

Epsilon Echos DK

5÷38 kW



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 brush-less 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 overall 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.

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TECHNICAL FEATURES

EPSILON ECHOS DK

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 total access to the internal components.

COMPRESSOR

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

Sizes 10 to 41: hermetic scroll compressors with circuit breaker 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 power 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, 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, 10). The LE units do not have a user side exchanger.

ELECTRIC CONTROL BOARD

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

The electric 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
 - Alarms reset
 - Self-adaptable regulation to permit optimal operation when there is low water content in the plant
 - Digital input 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)
- Antifreeze 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

This 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 input 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 ST 1P version)
- Anti-freeze heater (except for ST 1PS version)
- Additional heaters (for /HP/ST 1PS versions)
- Water filter

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 (Obligatory Accessory for Swegon Solutions)

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 control 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 therefore 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 a 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 electric 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.

The accessory is available only for version /HP /ST 1PS.

ELECTRICAL ACCESSORIES

RS485 serial interface

The increasing use of home automation and BMS (Building Management System) systems has led to the need for a single comprehensive supervision 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 RS485 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 and shutdown of the unit with a programmable weekly timer
- Viewing the temperature of the water produced by the unit

Electronic soft-starter

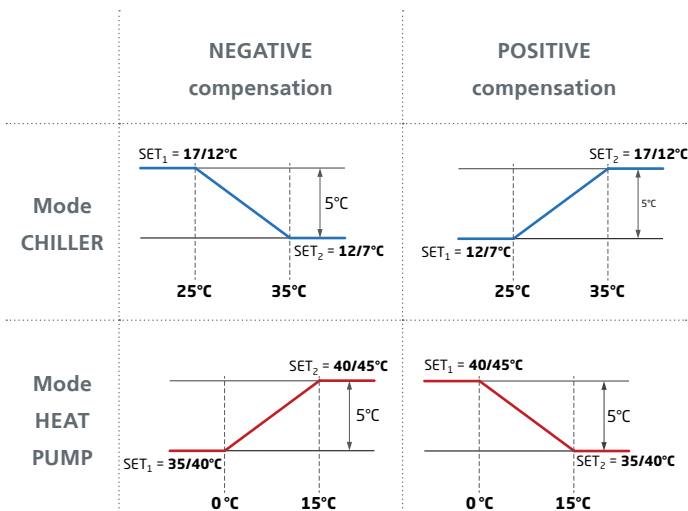
The units are equipped with the technology to minimize peak current, however the unit can also be fitted with a soft-starter unit as a further precaution. It is an electronic control device that monitors the start-up of the electric motors and reduces the normal breakaway starting current of the compressor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

Compensation of the set-point depending on the external air 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 compressors 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.

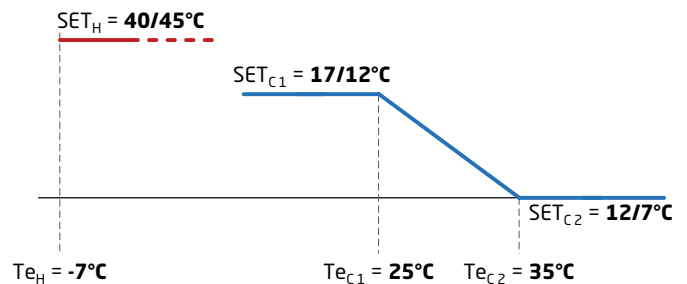
For units with integrated pump, the latter is kept running to prevent the formation of ice and to ensure correct operation of the temperature probes and anti-freeze safety devices.

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.

SMARTLink

A simple data cable connects the controller of the unit to that of a Swegon GOLD™ air treatment unit, to combine their operating logics and ensure the maximum energy efficiency of the system.

The RS485 serial interface is already included for connection to the Swegon unit. The accessory is provided in a box.

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		m3/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	1.140	1.488	2.138	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)	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		m3/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	1.140	1.488	2.138	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		m3/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		m3/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/ph/Hz	230/1~/50			400/3N~/50								
Electric power supply optional	(4)	V/ph/Hz	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/ph/Hz	230/1~/50			400/3N~/50								
Electric power supply optional	(4)	V/ph/Hz	400/3N~/50			230/1~/50			-					

All data shown are with standard power supply unit

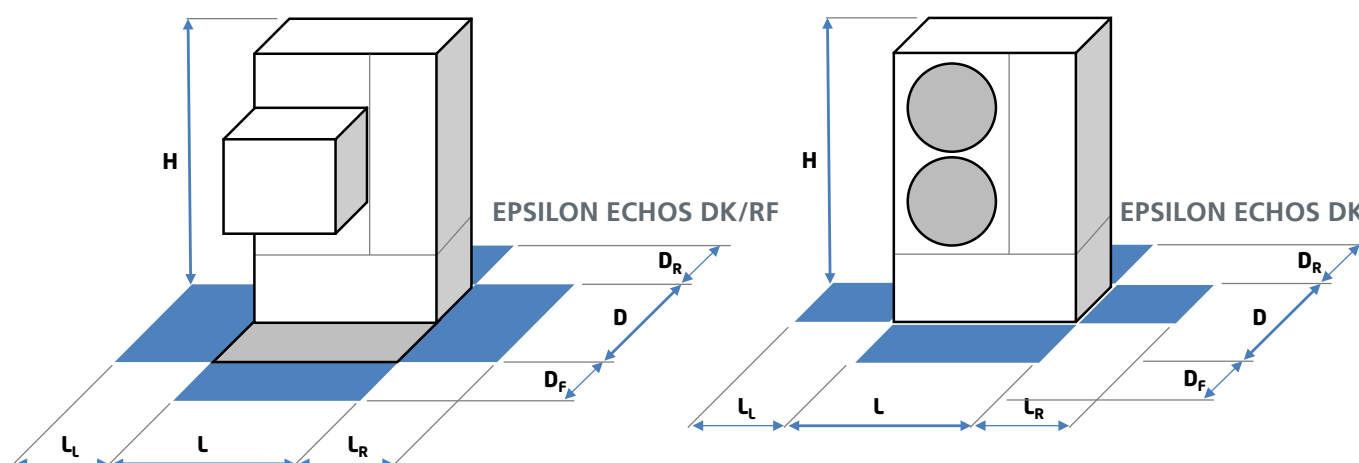
(1) Mains power supply to allow unit operation

(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		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		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

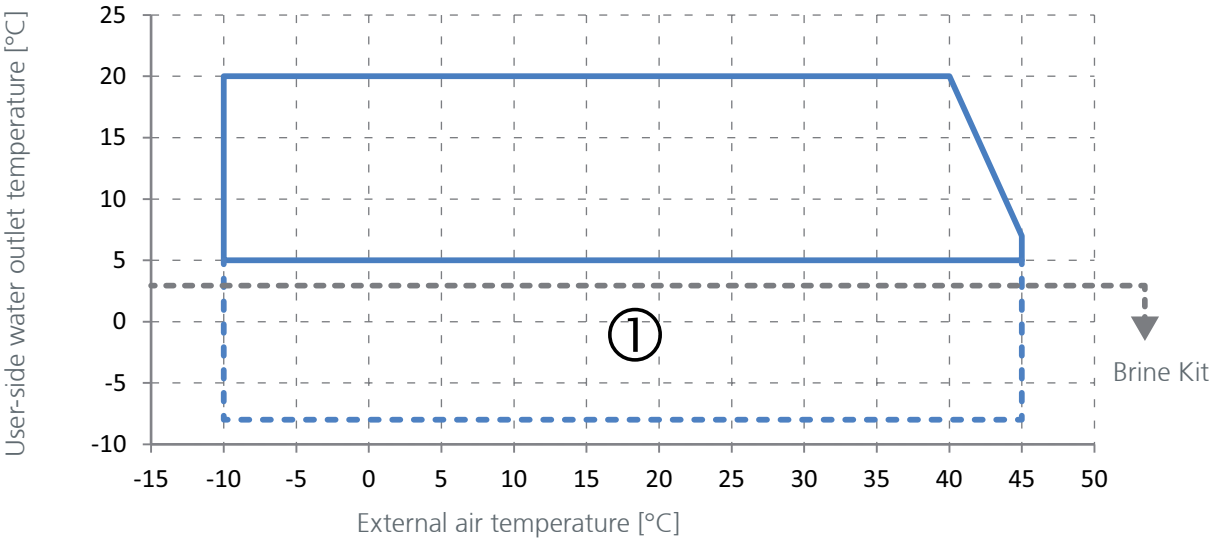
	Space required		6	8	10	14	16	18	21	25	28	31	37	41
L _L	Left side	(2) [mm]	600			600			600			600		
L _R	Right side	(2) [mm]	600			600			600			800		
D _F	Front	(2) [mm]	300			300			300			300		
D _R	Back	(2) [mm]	300			300			300			300		

(1) The mentioned weight is approximate and may vary depending on the unit layout

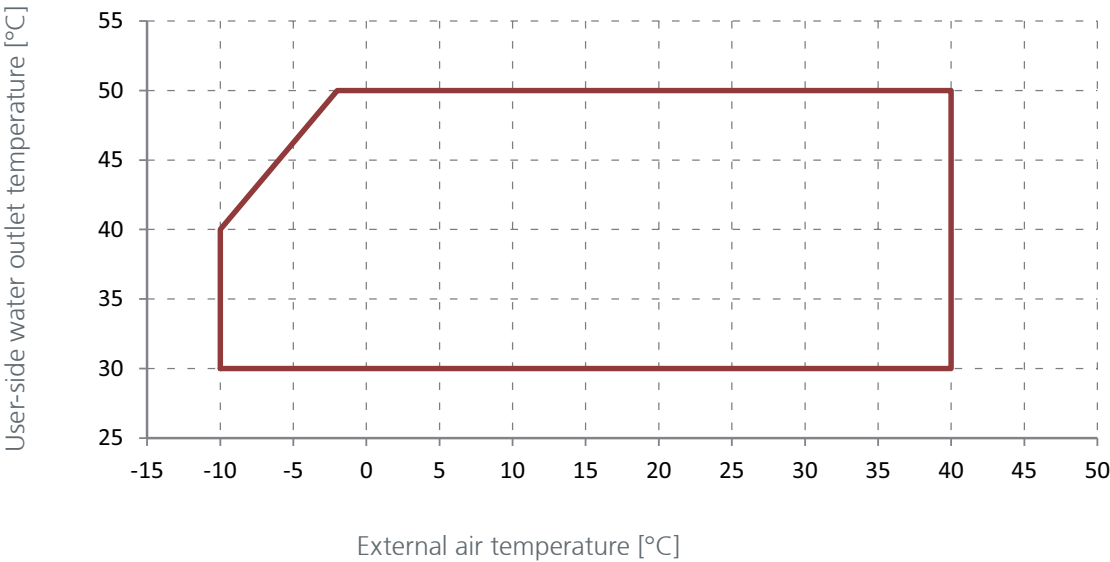
(2) The space required are given considering the fan's side in the front

OPERATING LIMITS BASIC VERSION AND /HP

Cooling



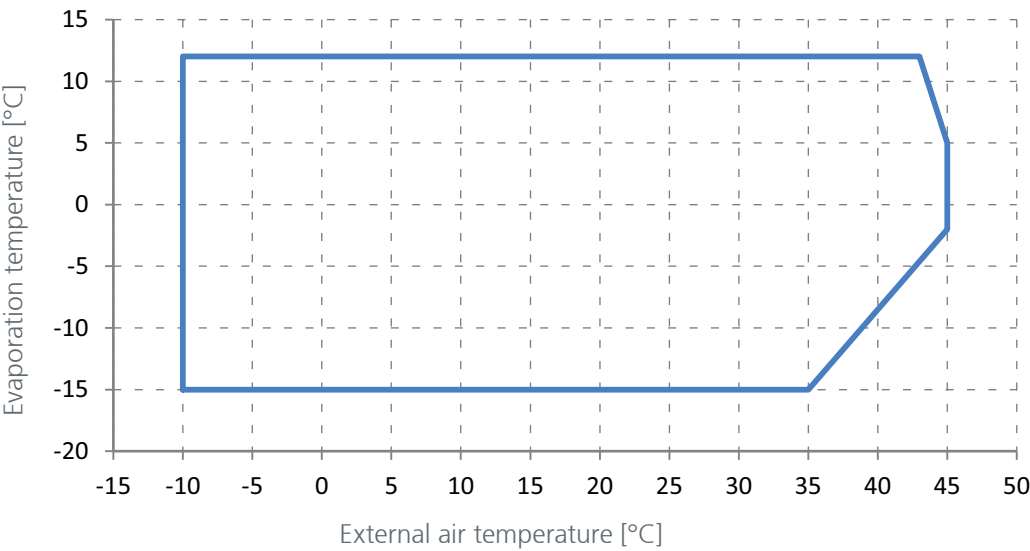
Heating



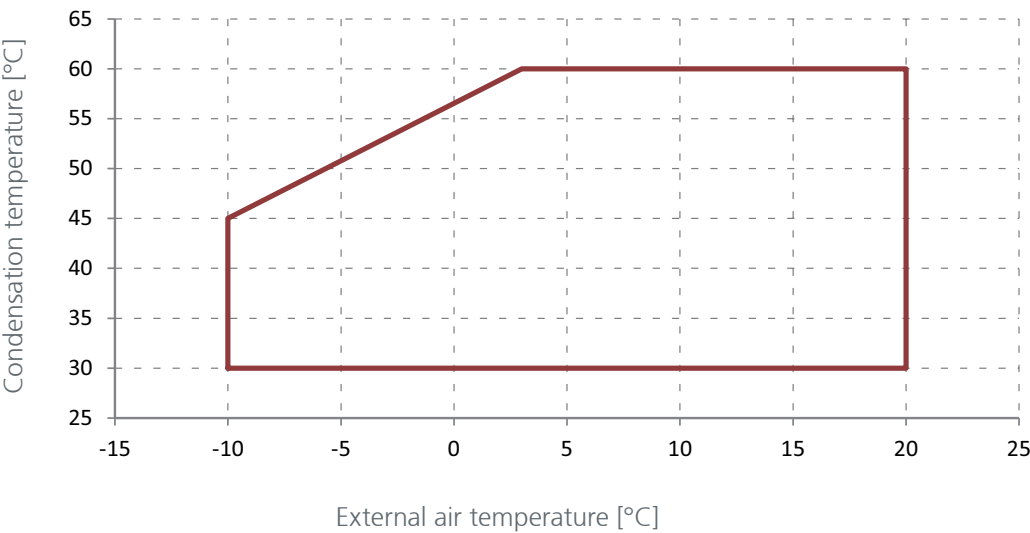
NOTE:
The thermal head to the heat exchanger user side must be between 4 °C and 7 °C
①: in this area the unit can only operate with glycolated water evaporator side.

