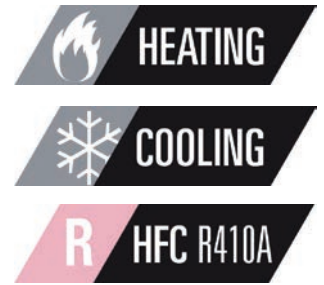


Climaveneta Data Book

WRX_0302_0804_202105_EN



WRX / WRX-T

0302 - 0804
97 - 240 kW

Fully-configurable and high-efficiency air-source reverse-cycle and cooling only rooftop unit



(The photo of the unit is purely indicative and may vary depending on the model)

- Maximum flexibility
- Very high reliability
- High versatility
- 4 types of heat recovery available



CERTIFICATIONS

Product certifications



System certifications



Climaveneta S.p.A.:

Quality System complying with the requirements of UNI EN ISO9001:2008 regulation

Environmental Management System complying with the requirements of UNI EN ISO14001:2004 regulation

SUMMARY

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The units highlighted in this publication contain HFC R410A [GWP₁₀₀ 2088] fluorinated greenhouse gases.

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Read this document carefully.

All work must be performed, components selected and materials used professionally and in complete accordance with the legislation in force in material in the country concerned, and considering the operating conditions and intended uses of the system, by qualified personnel.

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1. GREEN CERTIFICATION RELEVANT

Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., as a major player in the world HVAC market and a leading manufacturer of energy efficient, sustainable HVAC solutions, recognizes and supports the diffusion of green certification systems, as an effective way to deliver high performance buildings and improve the quality and the sustainability of the built environment.

Since the first certification system was introduced at the beginning of the 1990s, the demand for certified buildings has grown considerably, as well as the number of standards, rating and certification programs.

Operating worldwide Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., has extensive experience with many of them and is active member of Green Building Council Italy.

Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., commitment to develop responsible and sustainable HVAC solutions, is reflected by a full range of premium efficiency products and systems, designed with special care to improve building energy performance ratings, according to major certification protocols, including LEED, BREAM, GREENSTAR, BCA, NABERS, DNGB, HQE and BEAM.

To find out more about how our products contribute to enhanced green certification rating and energy performance of a building, please refer to:

<https://www.melcohit.com/GLOBAL/Company/Green-Certifications/QR%20code/>



2. PRODUCT PRESENTATION

The WRX units are packaged reverse-cycle air-to-air units resulting from MEHITS's extensive experience in the design and development of rooftop units.

This packaged solution directly serving the air-conditioned ambient optimises the system and simplifies installation, thanks to the flexibility and operating versatility guaranteed by the WRX range. Based on the selected version, these units can completely manage all air handling and air change requirements in spaces featuring large surface areas and volumes, such as supermarkets, shopping centres and exhibition centres.

All models come with a double refrigerant circuit, scroll compressors, R410A refrigerant and EC plug fans.

The units can be customised by choosing different air handling sections, accessories and four types of heat recovery on the exhaust air.

The unit is intended for outdoor installations.

2.2 Maximum flexibility

Maximum freedom in choosing the direction of air flows, both supply and return, means the units can be adapted to all installation contexts.

The building's constructional limits can therefore be overcome, offering a highly flexible solution.

In addition, ducting installation is much easier, as there are no restrictions in unit layout regarding the position of the supply and return duct connections.

2.3 High reliability

One of the main features of rooftop units is that they serve the system directly, and in many cases are the sole source of room air-conditioning.

As a result, it is fundamental to guarantee continuous and efficient unit operation in all conditions or situations that may arise. The WRX units respond perfectly to this requirement, as all models feature two completely independent refrigerant circuits. This means that in the event of a fault on one of the circuits or during defrost cycles for heat pump versions, the unit can still at least partially fulfil requirements.

2.4 High versatility

Each application has different needs, all of which require an optimum response. There may be applications requiring less specialised units in which the rooftop works as an integration of other systems, or vice-versa applications in which the rooftop represents the main or only air handling and ventilation system. The WSM units offers various possibilities in terms of air handling sections, ranging from recirculation only to mixing of fresh air and return ambient air, up to the solution with heat recovery from the exhaust air.

As well as this, each of the different configurations can be further customised thanks to a vast selection of accessories.

Moreover, each of the different functions can be further customised thanks to a vast range of accessories.

3. MAIN CHARACTERISTICS

3.1 Introduction

The WRX units are packaged reverse-cycle (WRX) or cooling only (WRX-T) air-air units, that are dedicated to the treatment and renewal of the air in environments with large surfaces or volumes, such as cinemas, shopping centers, exhibition centers and warehouses. All models come with a double refrigerant circuit, scroll compressors, electronic thermostatic valves, R410A refrigerant and EC plug fans for the supply air.

The ample freedom available in choosing the direction of air flows, as well as the possibility to customise the units with four types of heat recovery and different air handling sections, make WRX the ideal unit for all application contexts.

The range comprises 9 sizes, from 97 to 240 kW (10000 - 45000 m³/h), each available in eight different functions, allowing the unit to be adapted to the specific requirements of the system.

The possibility to reverse the refrigeration cycle, careful sizing of the components and specific design decisions mean the WRX units can work continuously across a wide operating range (outside temperatures down to -15°C in heat pump operation and over 46°C for some sizes in cooling operation). Considerable reductions in compressor power consumption can be achieved using the free cooling/free heating accessory, as standard on all the functions apart from the basic version (AR function).



The unit meets the seasonal energy efficiency requirements in heating (η_{s,h}) and cooling modes (η_{s,c}), as specified by EU regulation 2016/2281.



The WRX range is part of the Eurovent certification program for rooftop (RT) units. The list of certified products is available on the website www.eurovent-certification.com

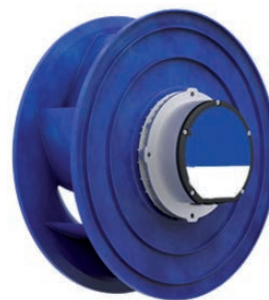
A wide range of accessories completes the offering; in particular, several filter options are available, in addition to ISO coarse 50% filters (ISO 16890 - G4 in accordance with EN779), with flat filters certified class ePM010 80% (ISO 16890 - M6 in accordance with EN 779), ePM01 50% (ISO 16890 - F7 in accordance with EN 779), ePM01 70% (ISO 16890 - F8 in accordance with EN 779) or ePM01 80% (ISO 16890 - F9 in accordance with EN 779).

The unit, based on the selected function and accessories, is delivered in one or more packages to simplify transport.

3.2 Plug fan

The WRX units are fitted with plug fans with EC brushless motors. These fans differ from traditional centrifugal fans due to absence of the scroll and direct coupling to the motor, thus eliminating energy loss from the belt and pulley transmission. The rotor is realized with high performance composite material that enhances the efficiency and reduces the noise.

This type of technology ensures clear advantages, with installation being simplified based on the parameters set by the user, without needing any flow-rate adjustment during calibration. In addition, fan speed adapts to the characteristics of the system even when the unit is operating, for example compensating for any variations in flow-rate due to progressive fouling of the filters. The low power consumption of these types of fans can be further reduced by applying the exclusive control logic developed by MEHITS S.p.A. All this means high operating efficiency even for the part involving the fans, traditionally a critical area in terms of running costs.



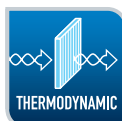
3.3 Electronic expansion valve as standard

The use of electronic expansion valves brings considerable benefits, especially when load is variable and with different outdoor conditions. Application of the valve on this unit is a result of specific design decisions regarding the refrigerant circuit configuration and optimisation of operation across a range of different operating conditions. The electronic expansion valve is standard on all versions.

3.4. Energy recovery from the exhaust air

MEHITS S.p.A. has always designed efficient units with the aim of reducing energy consumption and therefore energy waste. At the same time, it is important to ensure air quality inside air-conditioned spaces: this is why suitable air change not only increases the well-being of occupants, but is also mandatory by law in the individual member states. Specific European standards were issued (for example EN 16798-1:2019), which combine aspects regarding air quality inside buildings with energy requirements. For most of the year, the air that is discharged from the indoor spaces is in better temperature-humidity conditions than the incoming air from the outside: it is therefore useful to recover energy from the exhaust air before this is discharged. To satisfy this important requirement, the WRX units can be configured with four different types of energy recovery on the exhaust air, so as to best adapt to the different needs and climates where they are installed.

These are:



THERMODYNAMIC recovery: The effect is achieved by diverting the exhaust air through the outside section of the refrigerant circuit. This increases efficiency by allowing the unit to work at a more advantageous condensing temperature than allowed by outside conditions.



REFRIGERANT BOOSTER: a finned coil is placed next to the exhaust air damper. This is crossed by the entire exhaust air flow, allowing all of the heat contained in the exhaust air to be recovered. The recovered energy is transferred to the refrigerant circuit, which increases the net cooling effect in the air handling coil without requiring additional compressor work.



PLATES (CROSS-FLOWS): the flow of incoming fresh air, before being mixed with the return air, flows across a plate heat exchanger, where it is either heated or cooled by the exhaust air flow. The two air flows remain completely separate, being in sealed sections between the aluminium plates. Heat is transferred due to the temperature difference between the two air flows.



ROTARY heat recovery: an enthalpy wheel rotates continuously, absorbing the heat and humidity from one of the two air flows and then transferring it to the other. This represents the highest-performance form of heat recovery, recovering up to 85% of the energy.

3.5 AIR3000+ advanced controller

All units are fitted with the AIR3000+ controller, especially developed by MEHITS S.p.A. for rooftop units. It features a double control board, one for the refrigerant circuit and one for the air treatment, and a liquid crystal display (LCD) on board of all the units.

This keypad accesses a user interface with eighteen European languages available for selection by the user. This allows an interface that's specific for the country where the unit is installed, or alternatively, by setting English, completely independent for all other regions.

Temperature control is performed using algorithms that control available devices (compressors, hot gas reheat coil, heating devices) based on the unit configuration. Control is applied using the return air temperature probe reading, based on proportional or proportional + integral logic. As an alternative also supply temperature control is available. The temperature set point can be set directly on the controller, or managed via a remote digital or analogue contact.

Interfacing to commercially-available BMS systems is provided thanks to compatibility with BACnet, BACnet OverIP, ModBus, ModBus OverIP, and LonWorks protocols.

The **built-in clock** provides a daily scheduler function, organized into time bands so as to optimise unit operation, minimizing system energy consumption.

In fact, several time bands (up to 10) of different types (4) can be activated throughout the day, with each band being assigned:

- temperature set point for cooling and heating
- humidity set point
- unit operating modes: control on, off, purging, start-up.

Ventilation, according to unit's configuration, can be managed in the following modes:

- constant air flow (standard operation);
- constant pressure;
- variable air flow.

Other available functions:

- room humidity control in cooling and heating mode;
- automatic temperature- and enthalpy-based free cooling Management;
- self-adaptive defrost management using algorithms that reduce defrost duration or prevent unnecessary or wasteful cycles;
- demand limit on compressors to reduce mains power consumption;
- set point compensation based on outside temperature, in both cooling and heating operation;
- Management of the heating devices as integration or substitution of the heat pump;
- Control and management of the ambient air quality with on board sensors or remote signal;
- Air flow set point management with digital or analog signal;
- Auxiliary controls available through remote contact or directly from the controller: room washing mode, running-up mode, ventilation mode, full fresh air mode.



Display and acquisition of the last 200 alarm events (user level) are also available as well as recording of operating variables in the 10 minutes prior to each alarm event (assistance level through Black Box) with display via PC. Compatibility with remote keypad (management of up to 8 units).

3.6 Simplified installation and maintenance

The WRX rooftop units simplify and reduce the costs of maintenance and work on site, through:

- Sturdy and perfectly insulated structure that guarantees resistance to the elements and mechanical stress.
- Easy access to the inside sections and the components that require periodical cleaning, for fast and economical routine maintenance.
- "PLUG and PLAY" construction that ensures, once the unit has been positioned, simpler and faster electrical and air connections.
- Automatic calibration of air flow-rates, with consequent savings in technical service and greater comfort.

3.7 Variable Air Flow

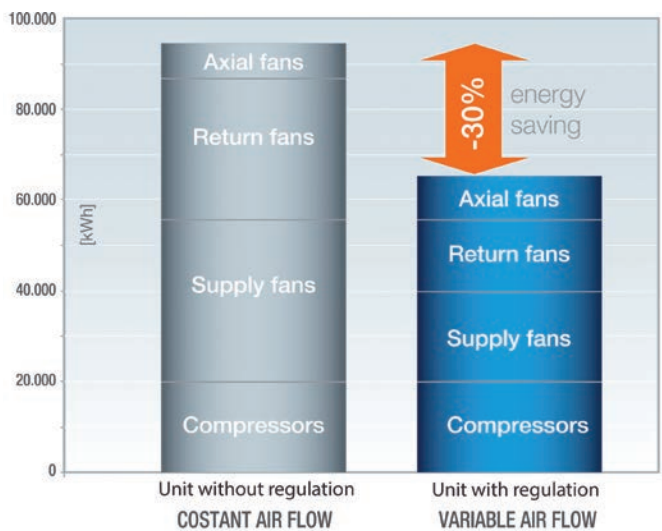
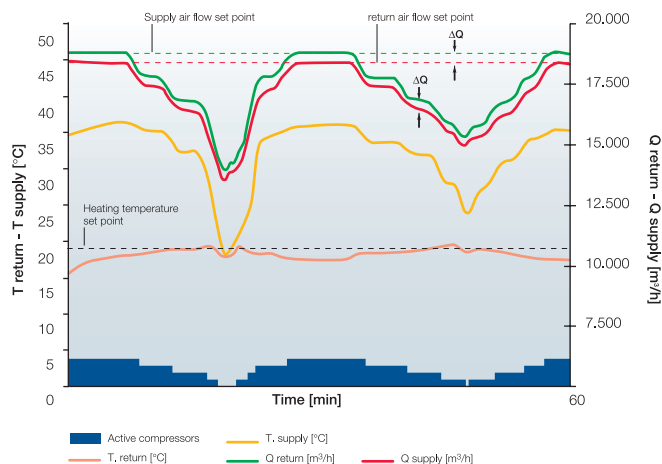
On rooftop units, that directly serve the air-conditioned environment and represent the main source of ventilation, the supply and return fans work continuously at a fixed flow-rate, in all operating conditions, even during freecooling and at part loads, which together account for the majority of operating hours.

Consequently, power consumption from fan operation on rooftop units represents over 50% of total annual unit power consumption, which is why MEHITS S.p.A. decided to develop a system for controlling fans that could reduce fan power consumption.

The most effective way to reduce power consumption is to decrease fan speed, and consequently flow-rate, whenever system operating conditions allow.

The advanced logic featured on the AIR3000+ controller and the use of plug fans with electronic speed control have allowed the **Variable Air Flow** function to be developed. This involves changing the supply and return air flow-rate based on effective demand from the system, considering the activation percentage of each device - compressors, heaters or burners, freecooling or freeheating. For example, progressive shutdown of the compressors will bring a reduction in air flow-rate, defined within the limits set by the user.

This means flow-rates are managed based on the actual conditions in the air-conditioned space, while still observing any limits defined on the components and the type of system. In addition to benefits in terms of comfort, there are also economic advantages, as reducing fan speed cuts total unit power consumption by 30% compared to the traditional fixed flow-rate solution.



Simulation on annual base, commercial area in the north of Italy

4. DESCRIPTION OF THE UNIT

4.1 Description

Packaged reverse-cycle (WRX) or cooling only (WRX-T) air-cooled rooftop air-conditioner with scroll compressor and R410A refrigerant.

Packaged reverse-cycle air-cooled rooftop air-conditioner for outdoor installation, for air handling, filtration and ventilation, based on the selected configuration. Hermetic rotary scroll compressors specifically for operation on R410A with two independent refrigerant circuits. Depending on the chosen version, the unit can manage free cooling based on temperature, with supply and return fans and motorised outside air, recirculation and exhaust dampers. The WRX units are part of the EURO-VENT CERTIFICATION program for rooftop (RT) units: the list of certified products is available at www.eurovent-certification.com. The units can work at full load across a very wide range of operating temperatures (outdoor temp. down to -15°C in heating mode and $+46^{\circ}\text{C} / 52^{\circ}\text{C}$ at full/partial load for units 0444-0804 and up to 48°C at full load for units 0302-0402).

Structure

Structure designed specifically for outdoor installation, base and load-bearing frame made from suitably thick hot galvanised steel sections. The external panelling is painted with polyester powder coat to ensure complete resistance to the elements (colour RAL 7035).

In particular, the panels making up the air handling supply section are insulated on the inside with a 6 mm layer of black closed cell flexible elastomeric foam (FEF) coupled with a 3 mm layer of cross-linked expanded PE, with embossed PE film surface finish. The insulation is rated Euroclass E regarding reaction to fire (EN-13501-1). The insulation is fixed to the metal panelling using specific adhesives and mechanical fasteners (washers) to guarantee durable fixing.

Alternatively, the air handling section can be made with an aluminium load-bearing frame. Attached to the frame are 25 mm side, 42 mm bottom and top, thick insulating panels with polyurethane foam core, average density 45 kg/m^3 , with the inside surface made from galvanised steel sheet, while the outside surface is made with pre-painted galvanized steel.

The unit, based on the selected function and/or accessories, is delivered separate packages to simplify transport.

Compressors

Hermetic rotary scroll compressors, R410A refrigerant, fitted with timed crankcase heater (automatically deactivated when not needed) and a two-pole electric motor with direct starting, internally protected against excess temperature.

Indoor heat exchanger

Direct expansion air handling coil for heat exchange with the refrigerant gas, made from a coil of mechanically expanded copper tubes and corrugated aluminium fins.

The speed of the air through the coil is kept below the limit value of 2.7 m/s , even at full flow, to avoid entraining condensate, even in the most extreme temperature-humidity conditions.

Aluminium basin for collecting condensate, with sloping bottom and complete with drain attachment.

Outdoor heat exchanger

Direct expansion outdoor coil for heat exchange between the refrigerant gas and the outside air, made from a coil of mechanically expanded copper tubes and corrugated aluminium. Each circuit has its own dedicated and independent condensing coil.

Accessory. Energy recovery from the exhaust air by thermodynamic heat transfer. (reference function Heat recovery Free HR-F)

Thermodynamic heat transfer allows efficient use of the remaining energy contained in the exhaust air, by forcing this through the outside section of the refrigerant circuit.

This consequently increases unit performance, allowing operation at a condensing temperature that's more advantageous than the outside temperature, meaning lower power consumption and higher overall efficiency.

Accessory. Refrigerant Booster heat exchanger (reference function HR-B)

Additional coil for heat exchange between the refrigerant gas and the exhaust air, made from a coil of mechanically expanded copper tubes and corrugated aluminium fins. The coil is installed at the air exhaust damper and is part of the main refrigerant circuit. In summer operation, this coil allows to increase the subcooling of the liquid by exploiting the favourable conditions of expelling air. In winter operation, on the other hand, the battery takes charge of part of the gas evaporation, relieving the work of external batteries, thus allowing the refrigeration circuit to work with the most advantageous disposal temperatures.

In cooling mode the booster coil is switched on whenever a compressor is working (also with a very low amount of exhaust air), while in heating mode, it operates if a compressor is working and exhaust damper is opened at a minimum.

Accessory. Cross-flow heat recovery (reference function HR-P)

Aluminum plate heat exchanger, made of flat surfaces with swirlers at variable spacing, without moving parts. Appropriate seals keep the air flows separated. The recovery transfers the energy from the high temperature flow to the low temperature one, thanks to a cross flow operation.

Two versions of plate heat exchanger are available for energy recovery: the first version (LOW FLOW) can handle up to 50% of the flow-rate delivered by the supply fans, recommended for all applications with medium occupancy.

For higher air change requirements, the HIGH FLOW version features larger plates, and can handle from 50% to 100% of the total flow-rate passing through the indoor direct expansion coil. Additional filters are fitted to protect the heat exchanger from excessive fouling: in particular, class G4 filters are installed in the fresh air flow.

Accessory. Heat recovery with enthalpy wheel (reference function HR-E)

Energy recovery system on the exhaust air, made up of a high efficiency enthalpy wheel consisting of alternating flat and corrugated aluminium sheets, with hygroscopic treatment, so as to create a series of passageways in the opposing directions to the flows of fresh and exhaust air. The wheel is driven by an electric motor at constant speed with very low power consumption. Both sensible and latent energy is recovered: this limits the introduction of moisture into the room during summer and increases humidity in winter.

Additional filters are fitted to protect the heat exchanger from excessive fouling: in particular, class G4 filters are installed in the fresh air flow.

Refrigerant circuit

The unit has two complete refrigerant circuits, each comprising, in addition to the above:

- R410A refrigerant charge
- filter-drier
- liquid flow indicator
- bi-directional electronic thermostatic expansion valve
- charge and pressure control valves
- high pressure switch
- double high pressure safety valve (protects the unit against explosion in the event of fire)
- low pressure safety valve
- non-return valve
- four-way reversing valve (only for WRX)
- liquid receivers at condenser outlet (only for WRX)
- compressor sump heaters

Air handling Plug fans (standard)

Supply plug fans with brushless EC motors. Three-dimensional profiled blades made of high performance composite material, optimized to enhance efficiency and reduce noise. EC brushless electric motor, directly coupled with electronic speed adjustment for the precise and continuous regulation of the air flow rate.

