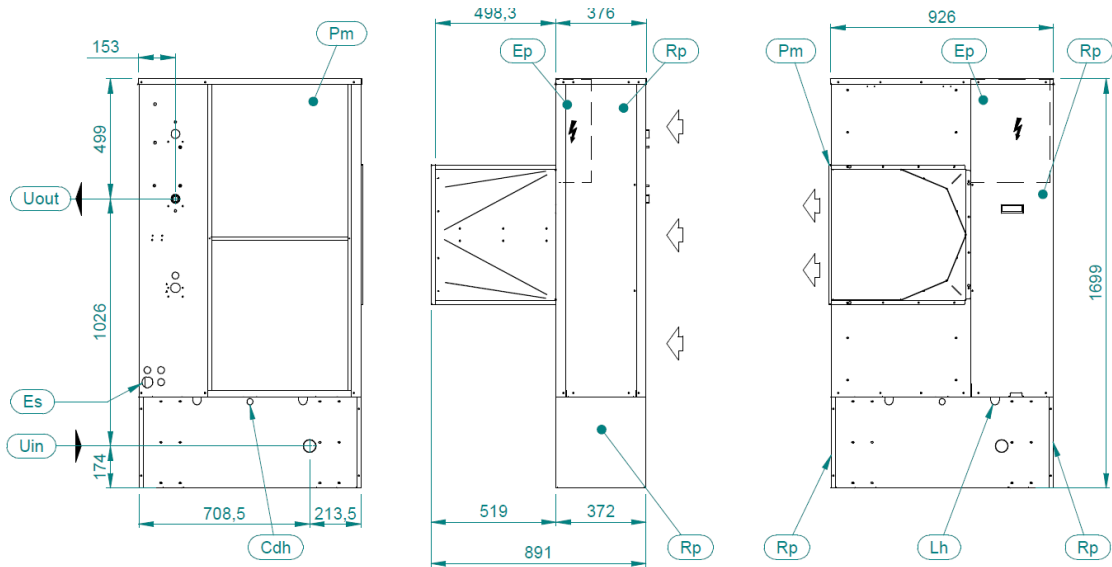
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 6	146	181
ST1PS 8	154	189
ST1PS 10	161	196
HP ST1PS 6	158	214
HP ST1PS 8	163	224
HP ST1PS 10	167	231

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
925	791	1049

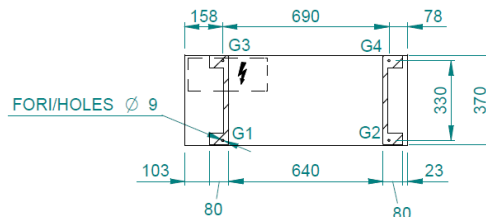
Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø35
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	ø18
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" BSPF
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM

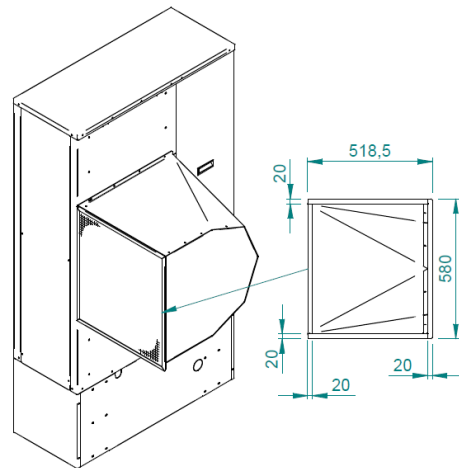




SPAZI DI INSTALLAZIONE / CLEARANCES

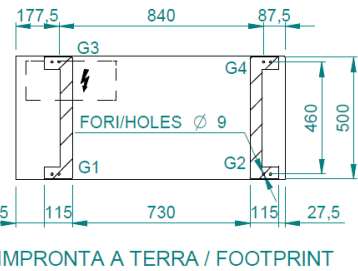
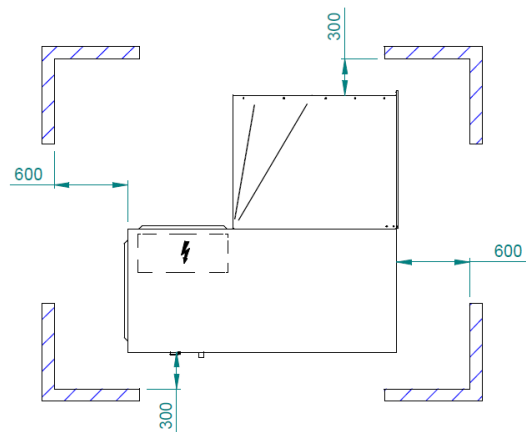
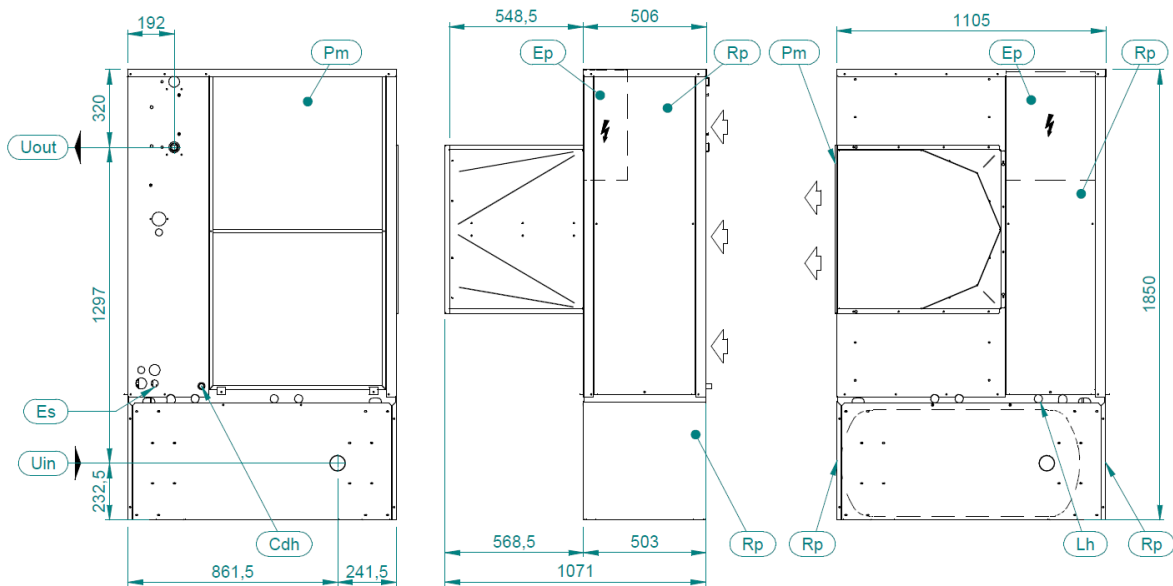


IMPRONTA A TERRA / FOOTPRINT



MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
			LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
STIPS 14	217	287	926	891	1690
STIPS 16	234	304			
STIPS 18	246	316			
HP STIPS 14	230	300			
HP STIPS 16	244	314			
HP STIPS 18	260	330			

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	ø18
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" BSPF
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM



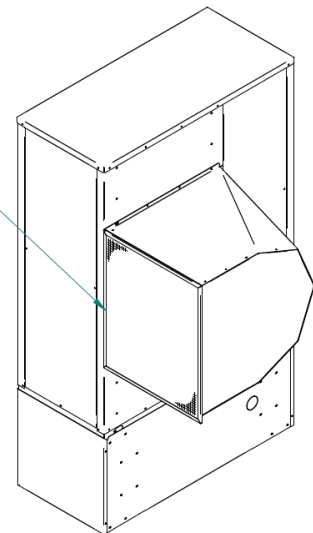
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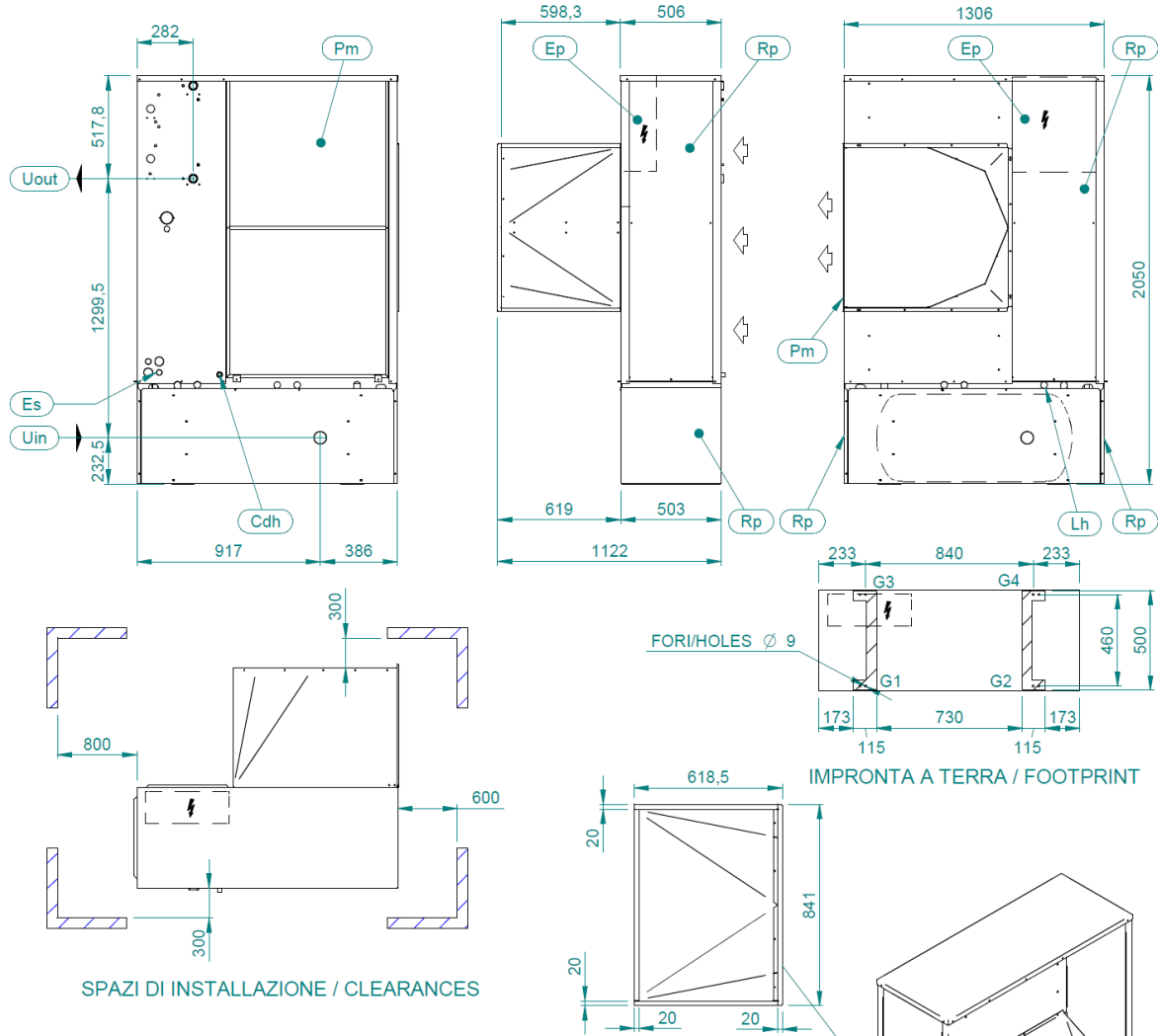
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 21	279	421
ST1PS 25	318	433
ST1PS 28	352	467
HP ST1PS 21	338	468
HP ST1PS 25	374	504
HP ST1PS 28	382	512

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	1071	1850

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	$\varnothing 34$
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL $\varnothing 22$
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" $\frac{1}{4}$ BSPF
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM



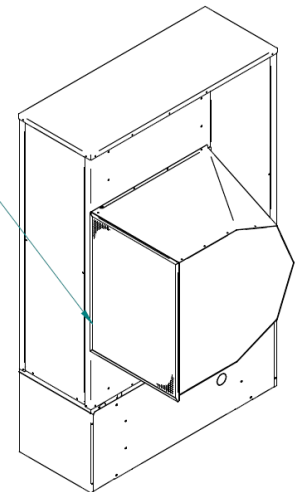


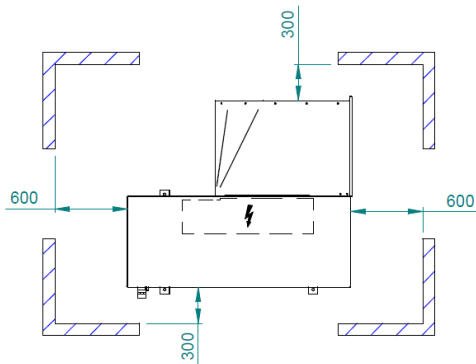
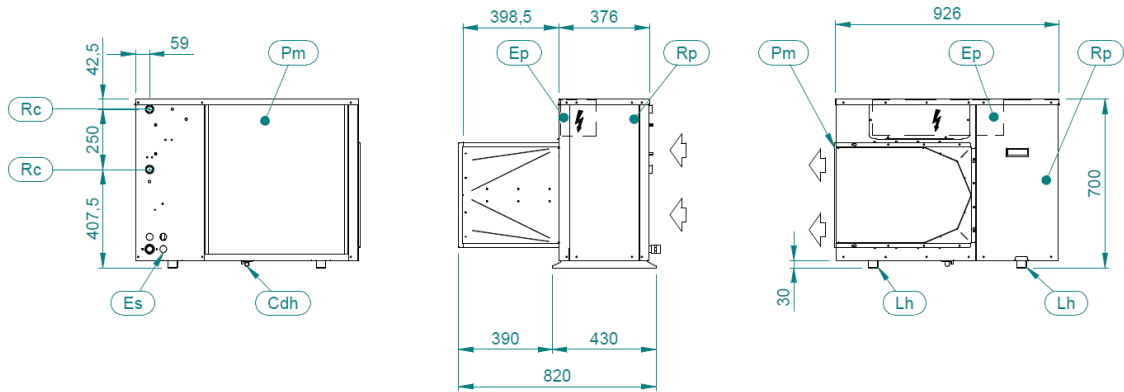
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 31	451	591
ST1PS 37	458	598
ST1PS 41	469	609
HP ST1PS 31	480	620
HP ST1PS 37	490	630
HP ST1PS 41	506	646

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1306	1122	2050

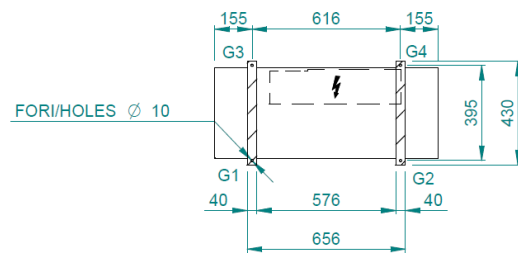
Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø34
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" ¼ BSPF
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" ¼ BSPM