OPERATING LIMITS VERSION /LE AND /LE/HP

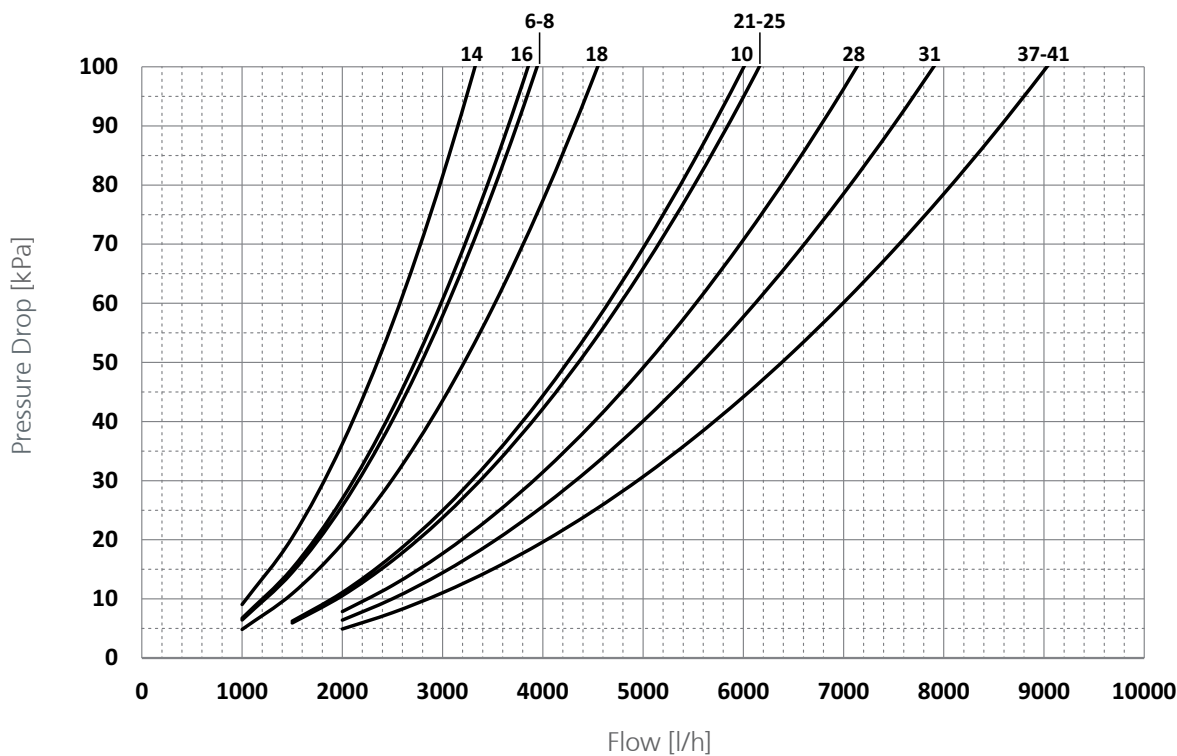
Cooling



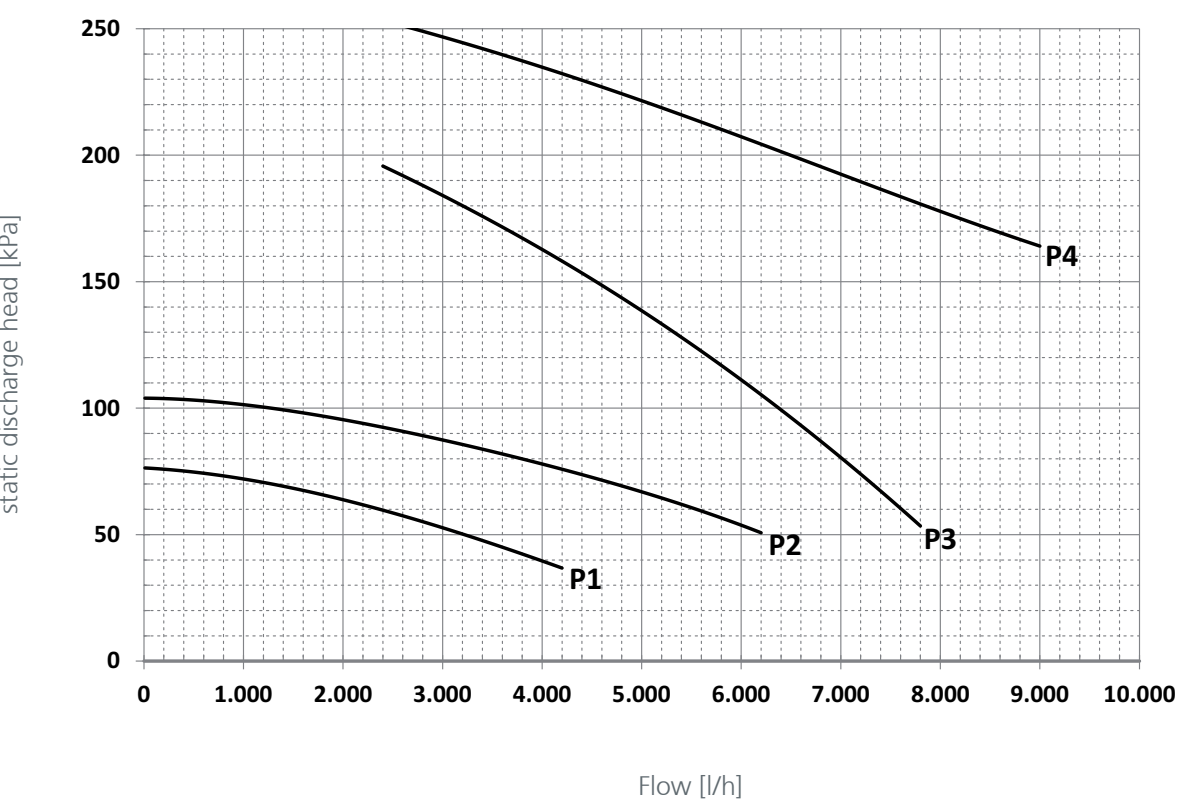
Heating



PRESSURE DROP EXCHANGERS



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	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp
6	76	68	76	68	75	67	70	62	64	56	58	50	51	43	43	35	71	57
8	77	69	76	68	76	68	70	62	64	56	59	51	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	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp
6	64	56	67	59	76	68	76	68	77	69	72	64	64	56	58	50	80	66
8	64	56	68	60	76	68	77	69	77	69	72	64	64	56	59	51	80	66
10	65	57	70	62	76	68	77	69	78	70	72	64	65	57	60	52	81	67
14	67	59	66	58	77	69	79	71	81	73	78	70	80	72	72	64	86	71
16	67	59	66	58	78	70	79	71	81	73	78	70	81	73	73	65	86	71
18	67	59	67	59	78	70	80	72	82	74	78	70	81	73	73	65	87	72
21	74	66	76	68	77	69	79	71	78	70	75	67	71	63	65	57	83	67
25	74	66	76	68	77	69	79	71	78	70	75	67	71	63	65	57	83	67
28	75	67	76	68	77	69	80	72	79	71	75	67	72	64	65	57	83	67
31	72	64	74	66	74	66	75	67	73	65	70	62	67	59	60	52	78	62
37	73	65	74	66	74	66	76	68	73	65	70	62	67	59	60	52	78	62
41	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.

Cooling Performance

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	*	*
	17	7,7	1,7	7,3	1,9	6,9	2,2	6,4	2,5	*	*
	18	7,9	1,7	7,5	1,9	7,1	2,2	6,6	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	*	*
	17	9,6	2,1	9,1	2,3	8,6	2,6	8,0	2,9	*	*
	18	9,8	2,1	9,3	2,3	8,7	2,6	8,1	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]

Cooling Performance

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]

Cooling Performance

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]

Cooling Performance

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]

Heating Performance

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
	20	90	8,5	1,6	8,4	1,8	8,3	2,1	8,3	2,3
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
	20	90	10,9	2,0	10,8	2,2	10,6	2,5	10,3	2,8
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 [%]

Heating Performance

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

HR: Relative humidity [%]

Heating Performance

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 [%]

Heating Performance

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 [%]

Cooling Performance LE

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]

Cooling Performance LE

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]

Heating Performance LE

Size	T _a [°C]	RH %	Condensation temperaturure [°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[%]

Heating Performance LE

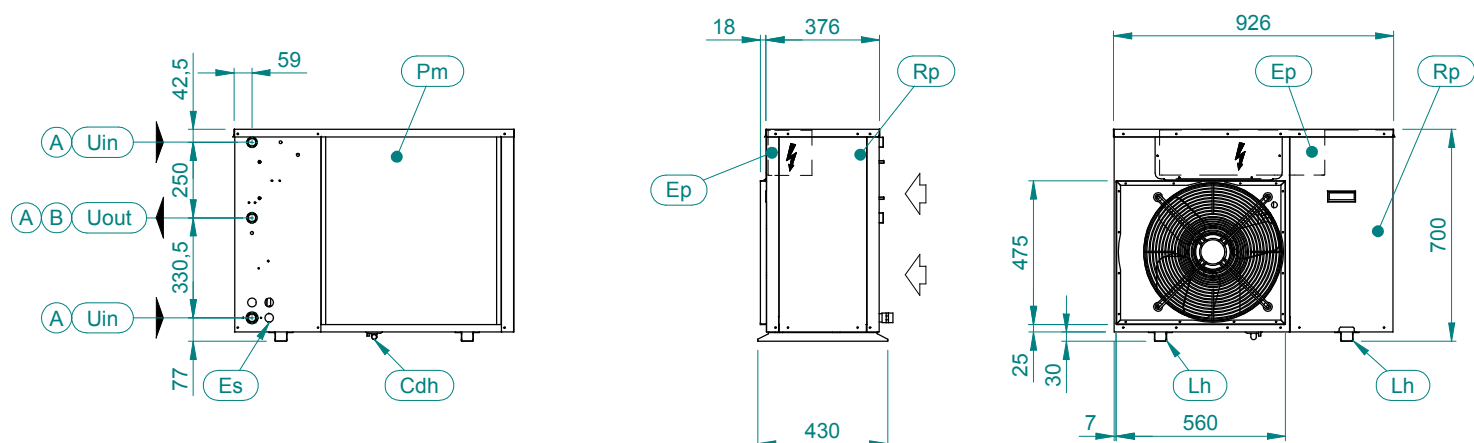
Size	T _a [°C]	RH %	Condensation temperaturure [°C]									
			40		45		50		55		60	
			P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}	P _t	P _{comp}
21	-10	95	14,03	4,74	13,6	5,21	*	*	*	*	*	*
	-5	90	15,63	4,78	15,42	5,25	15,01	5,77	*	*	*	*
	0	90	17,77	4,81	17,55	5,28	17,19	5,8	16,71	6,38	*	*
	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
	10	70	21,28	4,82	20,98	5,31	20,61	5,83	20,16	6,4	19,59	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
	10	70	27,16	6,37	26,92	7,02	26,8	7,77	26,8	8,64	26,9	9,61
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
	10	70	31,2	7,33	30,92	8,08	30,77	8,95	30,75	9,95	30,85	11,06
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
	10	70	34,12	8,08	33,86	8,9	33,76	9,85	33,81	10,95	34	12,18
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
	10	70	38,63	8,22	38,1	9,19	37,62	10,31	37,09	11,57	36,48	13
41	-10	95	28,13	9,44	28,23	10,63	*	*	*	*	*	*
	-5	90	31,55	9,51	31,55	10,63	31,62	11,97	*	*	*	*
	0	90	35,61	9,62	35,46	10,69	35,37	11,96	35,35	13,44	*	*
	5	80	39,35	9,73	39,03	10,78	38,79	12	38,59	13,42	38,42	15,08
	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]

RH: Relative humidity evaporator inlet air[%]

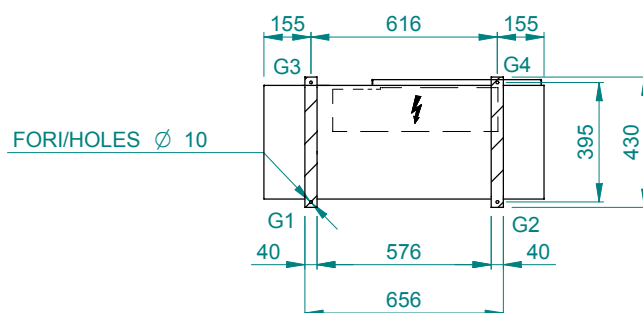
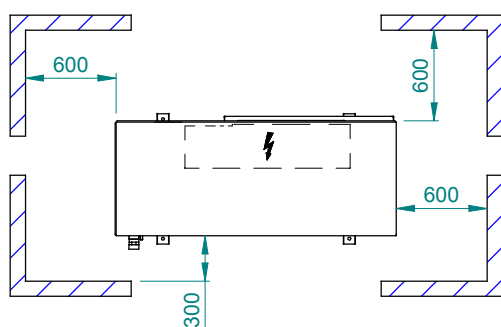
Dimensional drawing Epsilon Echos DK 6-8-10

C413132 - A



CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

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

FORI/HOLES $\varnothing$ 10

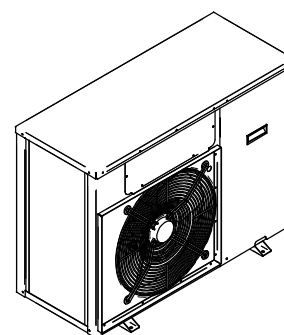
IMPRONTA A TERRA / FOOTPRINT

SPAZI DI INSTALLAZIONE / CLEARANCES

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

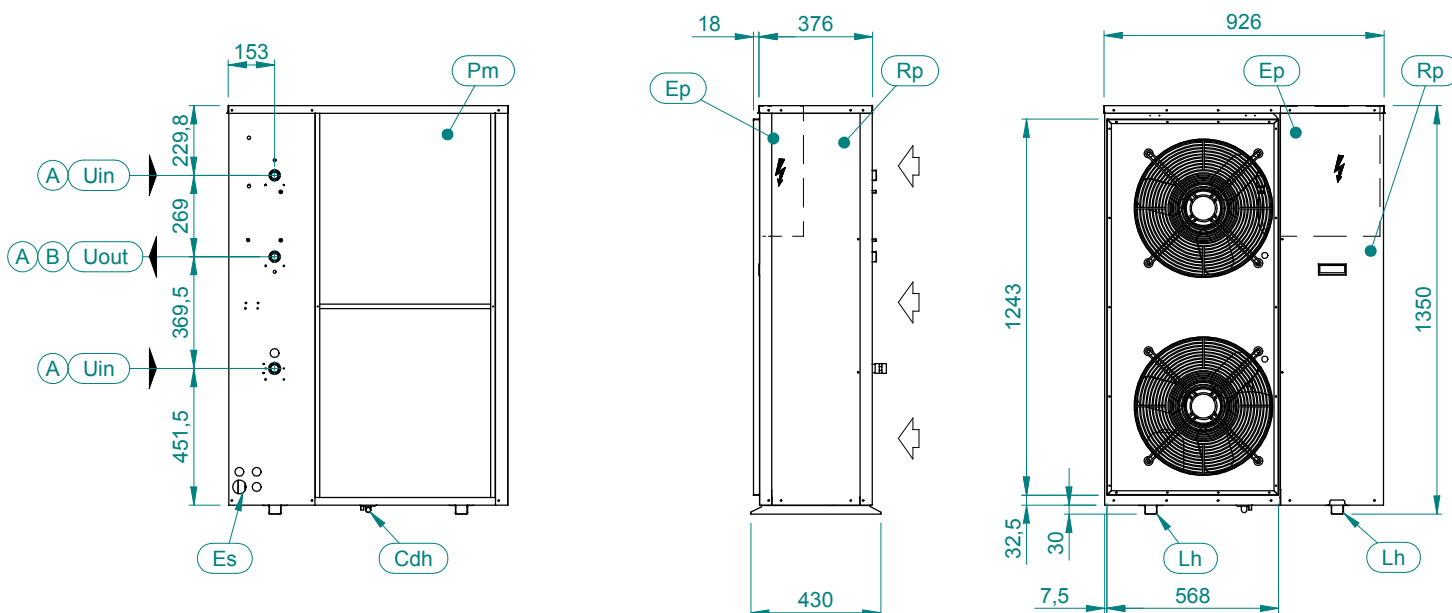
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	430	700

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	$\varnothing$ 18
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES		Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" BSPM
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH		Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM



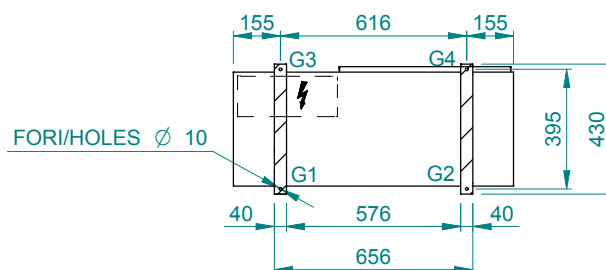
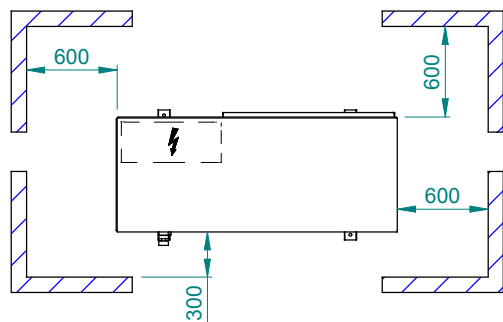
Dimensional drawing Epsilon Echos DK 14-16-18

C413133 - A



CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

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



IMPRONTA A TERRA / FOOTPRINT

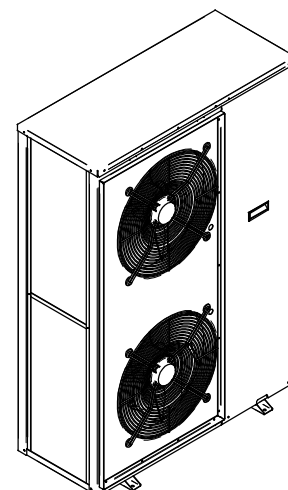
SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
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

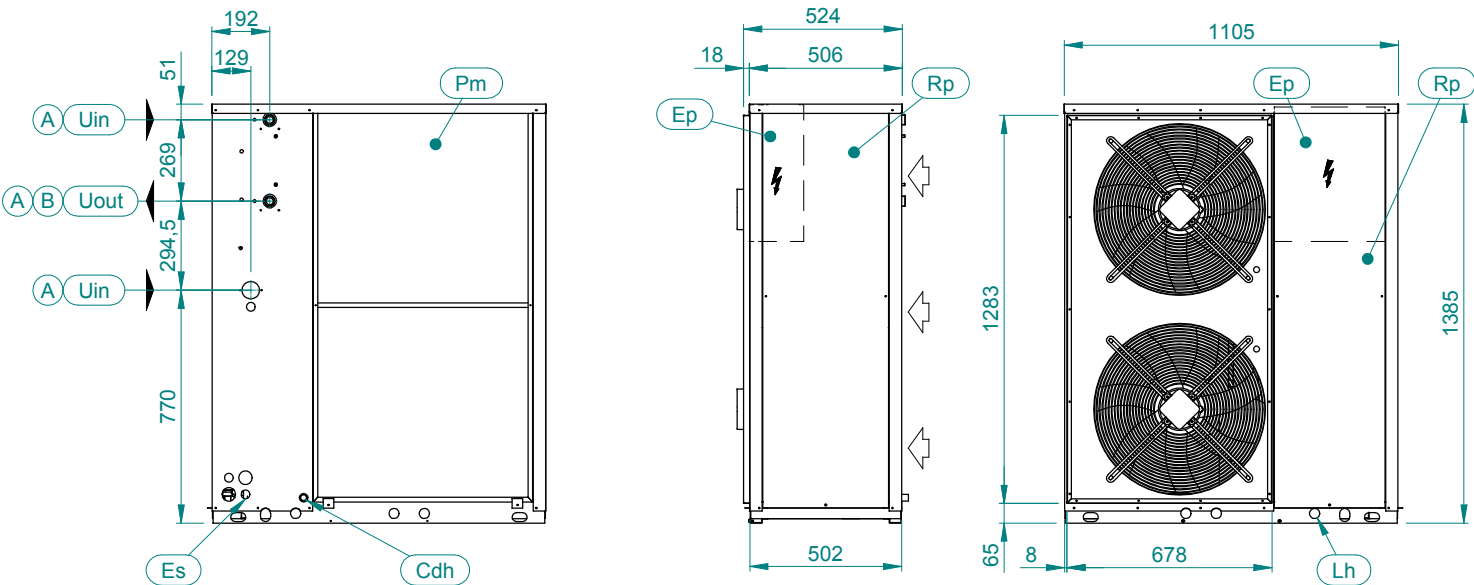
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	ø18
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET	1" BSPM
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET	1" BSPM