If the unit is fitted with the HR-F, HR-B, HR-P (low flow and high flow) and HR-E functions, the same type of EC plug fans are fitted for the return air from the air-conditioned space. These fans are installed in a ventilation section that is positioned underneath the rooftop unit.

Two types of fans are available: standard, and a higher-performance version for higher static pressure on the supply and/or return.

Outdoor ventilation section (standard)

Die-cast aluminium axial-flow airfoil fans, directly coupled, with external impeller. The electric motor is fitted with built-in thermal protector. Motor ingress protection IP54, insulation class F.

The fans are fitted with special diffusers to recover the residual kinetic energy from the supply air, converting this into static energy. Consequently, for the same air flow-rate there is lower power consumption and less noise produced.

Ventilation section for exhaust air (accessory)

If the WRX unit is fitted with the AX function, fans are also fitted on the exhaust air damper.

These are die-cast aluminium axial-flow airfoil fans, directly coupled, with external impeller. The electric motors are fitted with built-in thermal protector and have IP54 ingress protection, insulation class F. The fans are fitted with special diffusers to recover the residual kinetic energy from the supply air, converting this into static energy.

Consequently, for the same air flow-rate there is lower power consumption and less noise produced.

Filtration

Pleated synthetic fibre pre-filter, grade ISO coarse 50% (ISO 16890 - G4 in accordance with EN 779), 98 mm thick at the air inlet. The filters are positioned on steel guides with easy access for routine maintenance and replacement. For higher filtration, other filters are available in addition to the standard, grade ePM10 75% (ISO 16890 - M6 in accordance with EN 779), ePM01 50% (ISO 16890 - F7 in accordance with EN 779), ePM01 70% (ISO 16890 - F8 in accordance with EN 779), and ePM01 80% (ISO 16890 - F9 in accordance with EN 779).

Power and control electrical panel

Power and control electrical panel built in compliance with EN60204-1 and IEC204-1, complete with:

- Control circuit transformer
- Main door lock disconnect switch
- Power section with busbars
- Fuses to protect the loads (as standard, circuit-breakers available as options)
- Spring-loaded terminals on the control circuits
- Electrical panel for outdoor installation, made from hot galvanised and painted panels and complete with gaskets
- Electrical heaters on external coils (only for WRX)
- AIR3000+ microprocessor-based electronic controller
- Operator panel with LCD interface
- Compressor crankcase heaters with timer

Unit power supply voltage: 400V~ ±10% - 50Hz.

The electric panel is supplied with two air grills with filter and a flexible duct that connect supply air treatment side with the electric panel. In this way, electrical panel is cooled during summer and heated in winter time, reducing the problem of condensation on electrical device.

4.2 AIR3000+ controller

The AIR3000+ controller offers advanced functions and algorithms. It is made up by two control boards, dedicated to the air side and the refrigerant side respectively. The keypad features functional controls and a complete LCD display that allows for the monitoring and intervention on the unit by means of a multi-level menu with selectable user's language.

It can be used to set the unit start-up and ambient washing function, as well as to set unit the operating mode (manual heating or cooling, automatic changeover).

Temperature control is based on proportional or proportional + integral logic using the return air temperature probe reading; the set point can also be adjusted based on the outside temperature, in both cooling and heating mode.

For units fitted with motorised outside air damper, the controller automatically manages free cooling operation based on the outside air temperature; optionally, free cooling can also be managed based on enthalpy.

The ventilation section can work at constant flow-rate (standard) or variable flow-rate, at constant pressure (optional).

The controller can also integrate and automatically manage different optional heating devices (hot water coil, electric heater and built-in gas-fired heating module), hot gas post-heating (optional) and percentage of fresh air (optional via CO₂ or CO₂+VOC probes, or remote 4-20 mA signal).

Defrosts use proprietary self-adaptive logic involving monitoring of multiple operating and climate parameters.

This reduces the number and duration of defrosts, consequently increasing overall energy efficiency.

Compressor power consumption can be controlled using a demand limit function (optional), while an unloading function is available for part-load operation of the refrigerant circuit in critical conditions (HPTC function), which involves both the compressors and the outside air intake damper (where fitted).

In critical conditions (high outside temperatures), this function switches off one of the two tandem compressors in the refrigerant circuit and progressively closes the outside air intake damper, thus at least partly providing the required cooling capacity.

Supervision is available with different options, using proprietary devices or by integration into third party systems using BACnet, BACnet over-IP, Modbus, Modbus over-IP, Echelon and Lon-Works protocols.

AIR3000+ control is available also with the new KIPlink (Keyboard In yourPocket) user interface (optional). Based on

WiFi technology, it allows one to operate the unit directly from the smartphone or tablet. Using KIPLink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor in detail the status of the refrigerant circuits, the compressors, the fans, dampers and display and reset the possible alarms.

Compatibility with remote keypad (management of up to 8 units). The timer can be used to create an operating profile with up to 4 typical days and 10 different time bands.

4.3 Certification

Unit compliant with the following directives and amendments:

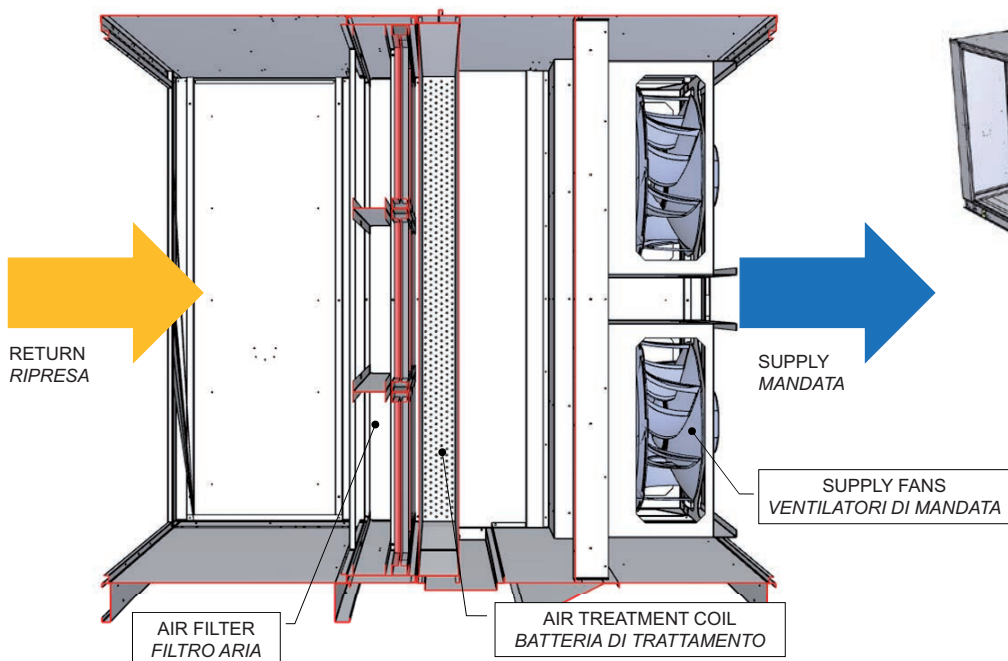
- Machinery directive 2006/42/EC.
- Electromagnetic compatibility directive 2014/30/EC.
- Pressure equipment directive 2014/68/EU
- Low voltage directive 2014/35/EC.
- 2011/65/EU RoHS Directive (As far as applicable)
- Gas appliances directive 2016/426/EU (As far as applicable)
- Regulation (EU) 2016/2281 (implementation of Directive 2009/125/EC).
- Eurovent certification (www.eurovent-certification.com) - rooftop unit program (RT)

4.4 Functions

Opt. 1071 (Basic unit) - AR function - Air recirculation

This represents the basic unit in the WRX range. The unit extracts air from the ambient and inflows it back after air treatment using internal coil.

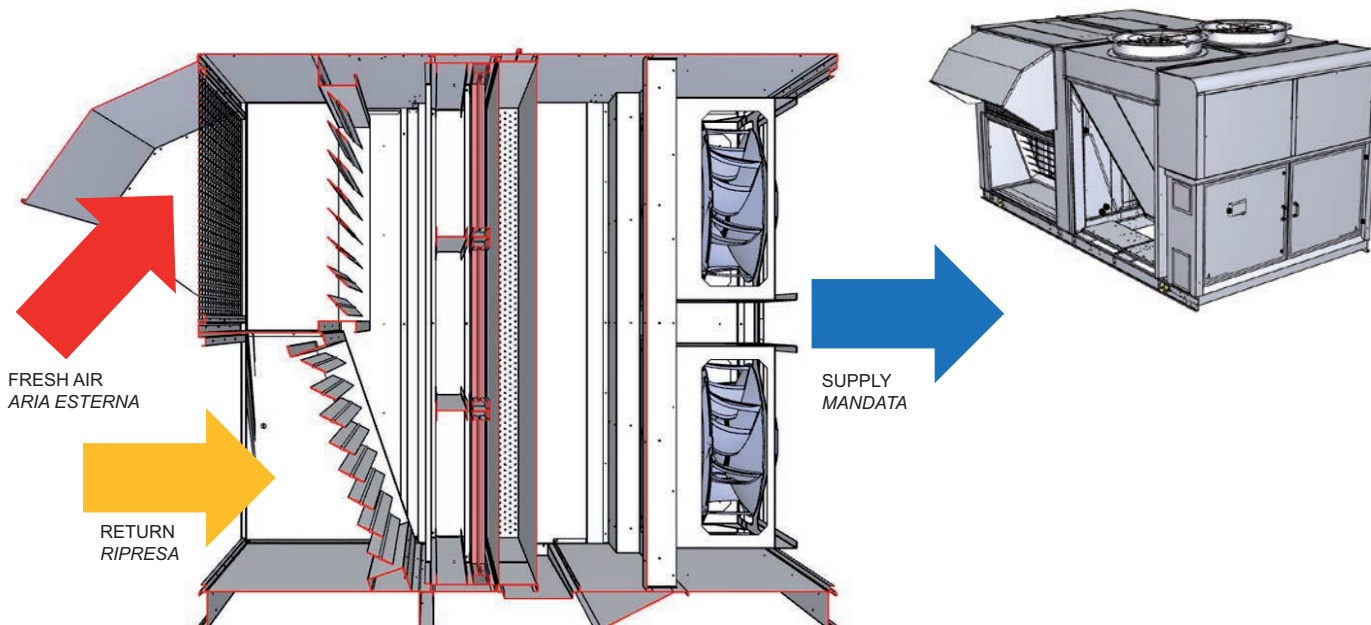
Ambient air expulsion and air renovation must be managed using systems that are separate from the rooftop unit.



Opt. 1072 - MF function - Mixing and Free cooling

Compared to the basic version, the unit features two opposing motorised dampers managed by the unit's controller so as to allow operation with 100% recirculated air, mixtures and free cooling. This function allows the recirculated ambient air to be mixed with some fresh outside air, either at a fixed percentage set on the controller, or using an air quality probe (CO₂ reading). Free cooling operation is managed by the controller, which opens the dampers so as to create a mixture of fresh outside air and recirculated air that requires less energy for the treatment,

depending on the outside temperature, indoor temperature and set point. During this function one or more cooling devices are disconnected, and are completely switched off with total free cooling operation. The supply fans guarantee rated air flow; ambient air expulsion must be managed using systems that are separate from the rooftop unit. This function should be chosen when the amount of fresh outside air to be introduced into the spaces is quite low, pressure drop in the return ducts is also low and the building is not particularly airtight (older constructions).



Opt. 1073 - AX function - Axial Fan for Extraction Mixture and exhaust with axial-flow fan

Compared to the basic version, the unit features two opposing motorised dampers managed by the unit's controller so as to allow operation with 100% recirculated air, mixtures and free cooling.

This function allows the recirculated air taken from the rooms to be mixed with some fresh outside air, either at a fixed percentage set on the controller, or using an air quality probe (CO₂ reading). The allowed minimum value of fresh air cannot be lower than the 25% of the total airflow.

Free cooling operation is managed by the controller which opens the dampers, starting from a minimum ratio equal to the 25% of the total airflow and creating a mixture of fresh outside air and recirculated air that requires less energy to air-condition, based on the outside temperature, the indoor temperature and the set point.

According to the size, one or more exhaust axial fans are activated with this function, which disconnects together one or more sources until their complete exclusion in case of total Free cooling.

During the operation with all recirculated air, the exhaust axial fans are not activated and a barometric damper fitted on the exhaust air flow hermetically closes the expulsion.

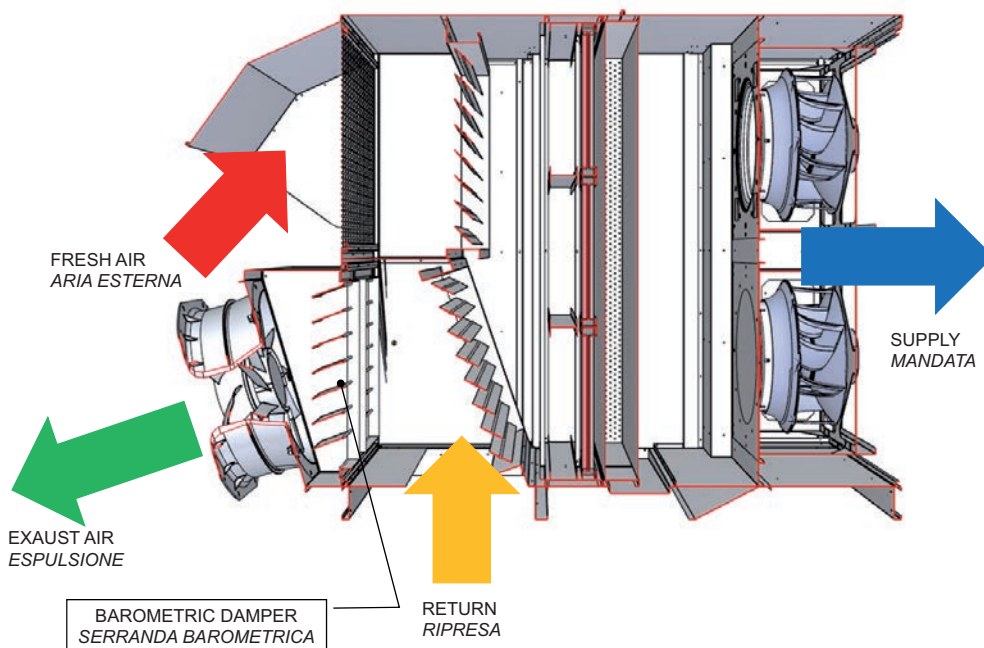
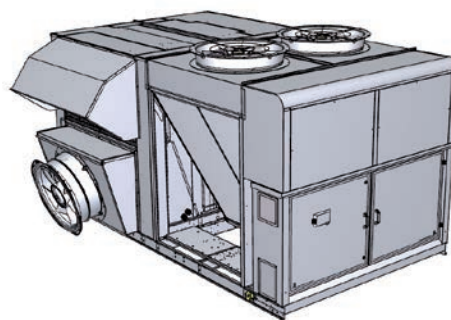
When a portion of fresh outside air is required (allowed minimum value equal to the 25% of the total airflow, with lower values the unit will operate in all recirculation), the system composed by the barometric damper + the exhaust axial fans works by expelling the same portion of exhaust air. The balance of both the airflows avoids any internal over pressure in the served area.

Depending on the selected exhaust airflow, the exhaust axial fans could provide an external static pressure up to 150 Pa.

A special device controls the exhaust air fan speed based on the opening percentage of the damper that controls outside air intake. The supply fans guarantee the design flow-rate, and in the event of high outside air flow-rates (for example, during free cooling or free heating), they can also generate considerable overpressure in the room: in buildings with good air tightness, it is recommended to install an additional extraction system.

This type of unit is suitable for all small-medium commercial premises in reasonably airtight buildings, such as supermarkets, shops and service stations.

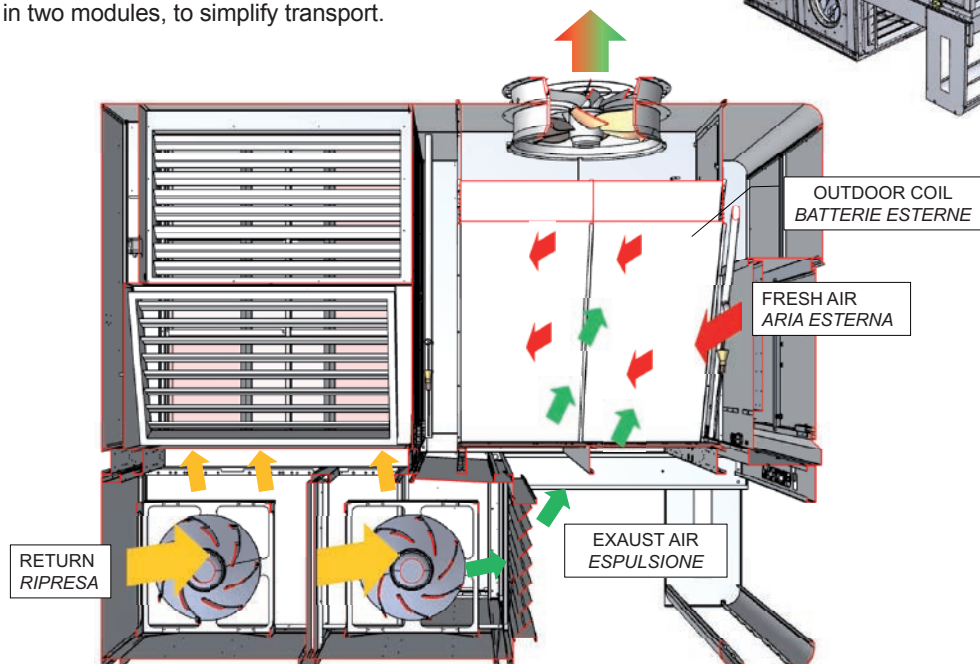
The axial fan module has to be hinged to the unit on site, to simplify transport.



Opt. 1074 - HR-F function - Heat recovery Free. Return air fan and heat recovery with thermodynamic heat transfer.

Thermodynamic heat transfer is achieved by deviating the exhaust air through the outdoor section of the refrigerant circuit. This increases efficiency by allowing the unit to work at a more advantageous condensing temperature than allowed by outside conditions.

The advantages of this effect are lost when the compressors are off (temperature set point reached or in total free cooling mode). The unit is supplied in two modules, to simplify transport.



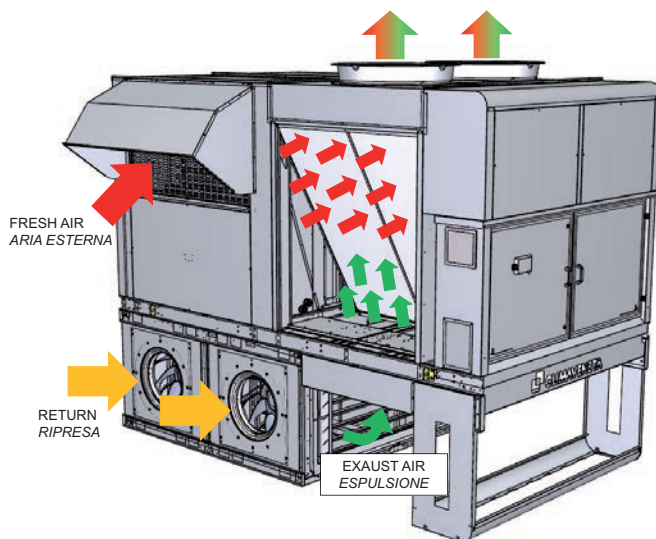
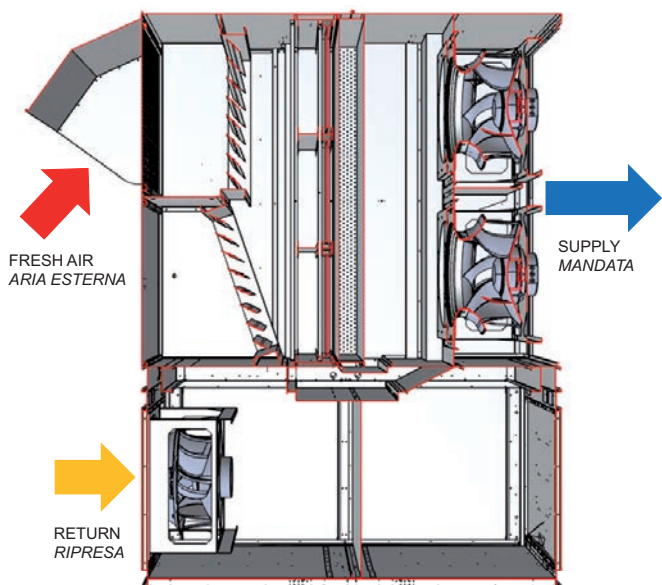
Benefits:

- Heat recovery from the exhaust air flow that would otherwise be completely lost
- No extra energy consumption needed for recovery: there are no coils or additional heat exchangers that create a pressure drop
- Simple and robust system, without additional components.

