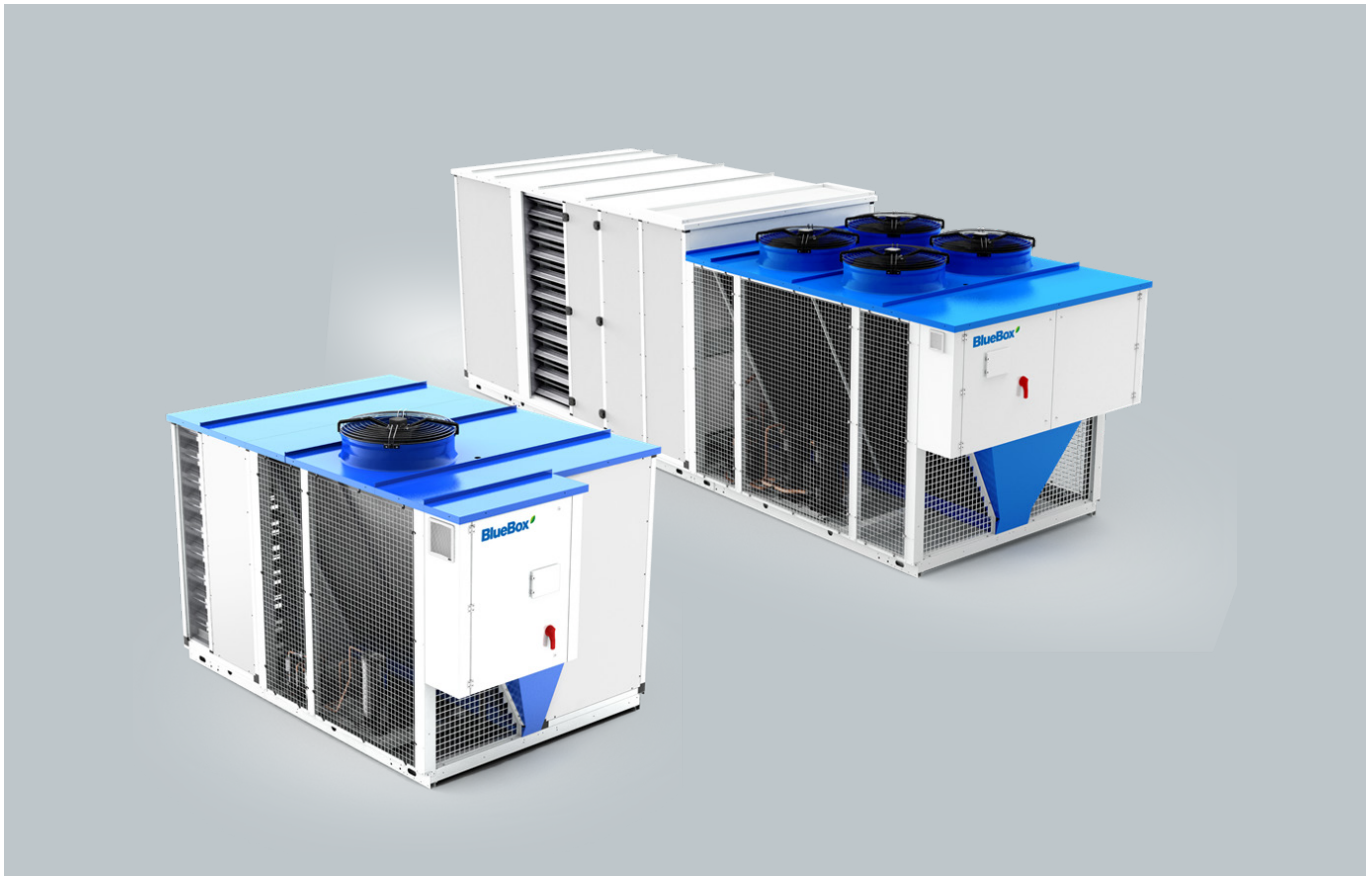
LAMBDA SKY

20÷300 kW



General
Lambda Sky combines a State of the Art Refrigeration module for Cooling & Heating together with proper Air handling unit module for circulating & mixing fresh air and ambient air.

Configurations
Hi R7: Packaged Roof Top air conditioner with inverter compressors and R32 refrigerant.

Hi HP R7: Packaged Roof Top air conditioner with inverter compressors, R32 refrigerant in reversible heat pump version.

R7: Packaged Roof Top air conditioner with R32 refrigerant.

R7: Packaged Roof Top air conditioner with R32 refrigerant in reversible heat pump version.

Strengths
- Precursor: the first which join variable capacity with inverter and low GWP refrigerant
- Careful: the air not needed has not to be treated Possibility to work with variable airflow to maximize the energy saving
- Adaptable: available with 5 configurations and many other accessories to adapt to any application
- Active: active thermodynamic heat recovery, always present on 3 dampers units; it reduces consumption of the fresh are needed

WESTERN™
AIRCONDITIONING
WARMTEPOMPEN

LAMBDA SKY

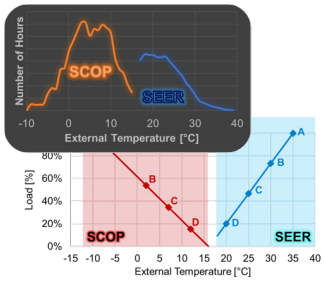
Fully packaged air to air cooling only air conditioner or heat pump with scroll compressors in "Roof-Top" design available as with multi-scroll and/or with inverter compressors.

The Lambda SKY range offers an ideal solution to optimize the indoor climate with a specific emphasis on an environmentally friendly R32 GWP (675) refrigerant, synonymous with a more sustainable solution. It offers an efficient plug & play solution for cooling, heating and fresh air management for medium and large buildings.

Lambda SKY range is available in capacity sizes ranging from 25 to 300 kW; the units from 25 to 120 kW are available both with inverter and alternatively with 2 circuits and 4 compressors in tandem. Above 120 kW all sizes are with 2 circuits and 4 tandem compressors.

Lambda SKY range is available in 5 versions (Base, FC2S, FC3S and with cross-flow heat recovery up to 50% or 100% of recovery capacity).

Lambda SKY in addition to a refrigerant with a reduced environmental impact, compressors that allow maximum efficiency at partial loads also offers the possibility, thanks to the standard EC fans on the user side, to modulate the air flow according to the load. If you apply all this to the representative profiles of the application and the load (the profiles that define SEER and SCOP), you immediately realize how much the Lambda SKY optimize their operation in most of the annual working period.

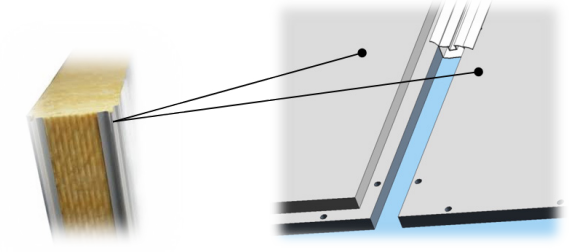


STRUCTURE

Base, cover (of the air treatment part) and frame: made of very thick galvanized sheet, painted with epoxy polyester powders in RAL 7035 color. Cover of the source part and cable cover casing under the electrical panel RAL 5017.

Paneling: made with 25mm thick sandwich panels consisting of a 0.5mm thick galvanized sheet metal casing pre-painted externally which encloses a polyurethane foam pad which guarantees the thermal and acoustic insulation of the unit. The surface of the panels in contact with the treated air is made of galvanized sheet-iron to facilitate cleaning and sanitizing operations.

The insulating material used has a very low thermal conductivity (0.02293 mW / mK).



The non-removable panels are fixed to the body with screws contained in nylon bushes with plug.

The removable panels are tied to the structure by means of nylon hinges which can also act as practical handles for easy opening or complete removal of the panels themselves.

REFRIGERANT

Lambda SKY models are available with R32 refrigerant.

Acronym "R7" indicates the need to use refrigerant R32 and it shows that the refrigerant has a GWP level below 700.

Refrigerant R32 (GWP=677*)

The refrigerant consists in pure gas.

R32 is classified as a Group 1 fluid under PED.

It is also classified as A2L under the ASHRAE Standard 34, i.e.

- non-toxic;
- mildly flammable.

(*) GWP (AR5), pursuant to IPCC V, evaluated over a span of 100 years.

EXTERNAL SOURCE SECTION

COMPRESSORS

The compressors are hermetic scrolls connected in tandem, in one or two circuits. They are equipped with thermal protection via internal Klixon® or external Kriwan © module (depending on the model) and an oil equalization line. All the compressors are fitted as standard with crankcase heater. The compressors are mounted on rubber anti-vibration mounts in the source section, therefore far from the user air flow; maintenance operations can therefore be carried out in total safety even with the unit running. The compressors can be installed without any risk with a hood, that allows to reduce noise emissions (accessory on request), as they comply with the requirements of the most stringent regulations on the use of A2L refrigerants.

BRUSHLESS DC COMPRESSORS

Depending on the model, there are the following compressor configurations:

models with just one compressor (x.1) use a single modulating compressor

models with two compressors (x.2) use one modulating compressor connected in tandem with one ON/OFF compressor

The modulating compressors are hermetic scroll compressors with permanent-magnet brushless motor and are fitted with oil level sight glass.

The speed of rotation of the compressor is variable in the range 1.800÷6.300 rpm.

The modulating compressors are controlled through DC inverter. This also has the following functions:

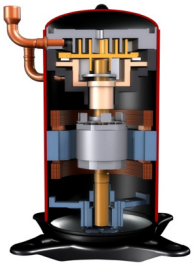
- management of acceleration and deceleration ramps
- management of the operating envelope of the modulating compressor
- management of the alarms and safety devices of the modulating compressor

The use of a modulating compressor allows the total inrush current to be reduced because it is always started with an acceleration ramp. For models with two compressors, the ON / OFF compressors will always start with the modulating compressor running at reduced speed, in order to reduce the unit starting current to the minimum.

For units with two compressors, there is also an oil equalization line.

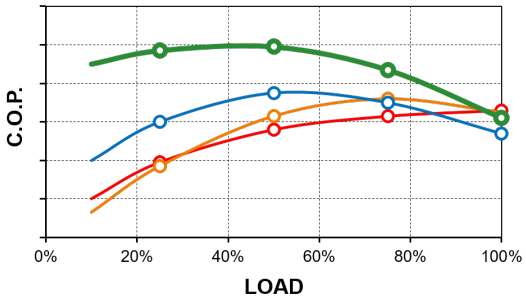
The compressor motor control driver is provided with integral electronic protection against overtemperature, overcurrent, over or under-voltage with absence of one or more phases.

The electronic control of the inverter is provided with automatic soft-start system and continuous control of the compressor curve to prevent and correct its use beyond the maximum allowed limits.



The brushless DC motor is inherently more efficient than an AC motor and it is designed to allow for speed regulation.

Below is a graph showing the efficiency trends of various compressor technologies according to the varying modulation capability. Brushless DC compressors appear to be the most efficient ones in the largest part of the work range.



- Green curve: Inverter-controlled brushless DC compressor
- Blue curve: Inverter AC compressor
- Orange curve: Digital scroll compressor
- Red curve: Scroll compressor On/Off

Besides higher efficiency at partial loads, the use of a brushless DC compressor offers a significant set of additional advantages:

- possibility to follow the thermal load demand quickly and constantly;
- Possibility of controlling the delivery to the user instead of working on the conditioning of the whole room;
- reduced inefficiencies linked to the thermal inertia effect;
- possibility to control the temperature more accurately and punctually.

REFRIGERANT CIRCUIT

The whole refrigeration circuit is installed externally to avoid any potentially flammable area and the components have been specifically chosen for the use of A2L refrigerants.

The standard circuit includes:

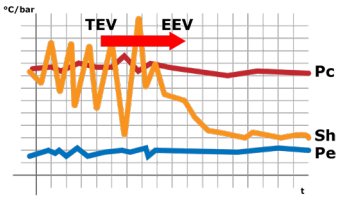
- electronic expansion valve (with its own temperature probe);
- shut off valve on the liquid line;
- shut off valve on the suction line (only on sizes where circuit pressing is required);
- 4-way reversing valve (HP version only);
- liquid receiver and safety valve (standard on the HP version, on request on the CO version);
- 5/16 ”service charge ports on the high and low pressure sides;
- 5/16 ”service charge ports on the liquid line;
- soldering filter;
- sight-glass;
- high pressure switch with manual reset;
- high pressure transducer with automatic reset;
- low pressure transducer with automatic reset;
- temperature probes to control the delivery of the compressors;

ELECTRONIC EXPANSION VALVE

Lambda SKY are supplied as standard with electronic thermostatic valve, the use of this component involves a series of advantages such as:

- quick and precise adjustment of the refrigerant flow;
- faster achievement of unit stability;
- constant preservation of the superheating value under variable thermal load conditions;
- efficient compressor work conditions, especially with low external temperatures;
- large working field with consequent extension of the operating limits of the unit.

These features contribute to increasing the unit performance and to achieving very significant energy saving results every year (e.g. in continental European climates yearly consumption may be reduced up to max. 12%).



The graph above illustrates the improvement achieved in the controller and in the superheating value (Sh), in parallel with the performance of the evaporation (Pe) and condensing (Pc) pressures, in cases where an electronic valve (E2V) is used.

DEFROST MANAGEMENT (only for HP units)

To manage the defrost, the unit control uses a sliding intervention threshold according to the pressure inside the unit and the temperature of the external air. By combining this information, the control is able to identify the presence of ice on the coil by activating the defrosting sequence only when necessary, in order 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 defrosting cycle is completely automatic: in the initial phase a defrosting is carried out by cycle inversion with the fans off. Once a sufficient level of frost melting on the coil has been reached, the unit resumes operation in heat pump mode.

SOURCE SIDE HEAT EXCHANGERS

Consisting of finned coils with copper pipes and aluminum fins. The specific geometry and an accurate sizing favor the thermal exchange performances and the charge reduction.

In the HP version, particular attention has been given to the choice of the fin spacing which has been optimized to reduce the frost formation and allow a rapid flow of condensate during the defrosting phases.

Options are available for installation in environments with a particularly aggressive atmosphere or in coastal or highly industrialized areas. See section: "Description of accessories".

SOURCE SIDE FANS

The fans are axial type directly coupled to a 6-pole electric motor, with integrated thermal protection (Klixon®) and IP 54 protection degree.

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

The control manages the speed of the fans through a phase cutting speed adjuster, in order to optimize the operating conditions and efficiency of the unit.

The fan speed regulator is supplied standardly.

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 (option), the same function is carried out using the electronically commutated motor of the fans.

All the fans used in the units already comply with the new restrictions dictated by the third phase of the European Regulation no. 327/2011.

AIR TREATEMENT SECTION

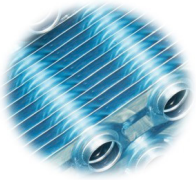
USER SIDE HEAT EXCHANGER

Finned coil with copper pipes and corrugated aluminum fins with hydrophilic treatment to better manage the condensate formation.

All coil surfaces have maximized surface area to ensure:

- the efficiency of heat exchange with consequent reduction in the compressors' consumption;
- minimum air side pressure drops with consequent reduction of internal fans' consumption;
- limited air speed on the coil: this avoids dragging drops of condensate from it;

At the bottom of the coil a condensate drain pan is installed; it's made off stainless steel and completed with connection for drainage.



FANS ON AIR TREATEMENT SIDE

The treatment fans are radial type with backward curved blades, without auger.

This technology allows:

- air direction high configurability;
- eliminate the weak points of the belt-pulley transmission system such as loss of engine power, constant maintenance and little flexibility with respect to variations in the characteristics of the system;
- vibrations minimization and quicker installation times thanks to the metal plates and strong supports.

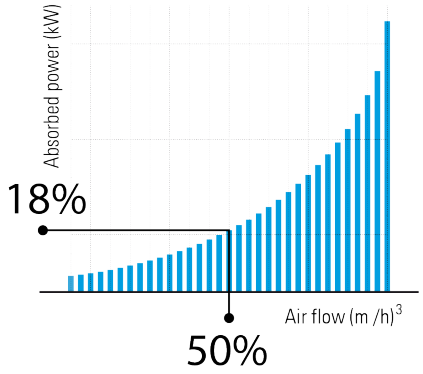
Standard fans' blade fans is made of composite material with a studied profile that guarantees high aeraulic and acoustic performance. To meet the most demanding regulations in some European countries, fans with aluminum blades are also available on request. (see Plug Fan Accessories section)

Fans are fitted with brushless, electronically commutated (EC) motors and they offer a number of advantages.

- greater efficiency at full load if compared with the corresponding AC model;
- Cosfi value close to 1;
- built-in soft starter;
- user-friendly adjustment - the 0-10V control signal enables monitoring the motor speed electronically with continuous regulation via the microprocessor onboard the unit so as to implement various control strategies (constant flow, constant pressure, based on thermal load, etc.).
- The motors are provided with integrated electronic protection against overtemperature, overcurrent, over or under-voltage with absence of one or more phases.

The strategic advantage of EC fans is the cubic ratio between speed and absorption. In other words, the consumption of a fan running at 70% is 50%, it is 18% when running at 50%, etc.

This brings about a potential saving that is exponential to partial loads. Hence, the need exists to modulate the fan efficiently and continuously using the correct algorithm required by the application.



Lambda SKY together with EC fans offer automatic air flow control as standard, either by maintaining a constant flow rate as the site conditions change (progressive fouling) or even better by allowing the flow rate to be modulated according to the required comfort conditions.