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



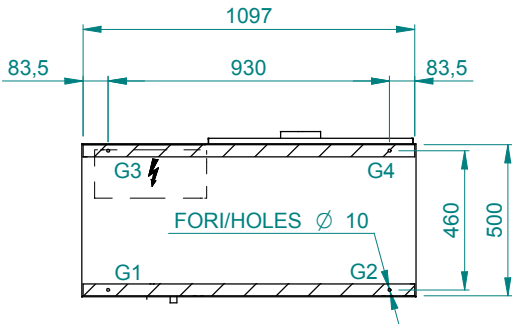
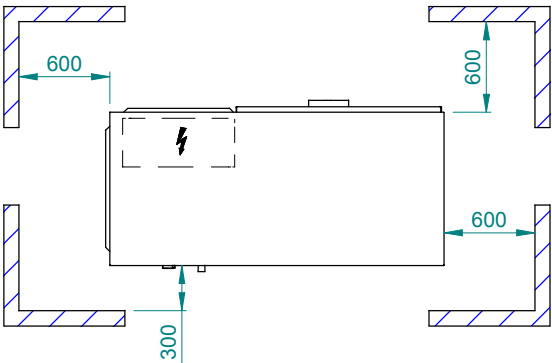
Dimensional drawing Epsilon Echos DK 21-25-28

C413134 - A



CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

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



IMPRONTA A TERRA / FOOTPRINT

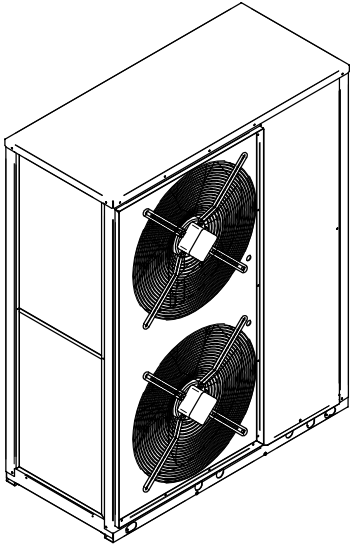
SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
21	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

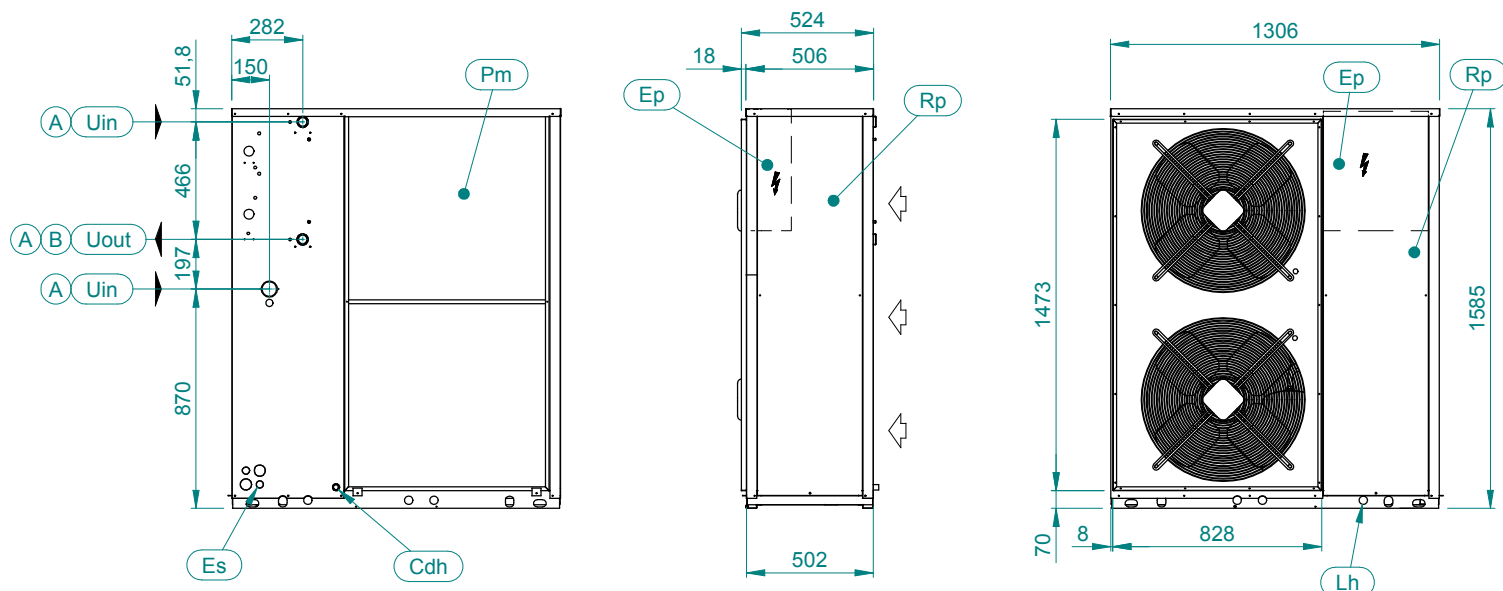
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	524	1385

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



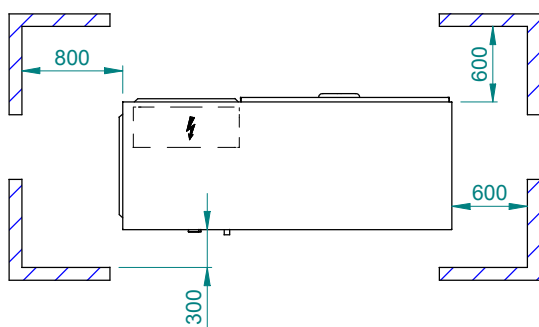
Dimensional drawing Epsilon Echos DK 31-37-41

C413135 - A



CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

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



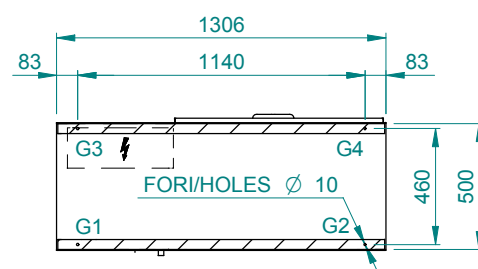
SPAZI DI INSTALLAZIONE / CLEARANCES

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

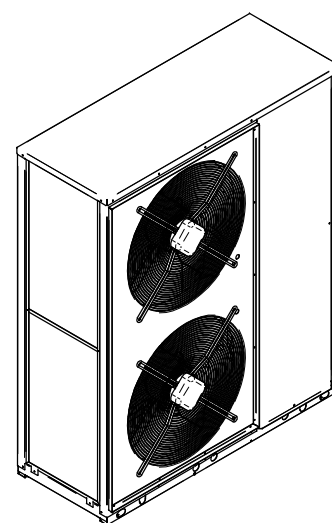
Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES

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 CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET

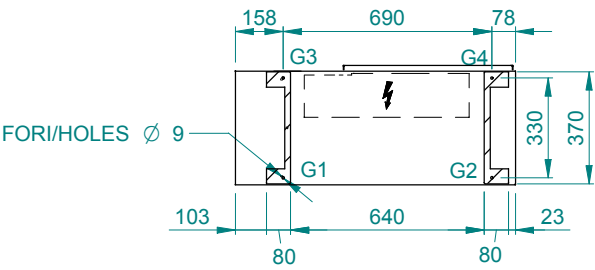
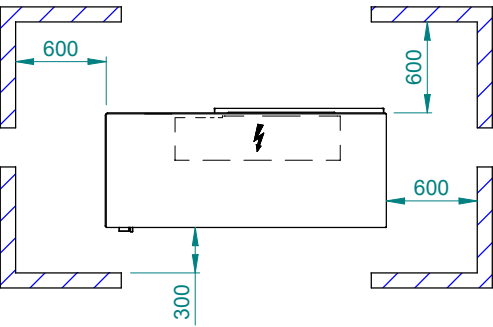
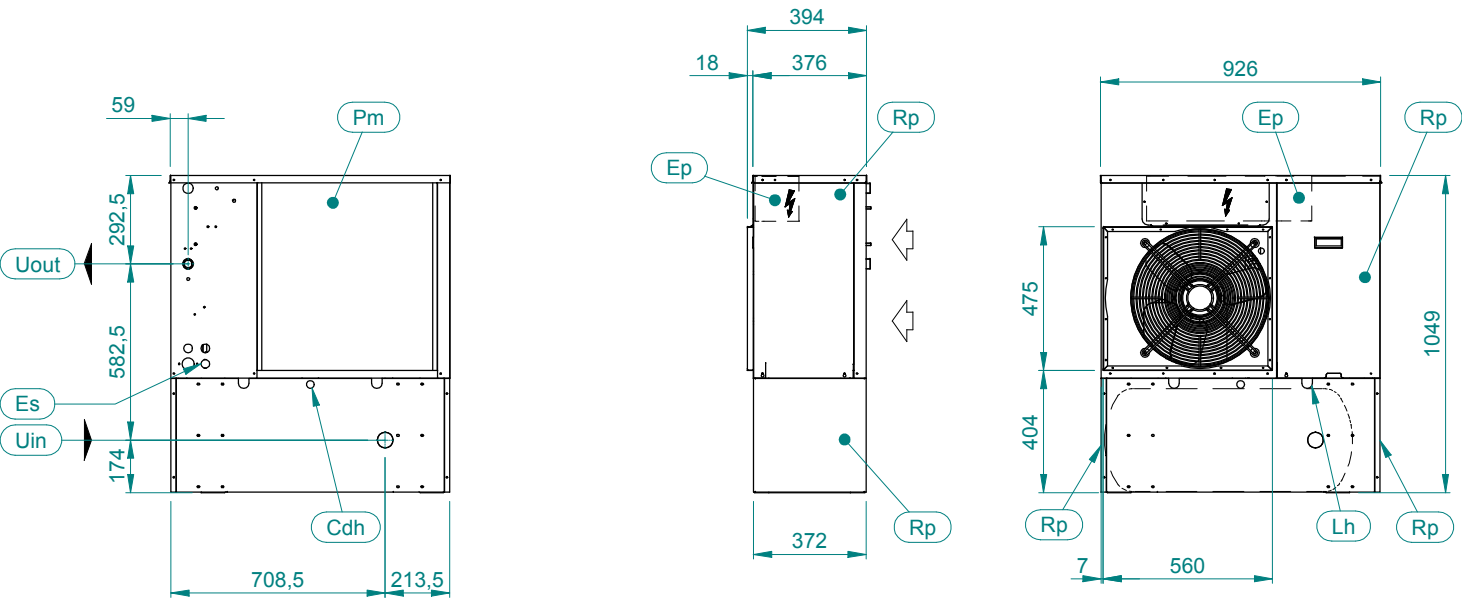


IMPRONTA A TERRA / FOOTPRINT



Dimensional drawing Epsilon Echos DK 6-8-10 1PS

C413136 - A



IMPRONTA A TERRA / FOOTPRINT

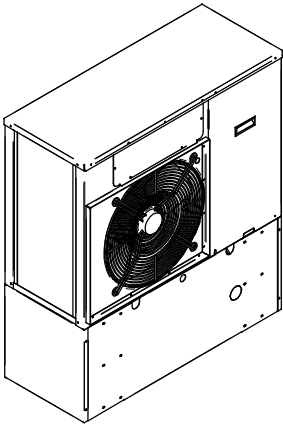
SPAZI DI INSTALLAZIONE / CLEARANCES

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

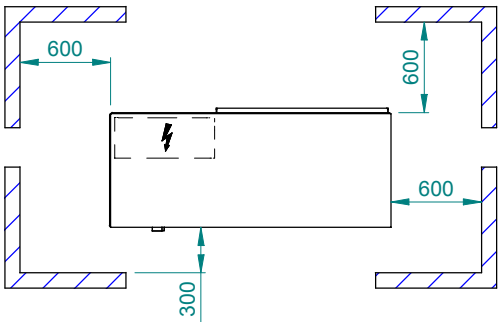
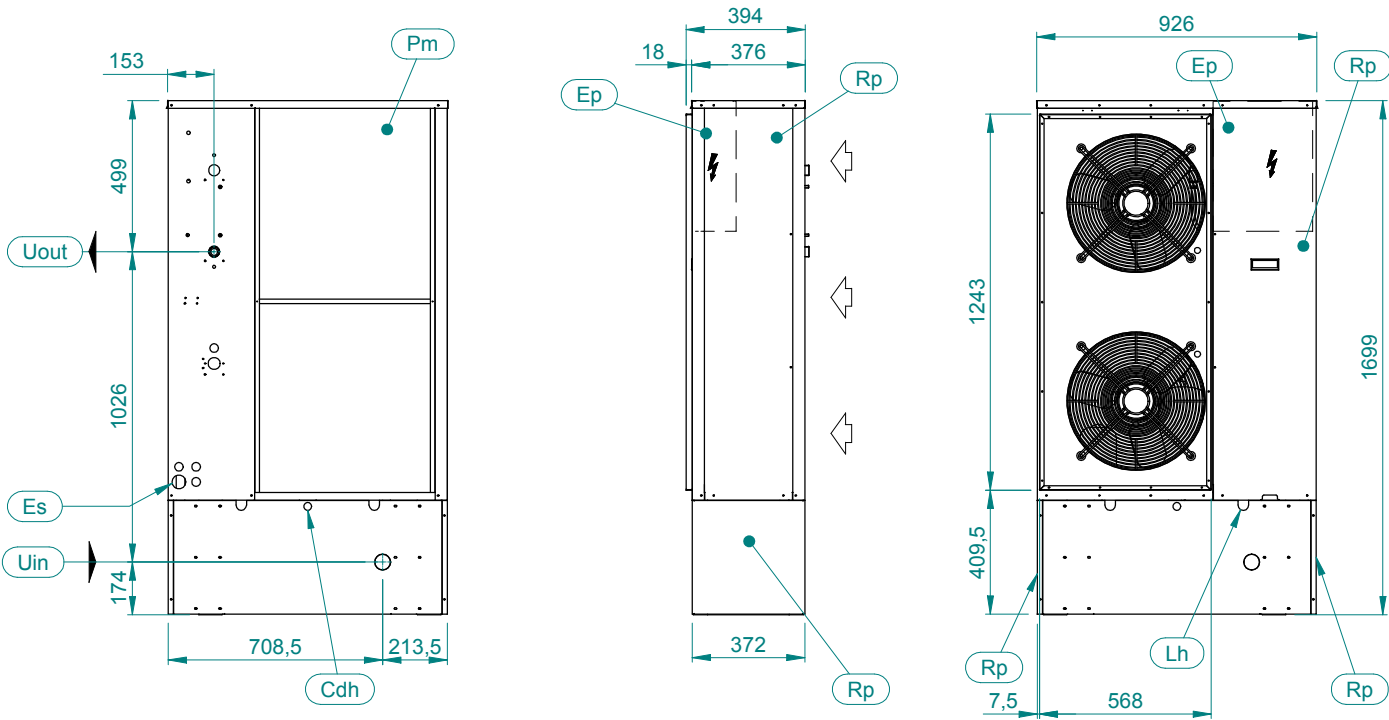
Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø35
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

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

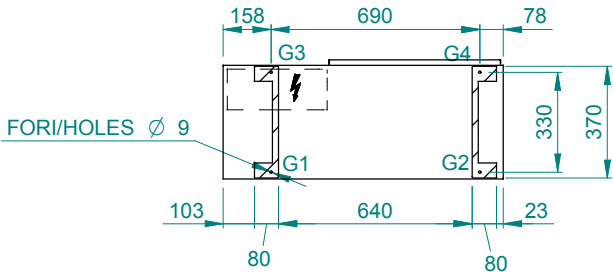


Dimensional drawing Epsilon Echos DK 14-16-18 1PS

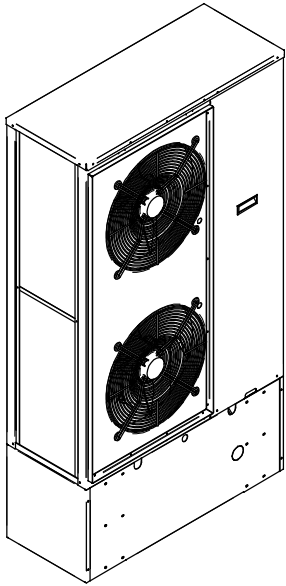
C413137 - A



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

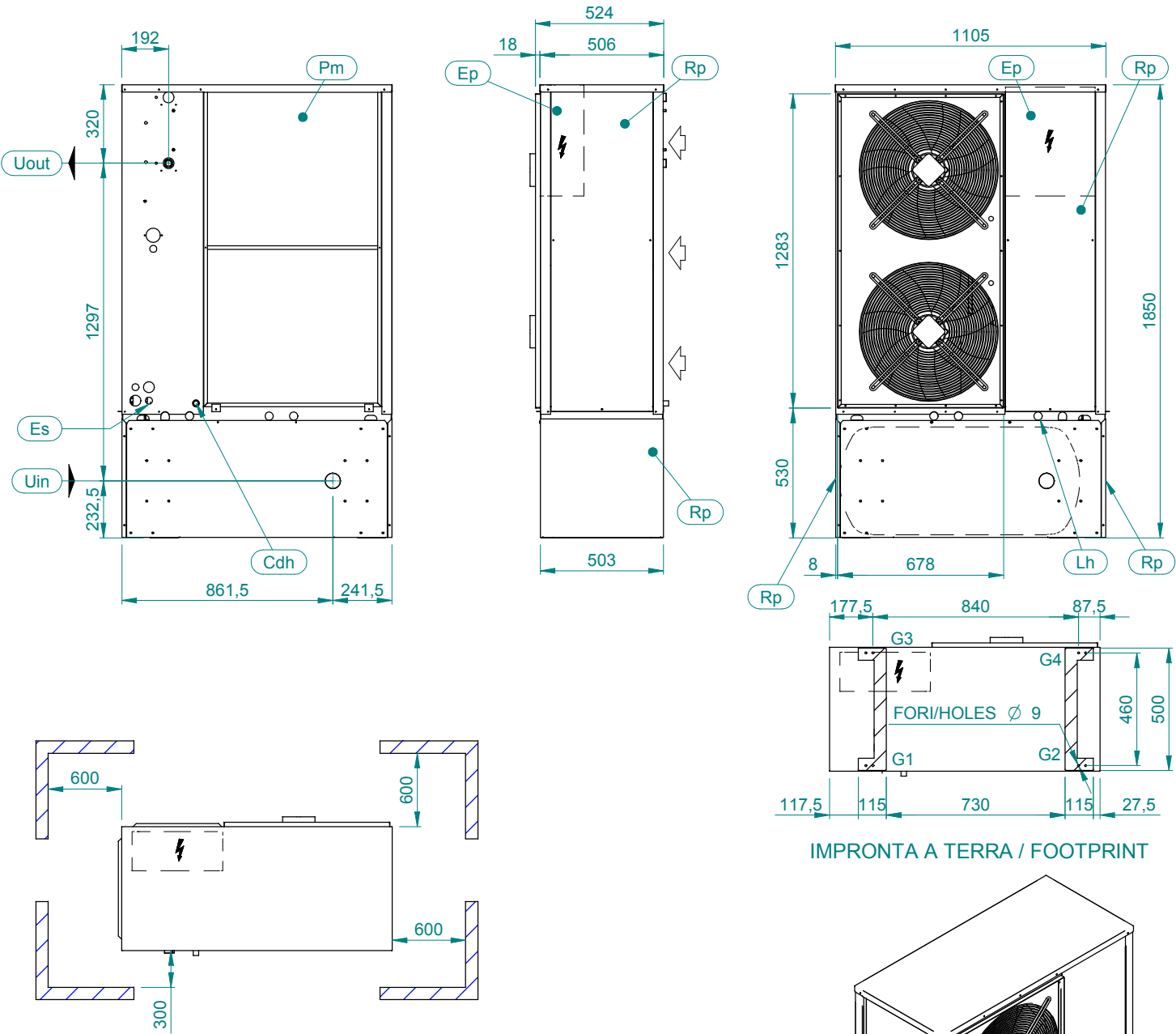
Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	$\varnothing 35$
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

