

Tetris 2 series

84÷913 kW



General

High energy efficient chillers and heat pumps with scroll compressors, and plate heat exchanger, designed to meet demands in the commercial and industrial sectors.

Configurations

A and A+: high efficiency unit

LN: low noise unit

SLN: super low noise unit

A SLN: high efficiency super low noise unit

HP: reversible heat pump

DS: unit with desuperheaters

DC: unit with recovery condenser

Strengths

- ▶ Unit in Eurovent class A
- ▶ Reduced refrigerant charge
- ▶ Wide operating limits
- ▶ Three types of pumps: standard, oversize and for high percentages of glycol (up to 50% e.g.)
- ▶ Bluethink: advanced control with integrated web server
- ▶ Multilogic: management of multiple unit systems
- ▶ Flowzer: system with variable water flow rate
- ▶ Blueye®: supervision system



Tetris 2 series

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High energy efficient chillers and heat pumps with scroll compressors, and plate heat exchanger, designed to meet demands in the commercial and industrial sectors.

PRODUCT DESCRIPTION

BODY

The body is modular with a load-bearing frame, made of galvanized sheet-iron coated with polyester powder RAL 5017/7035 which makes it highly resistant to weather conditions. All screws and bolts are stainless steel.

REFRIGERANT

The unit is charged with refrigerant R410A.

COMPRESSORS

The compressors are hermetic orbiting spiral scroll compressors connected in tandem or in trio, fitted with oil level sight glass, oil equalization line, crankcase heater and electronic protection.

SOURCE-SIDE HEAT EXCHANGER

(excluding HP units)

The exchangers are made with microchannel aluminium coils. Finned pack coils with copper tubes and aluminium fins can be requested as accessory.

to sophisticated production methods, microchannel coils are made using specific aluminium alloys for the tubes and for the fins. This allows the effects of galvanic corrosion to be drastically reduced to always ensure protection of the tubes that confine the refrigerant. Tubes and fins are also subjected to SilFLUX coating processes (or equivalent) or have zinc added to further increase their corrosion resistance.

If the unit has to be installed in an environment with a particularly aggressive atmosphere, e-coated microchannel coils are available as an option. This option is strongly recommended for applications in coastal or highly industrialized areas.

The use of microchannel coils compared to conventional copper/aluminium coils reduces the total weight of the unit by about 10% and gives a reduction in refrigerant charge of at least 30%.

The V-shaped arrangement of the coils enables them to be protected from hail and makes the unit compact. It also guarantees an increase in the air intake surface, and leaves ample space for distribution of the components of the refrigerant circuit and the hydraulic circuit.

To protect the exchangers from corrosion and ensure optimal operation of the unit, we advise following the recommendations given in the user, installation and maintenance manual for cleaning the coils. For installations within a kilometre of the coast, use of the accessory is strongly recommended Coil treated with anti-corrosion paints.

SOURCE-SIDE HEAT EXCHANGER

(only for HP units)

The exchangers are made with finned pack coils with copper tubes and aluminium fins.

At the base of each coil, there is an Anti-Ice Circuit: this prevents ice formation in the lower part of the coil and therefore allows the unit to operate even with extremely harsh temperatures and with high humidity levels.

The V-shaped arrangement of the coils enables them to be protected from hail and makes the unit compact. It also guarantees an increase in the air intake surface, and leaves ample space for distribution of the components of the refrigerant circuit and the hydraulic circuit.

To protect the exchangers from corrosion and ensure optimal operation of the unit, we advise following the recommendations given in the user, installation and maintenance manual for cleaning the coils. For installations within a kilometre of the coast, use of the accessory is strongly recommended Coil treated with anti-corrosion paints.

FANS

The fans are axial fans, directly coupled to a three-phase 6-pole electric motor, with integrated thermal overload protection (klixon) and IP 54 protection rating.

The fan includes the shroud, designed to optimize its efficiency and reduce noise emission to a minimum, and the safety guard.

USER-SIDE HEAT EXCHANGER

The exchanger is a braze-welded stainless steel plate heat exchanger, insulated with a shroud of closed-cell insulating material.

Models with two refrigerant circuits are fitted with dual circuit heat exchanger with a single hydraulic connection. Models with three or four refrigerant circuits are made with two manifolded heat exchangers.

Each heat exchanger is equipped with:

- a thermostat-controlled anti-freeze heater to protect it from ice formation when the unit is not running
- a temperature probe for freeze protection

REFRIGERANT CIRCUIT

Each refrigerant circuit of the basic unit (cold only) comprises:

- shut-off valve in the liquid line
- 5/16" charging valves
- liquid sight glass
- replaceable solid cartridge dehydrator filter
- electronic expansion valve
- pressure transducers for reading the high and low pressure values and relevant evaporating and condensing temperatures
- high pressure switches
- low pressure switches (only for models with parametric control)

The pipes of the circuit and the exchanger are insulated with extruded closed-cell expanded elastomer that is resistant to UV rays.

ELECTRICAL CONTROL PANEL

The electrical control panel is made in a painted galvanized sheet-iron box with forced ventilation and IP54 protection rating.

The electrical control panel of the basic unit comprises:

- main disconnect switch
- automatic circuit breakers for compressors with fixed calibration
- fuses for protecting the fans and auxiliary circuits
- thermal magnetic circuit breakers for pumps (if present)
- contactors for compressors, fans and pumps (if present)
- phase monitor
- potential-free general alarm contacts
- single potential free operating contacts for compressors, fans and pumps (if present)
- microprocessor controller with display accessible from the outside
- external air temperature probe
- summer/winter selection from digital input (only for / HP unit)

All the electrical cables inside the panel are numbered and the terminal board dedicated to the customer's connections is coloured blue so that it can be quickly identified in the panel.

Standard power supply of the unit is 400V/3~/50Hz

CONTROL BLUETHINK

The unit is supplied with two types of control according to size and version:

- parametric control: Tetris 2 units from model 10.2 to 16.2. For these units, the advanced control can in any case be ordered as an accessory.
- advanced control: all the other set-ups.

Main controller functions parametric

This is the standard control for models from 10.2 to 16.2. For these units, the advanced control can in any case be ordered as an accessory.

The control allows the following functions:

- water temperature adjustment, with control of the water entering the user-side heat exchanger
- freeze protection
- compressor timings
- automatic rotation of compressor starting sequence
- recording of the alarm log
- digital input for hot circuit ON/OFF
- digital input for general ON/OFF
- digital input for Summer/Winter selection (only for HP units)

For further details on available functions and on displayed information, you can refer to the specific documentation of the control.

By default, the serial connections present as standard are enabled only for reading from BMS. Enabling of writing from BMS is to be requested when ordering.

Main controller functions advanced

The control allows the following functions:

- water temperature adjustment, with control of the water entering the user-side heat exchanger
- freeze protection
- compressor timings
- automatic rotation of compressor starting sequence
- recording of the log of all machine inputs, outputs and states
- automatic rotation of compressor starting sequence
- recording of the alarm log
- digital input for hot circuit ON/OFF
- Ethernet serial port with Modbus protocol and integrated web server preloaded web page
- digital input for general ON/OFF
- digital input for Summer/Winter selection (only for HP units)

For further details on available functions and on displayed information, you can refer to the specific documentation of the control.

By default, the serial connections present as standard are enabled only for reading from BMS. Enabling of writing from BMS is to be requested when ordering.

Main functions of the webserver (only for units with advanced control)

As standard, the Bluethink controller integrates a web-server with a preloaded web page that is accessed via password.

The web page allows the following functions to be carried out (some of these are available only for users with advanced level rights):

- display of the main functions of the unit such as unit serial n°, size, refrigerant
- display of the general status of the machine: water inlet and outlet temperatures, external air temperature, mode (chiller or heat pump), evaporating and condensing pressures, suction and discharge temperatures
- display of the status of compressors, pumps, expansion valves
- display in real time of the graphs of the main quantities
- display of the graphs of logged quantities
- display of alarm log
- management of users on several levels
- remote ON/OFF
- remote set point change
- remote time band change
- remote summer winter mode selection

Human-Machine Interface

The control has a graphic display that allows the following information to be displayed:

- water inlet and outlet temperature
- set temperature and differential set points
- description of alarms
- hour meter of operation and number of start-ups of the unit, the compressors and the pumps (if present)
- high and low pressure values, and relevant condensing and evaporating temperatures
- external air temperature
- superheating at compressor suction.

Management of defrost cycles

(only for HP units)

For defrost management, the control of the unit uses a sliding intervention threshold, depending on the pressures inside the unit and the external air temperature. By putting together all this information, the control can identify the presence of ice on the coil and activates the defrosting sequence only when necessary, so as to maximize the energy efficiency of the unit.

Sliding management of the defrost threshold ensures that, as the absolute humidity of outdoor air decreases, the frequency of the defrost cycles gradually decreases because they are carried out only when the ice formed on the coil actually penalizes performance.

The defrost cycle is fully automatic and is carried out using a patented defrost system (patent n° 1335232): during the initial stage, a defrost is carried out by cycle reversal with fans stopped. When the frost on the coil has melted sufficiently, reverse ventilation is activated, that is, with air flow in the opposite direction to that of normal operation, so as to facilitate the ejection of condensed water and detached ice. When the coil is clean, ventilation is reversed again and the unit resumes operation in heat pump mode.

The combination of the sliding intervention threshold and the patented defrost system allows the number and duration of defrost cycles to be optimized and reduced to the minimum.

CONTROLS AND SAFETY DEVICES

All the units are fitted with the following control and safety components:

- high pressure switch with manual reset
- high pressure safety device with automatic reset, for a limited number of occurrences, managed by the controller
- low pressure safety device with automatic reset and limited tripping managed by the controller
- high pressure safety valve
- antifreeze probe at outlet of each evaporator
- mechanical paddle flow switch already installed
- overtemperature protection for compressors and fans

TESTING

All the units are factory-tested and supplied complete with oil and refrigerant.

VERSIONS

Alongside the basic version of the unit, there are various versions that differ in efficiency and noise levels.

A and A+

The A and A+ version units use larger coils than the basic unit, in order to increase the ratio between exchange surfaces and capacity of the compressors. This allows all models to achieve Eurovent Class A for both EER and COP and consequently also high ESEER values.

SLN and A/SLN

The SLN and A/SLN version units use a soundproofed compressor compartment, oversize coils compared to the standard efficiency unit and fans with speed adjuster and reduced air flow rate. The speed reduction of the fans is such that, under nominal operating conditions, the air flow rate and noise level are lower than those of the basic version of the unit. For the A/SLN version, together with obtaining an extremely moderate noise emission level, a high efficiency machine is also obtained.

In any case, the use of the speed adjuster to reduce the air flow rate allows rotation of the fans at maximum speed when external air temperature conditions are particularly critical and therefore guarantees the same operating limits as the high efficiency versions.

Also, for SLN/HP and A/SLN/HP version units working in heat pump mode, the fans always operate at 100% speed and therefore guarantee the same performance levels as the high efficiency versions.

OPTIONS

/HP: reversible heat pump

In addition to the set-up of a chiller only unit, /HP units comprise (for each refrigerant circuit):

- 4-way reversing valve
- suction separator
- fluid accumulator
- second electronic expansion valve.
- Anti-Ice Circuit at the base of each coil

The Anti-Ice Circuit prevents ice formation in the lower part of the coil and therefore allows the unit to operate even with extremely harsh temperatures and with high humidity levels.

For defrost management, the control of the unit uses a sliding intervention threshold, depending on the pressures inside the unit and the external air temperature. By putting together all this information, the control can identify the presence of ice on the coil and activates the defrosting sequence only when necessary, so as to maximize the energy efficiency of the unit.

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The combination of the sliding intervention threshold and the patented defrost system allows the number and duration of defrost cycles to be optimized and reduced to the minimum.

Summer/winter switching can be done from the control keypad, digital input or BMS (requires write enabling).

/DC: unit with recovery condenser

In addition to the set-up of a chiller only unit, /DC units comprise:

- a heat recovery condenser for recovering 100% of the condensation heat on each refrigerant circuit. The exchanger is a braze-welded plate heat exchanger; for multi-circuit units, the heat exchangers are to be manifolded outside the unit (by the customer)
- temperature probe at the inlet of each recovery exchanger
- liquid receiver for each refrigerant circuit with system for emptying the refrigerant from the condensing coil
- potential free contact in the electrical control panel for activation of recovery.

When required by the system, through the closing of a contact, the control automatically manages activation of recovery. Recovery management is carried out through a control on the temperature of the return water. The control also automatically manages safety deactivation of recovery if the condensing pressure becomes too high, and changes to using the condensing coils.

This option is not available for /HP units

/DS: unit with desuperheater

In addition to the set-up of a chiller only unit, /DS units comprise (for each refrigerant circuit) an exchanger for condensation heat recovery of up to 20% (depending on size, version and operating conditions), placed in series with the condensing coils. The exchanger is a braze-welded plate heat exchanger. For multi-circuit units, the exchangers are to be manifolded outside the unit (by the customer).

To maximize the use of the accessory and optimize machine operation, combination with the speed governor of the fans or with the EC fans is recommended.

This option is also available for /HP units, but in this case, in the installation, it must have provision for shutting off the recovery water circuit during operation in heat pump mode to avoid taking power from the user-side heat exchanger.

/LN: low noise unit

In the unit with /LN option, all the compressors are enclosed in a compartment that is fully soundproofed with sound absorbing material and soundproofing material.

/HAT: unit for high external air temperatures

The unit fitted with this accessory adopts an electrical control panel made using specific components to withstand high temperatures, special cables and oversize protection parts.

The accessory enables the unit to work with external air temperatures of over 46°C as indicated in the section on operating limits.

With this accessory, operation is guaranteed with external air temperature up to 52°C.

For higher temperatures up to about 55°C, a set-up with air conditioning of the electrical control panel is necessary; the unit works in capacity reduction mode. The feasibility of this set-up must be assessed: please contact our sales department.

HYDRAULIC MODULES

All units can be fitted with hydraulic module in various configurations:

- /1P: hydraulic module with one pump
- /2P: hydraulic module with two pumps
- /1PS: hydraulic module with one pump and buffer tank
- /2PS: hydraulic module with two pumps and buffer tank

All the above-mentioned modules have pumps with standard discharge head.

The following are also available:

- modules /1PM, /2PM, /1PMS and /2PMS that have pumps with increased available discharge head

Hydraulic modules with one pump have:

- one pump
- an expansion vessel

Hydraulic modules with two pumps have:

- two pumps
- a check valve on the delivery side of each pump
- an expansion vessel

In the version with 2 pumps, these are always with one on standby while the other is working. Switching over between the pumps is automatic and is done by time (to balance the hours of operation of each one) or in the event of failure.

Hydraulic modules with three pumps have:

- three pumps
- a check valve on the delivery side of each pump
- an expansion vessel

The 3 pumps operate in parallel and each one processes a third of the total flow rate. If one of the three pumps fails, the unit will work in forced capacity reduction mode (to avoid low pressure alarms) and the remaining two pumps will in any case be able to guarantee about 78% of the rated flow rate.

Hydraulic modules with tank also have:

- a gate valve at the inlet of the pump or the suction manifold
- a tank with drain valve and air valve

Refer to the table of configurations that are not possible to check for availability of specific set-ups.

DESCRIPTION OF ACCESSORIES

Refrigerant circuit accessories

- BC Capacitive backup battery for electronic expansion valve**
When the compressors stop, the controller always closes the electronic expansion valve to prevent dangerous refrigerant migration. The presence of the backup battery ensures that the electronic valve is kept in closed position even when there is no power supply
This accessory uses a condenser, and not an ordinary battery, as energy storage: this allows it to be unaffected by the memory effect of normal batteries and eliminates its need for maintenance.
- BT Backup battery for electronic expansion valve**
When the compressors stop, the controller always closes the electronic expansion valve to prevent dangerous refrigerant migration. The presence of the backup battery ensures that the electronic valve is kept in closed position even when there is no power supply
- BK Brine Kit**
This accessory is compulsory if a water temperature set point lower than +3°C is used (if the unit is provided with double set point or variable set point, the lower set point is considered).
The accessory consists of increased insulation and suitable sizing and calibration of some components.
The inlet and outlet temperatures of the user-side exchanger must be given on ordering to allow correct setting of the alarm parameters and verification of the sizing of the expansion valve.
The cooling set point can then be changed by the customer in an interval that, compared to the set point given on ordering, ranges from -1K up to the maximum temperature allowed by the above-stated operating limits.
The unit will be optimized to work at the set point temperature given on ordering. For different set points, the cooling capacity provided and the level of efficiency of the machine could decrease and move away from these conditions.
This accessory compulsorily requires the insertion of one of the options: condensing control with speed adjuster or EC fans.
- DVS Double safety valve**
With this accessory, instead of each individual safety valve per circuit, there is a "candelabrum" with two safety valves and a diverter valve for choosing the valve in operation. This allows the safety valves to be replaced without having to drain the machine and without having to stop it.
- MAFR Pressure gauges**
The operating pressures of each circuit of the unit can be displayed on the control by accessing the relevant screens. Also, the machine can be fitted with pressure gauges (two for each circuit) installed in a clearly visible position. These allow reading in real time of the working pressures of the refrigerant gas on the low pressure side and on the high pressure side of each refrigerant circuit.
- RG Condensation control with fan speed governor**
The control manages the speed of the fans through a phase cutting speed governor, in order to optimize the operating conditions and efficiency of the unit.
This control also has the effect of reducing the noise level of the unit: in fact, the typical conditions under which the control will be modulating the speed of the fans are those of the night, spring and autumn.
For units equipped with EC fans, the same function is carried out using the electronically commutated motor of the fans and is supplied as standard.
- RIC Liquid receiver**
The adoption of this accessory always guarantees correct feeding of the expansion valve even when the unit is subjected to wide external air temperature ranges.
This accessory is standard on DC and HP units.

RPP Refrigerant leak detector with automatic pump down

With this accessory, a refrigerant leak detector is placed inside each compressor compartment. Detection of a refrigerant leak is managed by the control through a specific alarm and display of a specific icon on the display of the control. For all the circuits of the unit, the alarm also starts the machine stopping procedure with pump down, confining all the refrigerant in the coils.

The accessory includes the capacitive backup battery.

The accessory can be applied only to units in LN or SLN set-up.

RPR Refrigerant leak detector

With this accessory, a refrigerant leak detector is placed inside each compressor compartment. Detection of a refrigerant leak is managed by the controller through a specific alarm and display of a specific icon on the display of the controller. This alarm stops the unit.

The accessory can be applied only to units in LN or SLN set-up.

RUB Compressor suction and delivery valves

The valves situated on the delivery side and on the suction side of the compressors allow the compressor to be isolated from the rest of the refrigerant circuit, so making the maintenance operations quicker and less invasive

Fan accessories

VEC EC fans

With this accessory, EC fans, with electronically commutated brushless motor, are used for the ventilating section. These guarantee very high efficiency levels for all working conditions and allow a 15% saving on the power absorbed by each fan working at full capacity.

Also, through a 0-10V analogue signal sent to each fan, the microprocessor carries out condensation/evaporation control by continuous adjustment of the air flow rate as the external air temperature changes, with a further reduction in electrical absorption and noise emission.

VEM Oversize EC fans

With this accessory, oversize EC fans, with electronically commutated brushless motor, are used for the ventilating section. These guarantee very high efficiency levels for all working conditions. Through a 0-10V analogue signal sent to each fan, the microprocessor carries out condensation/evaporation control by continuous adjustment of the air flow rate as the external air temperature changes, with a further reduction in electrical absorption and noise emission.

Oversize EC fans allow a residual available discharge head of about 100Pa to be obtained.

RECP Pressure recuperator

Normally, the air ejected by the fan has a high speed and this manifests itself as kinetic energy that is dissipated into the environment.

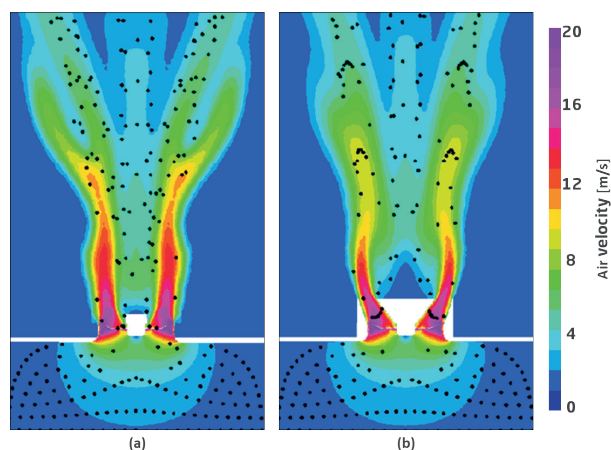
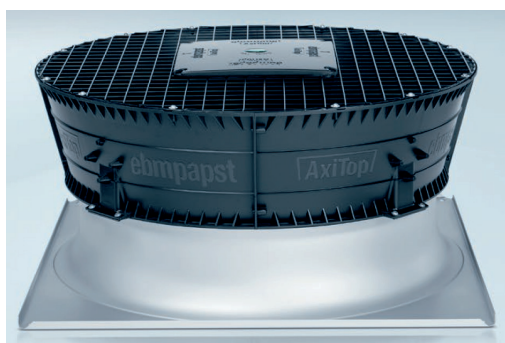
The pressure recuperator is a passive element situated on the ejection duct of each individual fan designed to allow better conversion of kinetic energy into static pressure, which manifests itself as a higher pressure generated by the fan.

This higher pressure can have at least two possible applications:

- For the same fan speed, the pressure recuperator allows an increase of about 50Pa in the available pressure of the ventilating section to be obtained. This can be useful for overcoming the head losses that may be present in specific installations. The increase in available pressure is to be considered in addition to the increase that can already be obtained with the application of oversize EC fans
- for the same pressure differential on the air, the pressure recuperator allows the same air flow rate to be obtained with a lower number of revolutions of the fan. This automatically produces a reduction of up to 3 dB(A) in the noise emission of the unit and a reduction in the absorption of the fan, with an immediate increase in the overall efficiency of the unit.

To allow optimization of the performance of the accessory, combination with the speed adjuster or EC fans is necessary. In this last case, the higher efficiency of the EC fans (especially when operating at low speed) is added to the performance improvement generated by the pressure recuperator.

The accessory is supplied separately from the unit on one or more pallets and it must compulsorily be installed (by the customer) before the first start-up of the machine.



(a) fan only;

(b) fan with pressure recuperator

Hydraulic circuit accessories

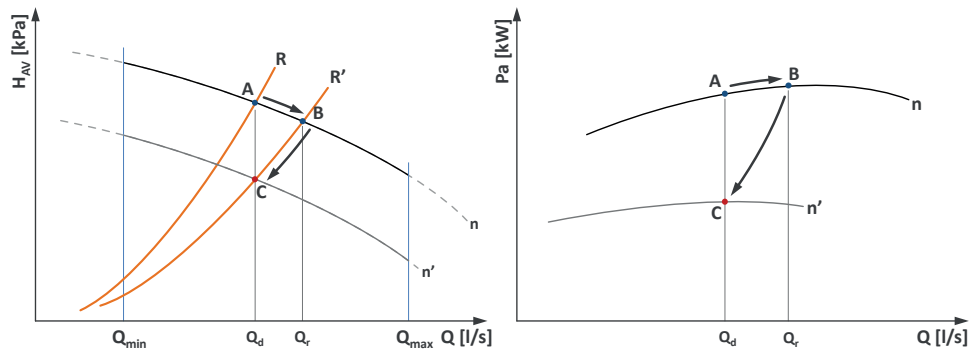
FVP FLOWZER VP - Inverter for manual pump adjustment

The accessory consists of inserting an inverter in the machine to manually adjust the speed of the pump (or pumps) in order to calibrate the pump flow rate on the head losses of the system.

This accessory is to be combined with one of the integrated hydraulic modules that can be selected for the unit. Units equipped with integrated hydraulic module allow a certain level of available discharge head (point A) to be obtained under nominal flow rate conditions Q_d .

But the actual head loss level of the system (e.g. characteristic curve R') normally causes the pump to find a different equilibrium point (point B), with a flow rate Q_r higher than Q_d .

In this condition, besides having a different flow rate from the nominal flow rate (and therefore also a different thermal gradient), there is also higher pump power absorption.



The use of the Flowzer allows the pump speed to be set manually (e.g. at speed n' instead of n) to obtain the design water flow rate and thermal gradient (point C).

Once the adjustment procedure has been carried out, the pump will always work at a fixed flow rate.

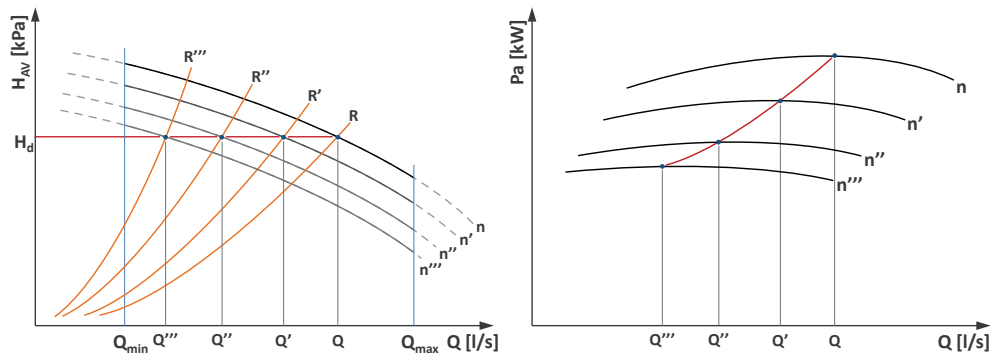
Use of the Flowzer VP allows the power absorption of the pump to be considerably reduced with consequent energy saving. By way of example:

- a 10% reduction in flow rate gives a reduction in absorbed power of about 23%
- a 30% reduction in flow rate gives a reduction in absorbed power of about 50%

FVD FLOWZER VD - Transducer for automatic adjustment

Flowzer VD requires a pressure transducer to be installed in the machine. Through this transducer, the inverter can gauge the actual pressure at the ends of the system and automatically adapt the pump speed to obtain a set available discharge head value. Flowzer VD must be combined with Flowzer VP.

This accessory therefore allows a constant pressure system to be achieved.



With the Flowzer VD, the customer can set, directly on the inverter, the available discharge head value H_d that the unit must maintain.

As can be seen in the graph, as the system user points close, the resistance curve of the system shifts to the left and therefore the inverter will be able to reduce the pump speed in order to keep the available discharge head of the unit constant. By doing so, an immediate reduction in the power absorbed by the pump will be obtained.

The customer will have to check that, in minimum flow rate conditions (that is, with the maximum number of user points closed), this is always higher than or equal to the minimum flow rate allowed by the unit.

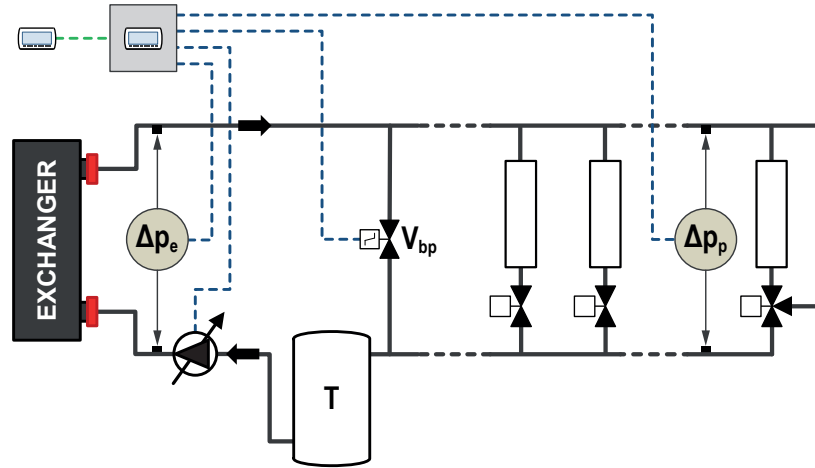
This accessory is useful when the total head losses of the circuit are slightly variable or when they change depending on the seasons (for example, some user points are active only during summer operation and not during winter operation).

The use of this accessory also allows the pump speed to be adapted to possible fouling of the filter on the hydraulic circuit.

FVF **FLOWZER VFPP – Kit for variable flow rate primary circuit pump with bypass valve included**

The Flowzer VFPP allows you to implement a variable flow rate primary hydraulic circuit using a single pumping unit driven by inverter and a modulating bypass valve, all managed by a dedicated controller installed in the unit.

This accessory allows you to implement an alternative plant-engineering solution to the classic system with a fixed flow rate primary circuit and a secondary circuit, if necessary with inverter driven pump.



The Flowzer VFPP must compulsorily be combined with the Flowzer VP and includes:

- a pressure transducer installed at the ends of the user-side exchanger (Δp_e)
- a modulating bypass valve with servo-motor supplied separately with it (V_{bp}) (installation by the customer)
- a pressure transducer supplied separately with it to measure the actual pressure present in the system (Δp_p) (installation by the customer)
- an additional controller dedicated to just management of the Flowzer VFPP system that communicates with the machine controller for optimization of capacity reduction of the unit depending on the load and pump speed

Use of the Flowzer VFPP allows you to:

- simplify the system by eliminating a pumping unit
- shut off the hydraulic circuit breaker with the modulating bypass valve that will open only if necessary
- use a single inverter on the single pumping unit and therefore guarantee, in all operating conditions, the lowest energy consumption due to just pumping.

