ZEPHIR4

CPAN-iY Size1 – Size4 Range

Full fresh air renewal unit

TECHNICAL BULLETIN

SIZE	Size1	Size2	Size3	Size4
Nominal airflow m^3/h	5000	7000	10000	15000
Cooling capacity kW	42,1	59,3	85,2	127

R-32

T2 / TB2

Contents

Features

HVAC systems: what are they for?

To ensure comfortable thermal and hygrometric conditions for building occupants, HVAC (Heating, Ventilation and Air Conditioning) systems are used to:

- Offset energy losses or gains through casing surfaces;
- Counteract indoor loads generated by activities and equipment in the environment;
- Reduce the load related to the intake of outside air, introduced either through natural ventilation or dedicated mechanical systems (VMC);
- Reduce the concentration of pollutants in the environment (through filtration or fresh air).

The role of ventilation

- We spend more than 90% of our time in enclosed spaces.
- Improved building insulation reduces uncontrolled air infiltration, causing a significant increase in the concentration of indoor pollutants (up to 50 times higher than outdoor air).

To therefore ensure high Indoor Environmental Quality (IEQ), mechanical ventilation systems, filtration and energy recovery of ejected air therefore play a key role.

ZEPHIR4, full coverage of ventilation loads and contribution to the building's air conditioning

CPAN-iY units are completely self-contained primary air processing systems, equipped to manage and filter both fresh and ejected air. They feature environmentally friendly full inverter thermodynamic recovery and an integrated post-heating coil.

Designed for both small and large scale commercial applications, these units are an optimal solution for:

The upgrading of existing buildings

The construction of new buildings

Thanks to the packaged structure, all the components are integrated into the unit, already assembled and factory tested.

- Refrigerant circuits with inverter compressors allow continuous modulation of the capacity provided, adapting exactly to the heat load of the fresh air.
- Centrifugal fans coupled with brushless EC motors ensure the required air flow-rate by adapting to both the supply and exhaust of the air distribution system.
- High mechanical and thermal performance structure. Classes T2 / TB2 according to UNI EN 1886
- Standard return G4 filtration and G4 + Electronic with iFD technology for supply.
- Automatic and variable control of the flow-rate of fresh air based on the actual requirements of occupants, using air quality probe.
- Free cooling function, which allows outside air to be introduced directly under favourable conditions, without the need for dedicated bypass systems.
- Summer dehumidification function to help cover the latent load in the room.
- Possibility of remote management using Clivet EYE and INTELLIAIR, with compatibility with main supervision systems through MODBUS protocol, and integration in VRF centralised control systems.

Features

Ventilation and purification

- Extracts and expels stale air
- Supplies 100% fresh air while keeping the air flow completely separate, without contamination with exhausted stale air
- High-efficiency filtration of intake air with standard supplied iFD electronic filters
- EC fans with automatic adjustment to ensure a constant flow-rate over time
- Variable flow-rate based on the concentration of CO_2
- Silent modes for the utmost acoustic comfort

Thermal Inland mechanical performance	Classes (UNI EN 1886)
Relative deflection maximum	D1
Leakage from casing (-400 Pa)	L1
Leakage from casing (+700 Pa)	L1
Filter bypass	F9
Thermal transmittance	T2
Thermal bridge factor	TB2

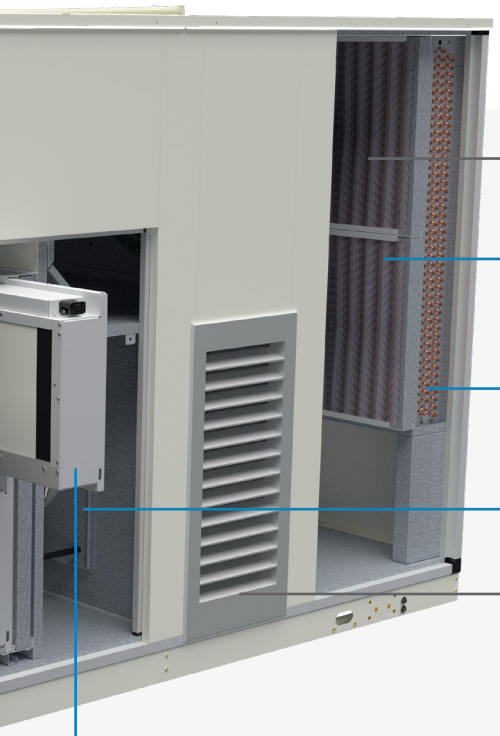
Simplification of the system for both existing buildings and new builds

- Compact and fully independent unit, with an extended winter operating range down to -20°C and high relative humidity in summer without the need for any auxiliary heat integration
- Reduced noise level
- Standard Modbus connectivity
- Integration into VRF control systems (via CCM-270 A/WS, TC3-7 and IMMPRO2) and into supervision systems INTELLIAIR with remote management via the APP
- Ideal for applications such as schools, offices, hotels, restaurants, shops, gyms
- Total fulfilment of fresh air load
- Contribution to the fulfilment of indoor loads. Advantages:
  - √ Reduces activation of the main air conditioning system in existing buildings,
  - √ Reduces the sizing of the main system for new builds.

The future of thermodynamic recovery and the solidity of traditional construction

A. Active recovery with full inverter thermodynamic circuit and free post-heating

- Amplifies the energy in exhausted stale air by using it as a favourable source of heat, thereby increasing efficiency compared to traditional recovery solutions
- Accurate modulating control of the inlet temperature; in cooling mode, dehumidification of the outside air is guaranteed as is simultaneous modulating control of the inlet temperature thanks to the hot gas post-heating coil integrated as standard in the unit
- Transfers energy to the supply air continuously throughout the year and only as and when actually required, further increasing efficiency in partial load operation
- Comfort ensured all year round, thanks to continuous modulation of the inlet temperature
- Reduced consumption in all operating modes due to system efficiency and low internal pressure drops in the unit



B. Structure of the high-performance single-module unit

- Thermal insulation, minimised thermal bridges and robustness in a one-piece structure Classes T2 / TB2 tested by the independent TÜV NORD laboratory according to UNI EN 1886.
- Technical compartments maintained at optimal working temperatures thanks to innovative solutions in extracted air management.

Clivet's choice towards a green evolution

- Reduction of the environmental impact by up to 80% through the use of R32 refrigerant with low GWP (675) and the careful design of every component.

Industrial quality and safety

- Detection of any refrigerant leaks through dedicated devices
- All components are designed for installation on the unit
- The units are tested and inspected by Clivet following strict quality standards

Features

All-round benefits, from the design phase to final use

	for the Designer	for the Investor	for the Installer / Maintenance Technician	for the End User / Operator
Existing Buildings with primary air systems to be built from scratch	• Existing air-conditioning system is not redesigned • Building renovation can take place in a modular manner over time	• Targeted investment in primary air only. • Investment diluted in case of gradual renovations	• Completely independent installation, start-up and maintenance	• Improved indoor air quality with minimal disruption of service. • Reduced operating costs thanks to the advantages of thermodynamic recovery technology (efficiency, low ventilation consumption)
Existing buildings with primary air systems to be replaced	• Existing air-conditioning system is not redesigned • Optimisation of space dedicated to the replaced systems, to be used for other purposes • Building renovation can take place in a modular manner over time	• Targeted investment in primary air only. • Increasing the value of the building by optimising the use of available surface • Investment diluted in case of gradual renovations	• Completely independent installation, start-up and maintenance • Distribution systems linked to replaced units to be dismantled	• Improved indoor air quality with minimal disruption of service. • Increased building efficiency due to the advantages of thermodynamic recovery technology (efficiency, low ventilation consumption)
New Builds	• The air-conditioning system capacity can be reduced thaks to the additional capacity provided by the ZEPHIR4 unit • Optimisation of system spaces for other purposesInlPossibility of modular design	• Optimised investment, reducing overall system size • Increasing the value of the building by optimising the use of available surface • Investment diluted in case of gradual extensions	• Installation, start-up and maintenance completely independent of the activities required for the air-conditioning system	• Excellent indoor air quality • Reduced operating costs thanks to the advantages of thermodynamic recovery technology (efficiency, low ventilation consumption)

Comparison with traditional systems

	UTA	ZEPHIR4
Purpose of use	Primary air unit / Air conditioner	Primary air unit
Supply air flow-rate	Outdoor air and recirculation	100% external air
Outdoor connections	Powered by Chiller / Heat Pump / VRF	Autonomous (integrated heat pump)
Fixed supply point	Simultaneous power supply with hot and cold fluid required	Autonomous (standard hot gas post heating)
Controls	Additional and external to the unit	Integrated standards
Start-up	Channel connection, external unit start-up, auxiliary resources, AHUs	Channel connection and switch-on
Recovery system	Passive: • High pressure drops • Efficient in harsh outdoor conditions	Heat pump: • Low pressure drops • Efficient all year round
Air quality	Bypass potential through passive recovery systems	Supply and return flows never in contact
Production	Tailor-made	Industrialised

Universal system for different system types

Primary Air		Indoor loads	
Technology	**Type of terminals**	**Technology**	**Type of terminals**
Thermodynamic recovery (ZEPHIR4)	Diffusers	Chillers / Heat pumps	Hydronic
			Radiant systems
			Cold beams
	Input on terminal unit exhaust	VRF systems	Direct expansion

CONNECTIVITY

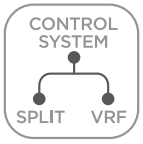
ZEPHIR4 can be easily integrated into supervision systems that use Modbus as a communication protocol, thus providing access to the full list of operating variables, commands and alarms.
It is also possible to manage the unit from systems such as:

- CLIVET EYE (IOTX option)
  monitoring system and control of individual unit

- INTELLIAIR
  monitoring system and systemInl control consisting of several units

INTELLIAIR
CLIVET

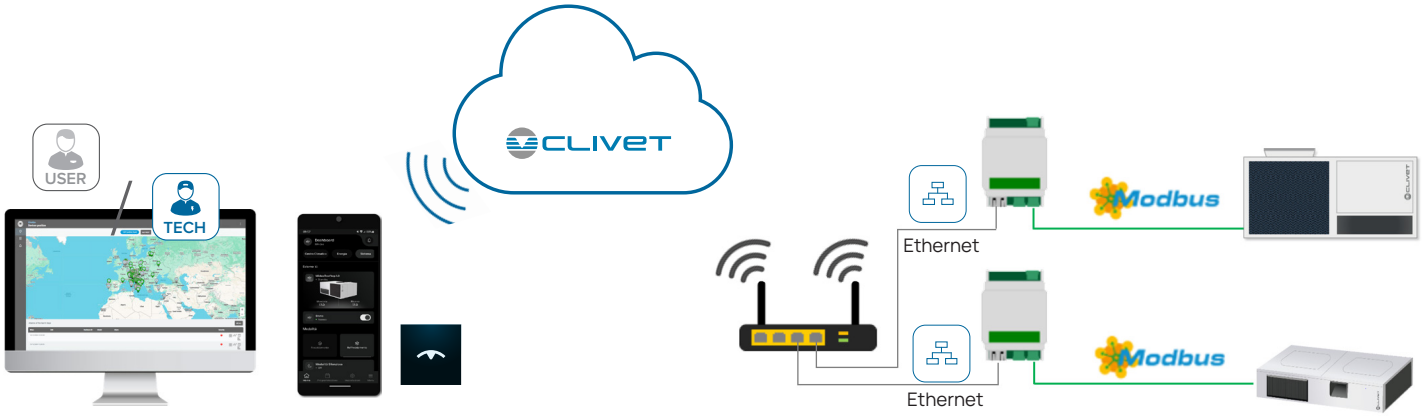
- VRF Centralised Controls (VRFG option)
  VRF system monitoring and control system



Features

IOTX industrial IoT module for functions and services on cloud platform

This device allows access to the unit's cloud-based supervision system through the Clivet EYE application and the Web platform www.cliveteye.com.



Interface available from **www.cliveteye.com**

App **CLIVET EYE** Google Play and Apple store

Through the IOTX module and using the Modbus RS485 port, it is possible to remotely monitor and manage the main operation parameters via the unit. Supervision is available with a USER or TECH licence and valid for 10 years after installation with the possibility of renewal. In addition to the functionalities available for the USER licence, the TECH one allows a more in-depth display of the operation status and allows any anomalies to be reset remotely (contact Clivet for activation request).

Among the main functions and for all monitored units, the two licences allow you to:

- View the main operating parameters (1)
- Switch the unit on and off /
- Display any anomalies and alarm history (reset only available with TECH licence) /
- Create graphs with patters for the main system variables (2) /
- Schedule a weekly schedule on an hourly basis (3) /
- Consult power consumption if a dedicated option is provid
- View the geographical map of the supervised units

(1)

(2)

(3)

⚠ IoT module to be provided for each unit to be remotely monitored.
⚠ Internet ethernet connection in charge of customer.
⚠ Installation is a responsibility of the Customer.
⚠ Maximum unit distance – IOTX: 1000m; IOTX - router: 100m;

Refer to the specific Technical Bulletin for more information.

Advanced system management: INTELLIAIR

IINTELLIAIR is Clivet's specialised solution for the supervision and control of air conditioning systems in all applications where comfort and energy efficiency are paramount. Thanks to the integration with independent Rooftop units and ventilation units, consumption is minimised and the utmost comfort of the served rooms is ensured.