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

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

Dimensional drawing Epsilon Echos DK 21-25-28 1PS

C413138 - A



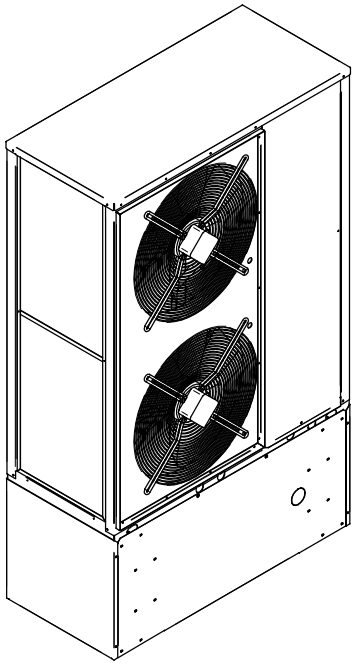
SPAZI DI INSTALLAZIONE / CLEARANCES

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

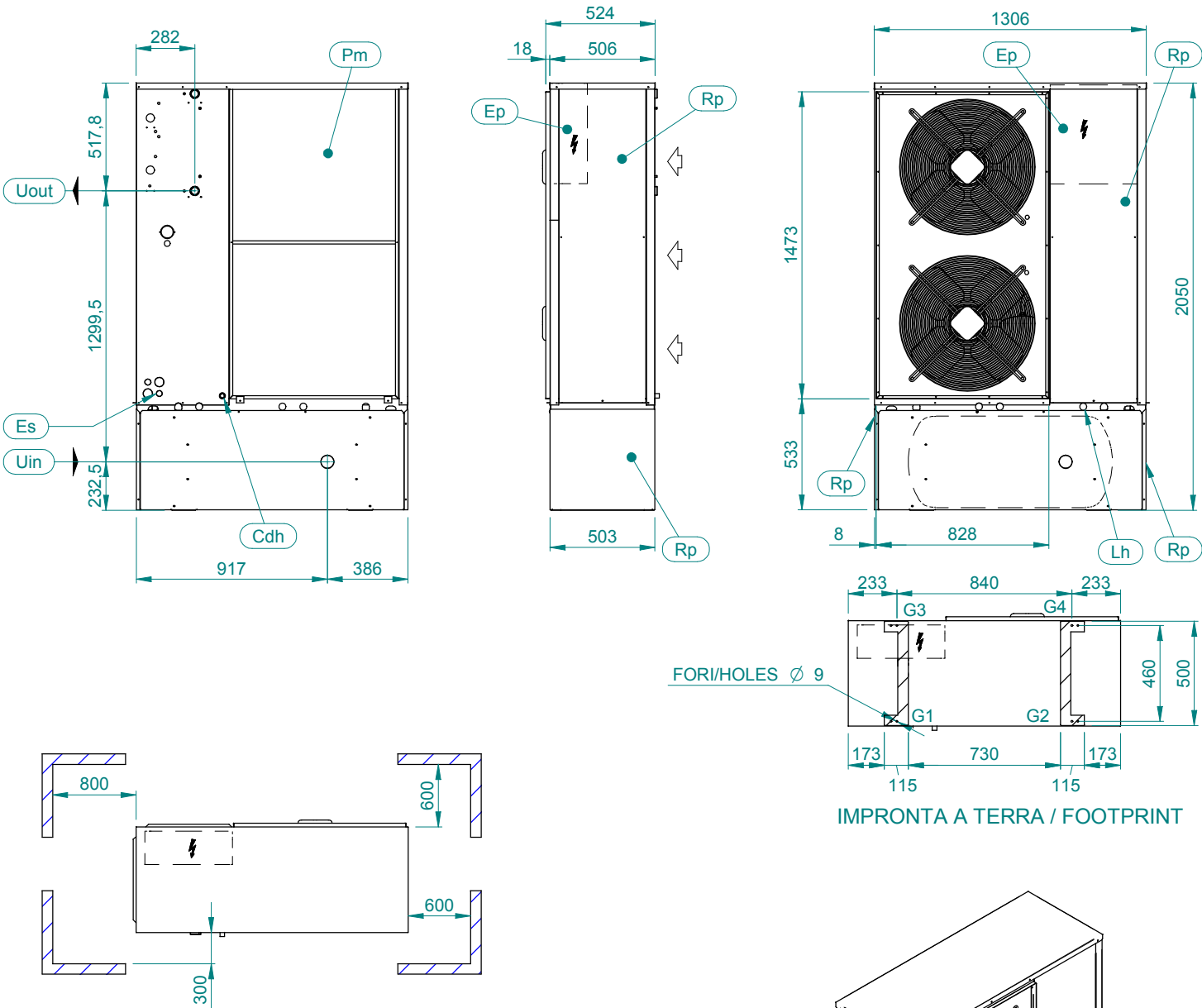
Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	ø34
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH	

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



Dimensional drawing Epsilon Echos DK 31-37-41 1PS

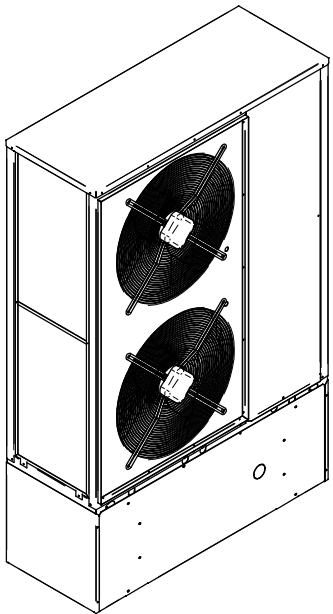
C413139 - A



SPAZI DI INSTALLAZIONE / CLEARANCES

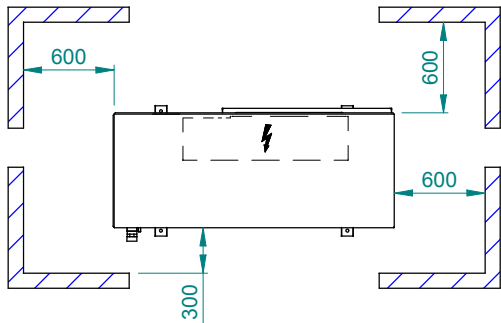
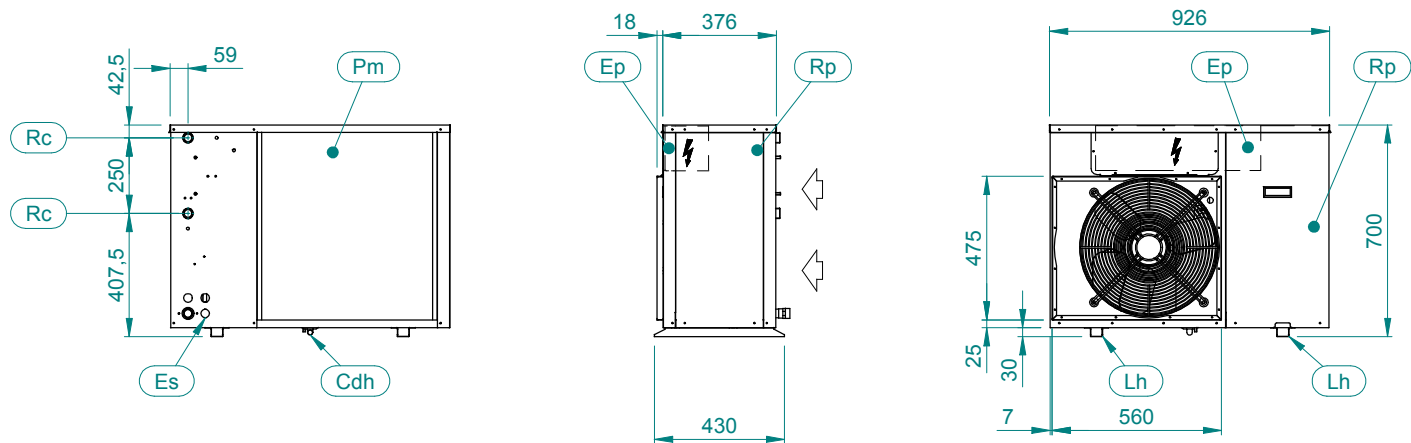
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
			LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
ST1PS 31	417	557	1306	524	2050
ST1PS 37	424	564			
ST1PS 41	432	572			
HP ST1PS 31	446	586			
HP ST1PS 37	456	596			
HP ST1PS 41	472	612			

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	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" ¼ BSPM

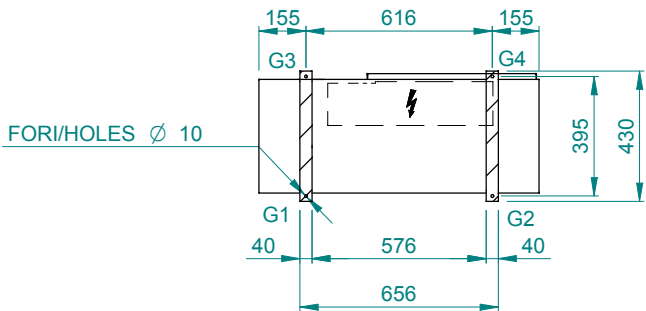


Dimensional drawing Epsilon Echos DK/LE 6-8-10

C413140 - A



SPAZI DI INSTALLAZIONE / CLEARANCES



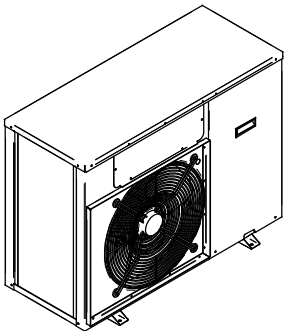
IMPRONTA A TERRA / FOOTPRINT

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
LE 6	71	71
LE 8	78	78
LE 10	85	85
LE/HP 6	83	83
LE/HP 8	87	87
LE/HP 10	91	91

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

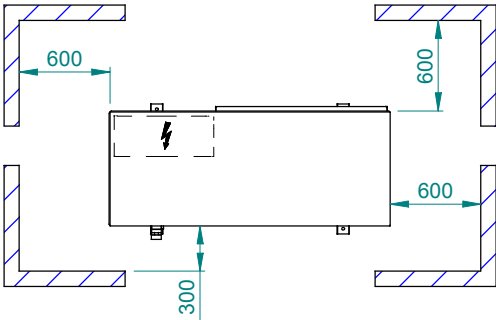
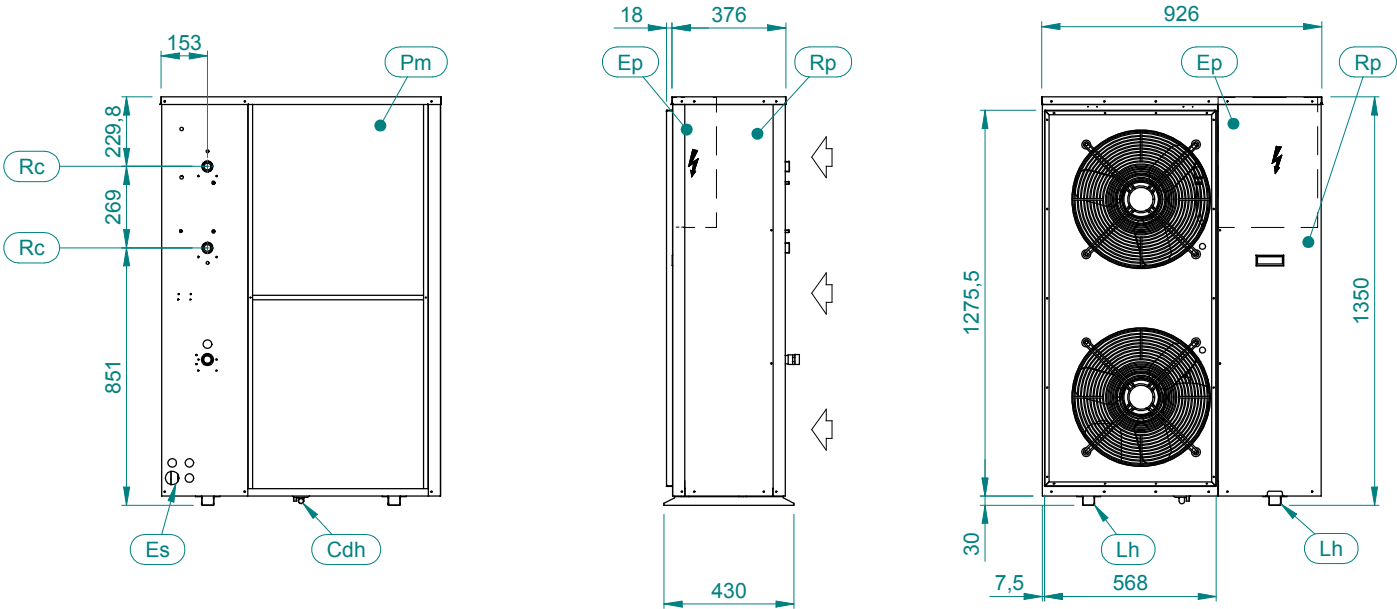
Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

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

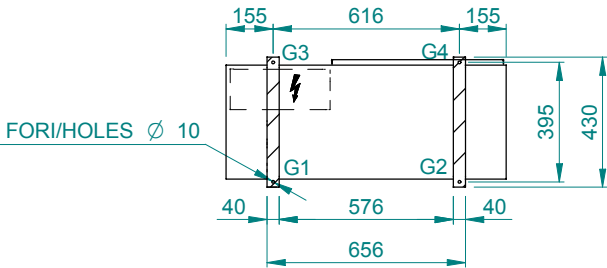


Dimensional drawing Epsilon Echos DK/LE 14-16-18

C413141 - A



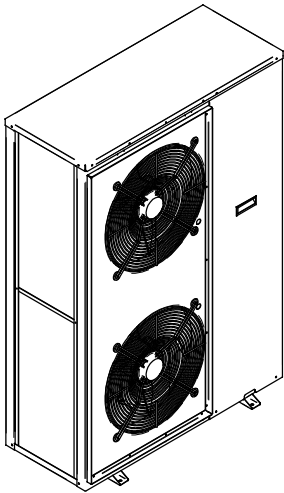
SPAZI DI INSTALLAZIONE / CLEARANCES



IMPRONTA A TERRA / FOOTPRINT

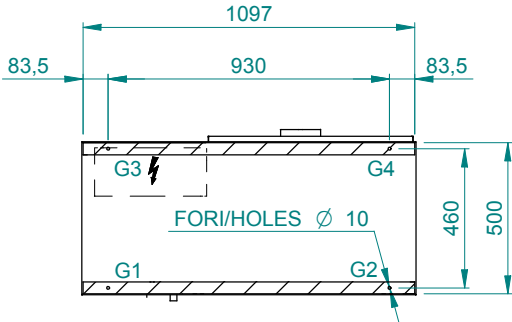
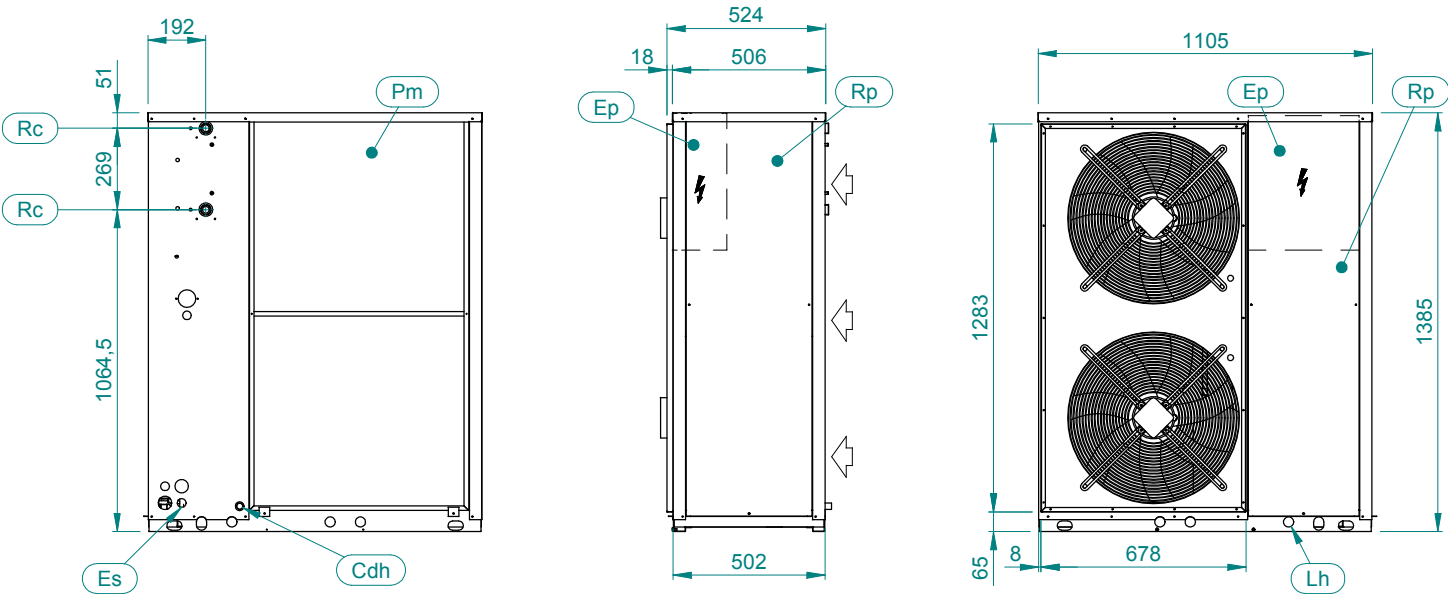
MODELLO MODEL		PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
				LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
LE 14		114	114	926	430	1350
LE 16		131	131			
LE 18		142	142			
LE/HP 14		127	127			
LE/HP 16		141	141			
LE/HP 18		156	156			