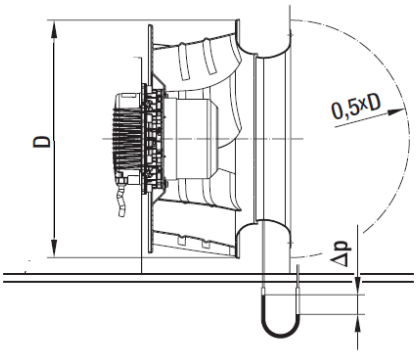
This solutions enables making the most out of the advantage in efficiency offered by EC fans at partial loads. The unit will modulate the fans according to the room load (distance from the temperature setpoint to be checked). It will also adapt to any aeraulic variations on site thanks to the back action on the air flow rate.

With the algorithm the exact amount of air required by the application is available at all times thanks to the constant measurement performed by a differential pressure transducer. The unit keeps the air at the reference value using a PID back action control algorithm which changes the fan speed whenever the external conditions change.

Please find a simplified list of the implied steps below:

- load change;
- change of controlled temperature;
- calculation of fan speed and of expected air flow rate;
- feedback of flow rate actually measured based on the site conditions (on-site losses, progressive filter fouling, etc.);
- new fan speed.

The Bernouilli's principle is the physical principle referenced to measure the air flow rate: the fan intake nozzle, which may be compared to a bottleneck, causes a pressure reduction which is affected by the geometrical features of the nozzle and of the air flow rate.



The simplified formula which summarises the link between the air flow rate and the pressure difference inside and outside the nozzle is as follows:

$$\dot{V} = k \times \sqrt{\Delta P}$$

V = air flow rate in m3/h

k = geometrical constant of nozzle

ΔP = pressure difference in Pa

If the unit is equipped with a pressure control option, this control replaces the pressure control described above, as it is no longer usable.

Lambda SKY units offer multiple user fans' solutions (Standard, Oversized, Ultra Oversized Fans) in order to better match the fan part of the unit to the specific site aeraulic needs. Solutions with fans with metal blades are also available as accessories to meet specific local regulations.

AIR FILTERS

All the units have a filtering section that precedes the treatment coil and therefore works on the entire flow of treated air with the same efficiency.

ISO ePM10 50%: alternative to the standard a 98mm thick corrugated filter with galvanized sheet metal frame with ISO ePM10 50% filtration degree (according to ISO 16890-3; M5 according to EN 779). The filter media is made of synthetic matting, which is regeneratable and self-extinguishing.

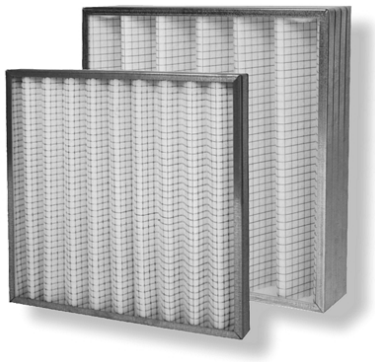
There are other filter grades based on the type of pollutant to be removed:

ISO ePM10 50%: plate filter alternative to standard one with 98mm width, structure made off galvanized steel and filtering material ISO ePM10 50% (according to ISO 16890-3; M5 accorinding to EN 779). The filter media is made of synthetic matting, which is regeneratable and self-extinguishing.

ISO ePM2.5 50%: 300mm thick rigid pocket filter (in addition to the standard) in polyester with filter media in pleated glass fiber paper with constant calibrated spacing. ISO ePM2.5 50% (according to ISO 16890-3; M6 according to EN 779). ISO ePM2.5 50% filters are always preceded by ISO Coarse 75% filters to protect them.

ISO ePM1 50%: 300mm thick rigid pocket filter (in addition to the standard) in polyester with filtering media in pleated glass fiber paper with constant calibrated spacing. ISO ePM1 50% (according to ISO 16890-3; F7 according to EN 779). ISO ePM1 50% filters are always preceded by grade ISO Coarse 75% filters to protect them.

There is always a door or removable panel to make the filter maintenance and/or replacement/cleaning operations easier.



ELECTRICAL CONTROL PANEL

The panel comprises:

- unit main switch;
- phase sequence relais;
- inverter+harmonic filter (unit with inverter compressor);
- fan on electrical panel;
- fuses to protect the compressors;
- fuses to protect axial fans;
- fuses to protect the radial fans;
- fuses to protect the primary and secondary of the electrical transformer;
- compressor contactors;
- electronic board;
- unit display;
- clean contacts in terminal board for alarm and warning;
- terminals for remote on / off;
- terminals for remote cooling / heating working mode change;
- terminals for serial connection rs485;
- ethernet port.

BLUE THINK AIR

Blue Think Air is the software that contains the whole Swegon-Blue Box know-how and experience within Packaged Air Conditioners and Air Handling application. Blue Think Air is developed and continuously updated internally with a continuous improvement process.

Blue Think Air has been designed to ensure the best functionality of the single units as well as of systems of multiple machines, while ensuring the highest safety level.

Blue Think Air includes the following functions:

- control of return temperature;
- control of delivery temperature;
- delivery temperature restriction;
- control of either relative or absolute humidity in the return line (only applies to units with the necessary sensor and/or humidifier);
- multiple solutions for ventilation control;
- Multiple functions to adapt to the site needs with dedicated hourly flexibility (Boosted Fresh Air Function, Pre-Heating, Pre-Cooling, Silenced working mode, etc ...);
- Adaptive damper control;
- integrated control of brushless DC compressor, with constant optimisation of operation;
- Integrated condensation control;
- Advanced defrost solutions to reduce their frequency and duration;
- Maximum flexibility to decide the change between cooling and heating working mode (automatic on temperature, automatic on time band, from BMS, from Display, from clean contact);

- advanced alarm management: recording of 100 alarms in the memory, division of alarms into two categories (minor and serious alarms), smart automatic reset;
- auto restart after a voltage failure;
- function for quick restart (only if the Black Out Restart option has been selected);
- integrated clock for timer-controlled switch-on/off and setpoint variation according to time bands;
- password-protected levels of access to parameter setup pages, protection against undesired tampering or tampering by unauthorised/non qualified staff;
- multi language interface, which the operator can select in real time;
- management of multiple locally networked units (up to 32) for integrated and optimised operation (if the corresponding option has been selected).

Specific functionalities (e.g. Local Network, Air free cooling, Ventilation) and set-up solutions are illustrated in more in-depth details in the relevant sections.

The graphic interface was designed for immediate feedback on the operating condition as well as for easy and efficient access to the various functionalities.

The standard unit offers the following control system interfaces, which are always included and active:

- a Modbus RS485 serial port for reading and writing purposes;
- a RJ45 port for IP communication, including a reading and writing Modbus TCP/IP, available as standard.

Supervision via WEB is always available with the RJ45 port. When the machine IP address is queried via web browser from any computer connected to the same local network to which the units are linked, access can be gained to the unit web page (password-protected access).

This solution is especially convenient and efficient to view the machine status or to perform maintenance. The solution does not require any dedicated software or hardware and it gives access to a set of graphs which are launched to monitor the trends of the main operating parameters of the unit in real time (temperature, humidity, air flow rate, etc.).

USER SIDE AIRFLOW CONTROL

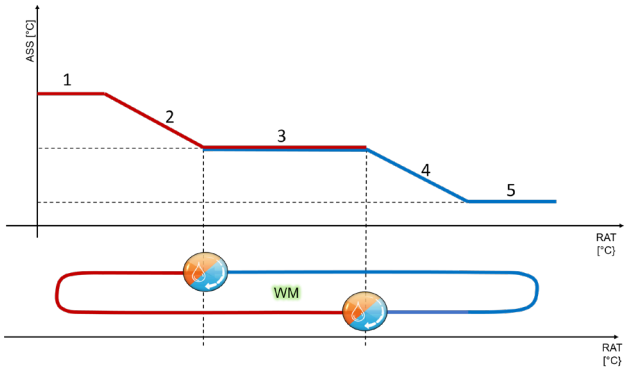
Blue Think Air offers multiple solutions to control user side airflow:

- Constant flow: The unit reacts automatically to any variations in the aeraulic losses, maintaining a constant flow rate in all cases. The unit varies its flow rate only for certain functions (for example, to make forced dehumidification more effective).
- Constant flow rate with 2 airflow settings: function similar to the previous one in which, however, if the cold / heat request is zero, the unit saves on the fans consumption by modulating them to the minimum, granting at the same time the air circulation on the application.
- Variable flow: solution to optimize consumption and exploit the cubic relationship between absorption and speed of the EC fans. The unit modulates the flow rate in proportion to the load.
- Constant pressure or delta pressure: solution (the specific accessory is needed) to keep the pressure constant in a given point of the aeraulic circuit.

Likewise, the exhaust fans can be controlled with the same flexibility. In fact, it is possible to set a flow rate identical to the delivery one, an additional dedicated pressure control or even a control in which the exhaust air flow is a percentage of the delivery one.

CASCADE CONTROL

Cascade control is a solution designed to optimize comfort and at the same time minimize consumption in middle seasons. The basic idea is that supplying air that is too hot or too cold during the middle seasons is both energetically disadvantageous and also a source of discomfort.



A simplified diagram representing this functionality is shown in the graphs above. RAT represents the return temperature from the environment.ASS instead it is the supply air setpoint. WM is the working mode

In zones 1 and 5 the unit works to provide the full capacity, as the load conditions are higher.

In zones 2 and 4, as the thermal load decreases, the unit progressively adapts its setpoint to the new working conditions.

Zone 3 is the one in which the unit supplies almost neutral air, thus managing the air renewals but optimizing its set point in the face of a very low load situation.

The unit therefore adapts its way of working according to the load conditions, maximizing the internal comfort conditions and at the same time minimizing energy consumption.

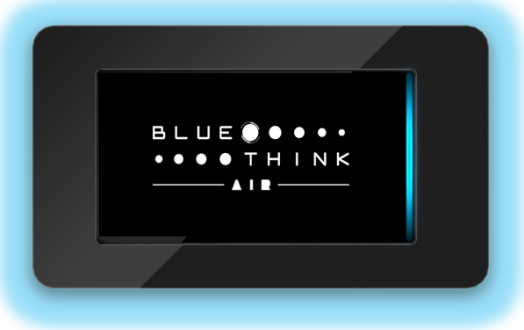
HARDWARE

The operating hardware consists of the following elements:

input/output boards including a 32-bit, 100 MHz microprocessor, with a 128-Mbyte non-volatile (FLASH) memory, 90Mbyte of which are available as file storage, and a 16 Mbyte data memory (RAM). Three different board sizes are used to optimise the number of inputs and outputs with respect to the application;

a humidifier-specific I/O board (which is therefore only fitted if this option is selected) communicating with the master board in serial mode;

a driver for the electronic expansion valve (where this option is selected) to pilot the electronic valve and integrate its data and functions in the machine. Communication with the master board is in serial mode.



The graphic terminal is a 4.3” touch screen panel. The electronic technology featured and the 65.000 colour display help manage high quality images and advanced functions. The touch screen panel is also designed for easier man-machine interaction as it makes screen browsing much more user-friendly.

The display is also supplied with a LED bar featuring different message-associated colours. The machine status can be viewed at any time without having to go close to the display.

Another innovative feature is the front position of the USB outlet for easier access without the use of specific tools.

Type	LCD TFT
Resolution	480 x 272 Wide
Display active area	4.3”, diagonal
Colours	67 K
Back-lighting	LCD - Lifetime 20k hrs @ 25 °C
Touchscreen	Resistive
System LED indicators	8-colour notification bar

CONTROLS AND SAFETY DEVICES

- High pressure switch with manual reset;
- High and low pressure transducers with automatic reset;
- High pressure safety valve to protect the liquid receiver;
- Minimum temperature probe for supply air;
- Maximum temperature probe on the gas burner (if selected);
- Thermal protection through Klixon on the electric heaters (if selected);
- Thermal cut-out device for compressors and fans;
- Refrigerant gas leak detection sensor in the air treatment section;
- Control of condensating and evaporating pressure;

TESTING

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

AIR HANDLING MODULE SET-UP

BASIC

Version suitable for working in 100% recirculation. No fresh air management is included.

FC2S

Version suitable for working with input of external air.

Compared to the basic version, this is equipped with a 2-damper mixing chamber, where one damper is placed on the air return and the other on the external air intake.

The unit is suitable for working in free cooling/free heating mode but without the management of the exhaust air, which needs to be manged in parallel by another local system (overpressure damper, exhaust fan, ...)

FC3S

Version suitable for working with input of external air and with exhaustion of stale air. Compared to the FC2S version, this is equipped with a 3-damper mixing chamber and exhaust air fans. Unit can work in freecooling/freeheating mode.

The return fan is supplied as standard with the same performance as the supply fan. Different air flow rates and pressures can be supplied on request.

The innovative configuration of the unit allows part of the energy expelled from the treated environment to be recovered.

The air being exhausted is conveyed over the source coil, which reduces the condensing temperature and thus increases the efficiency of the unit. In the same way, the air being exhausted is conveyed over the evaporating coil also during operation in heat pump mode, thereby considerably increasing its performance.

RS4S

The return/exhaust fans and a module inside which is positioned a static air/air cross-flow plate heat recovery unit are added to the unit in FC3S set-up.

Consisting of an aluminium plate pack, it allows recovery of sensible heat from the exhausted air with an efficiency, during winter operation, up to 55% depending on the model. The two air flows (exhaust and return) are completely separate and therefore every type of contamination between them is avoided.

The control manages the recovery according to a logic that can be set according to the presence or absence of the air quality probe.

The possibility of obtaining the free cooling option with RS version unit too is guaranteed by the presence of a fourth damper for external air as recovery system by-pass.

Lambda SKY offers on multiple sizes the possibility of having a unit heat recovery sized for 100% of the external air. In addition, as an alternative (and in any case on all those sizes in which 100% is not available) there is also the solution with 50% of external air flow.

All Lambda SKY recuperators have been selected to meet the requirements of the RITE standard.

CONCERTED ACTION
ENERGY PERFORMANCE
OF BUILDINGS

Condensing section accessories

ALPR **Pre-painted aluminium coil**

This option uses finned pack coils with copper tubes and pre-painted aluminium fins.

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.

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

- there are obvious signs of corrosion on the exposed metal surfaces in the installation area
- the installation is located close to the sea coast
- the prevailing winds come from the sea and travel in the direction of the unit
- the environment is industrial with a significant concentration of pollutants
- it is an urban environment with a high population density
- it is a rural environment with the presence of organic discharges and effluents

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

With reference to the protection criteria to follow, especially for installations close to the coast, refer to the section titled "Installations that require the use of treated coils".

RAV **Anti-freeze heater for condensate drip tray**

A heating cable, glued to the bottom, can be combined with the condensate drip tray to prevent ice formation at the base of the coil or near the drains.

The heater is controlled by a thermostat and is activated depending on the external air temperature.

Recommended accessory for installations in cold regions.

The accessory is installed externally in the source side coil area.

RETB **Coil protection net**

Coil protection net to protect against the entry of small animals and provide maximum physical protection.

RIC **Liquid receivers**

Liquid receivers installed in the refrigeration circuit for applications that specifically require it.

VASC **Condensate drip tray**

This accessory can be combined with HP units in order to collect the condensate that forms after each coil defrost cycle. The tray is made of stainless steel and is placed under the source-side heat exchanger, at a suitable distance.

On the opposite sides of the tray, there are some 1" close nipples to allow the customer to connect a pipe to it for draining out the water so as not to cause harm or damage to people or objects.

VEC **EC fans**

Fans featuring brushless, electronically commutated (EC) motors offer a number of advantages:

- greater efficiency at full load if compared with the corresponding AC model;
- Cosfi value close to 1;
- built-in soft starter;
- user-friendly adjustment - the 0-10V control signal enables monitoring the motor speed electronically with continuous regulation via the microprocessor onboard the unit so as to implement various control strategies (constant flow, constant pressure, based on thermal load, etc.).
- The motors are provided with integrated electronic protection against overtemperature, overcurrent, over or under-voltage with absence of one or more phases.

The strategic advantage of EC fans is the cubic ratio between speed and absorption. In other words, the consumption of a fan running at 70% is 50%, it is 18% when running at 50%, etc.

This brings about a potential saving that is exponential to partial loads. Hence, the need exists to modulate the fan efficiently and continuously using the correct algorithm required by the application.

VS **Liquid line solenoid valve**

This accessory prevents refrigerant migration that could damage the compressor on starting.

This option is standard in HP units.

Fan section accessories

AF **Dirty filters alarm**

Differential pressure sensor used to monitor any head loss through the filters and to warn about the critical threshold setpoint having been exceeded

In the case of units with double filtering section, the sensor monitors the total pressure loss.

BCO **Hot gas, post-heating coil with On/Off control**

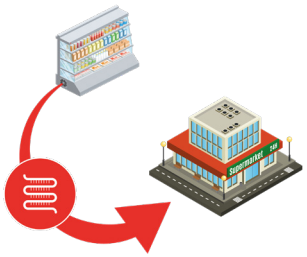
The option is designed to post heat the air under dehumidification conditions and to prevent the application from overcooling. This solution with hot gas contributes to reducing the size of electric components if compared with units featuring electrical heaters, which enables cutting electricity consumption.

BR3V **Coil to recover heat from process application (pre-heating)**

The solution is designed for those applications where there is heat rejected into the atmosphere even in the winter months. A typical example is the condensing circuits of supermarket refrigerated cabinets.

The idea is to use water to recover this heat and transfer it to a special coil in the Rooftop.

The heat is then recovered and used to heat (at least in part) the user in a completely free way.



CO2 **Duct sensor sensing CO2**

If there is a probe that detects the quality of the CO2 air, in addition to the minimum renewal, the control can manage a greater air exchange, depending on the value of the air quality measured. This function is very important in environments where there may be variations in crowding throughout the day (e.g. shopping malls, cinemas).