The Flowzer VFPP system controller uses an advanced algorithm that enables prevention of unnecessary waste of energy and hunting by the inverter and the bypass valve.

It is the best compromise between the minimum pump speed and the bypass valve closed as much as possible.

The operating principle of the Flowzer VFPP can be summarized as follows:

- The Flowzer VFPP system controller modulates the pump speed based on the reading by the system transducer Δp_p in order to keep the pressure at the set levels. This means that, as a result of the switching off of user points, there will be a slowing down of the pump.
- the pump will be able to slow down until the flow rate to the exchanger reaches the minimum allowed (flow rate gauged indirectly through the transducer Δp_e). When this threshold is exceeded, the Flowzer VFPP controller opens the valve V_{bp} to recirculate the flow rate that is not required by the system, but is necessary to guarantee the minimum flow rate to the exchanger.

To work correctly, in the maximum capacity reduction condition of the system (that is, with all the two-way valves closed), the Flowzer VFPP needs the volume of water that the unit processes to be greater than or equal to the required minimum volume (V_{min}) that must be concentrated in tank T, situated between the unit and the bypass valve.

If, on some user points, the system uses three-way valves situated in the final part of the system branch (as in the figure), even when the user point is switched off, the valve guarantees a minimum circulation of water on the distribution lines, thereby preventing the water in the lines from stagnating for long periods of time with possible thermal drift problems. In this way, when any user point is reactivated, the temperature of the water in the line will already be the correct one, so preventing thermal inertia effects.

The bypass valve V_{bp} supplied with the Flowzer VFPP is controlled through an 0-10V signal and therefore you are advised to install it within 30m of the unit.

The pressure traducer Δp_p is a differential transducer and therefore, to install it, you will only need to have two 1/4" female fittings in a suitable part of the system. This transducer is connected to the machine controller with a 4-20mA signal and therefore you are advised to install it within 200m of the unit.

The position in which to install this transducer should be chosen considering that:

- to ensure correct reading of the transducer, it is advisable for the capillaries not to exceed a length of one metre
- to ensure the correct pressure is available for all user points, you are advised to position the transducer near the user point that is affected by the highest load losses of the line or in any case in a part where the average pressure of the system can be measured.

Bypass valve diameter	TETRIS 2	TETRIS 2A	TETRIS 2 SLN	TETRIS 2A+	TETRIS 2A SLN
2 1/2"				18.4	18.4
				23.5	23.5
3"	27.4	28.4	28.4	27.6	27.6
	29.4	34.4	34.4	31.4	31.4
	32.4				
4"	33.4	38.4	38.4	36.4	36.4
	37.4	43.4	43.4	41.5	41.5
	41.4	47.4	47.4	44.6	44.6
	43.6	50.6	50.6	49.6	49.6
	47.6			54.6	54.6
5"		57.6	57.6		
		64.6	64.6		
		70.6	70.6		

COL Water manifolds for DS

This accessory provides a pair of manifolds for connection of the partial heat recovery heat exchangers. The installation of the manifolds outside the machine is to be carried out by the customer.

Accessory supplied loose.

PFP User-side pump with Pulse function

As standard, the unit is set to keep the system-side circulation pump on all the time, even when the set point temperature is reached.

But when the unit is provided with this accessory, on reaching the set point, the controller will switch off the pump and start it again at regular intervals for a sufficient time to measure the water temperature. If the controller verifies that the water temperature is still in set point condition, it will switch off the pump again. Otherwise the controller will start the compressors again to meet the requirements of the system.

This accessory therefore allows electrical absorption due to pumping to be drastically reduced, especially in spring and autumn when the load is extremely low.

RA Antifreeze heater ...

These are electric heaters inserted on the user-side heat exchanger, on the pumps and in the tank (depending on the configuration of the machine) to prevent damage to the hydraulic components due to ice formation during periods when the machine is stopped.

Based on normal operating conditions and the percentage of glycol in the system, an appropriate "antifreeze alarm" temperature is set in the control. When a temperature that is 1K higher than the antifreeze alarm threshold is detected at the outlet from the exchanger, the pump (if present) and the antifreeze heaters are switched on. If the temperature of the outgoing water reaches the antifreeze alarm threshold, the compressors are stopped, keeping the heaters and the pumps active, and the general alarm contact of the machine is activated.

VSIW Water-side safety valve

With this accessory, a safety valve is inserted in the hydraulic circuit of the unit: when the calibration pressure is reached, the valve opens and, by discharging (to be routed by the customer), prevents the system pressure from reaching limits that are dangerous for the components present in the system. The valves have positive action, that is, performance is guaranteed even if the diaphragm deteriorates or breaks.

Electrical accessories

ARU Stopping of the unit due to temperatures below the operating limit

With this accessory, it is possible to set the unit so that the controller switches off the compressors when the unit is operating in heat pump mode and the external air temperature falls below a minimum set limit: this will prevent the unit from going into low pressure alarm, so avoiding having to manually restart the machine. At the same time, the control will enable a digital output that can be used for activating an auxiliary heat source.

When the external air temperature returns above the set threshold temperature, the unit will automatically resume operation without it being necessary to do anything.

For units equipped with integrated pump, the pump will always be kept running so as to prevent ice formation and ensure correct reading of the temperature and antifreeze safety probes at all times.

The stopping temperature must be set based on the set point temperature and in accordance with what is allowed by the operating limits of the machine.

The same function can be used to set an external air temperature below which to use an alternative heat source because it is more efficient or economically more advantageous.

With the default programming, the limit that considers a production of outgoing water at 45°C is set, therefore:

- -7°C for standard units
- -10°C for /HE and /SLN units.

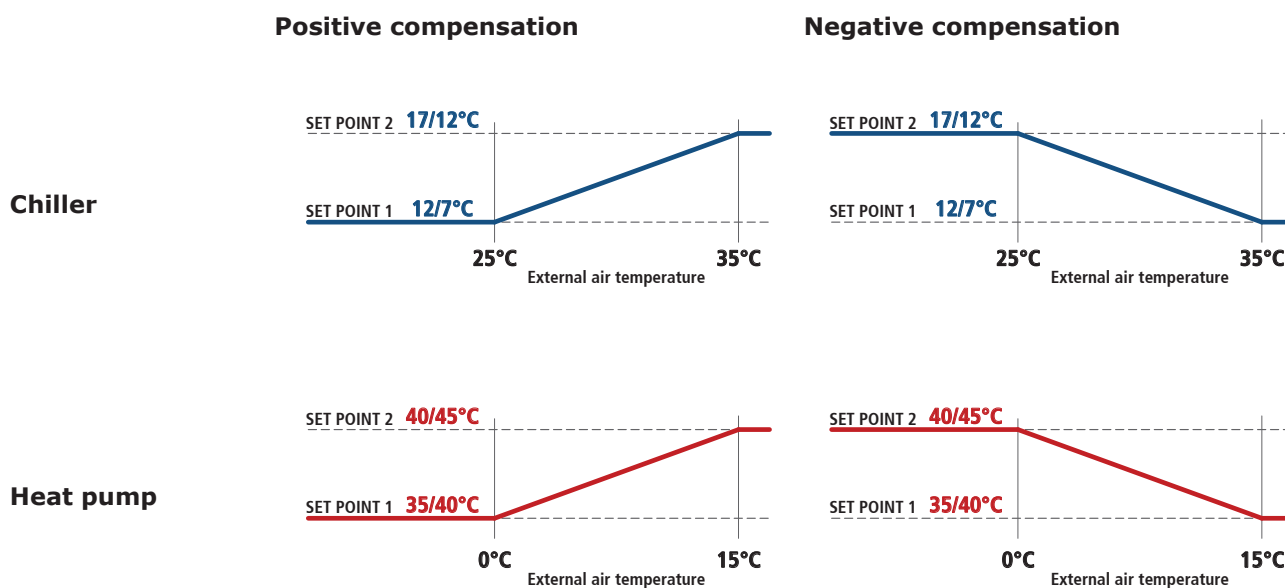
COTW Outgoing water temperature control

With this accessory, outgoing instead of incoming water temperature control is used.

CSP Set point compensation depending on external air temperature

For units fitted with this accessory, the set point of the unit is set so that it can vary between two values, a maximum and a minimum, depending on the external air temperature. The compensation ramp and the maximum and minimum values of the set point can be changed by the user.

Unless otherwise specified in the order, the controller will be set to implement a positive compensation logic according to the temperatures shown in the following diagrams:



DAA Double power supply with automatic switching

A motor-driven automatic switch to which to connect two separate power supply lines (for example, one from the mains power line and one from the uninterruptible power supply unit) is installed in the electrical control panel of the unit.

The switching from one line to another is automatic and obligatorily requires passing through the OFF position.

DAM Double power supply with manual switching

A manual switch to which to connect two separate power supply lines (for example, one from the mains power line and one from the uninterruptible power supply unit) is installed in the electrical control panel of the unit. The switching from one line to another is manual and obligatorily requires passing through the OFF position. When this accessory is requested, the power supply of the unit must compulsorily include neutral.

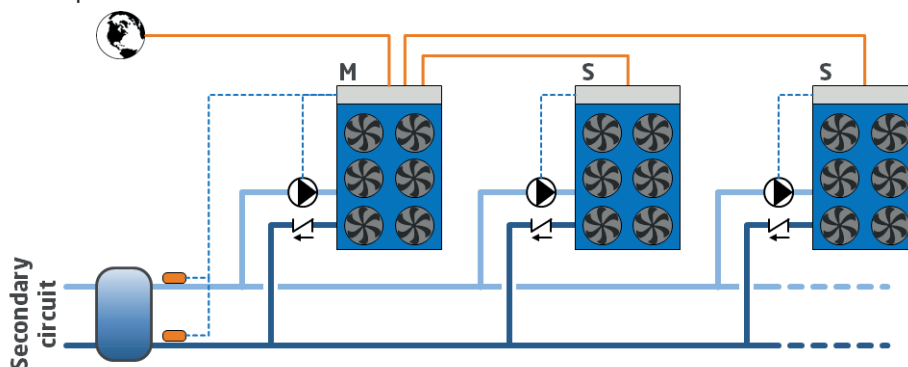
GLO Modbus Lonworks Gateway

With this accessory, a RS485/Lon gateway is installed inside the electrical control panel.

By default, the programming gives read-only access to the control of the unit. Enabling of read/write access should be requested when ordering.

FMx Multilogic Function

The Multilogic function allows management of up to 32 units equipped with advanced Bluethink controller and connected in hydraulic parallel with each other.



On the basis of the information recorded by the temperature probes installed on the delivery and return manifolds of the system, with the master unit, a capacity request is generated that is distributed among the units connected in the Multilogic network according to settable priority and optimization logics.

If communication between the units fails or if the master is off-line, the slave units can continue to work according to the set thermoregulation parameters.

The connected units can be different from each other, in terms of capacity and set-up, provided the following rules are complied with:

- if there are both chiller units and heat pumps in the Multilogic network, the Master unit must obligatorily be one of the HP units
- if there are both free cooling and non free-cooling units in the Multilogic network, the Master unit must obligatorily be one of the free-cooling units.

The Multilogic function that can be requested with the unit can be:

- **FM0:** Multilogic function for Slave unit
- **FM2:** Multilogic function for Master unit for managing up to 2 Slaves
- **FM6:** Multilogic function for Master unit for managing up to 6 Slaves

If you need to connect more than 6 slaves (up to 31), you can ask for a quotation from our sales department.

For the slave units, the accessory requires:

- programming of the unit as slave of a system of machines in Multilogic network

For the master units, the accessory requires:

- programming of the unit as master of a system of machines in Multilogic network
- entering of the parameters necessary for connection with the individual slave units
- installation in the electrical control panel of a network switch to allow the units to be connected in a LAN network.
- the supply of 2 temperature probes to be positioned on the delivery and return manifold of the system (supplied separately with it, installation and wiring by the customer)

The connection between the master unit and the slave units made with a CAT cable. 5E/UTP (prepared by the customer) with RJ45 connectors. Maximum cable length 100m.

For further details, please refer to the controller manual.

IACV Automatic circuit breakers

With this accessory, automatic circuit breakers are installed instead of fuses for the protection of auxiliary loads. Also, the same accessory uses automatic circuit breakers with adjustable thermal overload protection to protect the compressors.

LIID Limitation of the current absorbed by digital input

When this accessory is requested, a digital input is prepared in the terminal board to activate the forced capacity reduction of the unit to a set fixed level.

This accessory is useful when there is a need to necessarily limit the power absorbed by the unit as regards particular conditions.

We point out that, in some conditions (for example, during defrosting, oil return cycles or hourly compressor rotation procedures), the controller could force the unit to operate at full capacity for limited periods of time.

NSS Night Shift System

This accessory is applied to high efficiency /LN version units with speed governor or to SLN units.

In the day time slot, which is normally the one with the highest heat load, priority is given to efficiency and therefore the machine works with a fan control curve that maximises the EER. In this time slot, therefore, the unit is a high efficiency low noise machine (equivalent to A/LN, A+/LN)

In the night time band (or in any case from time band decided by the customer), the priority changes to limiting the noisiness of the machine and therefore the controller carries out an adjustment of the control ramp of the condensing fans, thereby reducing the air flow rate and consequently the noise emission level. So, in this time band, the unit is a super low noise machine (equivalent to SLN).

In any case, if there is a need for additional cooling capacity, the controller will manage the demand, if necessary, by accelerating the fans and keeping condensation within the correct operating limits.

The time slots can be set from the control depending on installation requirements.

When the unit is working in heat pump mode, in order to maximise the COP and to obtain the widest possible operating limits, the control of the unit forces the fans to the maximum speed also during the night time bands.

PBA BACnet protocol over IP (Ethernet)

The controller is set for use, in read and write mode, of the BACnet port on IP protocol.

By default, the programming gives read-only access to the control of the unit. Enabling of read/write access should be requested when ordering.

RE1P Relay for management of 1 external pump

This accessory can be requested for units without pumps and allows a pump outside the machine to be controlled.

RE2P Relay for management of 2 external pumps

This accessory can be requested for units without pumps and allows two pumps outside the machine to be controlled with a running/stand-by logic by implementing a rotation on the hours of operation.

RIF Power factor correction to $\cos\varphi \geq 0.9$

With this accessory, an electrical control panel, containing power factor correction condensers to bring the $\cos\varphi$ of the unit to being greater than 0.95, is supplied loose. The condensers should be connected (by the customer) to the electrical control panel of the unit in the specially prepared terminal board.

Besides reducing the absorbed reactive power, the use of this accessory also allows the maximum absorbed current to be lowered.

RMMT Maximum and minimum voltage relay

This accessory constantly monitors the voltage value and the unit's power supply phase sequence. If the supply voltage does not fall within the set parameters or there is a phase reversal, an alarm is generated that stops the machine to prevent damage to its main parts

SETD Double set point from digital input

The accessory allows you to preset two different operating set points and manage the change from one to the other through a digital signal.

The set point temperatures must be specified when ordering. For optimization of the unit, reference will be made to the lower set point in chiller mode and the higher set point in heat pump mode.

Unless otherwise specified in the order, the controller will be set at the factory with the following temperatures:

- in chiller mode, set point 1 to 7°C and set point 2 to 12°C
- in heat pump mode (only for HP units) set point 1 to 45°C and set point 2 to 40°C

SETV Variable set point with remote signal

The accessory allows the set point to be varied continuously between two preset values, a maximum and a minimum, depending on an external signal that can be of the 0-1V, 0-10V or 4-20mA type.

The set point temperatures and the type of signal to use for the adjustment must be specified when ordering. For optimization of the unit, reference will be made to the lower set point in chiller mode and the higher set point in heat pump mode.

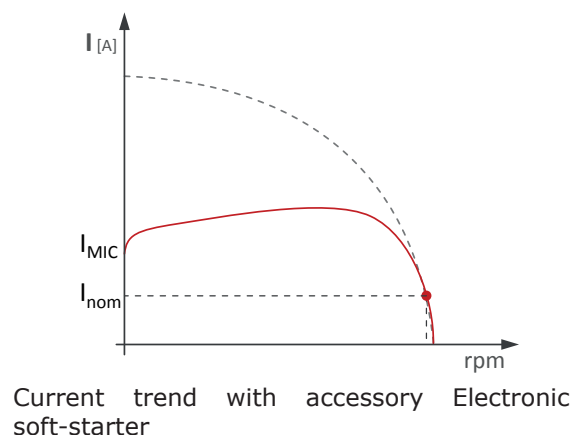
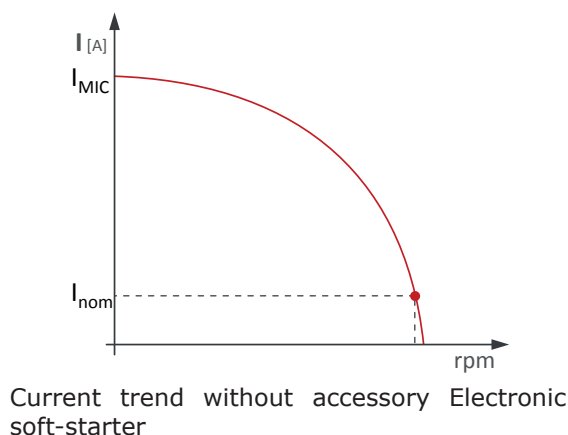
Unless otherwise specified in the order, the controller will be set at the factory with 0-10V analogue input and with the following temperatures:

- in chiller mode, 0V will correspond to a set point of 7°C and 10V will correspond to a set point of 12°C
- in heat pump mode (only for HP units), 0V will correspond to a set point of 45°C and 10V will correspond to a set point of 40°C

SOFT Electronic soft-starter

The scroll compressors have DOL (Direct On Line) starting and therefore the maximum inrush current I_{MIC} will be 4/5 times its nominal current I_{nom} .

If the unit is equipped with the electronic soft-starter accessory, the starting of each compressor is done with an acceleration ramp that allows the effective value (rms value) of the inrush current of the individual compressor to be lowered.



If the unit is equipped with accessory "Power factor correction to $\cos\phi \geq 0.9$ ", this last will be electro-mechanically connected only at the end of the acceleration ramp of the soft-starter.

SQE Heater for electrical control panel

Electric heaters are positioned inside the electrical control panel and these prevent the formation of ice or condensation inside it.

TERM Remote-controlled user terminal panel

This accessory allows the terminal normally situated on the machine to be replicated on a support situated at a distance. It is particularly suitable when the unit is placed in an area that is not easily accessible.

The accessory is supplied loose and is to be installed by the customer at a maximum distance of 120m from the unit. We advise using a cable of the following type: "TECO O.R. FE 2x2xAWG24 SN/ST/PUR".

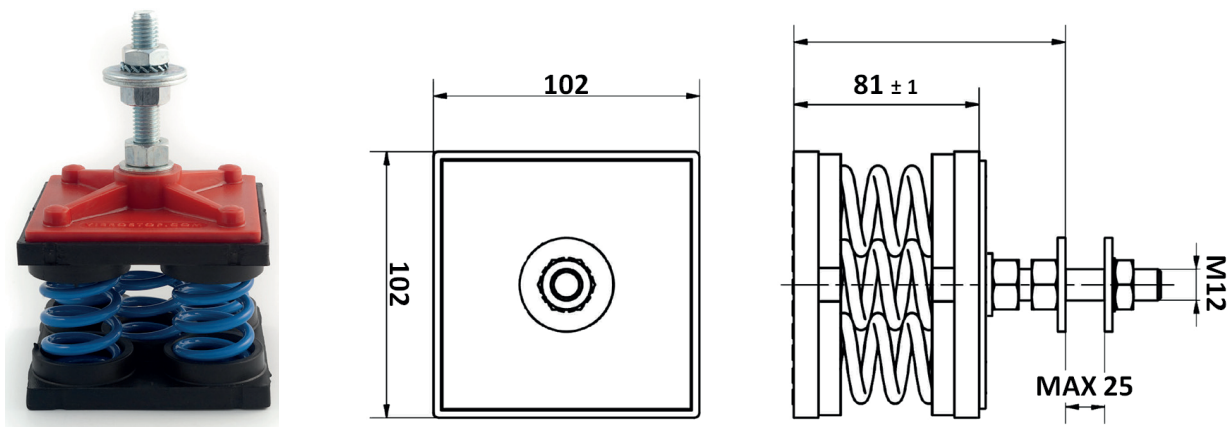
Other accessories

AG Rubber anti-vibration mounts

These allow you to reduce the vibrations transmitted from the unit to the surface it is standing on.
Accessory supplied loose.

AM Spring anti-vibration mounts

These allow you to reduce the vibrations transmitted from the unit to the surface it is standing on.
Accessory supplied loose.



ALPR Pre-painted aluminium coil

This accessory uses finned pack coils with copper tubes and aluminium fins pre-painted with an anti-corrosion treatment.

This accessory is available only for HP version units.

ANTC Coil treated with anti-corrosion paints

The treatment is applied exclusively to finned pack coils with copper tubes and aluminium fins and consists of aluminium passivation and coating with a polyurethane base; a double layer of paint, of which the first passivates the aluminium and acts as primer and the second is a polyurethane based surface coating. The product has high resistance to corrosion and all environmental conditions.

The choice of whether or not to treat the exchanger should be made in relation to the environment in which the unit is to be installed and through observation of other structures and machinery with exposed metal surfaces present in the destination environment.

The cross observation criterion is the most valid method of selection currently available without having to carry out preliminary tests or measurements with instruments. The identified reference environments are:

- marine coastal
- industrial
- urban with a high housing density
- rural

Please note that in cases where different conditions co-exist, even for short periods, the choice must be suitable for preserving the exchanger in the harsher environmental conditions and not in conditions between the worst and best situation.

Particular attention must be given to cases where an environment that is not particularly aggressive becomes aggressive as a consequence of a local and/or temporal concomitant cause such as, for example, due to the presence of a heating flue outlet or an industrial kitchen or a solvent extraction fan in a small craft business. Protective treatment of the exchanger is strongly recommended if at least one of the points below is verified:

- there are obvious signs of corrosion of the exposed metal surfaces in the installation area
- the distance from the coast is less than 20 km
- the prevailing winds come from the sea towards the unit
- the environment is industrial with a significant concentration of pollutants
- the environment is urban with a high population density
- the environment is rural with the presence of organic discharges and effluents.

For chiller units, this accessory also includes the "Cu/Al coil" accessory.

FW Water filter

To protect the elements of the hydraulic circuit (in particular, the exchangers), there are Y filters that can stop and settle the particles that are normally present in the water flow and would otherwise settle in the more delicate parts of the hydraulic circuit and damage its heat exchange capacity.

Installation of the water filter is mandatory even when it is not supplied as an accessory.

Accessory supplied loose.

MCHE E-coated microchannel coil

The e-coated microchannel coils are treated by immersion of the whole exchanger in an emulsion of organic resins, solvents, ionic stabilisers and deionised water. This is all subjected to a suitable electric field that causes the formation of a solid, uniform deposit on the exchanger. The function of this deposit will be to protect the aluminium from corrosion without penalising its thermophysical properties.

The choice of whether or not to treat the exchanger should be made in relation to the environment in which the unit is to be installed and through observation of other structures and machinery with exposed metal surfaces present in the destination environment.

The cross observation criterion is the most valid method of selection currently available without having to carry out preliminary tests or measurements with instruments. The identified reference environments are:

- marine coastal
- industrial
- urban with a high housing density
- rural

Please note that in cases where different conditions co-exist, even for short periods, the choice must be suitable for preserving the exchanger in the harsher environmental conditions and not in conditions between the worst and best situation.

Particular attention must be given to cases where an environment that is not particularly aggressive becomes aggressive as a consequence of a local and/or temporal concomitant cause such as, for example, due to the presence of a heating flue outlet or an industrial kitchen or a solvent extraction fan in a small craft business.

Protective treatment of the exchanger is strongly recommended if at least one of the points below is verified:

- there are obvious signs of corrosion of the exposed metal surfaces in the installation area
- the prevailing winds come from the sea towards the unit
- the environment is industrial with a significant concentration of pollutants
- the environment is urban with a high population density
- the environment is rural with the presence of organic discharges and effluents.

PRAC Steel profiles frames for container shipment

This accessory foresees the mounting of steel profiles frames on the unit for its loading into container. When this accessory is required it's for the shipping of the unit into container and its loading is mandatory to be done at the factory

PREA Unit suitable to be disassembled on site

The unit is delivered so that it can be disassembled easily on site if this makes the installation operations easier.

A unit requested with this option is supplied:

- screwed instead of riveted
- with plugged and not welded pipes
- without refrigerant charge
- untested
- covered by the warranty only if reassembled and screwed together by personnel authorized by the factory

RAAL Cu/Al coils

This accessory uses finned pack coils with copper tubes and aluminium fins instead of microchannel coils.

RAT Anti-intrusion nets

An arc-welded, painted net (RAL colour 7035) is installed to close off the external openings so as to prevent access to the technical compartment by unauthorized personnel.



SLIT Special pallet/skid for container shipment

The unit is placed on a skid that makes the container loading and unloading operations easier.

The accessory is mandatory if shipping by container is required

STL Brackets for transport over long distances

The accessory consists of adding reinforcing bars to the structural metalwork. This allows the strength of the structure to be increased for long distance road transport.