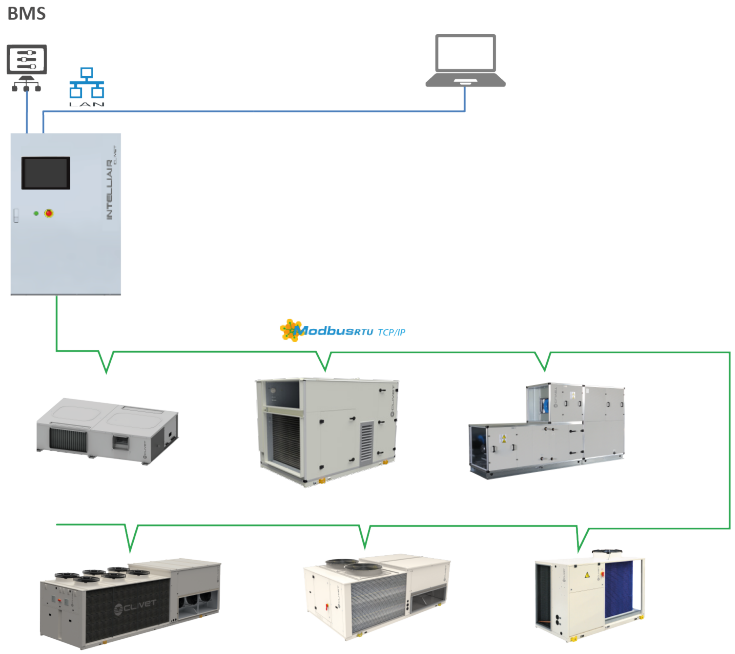
Communication between INTELLIAIR, Clivet air conditioning units and field devices is via RS-485 serial line with Modbus RTU communication protocol or with Ethernet cable for units communicating in Modbus TCP/IP.

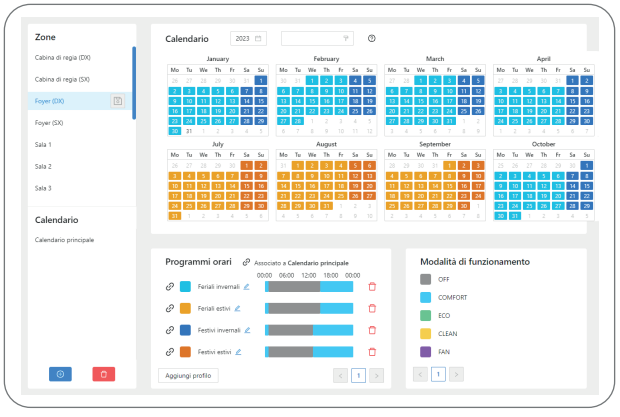
Some of its main functions are:

- General control of the building and individual areas via schematic system diagram
- Display of units' operating mode as well as alarms and maintenance status
- Modification of area operating parameters such as room temperature setpoint, relative humidity and air quality
- Display of room variable trends over the last 12 hours
- Hourly scheduling of the areas on a daily and annual basis

*shown above are some INTELLIAIR management interface screens: Schematic system diagram and Area programming

Refer to the specific Technical Bulletin for more information.





Operating principles

Fresh air

Extracts stale air from the indoor environment and introduces appropriately filtered fresh air from outdoors.

Purification

Fresh air introduced from outdoors is first of all filtered. Standard supplied iFD electronic filters purify the air with very high efficiency (ISO 16890 ePM1 90%), preventing nano-dust, smoke, bacteria and viruses from entering the building.

Active heat recovery

The energy contained in the ejected air is recovered and amplified via the refrigerant circuit, and then transferred to the fresh air flow. This process takes place without any contamination between the ejected and intake air.

The unit's thermoregulation is managed by standard supplied integrated temperature and humidity probes. Based on the difference between the measured values and the set points, the system autonomously and continuously regulates the refrigerant circuit:

- Conditioning the intake air to reach the desired setpoint
- Injecting air at neutral conditions when setpoints are already satisfied.

The mode change between heating and cooling and vice versa occurs automatically, depending on the ambient air temperature and setpoint values.
In particularly severe situations, the ZEPHIR4 can temporarily reduce the air flow-rate in order to keep the thermodynamic circuit active and still guarantee comfortable conditions for the intake air.

Cooling - Humidity and supply temperature control

During summer operation, priority is given to controlling the specific humidity of the intake air. Thanks to a dedicated probe installed in the supply section, the unit helps to keep indoor humidity levels under control.
The dehumidified air then passes through the hot gas post-heating exchanger (standard supplied), where the modulating valve continuously regulates the final inlet temperature, depending on the operating mode and set points.
The post-heating energy is delivered by fully or partially utilising the condensing heat that would otherwise be disposed of in the source coil, providing three main advantages over conventional systems:

1. Absence of fuel consumption and local emissions.
2. Elimination of auxiliary consumption related to the pumping of hot fluid from the boiler.
3. Lowering the condensing air temperature, resulting in an increase in the overall thermodynamic efficiency of the system.

Heating - Supply temperature and humidity control

In addition to modulating inlet temperature control, the units can be configured with humidification systems or control third-party supply systems. Humidification capacity modulation control is carried out according to the conditions detected on the exhaust, thus supplying only the required amount of vapour.
At low outdoor temperatures, the unit can autonomously modulate the flow-rate in order to ensure comfortable supply conditions.

Free cooling

With this standard feature, the unit independently evaluates the indoor and outdoor conditions against the set setpoints, with the aim of maximising free cooling of the rooms without activating the cooling resources. Energy consumption is limited to that required for ventilation only, which remains low thanks to the unit's low internal pressure drops.

Operating principles

Automatic management of the air flow-rate

Constant: just the flow-rate required

The nominal air flow-rate is set directly on the display, ensuring:
- Simplified system calibration and testing;
- Constant flow-rate thanks to automatic fan speed control;
- Compensation of the constant clogging of filters;
- Maximum manufacturing reliability of diffusion systems that do not support variations in flow-rate, as in the majority of induction systems.

Variable: only the flow-rate required

Flow-rate modulation can be carried out in 3 modes:
Detection of CO_2 concentration
The air quantity is modulated according to the actual crowding of the environment, increasing only when necessary.
- Additional energy savings for air movement.
- Also available for other pollutants (VOC) such as tobacco smoke, formaldehyde or cooking fumes.

External signal:
Ideal solution for independent environments managed by a single unit, e.g. classrooms or offices with variable occupancy profiles.
- It ensures high quality air only where and when it is needed, further reducing consumption.

Constant static supply pressure (opt PVARP)
Ideal solution for distribution systems with VAV/CAV flow-rate controllers.
- Ensures correct air distribution at every point in the building

The extraction flow-rate is by default equal to the set supply. Can be unbalanced via a dedicated parameter, with a maximum correction of ±10%.

Silent Mode

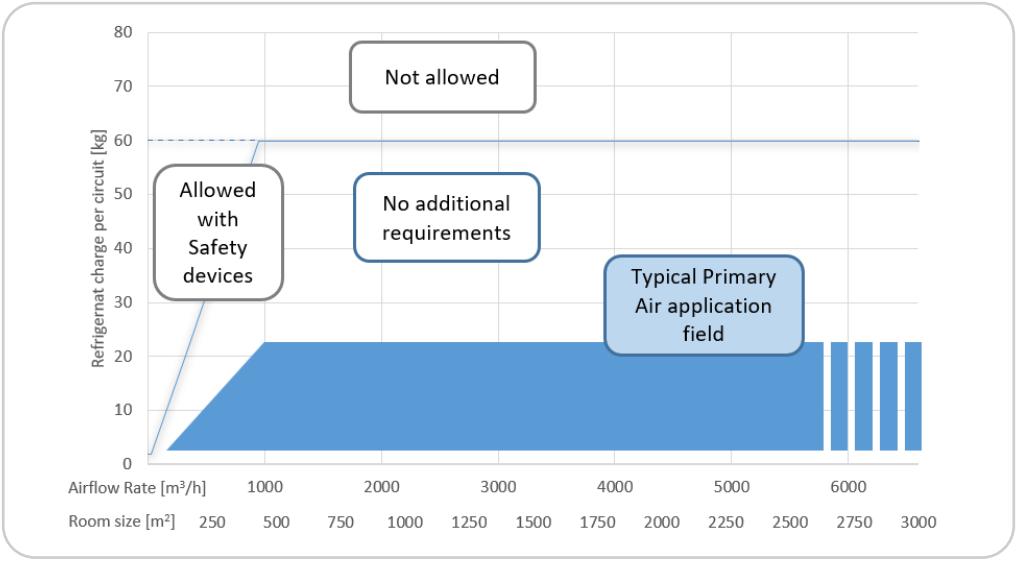
To minimise the noise of the outdoor unit and distribution ducts, Silent or Supersilent modes can be selected via an external signal, control keypad or supervisory system.
These modes act:

- By reducing the fans speed;
- Limiting the maximum compressor frequency

Under these conditions, the summer humidity setpoint still takes priority, ensuring comfort and optimal air control.

R32 refrigerant

European regulation EC 517/2014 envisages a reduction in the use of HFC (F-gas) refrigerants with the aim of reducing their environmental impact, measured through the GWP (Global Warming Potential) parameter.
Clivet, which has always placed a strong focus on the development of technological solutions aimed at protecting the environment, introduces R32 refrigerant with a low GWP (675) also in primary air units.
The environmental impact is thereby reduced by up to 80% not only thanks to the low GWP of R32, but also thanks to the reduction and optimisation of the refrigerant charge ensured through the careful design of each individual component.
The use of this A2L refrigerant (mildly flammable) is in line with the EN 378 standard, which defines its correct application based on the refrigerant charge and the surface of the rooms serviced.



Limit straight line calculated with room height of 2.2 m.
Air flow-rate values calculated assuming a hygienic exchange rate of 1 Vol/h
Areas considered to refer to interconnected surfaces served

Operating mode

Use with fixed-point supply control (CS)

In this mode the external air is processed based on the supply temperature set in accordance with one of the two following criteria:

1. Two fixed seasonal setpoints: one for cooling operation and one for heating operation.
2. Two dynamic seasonal sets: the supply temperature is offset automatically in accordance with the dry bulb ambient air temperature (T_OA), thanks to a climatic control.

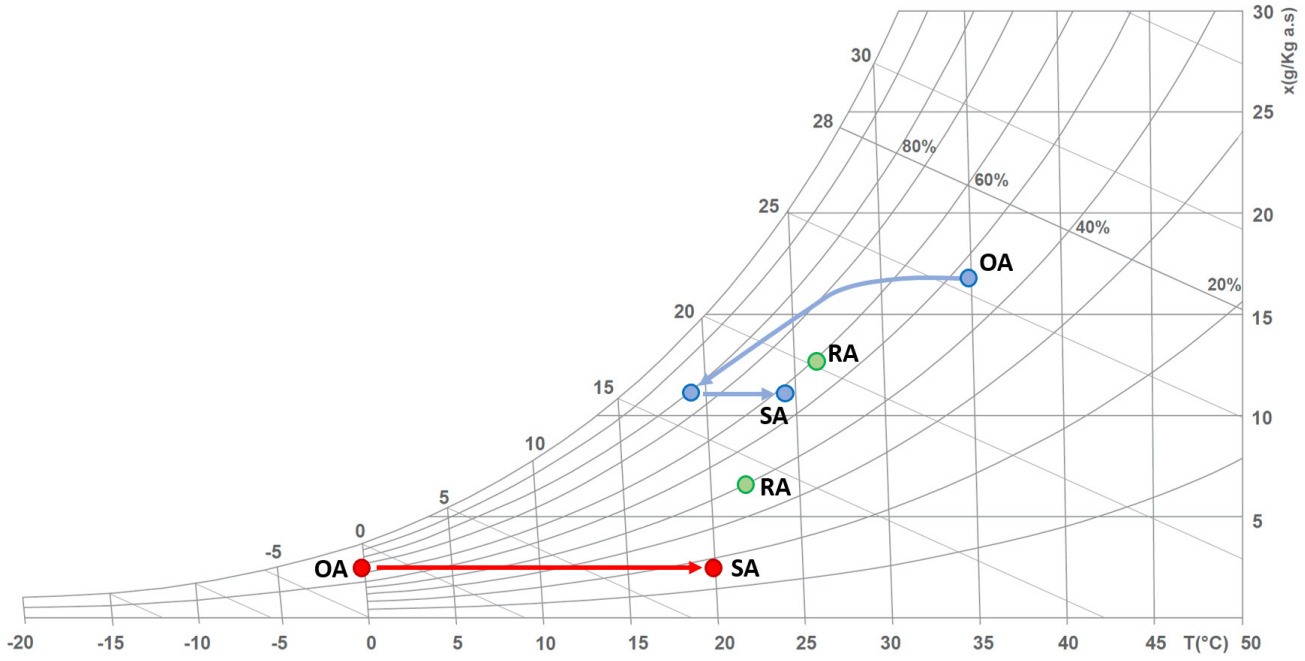
There is no feedback from the internal temperature.

Cooling

The humidity control of the supply air flow is standard supplied and a priority.
The capacity of the thermodynamic circuit is automatically modulated to dehumidify the outside air to the desired specific humidity value (X_SA).
The supply temperature (T_SA) is regulated by the hot gas post-heating, which is also modulating.

Heating

The capacity of the thermodynamic circuit is automatically modulated to heat the outside air to the set supply temperature (T_SA).