BTAC **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.

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

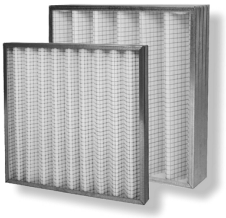
- there are obvious signs of corrosion on the exposed metal surfaces in the installation area
- the installation is located close to the sea coast
- the prevailing winds come from the sea and travel in the direction of the unit
- the environment is industrial with a significant concentration of pollutants
- it is an urban environment with a high population density
- it is a rural environment with the presence of organic discharges and effluents

With reference to the protection criteria to follow, especially for installations close to the coast, refer to the section titled "Installations that require the use of treated coils".

The accessory refers to the air treatment side coil.

FEU5 High efficiency filters ISO ePM10 50% (M5)

The units are available with filters having a greater filtration level than standard. This purpose is served in particular by a filter, class ISO ePM10 50% (under ISO 16890-3, corresponding to M5 EN779). The filtering material (synthetic fibre) is optimised to guarantee the required filtration class and, at the same time, to minimise the head losses on the air side.



FEU6 Rigid filters ISO ePM2,5 50% (M6)

The units are available with filters having a greater filtration level than standard. In particular, an ISO ePM2.5 50% class filter (based on ISO 16890-3 - corresponding to M6 EN779). The filter material has been optimized to guarantee the required filtration class, while at the same time minimizing the pressure drops on the air side.

FEU7 Rigid filters ISO ePM1 50% (F7)

The units are available with filters having a greater filtration level than standard. This purpose is served in particular by a filter, class ISO ePM1 50% (under ISO 16890-3, corresponding to F7 EN779). The filter material has been optimized to guarantee the required filtration class, while at the same time minimizing the pressure drops on the air side.

FEU9 Rigid filters ISO ePM1 85% (F9)

The units are available with filters having a greater filtration level than standard. In particular, an ISO ePM1 85% class filter (based on ISO 16890-3 - corresponding to F9 EN779). The filter material has been optimized to guarantee the required filtration class, while at the same time minimizing the pressure drops on the air side.

MU Top air delivery

Air delivery to the user from the top of the unit. For the compatibility of the accessory with the various models and configurations, refer to the specific table.

RP Rear return

Air intake from the back of the unit. The position of the return flow is defined in a relative way with respect to the delivery flow. For the compatibility of the accessory with the various models and configurations, refer to the specific table.

RR Air intake from the right

User side air intake from the right. The position of the return flow is defined in a relative way with respect to the delivery flow. For the compatibility of the accessory with the various models and configurations, refer to the specific table.

RL Air intake from the left

User side air intake from the left. The position of the return flow is defined in a relative way with respect to the delivery flow. For the compatibility of the accessory with the various models and configurations, refer to the specific table.

RU Air intake from the top

User air intake from the unit's roof. The position of the return flow is defined in a relative way with respect to the delivery flow. For the compatibility of the accessory with the various models and configurations, refer to the specific table.

RD Air intake from the bottom.

User air intake from the unit's bottom. The position of the return flow is defined in a relative way with respect to the delivery flow. For the compatibility of the accessory with the various models and configurations, refer to the specific table.

UEIB Immersed electrode humidifier

With the option, the unit can be equipped with an immersed electrode humidifier that humidifies the air in cases where the air is extremely dry, if compared to the setpoint stored.

The operating principle of the humidifier is as follows. A container featuring electrodes is filled with water until the electrodes are slightly covered, as water serves as the conducting medium between the electrodes. The Joule effect causes the running current to heat the water which evaporates as soon as it reaches the boiling point.

The output vapour is transferred to the environment. The solution with immersed electrodes is fully safe from a health standpoint and it is designed for proportional adjustment of vapour generation.

There are precise relationships between the humidifier potential and the absorbed power. Generally speaking, the following may be stated:

$$P = 0.75 \times Pv$$

where

P[kW] this is the absorbed power, expressed in kW;

Pv[kg/h] this is the generated vapour, expressed in kg/h.

Moreover:

$$I = \frac{P}{S \times \sqrt{n}}$$

where

I[A] this is the absorbed current, expressed in A;

P[W] this is the absorbed power, expressed in W;

S[V] this is the rated voltage, expressed in V.

n this is the number of phases in the power supply.

This shows a directly proportional relation between the absorbed current and the generated vapour, which may be summarised in the formula below:

$$Pv = \frac{\sqrt{n} \times S}{0.75} \times I$$

where

Pv[kg/h] this is the generated vapour, expressed in kg/h.

n this is the number of phases in the power supply.

S[V] this is the rated voltage, expressed in V.

I[A] this is the absorbed current, expressed in A.

The microprocessor controller proportionally adjusts the output steam, based on the humidification level required in the room, through the regulation of the current absorbed by the electrodes. Additionally, it controls all the operating phases: water filling and discharge, periodic emptying cycle, viewing of operating status and alarm messages. The end user will be able to select whether the control needs to be based on either relative or absolute humidity.

The humidifier cylinder is not designed for inspections and maintenance. A check should be made that the conditions of feed water to the humidifier are within the allowed limits. Consult the relevant installation, operation and maintenance manual for this purpose. Cylinders designed for inspection can be supplied upon request or cylinders for conductivity ranges other than standard.

UEIM **Immersed electrode humidifier oversized**

Accessory with identical functioning to the previous accessory. In this case with increased humidification characteristics for applications that requires it.

VOC **Duct sensor sensing VOC+CO2**

A continuous check of the air quality which involves an external air damper opening according to the CO2 probe and / or the VOC probe (if both are configured, the higher request "wins").

Auxiliary heating accessories

Some accessories may be incompatible with each other even if not expressly indicated.

B2B **Hot water heating coil with 2 way valve**

Solution identical to B3B, but with 2 way valve.

B3B **Hot water heating coil with 3 way valve**

The hot water heating coil is normally an alternative to electric heaters. It is placed downline of the cooling coil and it can operate in post cooling mode when de-humidification is required or in heating mode only.

The coil is with copper tubes and fully aluminium fins. A 3-way valve with a 0-10V regulation signal is always supplied for water flow regulation.

B2M **Oversized hot water heating coil with 2 way valve**

Solution identical to B2B, but with oversized heating capacity coil. For the details of the heating capacities see the dedicated table in the technical data section.

B3M **Oversized hot water heating coil with 3 way valve**

Solution identical to B3B, but with oversized heating capacity coil. For the details of the heating capacities see the dedicated table in the technical data section.

BRB **Electrical heaters**

This option is designed to equip the unit with electrical heaters that are used to control heating and/or post-heating.

The heating elements are made of AISI304 steel and have low surface temperature, spiral AISI304 steel fins featuring a safety bimetal thermostat. Elements are grouped in banks made of galvanized sheet metal with a locked electric box.

Eletrical heaters are control with capacity steps.

BRM **Oversize electric heaters**

Oversize electric heaters provide for greater heating power - approx. 50% greater on average.

For punctual and precise values, refer to the technical specification tables given in the dedicated section of this document.

BMB **Modulating electrical heaters**

If the unit is fitted with electric heaters, modulating heaters can be selected in place of step heaters. Triac-controlled electric heaters can follow the condition of the room with accuracy, thus improving efficiency in heating and post-heating operation.

BMM **Modulating electrical heaters oversized**

If the unit is fitted with electric heaters, modulating heaters can be selected in place of step heaters. Triac-controlled electric heaters can follow the condition of the room with accuracy, thus improving efficiency in heating and post-heating operation.

GC **Modulating gas burner**

With this accessory, the unit is equipped with a module containing a condensing direct exchange gas heat generator.

The main components of the generator are:

- Combustion chamber is made of AISI 430
- Heat exchanger pipes and exhaust gasses collector are made of stainless steel AISI 304L to increase corrosion resistance of parts in contact with condensate water
- premixed gas burner that guarantees absence of carbon monoxide and nitrogen oxide emissions below 35 parts per million
- electronic board that controls the burner and modulates heat output (fuel consumption) continuously between the minimum value and the maximum value according to the control parameters set and measured by the Pco control
- combustion fume exhaust flue

With the technology of premixing and modulation as heat demand from the room falls, the generator consumes less gas and increases its efficiency up to 105% (value calculated according to the net calorific value).

The generator certified by the GASTEC body and built in compliance with gas directive 90/396/EC is housed in a module whose panels are insulated with rock wool according to the criteria of Italian Ministerial Decree DM 12/04/96, the air flow is separated from the gas intake point and an aeration grille puts the external environment in contact with the burner.

The following safety devices are also present on the generator.

- Safety thermostat downline of the exchanger;
- Flame detection electrode;
- Safety pressure switch that controls any obstruction of the fume pipe and/or the air intake pipe;
- Differential pressure switch for air flow detection (supplied as standard with all the units);

All these devices, when activated, cause the burner to stop. They are indicated cumulatively by the Pco control and must be reset manually.

Plug-fans accessories

Some accessories may be incompatible with each other even if not expressly indicated.

PMMP-PMXP-PRMP-PRXP Oversize EC fans

Oversized (--M-) or extra oversized (--X-) EC fans in supply (-M--) and / or in return (-R--). With these accessories it is possible to adapt the aeraulic performance of the units to the specific air distribution needs of the site.

For more details on performance refer to the selection program.

PMSM-PMMM-PRSM-PRMM Metal blades EC Fans

EC fans in metal (-M--) with standard (--S-) or increased (--M-) head. With these accessories it is possible to respond to any local regulations requiring fans with metal blades.

For more details on performance refer to the selection program.

TRPA Remote pressure delta control

This option is used to check the radial fan speed required to keep the differential air pressure setpoint constant. Units are supplied with a differential sensor with two pressure outlets to be fitted remotely.

Min ESP	0 Pa
Max ESP	+1000 Pa

Dampers accessories

Some accessories may be incompatible with each other even if not expressly indicated.

CUFA **Rain cap with anti-intrusion grid**

The grill can help to stop leaves and small animals – birds which might damage the unit efficiency in case the air inlet / Outlet of the external air is not ducted.

It can also happen that external rain can wet the external air filters. This will not affect unit punctual operation, efficiency and consumption. Anyhow in the long term can partially reduce filter life. Rain cover can help in reducing this situation.

The accessory is applied to the dampers which are exposed to the outside envoiroment.

SEAL **Aluminum dampers**

Aluminum dampers for a lighter solution, which reduces the strain on the servomotors.

SERM **Spring return dampers**

Solution with spring return actuators; this allows an immediate closure of the shutters in the event of a power failure and therefore to avoid unwanted bypass or recirculation.

Electrical accessories

Some accessories may be incompatible with each other even if not expressly indicated.

ACID **Enable compressors from digital input**
Clean contact to allow enabling / disabling from digital input on the basis of a remote signal from the customer.

AEID **External alarm from digital input**
Possibility of sending a remote signal to the unit to inform the unit of the alarm status and configure a specific action.

ARID **Enabling of electric heating coil from digital input**
Possibility of sending a remote signal to the unit to enable the electric heaters remotely.

BAC **BacNet serial board**
Serial connection boards allow connection to supervision and remote management systems, thereby making it possible to display the main operating parameters and edit the main operational parameters. The BacNet serial board allows connection to supervision systems with the MS/TP protocol.
The monitoring solution is BTL-certified (BACnet Testing Laboratories) and ensures that the system is developed and tested according to the highest standards in the industry.

BAP **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.
The monitoring solution is BTL-certified (BACnet Testing Laboratories) and ensures that the system is developed and tested according to the highest standards in the industry.

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
This option uses a condenser as energy storage, and not an ordinary coil. In this way, it is not affected by the memory effect of normal coils and the need for maintenance is avoided.

BEET **Blueye® via Ethernet**
Blueye® is a supervision platform that enables remote monitoring of one or more units in the same system interconnected through a network with Modbus protocol.
This accessory features the Blueye device, as already installed and wired in the unit.
The critical variables to be monitored over time are identified for each connected device. These variables are sampled and saved to the cloud so that they are accessible at all times through a web portal or a mobile APP (available for Android and iOS).
The following options can be selected for connection to the internet:
- a LAN (Ethernet) connection - available in the system;
- a connection to a mobile network - at least 3G. The data SIM card is not included.

Three different types of contracts can be signed.
Blueye® Cloud Basic:
- to monitor a max. of 20 variables in total over max. 5 units/peripherals;
- to set a min. sampling frequency of 60 seconds.

Blueye® Cloud Advanced:
- to monitor a max. of 200 variables in total over max. 10 units/peripherals;
- to set a min. sampling frequency of 5 seconds.

Blueye® Connect:
- To monitor up to 10 units/peripherals.

Subscribing to any of the **Blueye® Cloud** enables:

- viewing the history of the monitored variables, in the form of both numerical values and graphs;
- downloading the history of variables in CSV format;
- the creation of automatic reports;
- setting notifications (via APP or mail) with settable thresholds for each variable;
- switching the unit ON/OFF remotely;;
- changing the set point remotely;
- selection of SUMMER/WINTER mode remotely (for reversible units only).

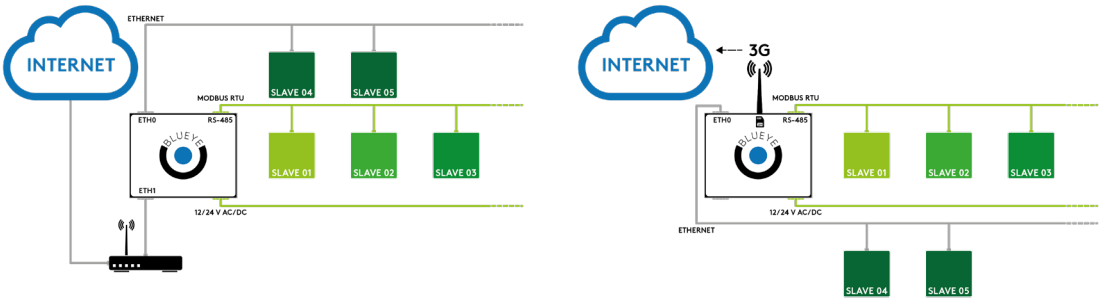
The subscription to the **Blueye® Connect** service offers the advantages below:

- a safe connection (tunnelling) between the user and the remote unit through the Blueye® portal;
- full access to the remote controller;
- real time monitoring;
- software upgrading.

Blueye® via Ethernet is only available for units supplied with an advanced controller and does not include any type of service. This service must be purchased separately based on the number of units/devices to be connected and the number of variables to be monitored. In order to connect multiple units to **Blueye® device, the network switch is required (this accessory is sold separately).**

Units can also be connected to the Blueye device through the RS485 network featuring a Modbus RTU protocol (for this option, refer to BERS accessory).

For further details, refer to the specific Blueye® documentation.



BORU Black Out Restart

For quicker restart after a power failure (blackout), the unit can be supplied with capacitive electrical condensers to keep the controller operational for 15 - 20 seconds (depending on its use). This allows for quicker cooling system restart as soon as the power supply is restored (or switches to the other line in cases with dual power supply).

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:

CP Single potential free operating contacts

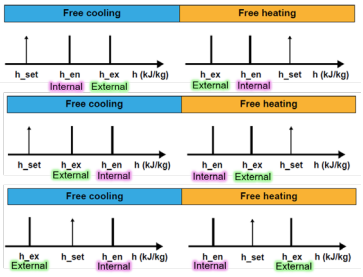
For units fitted with this accessory, clean contacts from which the customer can acquire signals that are showning the status of the unit's components (comressors, fans, pumps, allarms)

FCE Enthalpy Freecooling management

In most cases it is essential to ensure the best control of temperature and humidity. In such cases, a management of Freecooling exclusively based on temperature can be even counterproductive in energy terms.

A typical case is represented from extremely low external temperatures. In such cases, air is extremely dry. Its use would therefore involve indirect dehumidification of the indoor air, with the risk of having to turn on the humidifier to restore the correct conditions in the room.

On the other hand, enthalpy free-cooling allows you to compare the enthalpies of the internal and external air and allows free-cooling only in cases where it is energetically convenient.



The image represents the enthalpy free-cooling control functioning. You can see how the control compares the enthalpy value of the external air, of the internal air and compares everything with the target enthalpy set.

In the picture there are 3 cases. In the first, the freecooling conditions are not satisfied, in fact introducing air in those conditions would move the application away from the reference target setpoints. On the contrary, in the other two cases, the conditions allow free cooling.

FUOC Fire sensor

For fire detection with sensors placed on the unit or in its vicinity The sensor is a thermo-differential sensor and can perceive the speed with which the temperature is rising so as to react quickly to the currents of hot air from a fire. It can protect an area of 49 sq.m (7x7).

The sensor is supplied bulk for installation on site. As it operates correctly with air speeds below 0.2 m/s, it must be installed outside the unit (not inside it).

FUMO Smoke sensor

For smoke detection with sensors placed on the unit or in its vicinity This optical sensor is approved at national level by the Ministry of the Interior and it is type-approved at international level in conformity with harmonized European regulations CEN EN 54 part 7 and 8. It can protect an area of 81 sq.m (9x9).

The sensor is supplied bulk for installation on site. As it operates correctly with air speeds below 0.2 m/s, it must be installed outside the unit (not inside it).

The picture on the left shows a fire sensor (FUOCO - FIRE), whereas the picture on the right shows a smoke sensor (FUMO - SMOKE).

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.