TECHNICAL SPECIFICATIONS

TETRIS 2

			10.2	12.2	13.2	15.2	16.2	20.3	24.3	27.4
TETRIS 2										
Cooling (A35°C; W7°C)										
Refrigeration capacity	(1)	kW	108	118	126	139	159	194	229	261
Total absorbed power	(1)	kW	36	42	48	54	61	75	85	98
EER	(1)		3,00	2,79	2,59	2,56	2,63	2,58	2,70	2,68
EER energy class (Eurovent)	(1)		B	C	D	D	D	D	D	D
ESEER			3,91	3,61	3,53	3,52	3,52	3,75	3,90	4,00
TETRIS 2 / HP										
Cooling (A35°C; W7°C)										
Refrigeration capacity	(1)	kW	105	114	122	135	155	189	222	254
Total absorbed power	(1)	kW	36	42	48	54	60	75	85	97
EER	(1)		2,91	2,71	2,52	2,48	2,56	2,51	2,62	2,61
EER energy class (Eurovent)	(1)		B	C	D	E	D	D	D	D
ESEER			3,81	3,51	3,44	3,43	3,43	3,65	3,79	3,90
Heating (A7°C/87%; W45°C)										
Heating capacity	(2)	kW	108	119	129	146	163	193	231	257
Total absorbed power	(2)	kW	38	43	47	51	58	70	86	93
COP	(2)		2,84	2,77	2,71	2,85	2,82	2,74	2,69	2,76
COP energy class (Eurovent)	(2)		C	D	D	C	C	D	D	D
Compressors										
Compressors/Circuits		n°/n°	2/1	2/1	2/1	2/1	2/1	3/1	3/1	4/2
Minimum capacity reduction step		%	50%	44%	50%	45%	50%	33%	33%	25%
Refrigerant charge CH (MCHX)		kg	11	13	12	17	13	20	19	26
Refrigerant charge CH (Cu/Al)		kg	14	16	15	23	19	24	28	38
Refrigerant charge HP		kg	24	25	27	30	30	47	45	54
Fans										
Quantity		n°	2	2	2	2	2	3	3	4
Total air flow rate CH (MCHX)		m3/h	42.000	42.000	42.000	42.000	42.000	63.000	63.000	84.000
Total air flow rate HP		m3/h	40.000	40.000	40.000	40.000	40.000	60.000	60.000	80.000
User-side heat exchanger										
Quantity		n°	1	1	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	18,7	20,4	21,7	24,0	27,5	33,6	39,5	45,1
Head loss CH (A35°C; W7°C)	(1)	kPa	46	51	52	50	50	46	46	42
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	18,2	19,8	21,1	23,3	26,7	32,6	38,4	43,8
Head loss HP (A35°C; W7°C)	(1)	kPa	44	48	49	47	47	43	43	39
Hydraulic modules										
Volume of the expansion vessel		l	18	18	18	18	18	18	18	18
Volume of the buffer tank		l	300	300	300	300	300	300	300	300
Standard pumps										
Pump model 1P, 2P			P3	P9	P9	P9	P9	P10	P17	P17
Pump model 3P			-	-	-	-	-	-	-	P3
Available head 1P	(1)	kPa	154	143	130	144	135	160	219	219
Available head 2P	(1)	kPa	136	128	110	133	122	138	190	-
Available head 3P	(1)	kPa	-	-	-	-	-	-	-	154
Oversize pumps										
Pump model 1PM, 2PM			P10	P11	P11	P11	P11	P17	P22	P22
Pump model 3PM			-	-	-	-	-	-	-	P7
Available head 1PM	(1)	kPa	233	287	274	277	267	235	282	288
Available head 2PM	(1)	kPa	214	263	244	265	254	214	252	-
Available head 3PM	(1)	kPa	-	-	-	-	-	-	-	285
Noise levels										
Sound power level basic unit	(3)	dB(A)	89	89	89	89	89	92	92	95
Sound power level LN version	(3)	dB(A)	86	86	86	86	86	87	88	89
Dimensions and weights of basic unit										
Length		mm	1.148	1.148	1.148	1.148	1.148	2.297	2.297	2.297
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	880	900	920	950	970	1.430	1.480	1.790

- (CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)
- (1) in attesa di traduzione Values compliant with standard EN 14511
- (2) in attesa di traduzione Values compliant with standard EN 14511
- (3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C
- (4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.
- (5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2

			29.4	32.4	33.4	37.4	41.4	43.6	47.6
TETRIS 2									
Cooling (A35°C; W7°C)									
Refrigeration capacity	(1)	kW	281	305	334	368	407	426	456
Total absorbed power	(1)	kW	112	121	135	135	148	163	180
EER	(1)		2,50	2,52	2,48	2,73	2,75	2,61	2,54
EER energy class (Eurovent)	(1)		D	D	E	C	C	D	D
ESEER			3,68	3,88	3,89	4,02	4,07	4,09	3,99
TETRIS 2 /HP									
Cooling (A35°C; W7°C)									
Refrigeration capacity	(1)	kW	272	296	324	357	395	413	443
Total absorbed power	(1)	kW	112	121	135	134	148	163	180
EER	(1)		2,43	2,45	2,41	2,66	2,67	2,53	2,46
EER energy class (Eurovent)	(1)		E	E	E	D	D	D	E
ESEER			3,58	3,78	3,80	3,91	3,97	3,97	3,89
Heating (A7°C/87%; W45°C)									
Heating capacity	(2)	kW	282	308	341	356	401	423	461
Total absorbed power	(2)	kW	99	107	119	127	137	150	161
COP	(2)		2,84	2,88	2,87	2,80	2,92	2,83	2,87
COP energy class (Eurovent)	(2)		C	C	C	C	C	C	C
Compressors									
Compressors/Circuits		n°/n°	4/2	4/2	4/2	4/2	4/2	6/2	6/2
Minimum capacity reduction step		%	23%	25%	23%	25%	25%	15%	17%
Refrigerant charge CH (MCHX)		kg	27	28	36	39	39	49	52
Refrigerant charge CH (Cu/Al)		kg	36	40	48	47	47	62	70
Refrigerant charge HP		kg	64	64	78	90	90	90	90
Fans									
Quantity		n°	4	4	5	6	6	6	6
Total air flow rate CH (MCHX)		m3/h	84.000	84.000	105.000	126.000	126.000	126.000	126.000
Total air flow rate HP		m3/h	80.000	80.000	100.000	120.000	120.000	120.000	120.000
User-side heat exchanger									
Quantity		n°	1	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	48,4	52,6	57,6	63,6	70,2	73,5	78,8
Head loss CH (A35°C; W7°C)	(1)	kPa	36	41	35	38	38	42	47
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	47,0	51,1	56,0	61,7	68,1	71,4	76,5
Head loss HP (A35°C; W7°C)	(1)	kPa	34	39	33	36	36	40	44
Hydraulic modules									
Volume of the expansion vessel		l	18	18	18	18	18	18	18
Volume of the buffer tank		l	300	300	300	300	300	300	300
Standard pumps									
Pump model 1P, 2P			P17	P17	P17	P17	P25	P25	P25
Pump model 3P			P3	P3	P10	P10	P10	P10	P10
Available head 1P	(1)	kPa	212	193	214	203	248	228	212
Available head 2P	(1)	kPa	-	-	-	-	-	-	-
Available head 3P	(1)	kPa	150	135	243	234	213	206	188
Oversize pumps									
Pump model 1PM, 2PM			P22	P22	P22	P22	P28	P28	P28
Pump model 3PM			P7	P7	P11	P11	P11	P11	P11
Available head 1PM	(1)	kPa	287	274	299	290	276	274	260
Available head 2PM	(1)	kPa	-	-	-	-	-	-	-
Available head 3PM	(1)	kPa	274	249	312	303	281	275	258
Noise levels									
Sound power level basic unit	(3)	dB(A)	95	96	97	97	97	97	97
Sound power level LN version	(3)	dB(A)	90	91	92	93	93	93	93
Dimensions and weights of basic unit									
Length		mm	2.297	2.297	3.834	3.834	3.834	3.834	3.834
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	1.840	1.870	2.240	2.300	2.370	2.770	2.830

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2

			50.7	53.8	58.8	62.8	67.9	70.9
TETRIS 2								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	491	523	567	610	651	685
Total absorbed power	(1)	kW	182	194	218	242	255	264
EER	(1)		2,69	2,69	2,60	2,52	2,55	2,59
EER energy class (Eurovent)	(1)		D	D	D	D	D	D
ESEER			3,90	3,98	3,97	3,95	3,99	4,15
TETRIS 2 /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	476	508	550	592	632	666
Total absorbed power	(1)	kW	182	195	218	242	255	264
EER	(1)		2,62	2,61	2,52	2,45	2,48	2,52
EER energy class (Eurovent)	(1)		D	D	D	E	E	D
ESEER			3,80	3,88	3,86	3,83	3,87	4,03
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	488	513	564	615	653	692
Total absorbed power	(2)	kW	179	186	200	214	231	246
COP	(2)		2,73	2,76	2,82	2,88	2,83	2,81
COP energy class (Eurovent)	(2)		D	D	C	C	C	C
Compressors								
Compressors/Circuits		n°/n°	7/3	8/4	8/4	8/4	9/3	9/3
Minimum capacity reduction step		%	13%	12%	11%	12%	10%	11%
Refrigerant charge CH (MCHX)		kg	45	52	54	57	72	71
Refrigerant charge CH (Cu/Al)		kg	60	63	72	81	94	93
Refrigerant charge HP		kg	99	108	118	128	137	135
Fans								
Quantity		n°	7	8	8	8	9	9
Total air flow rate CH (MCHX)		m3/h	147.000	168.000	168.000	168.000	189.000	189.000
Total air flow rate HP		m3/h	140.000	160.000	160.000	160.000	180.000	180.000
User-side heat exchanger								
Quantity		n°	2	2	2	2	2	2
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	84,7	90,3	97,8	105,3	112,3	118,3
Head loss CH (A35°C; W7°C)	(1)	kPa	46	42	42	41	46	46
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	82,2	87,7	94,9	102,2	109,1	114,9
Head loss HP (A35°C; W7°C)	(1)	kPa	43	39	39	38	43	43
Hydraulic modules								
Volume of the expansion vessel		l	25	25	25	25	25	25
Volume of the buffer tank		l	500	500	500	500	500	500
Standard pumps								
Pump model 1P, 2P			P25	P25	P25	P25	P27	P27
Pump model 3P			P10	P10	P10	P11	P11	P11
Available head 1P	(1)	kPa	195	178	180	160	153	142
Available head 2P	(1)	kPa	-	-	-	-	-	-
Available head 3P	(1)	kPa	174	163	142	214	191	175
Oversize pumps								
Pump model 1PM, 2PM			P28	P28	P28	P28	P29	P29
Pump model 3PM			P11	P11	P11	P18	P18	P18
Available head 1PM	(1)	kPa	251	244	254	244	281	273
Available head 2PM	(1)	kPa	-	-	-	-	-	-
Available head 3PM	(1)	kPa	244	233	213	305	292	286
Noise levels								
Sound power level basic unit	(3)	dB(A)	98	100	100	100	100	100
Sound power level LN version	(3)	dB(A)	94	95	95	95	96	96
Dimensions and weights of basic unit								
Length		mm	5.019	5.019	5.019	5.019	6.168	6.168
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	3.340	3.570	3.650	3.730	4.170	4.230

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2

			70.9	74.10	78.10	80.12	87.12	93.12
TETRIS 2								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	685	718	761	793	853	913
Total absorbed power	(1)	kW	264	277	301	302	331	359
EER	(1)		2,59	2,59	2,53	2,63	2,58	2,54
EER energy class (Eurovent)	(1)		D	D	D	D	D	D
ESEER			4,15	4,15	4,05	4,18	4,15	4,13
TETRIS 2 /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	666	697	739	770	828	886
Total absorbed power	(1)	kW	264	277	301	302	330	359
EER	(1)		2,52	2,52	2,46	2,55	2,51	2,47
EER energy class (Eurovent)	(1)		D	D	E	D	D	E
ESEER			4,03	4,03	3,93	4,06	4,03	4,01
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	692	718	769	770	846	922
Total absorbed power	(2)	kW	246	254	268	278	300	321
COP	(2)		2,81	2,83	2,87	2,77	2,82	2,87
COP energy class (Eurovent)	(2)		C	C	C	D	C	C
Compressors								
Compressors/Circuits		n°/n°	9/3	10/4	10/4	12/4	12/4	12/4
Minimum capacity reduction step		%	11%	9%	10%	8%	8%	8%
Refrigerant charge CH (MCHX)		kg	71	78	80	112	108	104
Refrigerant charge CH (Cu/Al)		kg	93	102	110	129	134	140
Refrigerant charge HP		kg	135	144	154	180	180	180
Fans								
Quantity		n°	9	10	10	12	12	12
Total air flow rate CH (MCHX)		m3/h	189.000	210.000	210.000	252.000	252.000	252.000
Total air flow rate HP		m3/h	180.000	200.000	200.000	240.000	240.000	240.000
User-side heat exchanger								
Quantity		n°	2	2	2	2	2	2
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	118,3	123,9	131,4	136,8	147,2	157,5
Head loss CH (A35°C; W7°C)	(1)	kPa	46	47	47	44	44	47
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	114,9	120,3	127,5	132,8	142,9	152,9
Head loss HP (A35°C; W7°C)	(1)	kPa	43	44	44	41	41	44
Hydraulic modules								
Volume of the expansion vessel		l	25	25	25	25	25	25
Volume of the buffer tank		l	500	500	500	700	700	700
Standard pumps								
Pump model 1P, 2P			P27	P27	P27	P27	P28	P28
Pump model 3P			P11	P11	P17	P17	P17	P17
Available head 1P	(1)	kPa	142	149	134	131	170	144
Available head 2P	(1)	kPa	-	-	-	-	-	-
Available head 3P	(1)	kPa	175	155	183	180	162	138
Oversize pumps								
Pump model 1PM, 2PM			P29	P29	P29	P29	P31	P31
Pump model 3PM			P18	P18	P18	P18	P18	P18
Available head 1PM	(1)	kPa	273	260	247	244	283	249
Available head 2PM	(1)	kPa	-	-	-	-	-	-
Available head 3PM	(1)	kPa	286	275	264	262	244	222
Noise levels								
Sound power level basic unit	(3)	dB(A)	100	101	101	102	102	102
Sound power level LN version	(3)	dB(A)	96	97	98	99	99	99
Dimensions and weights of basic unit								
Length		mm	6.168	6.168	6.168	7.316	7.316	7.316
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	4.230	4.480	4.550	5.060	5.200	5.350

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2 A

			11.2	17.2	23.2	28.4	34.4	38.4
TETRIS 2 A								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	112	161	229	273	322	361
Total absorbed power	(1)	kW	36	51	73	86	102	116
EER	(1)		3,12	3,16	3,12	3,16	3,17	3,11
EER energy class (Eurovent)	(1)		A	A	A	A	A	A
ESEER			4,01	4,05	3,96	4,23	4,20	4,22
TETRIS 2 A /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	111	159	227	269	319	359
Total absorbed power	(1)	kW	36	51	73	86	101	116
EER	(1)		3,10	3,14	3,10	3,12	3,15	3,10
EER energy class (Eurovent)	(1)		A	A	A	A	A	A
ESEER			3,99	4,01	3,93	4,17	4,16	4,20
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	135	180	248	302	356	383
Total absorbed power	(2)	kW	40	56	77	92	110	119
COP	(2)		3,35	3,21	3,22	3,28	3,25	3,23
COP energy class (Eurovent)	(2)		A	A	A	A	A	A
Compressors								
Compressors/Circuits		n°/n°	2/1	2/1	2/2	4/2	4/2	4/2
Minimum capacity reduction step		%	50%	45%	50%	21%	23%	25%
Refrigerant charge CH (MCHX)		kg	11	18	23	29	34	34
Refrigerant charge CH (Cu/Al)		kg	17	27	35	44	52	52
Refrigerant charge HP		kg	28	43	56	71	85	85
Fans								
Quantity		n°	2	3	4	5	6	6
Total air flow rate CH (MCHX)		m3/h	42.000	63.000	84.000	105.000	126.000	126.000
Total air flow rate HP		m3/h	40.000	60.000	80.000	100.000	120.000	120.000
User-side heat exchanger								
Quantity		n°	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	19,3	27,8	39,5	47,1	55,6	62,4
Head loss CH (A35°C; W7°C)	(1)	kPa	47	42	29	32	37	43
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	19,2	27,5	39,2	46,4	55,0	62,0
Head loss HP (A35°C; W7°C)	(1)	kPa	46	41	28	30	35	40
Hydraulic modules								
Volume of the expansion vessel		l	18	18	18	18	18	18
Volume of the buffer tank		l	300	300	300	300	300	300
Standard pumps								
Pump model 1P, 2P			P9	P9	P10	P17	P17	P17
Pump model 3P			-	-	P3	P3	P3	P3
Available head 1P	(1)	kPa	165	147	170	234	201	175
Available head 2P	(1)	kPa	146	135	-	-	-	-
Available head 3P	(1)	kPa	-	-	183	167	142	122
Oversize pumps								
Pump model 1PM, 2PM			P11	P11	P14	P18	P18	P18
Pump model 3PM			-	-	P7	P7	P7	P7
Available head 1PM	(1)	kPa	302	279	303	315	285	260
Available head 2PM	(1)	kPa	283	267	-	-	-	-
Available head 3PM	(1)	kPa	-	-	335	302	259	227
Noise levels								
Sound power level basic unit	(3)	dB(A)	86	88	89	90	91	91
Sound power level LN version	(3)	dB(A)	82	84	85	86	87	87
Dimensions and weights of basic unit								
Length		mm	1.148	2.297	2.297	3.834	3.834	3.834
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	890	1.290	1.360	2.160	2.290	2.320

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2 A

			43.4	47.4	50.6	57.6	64.6	70.6
TETRIS 2 A								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	418	455	484	542	619	683
Total absorbed power	(1)	kW	134	146	152	171	198	219
EER	(1)		3,11	3,11	3,18	3,17	3,12	3,12
EER energy class (Eurovent)	(1)		A	A	A	A	A	A
ESEER			4,18	4,25	4,31	4,30	4,28	4,34
TETRIS 2 A /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	416	453	479	537	616	679
Total absorbed power	(1)	kW	134	146	152	170	198	219
EER	(1)		3,10	3,10	3,16	3,15	3,10	3,10
EER energy class (Eurovent)	(1)		A	A	A	A	A	A
ESEER			4,15	4,23	4,27	4,27	4,26	4,32
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	458	487	537	604	687	756
Total absorbed power	(2)	kW	141	150	164	185	212	232
COP	(2)		3,25	3,24	3,27	3,26	3,24	3,25
COP energy class (Eurovent)	(2)		A	A	A	A	A	A
Compressors								
Compressors/Circuits		n°/n°	4/2	4/2	6/2	6/2	6/2	6/2
Minimum capacity reduction step		%	21%	25%	15%	17%	14%	17%
Refrigerant charge CH (MCHX)		kg	46	51	54	59	65	70
Refrigerant charge CH (Cu/Al)		kg	68	75	81	89	98	106
Refrigerant charge HP		kg	103	115	127	141	154	160
Fans								
Quantity		n°	7	8	9	10	11	12
Total air flow rate CH (MCHX)		m3/h	147.000	168.000	189.000	210.000	231.000	252.000
Total air flow rate HP		m3/h	140.000	160.000	180.000	200.000	220.000	240.000
User-side heat exchanger								
Quantity		n°	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	72,2	78,4	83,4	93,4	106,8	117,9
Head loss CH (A35°C; W7°C)	(1)	kPa	42	25	24	30	30	36
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	71,8	78,1	82,6	92,5	106,1	117,1
Head loss HP (A35°C; W7°C)	(1)	kPa	39	24	23	28	29	35
Hydraulic modules								
Volume of the expansion vessel		l	25	25	25	25	25	25
Volume of the buffer tank		l	500	500	500	500	700	700
Standard pumps								
Pump model 1P, 2P			P17	P21	P21	P21	P27	P27
Pump model 3P			P9	P9	P9	P10	P10	P10
Available head 1P	(1)	kPa	167	197	190	186	215	199
Available head 2P	(1)	kPa	-	-	-	-	-	-
Available head 3P	(1)	kPa	155	161	152	188	162	155
Oversize pumps								
Pump model 1PM, 2PM			P18	P26	P26	P26	P29	P29
Pump model 3PM			P11	P11	P11	P14	P14	P14
Available head 1PM	(1)	kPa	255	354	346	364	325	309
Available head 2PM	(1)	kPa	-	-	-	-	-	-
Available head 3PM	(1)	kPa	289	294	284	359	299	289
Noise levels								
Sound power level basic unit	(3)	dB(A)	91	92	93	93	93	93
Sound power level LN version	(3)	dB(A)	87	88	89	89	89	89
Dimensions and weights of basic unit								
Length		mm	5.019	5.019	6.168	6.168	7.316	7.316
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	2.650	2.770	3.500	3.580	3.850	3.940

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2 SLN

			11.2	17.2	23.2	28.4	34.4	38.4
TETRIS 2 SLN								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	105	152	215	256	304	339
Total absorbed power	(1)	kW	37	53	77	90	106	121
EER	(1)		2,82	2,87	2,80	2,85	2,88	2,80
EER energy class (Eurovent)	(1)		C	C	C	C	C	C
ESEER			3,62	3,67	3,54	3,81	3,80	3,79
TETRIS 2 SLN /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	104	150	213	252	301	337
Total absorbed power	(1)	kW	38	53	78	91	107	123
EER	(1)		2,77	2,81	2,75	2,78	2,82	2,75
EER energy class (Eurovent)	(1)		C	C	C	C	C	C
ESEER			3,56	3,60	3,48	3,71	3,72	3,72
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	135	180	248	302	356	383
Total absorbed power	(2)	kW	40	56	77	92	110	119
COP	(2)		3,35	3,21	3,22	3,28	3,25	3,23
COP energy class (Eurovent)	(2)		A	A	A	A	A	A
Compressors								
Compressors/Circuits		n°/n°	2/1	2/1	2/2	4/2	4/2	4/2
Minimum capacity reduction step		%	50%	45%	50%	21%	23%	25%
Refrigerant charge CH (MCHX)		kg	11	18	23	29	34	34
Refrigerant charge CH (Cu/Al)		kg	17	27	35	44	52	52
Refrigerant charge HP		kg	28	43	56	71	85	85
Fans								
Quantity		n°	2	3	4	5	6	6
Total air flow rate CH (MCHX)		m3/h	32.000	48.000	64.000	80.000	96.000	96.000
Total air flow rate HP		m3/h	40.000	60.000	80.000	100.000	120.000	120.000
User-side heat exchanger								
Quantity		n°	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	18,2	26,2	37,0	44,2	52,5	58,6
Head loss CH (A35°C; W7°C)	(1)	kPa	45	40	28	30	35	41
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	18,0	26,0	36,8	43,5	51,9	58,2
Head loss HP (A35°C; W7°C)	(1)	kPa	44	39	26	28	33	38
Hydraulic modules								
Volume of the expansion vessel		l	18	18	18	18	18	18
Volume of the buffer tank		l	300	300	300	300	300	300
Standard pumps								
Pump model 1P, 2P			P9	P9	P10	P17	P17	P17
Pump model 3P			-	-	P3	P3	P3	P3
Available head 1P	(1)	kPa	165	147	170	234	201	175
Available head 2P	(1)	kPa	146	135	-	-	-	-
Available head 3P	(1)	kPa	-	-	183	167	142	122
Oversize pumps								
Pump model 1PM, 2PM			P11	P11	P14	P18	P18	P18
Pump model 3PM			-	-	P7	P7	P7	P7
Available head 1PM	(1)	kPa	302	279	303	315	285	260
Available head 2PM	(1)	kPa	283	267	-	-	-	-
Available head 3PM	(1)	kPa	-	-	335	302	259	227
Noise levels								
Sound power level	(3)	dB(A)	79	82	82	84	85	85
Dimensions and weights of basic unit								
Length		mm	1.148	2.297	2.297	3.834	3.834	3.834
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	970	1.370	1.440	2.340	2.470	2.510

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2 SLN

			43.4	47.4	50.6	57.6	64.6	70.6
TETRIS 2 SLN								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	392	426	456	510	582	642
Total absorbed power	(1)	kW	141	153	158	178	208	229
EER	(1)		2,78	2,79	2,88	2,87	2,80	2,81
EER energy class (Eurovent)	(1)		C	C	C	C	C	C
ESEER			3,73	3,80	3,90	3,89	3,84	3,90
TETRIS 2 SLN /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	390	425	451	505	578	638
Total absorbed power	(1)	kW	143	155	160	180	210	232
EER	(1)		2,73	2,74	2,82	2,81	2,75	2,75
EER energy class (Eurovent)	(1)		C	C	C	C	C	C
ESEER			3,66	3,74	3,82	3,81	3,76	3,82
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	458	487	537	604	687	756
Total absorbed power	(2)	kW	141	150	164	185	212	232
COP	(2)		3,25	3,24	3,27	3,26	3,24	3,25
COP energy class (Eurovent)	(2)		A	A	A	A	A	A
Compressors								
Compressors/Circuits		n°/n°	4/2	4/2	6/2	6/2	6/2	6/2
Minimum capacity reduction step		%	21%	25%	15%	17%	14%	17%
Refrigerant charge CH (MCHX)		kg	46	51	54	59	65	70
Refrigerant charge CH (Cu/Al)		kg	68	75	81	89	98	106
Refrigerant charge HP		kg	103	115	127	141	154	160
Fans								
Quantity		n°	7	8	9	10	11	12
Total air flow rate CH (MCHX)		m3/h	112.000	128.000	144.000	160.000	176.000	192.000
Total air flow rate HP		m3/h	140.000	160.000	180.000	200.000	220.000	240.000
User-side heat exchanger								
Quantity		n°	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	67,6	73,5	78,6	87,9	100,3	110,7
Head loss CH (A35°C; W7°C)	(1)	kPa	39	23	23	28	29	34
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	67,3	73,2	77,8	87,1	99,7	110,0
Head loss HP (A35°C; W7°C)	(1)	kPa	37	22	22	26	28	33
Hydraulic modules								
Volume of the expansion vessel		l	25	25	25	25	25	25
Volume of the buffer tank		l	500	500	500	500	700	700
Standard pumps								
Pump model 1P, 2P			P17	P21	P21	P21	P27	P27
Pump model 3P			P9	P9	P9	P10	P10	P10
Available head 1P	(1)	kPa	167	197	190	186	215	199
Available head 2P	(1)	kPa	-	-	-	-	-	-
Available head 3P	(1)	kPa	155	161	152	188	162	155
Oversize pumps								
Pump model 1PM, 2PM			P18	P26	P26	P26	P29	P29
Pump model 3PM			P11	P11	P11	P14	P14	P14
Available head 1PM	(1)	kPa	255	354	346	364	325	309
Available head 2PM	(1)	kPa	-	-	-	-	-	-
Available head 3PM	(1)	kPa	289	294	284	359	299	289
Noise levels								
Sound power level	(3)	dB(A)	85	85	87	87	87	87
Dimensions and weights of basic unit								
Length		mm	5.019	5.019	6.168	6.168	7.316	7.316
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	2.820	2.940	3.770	3.860	4.090	4.170

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2 A+

			8.2	13.3	18.4	23.5	27.6
TETRIS 2 A+							
Cooling (A35°C; W7°C)							
Refrigeration capacity	(1)	kW	89	133	180	225	270
Total absorbed power	(1)	kW	27	40	54	67	81
EER	(1)		3,29	3,29	3,36	3,35	3,35
EER energy class (Eurovent)	(1)		A	A	A	A	A
ESEER			4,13	4,26	4,33	4,29	4,26
TETRIS 2 A+ /HP							
Cooling (A35°C; W7°C)							
Refrigeration capacity	(1)	kW	86	129	175	219	262
Total absorbed power	(1)	kW	27	40	53	67	80
EER	(1)		3,21	3,22	3,29	3,28	3,27
EER energy class (Eurovent)	(1)		A	A	A	A	A
ESEER			4,03	4,16	4,23	4,19	4,16
Heating (A7°C/87%; W45°C)							
Heating capacity	(2)	kW	90	135	180	225	270
Total absorbed power	(2)	kW	27	40	54	67	81
COP	(2)		3,33	3,34	3,35	3,34	3,34
COP energy class (Eurovent)	(2)		A	A	A	A	A
Compressors							
Compressors/Circuits		n°/n°	2/1	3/1	4/2	5/2	6/2
Minimum capacity reduction step		%	50%	33%	25%	20%	17%
Refrigerant charge CH (MCHX)		kg	10	15	23	27	33
Refrigerant charge CH (Cu/Al)		kg	16	24	35	42	51
Refrigerant charge HP		kg	28	42	58	71	86
Fans							
Quantity		n°	2	3	4	5	6
Total air flow rate CH (MCHX)		m3/h	42.000	63.000	84.000	105.000	126.000
Total air flow rate HP		m3/h	40.000	60.000	80.000	100.000	120.000
User-side heat exchanger							
Quantity		n°	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	15,3	23,0	31,1	38,9	46,7
Head loss CH (A35°C; W7°C)	(1)	kPa	35	36	23	35	35
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	14,8	22,2	30,2	37,7	45,2
Head loss HP (A35°C; W7°C)	(1)	kPa	33	34	22	33	33
Hydraulic modules							
Volume of the expansion vessel		l	18	18	18	18	18
Volume of the buffer tank		l	300	300	300	300	300
Standard pumps							
Pump model 1P, 2P			P2	P3	P9	P10	P15
Pump model 3P			-	-	P1	P2	P2
Available head 1P	(1)	kPa	160	141	140	158	159
Available head 2P	(1)	kPa	142	127	-	-	-
Available head 3P	(1)	kPa	-	-	126	156	130
Oversize pumps							
Pump model 1PM, 2PM			P5	P7	P11	P14	P18
Pump model 3PM			-	-	P5	P5	P7
Available head 1PM	(1)	kPa	239	227	270	290	305
Available head 2PM	(1)	kPa	221	213	-	-	-
Available head 3PM	(1)	kPa	-	-	262	241	276
Noise levels							
Sound power level basic unit	(3)	dB(A)	83	85	86	87	88
Sound power level LN version	(3)	dB(A)	79	81	82	83	84
Dimensions and weights of basic unit							
Length		mm	1.148	2.297	2.297	3.834	3.834
Depth		mm	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	720	1.100	1.380	1.830	1.970

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2 A+

			31.4	36.4	41.5	44.6	49.6	54.6
TETRIS 2 A+								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	310	372	404	435	497	559
Total absorbed power	(1)	kW	93	112	121	130	149	167
EER	(1)		3,33	3,33	3,35	3,35	3,34	3,34
EER energy class (Eurovent)	(1)		A	A	A	A	A	A
ESEER			4,28	4,30	4,25	4,20	4,30	4,28
TETRIS 2 A+ /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	307	361	398	432	489	541
Total absorbed power	(1)	kW	96	111	125	135	153	166
EER	(1)		3,18	3,26	3,19	3,20	3,19	3,26
EER energy class (Eurovent)	(1)		A	A	A	A	A	A
ESEER			4,08	4,20	4,05	4,01	4,09	4,17
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	323	373	419	453	515	560
Total absorbed power	(2)	kW	100	112	129	140	158	168
COP	(2)		3,24	3,33	3,25	3,23	3,26	3,33
COP energy class (Eurovent)	(2)		A	A	A	A	A	A
Compressors								
Compressors/Circuits		n°/n°	4/2	4/2	5/2	6/2	6/2	6/2
Minimum capacity reduction step		%	24%	25%	19%	17%	15%	17%
Refrigerant charge CH (MCHX)		kg	42	48	56	61	69	77
Refrigerant charge CH (Cu/Al)		kg	63	72	83	91	102	113
Refrigerant charge HP		kg	100	115	130	144	159	175
Fans								
Quantity		n°	7	8	9	10	11	12
Total air flow rate CH (MCHX)		m3/h	147.000	168.000	189.000	210.000	231.000	252.000
Total air flow rate HP		m3/h	140.000	160.000	180.000	200.000	220.000	240.000
User-side heat exchanger								
Quantity		n°	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	53,6	64,2	69,7	75,1	85,8	96,4
Head loss CH (A35°C; W7°C)	(1)	kPa	34	32	33	34	35	34
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	52,9	62,2	68,7	74,5	84,4	93,3
Head loss HP (A35°C; W7°C)	(1)	kPa	33	30	32	34	34	32
Hydraulic modules								
Volume of the expansion vessel		l	24	24	24	24	24	24
Volume of the buffer tank		l	500	500	500	500	700	700
Standard pumps								
Pump model 1P, 2P			P15	P15	P17	P21	P21	P21
Pump model 3P			P3	P3	P3	P9	P9	P9
Available head 1P	(1)	kPa	150	140	174	183	173	164
Available head 2P	(1)	kPa	-	-	-	-	-	-
Available head 3P	(1)	kPa	130	120	128	130	115	100
Oversize pumps								
Pump model 1PM, 2PM			P18	P18	P18	P22	P22	P22
Pump model 3PM			P7	P7	P11	P11	P11	P11
Available head 1PM	(1)	kPa	294	278	261	269	257	246
Available head 2PM	(1)	kPa	-	-	-	-	-	-
Available head 3PM	(1)	kPa	251	218	282	263	246	230
Noise levels								
Sound power level basic unit	(3)	dB(A)	93	93	94	95	95	95
Sound power level LN version	(3)	dB(A)	89	89	90	91	91	91
Dimensions and weights of basic unit								
Length		mm	5.019	5.019	6.168	6.168	7.316	7.316
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	2.560	2.680	3.140	3.330	3.710	3.820