OA: Outdoor air
RA: Room air
SA: Supply Air

Using the maximum capacity available (MC)

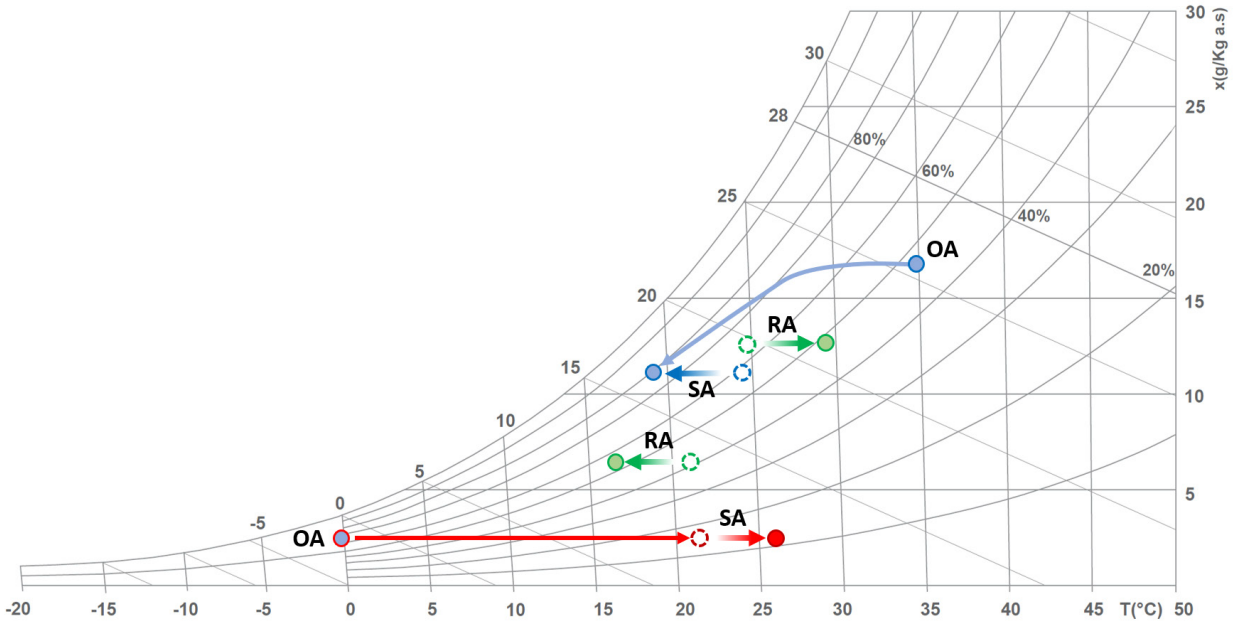
In this mode the supply air flow temperature (T_SA) varies in accordance with the temperature of the air extracted (T_RA) and their deviation from the set setpoint.
There is expected feedback from the ambient.

Cooling

The humidity control of the supply air flow is standard supplied and a priority.
The capacity of the thermodynamic circuit is automatically modulated to dehumidify the outside air to the set specific humidity value (X_SA).
The supply temperature (T_SA) is regulated by the hot gas post-heating, which is also modulating.
The post-heating energy increases the closer the temperature of the extracted air (T_RA) approaches the setpoint.
When the post-heating is zero, the maximum available power (P_D) is supplied to the environment, reducing the load on the secondary system.

Heating

The automatic capacity control of the thermodynamic circuit modulates the heat output (P_T) to heat the outside air.
The thermal power (P_T) is much lower as the temperature of the air extracted from the ambient (T_RA) is close to the set value.



OA: Outdoor air
RA: Room air
SA: Supply Air

Operating mode

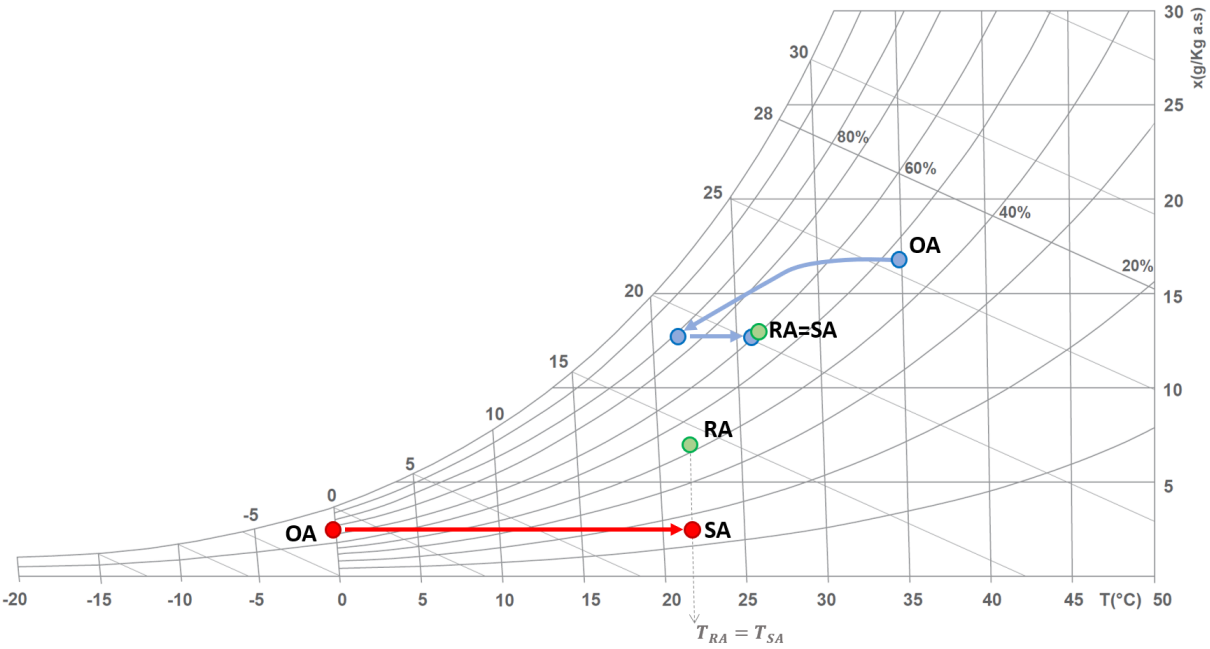
Use in maximum comfort mode (XC)

In this mode, the temperature of the supply air flow (T_SA) replicates that of the air extracted from the ambient (T_RA).
There is expected feedback from the ambient.

The aim is to ensure that the intake air is close to the temperature of the premises, reducing discomfort due to diffusers placed in critical locations and leaving the air conditioning system in complete control of room climate control.

Cooling
The humidity control of the supply air flow is standard supplied and a priority.
The capacity of the thermodynamic circuit is automatically modulated to dehumidify the outside air to the set specific humidity value (X_SA).
The supply temperature (T_SA) is controlled by the hot gas post-heating, which is also modulating up to the room air value (T_RA).

Heating
The capacity of the thermodynamic circuit is automatically modulated to heat the outside air to the room temperature value (T_RA)



OA: Outdoor air
RA: Room air
SA: Supply Air

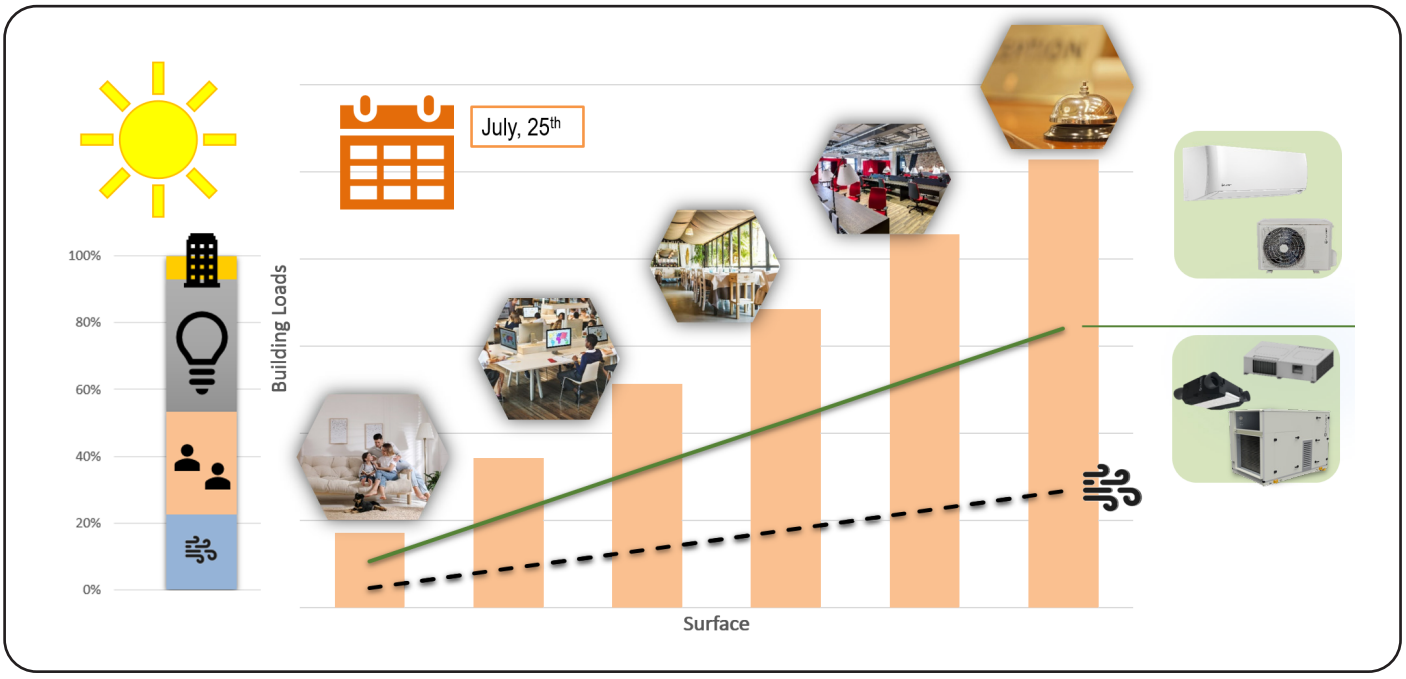
How to choose the best operating mode

Operating mode	Acronym	Ideal applications	Context	Advantages
Operating with constant-temperature delivery	**CS**	• Renovation of fresh air systems in existing buildings • Buildings with separate premises with different occupancy profiles	Traditional design, with constant inlet temperatures and humidity all year round	Automatic control of input conditions throughout the year
Operating at maximum available capacity	**MC**	• New builds • Total renovation of air conditioning and fresh air systems in existing buildings • Open-plan premises, with a single occupancy profile	Integrated design, with sizing of the air conditioning systems according to the actual potential of ZEPHIR4	Reduction of investment costs due to the possible reduction in the capacity of systems dedicated to the air conditioning of premises
Use in maximum comfort mode	**XC**	Renovation of fresh air systems in existing buildings	Air distribution and diffusion systems that generate discomfort for people (air currents and blades)	Reduced discomfort for building occupants

Unit configuration

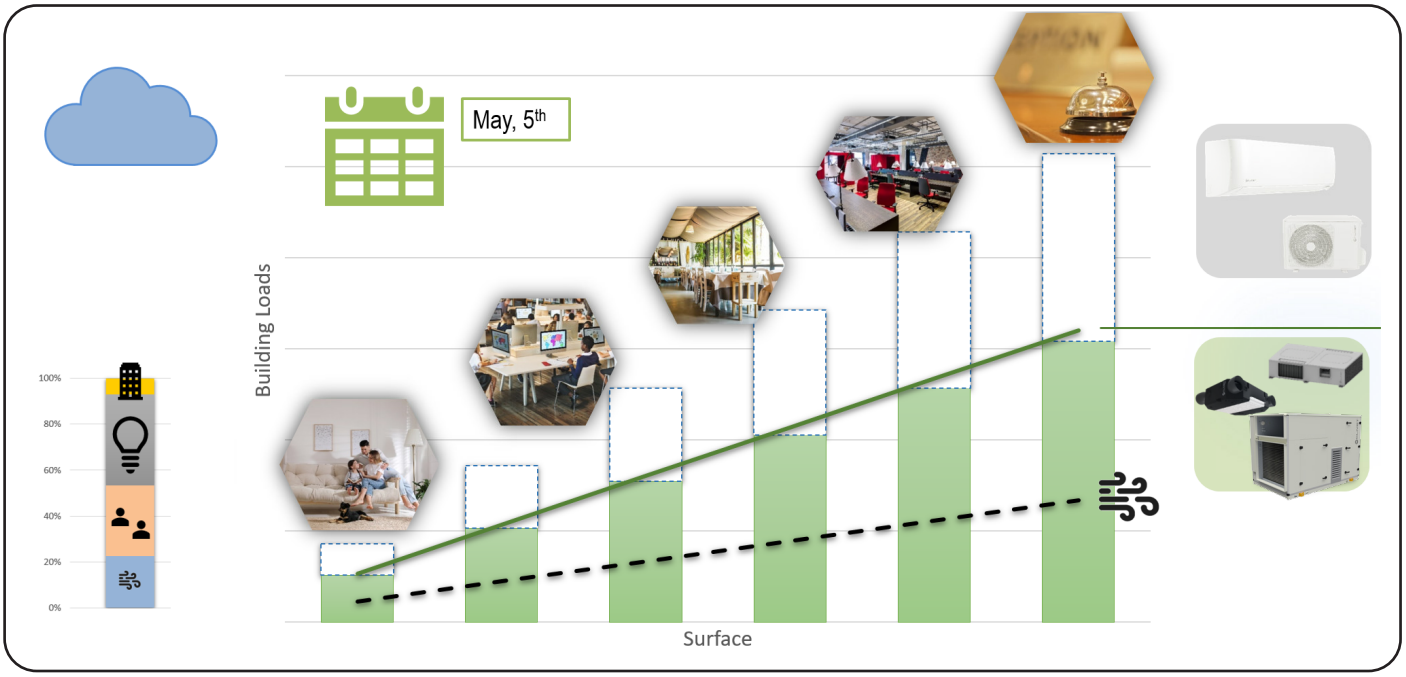
How to choose the unit

Thanks to inverter technology, choosing the unit is simpler and easier.
The wide modulation range of the output energy allows continuous and precise adaptation to the thermal and cooling requirements of the system.
In this way, the unit is able to fully cover the ventilation load throughout the year, and also contribute to fulfilling a share of the ambient loads under design conditions.