RIF **Power factor correction to cosφ ≥ 0.95**

With this accessory, an electrical control panel (IP54 protection rating), containing power factor correction capacitors to make the cosφ of the unit greater than or equal to 0.95, is supplied with the unit. The capacitors 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

SCHS **Unit status Cooling/Heating and defrost status**

Clean contacts available to the customer to remotely control the unit status (Cooling, Heating) and possible entry and exit from defrost.

SOFT **Electronic soft-starter**

The scroll compressors have DOL (Direct On Line) starting and therefore the maximum inrush current IMIC will be 4/5 times its nominal current Inom.

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.

Current trend without accessory Electronic soft-starter

Current trend with accessory Electronic soft-starter

If the unit is equipped with accessory "Power factor correction to cosφ ≥ 0.95", this last will be electro-mechanically connected only at the end of the acceleration ramp of the soft-starter.

SNMP **SNMP protocol**

The accessory consists of a gateway that allows Ethernet connection to a SNMP manager supervision system.

SRA **Return sensor that can be remoted in the room**

This option is used to command temperature regulation and ventilation based on the values measured by a sensor that is installed in a remote position from the unit (at a max. distance of 30m) and This can allow control more directly close to the zones to be conditioned.

SUM **Probe for humidity indication**

The accessory allows to control the humidity level. Once installed the unit is able, if necessary, to dehumidify. For humidification, on the other hand, it is also necessary to have the humidifier accessory.

The accessory is mandatory if a humidifier and / or enthalpy free-cooling is required. As these accessories need this sensor in order to perform their function.

TERT **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 installation is by the customer using the dedicated port into the control board.

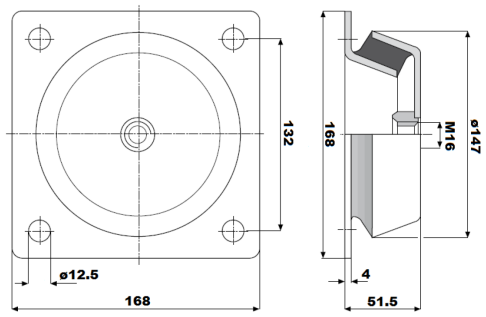
Other accessories

Some accessories may be incompatible with each other even if not expressly indicated.

AG **Rubber anti-vibration mounts**

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

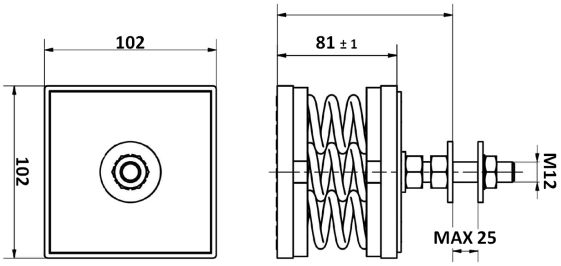
Accessory supplied loose.



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.



CUCO **Acoustic hoods on compressors**

Acoustic hoods consist of a removable casing made of soundproof material wrapped around the compressor. The hood can minimise the noise generated by the compressor by 1 to 2 dB(A) on average. The effect on the global noise of the unit depends on the fan speed - the noise of the fans is the prevailing noise in some operating modes.

The accessory is not compatible with the hood.

The hood is always supplied on inverter compressors.

COCA **Compressors hood**

Hood is a solution where the compressors are enclosed in a sound-insulated metal enclosure. The hood is able to attenuate the noise of the compressor by an average of 4-5 dB (A). The effect on the global noise of the unit depends on the fan speed - the noise of the fans is the prevailing noise in some operating modes.

The accessory is not compatible with the jacket.

P50 **50mm panels**

The 50mm paneling allows to further improve the thermal insulation of the units, thanks to the increase in the thickness of the insulating material inside the sandwich panels.

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

TECHNICAL SPECIFICATIONS

LAMBDA SKY R7 COOLING PERFORMANCES

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
Cooling (AE35°C/50%; AI27°C/47,4%) (GROSS)	**(1)**													
BASE UNIT (FULL RECIRCULATION)														
Refrigeration capacity		kW	55.2	73.6	81.8	105.6	116.1	128.4	136.6	146.0	157.5	168.7	188.1	204.3
Sensible cooling capacity		kW	42.4	56.7	64.6	82.1	88.1	100.3	106.8	113.0	119.1	125.4	142.1	151.0
Power absorbed by the compressors		kW	14.3	16.3	19.0	25.4	28.8	31.7	34.0	38.0	43.3	46.0	50.7	57.3
Total absorbed power	(2)	kW	19.3	23.6	27.6	34.9	39.3	43.2	46.5	48.8	55.0	58.3	64.4	72.0
EER			2.87	3.13	2.96	3.03	2.95	2.97	2.94	2.99	2.86	2.89	2.92	2.84
FC2S (30% FRESH AIR)														
Refrigeration capacity		kW	58.8	78.9	87.4	113.0	124.5	137.3	146.5	156.1	169.1	181.2	202.0	219.2
Sensible cooling capacity		kW	41.9	56.6	64.2	81.6	88.1	99.8	106.8	108.6	116.2	123.5	140.6	148.6
Power absorbed by the compressors		kW	14.6	16.6	19.3	25.8	29.3	32.4	34.6	38.7	44.1	46.8	51.6	58.5
Total absorbed power	(2)	kW	19.7	24.0	28.1	35.5	40.1	44.3	47.4	49.8	56.3	59.6	66.1	74.0
EER			2.99	3.29	3.11	3.18	3.11	3.10	3.09	3.13	3.01	3.04	3.06	2.96
FC3S (30% FRESH AIR)														
Refrigeration capacity		kW	59.0	79.5	88.0	114.1	125.9	139.1	148.5	157.9	171.5	183.4	204.4	222.1
Sensible cooling capacity		kW	42.0	56.9	64.8	82.3	89.0	100.9	108.0	110.7	118.3	125.0	141.0	150.7
Power absorbed by the compressors		kW	14.4	16.4	19.1	25.2	28.5	31.5	33.5	37.7	43.1	45.6	50.2	57.0
Total absorbed power	(2)	kW	20.3	25.2	29.6	36.1	40.8	45.3	48.8	52.2	58.3	61.8	68.3	76.4
EER			2.91	3.15	2.98	3.16	3.09	3.07	3.05	3.03	2.94	2.97	2.99	2.91
RS45 (50% FRESH AIR)														
Cooling capacity compressors		kW	61.4	82.7	91.2	117.3	129.8	143.1	152.0	160.8	173.9	187.4	208.7	226.1
Sensible cooling capacity compressors		kW	39.8	52.9	60.2	76.4	82.8	92.9	99.9	102.0	108.1	114.6	130.5	139.6
Cooling capacity recovered		kW	5.4	6.7	7.8	10.7	11.5	12.4	13.4	17.8	18.9	19.7	21.2	21.7
Power absorbed by the compressors		kW	14.5	16.7	19.4	26.0	29.5	32.6	34.8	38.8	44.3	47.1	52.0	59.3
Total absorbed power	(2)	kW	21.3	26.8	31.9	39.1	44.5	49.9	54.4	55.8	62.3	66.5	74.6	83.8
EER			2.88	3.09	2.87	3.00	2.92	2.87	2.80	2.88	2.79	2.82	2.80	2.70
RS41 (100% FRESH AIR)														
Cooling capacity compressors		kW	67.6	90.8	100.8	129.2	143.1	157.2	167.8	-	-	-	-	-
Sensible cooling capacity compressors		kW	38.8	50.1	57.3	72.0	78.7	87.7	94.7	-	-	-	-	-
Cooling capacity recovered		kW	10.4	13.4	15.5	21.4	23.0	24.9	26.7	-	-	-	-	-
Power absorbed by the compressors		kW	14.6	17.0	19.9	26.5	30.1	33.4	35.6	-	-	-	-	-
Total absorbed power	(2)	kW	22.4	27.6	32.8	40.3	45.8	51.5	56.1	-	-	-	-	-
EER			3.02	3.29	3.07	3.21	3.13	3.06	2.99	-	-	-	-	-
Cooling (AE35°C/50%; AI27°C/47,4%) - UNI EN 14511-1:2018	**(3)**													
Refrigeration capacity		kW	54.3	73.1	80.8	105.3	115.7	127.7	135.7	144.3	156.5	170.8	186.2	202.7
Sensible cooling capacity		kW	41.2	56.2	63.7	81.8	87.8	99.6	106.0	110.1	117.2	131.1	141.0	149.7
Total absorbed power		kW	18.6	22.8	26.8	33.4	37.7	41.5	44.4	46.6	52.6	55.8	61.7	69.3
EER			2.92	3.20	3.02	3.16	3.07	3.08	3.05	3.10	2.98	3.06	3.02	2.93

(1) Working conditions: Ambient Air 27°C DB, 19°C WB. External Air 35°C DB , 24°C WB. Unit with source AC fans, standard supply (and exhaust) fans and 100 Pa ESP.

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

(3) Working conditions: Ambient Air 27°C DB, 19°C WB. External Air 35°C DB , 24°C WB. Full recirculation, data according EN14511/2018

LAMBDA SKY R7 HEATING PERFORMANCES

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
Heating (AE7°C/87%; AI20°C/50%) (GROSS)	**(1)**													
BASE UNIT (FULL RECIRCULATION)														
Heating capacity		kW	53.5	67.7	75.6	94.1	107.4	116.6	124.7	132.2	145.7	157.9	168.1	190.1
Power absorbed by the compressors		kW	14.1	15.4	17.7	22.4	27.3	27.4	29.6	33.8	39.0	43.1	44.3	51.1
Total absorbed power	(2)	kW	17.9	21.1	24.5	29.3	35.0	35.8	38.9	40.9	46.7	51.5	53.8	61.1
COP			2.99	3.21	3.08	3.21	3.07	3.26	3.20	3.23	3.12	3.07	3.12	3.11
FC2S (30% FRESH AIR)														
Heating capacity		kW	54.1	78.9	87.4	96.3	108.3	117.5	125.6	132.8	147.7	158.9	171.1	192.7
Power absorbed by the compressors		kW	13.0	16.6	19.3	20.9	25.4	25.4	27.5	31.5	36.4	40.1	41.9	47.9
Total absorbed power	(2)	kW	16.7	24.0	28.1	27.6	32.9	33.6	36.5	38.7	44.2	48.6	51.5	58.1
COP			3.24	3.29	3.11	3.49	3.30	3.50	3.44	3.43	3.34	3.27	3.32	3.32
FC3S (30% FRESH AIR)														
Heating capacity		kW	55.4	79.5	88.0	103.3	115.6	125.5	134.6	141.9	157.3	169.2	182.7	201.6
Power absorbed by the compressors		kW	13.2	16.4	19.1	21.9	26.6	26.5	28.8	32.8	37.9	41.7	43.5	49.4
Total absorbed power	(2)	kW	17.8	25.2	29.6	29.6	35.4	36.5	40.1	42.5	48.1	53.1	56.2	63.2
COP			3.12	3.15	2.98	3.49	3.27	3.44	3.36	3.34	3.27	3.19	3.25	3.19
RS45 (50% FRESH AIR)														
Heating capacity compressors		kW	56.8	70.3	78.6	97.9	110.4	119.8	128.1	132.4	146.9	158.6	170.8	190.8
Heating capacity recovered		kW	10.3	13.0	15.1	20.6	22.1	24.2	26.1	35.2	36.6	38.4	41.7	42.9
Power absorbed by the compressors		kW	13.6	14.7	16.8	21.7	26.1	26.2	28.2	32.5	37.4	41.2	42.9	49.0
Total absorbed power	(2)	kW	19.0	22.7	26.8	31.6	37.5	39.4	43.6	44.9	50.5	55.9	60.1	65.2
COP			2.99	3.10	2.93	3.10	2.95	3.04	2.94	2.95	2.91	2.84	2.84	2.93
RS41 (100% FRESH AIR)														
Heating capacity compressors		kW	60.5	72.7	82.5	98.3	113.1	122.7	131.2	-	-	-	-	-
Heating capacity recovered		kW	20.0	26.1	30.3	41.6	44.5	48.8	52.7	-	-	-	-	-
Power absorbed by the compressors		kW	13.2	14.1	16.1	20.2	24.9	24.9	26.8	-	-	-	-	-
Total absorbed power	(2)	kW	19.4	22.2	25.1	30.3	36.5	38.4	42.5	-	-	-	-	-
COP			3.12	3.28	3.28	3.24	3.10	3.20	3.09	-	-	-	-	-
Heating (AE7°C/87%; AI20°C/50%) - UNI EN 14511-1:2018	**(3)**													
Heating capacity		kW	53.6	68.4	76.8	94.7	108.2	117.7	126.0	133.5	148.4	159.7	170.7	193.0
Total absorbed power		kW	17.3	20.5	23.2	28.0	33.6	34.3	37.2	39.1	44.8	49.3	51.6	58.8
COP			3.10	3.34	3.32	3.38	3.22	3.43	3.39	3.42	3.31	3.24	3.31	3.28

(1) Working conditions: Ambient Air 20°C DB, 15°C WB. External Air 7°C DB , 6°C WB. Unit with source AC fans, standard supply (and exhaust) fans and 100 Pa ESP.

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

(3) Working conditions: Ambient Air 20°C DB, 15°C WB. External Air 7°C DB , 6°C WB. Full recirculation, data according EN14511/2018

LAMBDA SKY R7 GENERAL DATA

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
Dimensions and weight: Base unit														
Length		mm	2427	4317						5117				
Depth		mm	2250											
Height		mm	2375	1925		2375								
Operating weight		kg	986	1551	1651	2116	2188	2305	2318	2454	2462	2504	2558	2636
Dimensions and weight: Unit FC2S														
Length		mm	2943	4879						5679				
Depth		mm	2250											
Height		mm	2375	1925		2375								
Operating weight		kg	1143	1703	1803	2300	2376	2493	2506	2658	2668	2708	2746	2828
Dimensions and weight: Unit FC3S														
Length		mm	3514	6317						7117				
Depth		mm	2250											
Height		mm	2375	1925		2375								
Operating weight		kg	1329	1996	2094	2642	2718	2845	2858	3024	3035	3074	3192	3271
Noise levels														
Sound power level of basic unit	(1)	dB(A)	79.4	81.9	82.1	86.1	85.9	85.8	86.1	88.7	88.7	89.1	89.4	90.3
Sound pressure level of basic unit	(2)	dB(A)	60.5	62.5	62.7	66.2	66.0	65.9	66.2	68.5	68.5	68.8	69.2	70.1

(1) Sound power levels calculated according to ISO 3744

(2) Sound pressure levels at 1 meter from the unit on free field, with direction factor Q=2.

LAMBDA SKY Hi R7 COOLING PERFORMANCES

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
Cooling (AE35°C/50%; AI27°C/47,4%) (GROSS)	**(1)**												
BASE UNIT (FULL RECIRCULATION)													
Refrigeration capacity		kW	28.2	36.5	42.2	49.6	64.3	71.8	81.6	97.7	104.3	119.0	125.1
Sensible cooling capacity		kW	21.2	27.0	31.3	35.3	46.5	52.0	63.3	70.3	74.9	89.4	94.2
Power absorbed by the compressors		kW	8.3	9.8	11.8	14.5	17.0	20.2	22.2	27.2	30.0	34.0	37.0
Total absorbed power	(2)	kW	10.2	12.1	14.3	17.5	21.1	25.1	27.4	33.3	36.6	41.4	45.0
EER			2.76	3.03	2.95	2.84	3.05	2.86	2.97	2.93	2.85	2.88	2.78
FC2S (30% FRESH AIR)													
Refrigeration capacity		kW	30.2	39.3	45.2	52.8	69.4	77.2	87.5	104.4	111.8	127.5	134.7
Sensible cooling capacity		kW	20.8	26.6	30.4	35.4	47.3	52.8	61.5	69.7	74.6	87.2	92.3
Power absorbed by the compressors		kW	8.5	10.0	12.1	14.8	17.3	20.6	22.6	27.7	30.5	34.8	37.9
Total absorbed power	(2)	kW	10.4	12.3	14.6	17.8	21.5	25.6	28.0	33.9	37.3	42.4	46.2
EER			2.90	3.20	3.10	2.96	3.23	3.02	3.13	3.08	3.00	3.01	2.92
FC3S (30% FRESH AIR)													
Refrigeration capacity		kW	30.5	40.0	45.6	53.9	70.3	78.6	89.1	106.1	113.6	129.8	137.2
Sensible cooling capacity		kW	21.1	27.3	30.7	36.3	47.5	53.4	63.0	71.3	76.3	89.3	94.5
Power absorbed by the compressors		kW	8.4	9.9	11.9	14.5	17.1	20.3	22.3	27.3	30.1	34.3	37.3
Total absorbed power	(2)	kW	10.8	12.9	15.0	18.4	22.5	26.8	29.3	34.8	38.5	43.8	48.0
EER			2.84	3.10	3.05	2.93	3.12	2.93	3.04	3.05	2.95	2.96	2.86
RS45 (50% FRESH AIR)													
Cooling capacity compressors		kW	30.7	41.5	47.4	55.7	73.0	81.5	92.3	109.8	117.7	134.3	142.1
Sensible cooling capacity compressors		kW	18.3	25.5	29.2	34.0	44.8	49.4	58.1	65.7	70.5	83.2	88.5
Cooling capacity recovered		kW	2.6	3.7	5.2	6.0	7.8	9.0	10.5	11.9	12.8	13.8	14.8
Power absorbed by the compressors		kW	8.4	9.9	12.0	14.7	17.5	20.7	22.8	27.9	30.8	34.9	38.2
Total absorbed power	(2)	kW	10.7	13.6	15.6	19.3	24.0	28.9	31.1	37.2	41.4	47.4	52.6
EER			2.86	3.04	3.04	2.88	3.04	2.82	2.96	2.95	2.84	2.84	2.70
RS41 (100% FRESH AIR)													
Cooling capacity compressors		kW	33.5	45.6	52.2	61.6	79.6	88.9	101.1	120.2	128.7	145.9	155.3
Sensible cooling capacity compressors		kW	17.3	24.5	28.2	33.9	41.4	46.6	53.8	62.1	66.7	76.8	82.4
Cooling capacity recovered		kW	5.2	7.3	10.0	11.5	15.6	18.0	21.0	23.8	25.6	27.6	29.7
Power absorbed by the compressors		kW	8.6	10.1	12.2	14.8	17.9	21.2	23.4	28.5	31.5	36.0	39.3
Total absorbed power	(2)	kW	11.1	14.0	16.4	20.4	24.8	29.8	32.1	38.4	42.7	49.1	54.4
EER			3.03	3.26	3.19	3.02	3.22	2.99	3.15	3.14	3.02	2.97	2.85
Cooling (AE35°C/50%; AI27°C/47,4%) - UNI EN 14511-1:2018	**(3)**												
Refrigeration capacity		kW	28.0	36.2	41.8	49.2	63.8	71.0	81.0	97.3	103.7	118.3	124.3
Sensible cooling capacity		kW	20.9	26.6	31.0	34.9	46.0	51.1	62.4	69.9	74.4	88.4	93.4
Total absorbed power		kW	9.9	11.8	13.8	16.8	20.5	24.4	26.3	32.0	35.2	39.8	43.2
EER			2.82	3.07	3.04	2.92	3.12	2.91	3.08	3.04	2.95	2.97	2.88

(1) Working conditions: Ambient Air 27°C DB, 19°C WB. External Air 35°C DB , 24°C WB. Unit with source AC fans, standard supply (and exhaust) fans and 100 Pa ESP.