Technical solution

Compared to the basic version (AR function), there is an additional mixing chamber with three dampers, a section containing the EC plug fans for the return air, and the exhaust air damper. The unit can mix the recirculated air taken in from the air-conditioned space with a certain portion of outside air, either set on the controller or variable based on air quality measured by a CO₂ sensor. The exhaust air flows through the exhaust air damper to the outdoor coils, thus exploiting the energy contained in this air

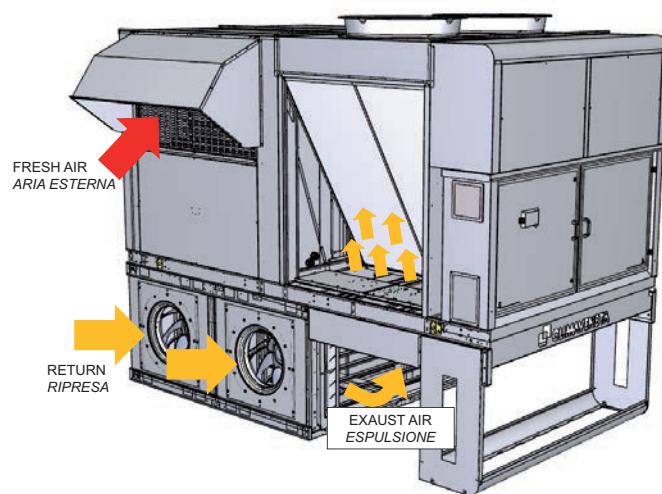
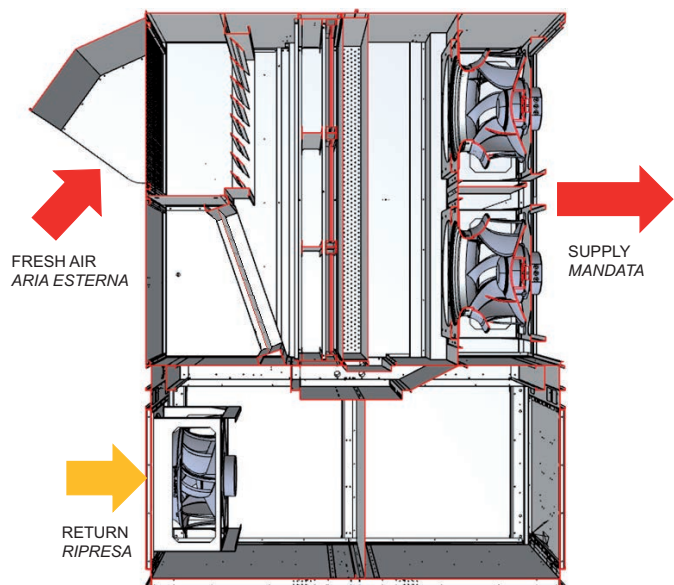
stream to increase overall unit performance. The return air plug fans can overcome considerable pressure drop in the duct (even higher than 250 Pa) with high air flow-rates, for precise control of overpressure in the air-conditioned space. This function is useful in new buildings with high air change requirements (such as cinemas, theatres, auditoriums, exhibition centres and shopping centres).



Free cooling operation

Free cooling operation is managed by the controller, which opens the dampers so as to create a mixture of fresh outside air and recirculated air that requires less energy for the treatment, depending on the outside temperature, indoor temperature and set point.

During this function one or more cooling devices are disconnected, and are completely switched off with total free cooling operation.



Opt. 1075 - HR-B Function - Return air fan and Refrigerant Booster heat recovery

The WRX/HR-B units are fitted with the exclusive Refrigerant Booster heat recovery system, which completely recovers heat from the exhaust air.

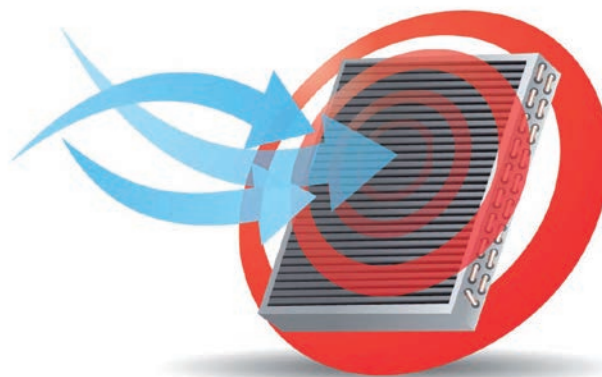
This recovered energy is transferred to the refrigerant circuit, which increases the capacity of the air handling coil without increasing compressor workload.

The recovery unit uses a finned coil installed at the air exhaust damper. The latter handles the entire air flow with uniform distribution.

In cooling operation, the favourable conditions of the exhaust air can be exploited to increase liquid subcooling.

In heating operation, on the other hand, the heat recovery coil contributes to the evaporation stage, meaning less work is needed by the outdoor coils and the refrigerant circuit can operate at more advantageous evaporating temperatures.

The unit is supplied in two modules, to simplify transport.

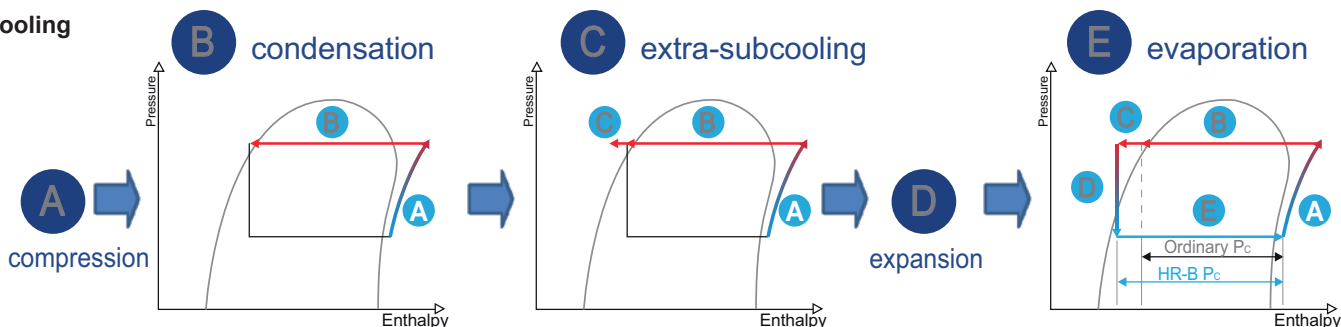


Thermodynamic principle

The refrigerant booster heat recovery system allows for the complete and precise recovery of the energy from the exhaust air. An additional sub-cooling coil is installed at the exhaust air damper, thus recovery energy is transferred to the refrigerant circuit, which increases the capacity of the air handling coil without increasing compressor workload.

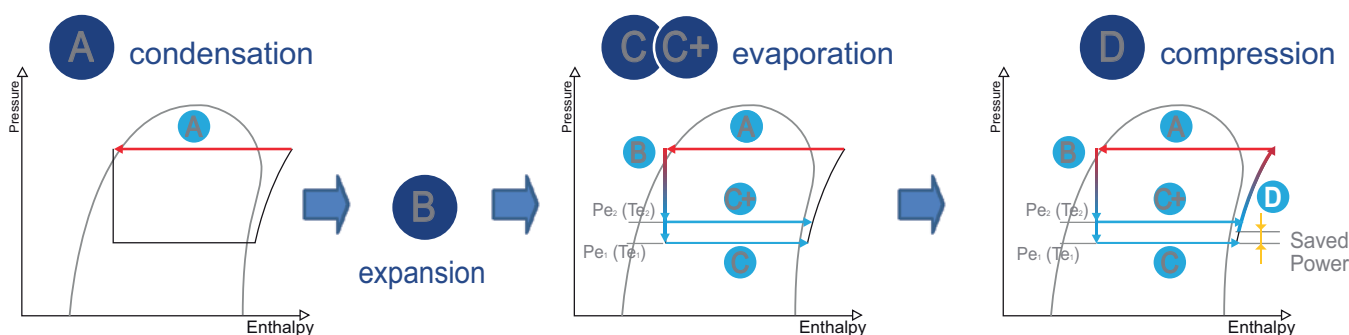
The favourable conditions of the exhaust air can be exploited to increase liquid subcooling (C) and therefore increase the cooling (Pc) capacity of the unit (E).

Cooling



In winter mode evaporation phase is divided between external and booster coil. The favourable conditions of the exhaust air can be exploited to evaporate a certain amount of refrigerant with an higher temperature (C+) and therefore increase unit efficiency.

Heating



Benefits

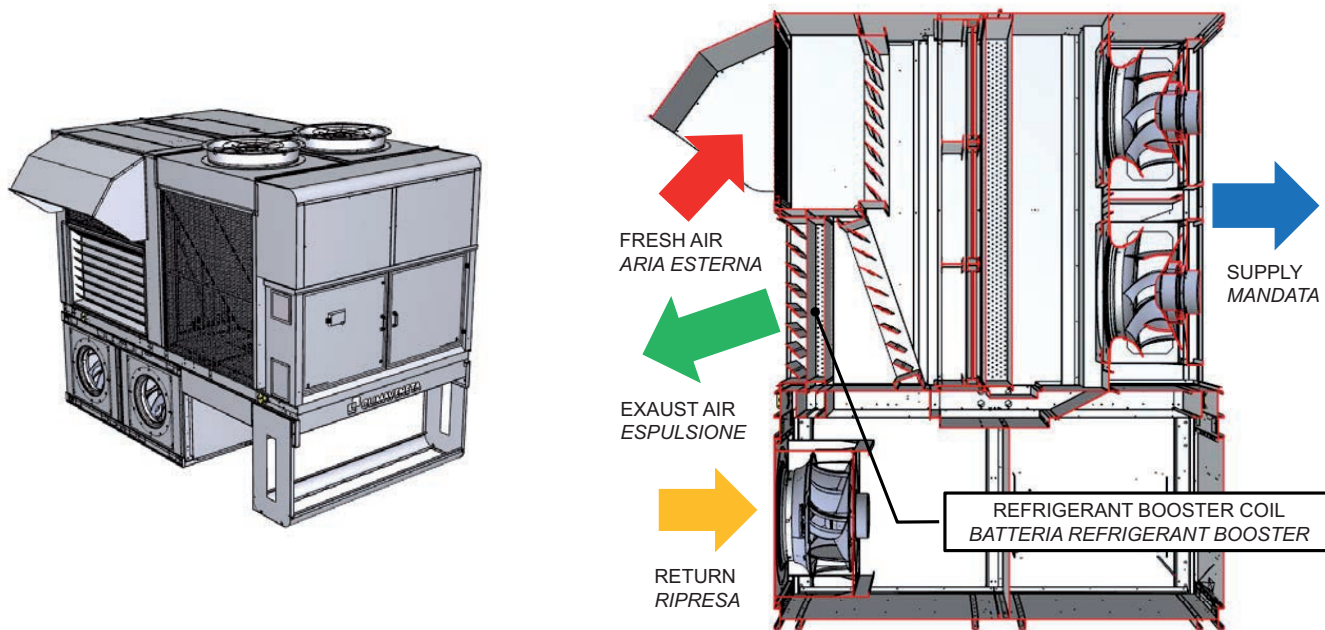
- Complete and precise recovery of the energy contained in the exhaust air, ensured by perfect distribution across the heat recovery coil without mixing with outside air.
- Increased cooling and heating capacity delivered by the entire unit.
- The additional heat exchanger coil in the refrigerant circuit means an overall reduction in compressor power consumption
- Complete separation of the air flows
- Additional air pressure drop is limited solely to the exhaust air flow.
- Ideal solution for Mediterranean climates with mild winters, as the energy in the exhaust air can also be exploited in conditions that traditional air/air heat recovery units would otherwise not allow.
- It starts to operate with a very low amount of exhaust air.

Technical solution

Compared to the basic version (AR), the HR-B function features a mixing chamber with three dampers, a section containing the EC plug fans for the return air, and the Refrigerant Booster recovery coil located near the exhaust air damper.

The return air fans can overcome considerable pressure drop in the duct (even higher than 250 Pa) with high air flow-rates,

for precise control of overpressure in the air-conditioned space. This function is useful in new buildings with high air change requirements (such as cinemas, theatres, auditoriums, exhibition centres and shopping centres).

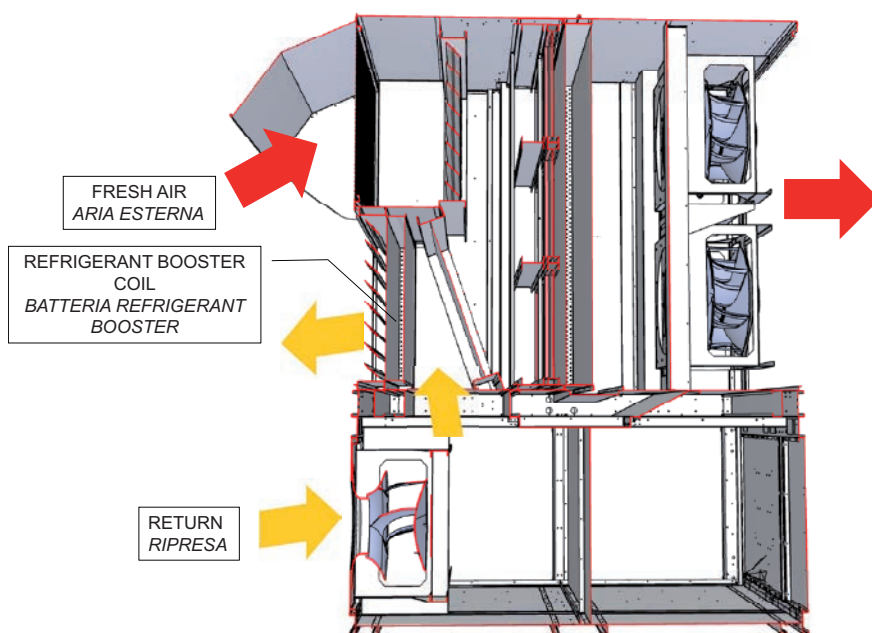


Free cooling operation

The unit controller manages the opening of the dampers so as to create a mixture between fresh and recirculated air and save energy, based on the outside air temperature, room temperature and set point. In free cooling mode, the unit works by delivering 100% outside air into the room.

One or more cooling devices (compressors) are deactivated, and are completely switched off with free cooling operation only (i.e.

when the set point can be reached solely by the introduction of outside air into the room); vice-versa, if the outside air alone is not sufficient to reach the desired set point, the compressors are switched on. When operating, the refrigerant circuit continues to exploit the Refrigerant Booster effect, maximising efficiency and reducing compressor running time.



Opt. 1076 -1077 - HR-P Function - Return air fan and heat recovery with plate heat exchanger

WRX units are available also with plate heat recovery, suitable for installation in cold or hot regions. It allows to transfer the energy of the exhaust air to the fresh air flow. The cross flow heat recovery allows also to extend the working limits of the unit and to operate with high air flows.

The unit is supplied in three modules, to simplify transport.

Operating principle

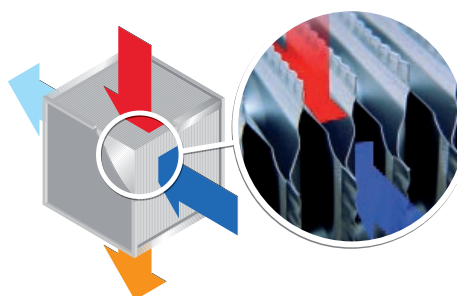
The exhaust air flow heats or cools the fresh air one, before mixing with return air, through the plates of the heat recovery.

The two air flows are completely separated thanks to appropriate seals and the heat transfer is realized thanks to the temperature difference between the two air flows.

The efficiency of energy recovery increases the higher the temperature difference between the two air flows, making this solution particularly suitable in extreme climates.

Benefits:

- Complete separation of the air flows
- High reliability and safe operation
- Easy cleaning and minimum maintenance
- Optimum performance in extreme climates
- Extends unit operating limits
- Suitable for operation with high outside air flow-rates (even 100% in some sizes/versions)
- Aluminium construction to increase heat exchange
- Low pressure drop ensured by the large heat exchange surfaces



Technical solution

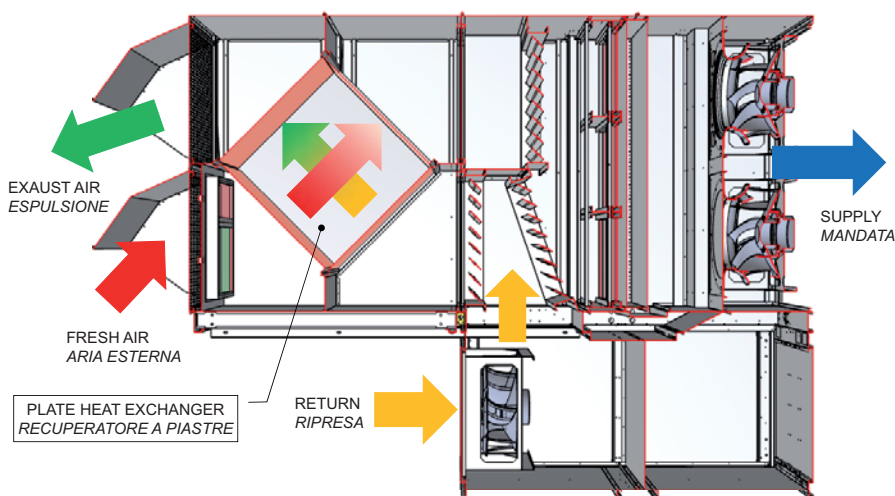
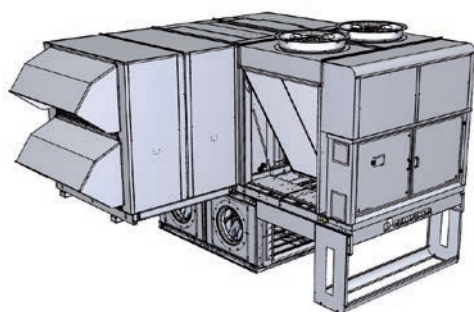
Compared to the HR-F version, the HR-P function uses a plate heat exchanger for heat recovery between the outside air intake and exhaust air.

The heat recovery unit is fitted inside a section that is installed upstream of the outside air intake damper and downstream of the main exhaust air damper.

This function is useful in new buildings with high air change requirements (such as cinemas, theatres, auditoriums, exhibition centres and shopping centres).

Two versions of plate heat exchanger are available.

For systems where the outside air intake flow-rate is normally less than 50% of supply air flow-rate, the low air flow version is suitable (opt. 1076 – low flow); vice-versa if the outside air flow-rate is predominant, a version is available featuring a heat exchanger with larger plates (option 1077 - high flow). Both solutions feature additional filters to protect the heat exchanger from excessive fouling: in particular, class G4 filters are installed in the outside air flow.

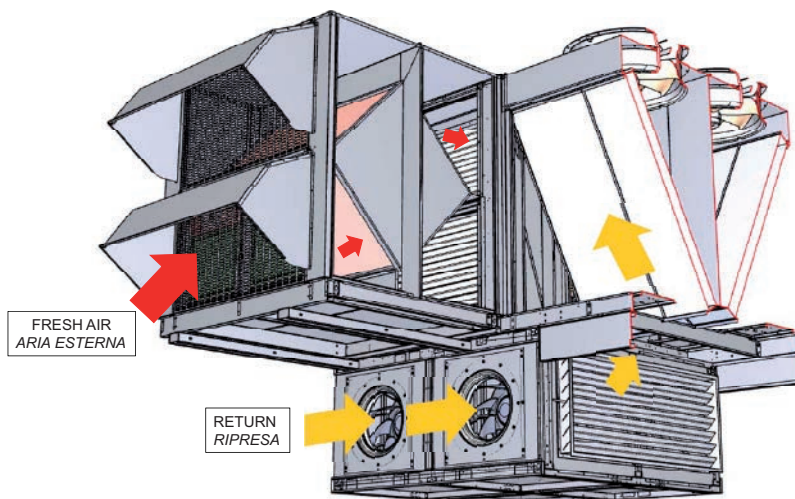


Free cooling operation

The unit controller manages the opening of the dampers so as to create a mixture between fresh and recirculated air and save energy, based on the outside air temperature, room temperature and set point. In free cooling mode, the unit works by delivering 100% outside air into the room.

For this operating mode, the unit is equipped with bypass dampers on the cross-flow heat recovery unit in the exhaust air flow, so as to avoid heat exchange with the fresh air inside the heat exchanger when this is not useful.

One or more cooling devices (compressors) are deactivated, and are completely switched off with free cooling operation only (i.e. when the set point can be reached solely by the introduction of outside air into the room); vice-versa, if the outside air alone is not sufficient to reach the desired set point, the compressors are switched on.



Opt. 1079 - HR-E function - Return air fan and heat recovery with enthalpy wheel

An enthalpy wheel is the most efficient form of heat recovery, with efficiency between 60% and 90% depending on operating conditions, allowing compliance with standards in force regarding energy savings.

The enthalpy wheel is made from an alternating sequence of flat and corrugated aluminium plates that create a very high heat exchange surface area in relation to the volume, achieving benefits also in terms of the space occupied inside the unit. The hygroscopic treatment that the aluminium plates undergo allows recovery of both latent heat and sensible heat, reducing the introduction of moisture in summer and minimising if not totally eliminating the need for humidifiers in winter, significantly increasing overall unit performance.

The unit is supplied in three modules, to simplify transport.



Operating principle

On a rotary heat recovery unit, heat exchange occurs through accumulation of heat in the wheel. Heat is transferred to the heat-absorbing material from the exhaust air in one half of the rotation. The heat is then given up to the fresh outside air in the other half of the rotation. As the wheel rotates, the parts that absorb and give up heat are continuously inverted.

The wheel is driven by a fixed-speed motor.