Ep	QUADRO ELETTRICO ELECTRICAL PANEL		Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET		Rp	PANNELLO ASPORTABILE REMOVABLE PANEL	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES		Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION	
				ø18	
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH				

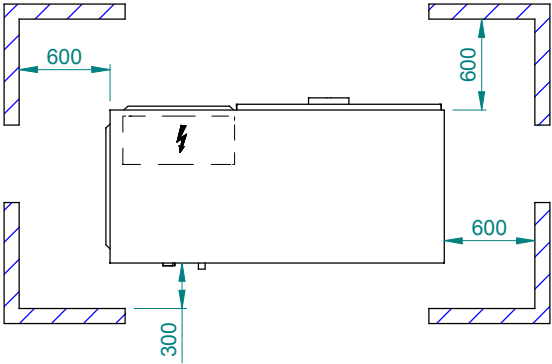


Dimensional drawing Epsilon Echos DK/LE 21-25-28

C413142 - A



IMPRONTA A TERRA / FOOTPRINT



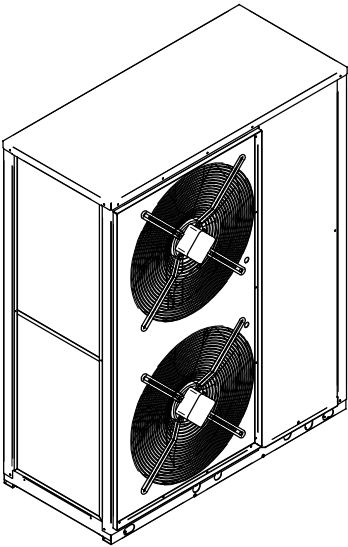
SPAZI DI INSTALLAZIONE / CLEARANCES

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

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

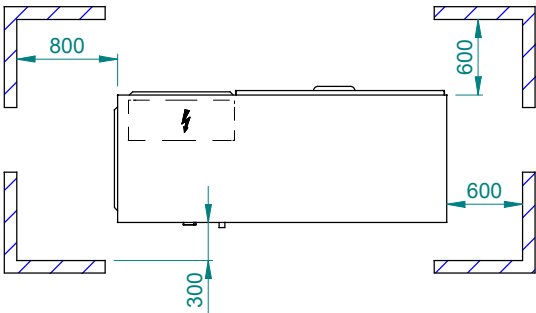
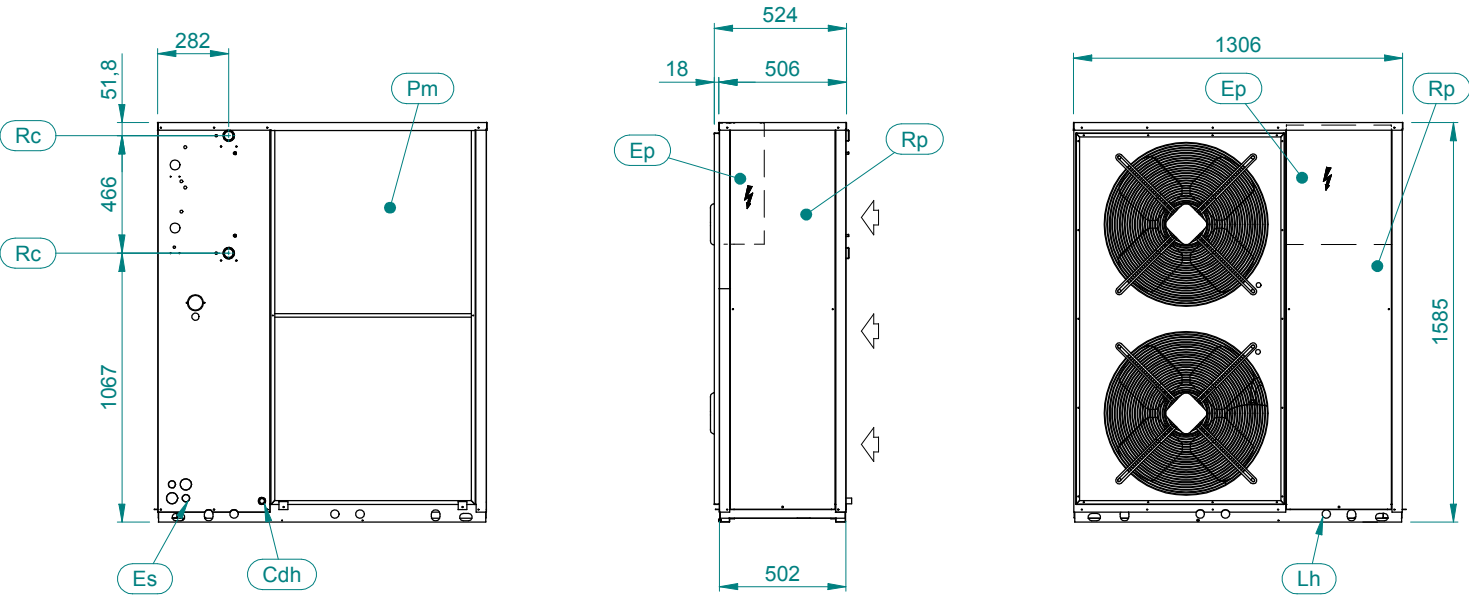
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	524	1385

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

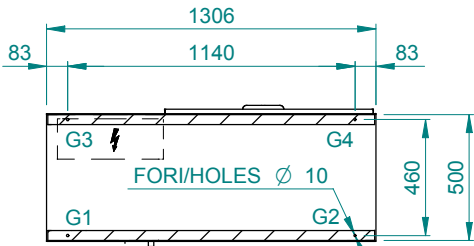


Dimensional drawing Epsilon Echos DK/LE 31-37-41

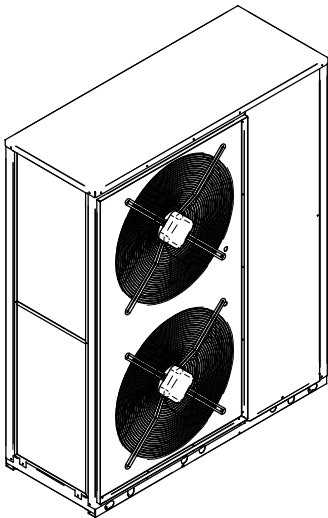
C413143 - A



SPAZI DI INSTALLAZIONE / CLEARANCES



IMPRONTA A TERRA / FOOTPRINT



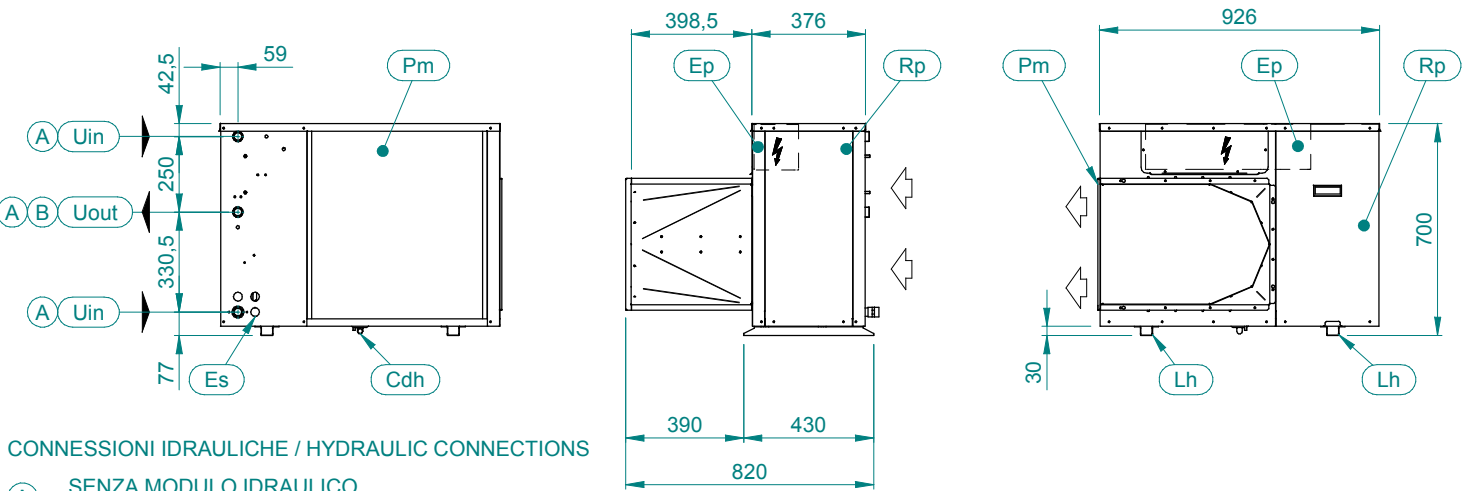
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)	DIMENSIONI - DIMENSIONS		
			LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
LE 31	312	312	1306	524	1585
LE 37	318	318			
LE 41	323	323			
LE/HP 31	341	341			
LE/HP 37	344	344			
LE/HP 41	360	360			

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

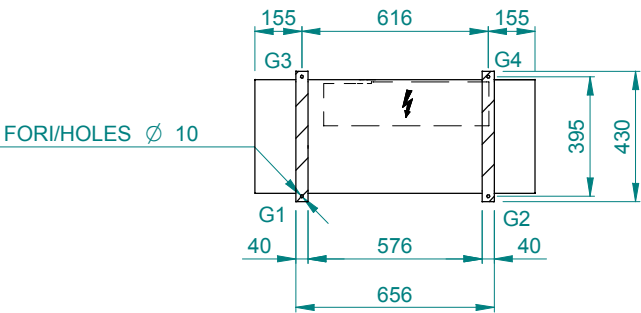
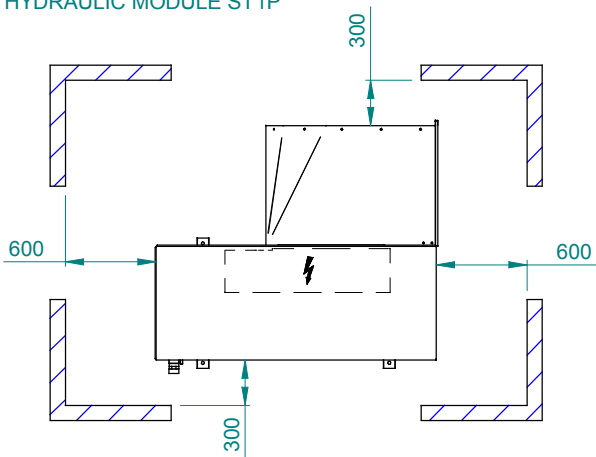
Dimensional drawing Epsilon Echos DK/RF 6-8-10

C413107 - A



CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

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



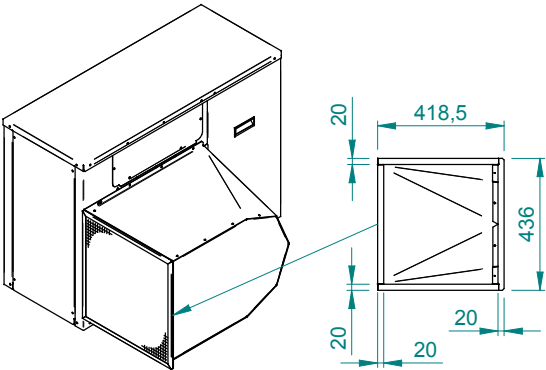
IMPRONTA A TERRA / FOOTPRINT

SPAZI DI INSTALLAZIONE / CLEARANCES

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	820	700

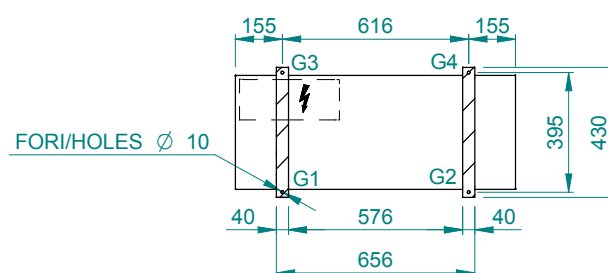
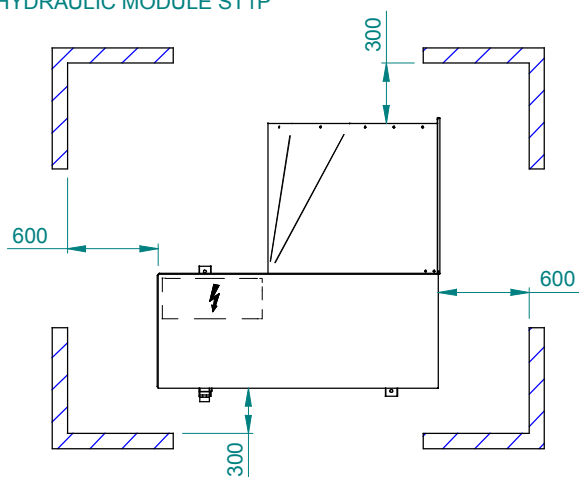
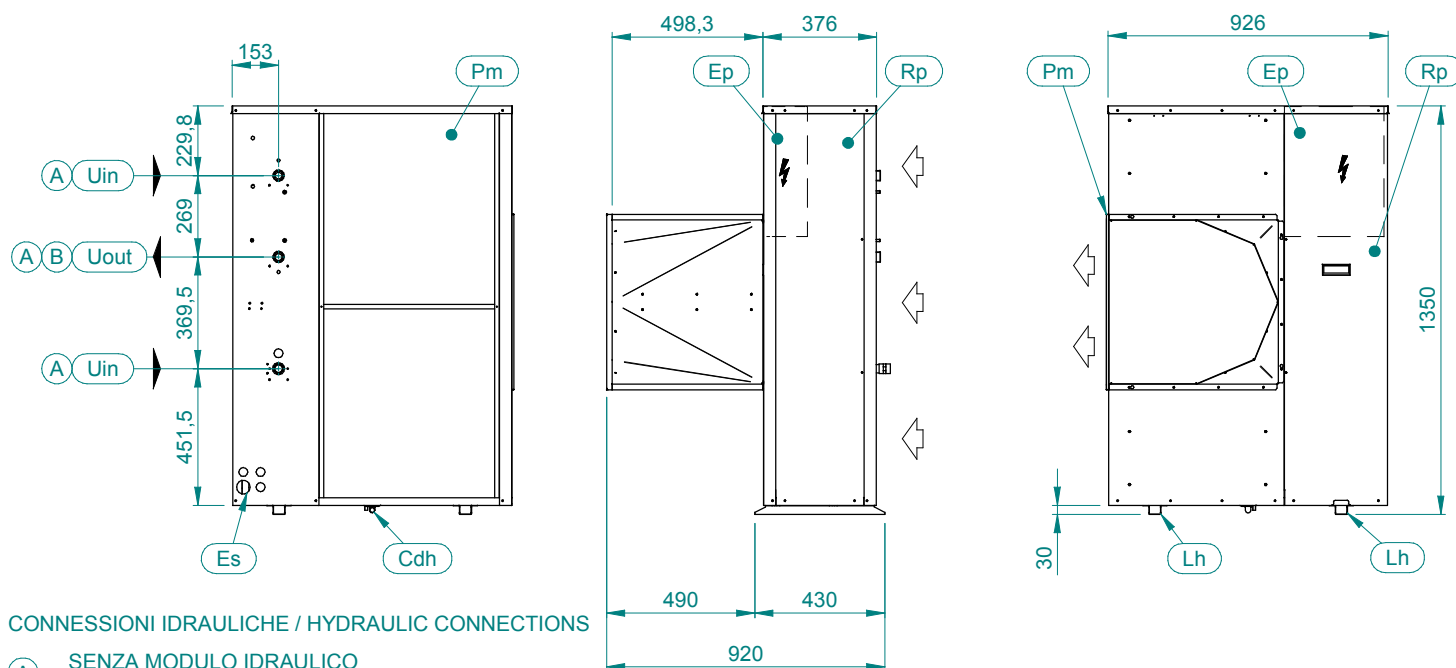
MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
6	97	97
8	105	105
10	112	112
HP 6	109	109
HP 8	114	114
HP 10	118	118

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
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