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

(3) Working conditions: Ambient Air 27°C DB, 19°C WB. External Air 35°C DB , 24°C WB. Full recirculation, data according EN14511/2018

LAMBDA SKY Hi R7 HEATING PERFORMANCES

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
Heating (AE7°C/87%; AI20°C/50%) (GROSS)	**(1)**												
BASE UNIT (FULL RECIRCULATION)													
Heating capacity		kW	27.1	32.6	38.4	48.5	58.1	69.6	74.0	90.5	98.3	108.8	115.9
Power absorbed by the compressors		kW	7.5	8.6	10.7	13.6	15.8	19.0	19.7	25.4	29.2	29.5	32.3
Total absorbed power	(2)	kW	8.8	10.2	12.3	15.6	18.5	22.5	23.0	29.4	33.7	34.3	37.7
COP			3.10	3.21	3.12	3.11	3.14	3.10	3.22	3.08	2.92	3.17	3.07
FC2S (30% FRESH AIR)													
Heating capacity		kW	27.5	32.9	38.7	48.7	58.6	70.0	74.5	89.0	98.0	109.0	116.6
Power absorbed by the compressors		kW	7.1	8.0	10.0	12.6	14.7	17.7	18.4	23.3	26.2	27.2	30.1
Total absorbed power	(2)	kW	8.3	9.5	11.6	14.6	17.4	21.1	21.7	27.4	30.6	32.0	35.6
COP			3.31	3.45	3.35	3.35	3.37	3.31	3.44	3.25	3.21	3.41	3.28
FC3S (30% FRESH AIR)													
Heating capacity		kW	27.7	33.7	40.5	50.1	59.7	72.1	76.0	93.1	101.2	111.1	118.7
Power absorbed by the compressors		kW	7.2	8.2	10.3	12.9	15.0	18.5	18.8	24.1	27.3	27.9	30.8
Total absorbed power	(2)	kW	8.8	10.4	12.3	15.6	18.8	23.2	23.4	29.1	33.1	34.5	38.4
COP			3.17	3.26	3.29	3.21	3.18	3.11	3.25	3.20	3.06	3.22	3.09
RS45 (50% FRESH AIR)													
Heating capacity compressors		kW	27.6	33.2	40.2	49.9	57.5	68.7	72.8	88.6	96.9	107.5	113.9
Heating capacity recovered		kW	4.8	7.1	9.8	11.1	15.1	17.1	20.6	22.9	24.5	26.9	29.0
Power absorbed by the compressors		kW	7.7	8.4	10.5	13.1	15.1	18.2	18.9	24.4	27.1	28.1	30.9
Total absorbed power	(2)	kW	9.3	11.1	13.0	16.5	20.0	24.5	24.9	31.3	35.0	37.4	41.9
COP			2.98	2.99	3.10	3.02	2.88	2.80	2.92	2.83	2.77	2.87	2.72
RS41 (100% FRESH AIR)													
Heating capacity compressors		kW	28.3	34.5	41.4	53.8	57.8	68.4	73.0	89.6	96.6	107.2	113.0
Heating capacity recovered		kW	9.6	14.2	18.9	21.6	30.2	34.2	41.3	45.8	49.1	53.8	58.0
Power absorbed by the compressors		kW	7.5	8.0	10.1	13.2	14.4	17.2	18.2	23.2	26.1	28.0	29.5
Total absorbed power	(2)	kW	9.1	10.9	13.1	17.5	19.4	23.7	24.4	30.2	34.3	37.7	41.0
COP			3.10	3.18	3.17	3.08	2.97	2.88	3.00	2.96	2.82	2.85	2.76
Heating (AE7°C/87%; AI20°C/50%) - UNI EN 14511-1:2018	**(3)**												
Heating capacity		kW	27.4	33.1	38.9	49.1	59.2	70.8	74.4	90.9	97.9	109.7	117.1
Total absorbed power		kW	8.5	9.9	11.8	15.0	18.0	21.8	22.1	28.6	31.8	33.5	36.1
COP			3.23	3.34	3.28	3.27	3.28	3.24	3.37	3.18	3.09	3.27	3.24

(1) Working conditions: Ambient Air 20°C DB, 15°C WB. External Air 7°C DB , 6°C WB. Unit with source AC fans, standard supply (and exhaust) fans and 100 Pa ESP.

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

(3) Working conditions: Ambient Air 20°C DB, 15°C WB. External Air 7°C DB , 6°C WB. Full recirculation, data according EN14511/2018

LAMBDA SKY Hi R7 GENERAL DATA

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
Dimensions and weight: Base unit													
Length		mm	2427				4317						
Depth		mm	2250										
Height		mm	1925		2375		1925		2375				
Operating weight		kg	852	908	966	986	1551	1651	1798	1856	1922	2008	2018
Dimensions and weight: Unit FC2S													
Length		mm	2943				4879						
Depth		mm	2250										
Height		mm	1925		2375		1925		2375				
Operating weight		kg	981	1014	1084	1143	1703	1803	1984	2040	2110	2196	2206
Dimensions and weight: Unit FC3S													
Length		mm	3514				6317						
Depth		mm	2250										
Height		mm	1925		2375		1925		2375				
Operating weight		kg	1166	1196	1310	1329	1996	2094	2336	2382	2452	2548	2558
Noise levels													
Sound power level of basic unit	(1)	dB(A)	82.3	84.4	86.8	86.2	88.5	87.6	92.5	88.7	89.9	90.5	94.1
Sound pressure level of basic unit	(2)	dB(A)	63.9	66.0	68.0	67.3	69.1	68.1	72.6	68.8	70.0	70.6	74.2

(1) Sound power levels calculated according to ISO 3744

(2) Sound pressure levels at 1 meter from the unit on free field, with direction factor Q=2.

TECHNICAL DATA STANDARD COMPONENTS

EXTERNAL SOURCE SECTION

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
Compressors														
Number of compressors		n°	2	2	2	4	4	4	4	4	4	4	4	4
Number of circuits		n°	1	1	1	2	2	2	2	2	2	2	2	2
Compressors/Circuits		n°/n°	2/1	2/1	2/1	4/2	4/2	4/2	4/2	4/2	4/2	4/2	4/2	4/2
Minimum capacity reduction step		%	50%	50%	43%	25%	25%	24%	25%	25%	25%	23%	25%	21%
Oil Charge		L	5.0	5.0	9.0	7.1	10.1	10.0	10.0	13.0	13.0	13.0	13.0	15.4
Refrigerat charge CO		kg	12.5	16.0	16.0	22.0	26.5	27.0	33.0	33.0	33.0	40.0	43.0	43.0
HP refrigerant charge		kg	15.0	18.0	18.0	26.0	30.5	31.0	38.0	38.0	38.0	46.0	50.0	50.0
Axial Fans														
Diameter		mm	800	800	800	800	800	800	800	800	800	800	800	800
Quantity		n°	1	2	2	2	2	2	2	4	4	4	4	4
Axial Fans		n°	1	2	2	2	2	2	2	4	4	4	4	4
Airflow single fan HP unit		m3/h	19,367	19,017	19,029	21,982	21,701	21,725	21,336	21,303	21,318	21,318	20,829	20,844
Total air flow rate		m3/h	19,367	38,034	38,058	43,964	43,401	43,450	42,671	85,213	85,270	85,270	83,316	83,374
Type			Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans
Fan Nominal Power Input		kW	1.04	1.04	1.04	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Fan Nominal Current		A	1.95	1.95	1.95	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
Compressors													
Number of compressors		n°	1	1	1	2	2	2	2	2	2	2	2
Number of circuits		n°	1	1	1	1	1	1	2	2	2	2	2
Compressors/Circuits		n°/n°	1/1	1/1	1/1	2/1	2/1	2/1	2/2	2/2	2/2	2/2	2/2
Minimum capacity reduction step		%	21%	28%	24%	28%	24%	22%	20%	23%	21%	19%	18%
Oil Charge		L	1.5	2.8	2.8	2.8	2.8	5.6	5.6	6.3	6.3	7.5	7.5
Refrigerat charge CO		kg	6.3	8.0	10.0	12.5	16.0	16.0	21.0	22.0	25.0	27.0	31.5
HP refrigerant charge		kg	7.0	10.0	12.0	15.0	18.0	18.0	23.0	24.0	28.0	30.0	36.0
Axial Fans													
Diameter		mm	800	800	800	800	800	800	800	800	800	800	800
Quantity		n°	1	1	1	1	2	2	2	2	2	2	2
Axial Fans		n°	1	1	1	1	2	2	2	2	2	2	2
Airflow single fan HP unit		m3/h	19,526	19,034	19,648	19,376	19,017	19,035	21,982	22,021	21,711	21,736	21,343
Total air flow rate		m3/h	19,526	19,034	19,648	19,376	38,034	38,070	43,964	44,041	43,421	43,471	42,685
Type			Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans	Axial AC fans
Fan Nominal Power Input		kW	1.04	1.04	1.04	1.04	1.04	1.04	1.45	1.45	1.45	1.45	1.45
Fan Nominal Current		A	1.95	1.95	1.95	1.95	1.95	1.95	3.40	3.40	3.40	3.40	3.40

AIR TREATMENT SECTION

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
Std supply fan: Plastic														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP Standard configuration without accessories		Pa	439	629	410	493	463	427	394	441	416	388	317	299
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	2	2	2	2	3	3	3	3	3
Nominal Power Input		kW	2.8	3.4	3.4	2.6	2.6	2.8	2.8	2.6	2.6	2.6	2.8	2.8
Nominal Current		A	4.4	5.4	5.4	4.2	4.2	4.4	4.4	4.2	4.2	4.2	4.4	4.4
Std exhaust fan: Plastic (only for FC3S/ RS45/RS41)														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP Standard configuration without accessories		Pa	519	426	474	543	519	483	438	324	445	353	497	428
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2	2
Nominal Power Input		kW	2.6	2.6	3.4	2.6	2.6	2.6	2.6	2.6	3.4	3.4	4.6	4.6
Nominal Current		A	4.2	4.2	5.4	4.2	4.2	4.2	4.2	4.2	5.4	5.4	7.4	7.4
Recuperator RS45														
Fresh Air nominal airflow		% - m3/h	50%-4500	50%-5500	50%-6500	50%-8250	50%-9000	50%-9900	50%-10800	50%-12500	50%-13250	50%-14000	50%-15250	50%-15750
Nominal pressure drops supply/exhaust sides	A1	Pa	85	120	153	111	129	152	178	97	107	118	137	145
Nominal efficiency (EN13053)		%	52%	57%	55%	57%	56%	55%	54%	58%	57%	57%	56%	56%
Width air filter on recuperator fresh air		mm	48	48	48	48	48	48	48	48	48	48	48	48
Filtration Grade EN ISO 16890 (EN779)			Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)
Filter pressure drops	A1	Pa	34.1	30.5	39.1	15.9	18.1	20.9	23.8	29.5	32.2	35.0	39.7	41.6
Recuperator RS45														
Fresh Air nominal airflow		% - m3/h	100%-4500	100%-5500	100%-6500	100%-8250	100%-9000	100%-9900	100%-10800	-	-	-	-	-
Nominal pressure drops supply/exhaust sides	A1	Pa	138	120	153	110	129	152	178	-	-	-	-	-
Nominal efficiency (EN13053)		%	50%	57%	55%	57%	56%	55%	54%	-	-	-	-	-
Width air filter on recuperator fresh air		mm	48	48	48	48	48	48	48	-	-	-	-	-
Filtration Grade EN ISO 16890 (EN779)			Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	-	-	-	-	-
Filter pressure drops	A1	Pa	96.2	85.4	109.5	44.6	50.8	58.5	66.6	-	-	-	-	-
Std filters														
Thickness		mm	98	98	98	98	98	98	98	98	98	98	98	98
Filtration Grade EN ISO 16890 (EN779)			Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
Std supply fan: Plastic													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP Standard configuration without accessories		Pa	425	727	510	439	629	410	526	493	463	427	394
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	1	2	2	2	2	2
Nominal Power Input		kW	1.3	2.1	2.6	2.8	3.4	3.4	2.6	2.6	2.6	2.8	2.8
Nominal Current		A	2.1	3.4	4.2	4.4	5.4	5.4	4.2	4.2	4.2	4.4	4.4
Std exhaust fan: Plastic (only for FC3S/ RS45/RS41)													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP Standard configuration without accessories		Pa	461	352	561	519	426	474	596	543	519	483	438
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	1	1	2	2	2	2
Nominal Power Input		kW	1.3	1.3	2.6	2.6	2.6	3.4	4.6	2.6	2.6	2.6	2.6
Nominal Current		A	2.1	2.1	4.2	4.2	4.2	5.4	7.4	4.2	4.2	4.2	4.2
Recuperator RS45													
Fresh Air nominal airflow		% - m3/h	50%-2250	50%-2900	50%-3750	50%-4500	50%-5500	50%-6500	50%-7250	50%-8250	50%-9000	50%-9900	50%-10800
Nominal pressure drops supply/exhaust sides	A1	Pa	64	131	64	85	120	153	87	111	129	152	178
Nominal efficiency (EN13053)		%	53%	51%	53%	52%	57%	55%	58%	57%	56%	55%	54%
Width air filter on recuperator fresh air		mm	48	48	48	48	48	48	48	48	48	48	48
Filtration Grade EN ISO 16890 (EN779)			Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)
Filter pressure drops	A1	Pa	22.2	32.4	25.9	34.1	30.5	39.1	13.1	15.9	18.1	20.9	23.8
Recuperator RS45													
Fresh Air nominal airflow		% - m3/h	100%-4500	100%-5800	100%-7500	100%-9000	100%-11000	100%-13000	100%-14500	100%-16500	100%-18000	100%-19800	100%-21600
Nominal pressure drops supply/exhaust sides	A1	Pa	64	131	102	138	120	153	87	110	129	152	178
Nominal efficiency (EN13053)		%	53%	51%	52%	50%	57%	55%	58%	57%	56%	55%	54%
Width air filter on recuperator fresh air		mm	48	48	48	48	48	48	48	48	48	48	48
Filtration Grade EN ISO 16890 (EN779)			Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)
Filter pressure drops	A1	Pa	62.6	91.5	73.2	96.2	85.4	109.5	36.8	44.6	50.8	58.5	66.6
Std filters													
Thickness		mm	98	98	98	98	98	98	98	98	98	98	98
Filtration Grade EN ISO 16890 (EN779)			Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)	Coarse 75% (G4)

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

VENTILATING SECTION ACCESSORIES

HIGH EFFICIENCY FILTERS

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
FEU5 - Plate filters ISO ePM10 50% (M5)														
Thickness		mm	98	98	98	98	98	98	98	98	98	98	98	98
Air side pressure drops	A1	Pa	41	36	45	32	36	41	46	56	60	65	73	76
FEU6 - Bag filters ISO ePM2,5 50% (M6)														
Thickness		mm	282	282	282	282	282	282	282	282	282	282	282	282
Air side pressure drops	A1	Pa	27	23	31	19	23	27	31	40	44	48	56	59
FEU7 - Bag filters ISO ePM1 50% (F7)														
Thickness		mm	282	282	282	282	282	282	282	282	282	282	282	282
Air side pressure drops	A1	Pa	38	33	43	28	32	38	43	55	60	66	76	80
FEU9 - Bag filters ISO ePM1 85% (F9)														
Thickness		mm	282	282	282	282	282	282	282	282	282	282	282	282
Air side pressure drops	A1	Pa	65	58	71	51	57	64	71	85	91	97	108	112