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

TETRIS 2 A SLN

			8.2	13.3	18.4	23.5	27.6
TETRIS 2 A SLN							
Cooling (A35°C; W7°C)							
Refrigeration capacity	(1)	kW	86	130	176	220	264
Total absorbed power	(1)	kW	27	40	54	67	81
EER	(1)		3,21	3,22	3,28	3,27	3,27
EER energy class (Eurovent)	(1)		A	A	A	A	A
ESEER			3,97	4,09	4,16	4,12	4,09
TETRIS 2 A SLN /HP							
Cooling (A35°C; W7°C)							
Refrigeration capacity	(1)	kW	84	126	170	213	256
Total absorbed power	(1)	kW	28	41	55	69	83
EER	(1)		3,04	3,05	3,10	3,09	3,09
EER energy class (Eurovent)	(1)		B	B	A	B	B
ESEER			3,87	3,99	4,04	4,00	3,98
Heating (A7°C/87%; W45°C)							
Heating capacity	(2)	kW	90	135	180	225	270
Total absorbed power	(2)	kW	27	40	54	67	81
COP	(2)		3,33	3,34	3,35	3,34	3,34
COP energy class (Eurovent)	(2)		A	A	A	A	A
Compressors							
Compressors/Circuits		n°/n°	2/1	3/1	4/2	5/2	6/2
Minimum capacity reduction step		%	50%	33%	25%	20%	17%
Refrigerant charge CH (MCHX)		kg	10	15	23	27	33
Refrigerant charge CH (Cu/Al)		kg	16	24	35	42	51
Refrigerant charge HP		kg	28	42	58	71	86
Fans							
Quantity		n°	2	3	4	5	6
Total air flow rate CH (MCHX)		m3/h	32.000	48.000	64.000	80.000	96.000
Total air flow rate HP		m3/h	40.000	60.000	80.000	100.000	120.000
User-side heat exchanger							
Quantity		n°	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	14,9	22,4	30,3	37,9	45,5
Head loss CH (A35°C; W7°C)	(1)	kPa	33	34	22	33	33
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	14,5	21,7	29,4	36,7	44,1
Head loss HP (A35°C; W7°C)	(1)	kPa	31	32	21	31	31
Hydraulic modules							
Volume of the expansion vessel		l	18	18	18	18	18
Volume of the buffer tank		l	300	300	300	300	300
Standard pumps							
Pump model 1P, 2P			P2	P3	P9	P10	P15
Pump model 3P			-	-	P1	P2	P2
Available head 1P	(1)	kPa	160	141	140	158	159
Available head 2P	(1)	kPa	142	127	-	-	-
Available head 3P	(1)	kPa	-	-	126	156	130
Oversize pumps							
Pump model 1PM, 2PM			P5	P7	P11	P14	P18
Pump model 3PM			-	-	P5	P5	P7
Available head 1PM	(1)	kPa	239	227	270	290	305
Available head 2PM	(1)	kPa	221	213	-	-	-
Available head 3PM	(1)	kPa	-	-	262	241	276
Noise levels							
Sound power level	(3)	dB(A)	76	78	79	80	81
Dimensions and weights of basic unit							
Length		mm	1.148	2.297	2.297	3.834	3.834
Depth		mm	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	800	1.290	1.570	2.150	2.270

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

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TETRIS 2 A SLN

			31.4	36.4	41.5	44.6	49.6	54.6
TETRIS 2 A SLN								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	303	363	394	425	484	544
Total absorbed power	(1)	kW	93	112	121	130	149	168
EER	(1)		3,26	3,24	3,26	3,27	3,25	3,24
EER energy class (Eurovent)	(1)		A	A	A	A	A	A
ESEER			4,12	4,12	4,07	4,05	4,13	4,10
TETRIS 2 A SLN /HP								
Cooling (A35°C; W7°C)								
Refrigeration capacity	(1)	kW	299	351	388	421	477	527
Total absorbed power	(1)	kW	100	114	130	140	160	172
EER	(1)		2,98	3,07	2,99	3,00	2,98	3,07
EER energy class (Eurovent)	(1)		B	B	B	B	B	B
ESEER			3,86	4,00	3,83	3,98	4,06	4,15
Heating (A7°C/87%; W45°C)								
Heating capacity	(2)	kW	323	373	419	453	515	560
Total absorbed power	(2)	kW	100	112	129	140	158	168
COP	(2)		3,24	3,33	3,25	3,23	3,26	3,33
COP energy class (Eurovent)	(2)		A	A	A	A	A	A
Compressors								
Compressors/Circuits		n°/n°	4/2	4/2	5/2	6/2	6/2	6/2
Minimum capacity reduction step		%	24%	25%	19%	17%	15%	17%
Refrigerant charge CH (MCHX)		kg	42	48	56	61	69	77
Refrigerant charge CH (Cu/Al)		kg	63	72	83	91	102	113
Refrigerant charge HP		kg	100	115	130	144	159	175
Fans								
Quantity		n°	7	8	9	10	11	12
Total air flow rate CH (MCHX)		m3/h	112.000	128.000	144.000	160.000	176.000	192.000
Total air flow rate HP		m3/h	140.000	160.000	180.000	200.000	220.000	240.000
User-side heat exchanger								
Quantity		n°	1	1	1	1	1	1
Water flow rate CH (A35°C; W7°C)	(1)	m3/h	52,3	62,6	67,9	73,3	83,6	93,8
Head loss CH (A35°C; W7°C)	(1)	kPa	32	31	31	32	33	32
Water flow rate HP (A35°C; W7°C)	(1)	m3/h	51,6	60,6	66,9	72,6	82,2	90,9
Head loss HP (A35°C; W7°C)	(1)	kPa	31	29	30	32	32	30
Hydraulic modules								
Volume of the expansion vessel		l	24	24	24	24	24	24
Volume of the buffer tank		l	500	500	500	500	700	700
Standard pumps								
Pump model 1P, 2P			P15	P15	P17	P21	P21	P21
Pump model 3P			P3	P3	P3	P9	P9	P9
Available head 1P	(1)	kPa	150	140	174	183	173	164
Available head 2P	(1)	kPa	-	-	-	-	-	-
Available head 3P	(1)	kPa	130	120	128	130	115	100
Oversize pumps								
Pump model 1PM, 2PM			P18	P18	P18	P22	P22	P22
Pump model 3PM			P7	P7	P11	P11	P11	P11
Available head 1PM	(1)	kPa	294	278	261	269	257	246
Available head 2PM	(1)	kPa	-	-	-	-	-	-
Available head 3PM	(1)	kPa	251	218	282	263	246	230
Noise levels								
Sound power level	(3)	dB(A)	86	86	87	88	88	88
Dimensions and weights of basic unit								
Length		mm	5.019	5.019	6.168	6.168	7.316	7.316
Depth		mm	2.260	2.260	2.260	2.260	2.260	2.260
Height		mm	2.440	2.440	2.440	2.440	2.440	2.440
Operating weight CH (MCHX)	(5)	kg	2.740	2.860	3.440	3.620	3.940	4.050

(CH: chiller unit ; HP: heat pump unit ; MCHX: unit with microchannel coils ; CuAl: unit with copper/aluminium tube/fin coils)

(1) in attesa di traduzione Values compliant with standard EN 14511

(2) in attesa di traduzione Values compliant with standard EN 14511

(3) Sound power level obtained from measurements carried out in accordance with standard ISO 3744. Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C

(4) Sound pressure level measured at a distance of 10 metres from the unit in free field, with directivity factor Q=2. Reference conditions: external air temperature 35°C; evaporator inlet-outlet water temperature 12/7°C. These values are to be considered indicative and non-binding.

(5) The weight refers to the unit without any accessory. The introduction of a few accessories such as copper/aluminum coils, hydraulic modules or the recovery exchangers can lead to weight increased that can exceed 10%. For further details refer to the specific drawing of the selected configuration.

ELECTRICAL SPECIFICATIONS

TETRIS 2

			10.2	12.2	13.2	15.2	16.2	20.3	24.3
General electrical specifications									
Max. absorbed power (FLI)	(1)	kW	54	60	65	73	80	98	120
Max. absorbed current (FLA)	(1)	A	82	90	98	112	127	147	191
Rated current (Inom)	(2)	A	68	76	83	94	103	124	156
cosφ standard unit	(2)		0,83	0,84	0,85	0,85	0,85	0,85	0,85
Nominal current with power factor correction (Inom)	(2)	A	59	66	74	85	93	111	141
cosφ unit with power factor correction	(2)		0,96	0,96	0,95	0,94	0,94	0,95	0,94
Max. inrush current (MIC)	(3)	A	270	317	325	363	378	374	442
Maximum inrush current with soft-starter (MIC)	(4)	A	180	208	216	239	254	265	318
Power supply		V/ph/Hz	400/3~/52						
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52						
Suggested line section	(5)	mm²	4x35 mm² FG70R	4x35 mm² FG70R	4x35 mm² FG70R	4x50 mm² FG70R	4x50 mm² FG70R	4x70 mm² FG70R	4x95 mm² FG70R
Suggested line protection	(6)		NH00 125A	NH00 125A	NH00 125A	NH00 160A	NH00 160A	NH1 200A	NH1 250A
Electrical specifications for fans									
Rated power of fan standard		n° x kW	2 x 2,0	2 x 2,0	2 x 2,0	2 x 2,0	2 x 2,0	3 x 2,0	3 x 2,0
Rated current of fan standard		n° x A	2 x 4,3	2 x 4,3	2 x 4,3	2 x 4,3	2 x 4,3	3 x 4,3	3 x 4,3
Rated power of fan EC		n° x kW	2 x 1,9	2 x 1,9	2 x 1,9	2 x 1,9	2 x 1,9	3 x 1,9	3 x 1,9
Rated current of fan EC		n° x A	2 x 2,9	2 x 2,9	2 x 2,9	2 x 2,9	2 x 2,9	3 x 2,9	3 x 2,9
Rated power of fan oversize EC		n° x kW	2 x 3,0	2 x 3,0	2 x 3,0	2 x 3,0	2 x 3,0	3 x 3,0	3 x 3,0
Rated current of fan oversize EC		n° x A	2 x 4,5	2 x 4,5	2 x 4,5	2 x 4,5	2 x 4,5	3 x 4,5	3 x 4,5

			27.4	29.4	32.4	33.4	37.4	41.4	43.6
General electrical specifications									
Max. absorbed power (FLI)	(1)	kW	131	145	160	174	186	200	218
Max. absorbed current (FLA)	(1)	A	196	225	254	288	311	333	338
Rated current (Inom)	(2)	A	166	187	207	233	249	264	280
cosφ standard unit	(2)		0,82	0,84	0,84	0,87	0,86	0,87	0,84
Nominal current with power factor correction (Inom)	(2)	A	145	167	185	216	230	247	250
cosφ unit with power factor correction	(2)		0,94	0,94	0,94	0,94	0,93	0,93	0,94
Max. inrush current (MIC)	(3)	A	423	476	505	504	507	554	588
Maximum inrush current with soft-starter (MIC)	(4)	A	314	352	381	389	400	435	464
Power supply		V/ph/Hz	400/3~/52						
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52						
Suggested line section	(5)	mm²	4x95 mm² FG70R	4x150 mm² FG70R	4x150 mm² FG70R	2x(4x70 mm²) FG70R	2x(4x70 mm²) FG70R	2x(4x70 mm²) FG70R	2x(4x70 mm²) FG70R
Suggested line protection	(6)		NH1 250A	NH2 315A	NH2 315A	NH2 400A	NH2 400A	NH2 400A	NH2 400A
Electrical specifications for fans									
Rated power of fan standard		n° x kW	4 x 2,0	4 x 2,0	4 x 2,0	5 x 2,0	6 x 2,0	6 x 2,0	6 x 2,0
Rated current of fan standard		n° x A	4 x 4,3	4 x 4,3	4 x 4,3	5 x 4,3	6 x 4,3	6 x 4,3	6 x 4,3
Rated power of fan EC		n° x kW	4 x 1,9	4 x 1,9	4 x 1,9	5 x 1,9	6 x 1,9	6 x 1,9	6 x 1,9
Rated current of fan EC		n° x A	4 x 2,9	4 x 2,9	4 x 2,9	5 x 2,9	6 x 2,9	6 x 2,9	6 x 2,9
Rated power of fan oversize EC		n° x kW	4 x 3,0	4 x 3,0	4 x 3,0	5 x 3,0	6 x 3,0	6 x 3,0	6 x 3,0
Rated current of fan oversize EC		n° x A	4 x 4,5	4 x 4,5	4 x 4,5	5 x 4,5	6 x 4,5	6 x 4,5	6 x 4,5

- (1) Data regarding the unit without accessories working in maximum power absorption conditions
- (2) Datum related to the unit without accessories working in standard conditions (A35°C; W12/7°C)
- (3) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + LRA of the largest compressor)
- (4) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + 0.6 x LRA of the largest compressor)
- (5) These values are determined for cables with operating temperature of 40°C, EPR insulation and a line with a maximum length of 50m. The line section must be determined by a qualified technician based on the protection devices, the length of the line, the type of cable used and the type of installation.
- (6) The correct line protection part must be determined by a qualified technician based on the length of the line, the type of cable used and the type of installation.

TETRIS 2

			47.6	50.7	53.8	58.8	62.8	67.9
General electrical specifications								
Max. absorbed power (FLI)	(1)	kW	240	251	262	291	320	338
Max. absorbed current (FLA)	(1)	A	382	386	391	450	509	528
Rated current (Inom)	(2)	A	311	277	289	321	353	374
cosφ standard unit	(2)		0,85	0,85	0,85	0,85	0,85	0,85
Nominal current with power factor correction (Inom)	(2)	A	281	245	256	287	316	335
cosφ unit with power factor correction	(2)		0,94	0,96	0,96	0,95	0,95	0,95
Max. inrush current (MIC)	(3)	A	632	637	619	701	760	779
Maximum inrush current with soft-starter (MIC)	(4)	A	508	513	510	577	636	655
Power supply		V/ph/Hz	400/3~/52					
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52					
Suggested line section	(5)	mm²	2x(4x120 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x150 mm²) FG7OR	2x(4x150 mm²) FG7OR	2x(4x150 mm²) FG7OR
Suggested line protection	(6)		NH3 500A	NH3 500A	NH3 500A	NH3 630A	NH3 630A	NH3 630A
Electrical specifications for fans								
Rated power of fan standard		n° x kW	6 x 2,0	7 x 2,0	8 x 2,0	8 x 2,0	8 x 2,0	9 x 2,0
Rated current of fan standard		n° x A	6 x 4,3	7 x 4,3	8 x 4,3	8 x 4,3	8 x 4,3	9 x 4,3
Rated power of fan EC		n° x kW	6 x 1,9	7 x 1,9	8 x 1,9	8 x 1,9	8 x 1,9	9 x 1,9
Rated current of fan EC		n° x A	6 x 2,9	7 x 2,9	8 x 2,9	8 x 2,9	8 x 2,9	9 x 2,9
Rated power of fan oversize EC		n° x kW	6 x 3,0	7 x 3,0	8 x 3,0	8 x 3,0	8 x 3,0	9 x 3,0
Rated current of fan oversize EC		n° x A	6 x 4,5	7 x 4,5	8 x 4,5	8 x 4,5	8 x 4,5	9 x 4,5

			47.6	50.7	53.8	58.8	62.8	67.9
General electrical specifications								
Max. absorbed power (FLI)	(1)	kW	240	251	262	291	320	338
Max. absorbed current (FLA)	(1)	A	382	386	391	450	509	528
Rated current (Inom)	(2)	A	311	277	289	321	353	374
cosφ standard unit	(2)		0,85	0,85	0,85	0,85	0,85	0,85
Nominal current with power factor correction (Inom)	(2)	A	281	245	256	287	316	335
cosφ unit with power factor correction	(2)		0,94	0,96	0,96	0,95	0,95	0,95
Max. inrush current (MIC)	(3)	A	632	637	619	701	760	779
Maximum inrush current with soft-starter (MIC)	(4)	A	508	513	510	577	636	655
Power supply		V/ph/Hz	400/3~/52					
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52					
Suggested line section	(5)	mm²	2x(4x120 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x150 mm²) FG7OR	2x(4x150 mm²) FG7OR	2x(4x150 mm²) FG7OR
Suggested line protection	(6)		NH3 500A	NH3 500A	NH3 500A	NH3 630A	NH3 630A	NH3 630A
Electrical specifications for fans								
Rated power of fan standard		n° x kW	6 x 2,0	7 x 2,0	8 x 2,0	8 x 2,0	8 x 2,0	9 x 2,0
Rated current of fan standard		n° x A	6 x 4,3	7 x 4,3	8 x 4,3	8 x 4,3	8 x 4,3	9 x 4,3
Rated power of fan EC		n° x kW	6 x 1,9	7 x 1,9	8 x 1,9	8 x 1,9	8 x 1,9	9 x 1,9
Rated current of fan EC		n° x A	6 x 2,9	7 x 2,9	8 x 2,9	8 x 2,9	8 x 2,9	9 x 2,9
Rated power of fan oversize EC		n° x kW	6 x 3,0	7 x 3,0	8 x 3,0	8 x 3,0	8 x 3,0	9 x 3,0
Rated current of fan oversize EC		n° x A	6 x 4,5	7 x 4,5	8 x 4,5	8 x 4,5	8 x 4,5	9 x 4,5

- (1) Data regarding the unit without accessories working in maximum power absorption conditions
- (2) Datum related to the unit without accessories working in standard conditions (A35°C; W12/7°C)
- (3) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + LRA of the largest compressor)
- (4) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + 0.6 x LRA of the largest compressor)
- (5) These values are determined for cables with operating temperature of 40°C, EPR insulation and a line with a maximum length of 50m. The line section must be determined by a qualified technician based on the protection devices, the length of the line, the type of cable used and the type of installation.
- (6) The correct line protection part must be determined by a qualified technician based on the length of the line, the type of cable used and the type of installation.

TETRIS 2 A - TETRIS 2 SLN

			11.2	17.2	23.2	28.4	34.4	38.4
General electrical specifications								
Max. absorbed power (FLI)	(1)	kW	54	75	102	128	149	164
Max. absorbed current (FLA)	(1)	A	82	117	171	198	234	263
Rated current (Inom)	(2)	A	69	85	136	153	169	185
cosφ standard unit	(2)		0,82	0,84	0,86	0,83	0,84	0,84
Nominal current with power factor correction (Inom)	(2)	A	59	75	123	134	149	164
cosφ unit with power factor correction	(2)		0,96	0,95	0,95	0,95	0,95	0,95
Max. inrush current (MIC)	(3)	A	270	368	392	449	484	514
Maximum inrush current with soft-starter (MIC)	(4)	A	180	244	273	325	360	390
Power supply		V/ph/Hz	400/3~/52					
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52					
Suggested line section	(5)	mm²	4x25 mm² FG7OR	4x50 mm² FG7OR	4x70 mm² FG7OR	4x120 mm² FG7OR	4x150 mm² FG7OR	4x150 mm² FG7OR
Suggested line protection	(6)		NH00 100A	NH00 160A	NH1 200A	NH1 250A	NH2 315A	NH2 315A
Electrical specifications for fans								
Rated power of fan standard		n° x kW	2 x 2,0	3 x 2,0	4 x 2,0	5 x 2,0	6 x 2,0	6 x 2,0
Rated current of fan standard		n° x A	2 x 4,3	3 x 4,3	4 x 4,3	5 x 4,3	6 x 4,3	6 x 4,3
Rated power of fan EC		n° x kW	2 x 1,9	3 x 1,9	4 x 1,9	5 x 1,9	6 x 1,9	6 x 1,9
Rated current of fan EC		n° x A	2 x 2,9	3 x 2,9	4 x 2,9	5 x 2,9	6 x 2,9	6 x 2,9
Rated power of fan oversize EC		n° x kW	2 x 3,0	3 x 3,0	4 x 3,0	5 x 3,0	6 x 3,0	6 x 3,0
Rated current of fan oversize EC		n° x A	2 x 4,5	3 x 4,5	4 x 4,5	5 x 4,5	6 x 4,5	6 x 4,5

			43.4	47.4	50.6	57.6	64.6	70.6
General electrical specifications								
Max. absorbed power (FLI)	(1)	kW	185	204	224	248	279	307
Max. absorbed current (FLA)	(1)	A	307	341	350	399	463	512
Rated current (Inom)	(2)	A	245	273	254	282	463	512
cosφ standard unit	(2)		0,87	0,86	0,84	0,84	0,87	0,87
Nominal current with power factor correction (Inom)	(2)	A	224	247	225	249	424	469
cosφ unit with power factor correction	(2)		0,95	0,95	0,95	0,95	0,95	0,95
Max. inrush current (MIC)	(3)	A	529	563	601	650	684	733
Maximum inrush current with soft-starter (MIC)	(4)	A	409	443	477	526	565	614
Power supply		V/ph/Hz	400/3~/52					
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52					
Suggested line section	(5)	mm²	2x(4x70 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x150 mm²) FG7OR	2x(4x150 mm²) FG7OR
Suggested line protection	(6)		NH2 400A	NH3 500A	NH3 500A	NH3 500A	NH3 630A	NH3 630A
Electrical specifications for fans								
Rated power of fan standard		n° x kW	7 x 2,0	8 x 2,0	9 x 2,0	10 x 2,0	11 x 2,0	12 x 2,0
Rated current of fan standard		n° x A	7 x 4,3	8 x 4,3	9 x 4,3	10 x 4,3	11 x 4,3	12 x 4,3
Rated power of fan EC		n° x kW	7 x 1,9	8 x 1,9	9 x 1,9	10 x 1,9	11 x 1,9	12 x 1,9
Rated current of fan EC		n° x A	7 x 2,9	8 x 2,9	9 x 2,9	10 x 2,9	11 x 2,9	12 x 2,9
Rated power of fan oversize EC		n° x kW	7 x 3,0	8 x 3,0	9 x 3,0	10 x 3,0	11 x 3,0	12 x 3,0
Rated current of fan oversize EC		n° x A	7 x 4,5	8 x 4,5	9 x 4,5	10 x 4,5	11 x 4,5	12 x 4,5

- (1) Data regarding the unit without accessories working in maximum power absorption conditions
- (2) Datum related to the unit without accessories working in standard conditions (A35°C; W12/7°C)
- (3) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + LRA of the largest compressor)
- (4) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + 0.6 x LRA of the largest compressor)
- (5) These values are determined for cables with operating temperature of 40°C, EPR insulation and a line with a maximum length of 50m. The line section must be determined by a qualified technician based on the protection devices, the length of the line, the type of cable used and the type of installation.
- (6) The correct line protection part must be determined by a qualified technician based on the length of the line, the type of cable used and the type of installation.

TETRIS 2 A+ - TETRIS 2 A SLN

			8.2	13.3	18.4	23.5	27.6	31.4
General electrical specifications								
Max. absorbed power (FLI)	(1)	kW	41	61	82	102	122	144
Max. absorbed current (FLA)	(1)	A	69	104	138	173	208	223
Rated current (Inom)	(2)	A	60	90	120	149	179	165
cosφ standard unit	(2)		0,76	0,76	0,76	0,76	0,76	0,83
Nominal current with power factor correction (Inom)	(2)	A	48	72	96	119	143	144
cosφ unit with power factor correction	(2)		0,95	0,95	0,95	0,95	0,95	0,95
Max. inrush current (MIC)	(3)	A	213	248	282	317	351	474
Maximum inrush current with soft-starter (MIC)	(4)	A	143	178	213	247	282	350
Power supply		V/ph/Hz	400/3~/52					
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52					
Suggested line section	(5)	mm²	4x25 mm² FG7OR	4x35 mm² FG7OR	4x70 mm² FG7OR	4x120 mm² FG7OR	4x120 mm² FG7OR	4x150 mm² FG7OR
Suggested line protection	(6)		NH00 100A	NH00 125A	NH1 200A	NH1 250A	NH1 250A	NH2 315A
Electrical specifications for fans								
Rated power of fan standard		n° x kW	2 x 2,0	3 x 2,0	4 x 2,0	5 x 2,0	6 x 2,0	7 x 2,0
Rated current of fan standard		n° x A	2 x 4,3	3 x 4,3	4 x 4,3	5 x 4,3	6 x 4,3	7 x 4,3
Rated power of fan EC		n° x kW	2 x 1,9	3 x 1,9	4 x 1,9	5 x 1,9	6 x 1,9	7 x 1,9
Rated current of fan EC		n° x A	2 x 2,9	3 x 2,9	4 x 2,9	5 x 2,9	6 x 2,9	7 x 2,9
Rated power of fan oversize EC		n° x kW	2 x 3,0	3 x 3,0	4 x 3,0	5 x 3,0	6 x 3,0	7 x 3,0
Rated current of fan oversize EC		n° x A	2 x 4,5	3 x 4,5	4 x 4,5	5 x 4,5	6 x 4,5	7 x 4,5

			36.4	41.5	44.6	49.6	54.6
General electrical specifications							
Max. absorbed power (FLI)	(1)	kW	168	186	204	228	252
Max. absorbed current (FLA)	(1)	A	272	291	311	359	407
Rated current (Inom)	(2)	A	193	214	234	262	290
cosφ standard unit	(2)		0,83	0,84	0,83	0,84	0,84
Nominal current with power factor correction (Inom)	(2)	A	169	189	204	232	256
cosφ unit with power factor correction	(2)		0,95	0,95	0,95	0,95	0,95
Max. inrush current (MIC)	(3)	A	522	542	538	610	658
Maximum inrush current with soft-starter (MIC)	(4)	A	398	418	429	486	534
Power supply		V/ph/Hz	400/3~/52				
Power supply for auxiliary circuits		V/ph/Hz	230-24/1~/52				
Suggested line section	(5)	mm²	2x(4x70 mm²) FG7OR	2x(4x70 mm²) FG7OR	2x(4x70 mm²) FG7OR	2x(4x120 mm²) FG7OR	2x(4x120 mm²) FG7OR
Suggested line protection	(6)		NH2 400A	NH2 400A	NH2 400A	NH3 500A	NH3 500A
Electrical specifications for fans							
Rated power of fan standard		n° x kW	8 x 2,0	9 x 2,0	10 x 2,0	11 x 2,0	12 x 2,0
Rated current of fan standard		n° x A	8 x 4,3	9 x 4,3	10 x 4,3	11 x 4,3	12 x 4,3
Rated power of fan EC		n° x kW	8 x 1,9	9 x 1,9	10 x 1,9	11 x 1,9	12 x 1,9
Rated current of fan EC		n° x A	8 x 2,9	9 x 2,9	10 x 2,9	11 x 2,9	12 x 2,9
Rated power of fan oversize EC		n° x kW	8 x 3,0	9 x 3,0	10 x 3,0	11 x 3,0	12 x 3,0
Rated current of fan oversize EC		n° x A	8 x 4,5	9 x 4,5	10 x 4,5	11 x 4,5	12 x 4,5

- (1) Data regarding the unit without accessories working in maximum power absorption conditions
- (2) Datum related to the unit without accessories working in standard conditions (A35°C; W12/7°C)
- (3) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + LRA of the largest compressor)
- (4) Maximum effective RMS value of the current when the last compressor starts (FLA of the entire unit - FLA of the largest compressor + 0.6 x LRA of the largest compressor)
- (5) These values are determined for cables with operating temperature of 40°C, EPR insulation and a line with a maximum length of 50m. The line section must be determined by a qualified technician based on the protection devices, the length of the line, the type of cable used and the type of installation.
- (6) The correct line protection part must be determined by a qualified technician based on the length of the line, the type of cable used and the type of installation.

PUMP DATA

	Rated power	Rated current	Min. flow rate	Max. flow rate
	kW	A	m³/h	m³/h
P1	1,1	2,5	7	20
P2	1,5	3,2	7	20
P3	1,9	4,5	12	34
P4	3,0	5,9	12	34
P5	2,2	4,5	6	20
P6	3,0	6,1	6	20
P7	3,0	6,1	6	24
P8	4,0	8,7	6	24
P9	2,2	4,5	12	51
P10	3,0	6,1	12	51
P11	4,0	8,7	12	51
P12	4,0	8,7	12	51
P13	5,5	10,4	12	51
P14	5,5	10,4	12	51
P15	4,0	8,7	24	72
P16	5,5	10,4	24	72
P17	5,5	10,4	24	87
P18	7,5	13,7	24	87
P19	7,5	13,7	24	87
P20	9,2	17,2	24	87
P21	7,5	13,6	42	132
P22	11,0	21,3	42	138
P23	11,0	21,3	42	138
P24	15,0	27,7	42	138
P25	9,2	17,2	42	132
P26	15,0	27,7	35	157
P27	11,0	20,2	58	237
P28	15,0	26,6	65	255
P29	18,5	33,0	70	270
P30	18,5	33,0	70	270
P31	22,0	40,4	50	233

USER-SIDE EXCHANGER FLOW RATE FIELDS

The units are sized and optimized for the following nominal conditions: external air 35°C, inlet-outlet of the user-side exchanger 12/7°C.