= Load satisfied by units with active thermodynamic recovery

= Ventilation Load



= Load satisfied by units with active thermodynamic recovery

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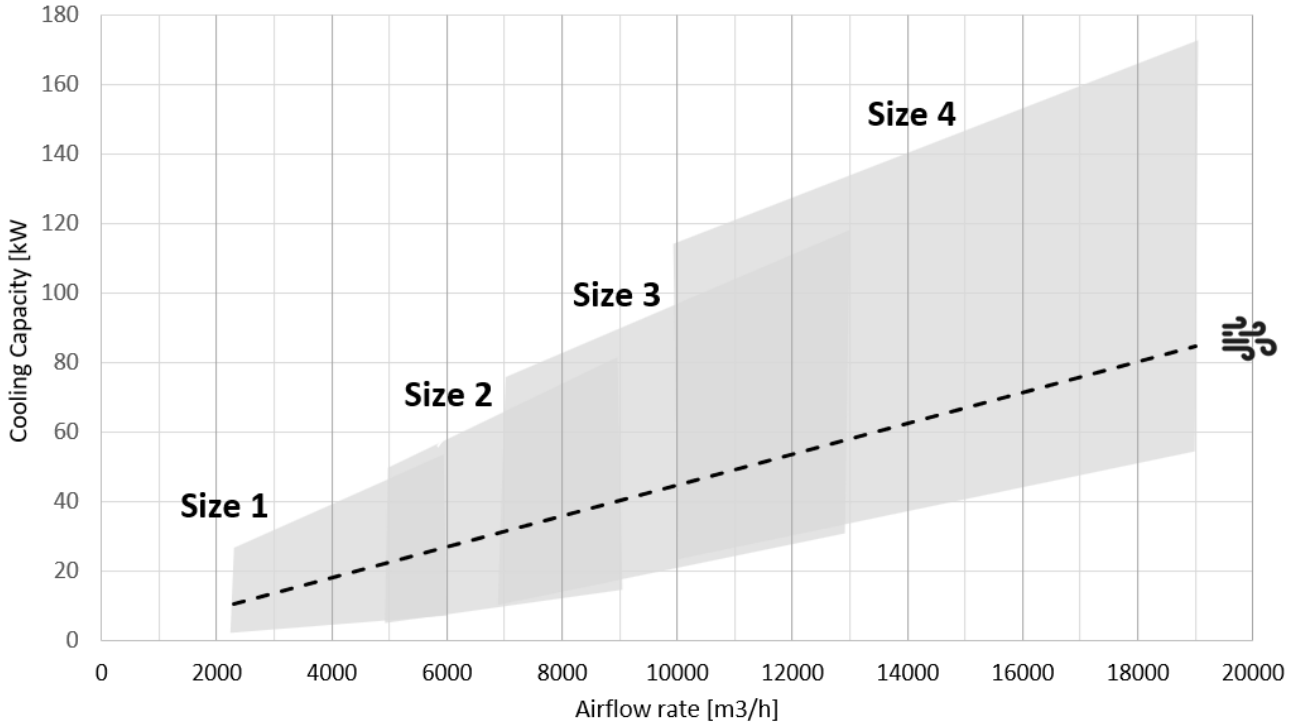


------ Ventilation load

Filter nomenclature in accordance with EN ISO 16890

The classification of air filters is based on the ability to retain airborne particulate matter.
To make it possible and easier to select appropriate filters according to different applications, the global reference standard for filtration is EN ISO 16890.
It defines a new classification for air filters based on their ability to retain dispersed airborne particulate matter (PM10, PM2.5 and PM1) through stringent and specific test methods.
The previous standards in force, such as EN 779-2012, ASHRAE 52.2 and other local standards, are thus unified for all countries worldwide.
Below, the correlation between the traditional nomenclature and the global standard for filters used in Clivet units. For easier reading, both names have been kept in the text.

Supply section	filtration stage (standard)	ISO 16890 Coarse 60%	G4
	filtration stage (alternative)	ISO 16890 ePM1 60%	F7
	filtration stage (alternative)	ISO 16890 ePM1 80%	F9
	filtration stage (standard)	ISO 16890 ePM1 90%	FELIFD (electronic filter iFD)
Exhaust section	filtration stage (standard)	ISO 16890 Coarse 60%	G4

Features of a standard unit

Compressor

SIZE 1 - SIZE 2

Inverter-controlled rotary hermetic compressor fitted with a motor protection device for overheating, overcurrents and excessive temperatures of the supply gas. It is installed on rubber antivibration mounts and comes with a full oil charge. The compressor is wrapped in a sound-absorbing hood that reduces its sound emissions. A crankcase heater with automatic activation prevents the refrigerant from diluting the oil when the compressor stops.
A single compressor is installed on a single refrigerant circuit.

SIZE 3 - SIZE 4

Hermetic Scroll compressor with inverter driven orbiting spiral, equipped with motor protection device for over-temperatures, over-currents and excessive temperatures of the supply gas. It is installed on rubber antivibration mounts and comes with a full oil charge. The compressor is wrapped in a sound-absorbing hood that reduces its sound emissions. A crankcase heater with automatic activation prevents the refrigerant from diluting the oil when the compressor stops.
There is a compressor installed on each refrigerant circuit.

Structure

The frame is made of aluminium profiles with ABS gaskets for the thermal cut-off. These double chambered profiles allow the fixing screws to be concealed and avoids thermal bridges. The corner profiles are made of glass filled nylon, complete with thermal cut-off. The base is assembled with a painted and hot-dip galvanised steel frame. The air processing structure is certified according to UNI EN 1886, with mechanical performance classes D1, L1, L1, F9 and thermal performance classes T2, TB2.

Panelling

The infill panelling is double-walled sheet metal and polyurethane foam insulation (thickness 50 mm, density 40 kg/m3), and is complete with a gasket around the entire outside perimeter for the thermal cut-off. The outside wall is painted with polyester powder for improved weather resistance, colour RAL 9001. Each panel can be easily removed to allow full access to internal components.

Internal exchanger

- Outdoor air processing exchanger
- Exchanger for energy recovery of extracted air

Direct expansion finned coil exchanger made with copper pipes placed on staggered rows mechanically expanded to better adhere to the fin collar. The fins are made from aluminium with a corrugated surface and adequately distanced to ensure the maximum heat exchange efficiency.

Fan

- Supply fan
- Exhaust fan

Fan (plug-fan type) without reversed blade screw, driven by directly coupled brushless direct current motors with electronic control. The fan blades are designed to optimise aerodynamics and reduce running noise, and are made in a high performance plastic. No drive sizing is required.
Presence of microswitches to stop both supply and extraction fan if the access panelling to the respective compartments is removed.

Refrigeration circuit

Cooling circuit complete with:
- refrigerant charge R32;
- safety high pressure switch,
- filter dryer,
- electronic expansion valve;
- non-return valve;
- 4-way cycle inversion valve;
- liquid receiver;
- suction separator;
- reheating by hot gas recovery to modulation capacity;
- LP shut-off valve.

Filtration

1. Fresh air intake side

- Pleated filter for greater filtering surface, made of a galvanized sheet frame with a galvanized and electric-welded protective mesh, and regenerable filtering media made from polyester fibre sized with synthetic resins. Efficiency G4 (ISO 16890 Coarse 60%). Self-extinguishing type (flame resistant class 1 - DIN 53438).
- On the fresh air intake side, a highly efficient second filtration stage is installed, by means of an aluminium alloy electronic filter with iFD (Intense Field Dielectric) technology, realised by active electrostatic filtering cells. The electronic control circuit is integrated with a watertight seal which allows it to be washed. ISO 16890 ePM1 filtering efficiency 90% equivalent to the E10 class rating used in conventional filters.
- Differential pressure switch for dirty filters alarm.

2. Extraction ambient side

- Pleated filter for greater filtering surface, made of a galvanized sheet frame with a galvanized and electric-welded protective mesh, and regenerable filtering media made from polyester fibre sized with synthetic resins. Efficiency G4 (ISO 16890 Coarse 60%). Self-extinguishing type (flame resistant class 1 - DIN 53438).
- Differential pressure switch for dirty filters alarm.

Drain pan

The heat exchangers are standard supplied with an aluminium, thermally insulated, double-sloped drain pan with central outlet, to eliminate water stagnation.

Electrical panel

The power section includes:
- main door lock isolator switch;
- phase monitor;
- auxiliary circuit protection fuse;
- fan motor thermal protections of internal and extraction section;
- circuit breaker to protect auxiliary circuit and options.

The microprocessor control section includes:
- control of processed air intake conditions;
- temperature set point and unit switch-on/off daily, weekly programmer;
- compressor timing and protection
- self-diagnosis system with instant error code visualisation;
- dry contacts for remote ON-OFF, cumulative alarm, fire alarm input, fan status, compressor status;
- variation of specific humidity of the cooling supply air flow;
- serial communication module to MODBUS supervisor.

Command and control keyboard including:
- display for mode indication and operation status;
- display for viewing set values and fault codes;
- PRG key for unit configuration and parameters display;
- ALARM key to access alarm management;
- operating mode key;
- ON/OFF key and manual reset in the event of a protection activation;
- UP and DOWN keys for navigation menus and submenus.

IoT integration (optional):
- Connection to the Clivet Eye IoT platform for the use of all services related to remote access, maintenance and optimisation of the unit. Remote accessibility via smartphone, tablet and PC with responsive interface.

Test

Unit built to ISO 9001 quality standards and subjected to functional testing at the end of the production line

General technical data

Performances

Size			SIZE 1	SIZE 2	SIZE 3	SIZE 4
Nominal Airflow		m^3/h	5000	7000	10000	15000
Use with fixed-point supply control (CS)						
Cooling						
Total cooling capacity	1	kW	42,1	59,3	85,2	127,0
Latent energy	1	kW	14,6	20,4	29,3	43,5
Post-heating capacity	1	kW	10,7	15,2	22,5	33,4
Compressor power input	1	kW	8,8	12,4	16,0	23,6
EER_C	1	-	5,99	6,01	6,72	6,82
EER_S	1	-	5,25	5,36	5,91	5,99
Cooling capacity (EN 14511-2022)	2	kW	42,2	59,5	85,4	127,4
EER (EN 14511-2022)	2	-	4,49	4,54	5,01	5,06
Heating						
Heating capacity	3	kW	22,8	32,0	45,7	68,5
Compressor power input	3	kW	2,1	3,3	5,1	6,9
COP_C	3	-	11,00	9,83	9,05	9,92
EER_S	3	-	6,89	6,69	6,32	6,73
Heating capacity (EN 14511-2022)	2	kW	22,7	31,8	45,5	68,1
COP (EN 14511-2022)	2	-	8,54	8,03	7,45	8,03
Using the maximum capacity available (MC)						
Cooling						
Total cooling capacity	4	kW	43,1	60,7	86,1	129,0
Latent energy	4	kW	14,6	20,5	29,3	44,3
Compressor power input	4	kW	15,0	22,1	29,4	42,7
EER_C	4	-	2,87	2,75	2,93	3,01
EER_S	4	-	2,65	2,57	2,73	2,80
Additional sensible capacity available to the room	4	kW	15,2	21,7	30,3	44,9
Heating						
Heating capacity	5	kW	40,4	56,5	80,7	121,0
Compressor power input	5	kW	7,9	11,1	15,5	23,4
COP_C	5	-	5,13	5,09	5,22	5,17
EER_S	5	-	4,43	4,48	4,57	4,53

Contains fluorinated greenhouse gases (GWP 675)
Performance in cooling mode: room air 26°C D.B./19°C W.B., air entering the outdoor exchanger 35°C D.B./24°C W.B.
Performance in heating mode: room air 20°C D.B./12°C W.B., air entering the outdoor exchanger 7°C D.B./6°C W.B.

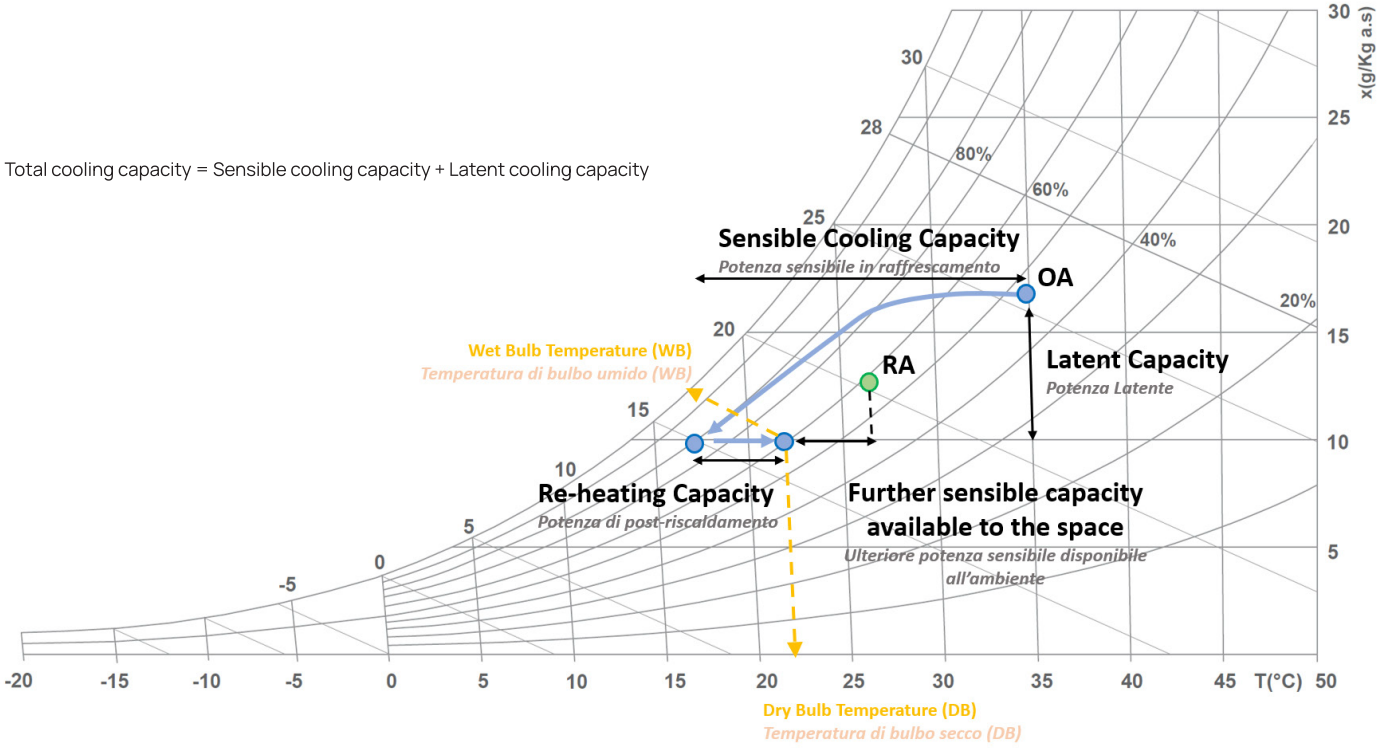
1. Specific humidity of the supply air flow: 11g/kg. Supply air flow temperature: 24°C D.B.
2. Data calculated in accordance with EN 14511-2022, with reference to an available pressure of 50 Pa
3. Supply air flow temperature: 20°C D.B.
4. Specific humidity of the supply air flow: 11g/kg
5. Supply air flow temperature: 30°C D.B.