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
FEU5 - Plate filters ISO ePM10 50% (M5)													
Thickness		mm	98	98	98	98	98	98	98	98	98	98	98
Air side pressure drops	A1	Pa	25	36	29	41	36	45	24	32	36	41	46
FEU6 - Bag filters ISO ePM2,5 50% (M6)													
Thickness		mm	282	282	282	282	282	282	282	282	282	282	282
Air side pressure drops	A1	Pa	15	23	18	27	23	31	14	19	23	27	31
FEU7 - Bag filters ISO ePM1 50% (F7)													
Thickness		mm	282	282	282	282	282	282	282	282	282	282	282
Air side pressure drops	A1	Pa	22	33	26	38	33	43	21	28	32	38	43
FEU9 - Bag filters ISO ePM1 85% (F9)													
Thickness		mm	282	282	282	282	282	282	282	282	282	282	282
Air side pressure drops	A1	Pa	42	57	48	65	58	71	40	51	57	64	71

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

HUMIDIFIERS

LAMBDA SKY R7: UEIM - OVERSIZED IMMERSED ELECTRODE HUMIDIFIER

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
Max. steam output		kg/h	8	10	15	18	18	18	18	25	25	25	35	35
Max. absorbed power		kW	6.0	7.5	11.3	13.5	13.5	13.5	13.5	18.8	18.8	18.8	26.3	26.3
Feed water conductivity		µS/cm	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750
Filling fitting,			¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male
Drain fitting		mm	32	32	32	32	32	32	32	40	40	40	40	40

LAMBDA SKY R7: UEIM - OVERSIZED IMMERSED ELECTRODE HUMIDIFIER

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
Max. steam output		kg/h	15	25	25	35	35	35	35	45	45	45	45	45
Max. absorbed power		kW	11.3	18.8	18.8	26.3	26.3	26.3	26.3	33.8	33.8	33.8	33.8	33.8
Feed water conductivity		µS/cm	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750
Filling fitting,			¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male
Drain fitting		mm	32	40	40	40	40	40	40	40	40	40	40	40

LAMBDA Hi SKY R7: UEIM - OVERSIZED IMMERSED ELECTRODE HUMIDIFIER

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
Max. steam output		kg/h	3	5	8	8	10	15	15	18	18	18	18
Max. absorbed power		kW	2.3	3.8	6.0	6.0	7.5	11.3	11.3	13.5	13.5	13.5	13.5
Feed water conductivity		µS/cm	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750
Filling fitting,			¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male
Drain fitting		mm	32	32	32	32	32	32	40	40	40	40	40

LAMBDA Hi SKY R7: UEIM - OVERSIZED IMMERSED ELECTRODE HUMIDIFIER

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
Max. steam output		kg/h	8	10	15	15	25	25	25	35	35	35	35
Max. absorbed power		kW	6.0	7.5	11.3	11.3	18.8	18.8	18.8	26.3	26.3	26.3	26.3
Feed water conductivity		µS/cm	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750	350-750
Filling fitting,			¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male	¾"G, male
Drain fitting		mm	32	32	32	32	40	40	40	40	40	40	40

HOT GAS REHEATING COIL

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
BCO - HOT GAS REHEATING COIL														
Nominal Capacity		kW	20.5	24.5	28.5	36.8	41.5	46.3	49.2	49.6	56.3	59.3	66.1	74.7
Air side pressure drops	A1	Pa	8	5	7	5	6	6	7	9	10	11	12	13
Additional refrigerant charge CO		kg	3.7	3.9	3.9	6.5	6.7	6.9	8.3	7.2	7.2	8.3	10.5	10.5
Additional refrigerant charge HP		kg	1.1	1.8	1.8	2.5	2.6	2.9	2.9	3.2	3.2	3.1	5.4	5.4

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
BCO - HOT GAS REHEATING COIL													
Nominal Capacity		kW	10.4	12.4	14.9	18.1	21.4	25.5	28.1	34.6	38.0	43.8	47.1
Air side pressure drops	A1	Pa	5	6	6	8	5	6	5	5	6	6	7
Additional refrigerant charge CO		kg	1.8	3.2	3.6	4.6	4.8	4.8	5.7	5.9	7.4	7.9	9.7
Additional refrigerant charge HP		kg	1.3	1.3	1.7	2.0	3.0	3.0	3.9	4.0	4.3	4.7	5.2

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

HEAT RECOVERY HOT WATER PROCESS COIL (PRE-HEATING)

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
BR3V - HEAT RECOVERY PROCESS WATER COIL (PRE-HEATING)														
Nominal Capacity	X1	kW	36	49	55	66	71	85	89	112	114	116	122	124
Air side pressure drops	A1	Pa	21	12	15	14	16	16	18	27	30	33	38	40
Water flow rate	X1	l/h	6147	8469	9461	11430	12340	14740	15480	19460	19480	20030	21100	21530
Hydraulic pressure drops	X1	kPa	55.5	80.4	97.5	76.9	87.9	76.6	83.5	81.0	81.1	85.2	93.4	96.7
3way valve														
DN			25	32	32	32	32	32	32	32	32	32	32	32
Valve connections		inch	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Kvs		m3/h	10	16	16	16	16	25	25	25	25	25	25	25
Pressure drops	X1	kPa	38	28	35	51	59	35	38	61	61	64	71	74

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

(X1): Nominal air flow. Air inlet temperature to the coil: 20°C. Water temperatures in/out: 35°C/30°C

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
BR3V - HEAT RECOVERY PROCESS WATER COIL (PRE-HEATING)													
Nominal Capacity	X1	kW	20.8	24.5	31.9	35.5	48.9	54.6	65.9	71.2	75.6	85.1	89.3
Air side pressure drops	A1	Pa	8.1	16.3	15.2	20.6	12.0	15.0	11.1	13.7	15.8	15.6	17.9
Water flow rate	X1	l/h	3604	4246	5528	6147	8469	9461	11430	12340	13100	14740	15480
Hydraulic pressure drops	X1	kPa	60.8	81.2	46.1	55.5	80.4	97.5	76.9	87.9	97.5	76.6	83.5
3way valve													
DN			20	20	25	25	32	32	32	32	32	32	32
Valve connections		inch	3/4"	3/4"	1"	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Kvs		m3/h	6.3	6.3	10	10	16	16	16	16	16	25	25
Pressure drops	X1	kPa	33	45	31	38	28	35	51	59	67	35	38

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

(X1): Nominal air flow. Air inlet temperature to the coil: 20°C. Water temperatures in/out: 35°C/30°C

SOURCE SECTION ACCESSORIES

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
EC Fan														
Diameter		mm	800	800	800	800	800	800	800	800	800	800	800	800
Quantity		n°	1	2	2	2	2	2	2	4	4	4	4	4
Axial Fans		n°	1	2	2	2	2	2	2	4	4	4	4	4
Airflow single fan HP unit		m3/h	22,323	21,992	22,004	22,704	22,329	22,351	21,864	21,884	21,889	21,292	21,305	21,328
Total air flow rate		m3/h	22,323	43,984	44,008	45,407	44,658	44,701	43,728	87,535	87,557	85,169	85,219	85,311
Fan Nominal Power Input		kW	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Fan Nominal Current		A	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
EC Fan													
Diameter		mm	800	800	800	800	800	800	800	800	800	800	800
Quantity		n°	1	1	1	1	2	2	2	2	2	2	2
Axial Fans		n°	1	1	1	1	2	2	2	2	2	2	2
Airflow single fan HP unit		m3/h	22,515	22,021	22,682	22,332	22,002	22,020	22,678	22,713	22,334	22,365	21,884
Total air flow rate		m3/h	22,515	22,021	22,682	22,332	44,004	44,039	45,356	45,426	44,668	44,730	43,768
Fan Nominal Power Input		kW	1.04	1.04	1.04	1.04	1.04	1.04	1.45	1.45	1.45	1.45	1.45
Fan Nominal Current		A	1.95	1.95	1.95	1.95	1.95	1.95	3.40	3.40	3.40	3.40	3.40

AUXILIARY HEATING ELEMENTS

GAS BURNER

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
MODULATING GAS BURNER														
Nominal Heating Capacity		kW	40.5	62.9	80.3	97.2	97.2	125.9	125.9	160.1	160.1	160.1	194.3	194.3
Max Condensated Water	A1	l/h	1.1	2.1	3.3	2.7	2.7	4.2	4.2	6.6	6.6	6.6	5.4	5.4
Std Operating Mode		°C	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40
ØGas connection			UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 1 1/2"	UNI/ ISO 228/1- G 1 1/2"	UNI/ ISO 228/1- G 1 1/2"	UNI/ ISO 228/1- G 1 1/2"	UNI/ ISO 228/1- G 1 1/2"	UNI/ ISO 228/1- G 1 1/2"	UNI/ ISO 228/1- G 1 1/2"
Øinlet/outlet pipes		mm	80/80	80/80	80/80	80/80	80/80	2 x 80/80	2 x 80/80	2 x 80/80	2 x 80/80	2 x 80/80	2 x 80/80	2 x 80/80
Air side pressure drops	A1	Pa	69	75	64	54	63	59	69	61	67	74	68	73
Temperature Increasing (nominal airflow)		°C	13	17	19	18	16	19	17	19	18	17	19	19

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
MODULATING GAS BURNER													
Nominal Heating Capacity		kW	18.2	33.6	40.5	40.5	62.9	80.3	80.3	97.2	97.2	125.9	125.9
Max Condensated Water	A1	l/h	0.4	0.9	1.1	1.1	2.1	3.3	3.3	2.7	2.7	4.2	4.2
Std Operating Mode		°C	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40	-15/40
ØGas connection			UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 3/4"	UNI/ ISO 228/1- G 1 1/2"	UNI/ ISO 228/1- G 1 1/2"
Øinlet/outlet pipes		mm	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80	2 x 80/80	2 x 80/80
Air side pressure drops	A1	Pa	43	61	58	69	75	64	52	54	63	59	69
Temperature Increasing (nominal airflow)		°C	12	17	16	13	17	19	17	18	16	19	17

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

ELECTRIC HEATERS

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
BRB/BMB - ELECTRICAL HEATERS ON/OFF & MODULATING														
Total Power Input		kW	13.5	18.0	18.0	27.0	27.0	31.5	31.5	36.0	36.0	36.0	40.5	40.5
Capacity Steps		kW	4,5+9	9+9	9+9	9+18	9+18	13,5+18	13,5+18	18+18	18+18	18+18	18+22,5	18+22,5
Total absorbed current		A	19	26	26	39	39	45	45	52	52	52	58	58
Temperature Increasing (nominal airflow)		°C	4.5	4.9	4.2	4.9	4.5	4.8	4.4	4.3	4.1	3.9	4.0	3.9
BRM/BMM - OVERSIZED ELECT. HEATERS ON/OFF & MODUL.														
Total Power Input		kW	18.0	27.0	27.0	36.0	36.0	45.0	45.0	54.0	54.0	54.0	63.0	63.0
Capacity Steps		kW	9+9	9+18	9+18	18+18	18+18	18+27	18+27	27+27	27+27	27+27	27+36	18+22,5
Total absorbed current		A	26	39	39	52	52	65	65	78	78	78	91	91
Temperature Increasing (nominal airflow)		°C	6.0	7.4	6.2	6.5	6.0	6.8	6.3	6.5	6.1	5.8	6.2	6.0

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
BRB/BMB - ELECTRICAL HEATERS ON/OFF & MODULATING													
Total Power Input		kW	4.5	9.0	13.5	13.5	18.0	18.0	27.0	27.0	27.0	31.5	31.5
Capacity Steps		kW	4.5	4,5+4,5	4,5+9	4,5+9	9+9	9+9	9+18	9+18	9+18	13,5+18	13,5+18
Total absorbed current		A	6	13	19	19	26	26	39	39	39	45	45
Temperature Increasing (nominal airflow)		°C	3.0	4.7	5.4	4.5	4.9	4.2	5.6	4.9	4.5	4.8	4.4
BRM/BMM - OVERSIZED ELECT. HEATERS ON/OFF & MODUL.													
Total Power Input		kW	9.0	13.5	18.0	18.0	27.0	27.0	36.0	36.0	36.0	45.0	45.0
Capacity Steps		kW	4,5+4,5	4,5+9	9+9	9+9	9+18	9+18	18+18	18+18	18+18	18+27	18+27
Total absorbed current		A	13	19	26	26	39	39	52	52	52	65	65
Temperature Increasing (nominal airflow)		°C	6.0	7.0	7.2	6.0	7.4	6.2	7.4	6.5	6.0	6.8	6.3

HOT WATER COILS

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
B2B/B3B - HOT WATER COIL														
Nominal Capacity	X1	kW	71	92	101	133	139	145	151	218	225	232	242	245
Air side pressure drops	A1	Pa	16	8	10	9	11	12	14	21	23	25	29	31
Water flow rate	X1	l/h	3139	4083	4446	5880	6156	6389	6681	9633	9925	10240	10680	10830
Hydraulic pressure drops	X1	kPa	29	38	44	41	44	39	42	81	85	90	97	99
2 / 3 way valve														
DN			25	25	25	25	25	25	25	32	32	32	32	32
Valve connections		inch	1"	1"	1"	1"	1"	1"	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Kvs		m3/h	10	10	10	10	10	10	10	16	16	16	16	16
Pressure drops	X1	kPa	10	17	20	35	38	41	45	36	38	41	45	46
B2M/B3M - OVERSIZED HOT WATER COIL														
Nominal Capacity	X1	kW	79	110	122	160	168	190	201	259	257	265	280	284
Air side pressure drops	A1	Pa	22	13	16	15	17	16	19	29	32	35	40	42
Water flow rate	X1	l/h	3507	4869	5373	7058	7439	8416	8868	11430	11340	11720	1240	12550
Hydraulic pressure drops	X1	kPa	17	25	30	28	30	48	53	82.4	81.2	86	95	97
2 / 3 way valve														
DN			25	32	32	32	32	32	32	32	32	32	32	32
Valve connections		inch	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Kvs		m3/h	10	16	16	16	16	16	16	16	16	16	16	16
Pressure drops	X1	kPa	12	9	11	19	22	28	31	51	50	54	1	62

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

(X1): Nominal air flow. Air inlet temperature to the coil: 20°C. Water temperatures in/out: 80°C/60°C

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
B2B/B3B - HOT WATER COIL													
Nominal Capacity	X1	kW	40.1	45.9	64.5	71.0	92.3	101.0	124.0	133.0	139.0	145.0	151.0
Air side pressure drops	A1	Pa	6	13	11.7	15.8	8.3	10.3	7.6	9.4	10.9	12.0	14.0
Water flow rate	X1	l/h	1771	2027	2853	3139	4083	4446	5485	5880	6156	6389	6681
Hydraulic pressure drops	X1	kPa	18	24	25	29	38	44	36	41	44	39	42
2 / 3 way valve													
DN			15	15	25	25	25	25	25	25	25	25	25
Valve connections		inch	1/2"	1/2"	1/2"	1"	1"	1"	1"	1"	1"	1"	1"
Kvs		m3/h	4	4	10	10	10	10	10	10	10	10	10
Pressure drops	X1	kPa	20	26	6	7	15	17	27	38	38	41	45
B2M/B3M - OVERSIZED HOT WATER COIL													
Nominal Capacity	X1	kW	46.8	54.8	71.1	79.3	110.0	122.0	147.0	160.0	168.0	190.0	201.0
Air side pressure drops	A1	Pa	8	16	15	22	13	16	11	15	17	16	19
Water flow rate	X1	l/h	2069	2422	3143	3507	4869	5373	6501	7058	7439	8416	8868
Hydraulic pressure drops	X1	kPa	19	25	14	17	25	30	24	28	30	48	53
2 / 3 way valve													
DN			20	20	25	25	32	32	32	32	32	32	32
Valve connections		inch	3/4"	3/4"	1"	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Kvs		m3/h	6.3	6.3	10	10	16	16	16	16	16	16	16
Pressure drops	X1	kPa	11	15	10	12	9	11	17	19	22	28	31

(A1): Additional pressure drops with nominal airflow compared to standard unit configuration.