Benefits:

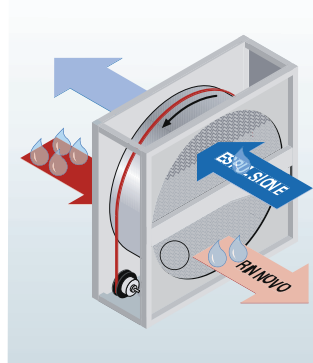
- Complete separation of the air flows
- High heat recovery efficiency
- Recovery of latent heat
- Optimum performance in extreme climates
- Extends unit operating limits
- Suitable for operation with high outside air flow-rates (even 100% in some sizes/versions)
- Heat recovery can be bypassed during free cooling operation using the outside air intake and exhaust air dampers, consequently reducing the energy consumption of the supply and return air fans.

Technical solution

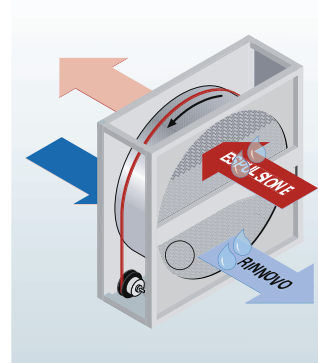
Compared to the HR-F version, the HR-E function uses an enthalpy wheel to recover sensible and latent heat between the fresh outside air and exhaust air.

The heat recovery unit is fitted inside a section that is installed upstream of the outside air intake damper and downstream of the main exhaust air damper.

Summer operating

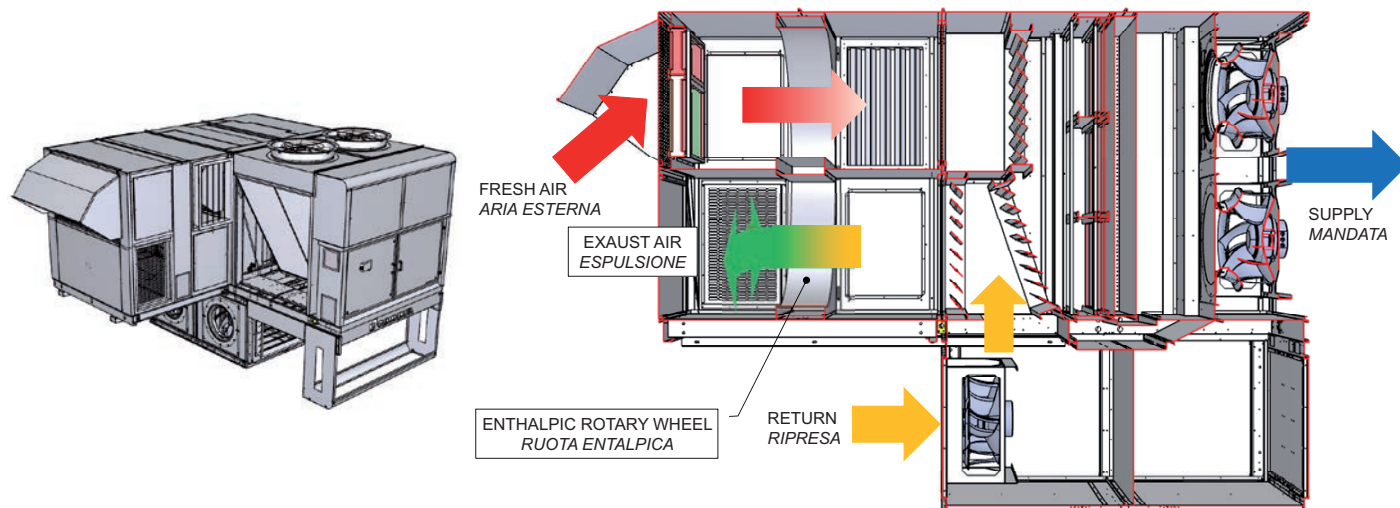


Winter operating



This function is useful in new buildings with high air change requirements (such as cinemas, theatres, auditoriums, exhibition centres and shopping centres).

Additional filters are fitted to protect the heat exchanger from excessive fouling: in particular, class G4 filters are installed in the outside air flow.



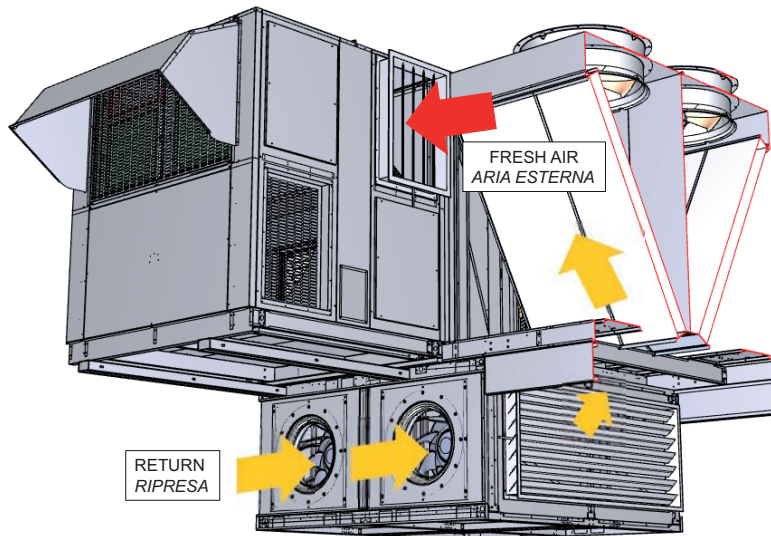
Free cooling operation

The unit controller manages the opening of the dampers so as to create a mixture between fresh and recirculated air and save energy, based on the outside air temperature, room temperature and set point. In free cooling mode, the unit works by delivering 100% outside air into the room.

In this operating mode, the unit stops the enthalpy wheel, so as to avoid heat exchange with the exhaust air when this is not useful; to increase energy savings by reducing the energy consumed by the fans alone, the unit's pressure drop is reduced by open-

ing two bypass dampers on the heat exchanger, one for fresh outside air and the other for the exhaust air.

One or more cooling devices (compressors) are deactivated, and are completely switched off with free cooling operation only (i.e. when the set point can be reached solely by the introduction of outside air into the room); vice-versa, if the outside air alone is not sufficient to reach the desired set point, the compressors are switched on.



4.5 Remote keypad

The unit's display is located on the electrical panel door and is connected directly to the AIR3000+ controller.

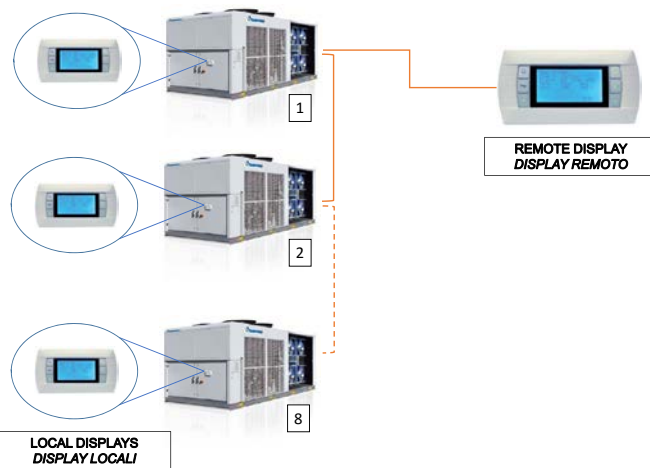
The unit can also be connected to a remote keypad, choosing between different configurations.

Code C9261063. Remote keypad kit up to 200 m (K200), being the distance between the last unit and the remote keypad. The kit includes a second keypad/display and two "T" junction boards: one to be fitted near the controller, the other near the remote keypad.

Code C9261064. Remote keypad kit up to 500 m (K500), being the distance between the last unit and the remote keypad. The kit includes a second keypad/display and two "T" junction boards: one to be fitted near the first controller in the LAN, the other near the remote keypad. The kit also includes an AC/DC power supply for the remote keypad, to be placed near the keypad.

The maximum length possible is 500 m.

The same remote keypad can display up to 8 rooftop units, exploiting the LAN connection between the units. After having correctly completed the connections, the remote keypad can switch from interfacing to one unit to the next, following the procedure shown in the user manual.



Option B901: Touch Room Thermostat - Air3000touch+

It is an additional display to control rooftop unit, to be installed in the air-conditioned space.

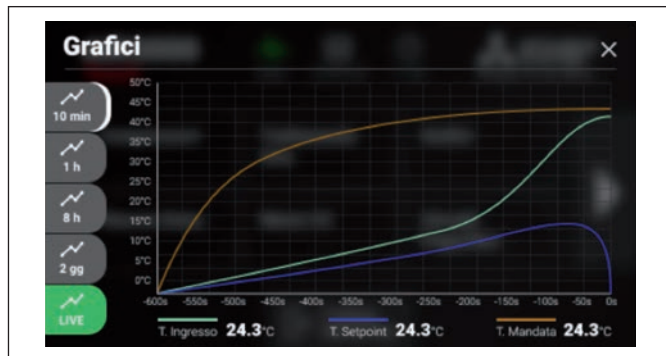
It reports all functions that are already available through the compact display fitted in the unit, adding:

- Ready to be installed inside the air conditioned space;
- Colour Touch screen 4,3" display;
- Temperature and humidity probes;
- User-friendly;
- It can be installed in a public space, since all menu is protected by a password;
- Multi-language menu.

AIR3000touch+ is connected to the rooftop unit via an AWG 20-22 cable (max distance 500m), and it is supplied loose together with the rooftop unit.

Power supply 24 Vdc comes as standard and the max distance between Air3000touch+ and the power supply is 300m.

The kit allows two possible installation: Wall surface mounted (with a wall box) or Wall mounted (flush-mounted wall installation).



Option 1441: Kiplink - Air3000link+

Based on the Wi-Fi technology, KIPLink allows to operate on the unit directly from his mobile device (smartphone, tablet, notebook) thanks to the MEHITS app.

It allows Monitor each component while moving around the unit for maintenance, view and change all parameters with easy-to-understand screenshots and dedicated tooltips and Get devoted "help" message for alarm reset and trouble shooting.

It monitors the immediate labor status of the compressors, heat exchangers, cooling circuits, air dampers, CO₂ probes, etc..., and view the real-time graphs of the key operating variable trends.

It has a data logger function, allowing to:

- View the real-time graphs of the key operating variable trends
- Enhance diagnostics with data and graphs of 10 minutes before and after each alarm
- Download all the data for detailed analysis

It also possible to connect the Kiplink hardware via its ethernet port to LAN of the building, in order to monitor the unit from a LAN device (as a PC, laptop or mobile phone) with a simple web browser connected to the IP address of the Kiplink.



Roofcurb

It is a raised frame that facilitates the installation of a rooftop unit when supply and return air ducts are down wise.

The roofcurb can be adapted to the slope of the roof thanks to its skirts, with a maximum inclination grade that varies according to the model. When roofcurb's skirts are properly fixed, they are in charge to support the roofcurb inner structure and the rooftop place above.

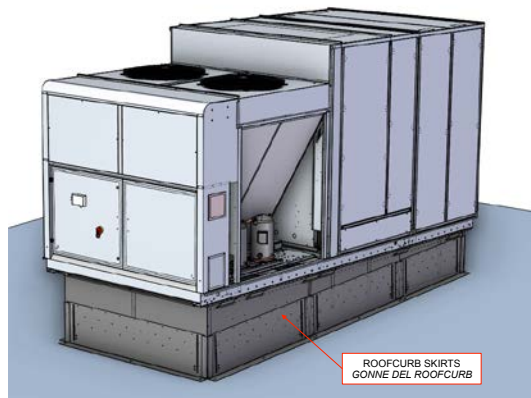
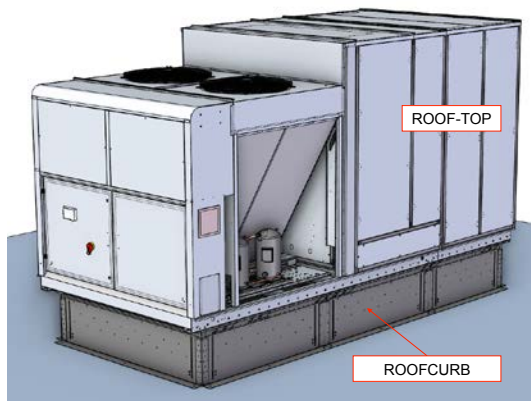
Roofcurb has a supply and a return duct, to facilitate the connection with the indoor air ducts. These ducts can be insulated internally with 25mm rockwool as an option (sandwich panel).

It's not mandatory to have rooftop with supply and return down wise: roofcurb can be used as a frame to help rooftop installation with whatever air flows directions.

Roofcurb model can vary according to:

- Unit's size
- Unit's function
- Unit's accessory

Please consult roofcurbs installation manual and dimensional drawings for deeper details.



ROOFCURB LIST PRICE CODES		UNIT SIZES								
FUNCTIONS		0302 - 0352 - 0402			0444 - 0484 - 0524 - 0604			0704 - 0804		
List price code	Description	W/O D.I.	W/ D.I.	m.s.[°]	W/O D.I.	W/ D.I.	m.s.[°]	W/O D.I.	W/ D.I.	m.s.[°]
1071, 1072, 1073	Function AR, MF, AX	BP11900001	BP11900002	5,2	BP12700001	BP12700002	3,8	BP12900001	BP12900002	3,2
1074, 1075, 1076, 1077, 1079	Function HR-F, B, P, E	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

For any special request, please contact the headquarter.

- W/O D.I. Without ducts insulation
- W/ D.I. With ducts insulation
- m.s.[°] Maximum roof slope
- n.a. Not available

5. ACCESSORIES

CODE	ACCESSORY NAME	DESCRIPTION	ADVANTAGES
1061	Unit ErP 2018 Compliant	This indicates that the unit complies with the minimum seasonal energy efficiency requirements for space heating and cooling specified in EU regulation 2016/2281	The unit fully respect the compatibility directives required for the CE mark, including new efficiency limits in force since January 1st, 2018
1062	Unit ErP 2021 Compliant	This indicates that the unit complies with the minimum seasonal energy efficiency requirements for space heating and cooling specified in EU regulation 2016/2281	The unit fully respect the compatibility directives required for the CE mark, including new efficiency limits in force since January 1st, 2021
2070	Supply air	The supply air flow direction can be chosen among lateral (right), from the bottom the rear or the top. Check compatibility with some accessories and functions on the table reported in this technical bulletin. The reference point always refers to looking at the unit from the electrical panel.	The installation of the unit and the ducts are significantly simplified.
2060	Return air	The return air flow direction can be chosen among lateral (left), from the bottom, the rear or the top. Check compatibility with some accessories and functions on the table reported in this technical bulletin. The reference point always refers to looking at the unit from the electrical panel.	The installation of the unit and the ducts are significantly simplified.
4461	Powdered coated panels + insulating material	Air treatment section is made of powdered coated self-supporting metal sheet panels, coated inside with an insulating mat 6+3 mm thick. Insulating layer is fixed with a specific adhesives together with mechanical fasteners (washers) that ensure maximum tightness over time.	This solution guarantees an excellent mechanical strength of the structure together with a suitable thermal insulation
4462+4467	Double skin (sandwich) panels	Air treatment section is made of self supporting aluminium frame. Panels are sandwich-type, with 25 mm thick polyurethane foam insulation, external layer made of pre-painted galvanized steel, only galvanized steel the inner one.	This solution guarantees an excellent mechanical strength of the structure together with an optimal thermal insulation
2411	Remote phase-sequence control	Relay for controlling the phase- sequence of mains.	Protects loads against faults due to incorrect connection of the electric line.
3412	Automatic circuit breakers	Over-current switch on the major electrical loads.	In case of overcurrent allows resetting of the switch without the replacement of relative fuses.
3301	Power factor correction	Capacitors on the compressors' power inlet line. For the combination with option 1511 (soft start), contact the office.	The unit's average cos(phi) increases from an average value of 0,87 to a value (average) of 0,92.
4181	ModBUS connectivity	Interface module for ModBUS protocols	Allows integration with BMS operating with Mod-BUS protocol
4182	Echelon connectivity	Interface module for Echelon systems	Allows integration with BMS operating with LonWorks protocol
4184	BACnet connectivity	Interface module for BACnet protocols	Allows integration with BMS operating with BACnet protocol
4185	BACnet OVER IP connectivity	Interface module for BACnet OVER-IP protocols	Allows to interconnect BACnet devices over Internet protocol within wide-area networks
4188	Modbus TCP/IP connectivity	Interface module for Modbus OVER-IP protocols	Allows to interconnect Modbus devices over Internet protocol within wide-area networks
861	Pressostatic condensing control for low ambient	System for the management of external axial fans. Into 2 axial fans unit (sizes 0162 -0402) there is a star delta converter for each axial fan; for units with 4 axial fans (sizes 0484-0804), the function manages stepped fans, with ON / OFF switch, on the basis of the condensation pressure.	When the unit is working at low external air temperatures, the device stops one or more fans in sequence in order to maintain control over condensing pressure
862	Variable step speed condensing control device	System for the management of external axial fans. It consists of an electrical transformer to manage the air flow at 3 fixed speed values according to the condensing temperature.	When the unit is working at low external air temperatures, the uniform reduction of airflow over the entire surface of the coil offers accurate control of condensing pressure and decreases the overall noise level of the unit.

CODE	ACCESSORY NAME	DESCRIPTION	ADVANTAGES
865	EC Axial Outdoor fans	Electronically commutated fans (EC fans). The brushless motor, governed by a special controller, continuously adjust fans' speed. This accessory is recommended in cooling mode with external temperatures below 12 °C	Reduced energy consumption and minimized current's absorption during start-up phase. The noise reduces proportionally to the unit's partialization.
1511	Soft start	Electronic device adopted to manage the inrush current. It acts on 2 phases. For the combination with option 3301 (compressor phase-shifting) contact the office.	Break down of the inrush current compared to the direct motor start, lower motor windings' mechanical wear, avoidance of mains voltage fluctuations during starting, favourable sizing for the electrical system.
B841	Public spaces safety pack	The package includes some accessories to detect the presence of smoke inside the unit. Among other things, they comply with the French ERP regulation. The accessories included are: - D.A.D. (NF S 61961 certified) - Smoke detector (NF S 61961 certified) - Spring return dampers (if foreseen by the chosen function of the unit) - smoke alarm management according to ERP standard - If there are electric heaters, they will be equipped with an automatic reset thermostat set at 90 ° C and a manual reset thermostat set at 120 ° C.	It's necessary to satisfy the specifications required by the ERP regulation (établissements recevant du public)
B830	Fans blade material	It is possible to choose the type of material of the supply or supply and return fans blades (if present)	It's necessary to satisfy the specifications required by the ERP regulation (établissements recevant du public)
4250	Supply fan uprated motor	Increment of the motor electrical power of the supply fans	Increment of the static available pressure at the supply fans outlet
4240	Return fan uprated motor	Increment of the motor electrical power of the return fans	Increment of the static available pressure at the return fans inlet
1861	Costant air flow regulation + Vair	The unit can manage the air flow set point, both on supply and return, according to the actual load of the resources.	The reduction of the air flow according to the actual load of the system allows to achieve considerable savings and to increase the efficiency.
1862	Costant air flow regulation	Air fan speed is regulated in order to maintain costant air flow valure.	As pressure drop varies, the fans adjust the speed so as to maintain flow-rate at the design value for the system, regardless of how dirty the filters are. We raccomend to select this option together with Filters differential pressure switch.
1863	Costant pressure regulation	Air fan speed is regulated in order to maintain costant static available pressure value.	Fan speed is controlled in such a way as to maintain a constant available static pressure in the system's air distribution plenum. This is useful for variable air volume (VAV) air distribution systems.
1864	Fixed speed 0-10V	Air fan speed is maintained costant at a fixed value set on display	The fan speed can be set directly in the controller in order to reduce start up procedure.
4401	Return fans double set point	It is possible to choose a second return fan set point value, different from that normally set and choose with whom to work via a digital input (set point = could be a fixed air flow or a static pressure or a fixed speed, according to what has been chosen among options 1862-1863-1864). This option is not available with Vair option (1861)	
4402	Return fans continuous set point variation	Return fan set point variation is managed through analog input; the set point varies between a minimum and a maximum values previously fixed via unit display (set point = could be a fixed air flow or a static pressure, according to what has been chosen among options 1862-1863-1864). This option is not available with Vair option (1861)	
4411	Supply fans double set point	It is possible to choose a second supply fan set point value, different from that normally set and choose with whom to work via a digital input (set point = could be a fixed air flow or a static pressure or a fixed speed, according to what has been chosen among options 1862-1863-1864). This option is not available with Vair option (1861)	

CODE	ACCESSORY NAME	DESCRIPTION	ADVANTAGES
4412	Supply+return fans double set point	It is possible to choose a second supply and return fan set point value, different from that normally set and choose with whom to work via a digital input (set point = could be a fixed air flow or a static pressure or a fixed speed, according to what has been chosen among options 1862-1863-1864). This option is not available with Vair option (1861)	
4413	Supply fans continuous set point variation	Supply fan set point variation is managed through analog input; the set point varies between a minimum and a maximum values previously fixed via unit display (set point = could be a fixed air flow or a static pressure, according to what has been chosen among options 1862-1863-1864). This option is not available with Vair option (1861)	
4414	Supply+return fans continuous set point variation	Supply and return fans set point variation is managed through analog input; the set point varies between a minimum and a maximum values previously fixed via unit display (set point = could be a fixed air flow or a static pressure, according to what has been chosen among options 1862-1863-1864). This option is not available with Vair option (1861).	
4141	CO ₂ air quality probe	Used to manage air quality inside the building. The signal is processed by the control unit in order to adjust the external air intake	Automatic management of the fresh air flow-rate allows outside air to be handled only when needed, guaranteeing compliance with relevant standards and occupant comfort.
4142	External forcing 4-20 mA	Remote forcing with 4-20 mA signal to manage the dampers for air renewal	
4143	CO ₂ +VOC air quality probe	Probe for managing the air quality inside the building. The signal processed by the controller allows you to adjust the flow of fresh air. The probe allows to measure both the concentration of CO ₂ (therefore indirectly the crowding of the environment) and the pollution generated by volatile organic compounds, the cause of the so-called indoor pollution: the higher value between the two commands the opening of the external air shutter .	Automatic management of the fresh air flow-rate allows outside air to be handled only when needed, guaranteeing compliance with relevant standards and occupant comfort.
B861 ÷ B864	Prefilters	In the standard units there is a 55% isocoarse class filter (ISO 16890 - G4 according to EN779). Pre-filters of different efficiency are available (M6 and F7 according to EN779)	It guarantees a pre-filtering of the air in order to reduce fouling of the high efficiency filter.
2525 ÷ 2528	High-efficiency flat filters	In addition to the standard filters, these are fibreglass-reinforced paper filters with different efficiencies ePM010 75% (ISO 16890, M6 in accordance with EN 779), ePM01 50% (ISO 16890, F7 in accordance with EN 779), ePM01 70% (ISO 16890, F8 in accordance with EN 779) or ePM01 80% (ISO 16890, F9 in accordance with EN 779) , with Class 1 fire resistance. Easy access from the outside thanks to the large inspection panels, and sliding on steel grills to allow simple removal for cleaning or replacement	Mounted on the treatment coil inlet, they ensure that the air effectively introduced into the room is filtered.
1852	Filters differential pressure switch	Differential air pressure switch to detect filters' obstruction, with warning. It measures standard filter and optional high efficiency filters clogging.	
3701	Water pre-treatment coil	Water pre-treatment coil installed before the treatment coil in an additional module. The coil is made of copper tube and aluminium fins.	The energy recovered from cold storages is used for the heating of the ambient. The coil allows to transfer the heat of the food refrigeration system to the air prior the treatment coil. The integration of the store refrigeration system with the air conditioning one increases the efficiency of the entire system and reduce the work of the refrigerant circuit in heating mode
1461	Hot gas coil with ON/OFF management	Condensing finned coil, installed downstream the treatment coil, fed by hot gas coming from the compressor's supply, with on-off management. For a correct functioning, this option has to be chosen with option dehumidification (opt. 4133- 4135 -4137)	The hot gas post-heating adjusts supply air temperature during dehumidification phases.