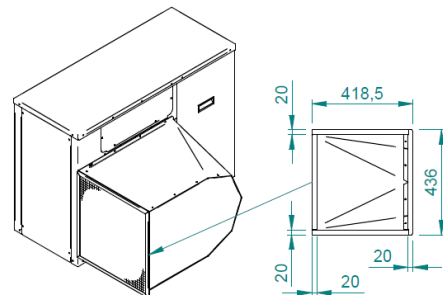


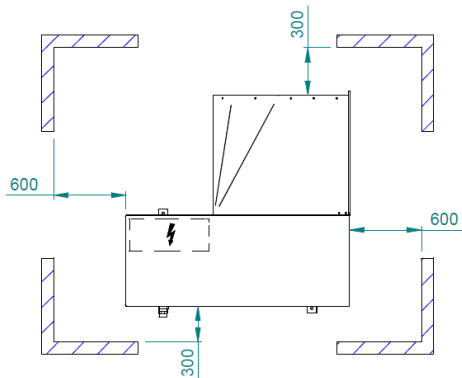
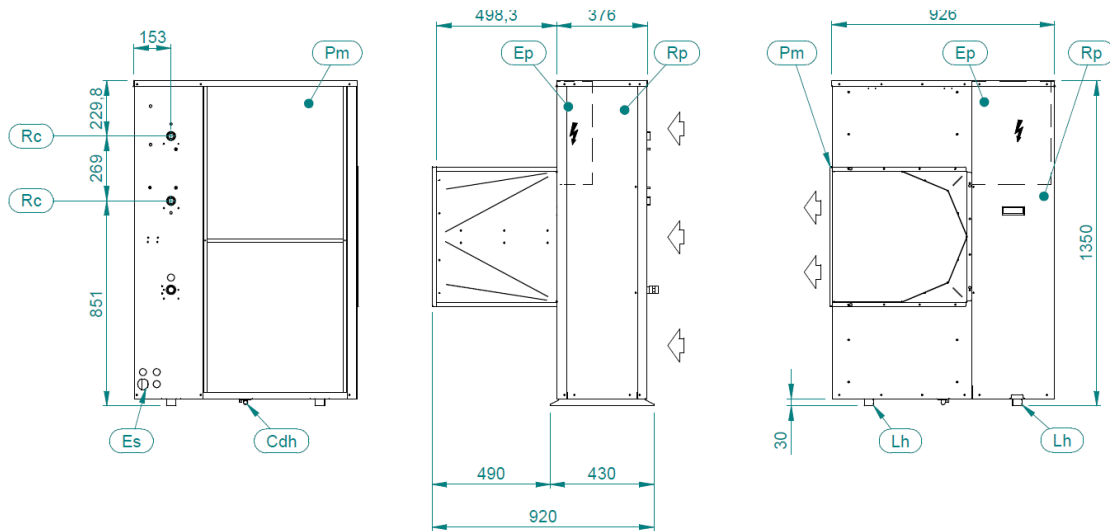
SPAZI DI INSTALLAZIONE / CLEARANCES



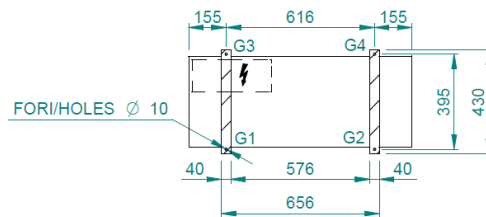
IMPRONTA A TERRA / FOOTPRINT

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
			LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
LE 6	94	94	926	820	700
LE 8	101	101			
LE 10	108	108			
LE/HP 6	106	106			
LE/HP 8	110	110			
LE/HP 10	114	114			
Ep	QUADRO ELETTRICO ELECTRICAL PANEL		Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS	
	Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET		Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Lh		FORI DI SOLLEVAMENTO LIFTING HOLES			Cdh
	Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH			