(X1): Nominal air flow. Air inlet temperature to the coil: 20°C. Water temperatures in/out: 80°C/60°C

PLUG FAN ACCESSORIES

SUPPLY FANS
LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
PMMP - PLASTIC FAN OVERSIZED														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP Standard configuration without accessories		Pa	758	906	709	816	770	702	622	762	727	687	578	543
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	2	2	2	2	3	3	3	3	3
Nominal Power Input		kW	3.4	4.6	4.6	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Nominal Current		A	5.4	7.4	7.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
PMXP - PLASTIC FAN SUPER OVERS.														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP Standard configuration without accessories		Pa	1009	906	768	816	1020	965	896	1004	975	943	845	814
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	2	2	2	2	2	3	3	3	3	3
Nominal Power Input		kW	4.6	4.6	2.5	3.4	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Nominal Current		A	7.4	7.4	4.0	5.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
PMSM - METAL FAN STD.														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP Standard configuration without accessories		Pa	863	596	478	603	454	780	663	538	435	783	647	598
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	2	2	2	2	2	2	3	3	3	3	3
Nominal Power Input		kW	3.8	1.7	1.7	2.7	2.7	3.8	3.8	2.7	2.7	3.8	3.8	3.8
Nominal Current		A	5.9	2.7	2.7	4.1	4.1	5.9	5.9	4.1	4.1	5.9	5.9	5.9
PMMM - METAL FAN OVERSIZED														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP Standard configuration without accessories		Pa	946	967	852	938	958	888	810	954	916	874	764	730
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	2	2	2	2	2	2	3	3	3	3	3
Nominal Power Input		kW	4.4	2.7	2.7	3.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Nominal Current		A	6.6	4.1	4.1	5.9	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
PMMP - PLASTIC FAN OVERSIZED													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP Standard configuration without accessories		Pa	933	727	845	758	906	709	865	816	770	702	622
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	1	2	2	2	2	2
Nominal Power Input		kW	2.1	2.1	3.4	3.4	4.6	4.6	3.4	3.4	3.4	3.4	3.4
Nominal Current		A	3.4	3.4	5.4	5.4	7.4	7.4	5.4	5.4	5.4	5.4	5.4
PMXP - PLASTIC FAN SUPER OVERS.													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP Standard configuration without accessories		Pa	933	900	845	1009	906	768	865	816	1020	965	896
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	2	2	2	2	2	2
Nominal Power Input		kW	2.1	2.5	3.4	4.6	4.6	2.5	3.4	3.4	4.6	4.6	4.6
Nominal Current		A	3.4	4.0	5.4	7.4	7.4	4.0	5.4	5.4	7.4	7.4	7.4
PMSM - METAL FAN STD.													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP Standard configuration without accessories		Pa	387	551	986	863	596	478	776	603	454	780	663
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	2	2	2	2	2	2	2
Nominal Power Input		kW	1.1	1.74	3.8	3.8	1.7	1.7	2.7	2.7	2.7	3.8	3.8
Nominal Current		A	1.7	2.7	5.9	5.9	2.7	2.7	4.1	4.1	4.1	5.9	5.9
PMMM - METAL FAN OVERSIZED													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP Standard configuration without accessories		Pa	702	925	1044	946	967	852	1012	938	958	888	810
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	2	2	2	2	2	2	2
Nominal Power Input		kW	1.7	2.7	4.4	4.4	2.7	2.7	3.8	3.8	4.4	4.4	4.4
Nominal Current		A	2.7	4.1	6.6	6.6	4.1	4.1	5.9	5.9	6.6	6.6	6.6

EXHAUST FANS (only for FC3S/RS45/RS41)

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
PRMP - PLASTIC FAN OVERSIZED														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP		Pa	519	426	474	543	519	483	438	531	746	659	661	610
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2	2
Nominal Power Input		kW	2.6	2.6	3.4	2.6	2.6	2.6	2.6	3.4	4.6	4.6	5.0	5.0
Nominal Current		A	4.2	4.2	5.4	4.2	4.2	4.2	4.2	5.4	7.4	7.4	7.8	7.8
PRXP - PLASTIC FAN SUPER OVERS.														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP		Pa	826	680	773	865	826	768	697	825	746	659	661	610
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2	2
Nominal Power Input		kW	3.4	3.4	4.6	3.4	3.4	3.4	3.4	4.6	4.6	4.6	5.0	5.0
Nominal Current		A	4.2	4.2	5.4	4.2	4.2	4.2	4.2	5.4	7.4	7.4	7.8	7.8
PRSM - METAL FAN STD														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP		Pa	511	711	384	302	511	326	738	474	338	589	448	386
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2	2
Nominal Power Input		kW	2.7	3.8	3.8	1.7	2.7	2.7	3.8	3.8	3.8	4.4	4.4	4.4
Nominal Current		A	4.1	5.9	5.9	2.7	4.1	4.1	5.9	5.9	5.9	6.6	6.6	6.6
PRMM - METAL FAN OVERSIZED														
Nominal air flow rate		m3/h	9000	11000	13000	16500	18000	19800	21600	25000	26500	28000	30500	31500
ESP		Pa	511	869	690	653	931	846	885	738	666	774	648	594
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2	2
Nominal Power Input		kW	2.7	4.4	4.4	2.7	3.8	3.8	4.4	4.4	4.4	5.0	5.0	5.0
Nominal Current		A	4.1	6.6	6.6	4.1	5.9	5.9	6.6	6.6	6.6	7.7	7.7	7.7

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
PRMP - PLASTIC FAN OVERSIZED													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP		Pa	461	352	561	519	426	474	596	543	519	483	438
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	1	1	2	2	2	2
Nominal Power Input		kW	1.3	2.1	2.6	2.6	2.6	3.4	5.0	2.6	2.6	2.6	2.6
Nominal Current		A	2.1	3.4	4.2	4.2	4.2	5.4	7.4	4.2	4.2	4.2	4.2
PRXP - PLASTIC FAN SUPER OVERS.													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP		Pa	969	793	896	826	680	773	905	865	826	768	697
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	1	2	2	2	2	2
Nominal Power Input		kW	2.1	2.1	3.4	3.4	3.4	4.6	3.4	3.4	3.4	3.4	3.4
Nominal Current		A	3.4	3.4	5.4	5.4	5.4	7.4	5.4	5.4	5.4	5.4	5.4
PRSM - METAL FAN STD													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP		Pa	423	616	420	511	711	384	453	302	511	326	738
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	1	2	2	2	2	2
Nominal Power Input		kW	1.1	1.7	1.7	2.7	3.8	3.8	1.7	1.7	2.7	2.7	3.8
Nominal Current		A	1.7	2.7	2.7	4.1	5.9	5.9	2.7	2.7	4.1	4.1	5.9
PRMM - METAL FAN OVERSIZED													
Nominal air flow rate		m3/h	4500	5800	7500	9000	11000	13000	14500	16500	18000	19800	21600
ESP		Pa	738	991	778	511	869	690	816	653	931	846	885
Type			EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan	EC-Plug Fan
Quantity		n°	1	1	1	1	1	1	2	2	2	2	2
Nominal Power Input		kW	1.7	2.7	2.7	2.7	4.4	4.4	2.7	2.7	3.8	3.8	4.4
Nominal Current		A	2.7	4.1	4.1	4.1	6.6	6.6	4.1	4.1	5.9	5.9	6.6

AVAILABLE SUPPLY AND RETURN AIR

		SUPPLY					RETURN				
SIZE	VER-SION	Frontal	Above	Below	Right	Left	Back	Above	Below	Right	Left
2.1 - 5.2	Base	V				V	V				
	FC2S	V				V	V			V	V
	FC3S	V				V	V				
	RS4S	V				V	V				
	Base + GC	V					V				
	FC2S + GC	V					V			V	V
	FC3S + GC	V					V				
	RS4S + GC	V					V				
6.1 - 19.4	Base		A	V	V	V	V				
	FC2S		A	V	V	V	V			V	V
	FC3S	V	A	V	V	V		A	A	S	A
	RS4S		A	V	V	V	V			A	A
	Base + GC		A	V	V	V	V				
	FC2S + GC		A	V	V	V	V			V	V
	FC3S + GC	V						A	A	S	A
	RS4S + GC		A	V	V	V	V			A	A

V - Selectable directly on site

A - To be chosen with proper accessory before the order

S - Standard

ECODESIGN

LAMBDA SKY R7

Ecodesign data - 2009/125/EC													
Size			**5.2**	**6.2**	**7.2**	**9.4**	**10.4**	**11.4**	**12.4**	**14.4**	**15.4**	**16.4**	**18.4**	**19.4**
SEER AC fans			**3.65**	**3.84**	**3.99**	**4.24**	**4.07**	**4.11**	**4.05**	**4.45**	**4.32**	**4.35**	**4.21**	**4.14**
ηsc (ηsc,target ErP compliance Reg. 2281 Tier 2 (2021) : 138,0%)			142.92%	150.40%	156.44%	166.72%	159.72%	161.40%	158.96%	175.04%	169.76%	170.84%	165.28%	162.64%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SEER EC fans			**3.89**	**4.14**	**4.29**	**4.71**	**4.34**	**4.35**	**4.29**	**4.92**	**4.71**	**4.73**	**4.55**	**4.45**
ηsc (ηsc,target ErP compliance Reg. 2281 Tier 2 (2021) : 138,0%)			152.4%	162.8%	168.5%	185.2%	170.4%	170.8%	168.4%	193.6%	185.4%	186.2%	179.0%	175.0%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SCOP AC fans			**3.22**	**3.20**	**3.35**	**3.34**	**3.22**	**3.37**	**3.31**	**3.39**	**3.37**	**3.34**	**3.30**	**3.33**
ηsh (ηsh,target ErP compliance Reg. 2281 Tier 2 (2021) : 125,0%)			125.8%	125.1%	131.2%	130.7%	125.7%	131.8%	129.5%	132.8%	131.7%	130.5%	128.8%	130.2%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SCOP EC fans			**3.37**	**3.50**	**3.57**	**3.60**	**3.46**	**3.63**	**3.53**	**3.74**	**3.70**	**3.67**	**3.57**	**3.61**
ηsh (ηsh,target ErP compliance Reg. 2281 Tier 2 (2021) : 125,0%)			131.8%	136.8%	140.0%	141.0%	135.5%	142.2%	138.3%	146.6%	144.9%	143.6%	139.7%	141.3%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

LAMBDA SKY Hi R7

Ecodesign data - 2009/125/EC												
Size			**2.1**	**3.1**	**4.1**	**5.1**	**6.1**	**7.2**	**8.2**	**9.2**	**10.2**	**11.2**	**12.2**
SEER AC fans			**4.78**	**4.90**	**5.35**	**5.41**	**5.46**	**4.51**	**5.31**	**5.47**	**5.18**	**5.16**	**5.12**
ηsc (ηsc,target ErP compliance Reg. 2281 Tier 2 (2021) : 138,0%)			188.36%	193.0%	211.0%	213.3%	215.4%	177.5%	209.6%	216.0%	204.2%	203.2%	201.8%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SEER EC fans			**5.32**	**5.44**	**5.97**	**5.99**	**6.16**	**4.93**	**6.03**	**6.09**	**5.76**	**5.67**	**5.46**
ηsc (ηsc,target ErP compliance Reg. 2281 Tier 2 (2021) : 138,0%)			210.0%	214.7%	235.9%	236.5%	243.2%	194.0%	238.2%	240.7%	227.6%	223.68%	215.56%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SCOP AC fans			**3.40**	**3.37**	**3.70**	**3.63**	**3.48**	**3.43**	**3.68**	**3.67**	**3.70**	**3.58**	**3.55**
ηsh (ηsh,target ErP compliance Reg. 2281 Tier 2 (2021) : 125,0%)			133.1%	132.0%	144.9%	142.3%	136.2%	134.0%	144.4%	143.7%	145.1%	140.4%	139.0%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SCOP EC fans			**3.76**	**3.70**	**4.09**	**3.89**	**3.87**	**3.77**	**4.40**	**4.29**	**4.20**	**4.01**	**3.95**
ηsh (ηsh,target ErP compliance Reg. 2281 Tier 2 (2021) : 125,0%)			147.4%	144.8%	160.8%	152.4%	152.0%	147.8%	172.8%	168.6%	165.0%	157.5%	155.0%
ErP compliance Reg. 2281 Tier 2 (2021)			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

ELECTRICAL DATA

LAMBDA SKY R7

Size			5.2	6.2	7.2	9.4	10.4	11.4	12.4	14.4	15.4	16.4	18.4	19.4
BASE UNIT / FC2S: STD CONFIG.														
Max. absorbed power (FLI)		kW	23.6	28.7	32.2	43.2	47.7	51.5	48.1	67.6	74.2	79.3	85.0	93.6
Max. absorbed current (FLA)		A	39.2	46.7	53.2	74.8	80.8	85.8	81.2	116.0	127.1	137.6	148.6	156.8
Maximum inrush current (MIC)		A	150.8	167.0	168.0	160.9	192.4	206.1	192.8	211.6	241.9	281.1	292.2	363.1
Maximum inrush current with soft-starter (MIC)		A	99.6	111.4	112.0	120.5	141.2	150.5	141.6	164.4	185.9	211.5	222.6	266.8
UNIT FC3S / RS45 / RS41: STD CONFIG.														
Max. absorbed power (FLI)		kW	26.2	31.3	35.6	48.4	52.9	56.7	53.3	72.8	81.0	86.1	94.2	102.8
Max. absorbed current (FLA)		A	43.4	50.9	58.6	83.2	89.2	94.2	89.6	124.4	137.9	148.4	163.4	171.6
Maximum inrush current (MIC)		A	155.0	171.2	173.4	169.3	200.8	214.5	201.2	220.0	252.7	291.9	307.0	377.9
Maximum inrush current with soft-starter (MIC)		A	103.8	115.6	117.4	128.9	149.6	158.9	150.0	172.8	196.7	222.3	237.4	281.6
PLUG FAN ACCESSORIES														
SUPPLY FANS														
PMMP - PLASTIC FAN OVERSIZED														
ΔNominal Power Input versus std fan		kW	0.6	1.2	1.2	1.6	1.6	1.2	1.2	2.4	2.4	2.4	1.8	1.8
ΔNominal Current versus std fan		A	1.0	2.0	2.0	2.4	2.4	2.0	2.0	3.6	3.6	3.6	3.0	3.0
PMXP - PLASTIC FAN SUPER OVERS.														
ΔNominal Power Input versus std fan		kW	1.8	1.2	1.6	1.6	4.0	3.6	3.6	6.0	6.0	6.0	5.4	5.4
ΔNominal Current versus std fan		A	3.0	2.0	2.6	2.4	6.4	6.0	6.0	9.6	9.6	9.6	9.0	9.0
PMSM - METAL FAN STD.														
ΔNominal Power Input versus std fan		kW	1.0	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	3.6	3.0	3.0
ΔNominal Current versus std fan		A	1.5	0.0	0.0	-0.2	-0.2	3.0	3.0	-0.3	-0.3	5.1	4.5	4.5
PMMM - METAL FAN OVERSIZED														
ΔNominal Power Input versus std fan		kW	1.6	1.9	1.9	2.4	3.6	3.2	3.2	5.4	5.4	5.4	4.8	4.8
ΔNominal Current versus std fan		A	2.2	2.8	2.8	3.4	4.8	4.4	4.4	7.2	7.2	7.2	6.6	6.6
EXHAUST FANS (only FC3S/RS45/RS41)														
PRMP - PLASTIC FAN OVERSIZED														
ΔNominal Power Input versus std fan		kW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.4	2.4	0.8	0.8
ΔNominal Current versus std fan		A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.0	4.0	0.8	0.8
PRXP - PLASTIC FAN SUPER OVERS.														
ΔNominal Power Input versus std fan		kW	0.8	0.8	1.2	1.6	1.6	1.6	1.6	4.0	2.4	2.4	0.8	0.8
ΔNominal Current versus std fan		A	1.2	1.2	2.0	2.4	2.4	2.4	2.4	6.4	4.0	4.0	0.8	0.8
PRSM - METAL FAN STD														
ΔNominal Power Input versus std fan		kW	0.0	1.2	0.4	-1.7	0.1	0.1	2.4	2.4	0.8	2.0	-0.4	-0.4
ΔNominal Current versus std fan		A	-0.1	1.7	0.5	-3.0	-0.2	-0.2	3.4	3.4	1.0	2.4	-1.6	-1.6
PRMM - METAL FAN OVERSIZED														
ΔNominal Power Input versus std fan		kW	0.0	1.8	1.0	0.1	2.4	2.4	3.6	3.6	2.0	3.2	0.8	0.8
ΔNominal Current versus std fan		A	-0.1	2.4	1.2	-0.2	3.4	3.4	4.8	4.8	2.4	4.6	0.6	0.6
MOTOCONDENSING SECTION ACCESSORIES														
EC Fan														
ΔNominal Power Input versus std fan		kW	0.21	0.21	0.21	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20
ΔNominal Current versus std fan		A	-0.05	-0.05	-0.05	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50
VENTILATING SECTION ACCESSORIES														
UEIB - IMMERSED ELECTRODE HUMIDIFIER														
Nominal Power Input		kW	6.0	7.5	11.3	13.5	13.5	13.5	13.5	18.8	18.8	18.8	26.3	26.3
Rated current		A	8.7	10.8	16.2	19.5	19.5	19.5	19.5	27.1	27.1	27.1	37.9	37.9
UEIM - OVERSIZED IMMERSED ELECTRODE HUMIDIFIER														
Nominal Power Input		kW	11.3	18.8	18.8	26.3	26.3	26.3	26.3	33.8	33.8	33.8	33.8	33.8
Rated current		A	16.2	27.1	27.1	37.9	37.9	37.9	37.9	48.7	48.7	48.7	48.7	48.7
AUXILIARY HEATING ELEMENTS														
BRB/BMB - ELECTRICAL HEATERS ON/OFF & MODULATING														
Nominal Power Input		kW	13.5	18.0	18.0	27.0	27.0	31.5	31.5	36.0	36.0	36.0	40.5	40.5
Rated current		A	19	26	26	39	39	45	45	52	52	52	58	58
BRM/BMM - OVERSIZED ELECT. HEATERS ON/OFF & MODUL.														
Nominal Power Input		kW	18.0	27.0	27.0	36.0	36.0	45.0	45.0	54.0	54.0	54.0	63.0	63.0
Rated current		A	26	39	39	52	52	65	65	78	78	78	91	91