CODE	ACCESSORY NAME	DESCRIPTION	ADVANTAGES
1466	Electric heater management	Option for Electric heater management, that are placed after direct expansion coil. For electric heater capacities, refer to 1312 ÷ 1318.	The electrical heating coil is a heating source which can be used as integration in heat pump working. Furthermore it can be used during defrosting cycles.
1467	2 Rows Water (heating) coil	Water heating coil installed after the internal treatment coil	The coil can be used as a heating source or as integration in heat pump working. Antifreeze function trough opening of the three way valve.
1468	3 Rows Water (heating) coil	Water heating coil installed after the internal treatment coil	The coil can be used as a heating source or as integration in heat pump working. Antifreeze function trough opening of the three way valve.
1341	2 way valve V2V	Modulating mixing valve installed downstream the water heating coil, with modulating drive. This option can be chosen only with water heating coil (opt. 1467 or 1468)	
1342	3 way valve V3V	Modulating mixing valve installed close to the water heating coil, with modulating drive. This option can be chosen only with water heating coil (opt. 1467 or 1468)	
1345	Water coil control continuous signal	It's a continuous signal from controller to manage an external water valve actuator that controls hot water coil flow. This option can be chosen only with water heating coil (opt. 1467 or 1468)	
1312 ÷ 1318	Electrical heating coil	Electrical heater installed after the internal treatment coil. This option can be chosen only with electric heater management (opt. 1466)	The electrical heating coil is a heating source which can be used as integration in heat pump working. Furthermore it can be used during defrosting cycles.
4131	Ambient humidity probe	Probe to measure relative humidity percentage in the ambient, intalled on the return	
4132	Enthalpic Free cooling	Function manged by temperature and humidity probes, installed in a position allowing them to check and compare the energy status of both the ambient and the external air. The control manages the opening/closing of the dampers in order to exploit more favourable external conditions.	During Free cooling functioning, the resources are progressively disconnected, till complete switch off, keeping the required termo-hygrometric ambient condition, thanks to the external favourable conditions
4133	Dehumidification	Thanks to a humidity probe, this function reduces during cooling mode the excess of humidity of the indoor air	Enthalpic control to maintain the ambient humidity to wellbeing values. It's reccomended to use hot resource to post-heating supply air temperature during dehumidification phases.
4134	Signal for external humidifier	The unit provides a signal for driving a humidifier, thanks to the reading of the humidity probe placed on reurn side. The type of the signal can be chosen among options 4309 and 4309A	It increases humidity in the air conditioned space. It acts only in heating mode. Contact the headquarter for special execution.
4309	ON/OFF signal for humidifier control	The unit provides a digital signal for driving a humidifier, thanks to the reading of the humidity probe placed on reurn side.	It increases humidity in the air conditioned space. It acts only in heating mode. Contact the headquarter for special execution.
4309A	Continuous signal for humidifier control	The unit provides an analogic signal for driving a humidifier, thanks to the reading of the humidity probe placed on reurn side.	It increases humidity in the air conditioned space. It acts only in heating mode. Contact the headquarter for special execution.
881	Cu/Cu condensing coils	Air-refrigerant heat exchanger with copper fins and tubes.	Recommended for applications in corrosive atmospheres
883	Condensing coils with epoxy-coated fins	Painted air-refrigerant heat exchanger.	Recommended for applications in medium level pollution atmospheres.
895	Condensing coils with Fin Guard Silver treatment	Air-refrigerant heat exchanger with epoxidic treatment on coils and fins.	Recommended for marine exposure conditions, with an high level of pollution or other aggressive atmospheres.
2032	Welded mesh protection coil	Welded mesh to protect outdoor coil	These grills protect outside coil and part of the refrigerant circuit against the intrusion of solid bodies with medium large dimensions.
2033	Condenser coil protection painted metal sheet	Outside coils protection punched panel	These grills protect outside coil and part of the refrigerant circuit against the intrusion of solid bodies with medium small dimensions.

CODE	ACCESSORY NAME	DESCRIPTION	ADVANTAGES
971	Cu/Cu internal coil	Internal air treatment coil with copper fins and tubes. Remark: this accessory is applied only to the main air treatment coil; please contact the headquarter if you need the same accessory applied to other optional coils (such as hot gas coil or hot water coil).	Recommended for applications in corrosive atmospheres
974	Internal coil with Fin Guard Silver treatment	Internal air treatment coil with epoxidic treatment on coils and fins. Remark: this accessory is applied only to the main air treatment coil; please contact the headquarter if you need the same accessory applied to other optional coils (such as hot gas coil or hot water coil).	Recommended for marine exposure conditions, with an high level of pollution or other aggressive atmospheres.
975	Internal coil with pre- painted fins	Internal air treatment coil with prepainted fins. Remark: this accessory is applied only to the main air treatment coil; please contact the headquarter if you need the same accessory applied to other optional coils (such as hot gas coil or hot water coil).	Recommended for applications in medium level pollution atmospheres.
1441	Kiplink + compact Keyboard	The unit is supplied with the Compact keyboard, with LCD display and buttons. In addition, there is KIPLink, the innovative user interface based on WiFi technology, which also allows you to reach the unit via LAN.	It is possible to control the unit in real time through the mehits app, within the Wi-Fi range or through the building's LAN network.
B901	Display AIR 3000 TOUCH+ 4,3" (Display 4,3" supplied loose)	It is an additional display to control rooftop unit, to be installed in the air-conditioned space. It reports all functions that are already available through the compact display fitted in the unit, adding: <ul style="list-style-type: none"> - Ready to be installed inside the air conditioned space - Colour Touch screen 4,3" display - Temperature and humidity probes - User-friendly - It can be installed in a public space, since all menu is protected by a password - Multi-language menu 	It's supplied loose together with the rooftop unit.
5924	Energy meter for BMS	This option includes the following devices on-board the unit panel: <ul style="list-style-type: none"> - network analyzer with display operating on ModBUS protocol over RS-485 (without certification MID) - current transformers 	This accessory allows to acquire the electrical data and the power absorbed by the unit and send them via RS-485 bus to the BMS for energy metering. For units size 0704-0804 not available together with opt. 3422 (Lights on electric board + power socket).
3433	Leakage detection system	An alarm appears on the unit display and via the serial bus if the gas charge drops by more than 20% compared to the original charge set in the factory. The detection takes place by measuring the unit overheat and the degree of opening of the electronic thermostatic valve	This accessory allows to detect refrigerant leakage that may occurs in any part of the refrigerant circuit.
381	Numbered wiring on electric board	During the execution of the electrical panel, in addition to identifying the individual inputs and outputs, electric cables are labeled for easier recognition.	Increase the usability of the electrical panel during maintenance.
382	PWR wirings according to Uk request	Power cables with coloring according to the U.K. standards.	
3591	Fans operating signal	Auxiliary contacts providing a voltage- free signal	Allows remote signalling of fans' activation or remote control of any auxiliary loads.
3601	Compressors' on/off signal	Auxiliary contacts providing a voltage- free signal	Allows remote signalling of compressor's activation or remote control of any auxiliary loads.
4121	Forced shut down	Digital inlet to switch off the unit from remote	
4161	Remote summer winter switch	Digital inlet to switch the unit operating mode from cooling to heating and viceversa	
4162	Automatic summer/winter switch	The unit changes its operating mode from cooling to heating according to outdoor and indoor air temperature	
6171	Input remote demand limit	Digital input (voltage free) to enable demand limit function	It permits to limit the unit's power absorption for safety reasons or in temporary situation.

CODE	ACCESSORY NAME	DESCRIPTION	ADVANTAGES
4111	Remote forcing for air extraction	Digital input that manage the closing of the recirculation damper, the opening of the outlet and inlet dampers, the switching off of the compressors and the start of he supply and return fans	Digital input for extraction of the air in case of smoke. Fornisce un allarme in uscita
4172	Remote room washing	Digital input for the complete renewal of air in the empty room. Estraction and expulsion of the ambient air, introduction of renewal external air with switched off compressors	Renewal of ambient air when the room has not been used for a long time or whenever all the ambient air requires rapid changing
3422	Lights on electric board + power socket	230V power socket in the electrical board, CEE 7/3 type (Schuko). The maximum power available is 500VA. Electrical board equipped with lights.	It allows to power small electrical/electronic devices (lights, notebooks, tablets, etc.) during maintenance operations. The interior lighting simplifies maintenance and operations to the electrical panel. Not available together with opt. 5924 (energy meter for BMS) for sizes 0704-0804.
4173	Washing and running up	Function to be activated when the room is empty, first washing of the air in the room and then start-up in total air recirculation.	
4381	Full fresh air	This digital input allows to work full fresh air	
4391	Total recirculation	This digital input allows to work in total recirculation	
7001	Ventilation-only digital input	Digital input for operation in ventilation-only mode (the heating devices and compressors are not switched on)	
4442	Double set point return temperature	It is possible to choose a second temperature set point value, different from that normally set and choose with whom to work via a digital input	
4444	Continuous set point return temperature	Return temperature set point variation is managed through analog input; the set point varies between a minimum and a maximum values previously fixed via unit display	
4271	Ambient air probe	Return air temperature probe supplied loose for ambient installation	
4272	Return air probe	Return air temperature probe supplied loose for return duct installation	
411	Electrical Panel with forced ventilation	Forced ventilation for electric switchboard	As standard, the electric panel is supplied with two air grills with filter. When unit is installed in hot climate, it's suggested to add 411 option, that include two fans that extract hot air from the enclosure. Exhaust fans are controlled via a thermostat
2101	Rubber anti vibration device	Not available for units with function HR-F/HR-B/HR-P and HR-E	
1972	Reinforced Structure for long distance transportation for units only with supply fan(s)	For AR, MF and AX functions. The accessory includes: reinforcing bar on compressors' base, frame supports on air treatment section, fixing brackets for fans, reinforced hinges that allow the sandwich panels opening	This accessory prevents the unit from possible structural damage during a long journey, especially by lorry, to the installation site
1973	Reinforced Structure for long distance transportation for units with supply and return fan(s)	For HR-... functions. The accessory includes: reinforcing bar on compressors' base, frame supports on air treatment section, fixing brackets for fans, reinforced hinges that allow the sandwich panels opening	This accessory prevents the unit from possible structural damage during a long journey, especially by lorry, to the installation site
9996	Container slides		

6. GENERAL TECHNICAL SPECIFICATIONS

WRX/AR - Basic Units											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	97,2	110	121	142	154	170	189	219	240
Total sensible capacity	(1)	kW	79,5	89,2	97,8	116	127	139	152	176	194
Total power input	(1)	kW	31,5	36,2	40,0	44,9	47,7	52,4	63,9	72,8	82,4
EER	(1)	-	3,10	3,00	3,00	3,20	3,20	3,20	3,00	3,00	2,90
Heating (Gross Value)											
Heating capacity	(2)	kW	95,2	109	123	138	148	168	192	217	239
Total power input	(2)	kW	26,4	29,8	33,8	37,0	40,7	46,0	55,0	60,2	67,8
COP	(2)	-	3,60	3,70	3,60	3,70	3,60	3,70	3,50	3,60	3,50
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial φ 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	27	30	33	40	43	54	54	56	59
Refrigerant			R410A								
Sound power											
Total	(4)	dB(A)	84	86	87	85	86	86	86	89	90
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width		mm	2.260								
Height		mm	2.150								
Operating weight standard units	(5)	kg	1.650	1.750	1.850	2.150	2.340	2.430	2.430	3.020	3.170

Notes:

- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 0%.
- (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 0%.
- (3) ESP for standard configuration (optional accessories not included/calculated).
- (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
- (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
- (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

GENERAL TECHNICAL SPECIFICATIONS

WRX/MF											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	104	117	129	151,0	163	182	201	233	256
Total sensible capacity	(1)	kW	80,9	90,4	99,1	118,0	129	141	153	179	196
Total power input	(1)	kW	32,0	36,9	40,8	45,6	48,3	53,2	65,0	74,1	84,1
EER	(1)	-	3,25	3,17	3,16	3,31	3,37	3,42	3,09	3,14	3,04
Heating (Gross Value)											
Heating capacity	(2)	kW	96,4	111	124	140	150	170	194	220	242
Total power input	(2)	kW	25,0	28,4	31,9	34,7	38,4	43,5	52,1	57,0	64,2
COP	(2)	-	3,86	3,91	3,89	4,03	3,91	3,91	3,72	3,86	3,77
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial φ 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	27	30	33	40	43	54	54	56	59
Refrigerant			R410A								
Sound power											
Total	(4)	dB(A)	84	86	87	85	86	86	86	89	90
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width	(6)	mm	2.260								
Height		mm	2.150								
Operating weight standard units	(5)	kg	1.780	1.920	1.980	2.320	2.520	2.610	2.610	3.240	3.390

Notes:

- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
- (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
- (3) ESP for standard configuration (optional accessories not included/calculated).
- (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
- (5) Unit in standard configuration/execution, without optional accessories.
- (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
- (6) It doesn't include rain hoods dimension
- (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

GENERAL TECHNICAL SPECIFICATIONS

WRX/AX											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	104	117	129	151,0	163	182	201	233	256
Total sensible capacity	(1)	kW	80,9	90,4	99,1	118,0	129	141	153	179	196
Total power input	(1)	kW	34,6	39,5	43,4	50,8	53,5	58,4	70,2	82,0	91,9
EER	(1)	-	3,00	3,00	3,00	3,00	3,00	3,10	2,90	2,80	2,80
Heating (Gross Value)											
Heating capacity	(2)	kW	96,4	111	124	140	150	170	194	220	242
Total power input	(2)	kW	27,6	31,0	34,5	39,9	43,6	48,7	57,3	64,8	72,0
COP	(2)	-	3,50	3,60	3,60	3,50	3,40	3,50	3,40	3,40	3,40
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial φ 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	27	30	33	40	43	54	54	56	59
Refrigerant			R410A								
Expulsion fans											
Type			Axial φ 710 mm								
Number		n°	1	1	1	2	2	2	2	3	3
Expulsion air flow-rate			5550	6300	6750	8100	9000	9750	10500	12300	13500
Available external static pressure	(3)	Pa	150	150	150	150	150	150	150	150	150
Sound power											
Total	(4)	dB(A)	86	88	88	88	88	88	88	91	92
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width		mm	2.920								
Height		mm	2.150								
Operating weight standard units	(5)	kg	1.850	1.990	2.050	2.390	2.590	2.680	2.680	3.340	3.490

Notes:

- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
- (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
- (3) ESP for standard configuration (optional accessories not included/calculated).
- (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
- (5) Unit in standard configuration/execution, without optional accessories.
- (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
- (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

GENERAL TECHNICAL SPECIFICATIONS

WRX/HR-F											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	105	118	131	153	165	183	204	236	259
Total sensible capacity	(1)	kW	81,4	91,1	99,9	119	129	142	154	180	198
Total power input	(1)	kW	33,6	42,0	42,7	48,6	51,2	56,4	68,4	77,6	87,8
EER	(1)	-	3,10	2,80	3,10	3,20	3,20	3,20	3,00	3,00	3,00
Heating (Gross Value)											
Heating capacity	(2)	kW	99,2	114	129	144	154	175	200	227	251
Total power input	(2)	kW	27,4	34,5	35,2	38,8	42,3	48,0	57,2	62,7	70,8
COP	(2)	-	3,60	3,30	3,70	3,70	3,60	3,70	3,50	3,60	3,50
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial ø 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	27	30	33	40	43	54	54	56	59
Refrigerant			R410A								
Return fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	3	3	3	3	4	4
Supply air flow-rate			18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Sound power											
Total	(4)	dB(A)	84	86	87	85	86	86	86	89	90
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width	(6)	mm	2.260								
Height		mm	3.240								
Operating weight standard units	(5)	kg	2.380	2.520	2.580	3.220	3.420	3.510	3.510	4.270	4.420

Notes:

- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
- (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
- (3) ESP for standard configuration (optional accessories not included/calculated).
- (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
- (5) Unit in standard configuration/execution, without optional accessories.
- (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
- (6) It doesn't include rain hoods dimension
- (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

GENERAL TECHNICAL SPECIFICATIONS

WRX/HR-B											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	113	127	140	164	178	197	219	253	278
Total sensible capacity	(1)	kW	84,8	94,8	104	124	135	148	161	187	206
Total power input	(1)	kW	34,3	39,6	43,8	49,5	52,2	57,5	69,8	79,4	90,1
EER	(1)	-	3,30	3,20	3,20	3,30	3,40	3,40	3,10	3,20	3,10
Heating (Gross Value)											
Heating capacity	(2)	kW	104,0	119	134	151	162	183	209	237	261
Total power input	(2)	kW	27,9	31,8	35,8	39,5	43,1	48,8	58,1	63,7	71,8
COP	(2)	-	3,70	3,80	3,70	3,80	3,80	3,80	3,60	3,70	3,60
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial φ 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	42,5	48,5	52	55	63	65	68	56	59
Refrigerant			R410A								
Return fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	3	3	3	3	4	4
Supply air flow-rate			18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Sound power											
Total	(4)	dB(A)	84	86	87	85	86	86	86	89	90
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width	(6)	mm	2.260								
Height		mm	3.240								
Operating weight standard units	(5)	kg	1.830	1.950	2.030	2.380	2.580	2.670	2.670	3.320	3.470

Notes:

- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
- (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
- (3) ESP for standard configuration (optional accessories not included/calculated).
- (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
- (5) Unit in standard configuration/execution, without optional accessories.
- (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
- (6) It doesn't include rain hoods dimension
- (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

GENERAL TECHNICAL SPECIFICATIONS

WRX/HR-P LOW FLOW											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	110	124	137	160	173	192	212	246	270
Total sensible capacity	(1)	kW	83,5	93,4	102	121	133	146	158	184	202
Total power input	(1)	kW	35,2	41,1	45,3	54,5	59,3	65,5	79,5	87,9	101,0
EER	(1)	-	3,10	3,00	3,00	2,90	2,90	2,90	2,70	2,80	2,70
Heating (Gross Value)											
Heating capacity	(2)	kW	108,0	124	138	155	167	188	213	243	267
Total power input	(2)	kW	29,0	33,5	37,5	44,8	50,4	57,0	68,0	72,4	82,8
COP	(2)	-	3,70	3,70	3,70	3,50	3,30	3,30	3,10	3,30	3,20
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial ø 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	27	30	33	40	43	54	54	56	59
Refrigerant			R410A								
Return fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	3	3	3	3	4	4
Supply air flow-rate			18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Sound power											
Total	(4)	dB(A)	84	86	87	85	86	86	86	89	90
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width	(6)	mm	3.560								
Height		mm	3.240								
Operating weight standard units	(5)	kg	2.820	2.960	3.020	3.760	3.960	4.050	4.050	4.880	5.030

Notes:

- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
- (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
- (3) ESP for standard configuration (optional accessories not included/calculated).
- (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
- (5) Unit in standard configuration/execution, without optional accessories.
- (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
- (6) It doesn't include rain hoods dimension
- (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