SPAZI DI INSTALLAZIONE / CLEARANCES



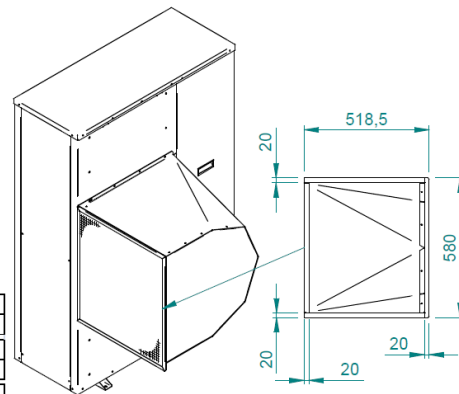
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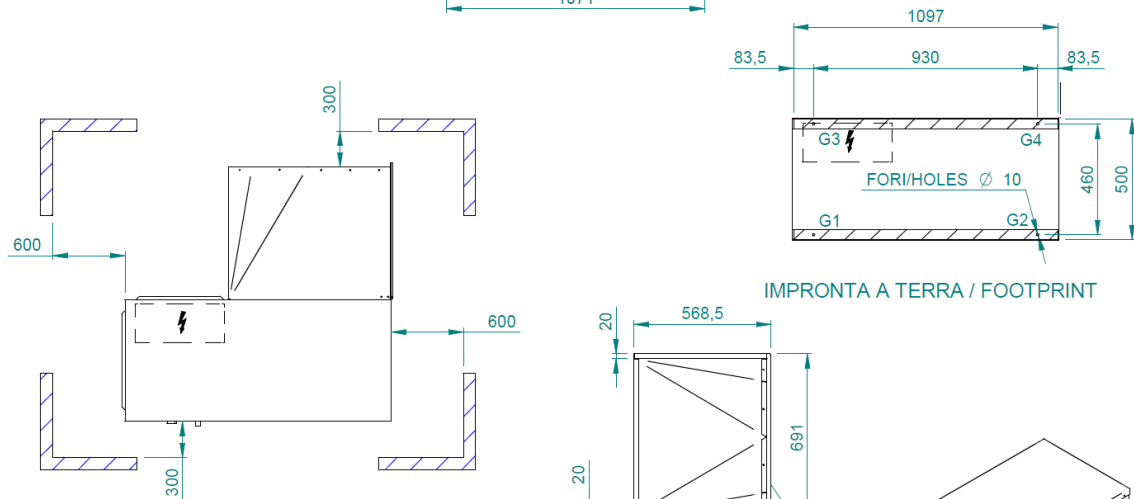
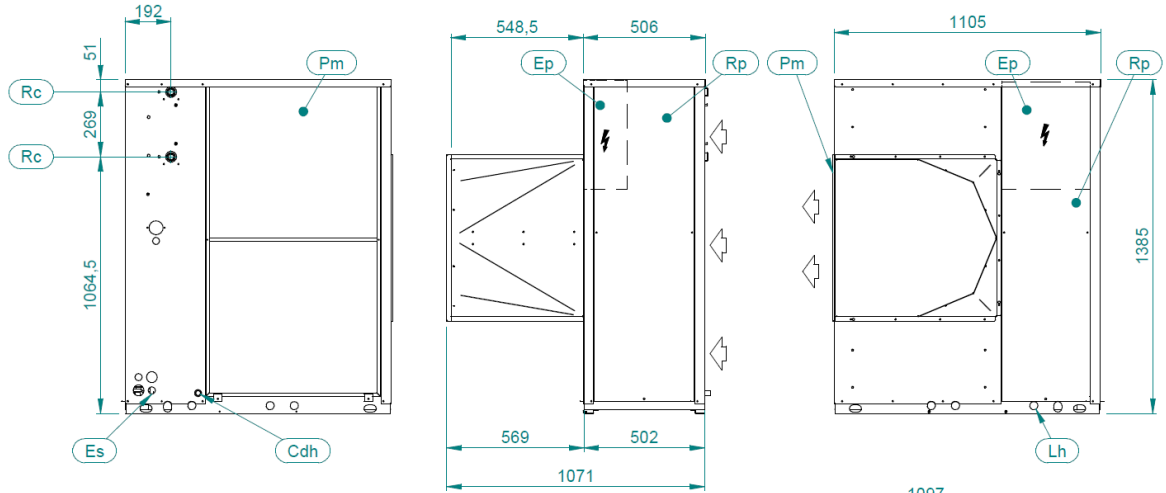
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
LE 14	148	148
LE 16	165	165
LE 18	176	176
LE/HP 14	161	161
LE/HP 16	175	175
LE/HP 18	190	190