The units can work at design conditions different from nominal conditions, provided that:

- the design condition falls within the operating limits specified below

TETRIS 2

	Qmin	Qmax
	m³/h	m³/h
10.2	9,4	28,1
12.2	10,2	30,5
13.2	10,9	32,6
15.2	12,0	36,1
16.2	13,8	41,3
20.3	16,8	50,4
24.3	19,8	59,3
27.4	22,6	67,7
29.4	24,2	72,6
32.4	26,3	78,9
33.4	28,8	86,4
37.4	31,8	95,4
41.4	35,1	105,2
43.6	36,7	110,2
47.6	39,4	118,1
50.7	42,3	127,0
53.8	45,1	135,4
58.8	48,9	146,7
62.8	52,6	157,9
67.9	56,2	168,5
70.9	59,2	177,5
74.10	62,0	185,9
78.10	65,7	197,1
80.12	68,4	205,2
87.12	73,6	220,8
93.12	78,8	236,3

TETRIS 2 A

	Qmin	Qmax
	m³/h	m³/h
11.2	9,6	28,9
17.2	13,9	41,7
23.2	19,8	59,3
28.4	23,6	70,7
34.4	27,8	83,5
38.4	31,2	93,5
43.4	36,1	108,3
47.4	39,2	117,7
50.6	41,7	125,1
57.6	46,7	140,1
64.6	53,4	160,2
70.6	58,9	176,8

TETRIS 2 A+

	Qmin	Qmax
	m³/h	m³/h
8.2	7,7	23,0
13.3	11,5	34,4
18.4	15,6	46,7
23.5	19,4	58,3
27.6	23,3	70,0
31.4	26,8	80,3
36.4	32,1	96,3
41.5	34,8	104,5
44.6	37,6	112,7
49.6	42,9	128,6
54.6	48,2	144,6

TETRIS 2 SLN

	Qmin	Qmax
	m³/h	m³/h
11.2	9,1	27,3
17.2	13,1	39,3
23.2	18,5	55,6
28.4	22,1	66,3
34.4	26,2	78,7
38.4	29,3	87,8
43.4	33,8	101,5
47.4	36,8	110,3
50.6	39,3	117,8
57.6	44,0	131,9
64.6	50,2	150,5
70.6	55,3	166,0

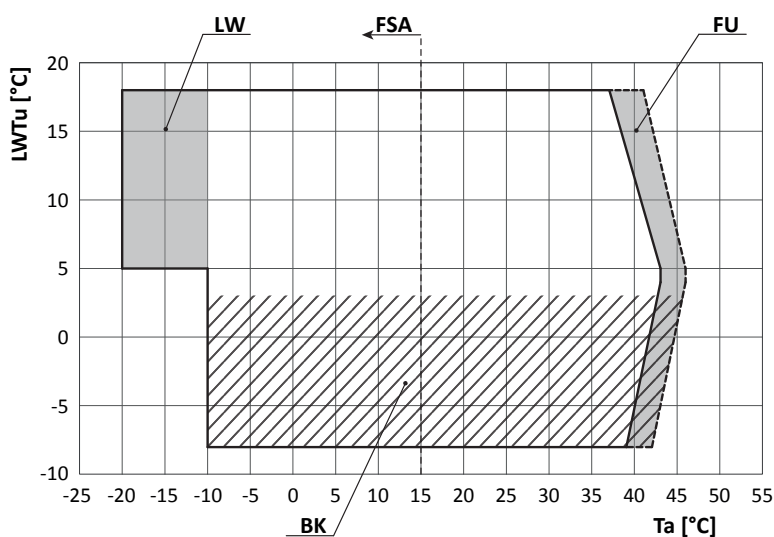
TETRIS 2 A SLN

	Qmin	Qmax
	m³/h	m³/h
8.2	7,5	22,4
13.3	11,2	33,6
18.4	15,2	45,5
23.5	19,0	56,9
27.6	22,7	68,2
31.4	26,1	78,4
36.4	31,3	93,8
41.5	34,0	101,9
44.6	36,6	109,9
49.6	41,8	125,3
54.6	46,9	140,8

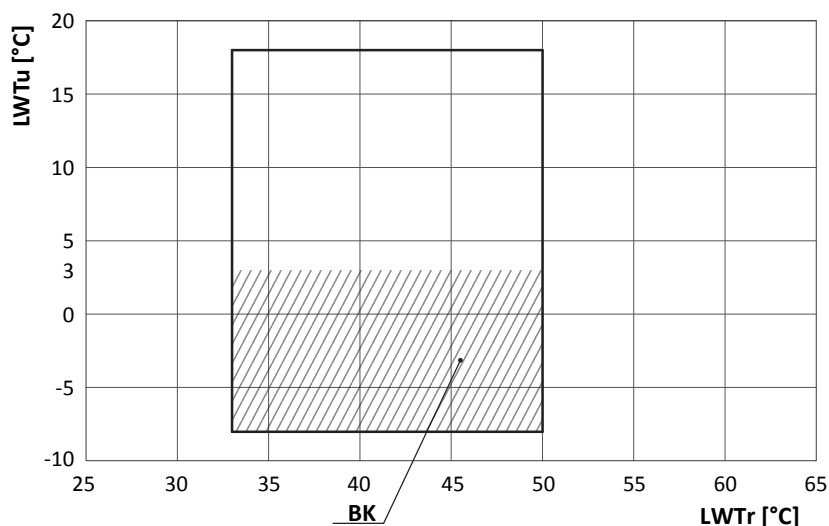
OPERATING LIMITS

TETRIS 2

COOLING



TOTAL RECOVERY



Ta: external air temperature

LWTu: water outlet temperature from the user-side heat exchanger

LWTr: water outlet temperature from the recovery exchanger

FSA: to work in the area indicated by the arrow, it is mandatory to include the "Fan speed adjuster" accessory or the "EC fans" accessory

LW: in the indicated area, the unit can work only where there is no wind

FU: in the indicated area, the control could actuate a forced capacity reduction of the compressors so as to prevent tripping of the safety devices

BK: For LWTu below +3°C, it is mandatory to fit the "Brine Kit" accessory

For LWTu below +5°C, it is compulsory to use suitable percentages of antifreeze additives (glycols) to prevent ice formation in the exchanger.

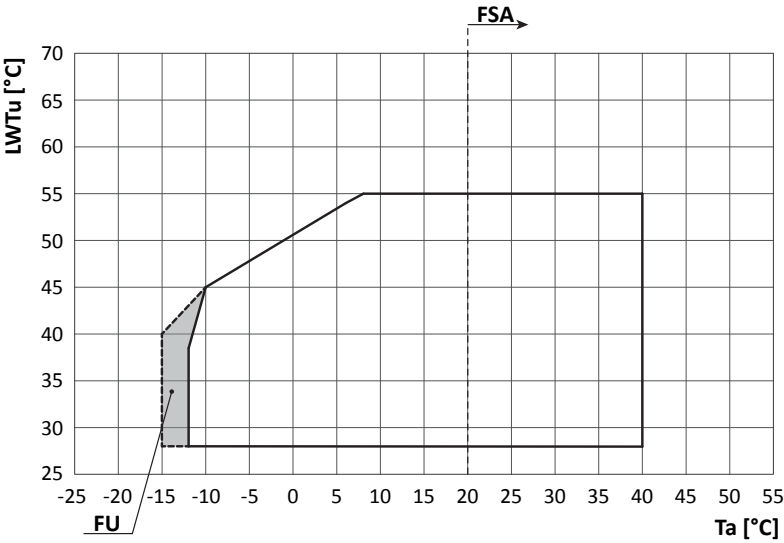
The inlet and outlet temperatures of the user-side exchanger must be given on ordering to allow correct setting of the alarm parameters and verification of the sizing of the expansion valve.

The cooling set point can then be changed by the customer in an interval that, compared to the set point given on ordering, ranges from -1K up to the maximum temperature allowed by the above-stated operating limits.

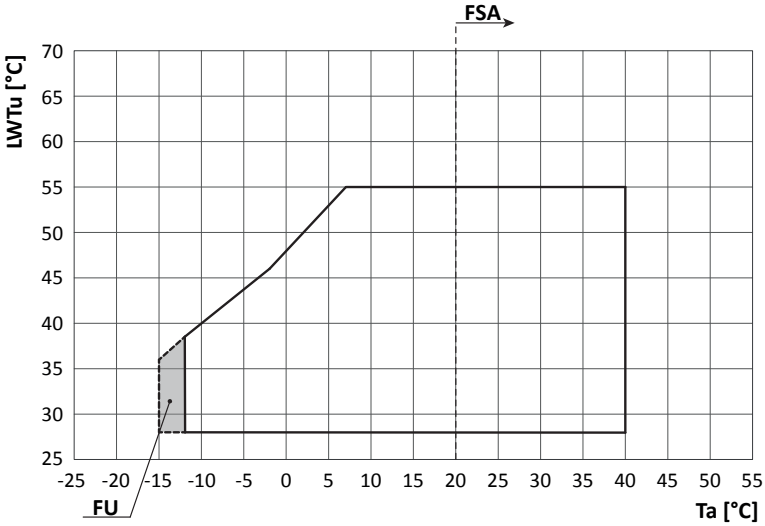
The unit will be optimized to work at the set point temperatures given on ordering. For different set points, the cooling capacity provided and the level of efficiency of the machine could decrease and move away from these conditions.

HEATING

For models Tetris 2 10.2, 16.2, 24.3, 32.4, 33.4, 37.4, 41.4, 47.6, 62.8, 70.9, 78.10, 93.12

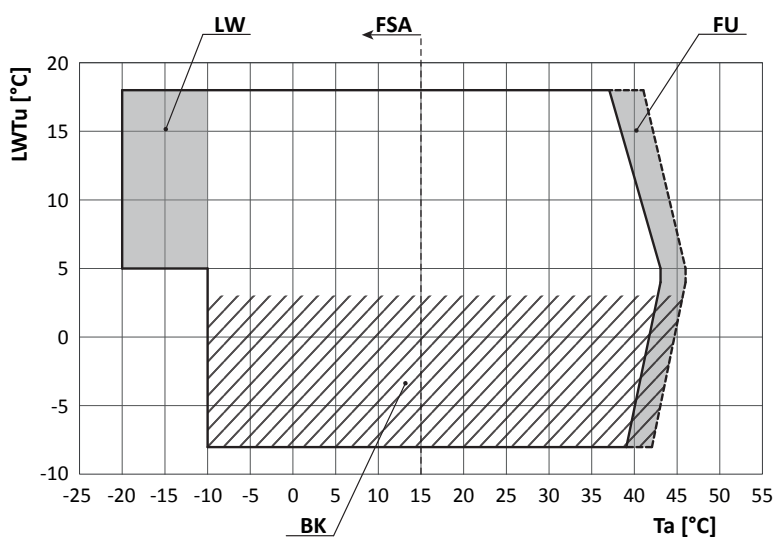


For models Tetris 2 12.2, 13.2, 15.2, 20.3, 27.4, 29.4, 43.6, 50.7, 53.8, 58.8, 67.9, 74.10, 80.12, 87.12

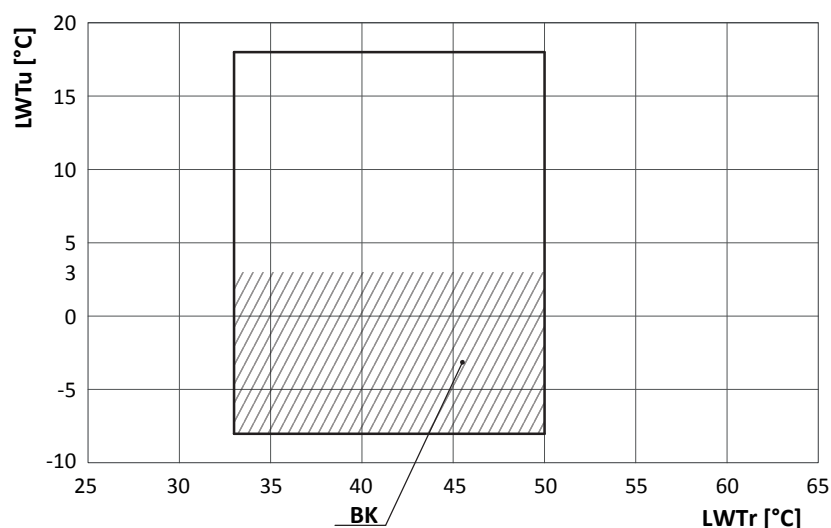


TETRIS 2 A - TETRIS 2 SLN

COOLING



TOTAL RECOVERY



- Ta:** external air temperature
- LWTu:** water outlet temperature from the user-side heat exchanger
- LWTr:** water outlet temperature from the recovery exchanger
- FSA:** to work in the area indicated by the arrow, it is mandatory to include the "Fan speed adjuster" accessory or the "EC fans" accessory
- LW:** in the indicated area, the unit can work only where there is no wind
- FU:** in the indicated area, the control could actuate a forced capacity reduction of the compressors so as to prevent tripping of the safety devices
- BK:** For LWTu below +3°C, it is mandatory to fit the "Brine Kit" accessory

For LWTu below +5°C, it is compulsory to use suitable percentages of antifreeze additives (glycols) to prevent ice formation in the exchanger.

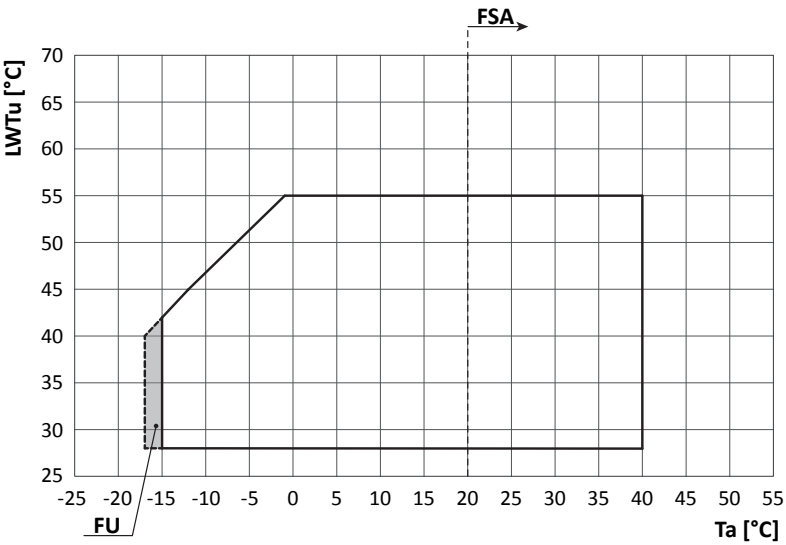
The inlet and outlet temperatures of the user-side exchanger must be given on ordering to allow correct setting of the alarm parameters and verification of the sizing of the expansion valve.

The cooling set point can then be changed by the customer in an interval that, compared to the set point given on ordering, ranges from -1K up to the maximum temperature allowed by the above-stated operating limits.

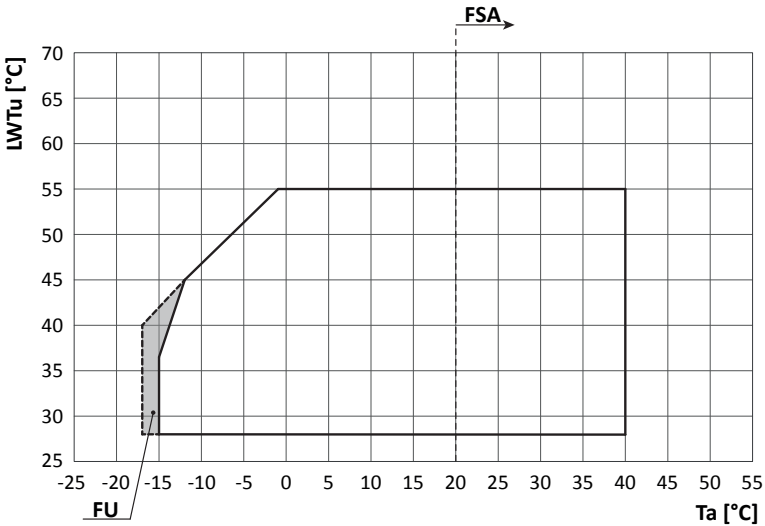
The unit will be optimized to work at the set point temperatures given on ordering. For different set points, the cooling capacity provided and the level of efficiency of the machine could decrease and move away from these conditions.

HEATING

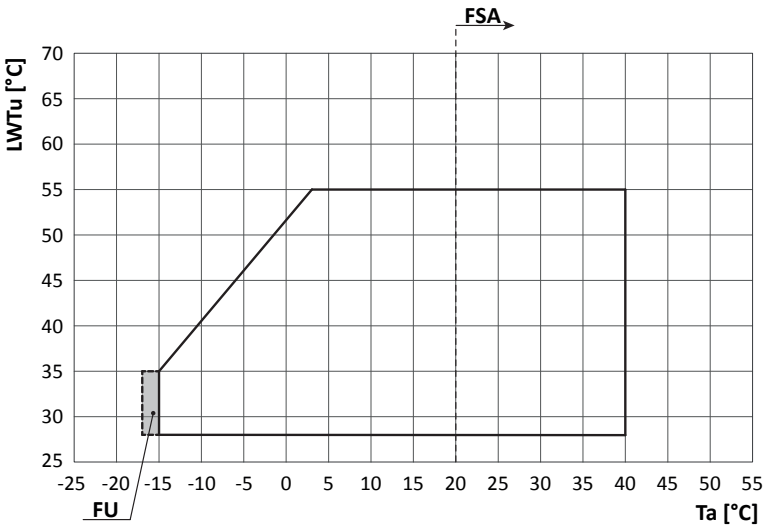
For models Tetris 2 A / Tetris 2 SLN 23.2



For models Tetris 2 A / Tetris 2 SLN 11.2, 38.4, 43.4, 47.4, 57.6, 64.6, 70.6

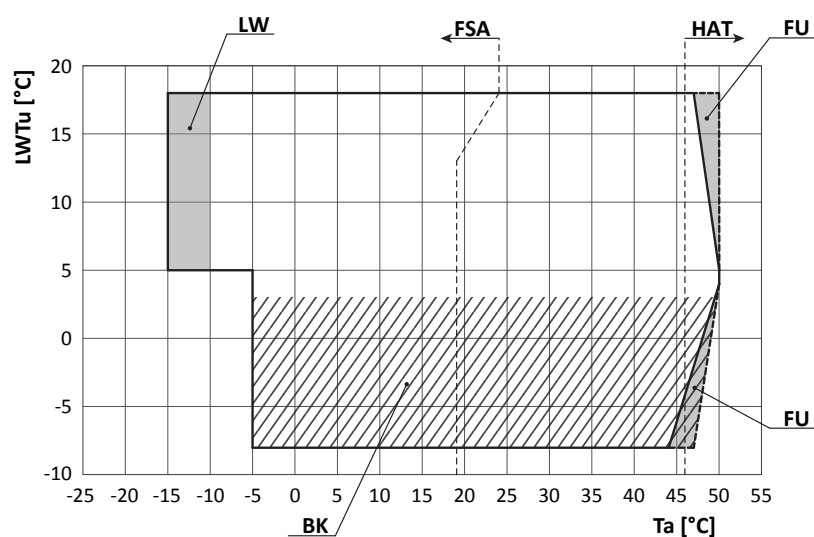


For models Tetris 2 A / Tetris 2 SLN 17.2, 28.4, 34.4, 50.6

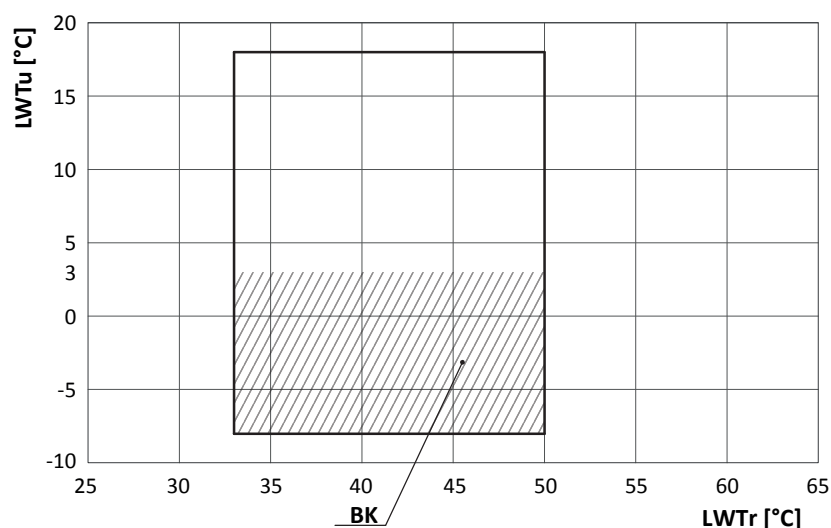


TETRIS 2 A+ - TETRIS 2 A SLN

COOLING



TOTAL RECOVERY



- Ta:** external air temperature
- LWTu:** water outlet temperature from the user-side heat exchanger
- LWTr:** water outlet temperature from the recovery exchanger
- FSA:** to work in the area indicated by the arrow, it is mandatory to include the "Fan speed adjuster" accessory or the "EC fans" accessory
- LW:** in the indicated area, the unit can work only where there is no wind
- FU:** in the indicated area, the control could actuate a forced capacity reduction of the compressors so as to prevent tripping of the safety devices
- BK:** For LWTu below +3°C, it is mandatory to fit the "Brine Kit" accessory

For LWTu below +5°C, it is compulsory to use suitable percentages of antifreeze additives (glycols) to prevent ice formation in the exchanger.

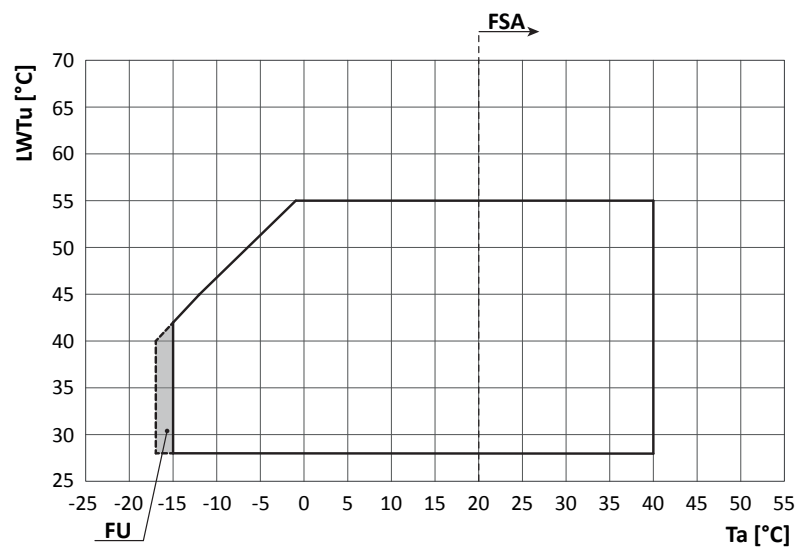
The inlet and outlet temperatures of the user-side exchanger must be given on ordering to allow correct setting of the alarm parameters and verification of the sizing of the expansion valve.

The cooling set point can then be changed by the customer in an interval that, compared to the set point given on ordering, ranges from -1K up to the maximum temperature allowed by the above-stated operating limits.

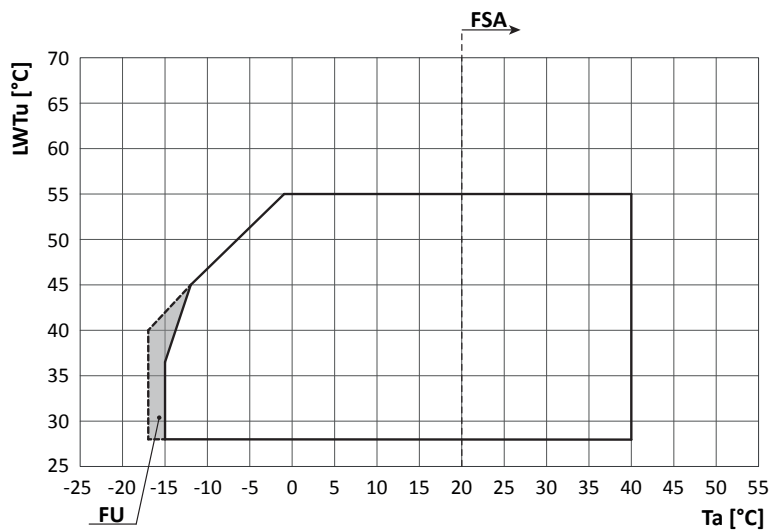
The unit will be optimized to work at the set point temperatures given on ordering. For different set points, the cooling capacity provided and the level of efficiency of the machine could decrease and move away from these conditions.

HEATING

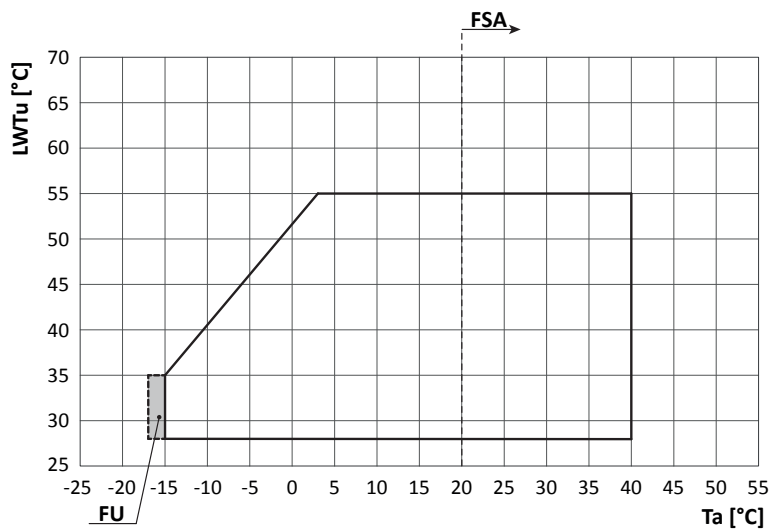
For models Tetris 2 A+ / Tetris 2 A SLN 8.2, 13.3, 18.4, 23.5, 27.6



For models Tetris 2 A+ / Tetris 2 A SLN 36.4, 54.6



For models Tetris 2 A+ / Tetris 2 A SLN 31.4, 41.5, 44.6, 49.6



NOISE LEVELS

TETRIS 2

	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
10.2	87	55	86	54	85	53	84	52	85	53	82	50	73	41	66	34	89	57
12.2	87	55	86	54	85	53	84	52	85	53	82	50	73	41	66	34	89	57
13.2	87	55	86	54	85	53	84	52	85	53	82	50	73	41	66	34	89	57
15.2	88	56	87	55	86	54	85	53	85	53	83	51	74	42	67	35	89	57
16.2	88	56	87	55	86	54	85	53	85	53	83	51	74	42	67	35	89	57
20.3	91	59	90	58	89	57	88	56	88	56	85	53	77	45	70	38	92	60
24.3	91	59	90	58	89	57	88	56	88	56	85	53	77	45	70	38	92	60
27.3	94	62	93	61	92	60	91	59	91	59	88	56	80	48	73	41	95	63
29.4	94	62	93	61	92	60	91	59	91	59	88	56	80	48	73	41	95	63
32.4	95	63	94	62	93	61	92	60	92	60	89	57	81	49	74	42	96	64
33.4	96	64	95	63	94	62	93	61	93	61	90	58	82	50	75	43	97	65
37.4	96	64	95	63	94	62	93	61	93	61	90	58	82	50	75	43	97	65
41.4	96	64	95	63	94	62	93	61	93	61	90	58	82	50	75	43	97	65
43.6	96	64	95	63	94	62	93	61	93	61	90	58	82	50	75	43	97	65
47.6	96	64	95	63	94	62	93	61	93	61	90	58	82	50	75	43	97	65
50.7	97	65	96	64	95	63	94	62	94	62	91	59	83	51	76	44	98	66
53.8	99	67	98	66	97	65	96	64	95	63	93	61	85	53	77	45	100	68
58.8	99	67	98	66	97	65	96	64	95	63	93	61	85	53	77	45	100	68
62.8	99	67	98	66	97	65	96	64	95	63	93	61	85	53	77	45	100	68
67.9	99	66	98	65	97	64	96	63	95	62	93	60	85	52	77	44	100	67
70.9	99	66	98	65	97	64	96	63	95	62	93	60	85	52	77	44	100	67
74.10	100	67	99	66	98	65	97	64	96	63	94	61	86	53	78	45	101	68
78.10	100	67	99	66	98	65	97	64	96	63	94	61	86	53	78	45	101	68
80.12	101	68	100	67	99	66	98	65	97	64	95	62	87	54	79	46	102	69
87.12	101	68	100	67	99	66	98	65	97	64	95	62	87	54	79	46	102	69
93.12	101	68	100	67	99	66	98	65	97	64	95	62	87	54	79	46	102	69

Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C; unit without accessories operating at nominal regime.

Lw: sound power levels obtained from measurements carried out in accordance with standard ISO 3744. In particular, Lw tot is the only binding value and complies with the Eurovent certification programme (8/1) where applicable.

Lp: Lp: sound pressure levels referring at a distance of 10 metres from the unit in free field with directivity factor Q=2. These values (including Lp tot) are calculated from the sound power levels and are therefore to be considered indicative and non-binding.