GENERAL TECHNICAL SPECIFICATIONS

WRX/HR-P HIGH FLOW											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	111	125	137	161	175	193	214	247	271
Total sensible capacity	(1)	kW	83,6	93,5	102	122	133	146	158	184	202
Total power input	(1)	kW	34,4	39,9	43,9	49,6	52,5	57,8	70,2	81,8	92,4
EER	(1)	-	3,20	3,10	3,10	3,30	3,30	3,30	3,00	3,00	2,90
Heating (Gross Value)											
Heating capacity	(2)	kW	109,0	124	139	158	170	191	217	244	268
Total power input	(2)	kW	28,2	32,3	36,1	40,0	43,8	49,5	58,9	66,3	74,4
COP	(2)	-	3,80	3,80	3,80	3,90	3,90	3,90	3,70	3,70	3,60
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial ø 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	27	30	33	40	43	54	54	56	59
Refrigerant			R410A								
Return fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	3	3	3	3	4	4
Supply air flow-rate			18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Sound power											
Total	(4)	dB(A)	84	86	87	85	86	86	86	89	90
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width	(6)	mm	3.960								
Height		mm	3.240								
Operating weight standard units	(5)	kg	2.820	2.960	3.020	3.760	3.960	4.050	4.050	4.880	5.030

Notes:

- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
- (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
- (3) ESP for standard configuration (optional accessories not included/calculated).
- (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
- (5) Unit in standard configuration/execution, without optional accessories.
- (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
- (6) It doesn't include rain hoods dimension
- (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

GENERAL TECHNICAL SPECIFICATIONS

WRX/HR-E											
SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
Cooling (Gross Value)											
Cooling capacity	(1)	kW	137	154	169	197	213	233	256	293	318
Total sensible capacity	(1)	kW	92,0	103	112	133	145	159	172	199	218
Total power input	(1)	kW	34,7	40,2	44,2	50,1	54,1	59,7	72,2	83,0	93,6
EER	(1)	-	4,00	3,80	3,80	3,90	3,90	3,90	3,50	3,50	3,40
Heating (Gross Value)											
Heating capacity	(2)	kW	122	139	154	175	189	211	238	269	295
Total power input	(2)	kW	29,2	33,4	37,4	41,4	46,4	52,4	62,1	69,0	77,3
COP	(2)	-	4,20	4,20	4,10	4,20	4,10	4,00	3,80	3,90	3,80
Supply fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	2	4	4	4	4	4
Supply air flow-rate		m³/h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Outdoor fans											
Type			Axial φ 800mm								
Number		n°	2	2	2	3	4	4	4	4	4
Outside air flow rate		m³/h	41260	40420	39580	60880	77824	73260	73260	75560	75560
Nominal installed power		kW	3,7	3,7	3,7	5,55	7,4	7,4	7,4	7,4	7,4
Compressors											
No. compressors		n°	2	2	2	4	4	4	4	4	4
No. circuits		n°	2	2	2	2	2	2	2	2	2
Number of capacity		n°	2	2	2	4	4	4	4	4	4
Refrigerant charge	(8)	kg	27	30	33	40	43	54	54	56	59
Refrigerant			R410A								
Return fans											
Type			Radial fan (plug fan)								
			EC motor with built-in controller								
Number		n°	2	2	2	3	3	3	3	4	4
Supply air flow-rate			18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250	250
Sound power											
Total	(4)	dB(A)	84	86	87	85	86	86	86	89	90
Weights and dimensions											
Length		mm	4.080	4.080	4.080	5.560	5.560	5.560	5.560	6.460	6.460
Width	(6)	mm	3.960								
Height		mm	3.240								
Operating weight standard units	(5)	kg	2.790	2.930	2.990	3.790	3.990	4.080	4.080	4.930	5.080

- Notes:**
- (1) Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
 - (2) Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
 - (3) ESP for standard configuration (optional accessories not included/calculated).
 - (4) Sound power on the basis of measurements made in compliance with ISO 3744. For complete sound data consult Elca World.
 - (5) Unit in standard configuration/execution, without optional accessories.
 - (5) The weight shown refers to the unit including any accessory batteries. Any additional modules are not considered.
 - (6) It doesn't include rain hoods dimension
 - (8) The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

TECHNICAL DATA SEASONAL EFFICIENCY IN HEATING (EN14825:2016 VALUE) - WRX

SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
WEATHER CONDITIONS - AVERAGE (1)											
Air flow		m ³ /h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Design heating load	P _{design,h}	kW	78,7	90,1	100,7	106,0	113,5	128,5	147,8	191,5	182,8
Reference design temperature	T _{design,h}	°C	-10,0	-10,0	-10,0	-10,0	-10,0	-10,0	-10,0	-10,0	-10,0
Bivalent temperature	T _{biv}	°C	-5,0	-5,0	-5,0	-6,0	-6,0	-6,0	-6,0	-4,0	-6,0
Seasonal coefficient of performance	SCOP		3,21	3,28	3,23	3,27	3,53	3,52	3,43	3,63	3,56
Seasonal space heating energy efficiency	η _{s,h}	%	125,40	128,20	126,20	127,80	138,20	137,80	134,20	142,20	139,40

(1) Indoor conditions: 20°C d.b. - 15°C w.b.
Type of calculation with fixed flow

TECHNICAL DATA SEASONAL EFFICIENCY IN COOLING (EN14825:2016 VALUE) - WRX

SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
WEATHER CONDITIONS - AVERAGE (2)											
Air flow		m ³ /h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Design cooling load	P _{design,c}	kW	98,3	111,2	122,9	144,0	156,2	173,0	192,0	222,3	243,8
Reference design temperature	T _{design,c}	°C	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0
Seasonal coefficient of performance	SEER		3,74	3,75	3,69	3,94	4,44	4,32	4,3	4,05	4,19
Seasonal space cooling energy efficiency	η _{s,c}	%	146,60	147,00	144,60	154,60	174,60	169,80	169,00	159,00	164,60

(2) Indoor conditions: 27°C d.b. - 19°C w.b.
Type of calculation with fixed flow

TECHNICAL DATA SEASONAL EFFICIENCY IN COOLING (EN14825:2016 VALUE) - WRX-T

SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
WEATHER CONDITIONS - AVERAGE (2)											
Air flow		m ³ /h	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Design cooling load	P _{design,c}	kW	98,3	111,2	122,9	144,0	156,2	173,0	192,0	222,3	243,8
Reference design temperature	T _{design,c}	°C	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0
Seasonal coefficient of performance	SEER		3,74	3,75	3,69	3,94	4,44	4,32	4,3	4,05	4,19
Seasonal space cooling energy efficiency	η _{s,c}	%	146,6	147,0	144,6	154,6	174,6	169,8	169,0	159,0	164,6

(2) Indoor conditions: 27°C d.b. - 19°C w.b.
Type of calculation with fixed flow

GLOBAL SEASONAL EFFICIENCY (EU 2016:2281) - WRX

SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
ErP Tier Achieved (Cooling & Heating)	ErP Tier		2021	2021	2021	2021	2021	2021	2021	2021	2021

GLOBAL SEASONAL EFFICIENCY (EU 2016:2281) - WRX-T

SIZE			0302	0352	0402	0444	0484	0524	0604	0704	0804
ErP Tier Achieved (Cooling & Heating)	ErP Tier		2021	2021	2021	2021	2021	2021	2021	2021	2021

EUROVENT CERTIFICATION PROGRAM

MEHITS S.p.A., in order to ensure greater transparency in relation to its rooftop units, has chosen have the performance of its units certified by a third party, Eurovent Certita Certification, a body recognised both in Europe and internationally (www.eurovent-certification.com).

The performance values certified in the third-party laboratory are declared in accordance with the following regulations:

EN 14511 “Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling” (Update 2018).

EN 14825 “Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling. Testing and rating at part-load conditions and calculation of seasonal performance” (Update 2018).

EN 12102 “Air conditioners, liquid chilling packages, heat pumps and dehumidifiers with electrically driven compressors for space heating and cooling - Measurement of airborne noise – Determination of the sound power level”.

The main certified values are shown below.

WRX								
SIZE		0302	0352	0402	0444	0484	0524	0604
Nominal airflow rate (indoor)	m³/h	18500	21000	22500	27000	30000	32500	35000
External Static Pressure	Pa	125	125	150	150	175	175	175
Cooling capacity (EN14511)	kW	98,3	111,0	123,0	144,0	156,0	173,0	192,0
Energy Efficiency Ratio (EN14511)		3,34	3,29	3,28	3,43	3,54	3,56	3,2
Seasonal Energy Efficiency (cooling) according to EN14825, ηs,c		146,60	147,00	144,60	154,60	174,60	169,80	169,00
SEER Class		B	B	B	B	B	B	B
Heating capacity (EN14511)	kW	94,0	108,0	121,0	136,0	146,0	165,0	189,0
Coefficient of Performance (EN14511)		3,86	3,93	3,88	4,00	3,93	3,91	3,71
Seasonal Energy Efficiency (heating) according to EN14825, ηs,h		125,40	128,20	126,20	127,80	138,20	137,80	134,20
SCOP Class		B	B	B	B	B	B	B
Sound power level (LWO - environment)	dB(A)	84	86	87	85	86	86	86
Sound power level (LWI - duct)	dB(A)	79	79	80	82	82	83	84

WRX-T								
SIZE		0302	0352	0402	0444	0484	0524	0604
Nominal airflow rate (indoor)	m³/h	18500	21000	22500	27000	30000	32500	35000
External Static Pressure	Pa	125	125	150	150	175	175	175
Cooling capacity (EN14511)	kW	98,3	111,0	123,0	144,0	156,0	173,0	192,0
Energy Efficiency Ratio (EN14511)		3,34	3,29	3,28	3,43	3,54	3,56	3,2
Seasonal Energy Efficiency (cooling) according to EN14825, ηs,c		146,60	147,00	144,60	154,60	174,60	169,80	169,00
SEER Class		B	B	B	B	B	B	B
Sound power level (LWO - environment)	dB(A)	84	86	87	85	86	86	86
Sound power level (LWI - duct)	dB(A)	79	79	80	82	82	83	84

Check ongoing validity of certificate and data update on: www.eurovent-certification.com

MATCHING TABLE FOR FUNCTIONS, ACCESSORIES AND AIR FLOW DIRECTIONS

CONFIGURATION				SUPPLY AIR DIRECTION (1)				RETURN AIR DIRECTION (1)			
Option code →				2075	2079A	2073	2074	2067	2065	2061	2063
Function	Accessory			TOP SIDE	RIGHT SIDE	REAR	DOWN-STREAM	TOP SIDE	LEFT SIDE	REAR	DOWN-STREAM
	Option code	Decription	What is it possible?								
AR	1467	2 ROWS WATER COIL H2R	ONLY ONE OF THEM	YES	YES	YES	YES	YES	YES	YES	YES
	1468	3 ROWS WATER COIL H3R									
	1466	ELECTRIC HEATER MANAGEMENT									
	1461	HOT GAS COIL									
	3701	PRE-TREATMENT COIL	(2)	YES	YES	YES	YES	YES	YES	YES	
	252-5/6/7/8	AIR FILTERS HIGH EFFICENCY	(2)								
	NO CODE	G4 FILTER ON AIR INTAKE	NO								
	NO CODE	G4 FILTER ON RETURN AIR	NO								
MF	1467	2 ROWS WATER COIL H2R	ONLY ONE OF THEM	YES	YES	YES	YES	NO	YES	NO	YES
	1468	3 ROWS WATER COIL H3R									
	1466	ELECTRIC HEATER MANAGEMENT									
	1461	HOT GAS COIL									
	3701	PRE-TREATMENT COIL	(2)	YES	YES	YES	NO	YES	NO	YES	
	252-5/6/7/8	AIR FILTERS HIGH EFFICENCY	(2)								
	NO CODE	G4 FILTER ON AIR INTAKE	NO								
	NO CODE	G4 FILTER ON RETURN AIR	NO								
AX	1467	2 ROWS WATER COIL H2R	ONLY ONE OF THEM	YES	YES	YES	YES	NO	NO	NO	YES
	1468	3 ROWS WATER COIL H3R									
	1466	ELECTRIC HEATER MANAGEMENT									
	1461	HOT GAS COIL									
	3701	PRE-TREATMENT COIL	(2)	YES	YES	YES	NO	NO	NO	YES	
	252-5/6/7/8	AIR FILTERS HIGH EFFICENCY	(2)								
	NO CODE	G4 FILTER ON AIR INTAKE	NO								
	NO CODE	G4 FILTER ON RETURN AIR	NO								
HR-F	1467	2 ROWS WATER COIL H2R	ONLY ONE OF THEM	YES	YES	YES	YES	NO	YES	NO	YES
	1468	3 ROWS WATER COIL H3R									
	1466	ELECTRIC HEATER MANAGEMENT									
	1461	HOT GAS COIL									
	1463	HEATING MODULE MANAGEMENT		NO							
	1464	HEATING MOD. MAN.+HOT GAS COIL		(3)							
	3701	PRE-TREATMENT COIL	(2)	YES	YES	YES	NO	YES	NO	YES	
	252-5/6/7/8	AIR FILTERS HIGH EFFICENCY	(2)								
	NO CODE	G4 FILTER ON AIR INTAKE	NO								
	NO CODE	G4 FILTER ON RETURN AIR	NO								

Remarks:

(1) = Point of view: in front of electric panel.

(2) = Available as an option.

(3) = Not all gas heating module can be placed inside base moulding. Contact the headquarter for more information.

YES: Available (as an option)

NO: Not available. For special request, contact the Headquarter.

MATCHING TABLE FOR FUNCTIONS, ACCESSORIES AND AIR FLOW DIRECTIONS

CONFIGURATION				SUPPLY AIR DIRECTION (1)				RETURN AIR DIRECTION (1)			
Option code →				2075	2079A	2073	2074	2067	2065	2061	2063
Function	Accessory			TOP SIDE	RIGHT SIDE	REAR	DOWN-STREAM	TOP SIDE	LEFT SIDE	REAR	DOWN-STREAM
	Option code	Description	What is it possible?								
HR-B	1467	2 ROWS WATER COIL H2R	ONLY ONE OF THEM	YES	YES	YES	YES	NO	YES	NO	YES
	1468	3 ROWS WATER COIL H3R									
	1466	ELECTRIC HEATER MANAGEMENT									
	1461	HOT GAS COIL									
	3701	PRE-TREATMENT COIL	(2)	YES	YES	YES	NO	YES	NO	YES	
	252-5/6/7/8	AIR FILTERS HIGH EFFICIENCY	(2)								
	NO CODE	G4 FILTER ON AIR INTAKE	NO								
NO CODE	G4 FILTER ON RETURN AIR	NO									
HR-P HR-E	1467	2 ROWS WATER COIL H2R	ONLY ONE OF THEM	YES	YES	YES	YES	NO	YES	NO	YES
	1468	3 ROWS WATER COIL H3R									
	1466	ELECTRIC HEATER MANAGEMENT									
	1461	HOT GAS COIL									
	3701	PRE-TREATMENT COIL	NO	YES	YES	YES	NO	YES	NO	YES	
	252-5/6/7/8	AIR FILTERS HIGH EFFICIENCY	(2)								
	NO CODE	G4 FILTER ON AIR INTAKE	YES								
NO CODE	G4 FILTER ON RETURN AIR	YES									

Remarks:

(1) = Point of view: in front of electric panel.

(2) = Available as an option.

(3) = Not all gas heating module can be placed inside base moulding. Contact the headquarter for more information.

YES: Available (as an option)

NO: Not available. For special request, contact the Headquarter.

SUPPLY FANS (FOR ALL FUNCTIONS)

Size		0302	0352	0402	0444	0484	0524	0604	0704	0804
Minimum air flow	[m ³ /h]	14.800	16.800	18.000	21.600	24.000	26.000	28.000	32.800	36.000
Nominal air flow	[m ³ /h]	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Maximum air flow	[m ³ /h]	24.400	24.400	24.400	36.000	36.000	36.000	36.000	48.000	48.000

Size		0302	0352	0402	0444	0484	0524	0604	0704	0804
EC PLUG FAN, standard	F.L.I.	5,2	5,6	5,6	5,6	10,4	10,4	10,4	10,4	10,4
	F.L.A.	8,4	8,8	8,8	8,8	16,8	16,8	16,8	16,8	16,8
EC PLUG FAN, higher rating (MM1)	F.L.I.	12,0	12,0	12,0	12,0	24,0	24,0	24,0	24,0	24,0
	F.L.A.	18,8	18,8	18,8	18,8	37,6	37,6	37,6	37,6	37,6
Number	N°	2	2	2	2	4	4	4	4	4

The electrical data shown are total values.

FLI Power consumption in max. admissible conditions. [kW]

FLA Current draw in max. admissible conditions. [A]

Unit in the standard configuration, without accessories

For detailed specifications contact Elca World

EXHAUST AIR FANS (FOR AX FUNCTION)

Size		0302	0352	0402	0444	0484	0524	0604	0704	0804
Axial-flow fan	F.L.I.	2,6	2,6	2,6	5,2	5,2	5,2	5,2	7,8	7,8
	F.L.A.	4,8	4,8	4,8	9,6	9,6	9,6	9,6	14,4	14,4
Nominal fan diameter	mm	710	710	710	710	710	710	710	710	710
Number	N°	1	1	1	2	2	2	2	3	3

The electrical data shown are total values.

FLI Power consumption in max. admissible conditions. [kW]

FLA Current draw in max. admissible conditions. [A]

Unit in the standard configuration, without accessories

Limit flow-rate to ensure a maximum coil flow-through speed of 2.7 m/s

For detailed specifications contact Elca World

RETURN AIR FANS (FOR HR-F, HR-B, HR-P, HR-E FUNCTIONS)

Size		0302	0352	0402	0444	0484	0524	0604	0704	0804
Minimum air flow	[m ³ /h]	7.400	8.400	9.000	10.800	12.000	13.000	14.000	16.400	18.000
Nominal air flow	[m ³ /h]	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000
Maximum air flow	[m ³ /h]	24.400	24.400	24.400	36.000	36.000	36.000	36.000	48.000	48.000

Size		0302	0352	0402	0444	0484	0524	0604	0704	0804
EC PLUG FAN, standard	F.L.I.	5,6	5,6	5,6	8,4	8,4	8,4	8,4	11,2	11,2
	F.L.A.	8,8	8,8	8,8	13,2	13,2	13,2	13,2	17,6	17,6
EC PLUG FAN, higher rating (MM1)	F.L.I.	12,0	12,0	12,0	18,0	18,0	18,0	18,0	24,0	24,0
	F.L.A.	18,8	18,8	18,8	28,2	28,2	28,2	28,2	37,6	37,6
Number	N°	2	2	2	3	3	3	3	4	4

The electrical data shown are total values.

FLI Power consumption in max. admissible conditions. [kW]

FLA Current draw in max. admissible conditions. [A]

Unit in the standard configuration, without accessories

For detailed specifications contact Elca World

STANDARD COMPRESSORS

Size	Type	CIRCUIT 1					CIRCUIT 2				
		No.	Connection	F.L.I.	F.L.A.	L.R.A.	No.	Connection	F.L.I.	F.L.A.	L.R.A.
				[kW]	[A]	[A]			[kW]	[A]	[A]
0302	scroll	1	single	17	30	174	1	single	17	30	174
0352	scroll	1	single	17	30	174	1	single	23	36	225
0402	scroll	1	single	23	36	225	1	single	23	36	225
0444	scroll	2	tandem	12	19	118	2	tandem	13	21	118
0484	scroll	2	tandem	13	21	118	2	tandem	13	21	118
0524	scroll	2	tandem	15	27	140	2	tandem	15	27	140
0604	scroll	2	tandem	17	30	174	2	tandem	17	30	174
0704	scroll	1	tandem	17	30	174	1	tandem	17	30	174
		1		23	36	225	1		23	36	225
0804	scroll	2	tandem	23	36	225	2	tandem	23	36	225

Electrical data refer to the individual component.

FLI Power consumption in max. admissible conditions.

FLA Current draw in max. admissible conditions.

LRA Locked rotor current

HEATING WATER COIL (Accessory)

	Size	0302	0352	0402	0444	0484	0524	0604	0704	0804	
Airflow	[m ³ /h]	18.500	21.000	22.500	27.000	30.000	32.500	35.000	41.000	45.000	
2-ROWS COIL	Thermal power	kW	134	145	151	196	210	220	230	289	306
	Flowrate	l/s	1,64	1,77	1,85	2,39	2,56	2,69	2,81	3,53	3,74
	Pressure drops water side	kPa	10,8	12,3	13,2	9,5	10,7	11,6	12,5	24,4	26,8
	Pressure drop air side	Pa	22	27	30	21	25	29	32	26	31
	Water contentent	dm ³	17	17	17	25	25	25	25	34	34
	Type of water connections		Threaded connections								
	DN - Nominal diameter IN	mm	40	40	40	50	50	50	50	50	50
	DN - Nominal diameter OUT	mm	40	40	40	50	50	50	50	50	50
3-ROWS COIL	Thermal power	kW	180	195	204	263	283	298	312	388	413
	Flowrate	l/s	2,19	2,38	2,49	3,21	3,45	3,63	3,81	4,74	5,04
	Pressure drops water side	kPa	8,8	10,1	10,9	7,8	8,8	9,6	10,4	20,1	22,3
	Pressure drop air side	Pa	32	40	45	32	38	43	49	39	46
	Water contentent	dm ³	26	26	26	38	38	38	38	51	51
	Type of water connections		Threaded connections								
	DN - Nominal diameter IN	mm	50	50	50	50	50	50	50	50	50
	DN - Nominal diameter OUT	mm	50	50	50	50	50	50	50	50	50

Nominal heating capacity, entering air temperature 20°C, to the capacity indicated and IN/OUT water temperature 80/60°C.
Water connections (inlet and outlet) as standard are placed on the rear side of the unit (point of view: from the switchboard).