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	920	1350

Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
	ø18





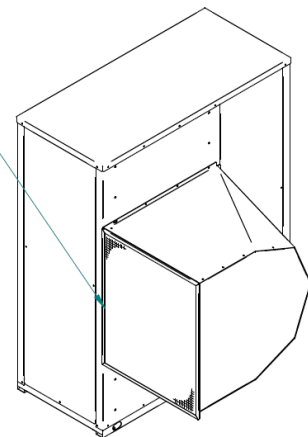
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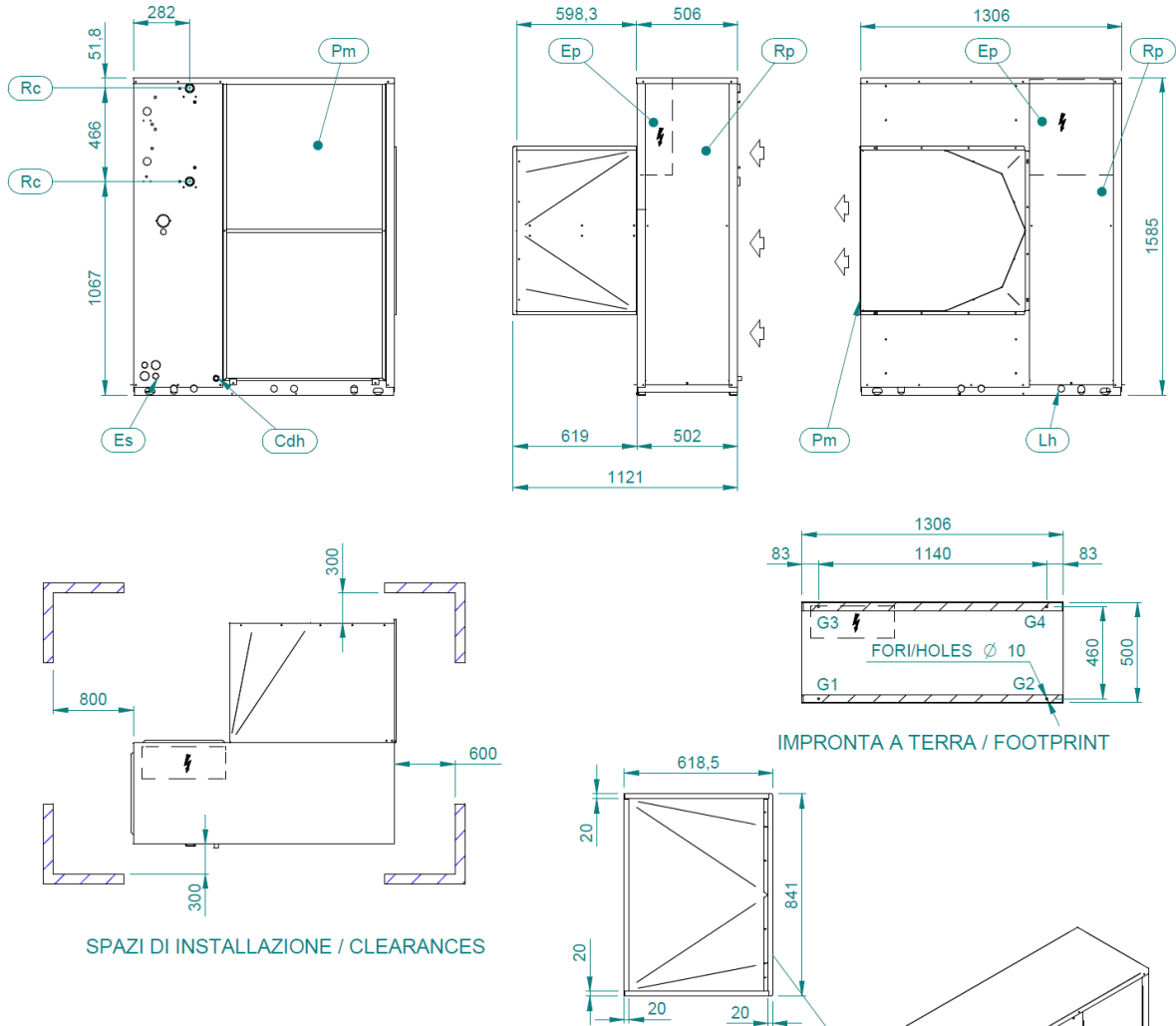
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
LE 21	214	214
LE 25	226	226
LE 28	259	259
LE/HP 21	246	246
LE/HP 25	254	254
LE/HP 28	280	280

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	1071	1385

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø34
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS	
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22



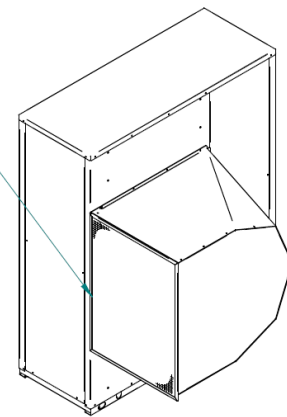


MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
LE 31	346	346
LE 37	352	352
LE 41	357	357
LE/HP 31	375	375
LE/HP 37	378	378
LE/HP 41	394	394

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1306	1121	1585

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø34
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS	
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	OPTIONAL ø22





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