TETRIS 2 /LN

	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
10.2	86	54	82	50	84	52	84	52	82	50	74	42	66	34	59	27	86	54
12.2	86	54	82	50	84	52	84	52	82	50	74	42	66	34	59	27	86	54
13.2	86	54	82	50	84	52	84	52	82	50	74	42	66	34	59	27	86	54
15.2	87	55	83	51	85	53	85	53	82	50	75	43	67	35	60	28	86	54
16.2	87	55	83	51	85	53	85	53	82	50	75	43	67	35	60	28	86	54
20.3	88	56	85	53	86	54	86	54	83	51	76	44	69	37	62	30	87	55
24.3	89	57	87	55	87	55	87	55	84	52	76	44	69	37	62	30	88	56
27.3	90	58	87	55	88	56	88	56	85	53	77	45	70	38	63	31	89	57
29.4	91	59	87	55	89	57	88	56	86	54	77	45	70	38	63	31	90	58
32.4	92	60	88	56	90	58	90	58	87	55	79	47	72	40	65	33	91	59
33.4	93	61	89	57	91	59	91	59	88	56	80	48	73	41	66	34	92	60
37.4	93	61	89	57	91	59	91	59	88	56	80	48	73	41	66	34	92	60
41.4	94	62	90	58	92	60	92	60	89	57	81	49	74	42	67	35	93	61
43.6	94	62	90	58	92	60	92	60	89	57	81	49	74	42	67	35	93	61
47.6	94	62	90	58	92	60	92	60	89	57	81	49	74	42	67	35	93	61
50.7	95	63	91	59	93	61	93	61	90	58	82	50	75	43	68	36	94	62
53.8	96	64	92	60	94	62	94	62	91	59	83	51	76	44	69	37	95	63
58.8	96	64	92	60	94	62	94	62	91	59	83	51	76	44	69	37	95	63
62.8	96	64	92	60	94	62	94	62	91	59	83	51	76	44	69	37	95	63
67.9	97	64	93	60	95	62	95	62	93	60	84	51	77	44	70	37	96	63
70.9	97	64	93	60	95	62	95	62	93	60	84	51	77	44	70	37	96	63
74.10	98	65	94	61	96	63	96	63	92	59	85	52	78	45	70	37	97	64
78.10	99	66	95	62	97	64	97	64	93	60	86	53	79	46	71	38	98	65
80.12	100	67	96	63	98	65	98	65	94	61	87	54	80	47	72	39	99	66
87.12	100	67	96	63	98	65	98	65	94	61	87	54	80	47	72	39	99	66
93.12	100	67	96	63	98	65	98	65	94	61	87	54	80	47	72	39	99	66

Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C; unit without accessories operating at nominal regime.

Lw: sound power levels obtained from measurements carried out in accordance with standard ISO 3744. In particular, Lw tot is the only binding value and complies with the Eurovent certification programme (8/1) where applicable.

Lp: Lp: sound pressure levels referring at a distance of 10 metres from the unit in free field with directivity factor Q=2. These values (including Lp tot) are calculated from the sound power levels and are therefore to be considered indicative and non-binding.

TETRIS 2 A

	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
11.2	76	44	66	34	77	45	79	47	79	47	83	51	75	43	65	33	86	54
17.2	71	39	62	30	77	45	79	47	83	51	84	52	78	46	71	39	88	56
23.2	68	36	68	36	82	50	86	54	86	54	81	49	76	44	72	40	89	57
28.4	77	45	67	35	80	48	82	50	84	52	86	54	79	47	72	40	90	58
34.4	74	42	65	33	80	48	82	50	86	54	87	55	81	49	74	42	91	59
38.4	73	41	64	32	80	47	83	51	87	54	87	54	81	48	73	41	91	59
43.4	77	45	72	39	82	50	87	55	87	55	84	51	79	47	76	44	91	58
47.4	71	38	71	38	85	52	89	56	89	56	84	51	79	47	75	43	92	59
50.6	76	43	66	34	82	49	84	52	88	56	89	56	83	50	76	43	93	61
57.6	75	43	66	34	82	49	85	52	89	56	88	56	82	50	75	43	93	61
64.6	79	47	74	41	84	52	89	57	89	57	86	54	81	49	79	46	93	61
70.6	72	40	72	40	86	54	90	58	90	58	85	53	81	48	77	44	93	61

TETRIS 2 A/LN

	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
11.2	73	41	63	31	74	42	75	43	75	43	79	47	71	39	62	30	82	50
17.2	67	35	59	27	73	41	75	43	79	47	80	48	74	42	68	36	84	52
23.2	65	33	65	33	78	46	82	50	82	50	77	45	73	41	69	37	85	53
28.4	73	41	64	32	76	44	78	46	80	48	82	50	76	44	69	37	86	54
34.4	70	38	62	30	76	44	79	47	82	50	83	51	77	45	71	39	87	55
38.4	70	37	61	29	76	44	79	47	83	50	83	50	77	44	70	37	87	55
43.4	74	41	68	36	78	46	83	51	83	51	80	48	75	43	73	40	87	54
47.4	68	35	67	35	81	48	84	52	85	52	80	48	76	43	72	39	88	55
50.6	72	40	63	31	78	46	80	48	84	52	85	52	79	46	72	40	89	57
57.6	72	39	63	31	78	45	81	48	85	52	84	52	79	46	72	39	89	57
64.6	76	43	70	38	80	48	85	53	85	53	82	50	78	45	75	42	89	57
70.6	69	37	69	37	82	50	86	53	86	54	82	49	77	45	73	41	89	57

TETRIS 2 SLN

	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
11.2	70	38	61	29	71	39	72	40	72	40	76	44	69	37	60	28	79	47
17.2	66	34	57	25	71	39	74	42	77	45	78	46	72	40	66	34	82	50
23.2	63	31	62	30	75	43	79	47	79	47	75	43	70	38	67	35	82	50
28.4	71	39	62	30	74	42	76	44	78	46	80	48	74	42	67	35	84	52
34.4	69	37	60	28	74	42	77	45	80	48	81	49	75	43	69	37	85	53
38.4	68	36	60	27	74	42	77	45	81	48	81	48	75	42	68	36	85	53
43.4	72	39	66	34	76	44	81	48	81	48	78	45	73	41	71	38	85	52
47.4	65	33	65	33	78	46	82	49	82	49	78	45	73	41	70	37	85	53
50.6	70	38	62	29	76	44	78	46	82	50	83	50	77	44	71	38	87	55
57.6	70	38	62	29	76	44	79	46	83	50	82	50	77	44	70	37	87	55
64.6	74	41	68	36	78	45	83	50	83	50	80	47	75	43	73	40	87	54
70.6	67	35	67	35	80	47	84	51	84	51	79	47	75	42	71	39	87	55

Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C; unit without accessories operating at nominal regime.

Lw: sound power levels obtained from measurements carried out in accordance with standard ISO 3744. In particular, Lw tot is the only binding value and complies with the Eurovent certification programme (8/1) where applicable.

Lp: Lp: sound pressure levels referring at a distance of 10 metres from the unit in free field with directivity factor Q=2. These values (including Lp tot) are calculated from the sound power levels and are therefore to be considered indicative and non-binding.

TETRIS 2 A+

	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
8.2	62	30	60	28	75	43	75	43	80	48	74	42	72	40	66	34	83	51
13.3	62	30	60	28	76	44	77	45	83	51	76	44	73	41	66	34	85	53
18.4	76	44	66	34	77	45	79	47	79	47	83	51	75	43	65	33	86	54
23.5	66	34	64	32	79	47	79	47	84	52	78	46	76	44	71	39	87	55
27.6	71	39	62	30	77	45	79	47	83	51	84	52	78	46	71	39	88	56
31.4	76	43	66	34	82	49	84	52	88	56	89	56	83	50	76	43	93	61
36.4	76	43	66	34	82	49	84	52	88	56	89	56	83	50	76	43	93	61
41.5	95	63	91	59	93	61	93	61	90	58	82	50	75	43	68	36	94	62
44.6	96	64	92	60	94	62	94	62	91	59	83	51	76	44	69	37	95	63
49.6	96	64	92	60	94	62	94	62	91	59	83	51	76	44	69	37	95	63
54.6	96	64	92	60	94	62	94	62	91	59	83	51	76	44	69	37	95	63

TETRIS 2 A+ /LN

	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
8.2	61	29	56	24	74	42	75	43	77	45	66	34	65	33	59	27	79	47
13.3	61	29	56	24	75	43	77	45	79	47	68	36	66	34	59	27	81	49
18.4	64	32	59	27	77	45	79	47	80	48	69	37	68	36	63	31	82	50
23.5	65	33	60	28	78	46	79	47	81	49	70	38	69	37	64	32	83	51
27.6	65	33	60	28	79	47	80	48	82	50	72	40	70	38	64	32	84	52
31.4	68	36	68	36	82	50	86	54	86	54	81	49	76	44	72	40	89	57
36.4	68	36	68	36	82	50	86	54	86	54	81	49	76	44	72	40	89	57
41.5	77	45	67	35	80	48	82	50	84	52	86	54	79	47	72	40	90	58
44.6	74	42	65	33	80	48	82	50	86	54	87	55	81	49	74	42	91	59
49.6	73	41	64	32	80	47	83	51	87	54	87	54	81	48	73	41	91	59
54.6	73	41	64	32	80	47	83	51	87	54	87	54	81	48	73	41	91	59

TETRIS 2 A SLN

	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
8.2	60	28	52	20	73	41	74	42	73	41	57	25	57	25	51	19	76	44
13.3	60	28	52	20	74	42	76	44	75	43	60	28	58	26	51	19	78	46
18.4	63	31	55	23	76	44	78	46	76	44	60	28	60	28	55	23	79	47
23.5	64	32	56	24	77	45	78	46	77	45	61	29	61	29	56	24	80	48
27.6	64	32	56	24	78	46	79	47	78	46	63	31	62	30	56	24	81	49
31.4	73	41	64	32	76	44	78	46	80	48	82	50	76	44	69	37	86	54
36.4	73	41	64	32	76	44	78	46	80	48	82	50	76	44	69	37	86	54
41.5	70	38	62	30	76	44	79	47	82	50	83	51	77	45	71	39	87	55
44.6	89	57	87	55	87	55	87	55	84	52	76	44	69	37	62	30	88	56
49.6	89	57	87	55	87	55	87	55	84	52	76	44	69	37	62	30	88	56
54.6	89	57	87	55	87	55	87	55	84	52	76	44	69	37	62	30	88	56

Reference conditions: external air temperature 35°C; evaporator inlet/outlet water temperature 12/7°C; unit without accessories operating at nominal regime.

Lw: sound power levels obtained from measurements carried out in accordance with standard ISO 3744. In particular, Lw tot is the only binding value and complies with the Eurovent certification programme (8/1) where applicable.

Lp: Lp: sound pressure levels referring at a distance of 10 metres from the unit in free field with directivity factor Q=2. These values (including Lp tot) are calculated from the sound power levels and are therefore to be considered indicative and non-binding.

CONFIGURATIONS THAT ARE NOT POSSIBLE

TETRIS 2

	CHILLER ONLY												HEAT PUMP					
	/DC /1P	/DC /2P	/DC /3P	/DC /1PS	/DC /2PS	/DC /3PS	/DS /1P	/DS /2P	/DS /3P	/DS /1PS	/DS /2PS	/DS /3PS	HP /DS /1P	HP /DS /2P	HP /DS /3P	HP /DS /1PS	HP /DS /2PS	HP /DS /3PS
10.2			n.a.			n.a.			n.a.			n.a.		n.a.	n.a.		n.a.	n.a.
12.2			n.a.			n.a.			n.a.			n.a.		n.a.	n.a.		n.a.	n.a.
13.2			n.a.			n.a.			n.a.			n.a.		n.a.	n.a.		n.a.	n.a.
15.2			n.a.			n.a.			n.a.			n.a.		n.a.	n.a.		n.a.	n.a.
16.2			n.a.			n.a.			n.a.			n.a.		n.a.	n.a.		n.a.	n.a.
20.3			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.
24.3			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.
27.4		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.
29.4		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.
32.4		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.
33.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
37.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
41.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
43.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
47.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
50.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
53.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
58.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
62.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
67.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
70.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
74.10	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
78.10	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
80.12	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
87.12	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
93.12	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

n.a.: configuration not available

TETRIS 2 A - TETRIS 2 SLN

	CHILLER ONLY												HEAT PUMP					
	/DC /1P	/DC /2P	/DC /3P	/DC /1PS	/DC /2PS	/DC /3PS	/DS /1P	/DS /2P	/DS /3P	/DS /1PS	/DS /2PS	/DS /3PS	HP /DS /1P	HP /DS /2P	HP /DS /3P	HP /DS /1PS	HP /DS /2PS	HP /DS /3PS
11.2			n.a.			n.a.			n.a.			n.a.		n.a.	n.a.		n.a.	n.a.
17.2			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.
23.2		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.
28.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
34.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
38.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
43.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
47.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
50.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
57.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
64.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
70.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	

n.a.: configuration not available

TETRIS 2 A+ - TETRIS 2 A SLN

	CHILLER ONLY												HEAT PUMP					
	/DC /1P	/DC /2P	/DC /3P	/DC /1PS	/DC /2PS	/DC /3PS	/DS /1P	/DS /2P	/DS /3P	/DS /1PS	/DS /2PS	/DS /3PS	HP /DS /1P	HP /DS /2P	HP /DS /3P	HP /DS /1PS	HP /DS /2PS	HP /DS /3PS
8.2			n.a.			n.a.			n.a.			n.a.		n.a.	n.a.		n.a.	n.a.
13.3			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.	n.a.
18.4		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.		n.a.		n.a.	n.a.	n.a.
23.5		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
27.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
31.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
36.4		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
41.5		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
46.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
49.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	
54.6		n.a.			n.a.			n.a.			n.a.			n.a.			n.a.	

n.a.: configuration not available

INSTALLATION ADVICE

The units described in this document are, by nature, strongly affected by the characteristics of the system, the working conditions and the installation site.

Remember that the unit must be installed by a qualified and skilled technician, and in compliance with the national legislation in force in the destination country.

The installation must be done in such a way that it will be possible to carry out all routine and non-routine maintenance operations.

Before starting any work, you must carefully read the "Installation, operation and maintenance manual" of the machine and do the necessary safety checks to prevent any malfunctioning or hazards.

We give some advice below that will allow you to increase the efficiency and reliability of the unit and therefore of the system into which it is inserted.

Water characteristics

To preserve the life of the exchangers, the water is required to comply with some quality parameters and it is therefore necessary to make sure its values fall within the ranges indicated in the following table:

Total hardness	2,0 ÷ 6,0 °f
Langelier index	- 0,4 ÷ 0,4
pH	7,5 ÷ 8,5
Electrical conductivity	10 ÷ 500 µS/cm
Organic elements	-
Hydrogen carbonate (HCO₃⁻)	70 ÷ 300 ppm
Sulphates (SO₄²⁻)	< 50 ppm
Hydrogen carbonate / Sulphates (HCO₃⁻/SO₄²⁻)	> 1
Chlorides (Cl⁻)	< 50 ppm
Nitrates (NO₃⁻)	< 50 ppm
Hydrogen sulphide (H₂S)	< 0,05 ppm
Ammonia (NH₃)	< 0,05 ppm
Sulphites (SO₃⁻), free chlorine (Cl₂)	< 1 ppm
Carbon dioxide (CO₂)	< 5 ppm
Metal cations	< 0,2 ppm
Manganese ions (Mn⁺⁺)	< 0,2 ppm
Iron ions (Fe²⁺, Fe³⁺)	< 0,2 ppm
Iron + Manganese	< 0,4 ppm
Phosphates (PO₄³⁻)	< 2 ppm
Oxygen	< 0,1 ppm

Installation of water filters on all the hydraulic circuits is obligatory.

The supply of the most suitable filters for the unit can be requested as accessory. In this case, the filters are supplied loose and must be installed by the customer following the instructions given in the installation, operation and maintenance manual.

Glycol mixtures

With temperatures below 5°C, it is mandatory to work with water and anti-freeze mixtures, and also change the safety devices (anti-freeze, etc.), which must be carried out by qualified authorised personnel or by the manufacturer.

Liquid outlet temperature or minimum ambient temperature	°C	0	-5	-10	-15	-20	-25	-30	-35	-40
Freezing point	°C	-5	-10	-15	-20	-25	-30	-35	-40	-45
Ethylene glycol	%	6	22	30	36	41	46	50	53	56
Propylene glycol	%	15	25	33	39	44	48	51	54	57

The quantity of antifreeze should be considered as % on weight

Minimum water content in the system

For correct operation of the unit, it is necessary to ensure a buffering on the system such as to comply with the minimum operating time considering the greater between the minimum OFF time and the minimum ON time. In short, these contribute to limiting the number of times the compressors are switched on per hour and to preventing undesired deviations from the set point of the delivered water temperature.

$$V_{min} = \frac{P_{tot} \cdot 1.000}{N} \cdot \frac{300}{\Delta T \cdot \rho \cdot c_p} + P_{tot} \cdot 0,8$$

where

V_{min} is the minimum water content of the system measured in l

P_{tot} is the total cooling capacity of the machine measured in kW

N is the number of capacity reduction steps

ΔT is the differential allowed on the water temperature. Unless otherwise specified, this value is considered to be 2.5K

ρ is the density of the heat-carrying fluid. Unless otherwise specified, the density of water is considered and therefore 1000kg/m³

c_p is the specific heat of the heat-carrying fluid. Unless otherwise specified, the specific heat of water is considered and therefore 4.186kJ/(kgK)

Considering the use of water and grouping together some terms, the formula can be re-written as follows:

$$V_{min} = \frac{P_{tot}}{N} \cdot 17,2 + P_{tot} \cdot 0,25$$

N is equal to the number of compressors installed in the unit.

Installation site

To determine the best installation site for the unit and its orientation, you should pay attention to the following points:

- compliance with the clearance spaces indicated in the official dimensional drawing of the unit must be guaranteed so as to ensure accessibility for routine and non-routine maintenance operations
- you should consider the origin of the hydraulic pipes and their diameters because these affect the radiuses of curvature and therefore the spaces needed for installing them
- you should consider the position of the cable inlet on the electrical control panel of the unit as regards the origin of the power supply
- if the installation includes several units side by side, you should consider the position and dimensions of the manifolds of the user-side exchangers and of any recovery exchangers
- if the installation includes several units side by side, you should consider that the minimum distance between units is 3 metres
- you should avoid all obstructions that can limit air circulation to the source-side exchanger or that can cause recirculation between air supply and intake
- you should consider the orientation of the unit to limit, as far as possible, exposure of the source-side exchanger to solar radiation
- if the installation area is particularly windy, the orientation and positioning of the unit must be such as to avoid air recirculation on the coils. If necessary, we advise making windbreak barriers in order to prevent malfunctioning.

Once the best position for the unit has been identified, you must check that the support slab has the following characteristics:

- its dimensions must be proportionate to those of the unit: if possible, longer and wider than the unit by at least 30 cm and 15/20cm higher than the surrounding surface
- it must be able to bear at least 4 times the operating weight of the unit
- it must allow level installation of the unit: although the unit is installed on a horizontal base, make slopes in the support surface to convey rain water or defrost water to drains, wells or in any case to places where it cannot generate an accident hazard due to ice formation. All heat pump version units are equipped with discharge manifolds for the condensed water; these can be manifolded to facilitate condensate discharge.

The units are designed and built to reduce to a minimum the level of vibration transmitted to the ground, but it is in any case advisable to use rubber or spring anti-vibration mounts, which are available as accessory and should be requested when ordering.

The anti-vibration mounts must be fixed on before positioning the unit on the ground.

In the event of installation on roofs or intermediate floors, the pipes must be isolated from the walls and ceilings.

It is advisable to avoid installation in cramped places, to prevent reverberations, reflections, resonances and acoustic interactions with elements outside the unit.

It is essential that any work done to soundproof the unit does not affect its correct installation or correct operation and, in particular, does not reduce the air flow rate to the source-side exchanger.

Installations that require the use of treated coils

If the unit has to be installed in an environment with a particularly aggressive atmosphere, coils with special treatments are available as options.

- e-coated microchannel coils (accessory not available for HP units)
- pre-painted aluminium coils (accessory available only for HP units)
- coils with anti-corrosion treatment (accessory available only for units with Cu/Al coil or HP units)

A description of the individual accessories is available in the "Description of accessories" section.

The type of coil treatment should be chosen with regard to the environment in which the unit is to be installed, through observation of other structures and machinery with exposed metal surfaces present in the destination environment.

The cross observation criterion is the most valid method of selection currently available without having to carry out preliminary tests or measurements with instruments. The identified reference environments are:

- coastal/marine
- industrial
- urban with a high housing density
- rural

Please note that in cases where different conditions co-exist, even for short periods, the choice must be suitable for preserving the exchanger in the harsher environmental conditions and not in conditions between the worst and best situation.

Particular attention must be given in cases where an environment that is not particularly aggressive becomes aggressive as a consequence of a concomitant cause, for example, the presence of a flue outlet or an extraction fan.

We strongly suggest choosing one of the treatment options if at least one of the points listed below is verified:

- there are obvious signs of corrosion of the exposed metal surfaces in the installation area
- the prevailing winds come from the sea towards the unit
- the environment is industrial with a significant concentration of pollutants
- the environment is urban with a high population density
- the environment is rural with the presence of organic discharges and effluents

In particular, for installations near the coast, the following instructions apply:

- for installations between 1 and 20 km from the coast of units with microchannel coil, we strongly recommend using the accessory "E-coated microchannel coils"
- for installations between 1 and 20 km from the coast of reversible units or units with Cu/Al coils, we strongly recommend using the accessory "Coil treated with anti-corrosion paints"
- for distances within a kilometre of the coast, we strongly recommend using the accessory "Coil treated with anti-corrosion paints" for all units.

To protect the exchangers from corrosion and ensure optimal operation of the unit, we advise following the recommendations given in the user, installation and maintenance manual for cleaning the coils.

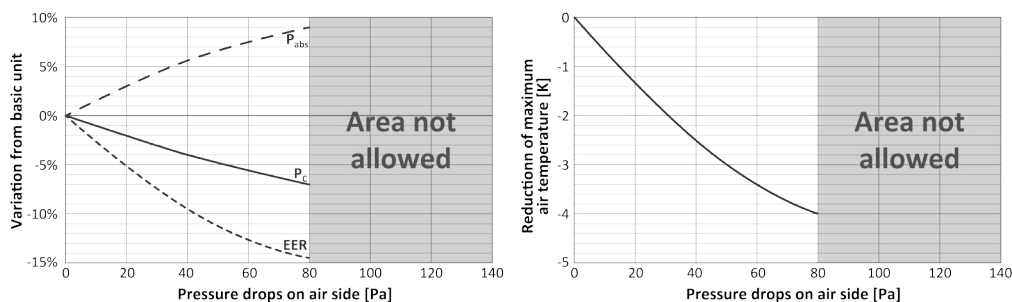
Aeraulic head losses and options available for the ventilating section

With the exception of units for which oversize fans are required, as standard, the units are designed considering that, at the nominal air flow rate, the fans work with null available pressure.

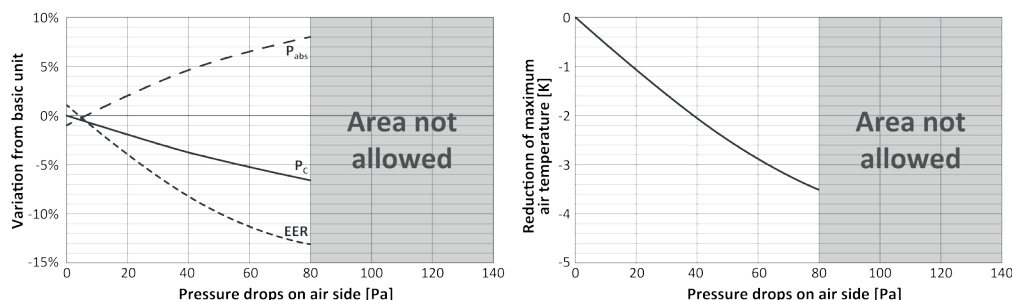
If there are obstacles to free air flow, you should consider the additional aeraulic head losses that will cause a reduction of the air flow rate and a consequent deterioration of performance.

The following diagrams show the trend of cooling capacity (P_c), EER, total absorbed power (P_{abs}) and reduction of the maximum external air temperature in chiller operating mode, depending on the aeraulic head losses that the fans will have to overcome.

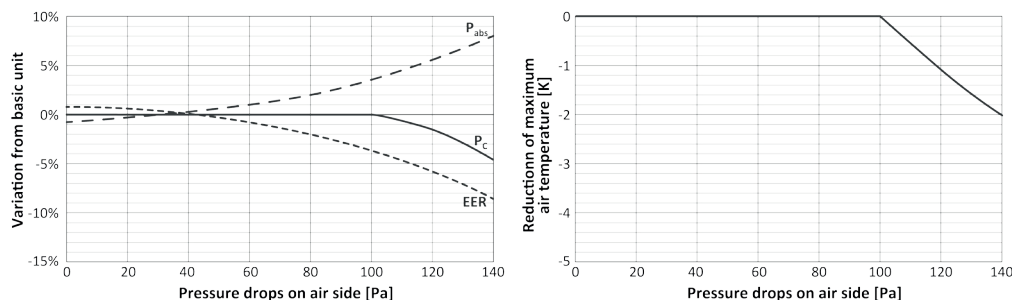
AC fans (Ø 800)



EC fans (Ø 800)



Oversize EC fans (Ø 800)



The indicated values are for the standard machine, without accessories, with AC fans and in any case in the absence of air recirculation.

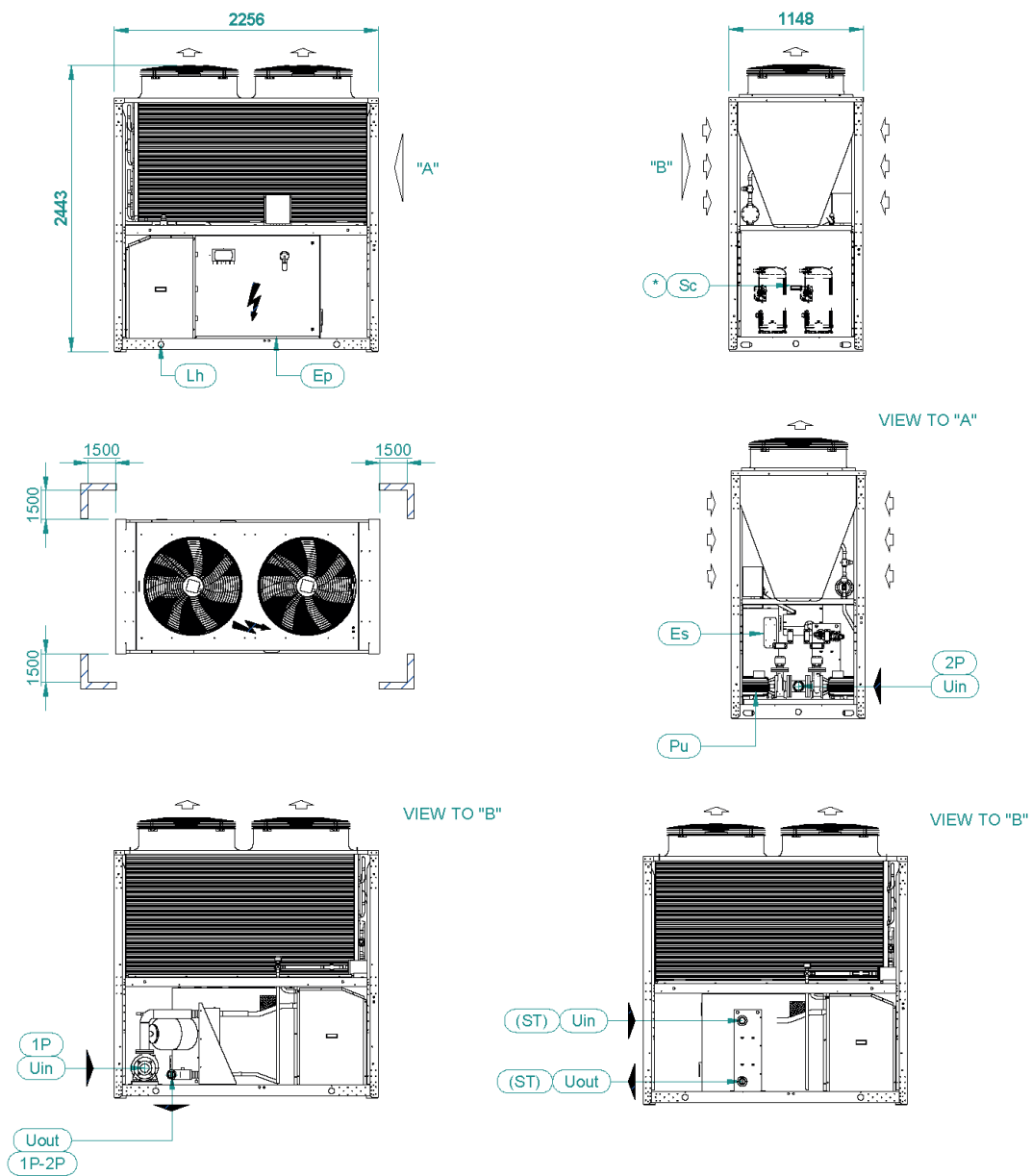
Example: supposing you expect there to be obstacles that will generate an estimated aeraulic head loss of 60Pa. In this case, there are 3 possibilities:

- use the unit with standard AC fans: compared to ideal conditions, the output power will be reduced by about 5.5%, the total absorbed power will increase by about 7.5%, the EER will be reduced by about 12.5% and the maximum allowed external air temperature for operation at 100% will be reduced by about 3.4K compared to the nominal limit
- use the unit with EC fans: compared to the unit with AC fans working in ideal conditions, the output power will be reduced by about 5%, the total absorbed power will increase by about 6.5%, the EER will be reduced by about 11.5% and the maximum allowed external air temperature for operation at 100% will be reduced by about 2.8K compared to the nominal limit
- use the unit with oversize EC fans: compared to the unit with AC fans working in ideal conditions, the output power of the unit will be unchanged, the total absorbed power will increase by about 1%, the EER will be reduced by about 2% and the maximum external air temperature will remain the one shown in the diagram of the operating limits.