THREE-WAY WATER VALVES (accessory)

	Taglie	0302	0352	0402	0444	0484	0524	0604	0704	0804	
2-ROWS COIL	kvs valve	[m ³ /h]	25	25	25	40	40	40	40	40	
	DN - Nominal diameter	mm	40	40	40	50	50	50	50	50	
3-ROWS COIL	kvs valve	[m ³ /h]	40	40	40	40	40	40	40	40	
	DN - Nominal diameter	mm	50	50	50	50	50	50	50	50	
	Type of actuator		0-10 V proportional control (managed by AIR3000+ controller)								
	Type of valve connection		Threaded connections								

ELECTRICAL HEATING COIL (Accessory)

Combinations units / electrical heating coil

Electrical heating coil													
Option code	Size	Thermal power [kW]	Absorbed current [A]	Step	0302	0352	0402	0444	0484	0524	0604	0704	0804
1312	12	12	17	0-50-100%									
1313	18	18	26	0-50-100%	X	X	X						
1314	24	24	35	0-50-100%	X	X	X						
1314A	30	30	43	0-50-100%	X	X	X						
1315	36	36	52	0-50-100%	X	X	X	X	X	X	X		
1318	45	45	65	0-50-100%				X	X	X	X	X	X
1319	60	60	87	0-50-100%				X	X	X	X	X	X
1319A	80	80	115	0-50-100%								X	X

Three-phase power supply with star connection, no neutral

Note: The possible combinations are marked with an **X**

ELECTRICAL DATA

General note:

The electrical data shown are total values.

F.L.I. Absorbed power at max. permissible conditions

F.L.A. Absorbed current at max. permissible conditions

L.R.A. Compressor lock rotor current

S.A. Peak current of unit with standard motors

Electrical power input:

- 400/3/50 WITHOUT NEUTRAL

- Permissible voltage variation 10%

- Maximum unbalance between phase voltages 3%

AR and MF functions														
Size	Compressors			Supply fans			Axial-flow outside air fans			Auxiliary		Total		
	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	F.L.I.	F.L.A.	F.L.I.	F.L.A.	S.A.
		[kW]	[A]		[kW]	[A]		[kW]	[A]					
0302	2	34	60	2	5,20	8,40	2	3,70	7,60	0,50	0,72	43	77	221
0352	2	39	66	2	5,60	8,80	2	3,70	7,60	0,50	0,72	49	84	273
0402	2	45	73	2	5,60	8,80	2	3,70	7,60	0,50	0,72	55	90	279
0444	4	49	82	2	5,60	8,80	3	5,55	11,40	0,50	0,72	62	105	201
0484	4	52	86	4	10,40	16,80	4	7,40	15,20	0,50	0,72	71	119	216
0524	4	59	108	4	10,40	16,80	4	7,40	15,20	0,50	0,72	77	142	255
0604	4	68	120	4	10,40	16,80	4	7,40	15,20	0,50	0,72	86	154	298
0704	4	79	133	4	10,40	16,80	4	7,40	15,20	0,50	0,72	98	166	355
0804	4	90	146	4	10,40	16,80	4	7,40	15,20	0,50	0,72	109	179	368

AX function																	
Size	Compressors			Supply fans			Axial-flow exhaust air fans			Axial-flow outside air fans			Auxiliary		Total		
	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	F.L.I.	F.L.A.	F.L.I.	F.L.A.	S.A.
		[kW]	[A]		[kW]	[A]		[kW]	[A]		[kW]	[A]					
0302	2	34	60	2	5,20	8,40	1	2,60	4,80	2	3,70	7,60	0,50	0,72	43	77	221
0352	2	39	66	2	5,60	8,80	1	2,60	4,80	2	3,70	7,60	0,50	0,72	49	84	273
0402	2	45	73	2	5,60	8,80	1	2,60	4,80	2	3,70	7,60	0,50	0,72	55	90	279
0444	4	49	82	2	5,60	8,80	2	5,20	9,60	3	5,55	11,40	0,50	0,72	62	105	201
0484	4	52	86	4	10,40	16,80	2	5,20	9,60	4	7,40	15,20	0,50	0,72	71	119	216
0524	4	59	108	4	10,40	16,80	2	5,20	9,60	4	7,40	15,20	0,50	0,72	77	142	255
0604	4	68	120	4	10,40	16,80	2	5,20	9,60	4	7,40	15,20	0,50	0,72	86	154	298
0704	4	79	133	4	10,40	16,80	3	7,80	14,40	4	7,40	15,20	0,50	0,72	98	166	355
0804	4	90	146	4	10,40	16,80	3	7,80	14,40	4	7,40	15,20	0,50	0,72	109	179	368

HR-F, HR-B, HR-P, HR-E functions																	
Size	Compressors			Supply fans			Return fans			Axial-flow outside air fans			Auxiliary		Total		
	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	No.	F.L.I.	F.L.A.	F.L.I.	F.L.A.	F.L.I.	F.L.A.	S.A.
		[kW]	[A]		[kW]	[A]		[kW]	[A]		[kW]	[A]					
0302	2	34	60	2	5,20	8,40	2	5,60	8,80	2	3,70	7,60	0,50	0,72	49	86	230
0352	2	39	66	2	5,60	8,80	2	5,60	8,80	2	3,70	7,60	0,50	0,72	55	92	281
0402	2	45	73	2	5,60	8,80	2	5,60	8,80	2	3,70	7,60	0,50	0,72	60	99	287
0444	4	49	82	2	5,60	8,80	3	8,40	13,20	3	5,55	11,40	0,50	0,72	69	116	212
0484	4	52	86	4	10,40	16,80	3	8,40	13,20	4	7,40	15,20	0,50	0,72	79	132	228
0524	4	59	108	4	10,40	16,80	3	8,40	13,20	4	7,40	15,20	0,50	0,72	85	154	267
0604	4	68	120	4	10,40	16,80	3	8,40	13,20	4	7,40	15,20	0,50	0,72	94	166	310
0704	4	79	133	4	10,40	16,80	4	11,20	17,60	4	7,40	15,20	0,50	0,72	108	183	372
0804	4	90	146	4	10,40	16,80	4	11,20	17,60	4	7,40	15,20	0,50	0,72	120	196	385

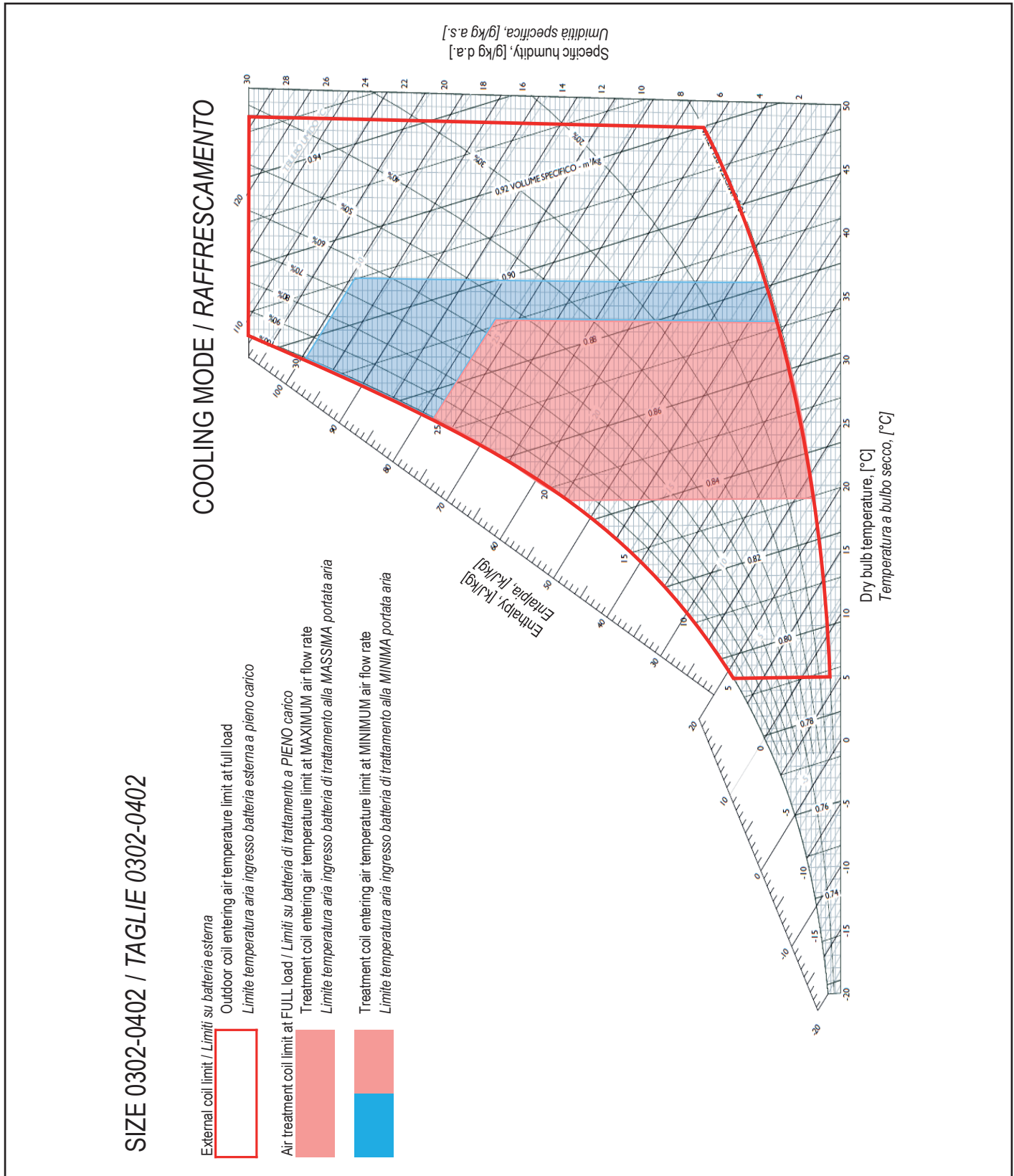
7. OPERATING LIMITS FOR EACH SIZE

OPERATING LIMITS CALCULATED IN THE FOLLOWING CONDITIONS:

- Unit correctly installed and used
- Operating in stable conditions

Warning:

1. When unit is installed in very hot climate (external temperature goes up to 46°C), it's suggested to use 411 - Electric panel with forced ventilation
2. When the unit is working in cooling mode with outdoor temperature below 12°C, it's suggested to use 865 - EC Axial Outdoor fans
3. For detailed working limits, please refer to ElcaWorld selection software



SIZE 0444-0804 / TAGLIE 0444-0804

COOLING MODE / RAFFRESCAMENTO

External coil limit / Limiti su batteria esterna

Outdoor coil entering air temperature limit at full load

Limite temperatura aria ingresso batteria esterna a pieno carico

Outdoor coil entering air temperature limit at partial load [half capacity]

Limite temperatura aria ingresso batteria esterna a carico parziale [metà potenza]

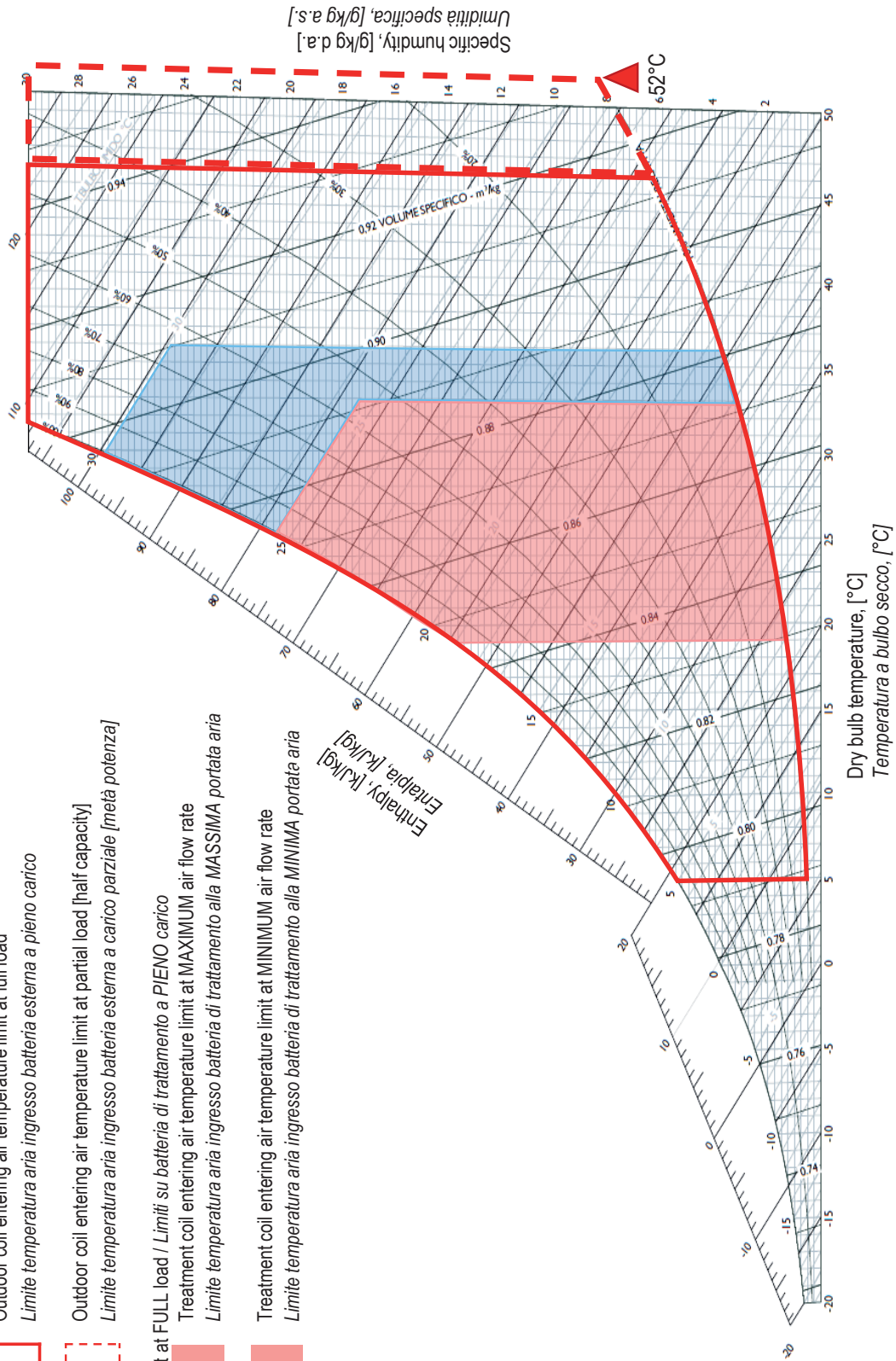
Air treatment coil limit at FULL load / Limiti su batteria di trattamento a PIENO carico

Treatment coil entering air temperature limit at MAXIMUM air flow rate

Limite temperatura aria ingresso batteria di trattamento alla MASSIMA portata aria

Treatment coil entering air temperature limit at MINIMUM air flow rate

Limite temperatura aria ingresso batteria di trattamento alla MINIMA portata aria



SIZE 0302-0804 / TAGLIE 0302-0804

HEATING MODE / RISCALDAMENTO

External coil limit / Limiti su batteria esterna



Outdoor coil entering air temperature limit at full load

Limite temperatura aria ingresso batteria esterna a pieno carico

Air treatment coil limit at FULL load / Limiti su batteria di trattamento a PIENO carico



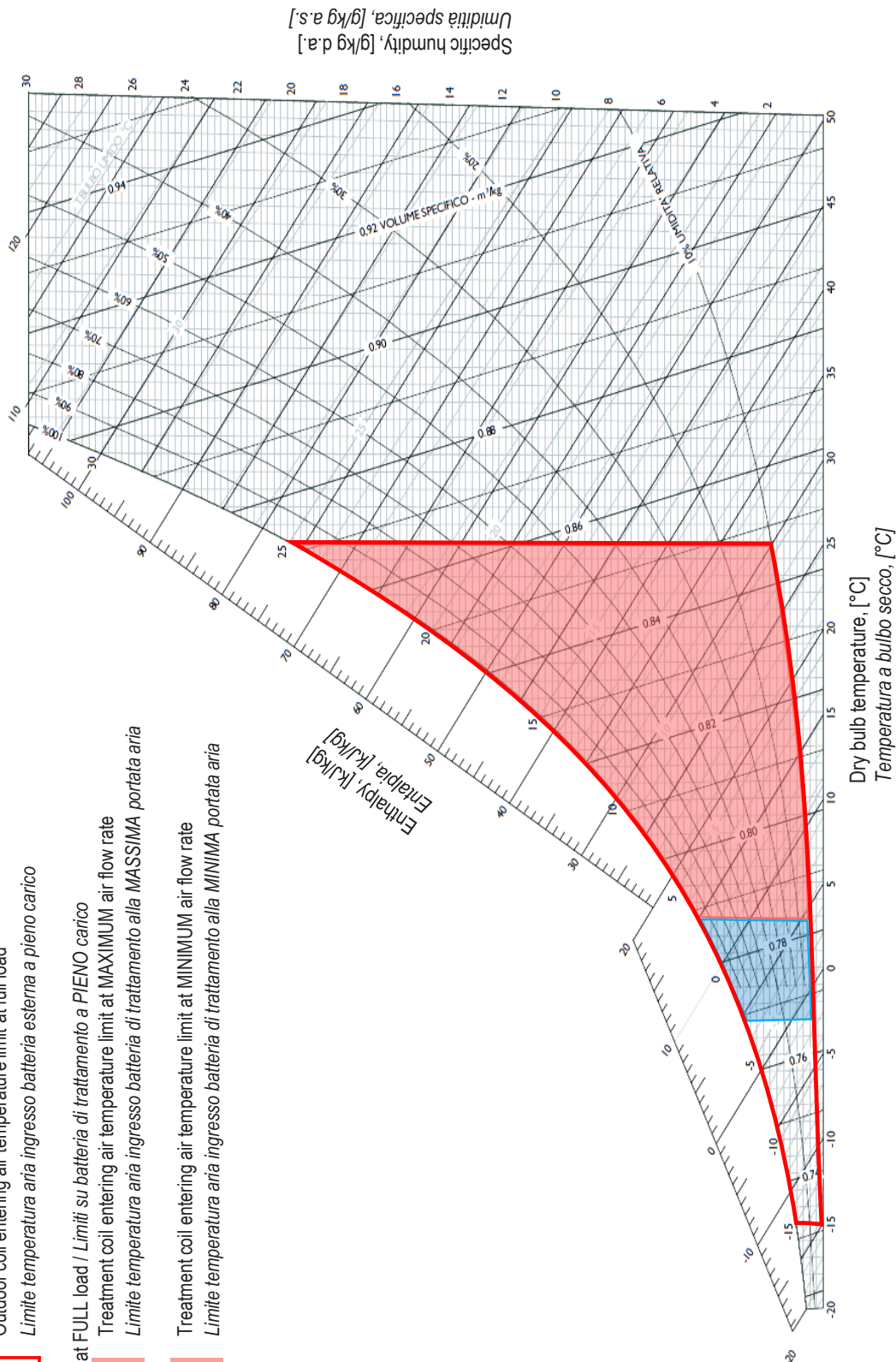
Treatment coil entering air temperature limit at MAXIMUM air flow rate

Limite temperatura aria ingresso batteria di trattamento alla MASSIMA portata aria

Treatment coil entering air temperature limit at MINIMUM air flow rate



Limite temperatura aria ingresso batteria di trattamento alla MINIMA portata aria



UNIT PERFORMANCE IN COOLING MODE WITH OUTDOOR TEMPERATURE ABOVE 46°C

Units size 0444-0804 can work with outdoor temperature above 46°C, up to 52°C, in cooling mode, at partial load (means half compressors are working) if the air facing to the indoor coil is included between 19°C and 28°C d.b., with whatever airflow rate.