Size			SIZE 1	SIZE 2	SIZE 3	SIZE 4
Use in maximum comfort mode (XC)						
Cooling						
Total cooling capacity	6	kW	42,1	59,3	85,2	127,0
Latent energy	6	kW	14,6	20,4	29,3	43,5
Post-heating capacity	6	kW	10,7	15,9	22,5	33,4
Compressor power input	6	kW	7,3	10,4	13,3	19,6
EER_C	6	-	7,20	7,23	8,08	8,20
EER_S	6	-	6,16	6,30	6,94	7,02
Heating						
Heating capacity	7	kW	26,3	36,9	52,7	79,0
Compressor power input	7	kW	2,79	4,06	6,15	8,50
COP_C	7	-	9,44	9,09	8,56	9,30
EER_S	7	-	6,52	6,61	6,32	6,71

6. Specific humidity of the supply air flow: 11g/kg. Supply air flow temperature: 26°C D.B.
7. Ambient temperature: 7°C D.B./ 6.0°C W.B. Extracted air temperature: 22°C D.B. / 13.8°C W.B. Supply air flow temperature: 22°C D.B.

Total cooling capacity = Sensible energy + Latent energy + Post-heating energy
EER_C = Thermodynamic efficiency of the system in cooling mode (thermodynamic circuit including post-heating)
EER_S= Overall efficiency of the system in cooling mode (thermodynamic circuit including post-heating and fan)
COP_C= Thermodynamic efficiency of the system in heating mode
COP_S= Overall efficiency of the system in heating mode (thermodynamic circuit and fan)
Usable static pressure in delivery 150 Pa, in extraction 100 Pa

Total cooling capacity = Sensible cooling capacity + Latent cooling capacity



General technical data

Fan

Size			SIZE 1	SIZE 2	SIZE 3	SIZE 4
Fan						
Nominal Airflow		m^3/h	5000	7000	9000	15000
Supply fan consumption	1	W	0,77	0,93	1,10	1,97
Exhaust fan consumption	2	W	0,48	0,59	0,70	1,31
SFP (Specific Fan Power)		$W/(m^3/s)$	899	783	720	786

1. Available static supply pressure 150 Pa
2. Available static exhaust pressure 100 Pa

Electrical data

Size		SIZE 1	SIZE 2	SIZE 3	SIZE 4
F.L.A. - Full load current at max admissible conditions					
F.L.A. Total	[A]	52,4	58,2	90,9	109,2
F.L.I. - Full load power input at max admissible conditions					
F.L.I. Total	[kW]	31,4	37,7	45,8	57,4

Data refer to standard units. Power supply: 400/3~/50 Hz. Voltage variation: max. +/-10%

Voltage unbalance between phases: max 2 %

Construction

Size			SIZE 1	SIZE 2	SIZE 3	SIZE 4
Compressor						
Type of compressors		-	ROT	ROT	SCROLL	SCROLL
N° compressors		Nr	2	2	2	2
Refrigeration circuits		Nr	2	2	2	2
Control capacity		%	15-100%	15-100%	20-100%	20-100%
Refrigerant charge (C1)	1	kg	5,4	6,5	9,5	13,5
Refrigerant charge (C2)	1	kg	5,2	6,5	9,5	13,5
Air Handling Section Fans (Supply)						
Type of supply fan/motor		-	RAD/EC	RAD/EC	RAD/EC	RAD/EC
No. of supply fans		Nr	1	1	1	2
Nominal air flow-rate		m^3/h	5000	7000	10000	15000
Minimum air flow-rate		m^3/h	2300	5000	7000	10000
Maximum air flow-rate		m^3/h	6000	9000	13000	19000
Installed unit power		kW	2,85	2,85	3,95	2,85
Max. static pressure supply fan	2	Pa	720	740	830	740
Fans (Exhaust)						
Type of fans/motor		-	RAD/EC	RAD/EC	RAD/EC	RAD/EC
Number of fans		Nr	1	1	2	2
Installed unit power		kW	2,85	3,95	2,85	3,95
Maximum exhaust static pressure	2	Pa	780	980	810	980
Maximum unbalance	3	%	+/- 10%	+/-10%	+/-10%	+/-10%
Connections						
Condensate drain		mm	32	32	32	32
Power supply						
Standard power supply		V	400/3~50	400/3~50	400/3~50	400/3~50
Power supply						
A - length		mm	2680	2680	3190	3190
B - Width		mm	1650	1650	2250	2250
C - Height		mm	1580	1850	1850	2260
Standard unit weights						
Shipping weight		kg	885	1000	1300	1640
Operating weight		kg	860	975	1260	1600

ROT = Rotary compressor
SCROLL = Scroll compressor
RAD = Radial fan
EC = Electronically Commutated

1. Indicative values for standard units with possible +/-10% variation. The actual data are indicated on the label of the unit
2. Net pressure available at nominal flow-rate
3. Values referring to supply flow-rate

General technical data

Nominal Flow-Rate

Sound levels – Nominal operation

Size	Sound Power Level								Sound power level	Sound pressure level (1 m)
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
SIZE 1	68	49	60	65	76	75	71	65	**80**	**62**
SIZE 2	71	52	62	68	78	77	73	67	**82**	**64**
SIZE 3	64	78	78	79	79	75	72	61	**85**	**66**
SIZE 4	65	80	81	82	83	76	69	62	**88**	**69**

Silent sound levels

Size	Sound Power Level								Sound power level	Sound pressure level (1 m)
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
SIZE 1	67	45	56	64	74	71	69	62	**77**	**60**
SIZE 2	68	50	59	67	77	75	71	65	**80**	**62**
SIZE 3	63	76	73	74	75	72	65	56	**81**	**63**
SIZE 4	71	71	77	79	79	76	68	60	**84**	**65**

Sound levels refer to a unit with nominal load installed in a false ceiling and ducted. Static pressure 50 Pa.
The average sound pressure level, in compliance with UNI-EN ISO 3744, refers to a distance of 1 m from the outer surface of a ducted unit installed in a false ceiling.
Power measurements are taken in accordance with UNI EN ISO 9614-1, with a ducted unit installed near a reflective surface, with a tolerance of 2 dB(A) on the measured sound power level.
The SILENT and SUPER SILENT operating modes (selectable via keypad or dry contact) limit the compressor and fan speed in order to reduce the noise level.
Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations.

Supersilent sound levels

Size	Sound Power Level								Sound power level	Sound pressure level (1 m)
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
SIZE 1	64	44	55	60	70	68	66	60	**74**	**56**
SIZE 2	63	42	53	60	70	69	65	59	**74**	**56**
SIZE 3	59	67	68	68	69	64	60	51	**75**	**56**
SIZE 4	73	68	73	75	76	70	63	55	**81**	**62**

Capacity and flow-rate limitation in Silent and Supersilent mode

		SIZE 1		SIZE 2		SIZE 3		SIZE 3	
		Silent	Supersilent	Silent	Supersilent	Silent	Supersilent	Silent	Supersilent
Capacity C/H *	-	0,80	0,46	0,85	0,71	0,85	0,69	0,80	0,66
EER/COP *	-	1,13	1,35	1,06	1,13	1,10	1,19	1,12	1,20
Airflow	m^3/h	4000	2300	6000	5000	8500	7000	12000	10000

Sound levels refer to a unit with nominal load installed in a false ceiling and ducted. Static pressure 50 Pa.
The average sound pressure level, in compliance with UNI-EN ISO 3744, refers to a distance of 1 m from the outer surface of a ducted unit installed in a false ceiling.
Power measurements are taken in accordance with UNI EN ISO 9614-1, with a ducted unit installed near a reflective surface, with a tolerance of 2 dB(A) on the measured sound power level.
The SILENT and SUPER SILENT operating modes (selectable via keypad or dry contact) limit the compressor and fan speed in order to reduce the noise level.
Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations.

General technical data

Minimum Flow-Rate

Sound levels – Nominal operation

Size	Sound Power Level								Sound power level	Sound pressure level (1 m)
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
SIZE 1	67	45	56	64	74	71	69	62	**77**	**60**
SIZE 2	68	50	59	67	77	75	71	65	**80**	**62**
SIZE 3	63	76	73	74	75	72	65	56	**81**	**63**
SIZE 4	71	71	77	79	79	76	68	60	**84**	**65**

Maximum flow-rate

Sound levels – Nominal operation

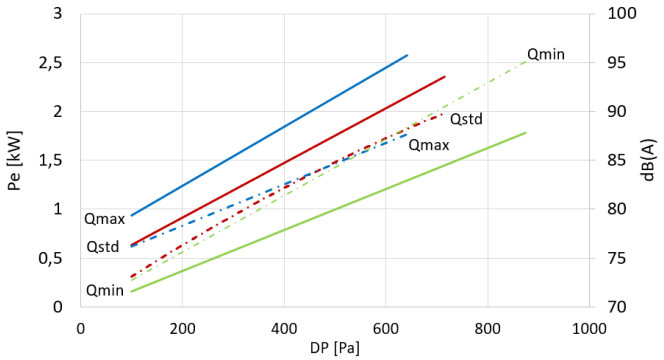
Size	Sound Power Level								Sound power level	Sound pressure level (1 m)
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
SIZE 1	73	54	67	73	84	82	80	75	**81**	**63**
SIZE 2	81	62	73	80	89	88	90	82	**86**	**68**
SIZE 3	79	92	94	94	92	87	91	81	**92**	**73**
SIZE 4	74	90	91	93	93	86	86	77	**91**	**72**

Sound levels refer to a unit with nominal load installed in a false ceiling and ducted. Static pressure 50 Pa.
The average sound pressure level, in compliance with UNI-EN ISO 3744, refers to a distance of 1 m from the outer surface of a ducted unit installed in a false ceiling.
Power measurements are taken in accordance with UNI EN ISO 9614-1, with a ducted unit installed near a reflective surface, with a tolerance of 2 dB(A) on the measured sound power level.
The SILENT and SUPER SILENT operating modes (selectable via keypad or dry contact) limit the compressor and fan speed in order to reduce the noise level.
Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations.

Fan performances

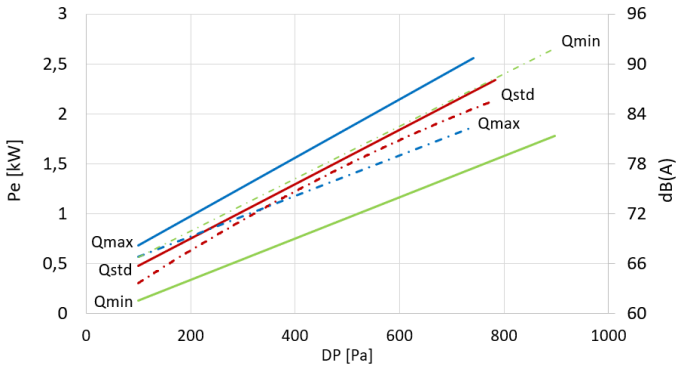
SIZE 1

Supply fan



DP = Static supply pressure
Pe = Total electrical power absorbed
dB(A) = Supply sound energy (supply fan), exhaust sound energy (extraction fan)

Exhaust fan

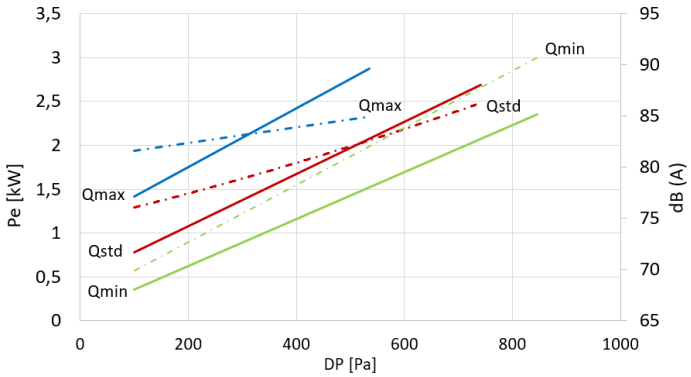


Qmin = 2.300 m³/h
Qstd = 5.000 m³/h
Qmax = 6.000 m³/h

Drops in pressure of air-side optional components		Qmin	Qstd	Qmax
F7B - F7 high efficiency air filter (ISO 16890 ePM1 60%)	Pa	22	62	77
F9B - F9 high efficiency air filter (ISO 16890 ePM1 80%)	Pa	28	76	93

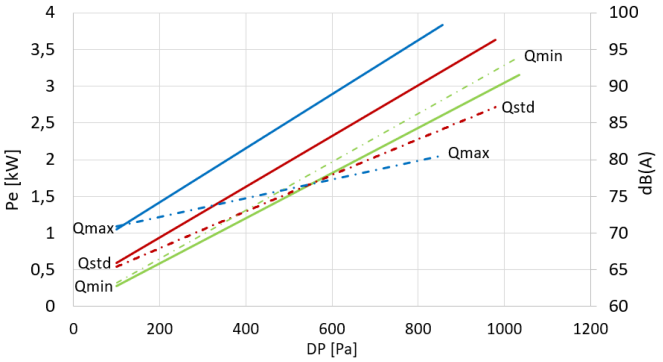
SIZE 2

Supply fan



DP = Static supply pressure
Pe = Total electrical power absorbed
dB(A) = Supply sound energy (supply fan), exhaust sound energy (extraction fan)

Exhaust fan



Qmin = 5.000 m³/h
Qstd = 7.000 m³/h
Qmax = 9.000 m³/h

Drops in pressure of air-side optional components		Qmin	Qstd	Qmax
F7B - F7 high efficiency air filter (ISO 16890 ePM1 60%)	Pa	33	51	69
F9B - F9 high efficiency air filter (ISO 16890 ePM1 80%)	Pa	41	62	84

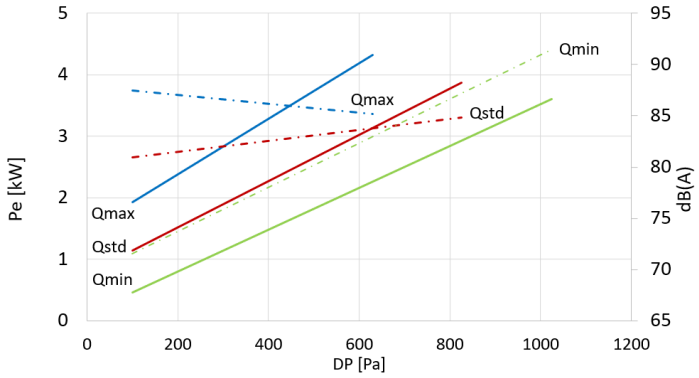
⚠ The performance takes into account the pressure drops inside the unit (treatment coil pressure drops, standard filters, etc.).
⚠ To determine the required performance of the fans, the pressure drops of any accessories must be added to the desired available static pressure.
⚠ The pressure drops of the filtration options refer to moderately dirty filters.