DIMENSIONAL DIAGRAMS

TETRIS 2 10.2-16.2 (ST)-1P-2P

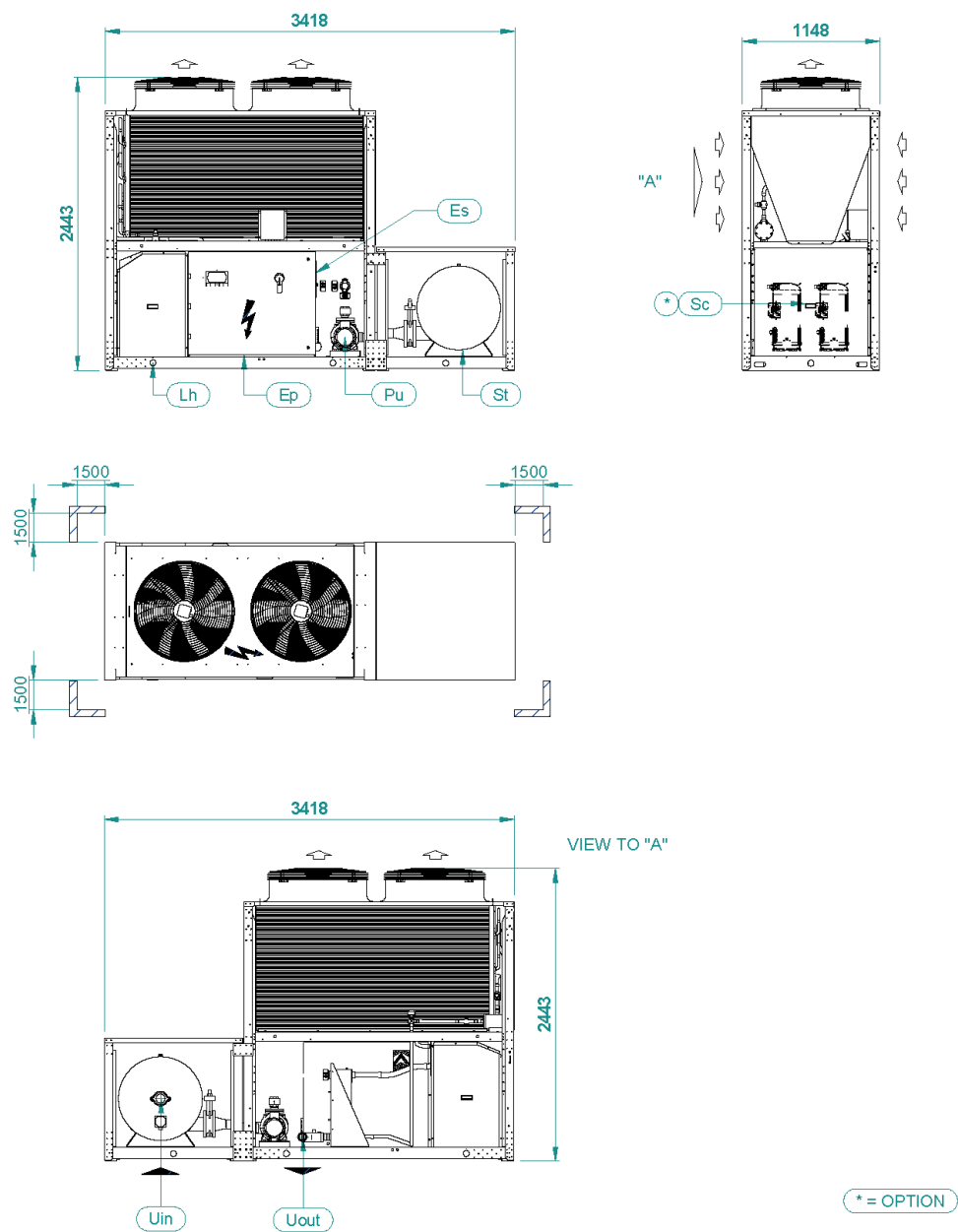
A4F849A



* = OPTION

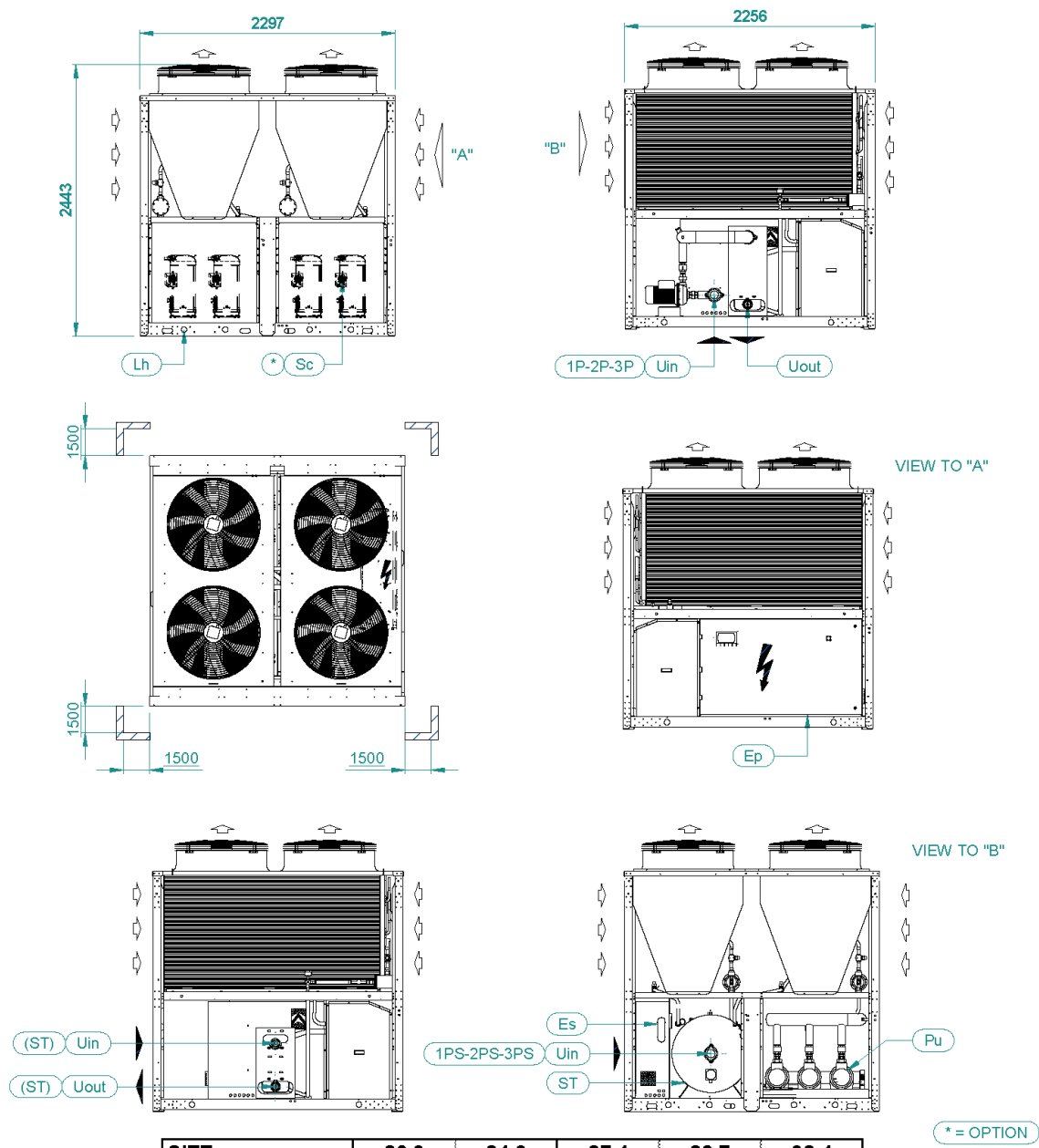
SIZE	10.2	12.2	13.2	15.2	16.2
Uin (ST)	G 2"M	G 2"M	G 2"M	G 2"M	G 2"M
Uin 1P	OD 60.3	G 2"1/2 F	G 2"1/2 F	G 2"1/2 F	G 2"1/2 F
Uin 2P	G 2"F	G 2"1/2 F	G 2"1/2 F	G 2"1/2 F	G 2"1/2 F
Uout	G 2"M	G 2"M	G 2"M	G 2"M	G 2"M
OD 60.3 grooved connection					

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



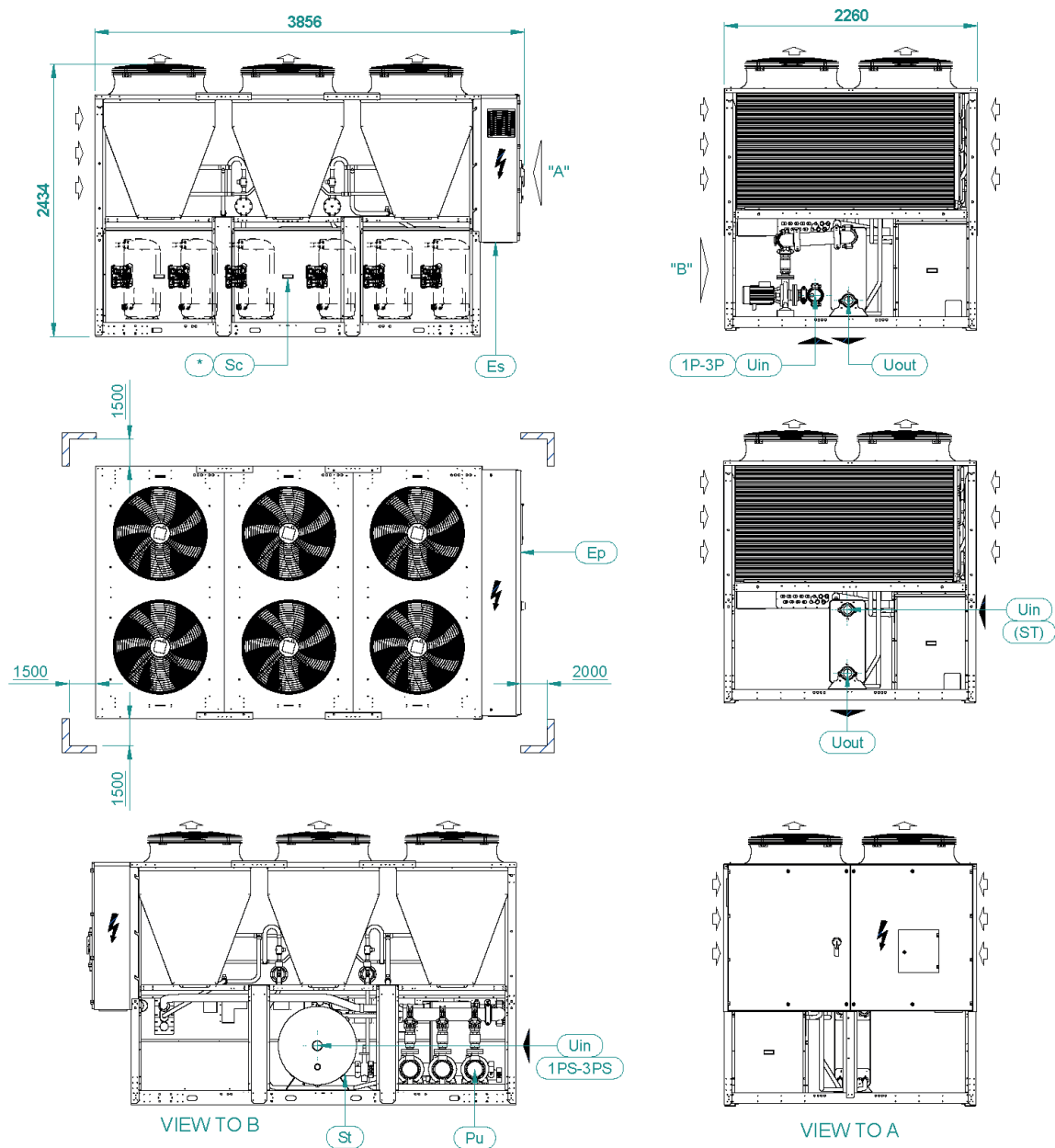
SIZE	10.2	12.2	13.2	15.2	16.2
Uin 1PS -2PS	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9
Uout	G 2"M	G 2"M	G 2"M	G 2"M	G 2"M
OD 88.9 grooved connection					

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



SIZE	20.3	24.3	27.4	29.7	32.4
Uin (ST)	G 2"M	G 2"M	OD 88.9	OD 88.9	OD 88.9
Uin 1P	OD 76.1	OD 76.1	OD 76.1	OD 76.1	OD 76.1
Uin 2P	OD 76.1	OD 76.1	-	-	-
Uin 3P	-	-	OD 114.3	OD 114.3	OD 114.3
Uin 1PS-2PS-3SP	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9
Uout	G 2"M	G 2"M	OD 88.9	OD 88.9	OD 88.9
OD 76.1, OD 88.9 and OD 114.3 are grooved connections					

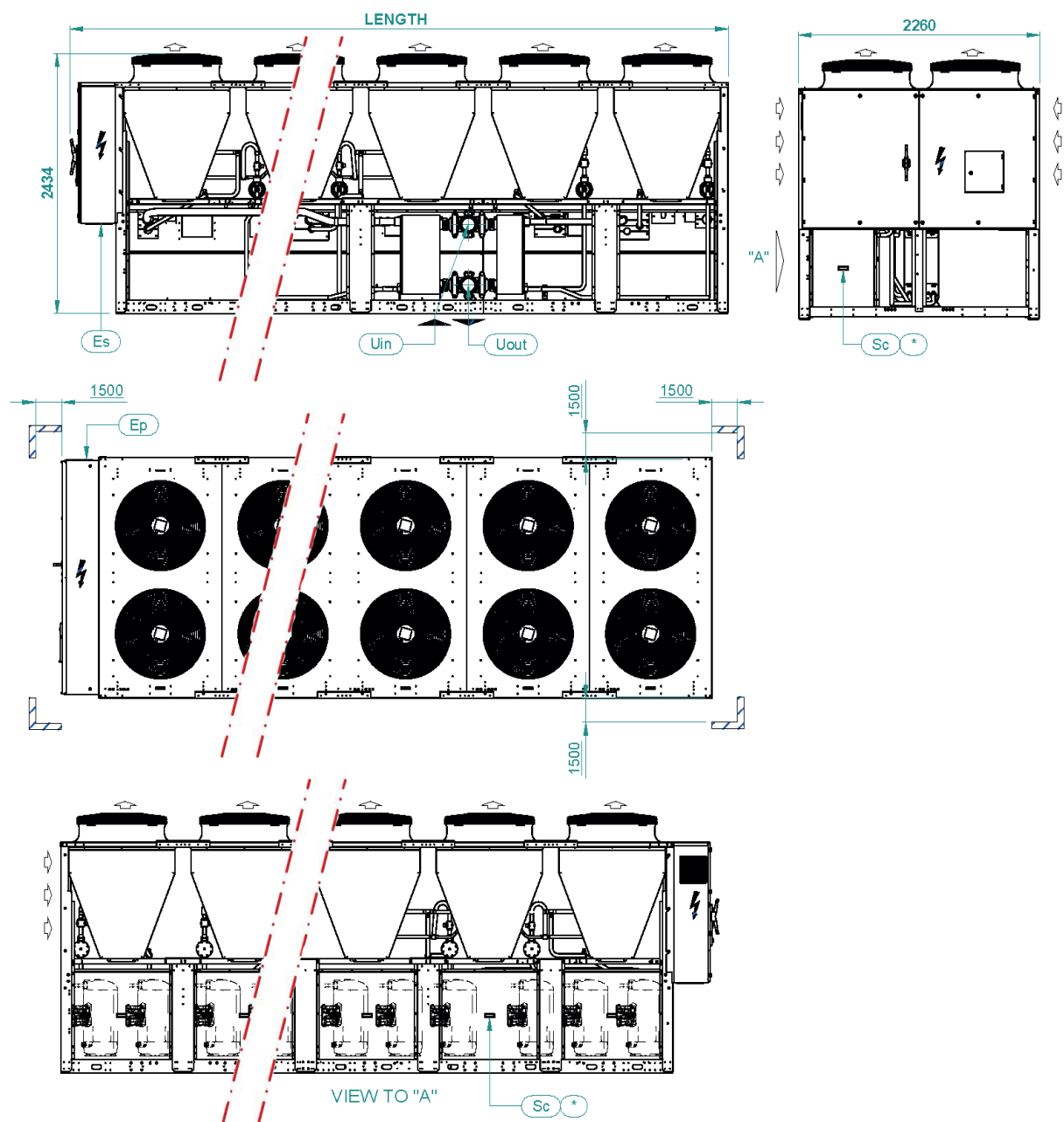
Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



SIZE	33.4	37.4	41.4	43.6	47.6
Uin (ST)	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9
Uin 1P	OD 76.1	OD 76.1	OD 88.9	OD 88.9	OD 88.9
Uin 3P	OD 114.3	OD 114.3	OD 114.3	OD 114.3	OD 114.3
Uin 1PS-3PS	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9
Uout	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9
OD 76.1, OD 88.9 and OD 114.3 are grooved connections					

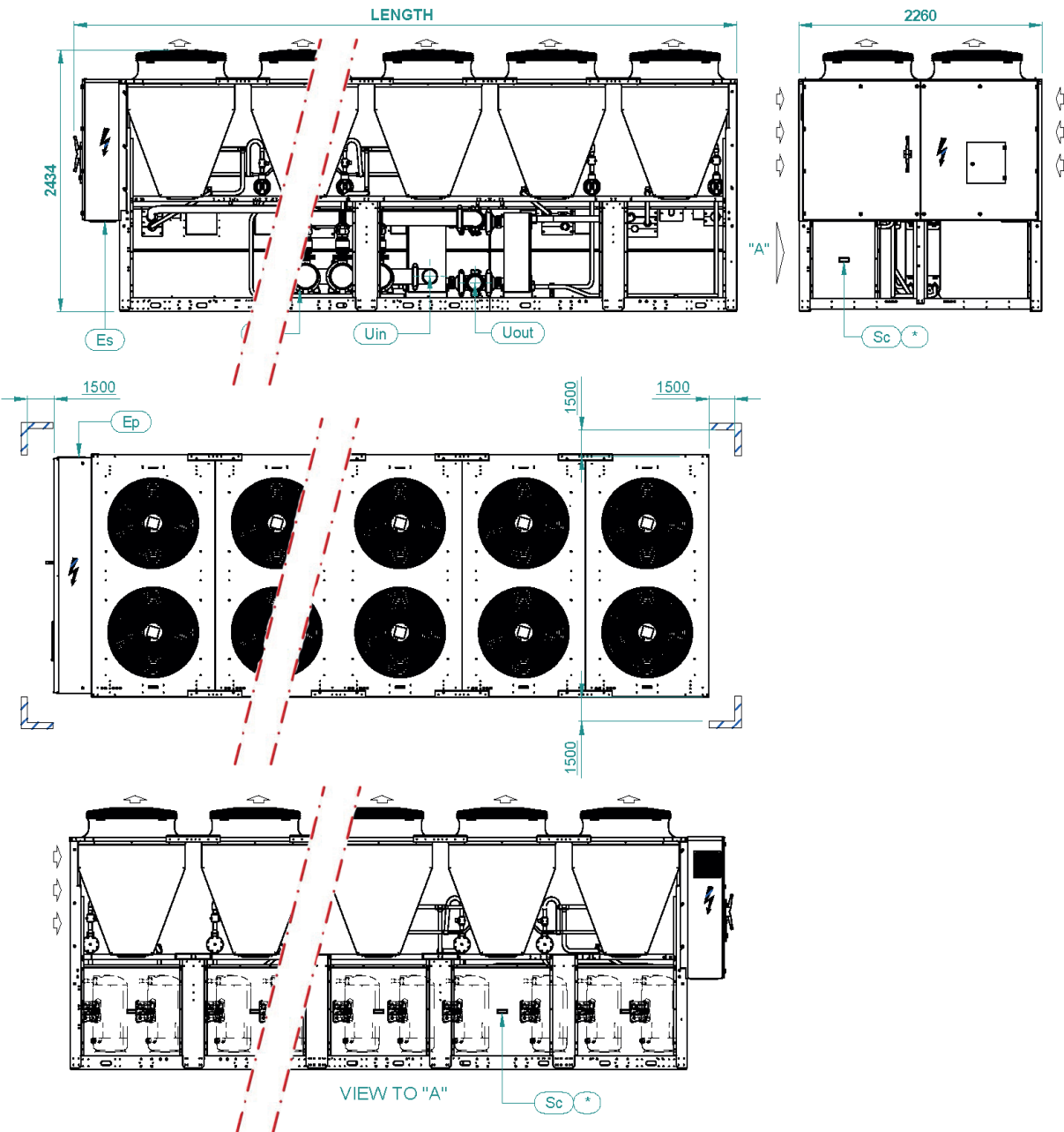
* = OPTION

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



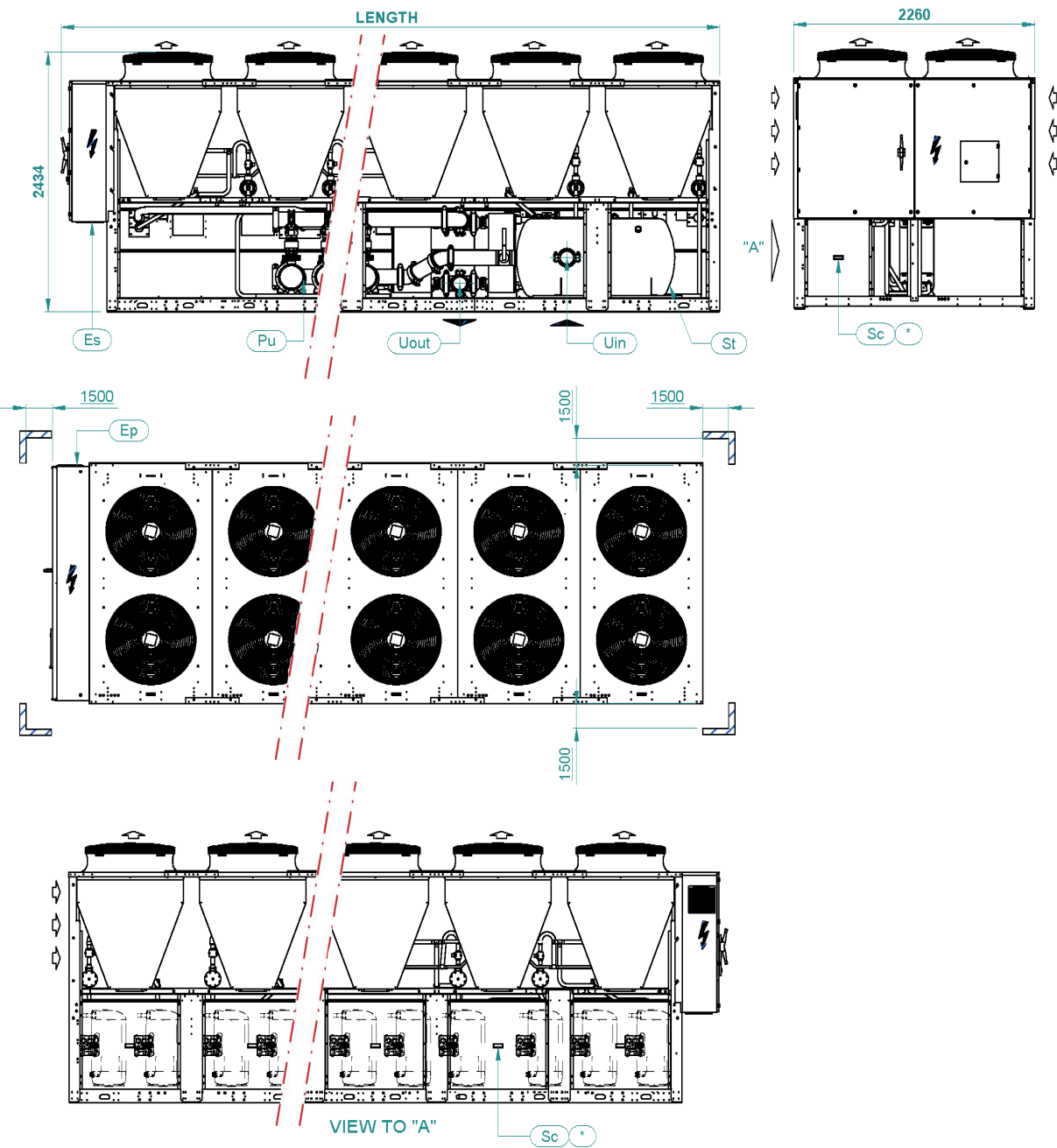
SIZE	50.7	53.8	58.8	62.8	67.9	70.9	74.10	78.10	80.12	87.12	93.12
LENGTH (mm)	5022	5022			6153		6153		7302		
Uin	OD 114.3	OD 114.3	OD 114.3	OD 114.3	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
Uout	OD 114.3	OD 114.3	OD 114.3	OD 114.3	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
OD 114.3 and OD 139.7 are grooved connections											

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



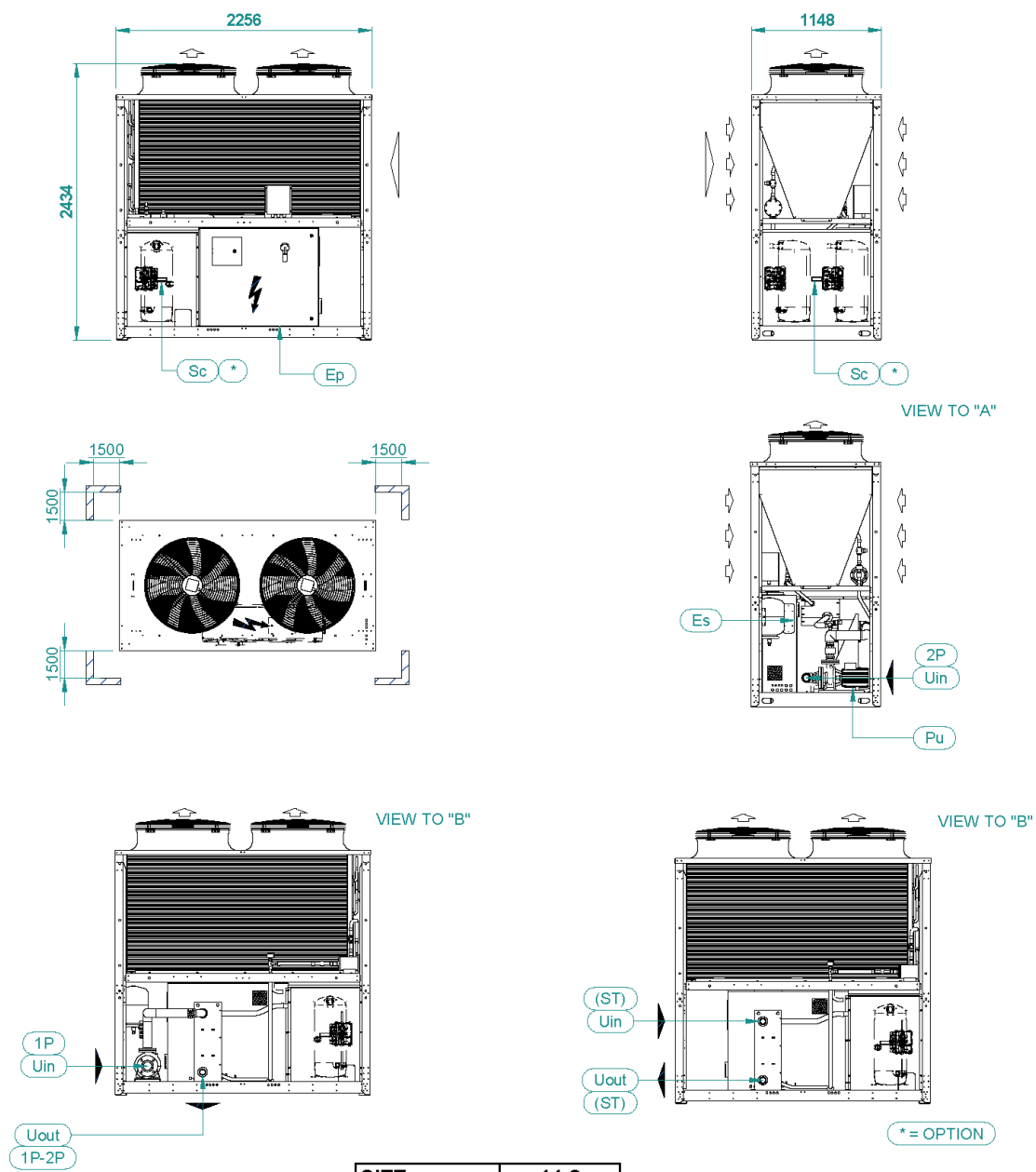
SIZE	50.7	53.8	58.8	62.8	67.9	70.9	74.10	78.10	80.12	87.12	93.12
LENGTH (mm)	5022	5022			6153		6153		7302		
Uin 1P	OD 114.3	OD 114.3	OD 114.3	OD 114.3	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
Uin 3P	OD 114.3	OD 114.3	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
Uout 1P-3P	OD 114.3	OD 114.3	OD 114.3	OD 114.3	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
OD 114.3 and OD 139.7 are grooved connections											

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



SIZE	50.7	53.8	58.8	62.8	67.9	70.9	74.10	78.10	80.12	87.12	93.12
LENGTH (mm)	5022	5022			6153		6153		7302		
Uin 1PS-3PS	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
Uout 1PS-3PS	OD 114.3	OD 114.3	OD 114.3	OD 114.3	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
OD 114.3 and OD 139.7 are grooved connections											

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.