LAMBDA SKY Hi R7

Size			2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2	11.2	12.2
BASE UNIT / FC2S: STD CONFIG.													
Max. absorbed power (FLI)		kW	10.0	17.8	18.3	25.3	27.0	31.8	34.4	47.3	47.3	52.0	52.0
Max. absorbed current (FLA)		A	15.4	30.4	31.2	38.4	41.3	53.0	58.9	77.7	77.7	82.2	82.2
Maximum inrush current (MIC)		A	9.1	10.4	11.2	11.4	14.3	167.0	172.9	219.7	219.7	288.4	288.4
Maximum inrush current with soft-starter (MIC)		A	7.1	8.4	9.2	9.4	12.3	111.4	117.3	150.1	150.1	192.1	192.1
UNIT FC3S / RS45 / RS41: STD CONFIG.													
Max. absorbed power (FLI)		kW	11.3	19.1	20.9	27.9	29.6	35.2	39.0	52.5	52.5	57.2	57.2
Max. absorbed current (FLA)		A	17.5	32.5	35.4	42.6	45.5	58.4	66.3	86.1	86.1	90.6	90.6
Maximum inrush current (MIC)		A	11.2	12.5	15.4	15.6	18.5	172.4	180.3	228.1	228.1	296.8	296.8
Maximum inrush current with soft-starter (MIC)		A	9.2	10.5	13.4	13.6	16.5	116.8	124.7	158.5	158.5	200.5	200.5
PLUG FAN ACCESSORIES													
SUPPLY FANS													
PMMP - PLASTIC FAN OVERSIZED													
ΔNominal Power Input versus std fan		kW	0.8	0.0	0.8	0.6	1.2	1.2	1.6	1.6	1.6	1.2	1.2
ΔNominal Current versus std fan		A	1.3	0.0	1.2	1.0	2.0	2.0	2.4	2.4	2.4	2.0	2.0
PMXP - PLASTIC FAN SUPER OVERS.													
ΔNominal Power Input versus std fan		kW	0.8	0.4	0.8	1.8	1.2	1.6	1.6	1.6	4.0	3.6	3.6
ΔNominal Current versus std fan		A	1.3	0.6	1.2	3.0	2.0	2.6	2.4	2.4	6.4	6.0	6.0
PMSM - METAL FAN STD.													
ΔNominal Power Input versus std fan		kW	-0.2	-0.4	1.2	1.0	0.1	0.1	0.1	0.1	0.1	2.0	2.0
ΔNominal Current versus std fan		A	-0.4	-0.7	1.7	1.5	0.0	0.0	-0.2	-0.2	-0.2	3.0	3.0
PMMM - METAL FAN OVERSIZED													
ΔNominal Power Input versus std fan		kW	0.4	0.6	1.8	1.6	1.9	1.9	2.4	2.4	3.6	3.2	3.2
ΔNominal Current versus std fan		A	0.6	0.7	2.4	2.2	2.8	2.8	3.4	3.4	4.8	4.4	4.4
EXHAUST FANS (only FC3S/RS45/RS41)													
PRMP - PLASTIC FAN OVERSIZED													
ΔNominal Power Input versus std fan		kW	0.0	0.8	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
ΔNominal Current versus std fan		A	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PRXP - PLASTIC FAN SUPER OVERS.													
ΔNominal Power Input versus std fan		kW	0.8	0.8	0.8	0.8	0.8	1.2	2.2	1.6	1.6	1.6	1.6
ΔNominal Current versus std fan		A	1.3	1.3	1.2	1.2	1.2	2.0	3.4	2.4	2.4	2.4	2.4
PRSM - METAL FAN STD													
ΔNominal Power Input versus std fan		kW	-0.2	0.4	-0.9	0.0	1.2	0.4	-1.1	-1.7	0.1	0.1	2.4
ΔNominal Current versus std fan		A	-0.4	0.6	-1.5	-0.1	1.7	0.5	-2.0	-3.0	-0.2	-0.2	3.4
PRMM - METAL FAN OVERSIZED													
ΔNominal Power Input versus std fan		kW	0.4	1.4	0.0	0.0	1.8	1.0	0.7	0.1	2.4	2.4	3.6
ΔNominal Current versus std fan		A	0.6	2.0	-0.1	-0.1	2.4	1.2	0.8	-0.2	3.4	3.4	4.8
MOTOCONDENSING SECTION ACCESSORIES													
EC Fan													
ΔNominal Power Input versus std fan		kW	0.21	0.21	0.21	0.21	0.42	0.42	-0.40	-0.40	-0.40	-0.40	-0.40
ΔNominal Current versus std fan		A	-0.05	-0.05	-0.05	-0.05	-0.10	-0.10	-3.00	-3.00	-3.00	-3.00	-3.00
VENTILATING SECTION ACCESSORIES													
UEIB - IMMERSED ELECTRODE HUMIDIFIER													
Nominal Power Input		kW	2.3	3.8	6.0	6.0	7.5	11.3	11.3	13.5	13.5	13.5	13.5
Rated current		A	3.2	5.4	8.7	8.7	10.8	16.2	16.2	19.5	19.5	19.5	19.5
UEIM - OVERSIZED IMMERSED ELECTRODE HUMIDIFIER													
Nominal Power Input		kW	6.0	7.5	11.3	11.3	18.8	18.8	18.8	26.3	26.3	26.3	26.3
Rated current		A	8.7	10.8	16.2	16.2	27.1	27.1	27.1	37.9	37.9	37.9	37.9
AUXILIARY HEATING ELEMENTS													
BRB/BMB - ELECTRICAL HEATERS ON/OFF & MODULATING													
Nominal Power Input		kW	4.5	9.0	13.5	13.5	18.0	18.0	27.0	27.0	27.0	31.5	31.5
Rated current		A	6	13	19	19	26	26	39	39	39	45	45
BRM/BMM - OVERSIZED ELECT. HEATERS ON/OFF & MODUL.													
Nominal Power Input		kW	9.0	13.5	18.0	18.0	27.0	27.0	36.0	36.0	36.0	45.0	45.0
Rated current		A	13	19	26	26	39	39	52	52	52	65	65

NOISE LEVELS

LAMBDA SKY R7 - Base versin

	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
5.2	88	69	84	66	79	60	76	57	74	55	70	51	69	50	64	46	**79**	**61**
6.2	91	71	87	68	82	62	76	59	76	57	73	54	71	52	65	45	**82**	**62**
7.2	94	75	88	68	82	63	76	59	76	57	73	54	71	52	64	44	**82**	**63**
9.4	97	77	94	74	84	65	76	62	81	61	77	57	74	54	66	46	**86**	**66**
10.4	97	77	94	74	85	65	76	62	81	61	76	56	74	54	68	48	**86**	**66**
11.4	97	77	94	74	85	65	76	61	80	61	76	56	74	54	67	47	**86**	**66**
12.4	97	77	94	74	85	65	76	61	81	61	77	57	75	55	68	48	**86**	**66**
14.4	100	80	97	77	87	67	76	64	83	63	79	59	77	56	68	48	**89**	**68**
15.4	100	80	97	77	87	67	76	64	83	63	79	59	77	56	68	47	**89**	**68**
16.4	100	80	97	77	87	67	76	64	84	63	80	60	77	57	69	49	**89**	**69**
18.4	100	80	97	77	88	67	76	64	84	64	81	61	78	57	71	50	**89**	**69**
19.4	100	80	97	77	88	67	76	64	84	64	84	64	78	58	70	50	**90**	**70**

Lw: sound power lever based on measurements according to ISO 3744. Data refers to full receirculation configuration.
Lp: average sound pressure level, at 1 meter from the unit, free field conditions on reflecting surface. Data not binding derived from sound power level.

LAMBDA SKY R7 - Base version with sound casing (COCA)

	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
5.2	87	68	83	65	78	59	74	56	72	53	68	49	64	45	56	37	**77**	**58**
6.2	90	70	86	67	81	61	77	58	74	55	71	51	66	47	58	39	**80**	**61**
7.2	93	74	87	67	81	62	77	58	74	55	71	51	66	47	58	39	**80**	**61**
9.4	96	76	93	73	83	64	80	60	79	59	74	54	71	51	62	42	**84**	**65**
10.4	96	76	93	73	84	64	80	60	79	59	74	54	71	51	63	43	**84**	**65**
11.4	96	76	93	73	83	64	80	60	79	59	74	54	71	51	62	43	**84**	**65**
12.4	96	76	93	73	84	64	80	60	79	59	74	54	71	51	63	43	**84**	**65**
14.4	99	79	96	76	86	66	83	63	82	62	77	57	74	54	65	45	**87**	**67**
15.4	99	79	96	76	86	66	83	63	82	62	77	57	74	54	65	45	**87**	**67**
16.4	99	79	96	76	86	66	83	63	82	62	78	57	74	54	65	45	**87**	**67**
18.4	99	79	96	76	86	66	83	63	82	62	78	57	74	54	65	45	**88**	**67**
19.4	99	79	96	76	87	66	83	63	82	62	79	58	74	54	65	45	**88**	**67**

Lw: sound power lever based on measurements according to ISO 3744. Data refers to full receirculation configuration.
Lp: average sound pressure level, at 1 meter from the unit, free field conditions on reflecting surface. Data not binding derived from sound power level.

LAMBDA SKY Hi R7 - Base versin

	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
2.1	88	69	85	66	79	61	77	58	76	57	75	57	75	57	71	53	**82**	**64**
3.1	88	69	85	66	80	61	79	61	79	60	78	59	76	58	70	52	**84**	**66**
4.1	89	70	86	67	84	65	79	60	82	63	81	62	79	60	66	47	**87**	**68**
5.1	88	69	85	66	79	61	80	61	80	62	81	62	77	58	73	54	**86**	**67**
6.1	91	71	88	68	83	64	81	61	82	62	81	62	83	64	75	55	**88**	**69**
7.2	94	75	89	69	85	66	81	61	82	63	81	62	79	60	67	48	**88**	**68**
8.2	97	77	94	74	88	69	84	64	85	65	82	62	89	69	77	57	**93**	**73**
9.2	97	77	94	74	85	65	83	63	83	63	82	62	79	59	73	53	**89**	**69**
10.2	97	77	94	74	85	66	83	63	84	64	82	63	83	63	75	55	**90**	**70**
11.2	97	77	94	74	86	66	83	63	84	64	84	64	84	64	75	55	**90**	**71**
12.2	97	77	94	74	88	68	84	65	87	67	85	66	90	70	79	59	**94**	**74**

Lw: sound power lever based on measurements according to ISO 3744. Data refers to full receirculation configuration.
Lp: average sound pressure level, at 1 meter from the unit, free field conditions on reflecting surface. Data not binding derived from sound power level.

LAMBDA SKY Hi R7 - Base version with sound casing (COCA)

	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
2.1	88	69	85	66	79	60	76	57	73	55	70	52	66	47	60	42	**79**	**61**
3.1	88	69	85	66	79	61	77	58	75	57	72	53	66	48	60	42	**80**	**62**
4.1	89	70	86	67	80	61	77	58	77	58	74	55	67	48	58	39	**81**	**62**
5.1	88	69	84	66	79	60	77	58	76	57	74	55	67	48	61	43	**81**	**62**
6.1	91	71	88	68	82	63	79	60	78	59	75	56	70	51	63	44	**83**	**64**
7.2	94	75	88	69	83	64	79	60	78	59	75	55	69	50	60	41	**83**	**64**
8.2	97	77	94	74	86	66	82	62	82	62	77	57	75	55	66	46	**87**	**67**
9.2	97	77	94	74	85	65	82	62	81	61	77	57	72	53	65	45	**86**	**66**
10.2	97	77	94	74	85	65	82	62	81	61	77	57	73	53	66	46	**86**	**66**
11.2	97	77	94	74	85	65	82	62	81	61	78	58	73	53	66	46	**86**	**67**
12.2	97	77	94	74	85	65	82	62	83	63	79	59	76	56	67	48	**87**	**68**

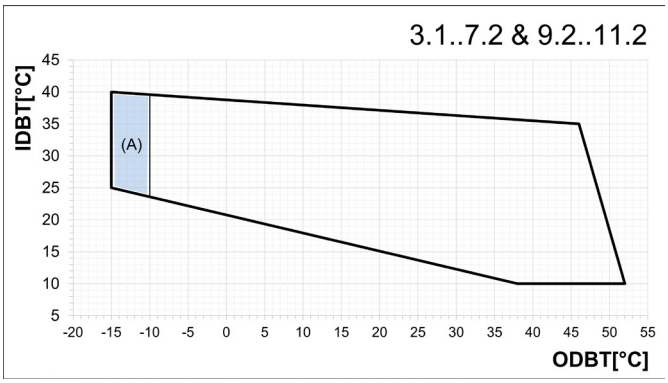
Lw: sound power lever based on measurements according to ISO 3744. Data refers to full receirculation configuration.
Lp: average sound pressure level, at 1 meter from the unit, free field conditions on reflecting surface. Data not binding derived from sound power level.

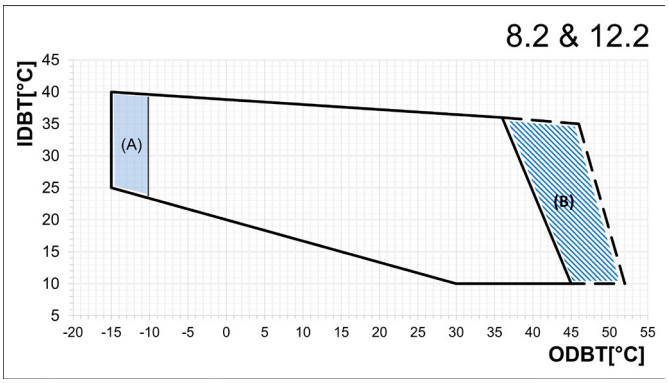
THEORETICAL NOISE ATTENUATION VALUES BASED ON DISTANCE IN FREE FIELD

Distance	(m)	1	2	3	4	5	6	7	8	9	10
Attenuation	(dB)	0	6	9.5	12	14	15.5	17	18	19	20

OPERATING LIMITS - LAMBDA SKY HI R7

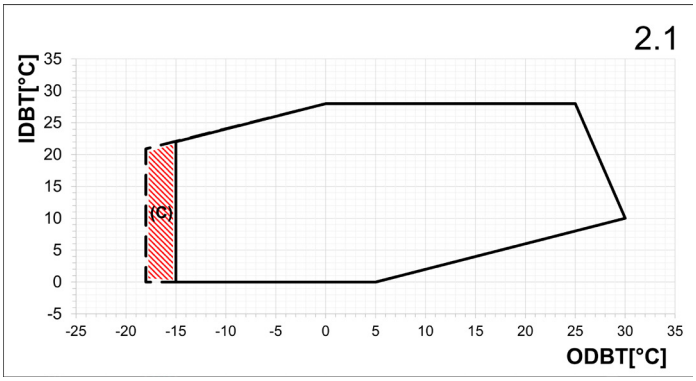
COOLING

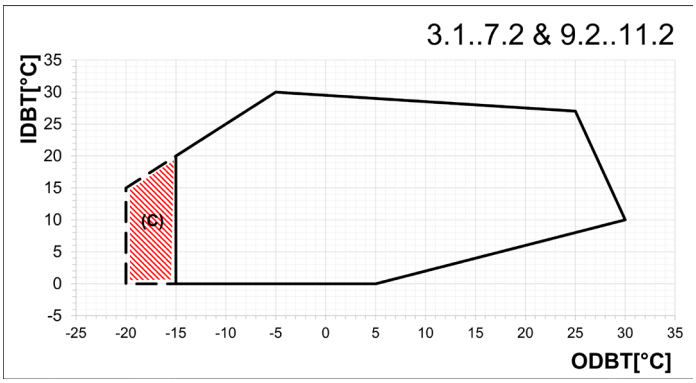


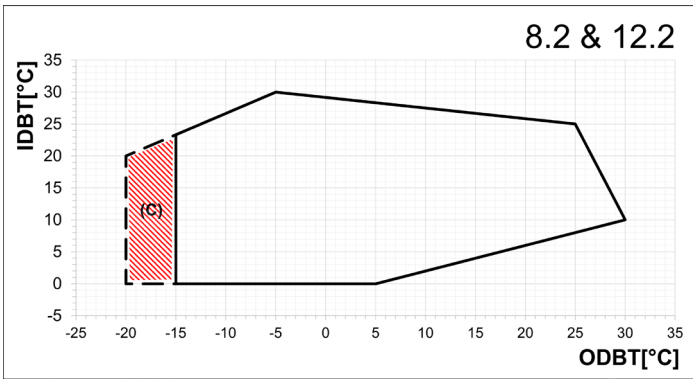


ODBT: Temperature of the external air that strikes the condensing coil (dry bulb)
IDBT: Temperature of the internal air that strikes the evaporating coil (dry bulb)
(A): EC Fans on source side mandatory
(B): Working area with forced modulated compressors
They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

HEATING







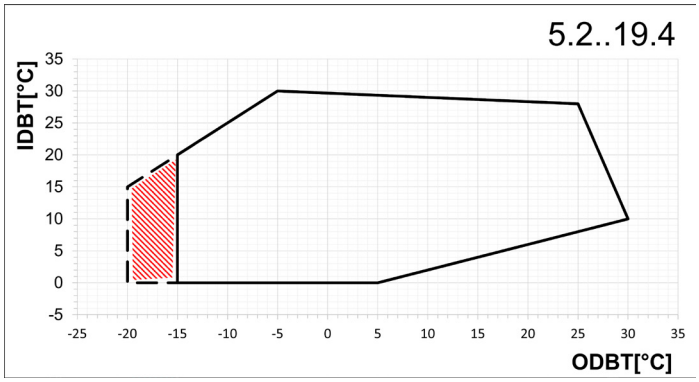
ODBT: Temperature of the external air that strikes the condensing coil (dry bulb)
IDBT: Temperature of the internal air that strikes the evaporating coil (dry bulb)
(C): Working area with unit alive but not granted capacity
They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

OPERATING LIMITS - LAMBDA SKY R7

COOLING

ODBT: Temperature of the external air that strikes the condensing coil (dry bulb)
IDBT: Temperature of the internal air that strikes the evaporating coil (dry bulb)
(A): EC Fans on source side mandatory
They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

HEATING



ODBT: Temperature of the external air that strikes the condensing coil (dry bulb)
IDBT: Temperature of the internal air that strikes the evaporating coil (dry bulb)
(C): Working area with unit alive but not granted capacity
They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

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.

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 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 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.

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)
- coils with anti-corrosion treatment (accessory available only for HP units or with Cu/Al coil)

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, is strongly recommended 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.

TC_0000_Lambda SKY_EN_Rev00_20201212

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