General technical data

Fan performances

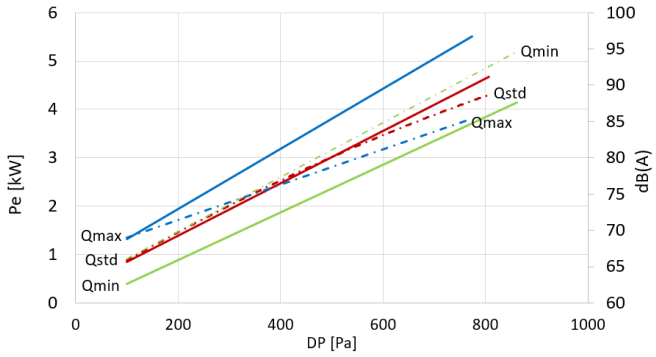
SIZE 3

Supply fan



DP = Static supply pressure
Pe = Total electrical power absorbed
dB(A) = Supply sound energy (supply fan), exhaust sound energy (extraction fan)

Exhaust fan

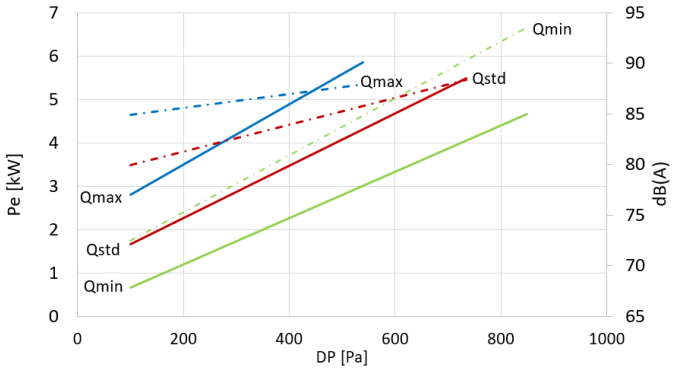


Qmin = 7.000 m³/h
Qstd = 10.000 m³/h
Qmax = 13.000 m³/h

Drops in pressure of air-side optional components		Qmin	Qstd	Qmax
F7B - F7 high efficiency air filter (ISO 16890 ePM1 60%)	Pa	30	48	66
F9B - F9 high efficiency air filter (ISO 16890 ePM1 80%)	Pa	37	59	80

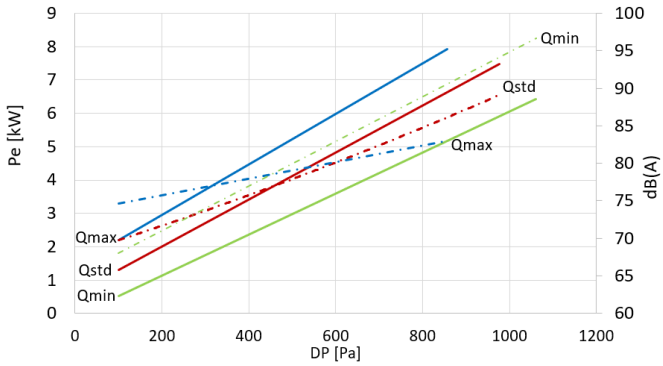
SIZE 4

Supply fan



DP = Static supply pressure
Pe = Total electrical power absorbed
dB(A) = Supply sound energy (supply fan), exhaust sound energy (extraction fan)

Exhaust fan



Qmin = 10.000 m³/h
Qstd = 15.000 m³/h
Qmax = 19.000 m³/h

Drops in pressure of air-side optional components		Qmin	Qstd	Qmax
F7B - F7 high efficiency air filter (ISO 16890 ePM1 60%)	Pa	28	48	64
F9B - F9 high efficiency air filter (ISO 16890 ePM1 80%)	Pa	35	59	78

⚠ The performance takes into account the pressure drops inside the unit (treatment coil pressure drops, standard filters, etc.).
⚠ To determine the required performance of the fans, the pressure drops of any accessories must be added to the desired available static pressure.
⚠ The pressure drops of the filtration options refer to moderately dirty filters.

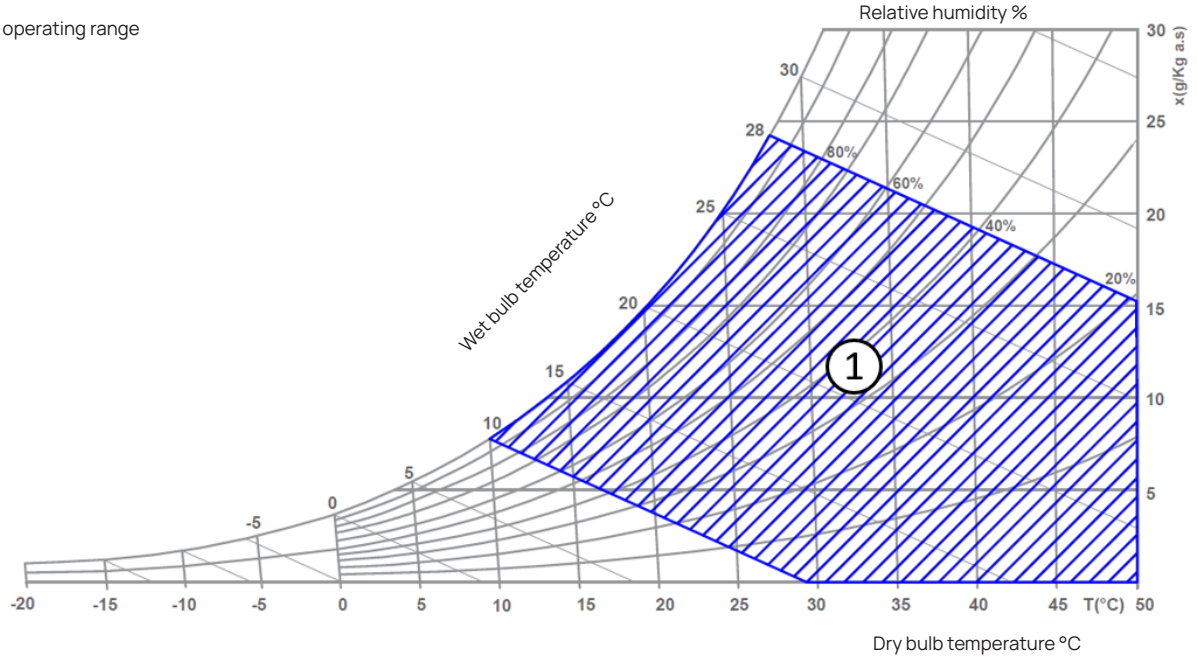
Operating ranges

Cooling

The limits are indicative and take into consideration:
- General and non specific sizes
- Unit correctly installed and serviced
- Clean exchangers and filters
- Nominal air flows

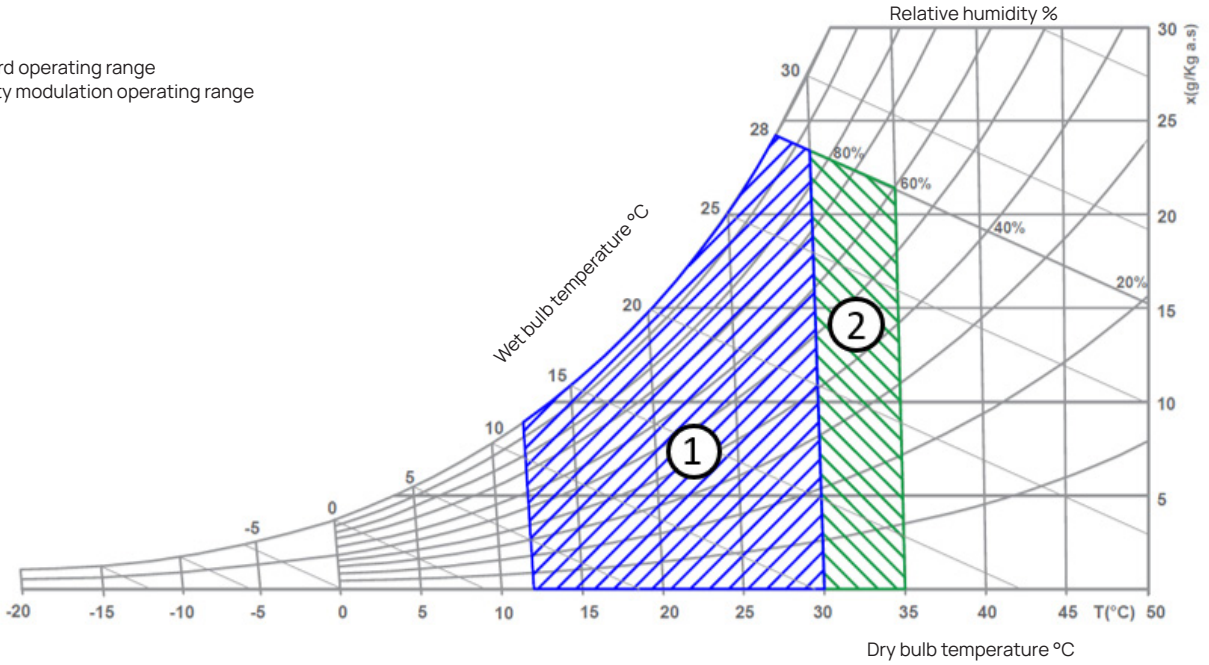
Outdoor air

1. Standard operating range



Extracted air

1. Standard operating range
2. Capacity modulation operating range



General technical data

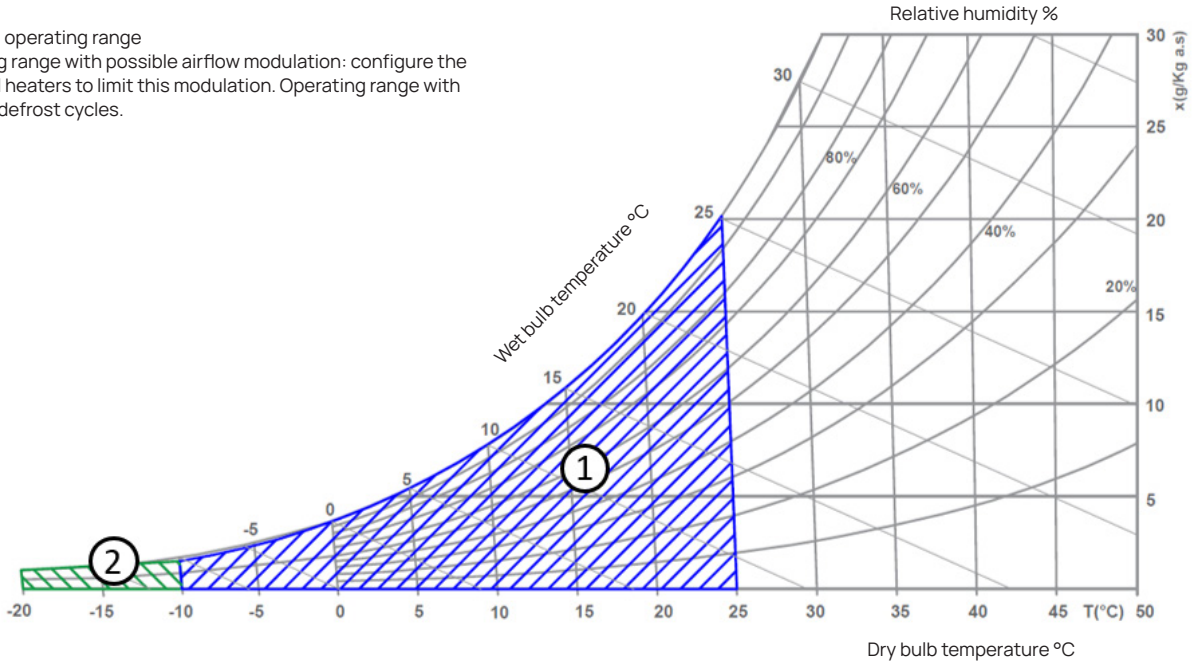
Operating ranges

Heating

The limits are indicative and take into consideration:
- General and non specific sizes
- Unit correctly installed and serviced
- Clean exchangers and filters
- Nominal air flows