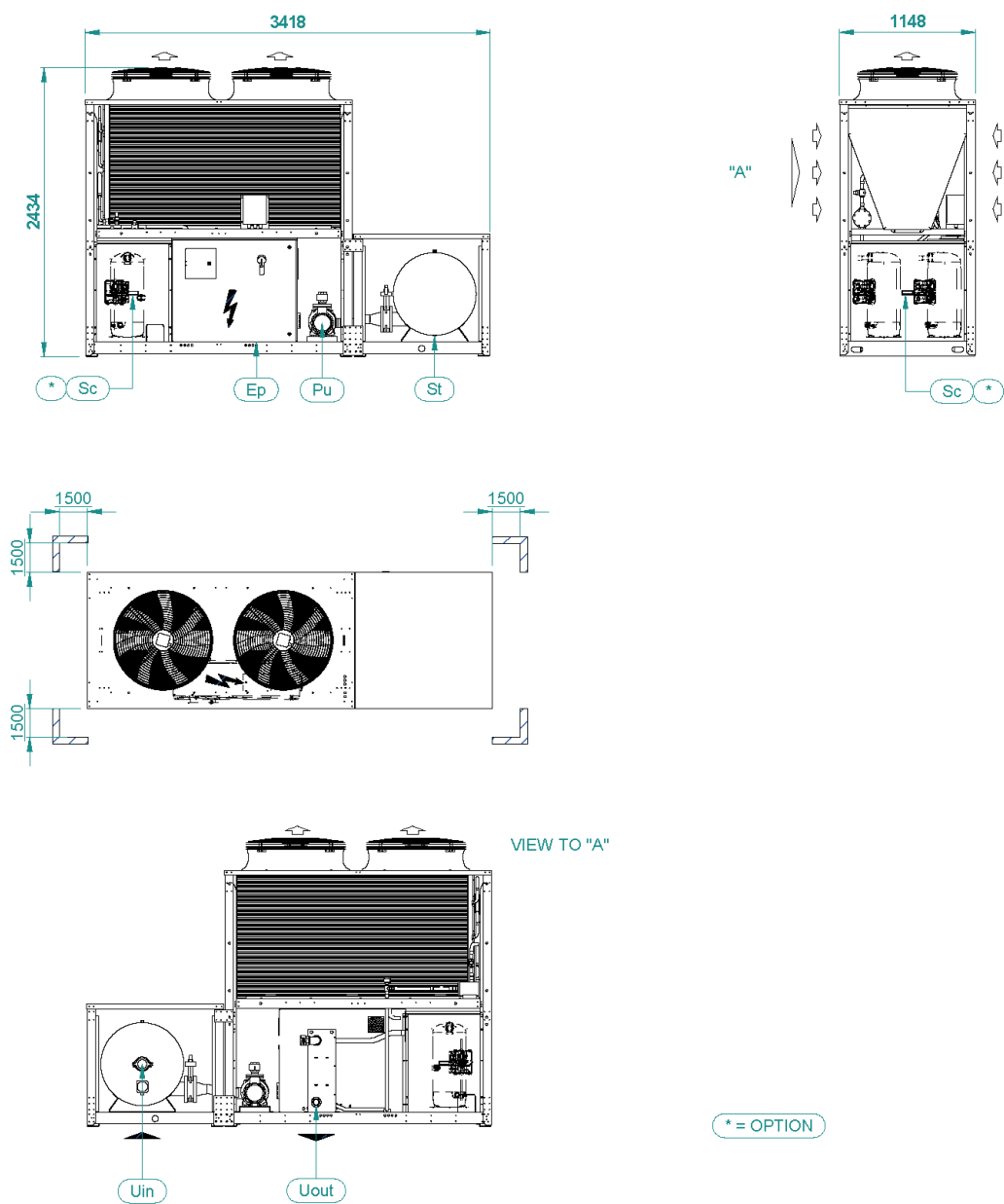


SIZE	11.2
Uin (ST)	G 2"M
Uin 1P	G 2"1/2 F
Uin 2P	G 2"F
Uout	G 2"M

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.

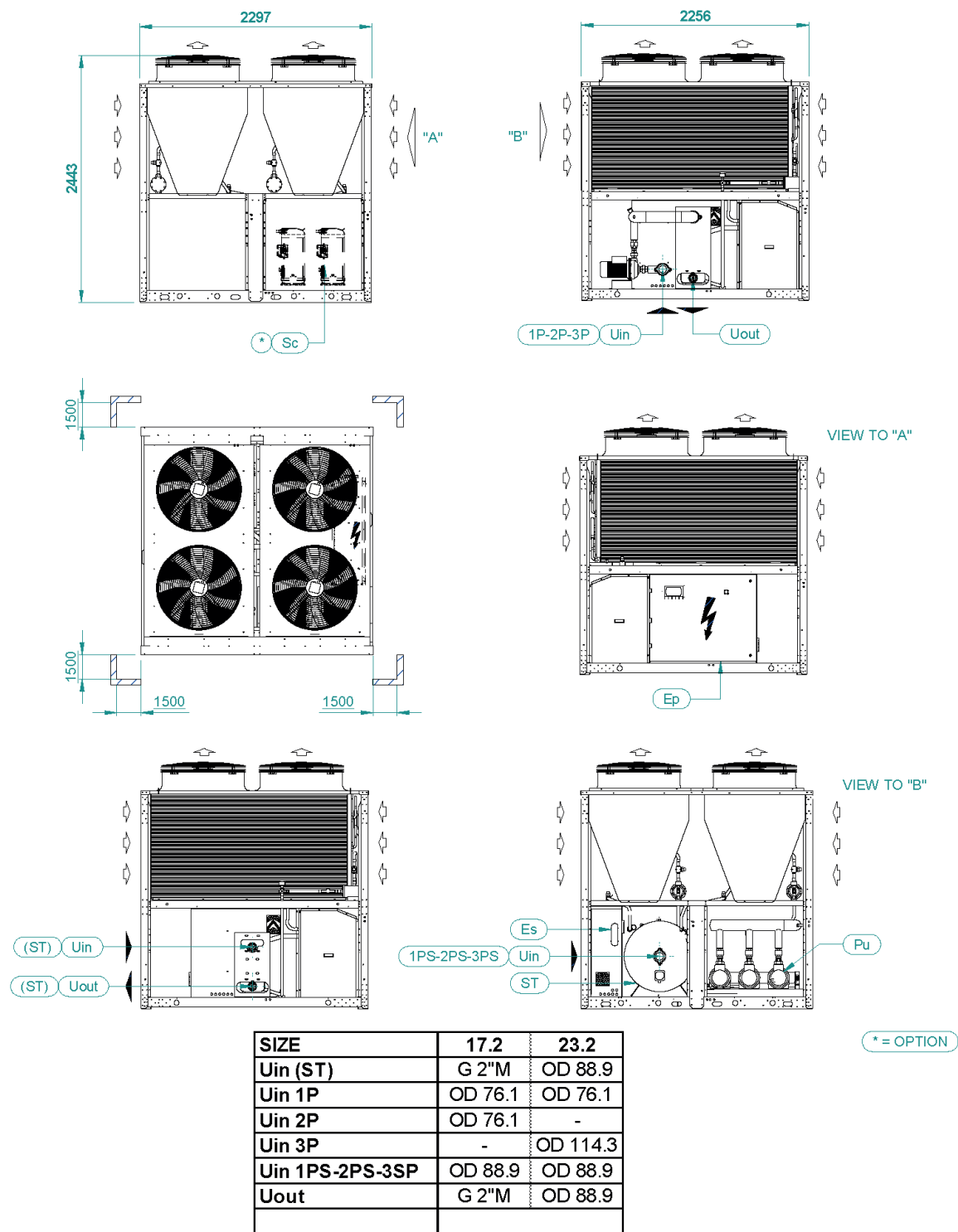
TETRIS 2 A / TETRIS 2 SLN 11.2 1PS-2PS

A4F861A



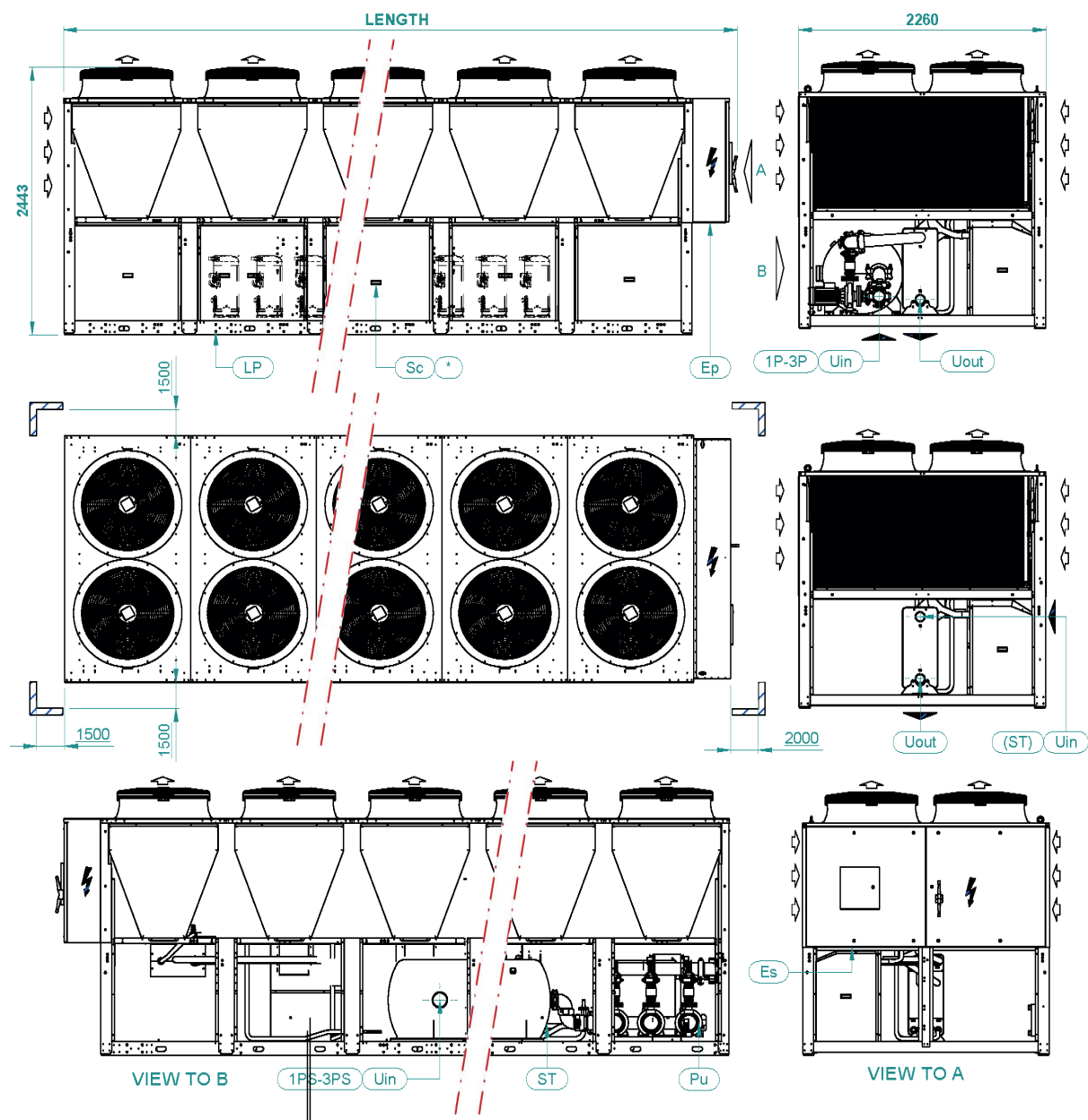
Uin	OD 88.9
Uout	OD 60.3
WEIGHT	TBD

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



OD 76.1, OD 88.9 and OD 114.3 are grooved connections

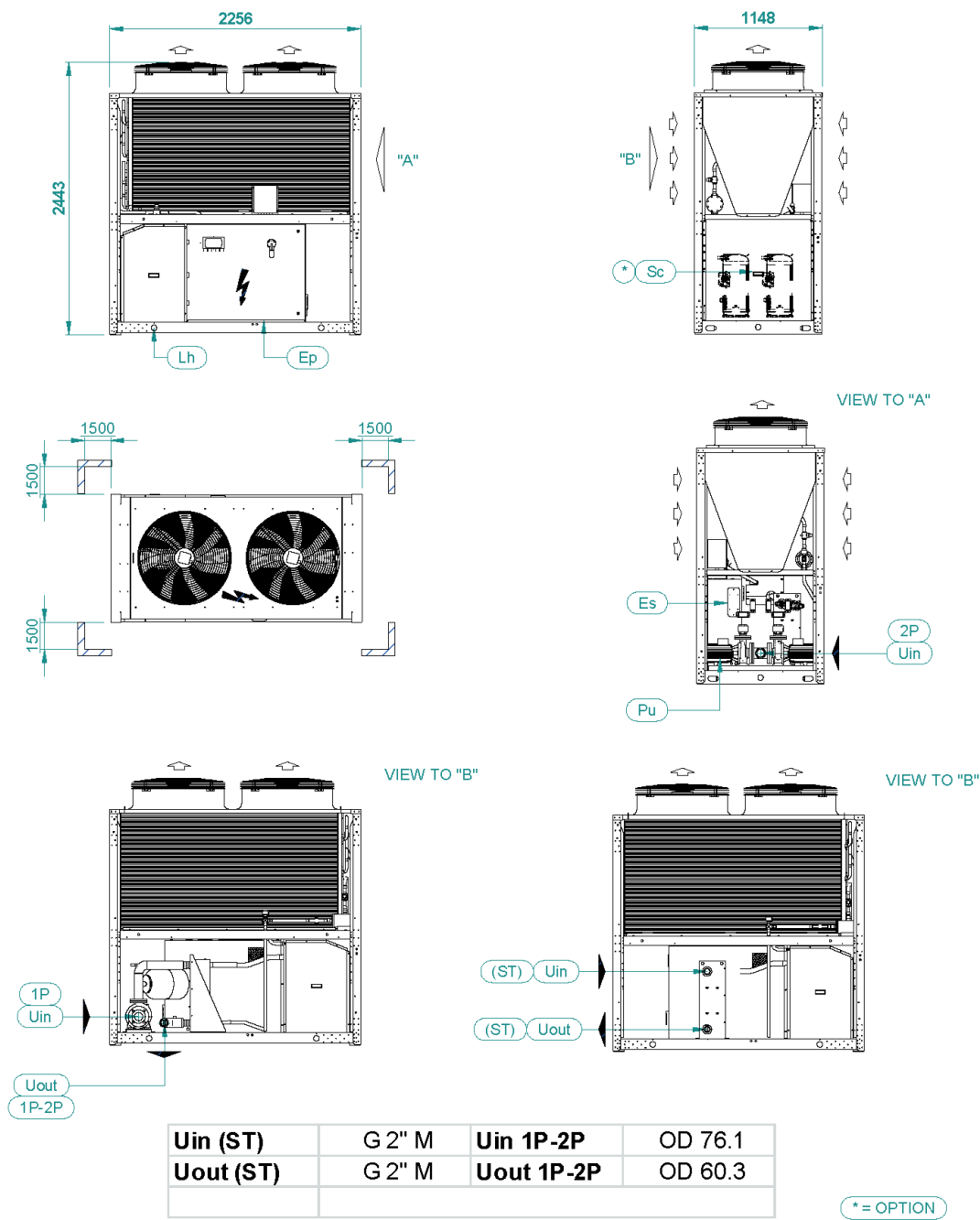
Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



* OPTIONS

SIZE	28.4	34.4	38.4	43.4	47.4	50.6	57.6	64.6	70.6
LENGTH (mm)	3856	3856	3856	5022	5022	6153	6153	7302	7302
Uin (ST)	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 114.3	OD 114.3	OD 114.3	OD 114.3
Uin 1P-3P	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 114.3	OD 114.3	OD 114.3	OD 114.3
Uin 1PS-3PS	OD 88.9	OD 88.9	OD 88.9	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
Uout	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 114.3	OD 114.3	OD 114.3	OD 114.3
OD 88.9, OD 114.3 and OD 139.7 are grooved connections									

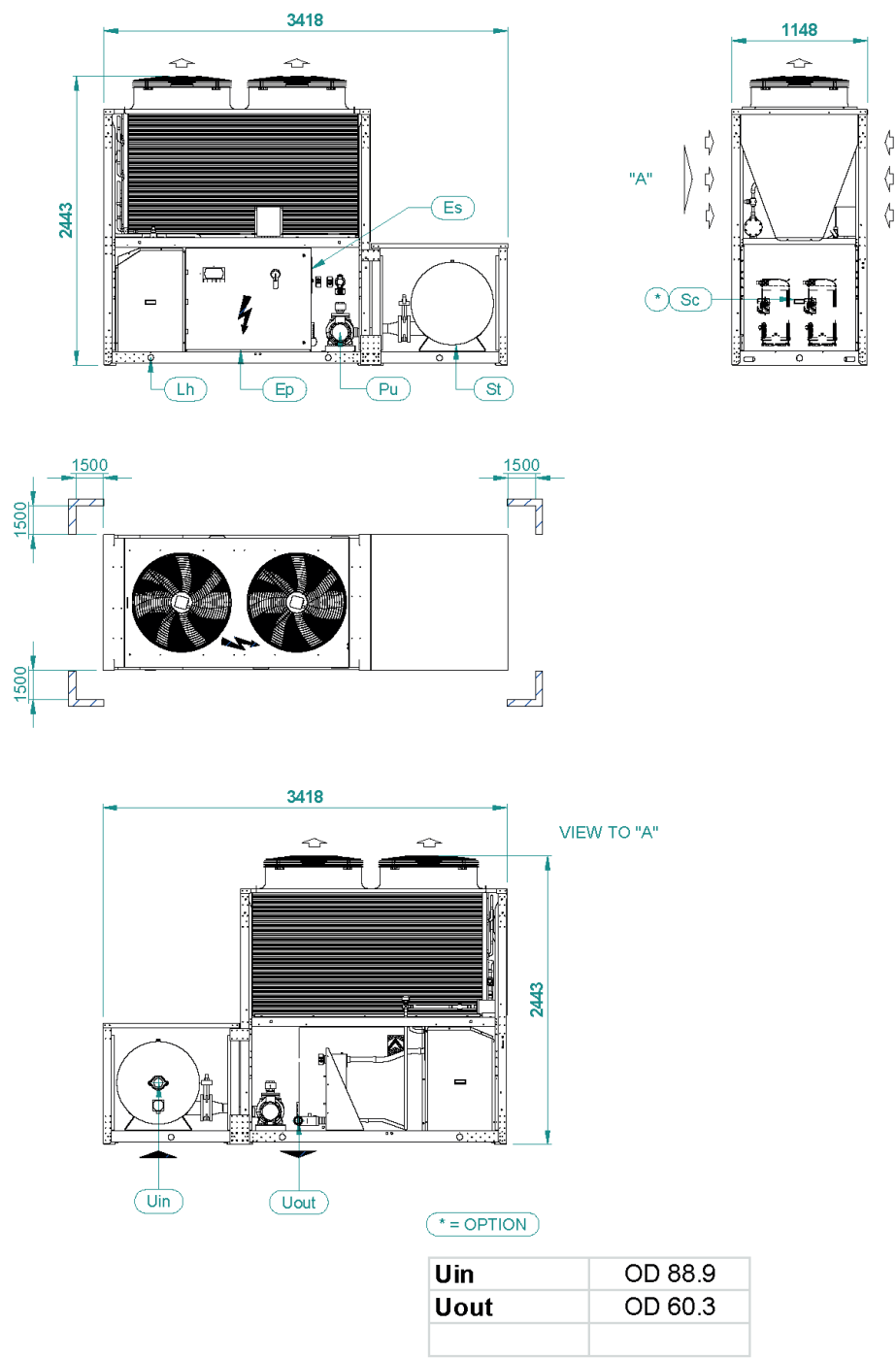
Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.

TETRIS 2 A+ / TETRIS 2 A SLN 8.2 1PS-2PS

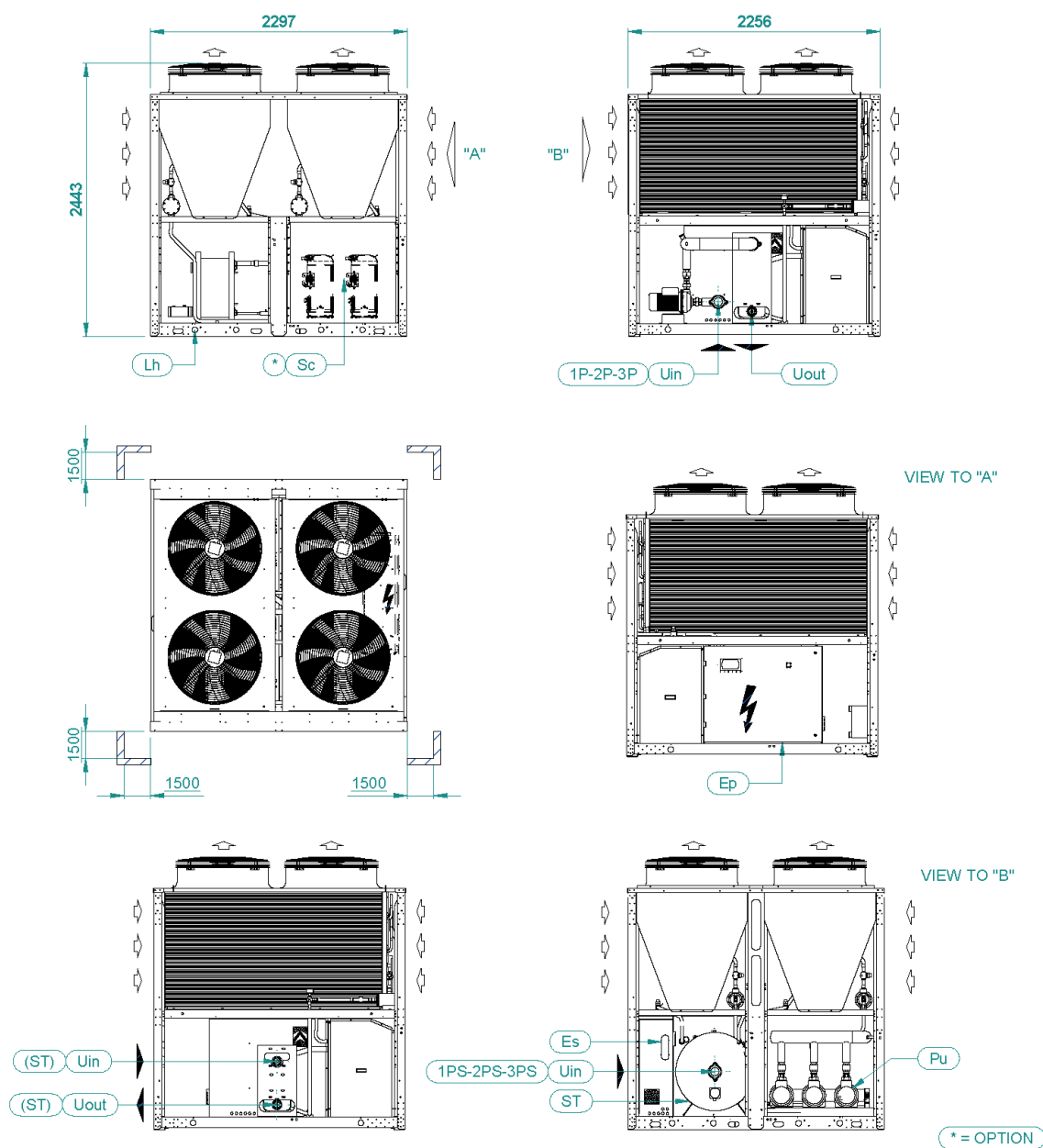
A4F174A



Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.

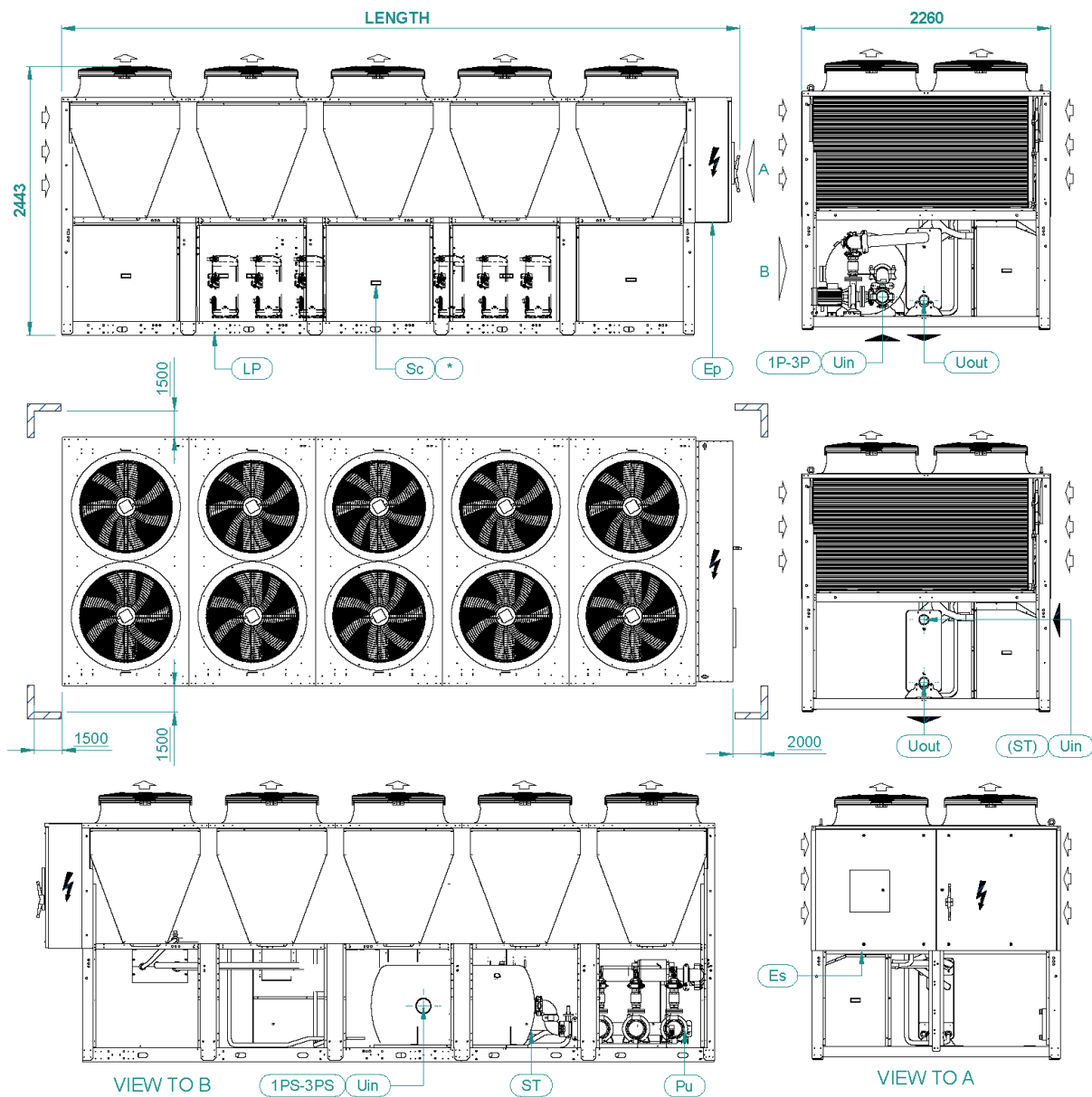
TETRIS 2 A+ / TETRIS 2 A SLN 13.3-18.4

A4F175B



SIZE	Uin (ST)	Uin 1P-2P	Uin 1PS-2PS	Uout
13.3	G 2" M	OD 76.1	OD 88.9	G 2" M
	Uin (ST)	Uin 1P-3P	Uin 1PS-3PS	Uout
18.4	OD 88.9	OD 76.1	OD 88.9	OD 88.9
	OD 76.1 and OD 88.9 ARE Grooved Connections			

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.



SIZE	23.5	27.6	31.4	36.4	41.5	44.6	49.6	54.6
LENGTH (mm)	3856	3856	5022	5022	6153	6153	7302	7302
Uin (ST)	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 114.3	OD 114.3	OD 114.3	OD 114.3
Uin 1P-3P	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 114.3	OD 114.3	OD 114.3	OD 114.3
Uin 1PS-3PS	OD 88.9	OD 88.9	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7	OD 139.7
Uout	OD 88.9	OD 88.9	OD 88.9	OD 88.9	OD 114.3	OD 114.3	OD 114.3	OD 114.3

Note: These drawings are not contractually binding. For the installation design, refer to the specific dimensional drawing available on request.

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