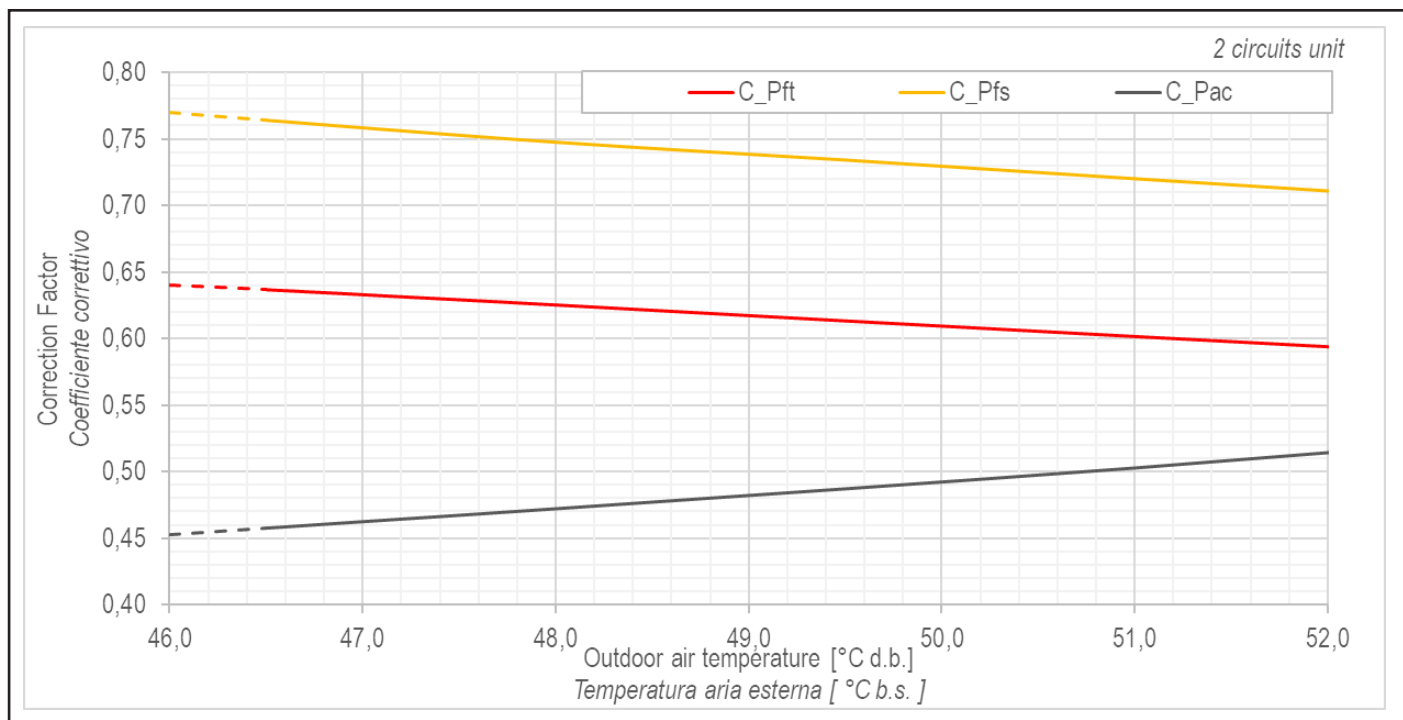
It's possible to assess unit cooling performances (total cooling capacity, sensible cooling capacity and compressor(s) power input) thanks to the graph below.

Instructions:

- with ElcaWorld, calculate unit performances at your desired working conditions, but with 46°C outdoor air temperature;
- to correct those cooling performance (total and sensible) and the compressor power input, use the graph below, where correction factors are reported (ordered) in function of outdoor temperature (abscissa).

Key

- C_Pft = corr. Factor for total cooling capacity gross
- C_Pfs = corr. Factor for sensible cooling capacity gross
- C_Pac = corr. Factor for compressor power input



8. DIMENSIONAL DRAWINGS

WRX/AR

Technical drawings of the WRX/AR unit. The left drawing is a front view showing the unit's profile with two condenser coils and a fan section. Dimension A indicates the length of the unit without brackets. The right drawing is a side view showing the unit's height H and width B.

Function AR	Sizes	Length - A	Height - H	Width - B
		[mm]	[mm]	[mm]
	0302-0402	4.080	2.150	2.260
	0444-0604	5.650	2.150	2.260
	0704-0804	6.460	2.150	2.260

Dimensions and weight refer to the unit in the standard configuration
Width A refers to the unit without brackets.

WRX/MF

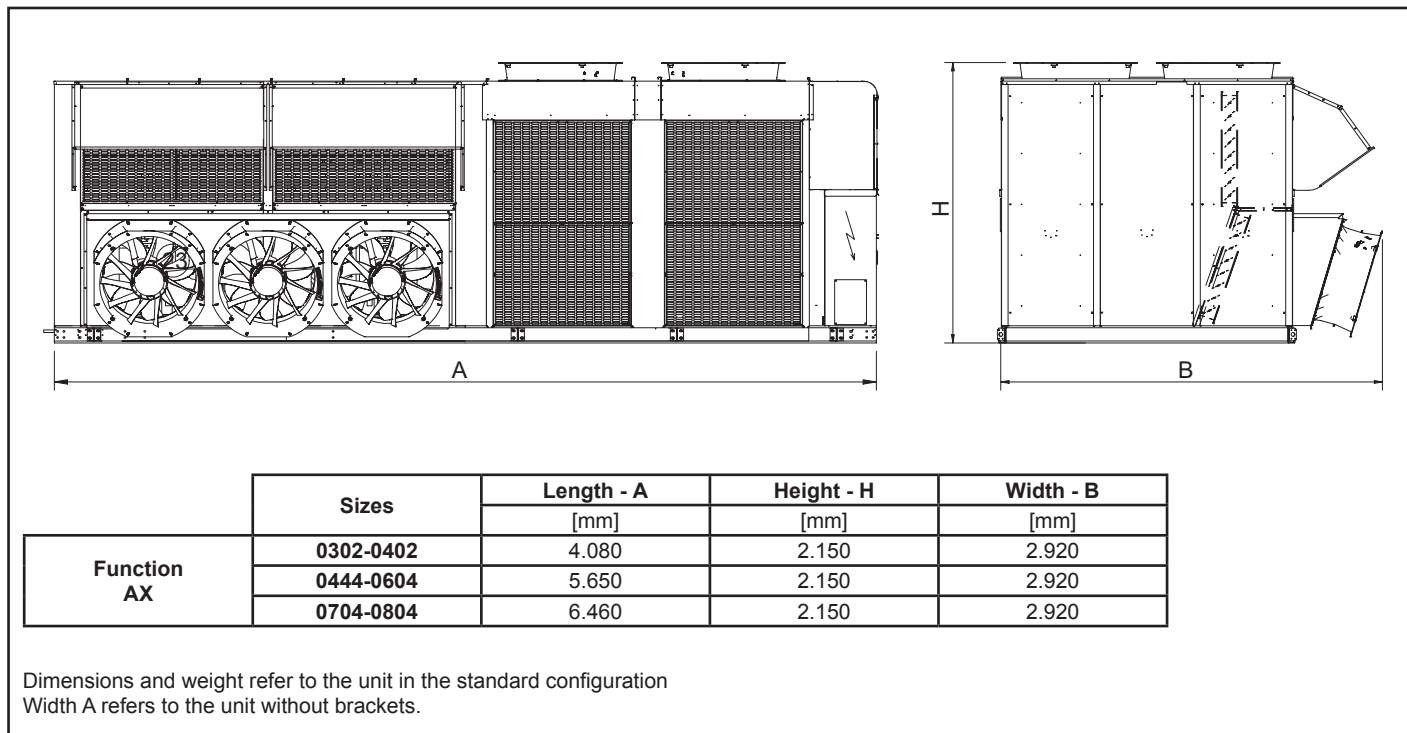
Technical drawings of the WRX/MF unit. The left drawing is a front view showing the unit's profile with two condenser coils and a fan section. Dimension A indicates the length of the unit without brackets. The right drawing is a side view showing the unit's height H, width B, and a depth of 620 mm.

Function MF	Sizes	Length - A	Height - H	Width - B
		[mm]	[mm]	[mm]
	0302-0402	4.080	2.150	2.260
	0444-0604	5.650	2.150	2.260
	0704-0804	6.460	2.150	2.260

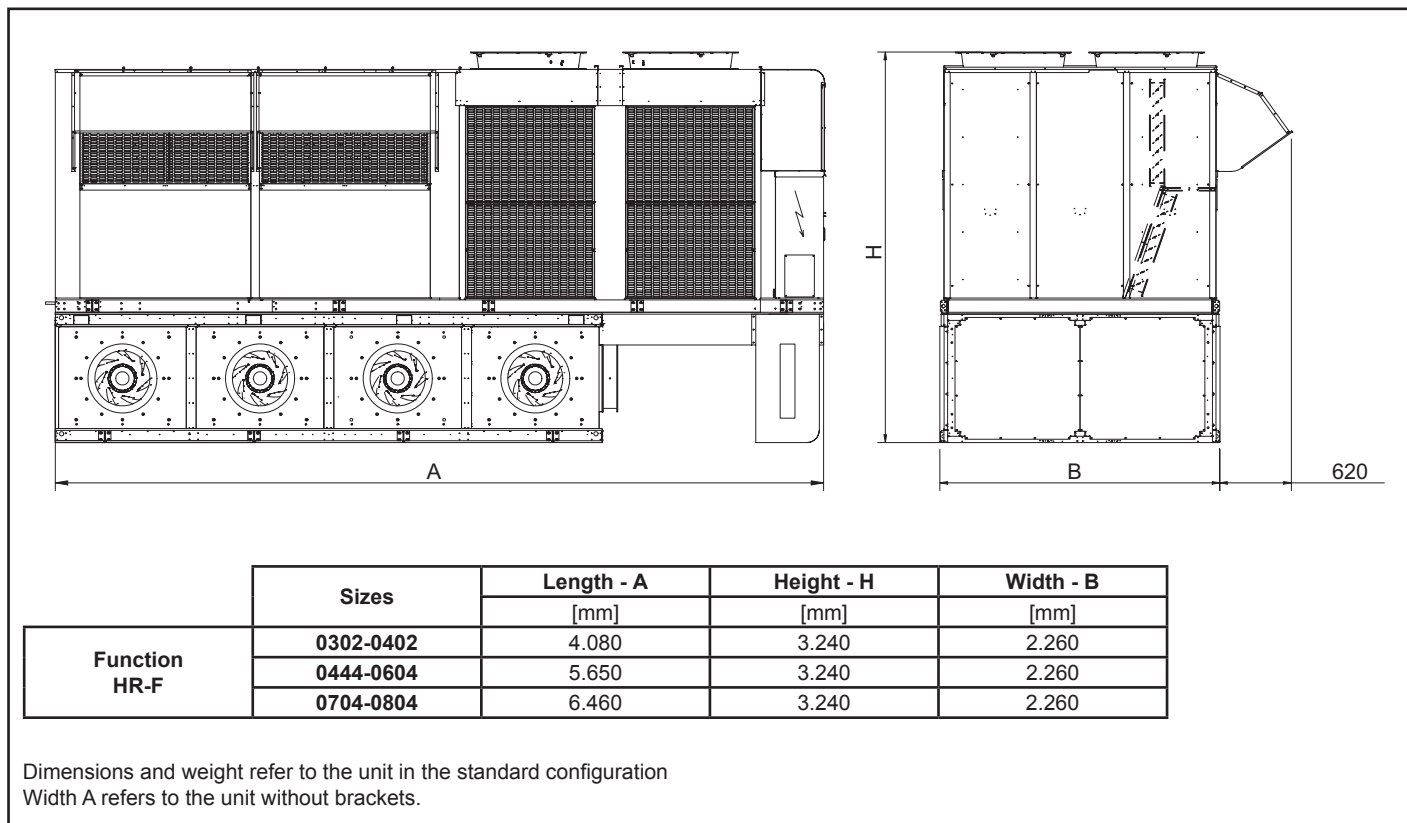
Dimensions and weight refer to the unit in the standard configuration
Width A refers to the unit without brackets.

DIMENSIONAL DRAWINGS

WRX/AX

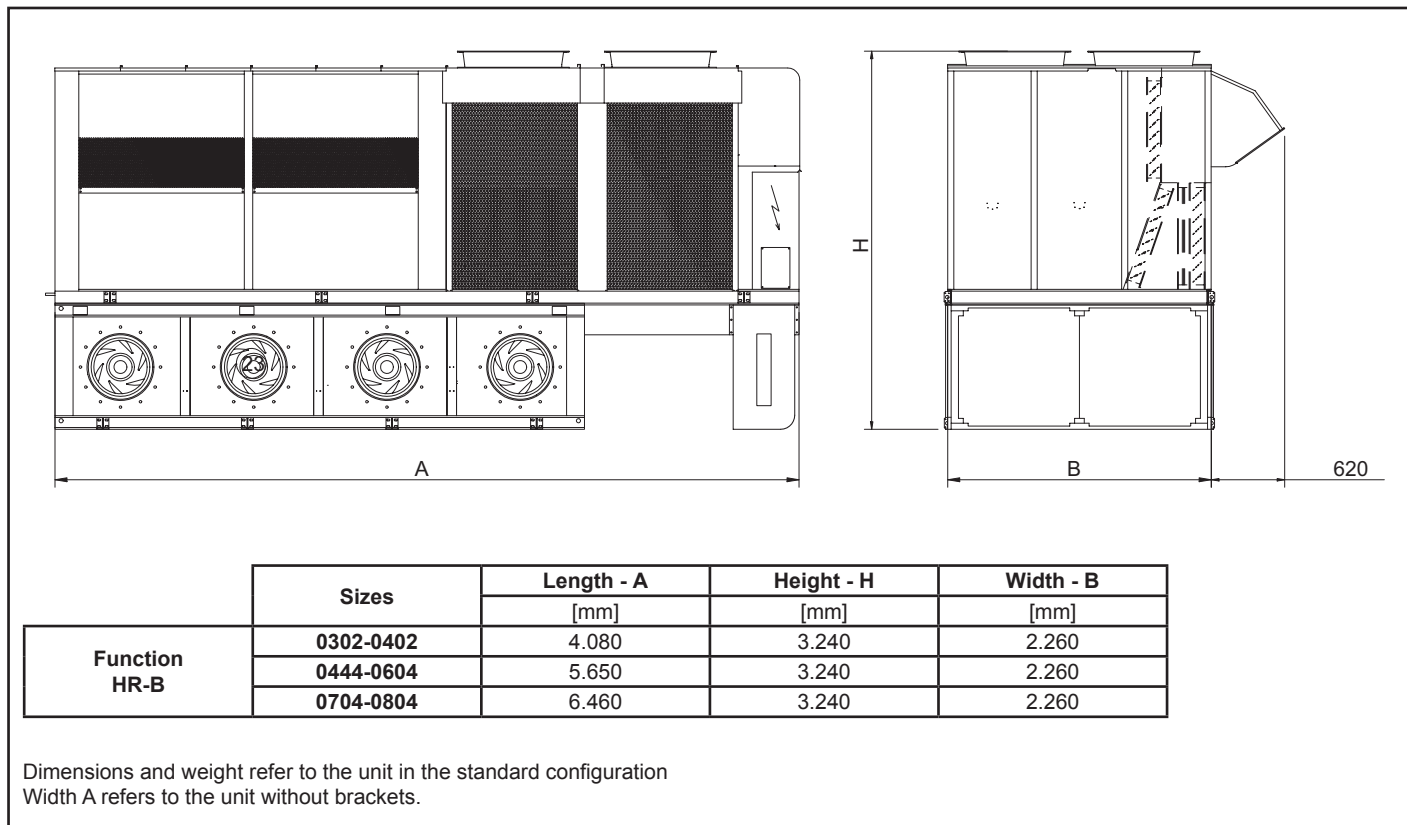


WRX/HR-F

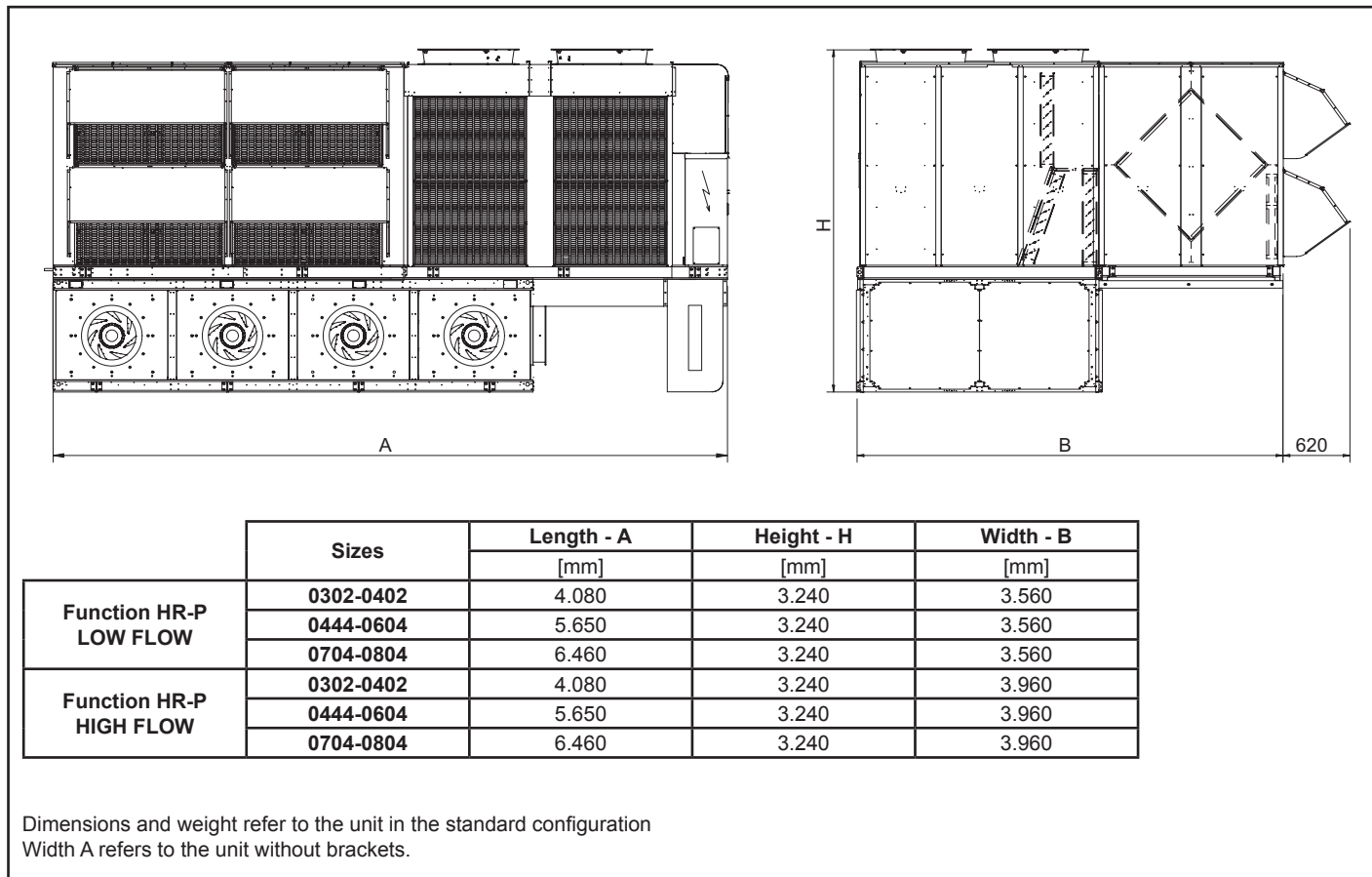


DIMENSIONAL DRAWINGS

WRX/HR-B

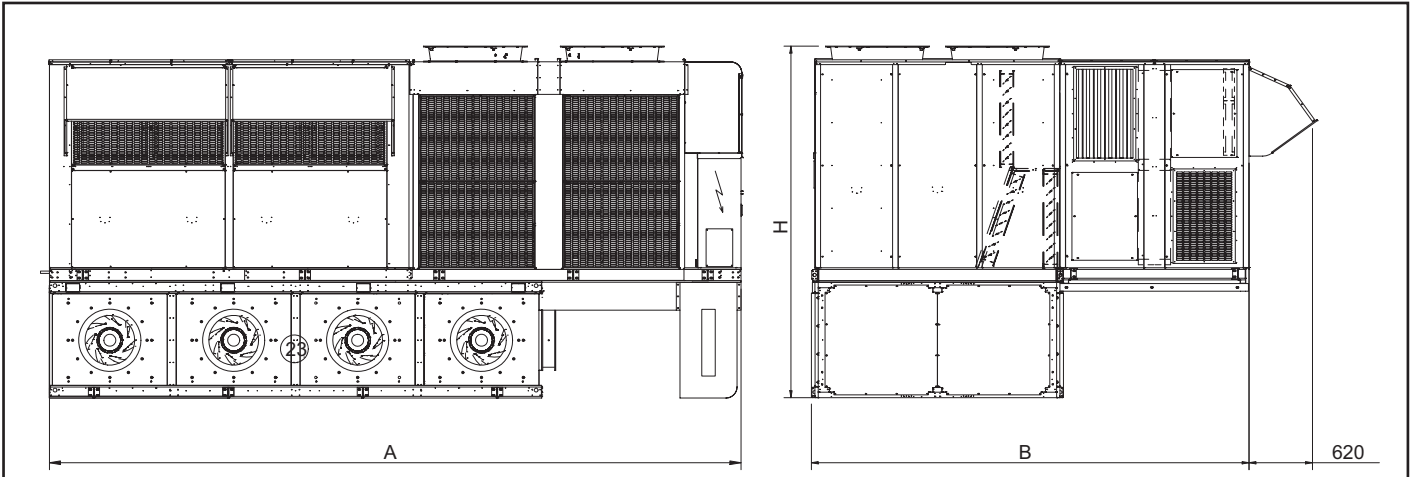


WRX/HR-P



DIMENSIONAL DRAWINGS

WRX/HR-E



	Sizes	Length - A	Height - H	Width - B
		[mm]	[mm]	[mm]
Function HR-E	0302-0402	4.080	3.240	3.960
	0444-0604	5.650	3.240	3.960
	0704-0804	6.460	3.240	3.960

Dimensions and weight refer to the unit in the standard configuration
Width A refers to the unit without brackets.



MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.

Head Office: M11 - Via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

Tel (+39) 0424 509 500 - Fax (+39) 0424 509 509

www.climaveneta.com

www.melcohit.com