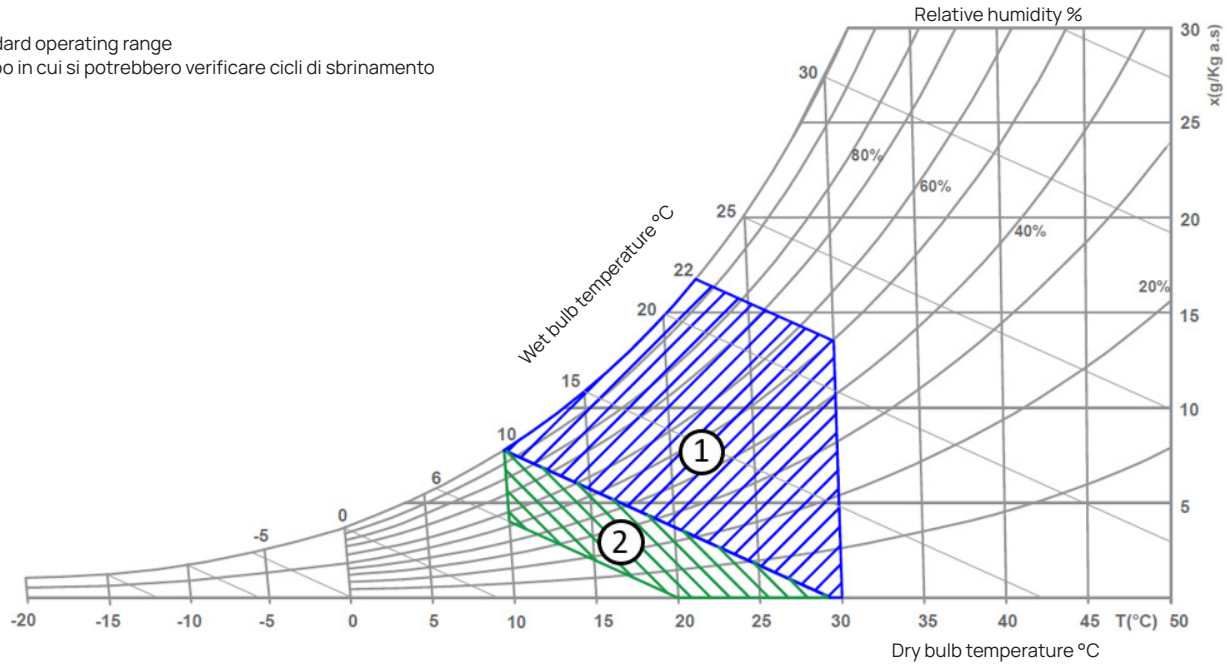
Outdoor air

1. Standard operating range
2. Operating range with possible airflow modulation: configure the electrical heaters to limit this modulation. Operating range with possible defrost cycles.



Extracted air

1. Standard operating range
2. Campo in cui si potrebbero verificare cicli di sbrinamento



⚠ Failure to comply with the lower limit of wet bulb temperature can cause the unit to stop.

Option compatibility

Name	Description	COMPATIBILITY
	VESION	
RTA	Active thermodynamic recovery	√
FCE	Enthalpic free cooling	√
	REFRIGERANT CIRCUIT	
CINV	Inverter compressor	√
EVE	Electronic expansion valve	√
CPHGM	Reheating by hot gas recovery to modulation capacity	√
CEA	Exchanger in copper/aluminium execution with acrylic coating on outside air	O
CCA	Exchanger in copper/aluminium execution with acrylic coating on ejected air	O
CPHGMA	Reheating by hot gas recovery to modulation capacity in acrylic Cu/Al execution	O
	AERAULIC CIRCUIT	
FG4EE	Air filters class G4 on external air and ejected air	√
FELIFD	Electronic filters (ISO 16890 ePM1 90%) - iFD	√
F7B	F7 high efficiency air filter (ISO 16890 ePM1 60%)	O
F9B	High efficiency F9 air filter (ISO 16890 ePM1 80%)	O
PSTAF	Differential pressure switch dirty filters for supply and exhaust	√
PCOSME	Constant supply and ejected air flow	√
PVARC	Variable air flow on supply and exhaust with remote CO_2 probe	O
PVARC2	Variable air flow on supply and exhaust with double CO_2 probe	O
PVARCV	Variable air flow on supply and exhaust with CO_2+ VOC probe	O
PVARCV2	Variable air flow on supply and exhaust with double CO_2+VOC probe	O
PVARP	Variable air flow on supply and exhaust with supply pressure probe	O
PVMS	Variable air flow on supply and exhaust by an external signal	O
PVARCX	Variable supply and ejected air flow with remote CO_2 probe	◊
MHSEX	Immersed electrode and vapour humidification module	◊
R5	Exhaust from above	O
RSSX	Supply air flow sensor for remote installation	◊

√ Standard component
O Optional component
◊ PE optional component

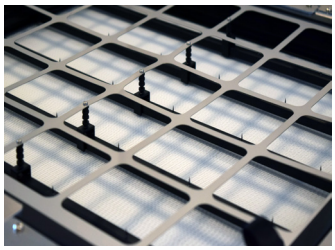
Option compatibility

Name	Description	COMPATIBILITY
	ELECTRIC CIRCUIT	
CTU	Temperature and humidity control	√
PM	Phase monitor	√
EHR	Electric heater resisters	O
PUE	External Humidifier management with 0-10V signal	O
CMSC9	Serial communication module for Modbus supervisor	√
CMSC11	Serial communication module for BACnet/IP supervisor	O
CMSC12	Serial communication module for BACnet-MSTP supervisor	O
DESM	Smoke detector	O
CRC	Remote control with user interface	√
NCRC	Remote control with user interface: not required	O
VSXS	Change specific humidity setpoint from external signal	√
MDMTX	Management of ambient temperature probes	◊
MDMTUX	Management of temperature and humidity ambient probes	◊
MDMADX	Management of advanced ambient monitoring devices	◊
IOTX	IoT industrial module for cloud based interoperability & services	◊
VRFG	VRF gateway	O
CONTA2	Energy meter	O
CHMET	Cooling and Heating Capacity Meter	O
SIX	Service interface (1.5 metre cable)	◊
PREAEX	External device management to pre-handle the renewal air	◊
	ISTALLATION	
IO	Outdoor installation	√
AMMX	Spring antivibration mounts	◊
AMMSX	Anti-seismic antivibration kit	◊
AMMBX	Spring antivibration mounts for unit and humidifying module	◊
AMMUX	Anti-seismic spring antivibration mounts for unit and humidifying module	◊
	VARIOUS	
PTCO	Set up for shipping via container	O
RPRC	Compressors vane refrigerant leak detector	√
RPRCMX	Refrigerant leak detector for compressor compartment and remote supply line	◊

√ Standard component
O Optional component
◊ PE optional component

Standard configuration

FELIFD **Electronic filters with iFD technology (ISO 16890 ePM1 90%)**



High efficiency filters with active electrostatic system with an intense dielectric field are additional standard filtration components to standard ISO 16890 Coarse 60% filters (formerly class G4). They are active on a broad spectrum of pollutants, including pollen, dust, micro- and nanopowders, toners, mould, smog, bacteria and viruses; in particular, the filtering efficiency for bacteria is 90%, while for yeasts and moulds it is 76%, as certified by checks conducted by the European CLEAN TECH SYSTEM laboratory.

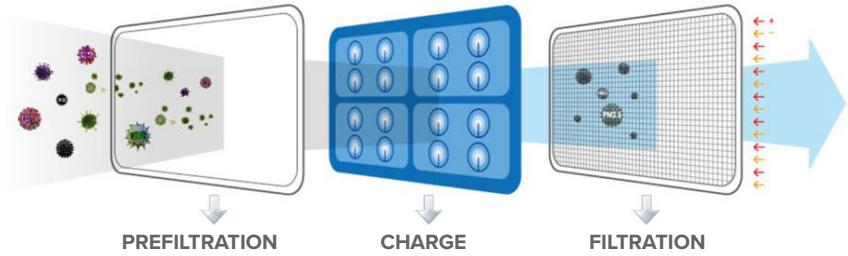
The air filtration process follows the most advanced air purification technologies and consists of these phases:
- first pre-filtration phase;
- second ionisation phase in which the particles are charged through transfer;

through a thin perforated metal plate, with needle electrodes in the centre of each hole;
- third absorption phase, in which the charged dust particles are captured by a strong and intense dielectric field formed by a honeycomb duct.

The iFD electronic filters have a very high filtering efficiency with low pressure drops and therefore reduced ventilation consumption compared to traditional filters. The typical air crossing speeds of Clivet units ensure filtering efficiencies higher than ISO 16890 ePM1 90% (equivalent to class E10 of absolute filters in accordance with EN 1822). For this result to be guaranteed and the microbicidal action against bacteria and viruses to be kept steady over time while ensuring minimum pressure drops, the filters require proper maintenance. This is extremely simple and is done by washing them with a standard kitchen degreaser. This means that the filter cell does not need replacing, just washing.

Filters must be cleaned at least every six months; we recommend quarterly or more frequent cleaning if the units are located in excessively polluted areas. Intervention on the filters during the unit's routine maintenance includes washing the electronic cells on site.
The higher initial cost, compared to a traditional mechanical filter, can be amortized in a short time. Indeed, the lifespan of the electrostatic filters is the same as that of the unit, whereas pocket filters need periodic replacement.

⚠ This option determines a reduction in the available static head (air side).
⚠ iFD electronic filters are not suitable for filtering water vapours even in low concentrations, oily vapours, large quantities of dust, shavings and iron filing dust, residues in general and gases.
⚠ All the following substances must be absolutely avoided with electronic filters: metallic material dust, even if very fine; fumes produced by the combustion of organic and non-organic materials; flour dust; dust and vapours from potentially explosive atmospheres.



Standard configuration

PSTAF **Differential pressure switch dirty filters for supply and exhaust**

It detects and signals when the maximum level of clogging of the air filters has been reached. This alerts the machine operator when maintenance of the filters is required. The detection device is installed in the unit and already connected to the electrical panel of the machine and pre-calibrated in the factory. The calibration can be modified by authorised personnel

PCOSME **Constant supply and ejected air flow**

Thanks to the use of fans with EC technology, the continuous modulation of the fan speed ensures the set air flow-rate, which remains constant when the pressure drops in the distribution system and the filter clogging varies, keeping the air distribution inside the rooms unchanged.

PM **Phase monitor**

The phase monitor allows verifying the proper phase connection and their unbalance in the units powered by the three-phase system. The monitor communicates with the control circuit and orders the switch-off of the unit should one of the following cases occur: improper phase connection; the limit value referring to the unbalance between the phases is exceeded; over/undervoltage for a certain amount of time. As soon as the nominal line conditions are restored, the unit is automatically reset. The device is installed and wired on the unit.

CMSC9 **Serial communication module for Modbus supervisor**

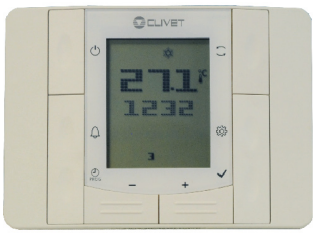
Allows serial connection to supervision systems, using RTU or TCP/IP Modbus as a communication protocol.
It gives access to the entire list of operation variables, controls and alarms.
The device is installed and wired built-in the unit.

⚠ The total length of each individual serial line must not exceed 1000 m and the line must be connected in bus type (input/output).

CRC **Remote control with user interface**

The remote control with user interface, which is easy to use even by non-specialised personnel, is standard supplied and is prepared for wall mounting. The connective cable (under customer responsibility:) performs the dual function of serial communication and power supply.
Some of its main functions:

- starting up and shutting down the unit, ventilation only;
- daily, weekly programming of unit switch-on or switch-off;
- display of the alarm code and unit statuses;
- temperature offset +/- 2°C
- selective key lock, unlocked with a password;



Temperature and humidity are measured by means of on-board probes: the remote control can therefore also be installed inside technical control rooms. In cases where a centralised supervisory system or other remote management device is planned, the unit can be chosen without remote control with user interface.

⚠ Connection of the user interface with 3 x 0.75 mm^2 shielded cable for communication, 2 x 1 mm2 cable for the power supply if required

RLDCC **Refrigerant leak detector for compressor compartment**

The unit comes standard with a leak detector installed in the compressor compartment. The appropriate and targeted design of the unit makes it possible to reduce the risk of leakage in general, and to concentrate the residual risk in the compressor compartment.
The combination of this factor and the still air inside the compartment makes the device effective and prompt in detecting any leaks.
Activation threshold at concentrations >15% LFL.
If a leak is detected, the unit is immediately switched off and a specific alarm is displayed.
In addition to the attention to environmental impact, this solution serves to reduce the frequency of periodic checks required by the F-GAS directive.

- ⚠ The unit is designed in compliance with the minimum requirements of EN 378-2. The adoption of this device is redundant given the minimum requirements.
- ⚠ With reference to the use of A2L refrigerants, the application and installation of these units must comply with the safety standards of EN 378.
- ⚠ The presence of this detector has no impact on the definition of the minimum surface areas required for the ambients served.
- ⚠ The device is not part of the unit's primary safety chain

FCE **Enthalpic free cooling**

It reduces energy consumption and compressor wear by continuously monitoring outside air.
The thermoregulation compares the conditions of the external temperature and the reference parameters according to the actual operating mode, with the aim of keeping the compressors off or at reduced load as much as possible.

CPHGM **Reheating by hot gas recovery to modulation capacity**

Std-equipped solution that make it possible to precisely control the supply temperature in cooling and dehumidification mode.
The coil is integrated into the unit's refrigerant circuit and is crossed by the refrigerant in a gaseous state exiting the compressor by the action of a dedicated modulating solenoid valve.
Located downstream of the evaporator coil, it is therefore crossed by dehumidified and cooled air.
It is managed completely autonomously from the machine logic according to modes, setpoints and specific operating conditions.
By continuously modulating the quantity of refrigerant processed, the supply temperature can be controlled dynamically and continuously.
With respect to traditional devices, such as electrical electric elements or hot water coils, use of the re-heat coil does not consume any extra energy. It also lowers refrigerant condensation temperature, which provides two positive effects: power absorbed by the compressors is considerably reduced, and at the same time, cooling capacity is increased, resulting in greater efficiency (EER).

VSXS **Change specific humidity setpoint from external signal**

Allows you to set the specific humidity setpoint from an external signal or supervisory system.