Dimensional drawing Epsilon Echos DK/RF 14-16-18

C413108 - A



IMPRONTA A TERRA / FOOTPRINT

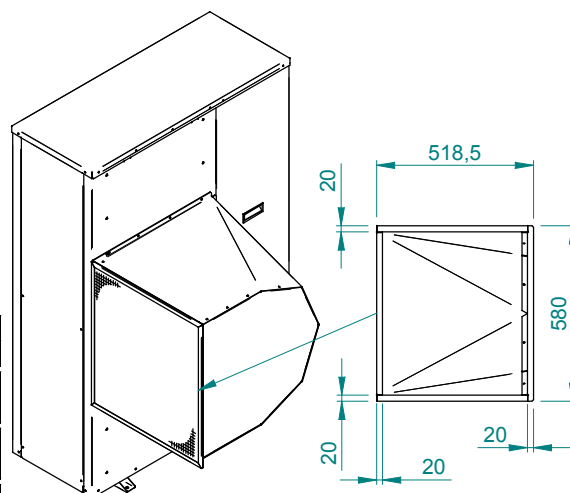
SPAZI DI INSTALLAZIONE / CLEARANCES

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

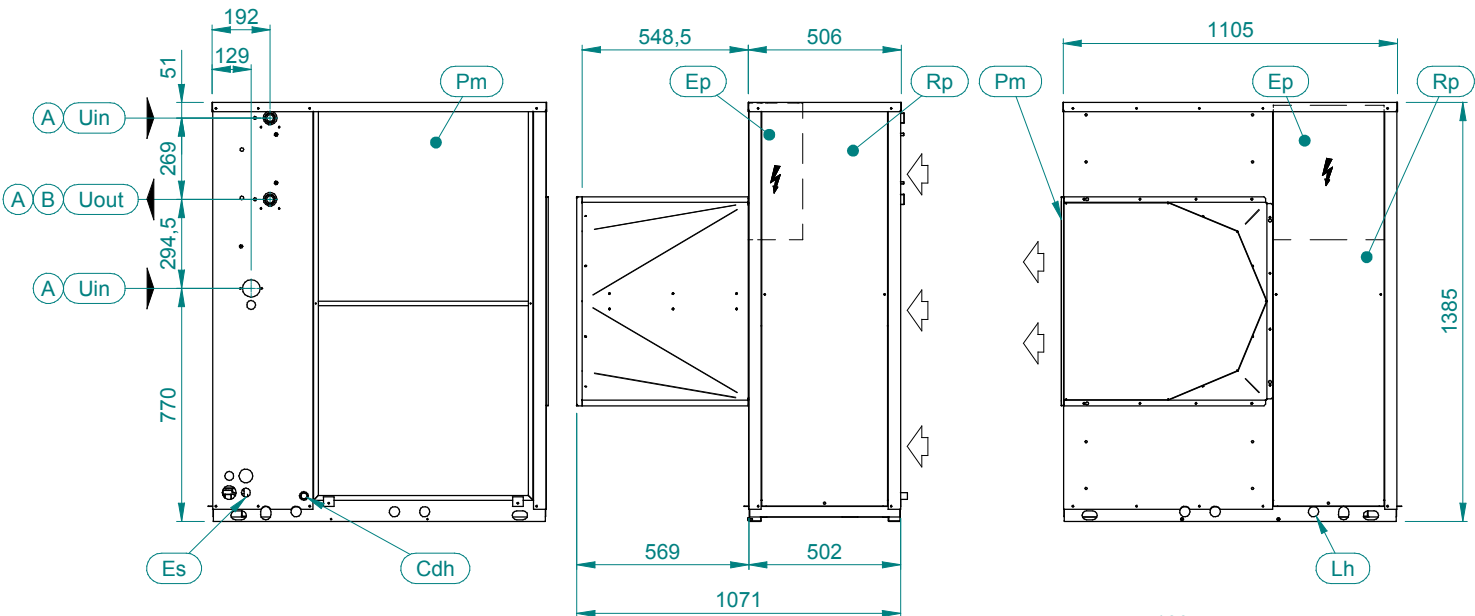
Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
CdH	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET



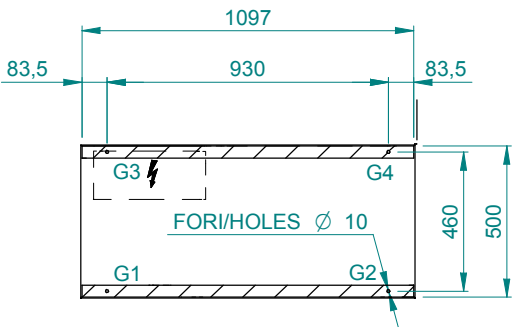
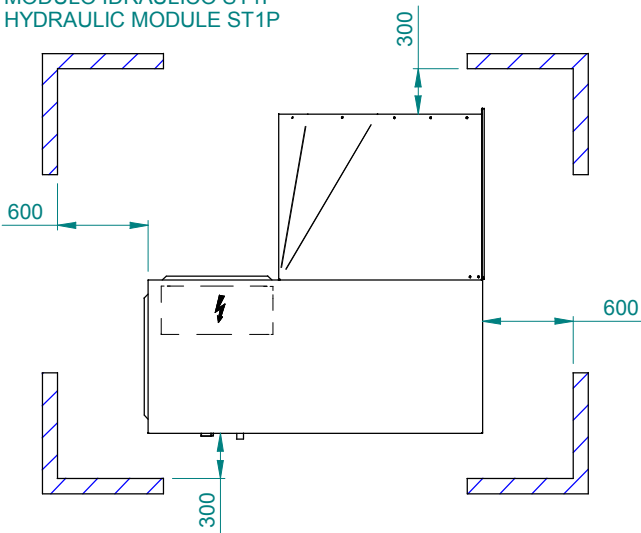
Dimensional drawing Epsilon Echos DK/RF 21-25-28

C413109 - A



CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

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



IMPRONTA A TERRA / FOOTPRINT

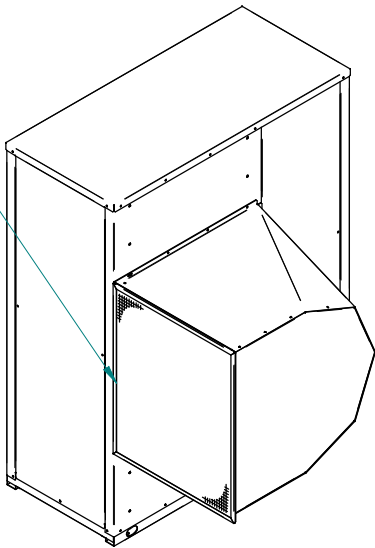
SPAZI DI INSTALLAZIONE / CLEARANCES

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

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

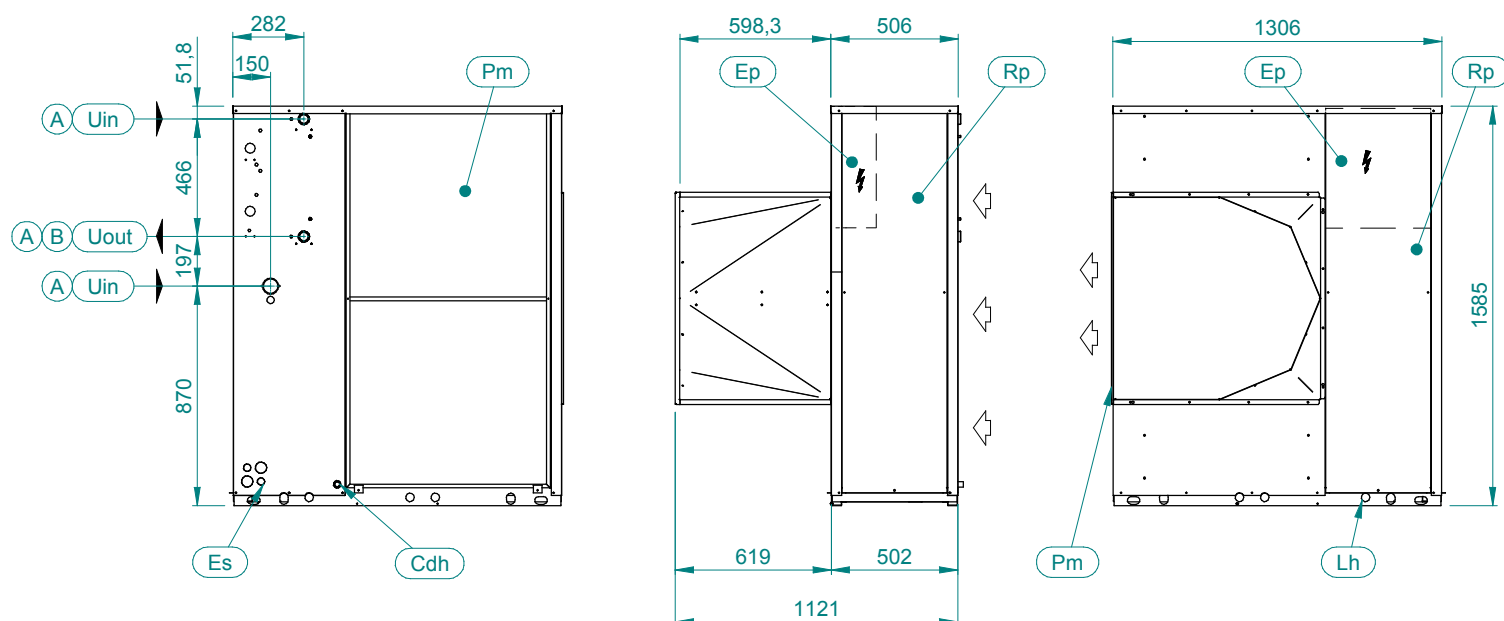
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1105	1071	1385

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



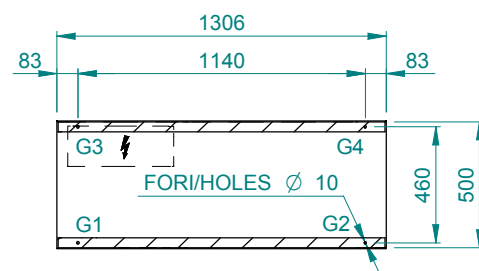
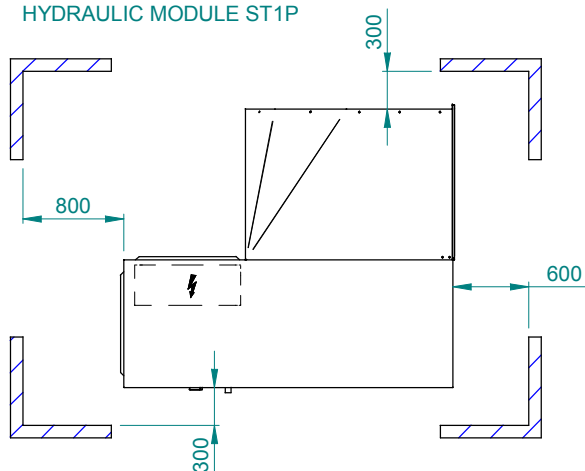
Dimensional drawing Epsilon Echos DK/RF 31-37-41

C413110- A

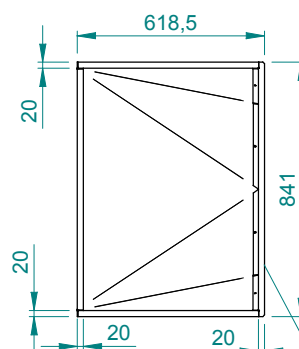


CONNESSIONI IDRAULICHE / HYDRAULIC CONNECTIONS

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



IMPRONTA A TERRA / FOOTPRINT



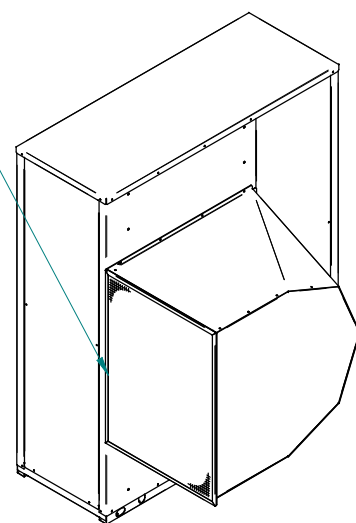
SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
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

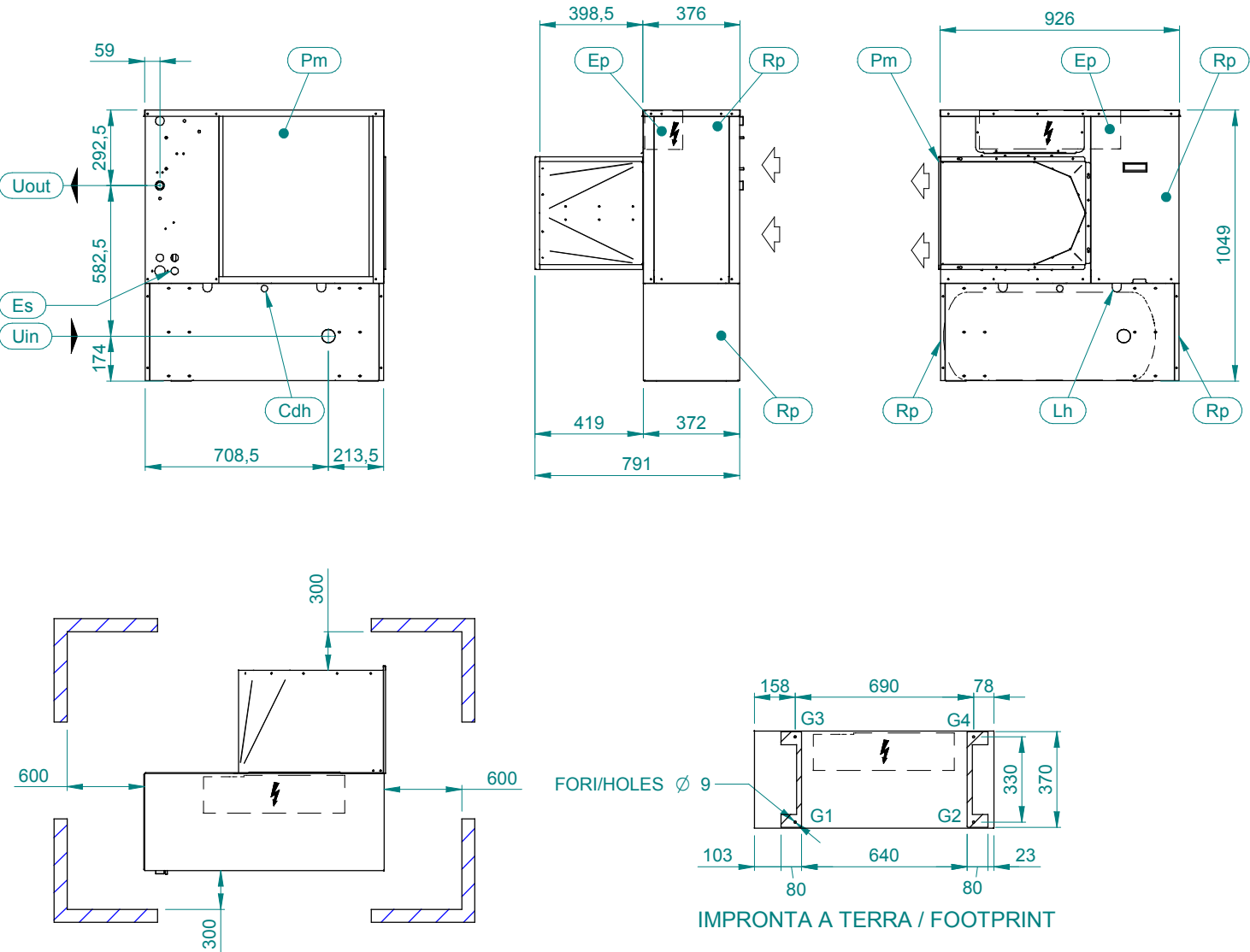
Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Cdh	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET



Dimensional drawing Epsilon Echos DK/RF 6-8-10 1PS

C413111 - A



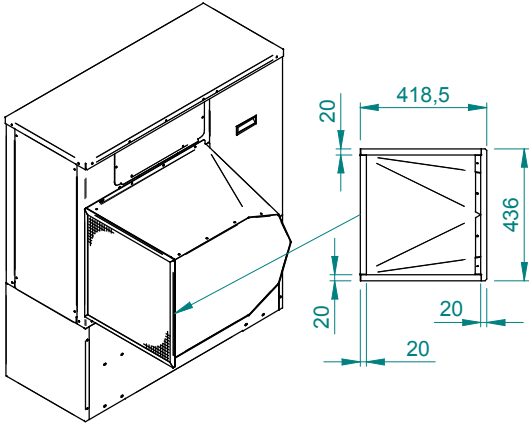
SPAZI DI INSTALLAZIONE / CLEARANCES

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

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

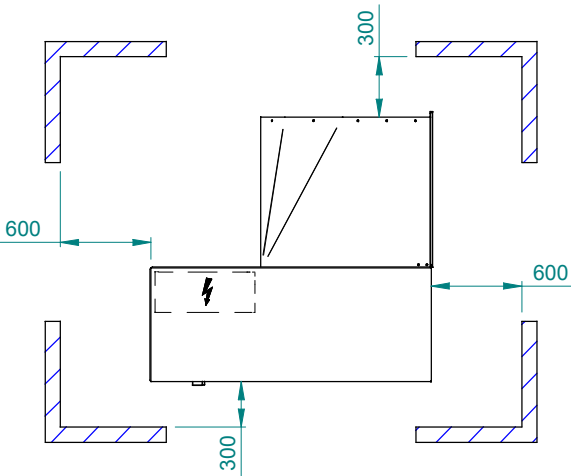
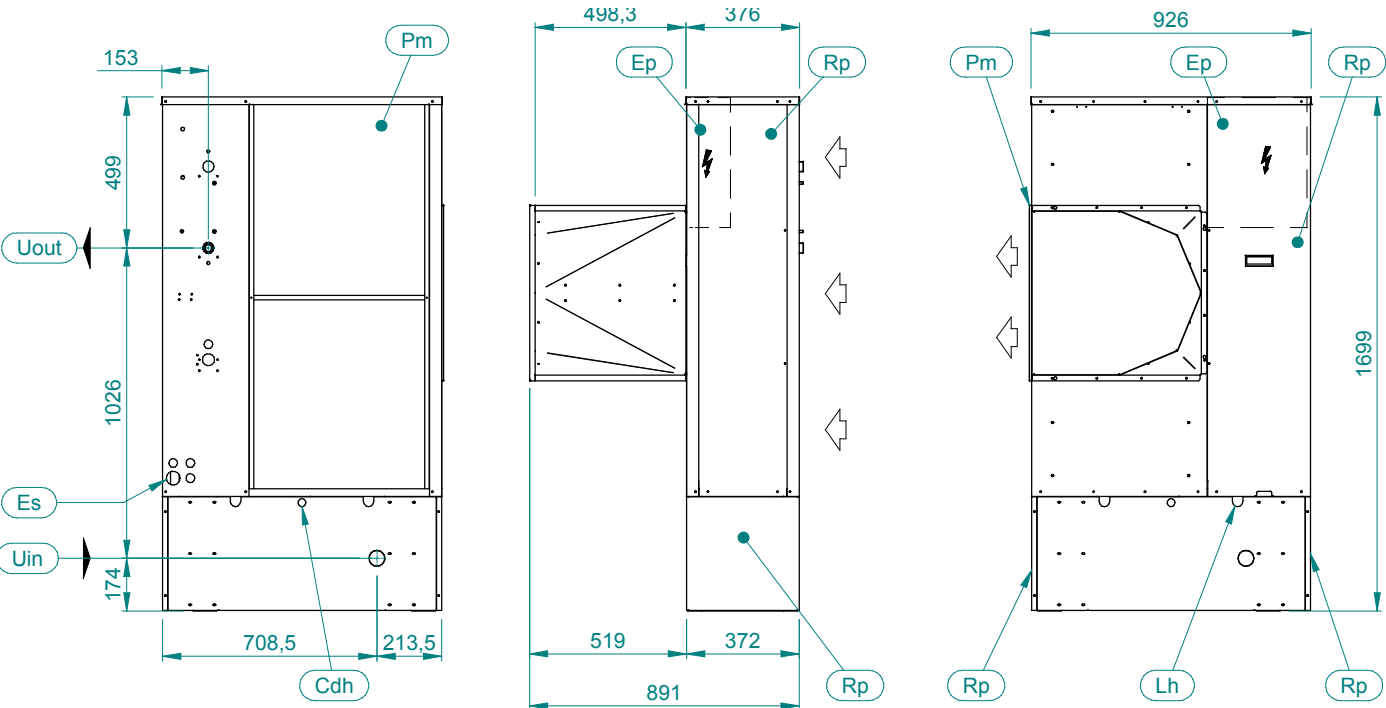
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
925	791	1049

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

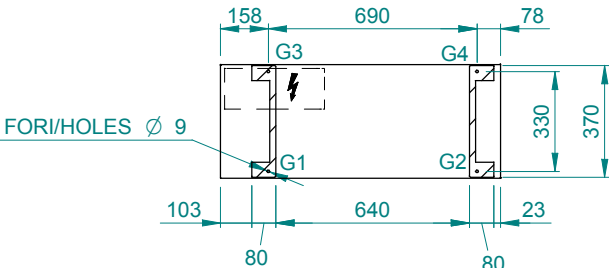


Dimensional drawing Epsilon Echos DK/RF 14-16-18 1PS

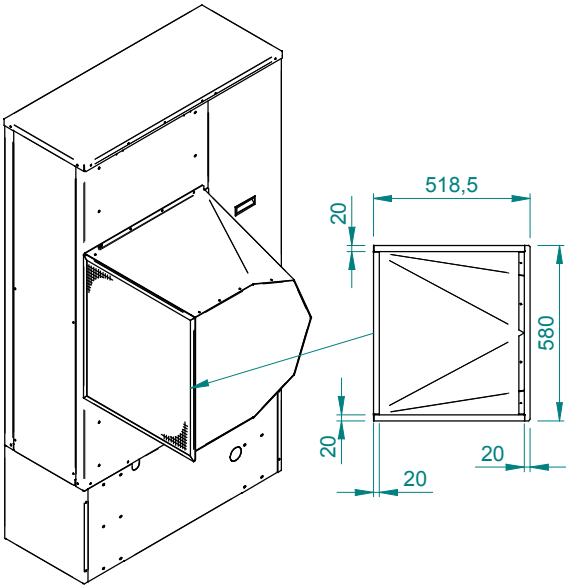
C413112 - A



SPAZI DI INSTALLAZIONE / CLEARANCES



IMPRONTA A TERRA / FOOTPRINT



MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
ST1PS 14	217	287
ST1PS 16	234	304
ST1PS 18	246	316
HP ST1PS 14	230	300
HP ST1PS 16	244	314
HP ST1PS 18	260	330

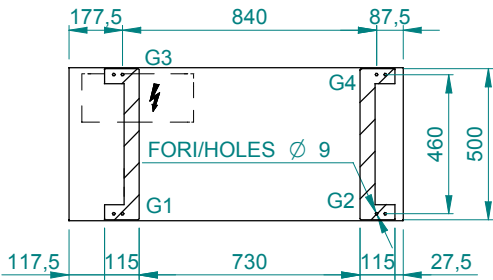
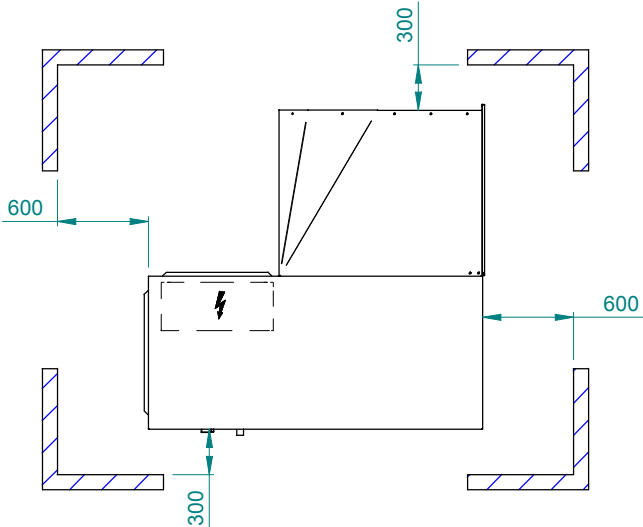
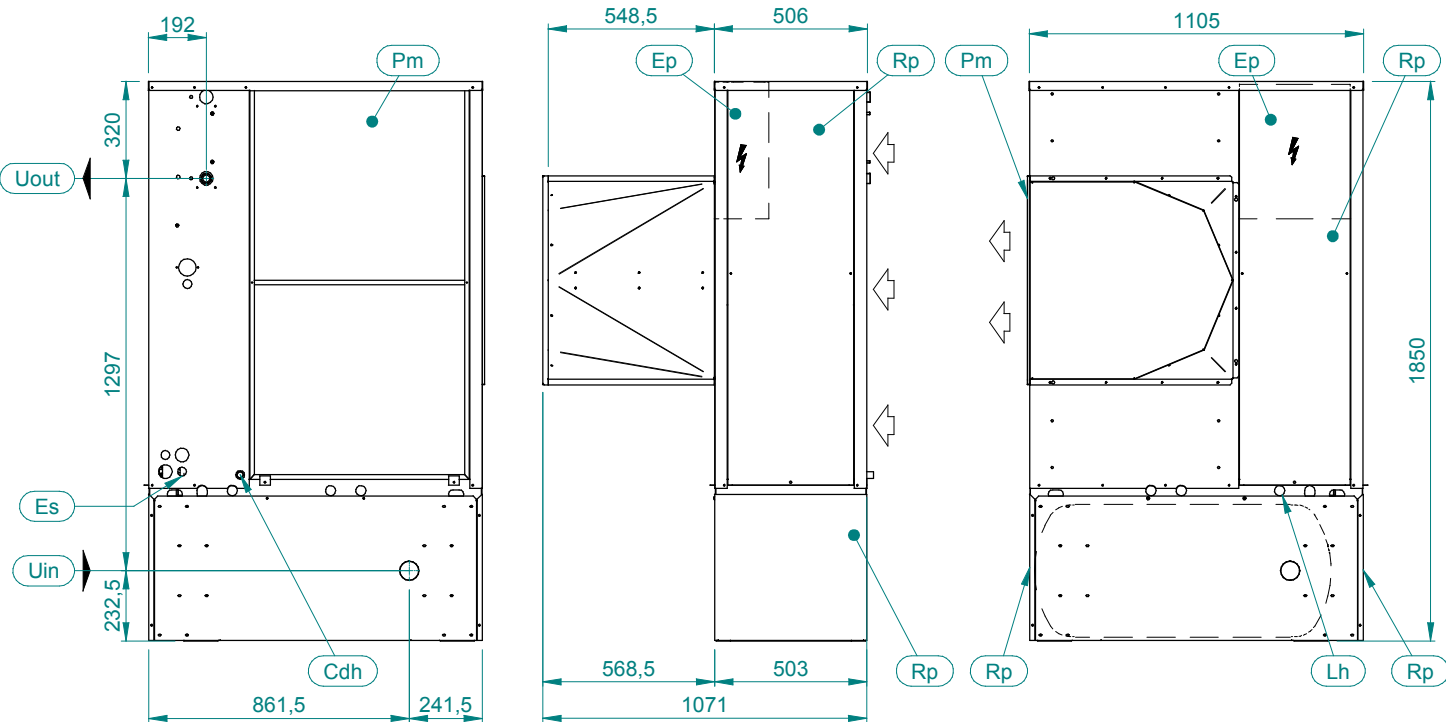
Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	891	1690

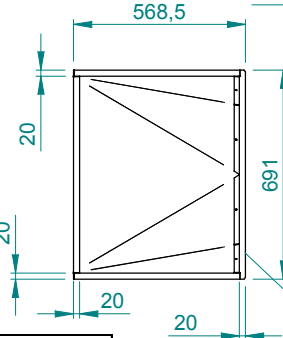
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET

Dimensional drawing Epsilon Echos DK/RF 21-25-28 1PS

C413113 - A



IMPRONTA A TERRA / FOOTPRINT



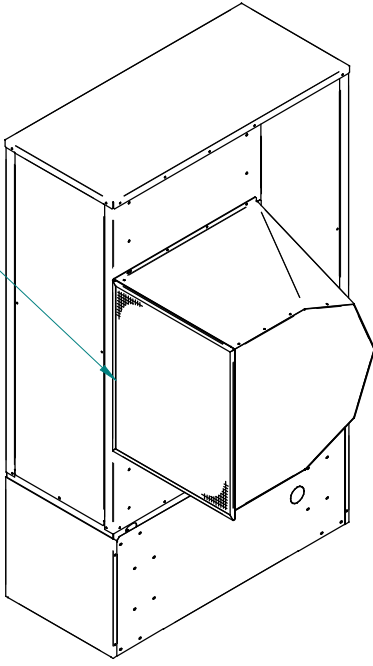
SPAZI DI INSTALLAZIONE / CLEARANCES

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

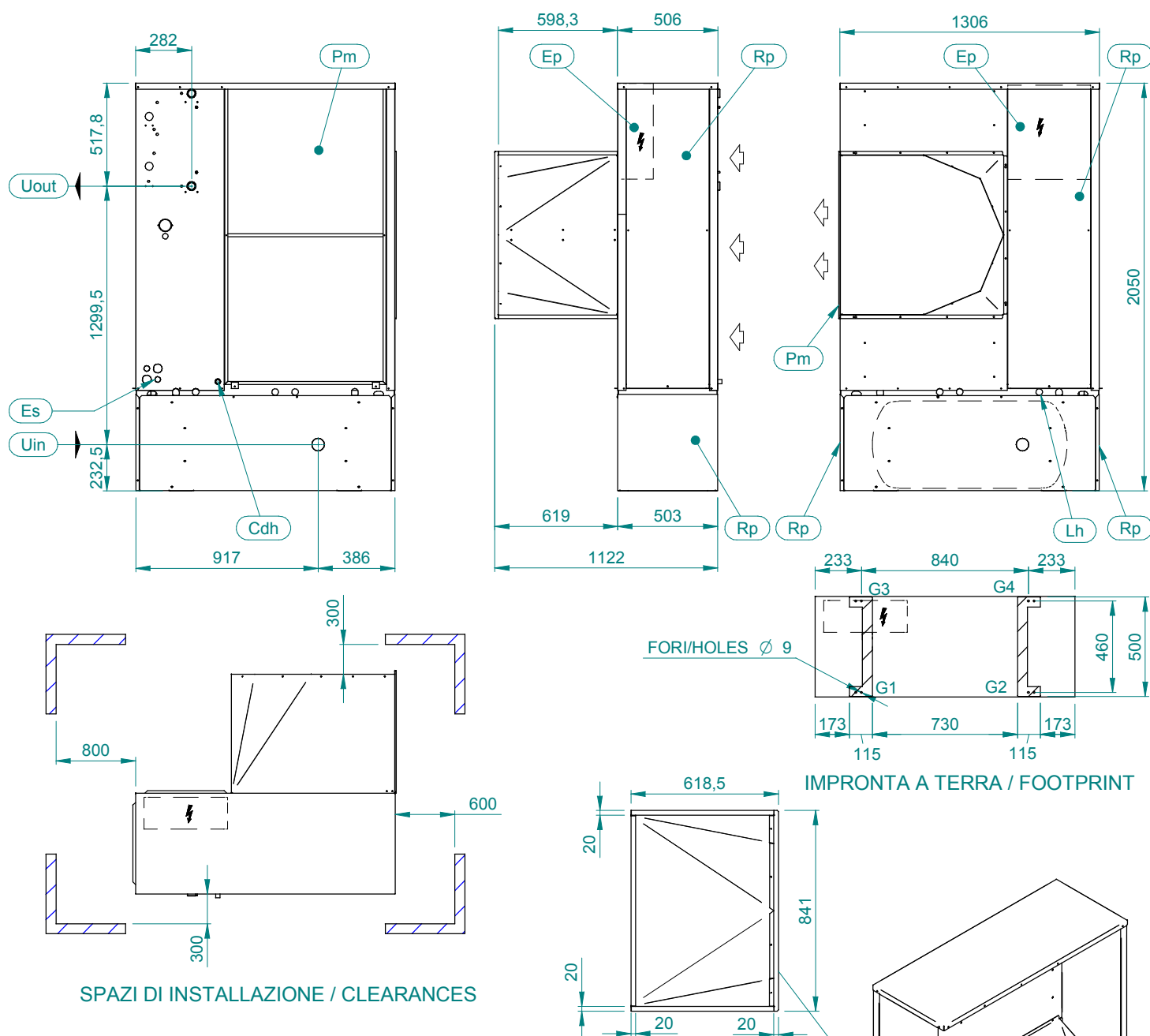
Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Cdh	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION
Uin	INGRESSO ACQUA UTILIZZO USER WATER INLET
Uout	USCITA ACQUA UTILIZZO USER WATER OUTLET



Dimensional drawing Epsilon Echos DK/RF 31-37-41 1PS

C413114 - A



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

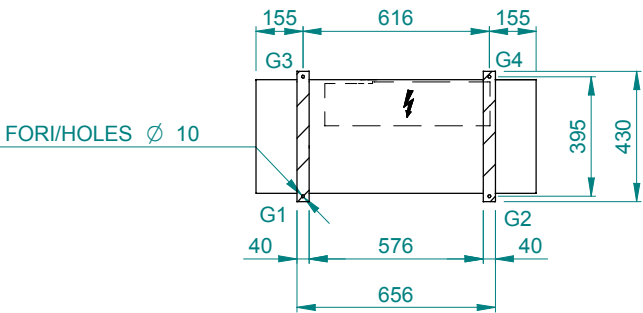
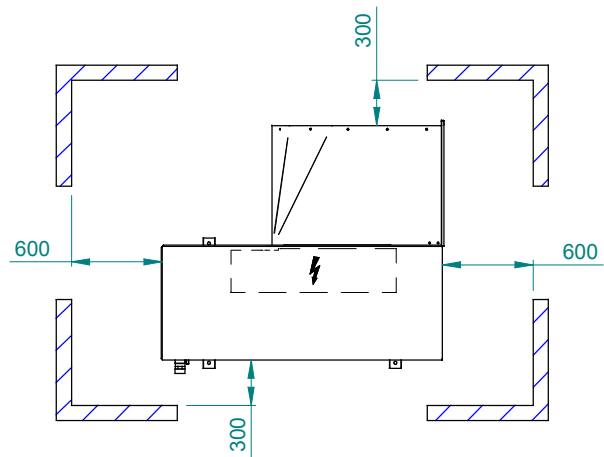
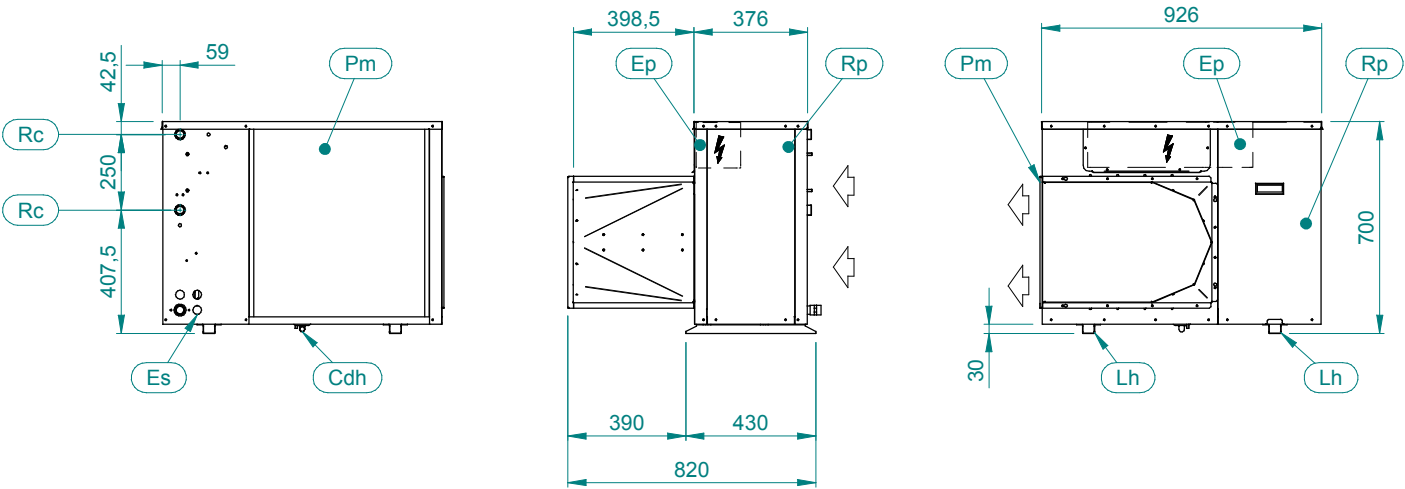
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
1306	1122	2050

Ep	QUADRO ELETTRICO ELECTRICAL PANEL	
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET	
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES	$\varnothing 34$
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" $\frac{1}{4}$ BSPM

Dimensional drawing Epsilon Echos DK/RF/LE 6-8-10

C413115 - A



IMPRONTA A TERRA / FOOTPRINT

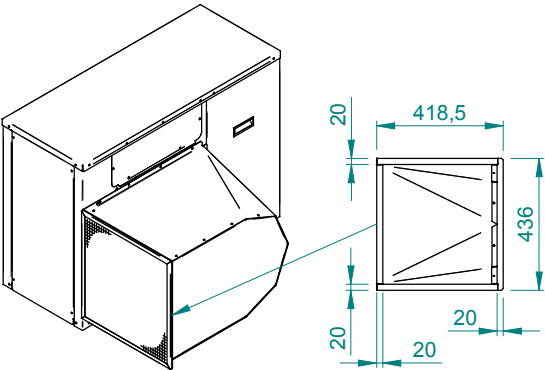
SPAZI DI INSTALLAZIONE / CLEARANCES

MODELLO MODEL	PESO WEIGHT (kg)	PESO IN FUNZIONE OPERATING WEIGHT (kg)
LE 6	94	94
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
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

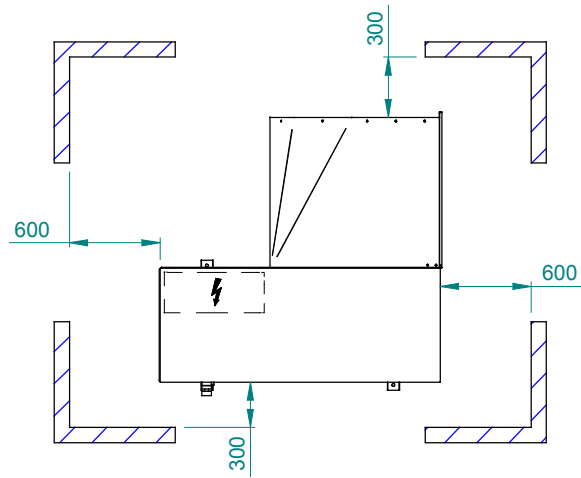
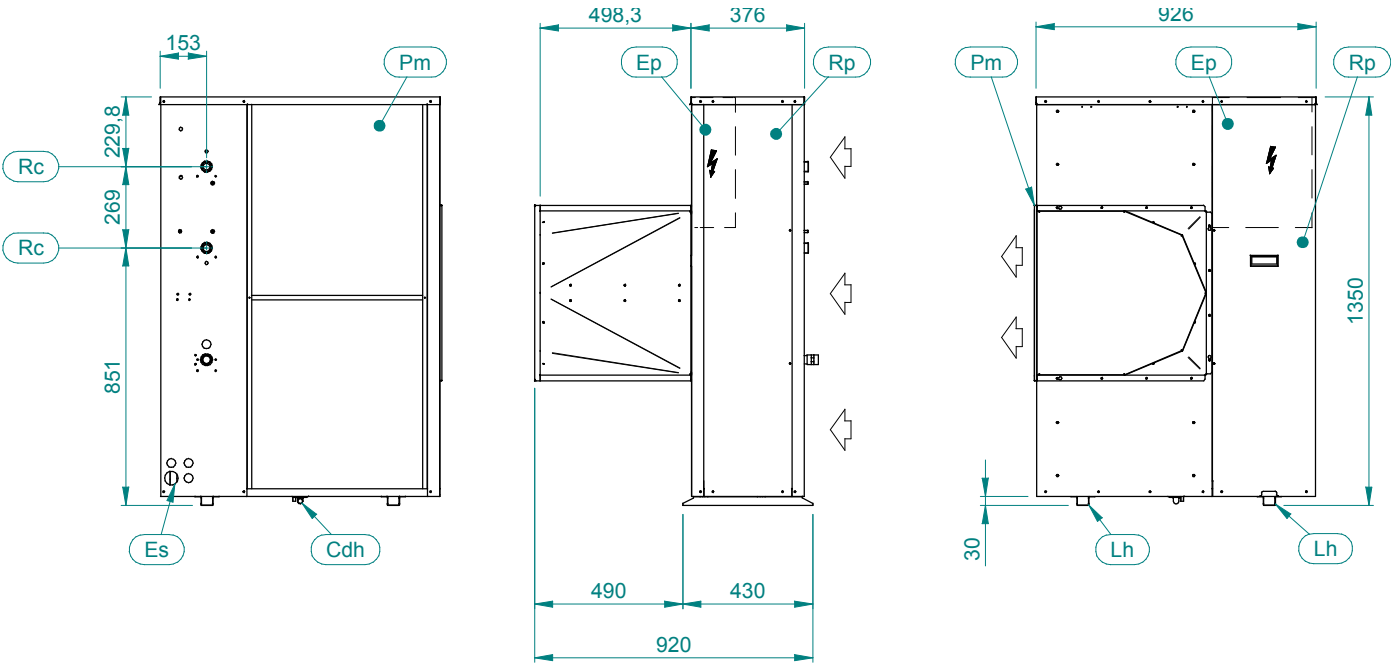
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	820	700

Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Cdh	SCARICO CONDENZA VERSIONE HP CONDENSATE DRAIN HP VERSION
	Ø18

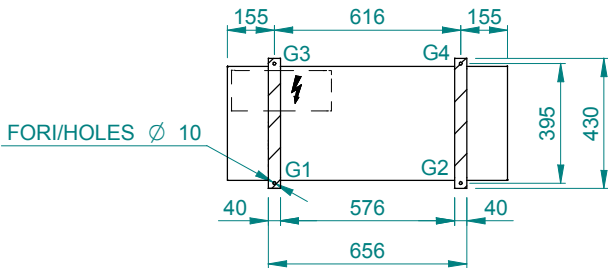


Dimensional drawing Epsilon Echos DK/RF/LE 14-16-18

C413116 - A



SPAZI DI INSTALLAZIONE / CLEARANCES



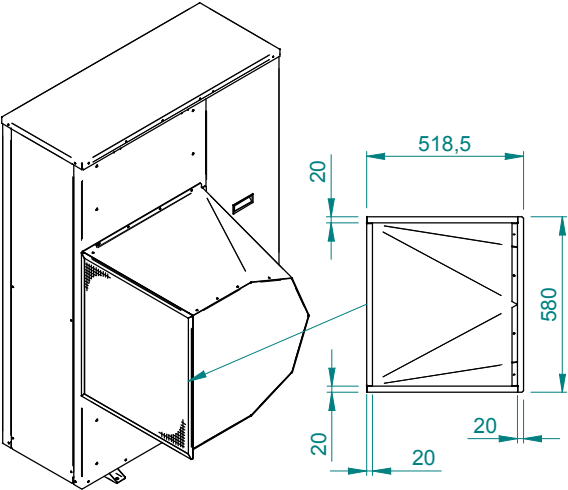
IMPRONTA A TERRA / FOOTPRINT

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

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

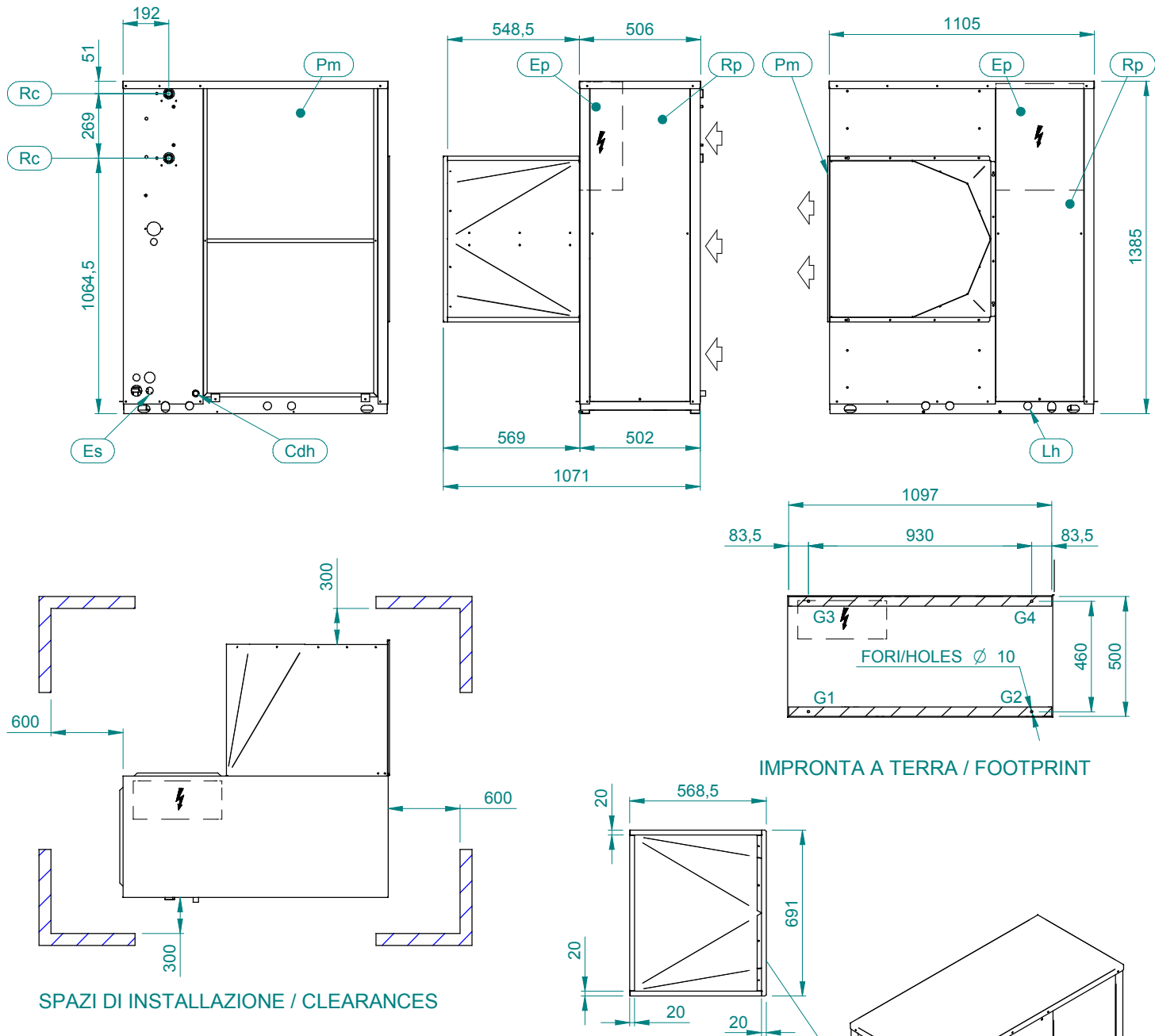
DIMENSIONI - DIMENSIONS		
LUNGHEZZA WIDTH	PROFONDITA' DEPTH	ALTEZZA HEIGHT
926	920	1350

Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
	Ø18



Dimensional drawing Epsilon Echos DK/RF/LE 21-25-28

C413117 - A



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

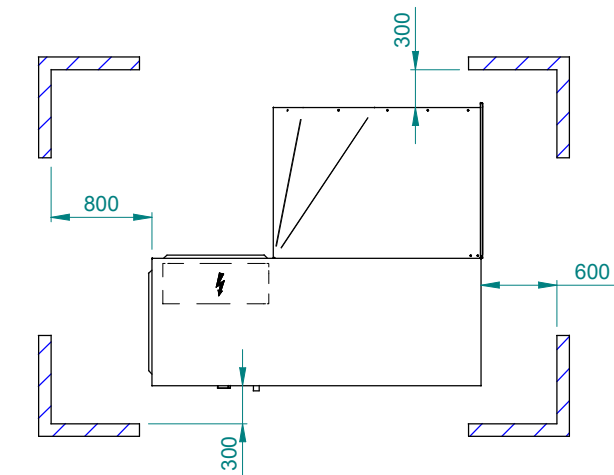
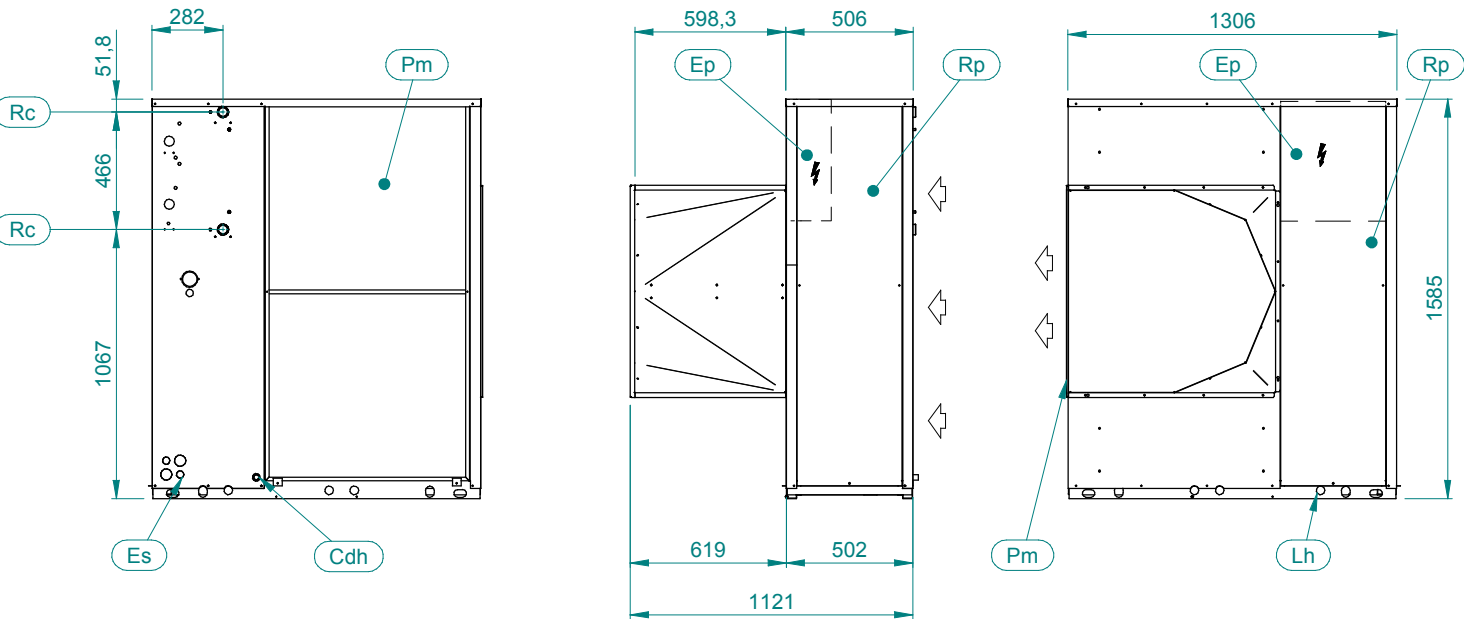
Ep	QUADRO ELETTRICO ELECTRICAL PANEL
Es	INGRESSO ALIMENTAZIONE ELETTRICA ELECTRICAL SUPPLY INLET
Lh	FORI DI SOLLEVAMENTO LIFTING HOLES
Pm	GRIGLIE DI PROTEZIONE PROTECTIVE METAL MESH

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

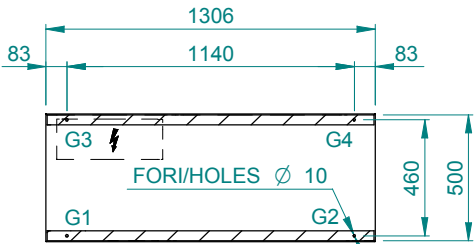
Rc	CONNESSIONI REFRIGERANTE REFRIGERANT CONNECTIONS
Rp	PANNELLO ASPORTABILE REMOVABLE PANEL
Cdh	SCARICO CONDENSA VERSIONE HP CONDENSATE DRAIN HP VERSION
	OPTIONAL ø22

Dimensional drawing Epsilon Echos DK/RF/LE 31-37-41

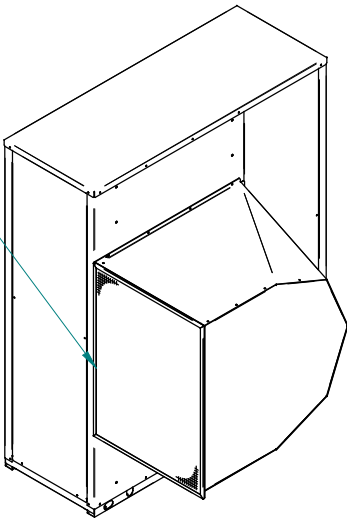
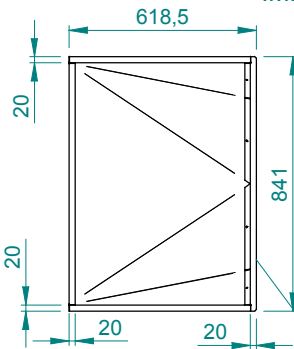
C413118 - A



SPAZI DI INSTALLAZIONE / CLEARANCES



IMPRONTA A TERRA / FOOTPRINT



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

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

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

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