Accessories

CEA **Exchanger in copper/aluminium execution with acrylic coating on outside air**

CCA **Exchanger in copper/aluminium execution with acrylic coating on ejected air**

CPHGMA **Reheating by hot gas recovery to modulation capacity in acrylic Cu/Al execution**

Coils with copper pipes and aluminium fins with acrylic coating.
They can be used in environments containing airborne concentrations of salt and other moderately aggressive agents.

F7B **F7 high efficiency air filter (ISO 16890 ePM1 60%)**

F9B **F9 high efficiency air filter (ISO 16890 ePM1 80%)**

The multi-dihedral rigid pocket filters are additional filtration components to the standard ISO Coarse 60% (ISO 16890) filters (formerly class G4) for more effective filtration. They are widely used in civil air conditioning systems and in industrial applications requesting an adequate yield with respect to fine dust and particles larger than 1 µm.
Filters are made of folded fibreglass paper with constant calibrated spacing, mounted on frames made of a sturdy extruded moulded polyester structure; the large filtering surface is designed to keep air side pressure drops low. The traditional mechanical filters must be replaced after reaching clogging limits with scheduled periodic maintenance.

⚠ This option determines a reduction in the available static head (air side).

PVARC **Variable air flow on supply and exhaust with CO_2 probe**

PVARC2 **Variable air flow on supply and exhaust with double CO_2 probe**

This option is recommended for environments with highly variable crowding, automatically adjusts the air flow-rate to the actual conditions of use and increased savings for ventilation. Complete with probe and integrated relative control logic. In the presence of a CO_2 concentration greater than the set-point, the air flow-rate is increased in accordance with the distance from the set-point. The probe is installed and wired on board the unit and is located in the air duct of the unit.
In the double probe version, in addition to the on-board probe, there is also a probe that detects the parameters of the external temperature. Depending on the difference between the two recorded concentrations, the machine logic intervenes by enabling the flow-rate increase only if the concentration detected in the outside air is lower than the indoor one.

⚠ The adjustment is made between the selected supply air flow value and a flow-rate value that can be set by parameter and does not exceed the maximum air flow value available for the specific size.
⚠ Properly size the aeraulic distribution network to manage flow-rate variability.

PVARCV **Variable air flow on supply and exhaust with CO_2+VOC probe**

PVARCV2 **Variable air flow on supply and exhaust with CO_2+VOC double probe**

Option shown in environments characterised by tobacco smoke, formaldehyde (coming for example from solvents,
deodorants, glues, paints, detergents), cooking, etc. Automatically adjusts the air flow-rate to the actual conditions of use and increased savings in ventilation. Complete with probe and integrated relative control logic. In the presence of a CO_2 and VOC (volatile organic compounds) concentration greater than the set-point, the air flow-rate is increased in accordance with the distance from the set-point The probe is installed and wired on board the unit and is located in the air duct of the unit.

⚠ The adjustment is made between the selected supply air flow value and a flow-rate value that can be set by parameter and does not exceed the maximum air flow value available for the specific size.
⚠ Properly size the aeraulic distribution network to manage flow-rate variability.

PVARP

Variable flow-rate for supply and ejected air with supply pressure probe

Option suitable in applications for multi-zone environments where variable air flow-rate is required, depending on the actual conditions of use of some rooms. Suitable for aeraulic systems fitted with terminals consisting of dampers with VAV/CAV flow regulators. Unit complete with differential pressure switch and related integrated control logic installed and wired on board. After setting the desired air head, in the event of a change in the system's aeraulic load curve, it can be used to automatically vary the air flow-rate to keep the set available static pressure constant.

- ⚠ For effective control, it is necessary to set an available static head setpoint > 100 Pa on the supply channel
- ⚠ The adjustment is made between the selected air flow value and the minimum air flow value available for the specific size.

PVMS

Variable supply and ejected air flow from external signal

The unit is configured with an input available for the proportional control of the amount of fresh air according to a signal from a system to be taken care of by the customer.

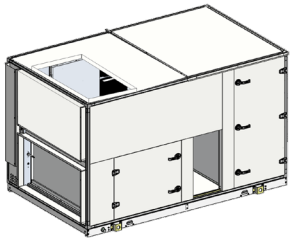
- ⚠ The type of input signal, 4-20mA or 0-10V, must be set during start-up
- ⚠ This solution is not compatible with the PVARC (PVARC2) and PVARCV (PVARCV2) options
- ⚠ Control must be within the specific flow-rate range for each size

R5

Exhaust from above

A solution that allows the air duct to be connected to the unit through an opening in the rooftop of the unit.
Alternative solution to the standard horizontal return position. This provides additional installation flexibility, especially when replacing primary air units in existing systems.

- ⚠ Option available on request.



EHR

Electric heater resisters

An option suitable for cold climates, it integrates the power output of the heat pump. The heating elements are placed before the handling coils and perform the function of preheating the air by extending the operation limits of the machine. Together with any reduction in air flow-rate, they help to ensure comfortable inlet temperature conditions.
The fins are made of aluminum, of suitable dimension to ensure high efficiency and maintain low power density on the surfaces to limit overheating. The low temperature of the heating elements increases the lifespan and limits the effect of air ionization.

The heaters are managed by the on-board logic with single-step control.

Combinations of electric heating elements

Size	Size1	Size2	Size3	Size4
	9 kW	12 kW	18 kW	24 kW

This option results in a variation of the main electrical data of the unit

Electrical input

size		SIZE 1	SIZE 2	SIZE 3	SIZE 4
F.L.A. - Full load current at max admissible conditions					
F.L.A. EHR - Electric heater resisters	A	13,0	17,3	26,0	34,7
F.L.I.: Power consumption at max admissible conditions					
F.L.I. EHR - Electric heater resisters	kW	9,0	12,0	18,0	24,0

Accessories

CMSC11 **Serial communication module for BACnet/IP supervisor**

CMSC12 **Serial communication module for BACnet-MSTP supervisor**

Makes it possible to perform the serial connection to supervision systems by using BACnet as a communication protocol. Provides access to a list of operation variables, controls and alarms.
The device is installed and wired on the unit.

⚠ The configuration and management activities for the BACnet networks are the responsibility of the client.
⚠ The total length of each individual serial line must not exceed 1000 m and the line must be connected in bus type (input/output).

DESM **Smoke detector**

Option that detects the presence of smoke in the environment and intervenes on the operation of the unit.
Complete with sensor, control box and integrated relative logic control. In the presence of an alarm or a sensor failure signal the ventilation stops. The ON-OFF remote control and the start-up/shut-down keyboard control are disabled. The unit is reactivated manually. Smoke detection in the environment is done through the analysis of the return air. The Tyndall effect smoke detector's increased sensitivity can detect the presence of smoke in high speed air flows, by means of a photo-optical system with a labyrinth detection chamber.
The device is installed inside the unit.

⚠ Any fire detection devices built-in the unit must be considered as an auxiliary safety system, and, accordingly, must not be a replacement for any fire detection devices in the room.

NCRC **Remote control with user interface: not required**

This option is recommended in the presence of a centralized supervision system or other remote management equipment. The unit will maintain their functions unchanged, but is supplied without a user interface.

⚠ During routine maintenance, the authorized personnel must be equipped with properly configured personal computer or a compatible service interface.

VRFG **VRF gateway**

Option for integrating ZEPHIR4 in Clivet's VRF systems.
In the case of air conditioning, the ZEPHIR4 unit takes in fresh air while the internal units of the associated VRF system perform air-conditioning of the room.
The option consists of a gateway in the electrical panel of the unit to be connected to the centralised control systems CCM-270A/WS (platform V6) or TC3-7 (platform V6/V8) used to manage Clivet's VRF systems.

The centralised controller permits use of the following functions on ZEPHIR4:
- unit switch-on/switch-off,
- supply temperature with +/- 4°C offset from the set point
- hourly/daily/weekly schedule
- automatic / ventilation only operating mode
- cumulative alarm signal

The CCM-270A/WS central control provides six RS485 ports while the TC3-7 provides two. Up to 8 ZEPHIR4 units or 8 VRF systems can be connected to each port.

⚠ The total length of each individual serial line must not exceed 1000 m (to be connected by the Customer).

CONTA2

Energy meter

Allows to display and record the unit's main electrical parameters.
The data can be displayed with the user interface on the unit or via the supervisor through the specific Modbus protocol. It is possible to control:

- voltage (V),
- absorbed current (A),
- frequency (Hz),
- phase shifting cos ϕ
- power input (kW),
- absorbed energy (kWh),
- harmonic components (%)

⚠ The device is installed and wired on the unit.
⚠ This device is an accurate meter with CE certification; not suitable for legal metrology findings.
⚠ If CONTA2 and CHMET are configured at the same time, the overall efficiency value of the unit is also available for reading

CHMET

Cooling and Heating Capacity Meter

System to calculate the heating and cooling capacity by measuring the enthalpy of the supply and return air and the outdoor environment, as well as the indirect measurement of the supply and fresh airflow.
The data can be read directly on the device or through the supervision system with a ModBus communication protocol.

⚠ The device is installed and wired built-in the unit.
⚠ The capacities detected are to be considered indicative of the operation and the actual work point of the unit and are not comparable to the accuracy of the precise laboratory performance data declared in the Technical Bulletin.
⚠ If CONTA2 and CHMET are configured at the same time, the overall efficiency value of the unit is also available for reading

PTCO

Set up for shipping via container

Option to transport via container. It includes the application of sheet plate slides for easy sliding of the unit, packaging of the unit with protective corners and nylon, anchoring systems. If necessary, the side lifting brackets and the handle of the main power switch disconnector are removed to prevent damage during transport (components removed and placed inside the unit). For special shipping requirements, please contact Clivet's Shipping Department.

PUE

External Humidifier management with 0-10V signal

The option allows a humidifier outside the unit to be controlled in heating mode by a dedicated 0-10V signal.
Activation is managed by the machine temperature controller by controlling the specific humidity in the return section through a probe that is already mounted and wired on board.
Set point settable from HMI or supervisor interface.

⚠ Capacity modulation is carried out according to the conditions detected on the exhaust.
⚠ Humidifier supply, power supply and installation to be provided by the customer

Accessories separately supplied

PVARCX

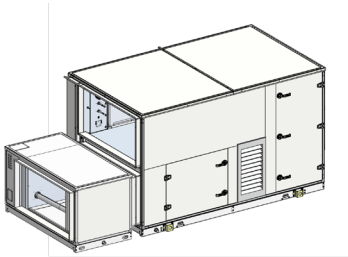
Variable supply and ejected air flow with remote CO_2 probe

CO_2 concentration detection device to be placed in the served environment. Depending on the room occupancy rate, the probe communicates directly with the unit, which follows the same operating mode as the PVARC, PVARCV options.

- ⚠ Place the probe in a position that represents the conditions of the environment served
- ⚠ Serial connection with the unit by customer

MHSEX

Immersed electrode and vapour humidification module



This device is suitable for winter operation when humidity is required for the ambient without cooling the air flow.
The modulating automatic adjustment allows adapting the vapour production and the relative management cost to the relative requirements.
Sized in accordance with the various capacities, the device is suitable for use with un-softened water of medium conductivity and is complete with: solenoid valve feed, deluge cylinder, solenoid valve discharge, distribution control, electronic control panel with water level monitor, conductivity monitor, defoamer, manual flush. To ensure maximum hygiene, the cylinder can automatically empty after a determined period of stand-by.
The option is installed in a separate module external to the unit and with electrical board dedicated to this as well as separate electrical supply.
The control of the device, regulated by the unit, is realized through a 0-10V signal.
A return probe already assembled and wired on board the unit is used to control the humidity level.
The device is also suitable for remote installation, on the air supply duct, at a maximum distance of 30 m from the unit

- ⚠ Capacity modulation is carried out according to the conditions detected on the exhaust.
- ⚠ This operation involves variation of the main electrical data of the unit.
- ⚠ This accessory requires the presence of a water and drainage circuit on board. Under customer responsibility.
- ⚠ Installation is a responsibility of the Customer.

Combinations of immersed electrode and vapour humidification module

size	SIZE 1	SIZE 2	SIZE 3	SIZE 4
Size immersed electrodes to vapour humidifier	HSE25 (25 kg/h)	HSE35 (35 kg/h)	HSE45 (45 kg/h)	HSE45 (45 kg/h)

Electrical input

size		SIZE 1	SIZE 2	SIZE 3	SIZE 4
F.L.A. - Full load current at max admissible conditions					
F.L.A. MHSE - Immersed electrode and vapour humidification module	A	27,0	38,0	48,8	48,8
F.L.I.: Power consumption at max admissible conditions					
F.L.I. MHSE - Immersed electrode and vapour humidification module	kW	18,8	26,3	33,8	33,8

Sizes of immersed electrode and vapour humidification module

size		SIZE 1	SIZE 2	SIZE 3	SIZE 4
A	mm	1000	1000	1000	1000
B	mm	1645	1645	2250	2250
C	mm	850	1250	1250	1700

RSSX

Supply air flow sensor for remote installation

Option that detects the conditions in the flow channel and allows them to be used in the automatic control of the system instead of the on-board sensor. Complete with temperature and humidity sensor, box for installation outside the duct, 10 m length cable and quick connector for connection to the system.

⚠ The device is designed to be installed outside the unit (to be carried out by the customer).
⚠ Only use the cable included in the package. For proper functioning, the cable must never be cut.

MDMTX

Management of ambient temperature probes

1 to 4 remote environment temperature probes can be used with this option. The values recorded by the probes can be consulted on the remote control and with the available supervision systems.
The average of the values recorded by the probes can only be used for thermoregulation in the MC (Operation at maximum available capacity) and XC (Operation in maximum comfort mode) operating modes.

⚠ Place the probes in a position that represents the conditions of the environment served.
⚠ Serial connection with the unit by customer

MDMTUX

Management of ambient temperature and humidity probes

1 to 4 remote room temperature and humidity probes can be used with this option. The values recorded by the probes can be consulted on the remote control and with the available supervision systems.
The average of the values recorded by the probes can only be used for thermoregulation in the MC (Operation at maximum available capacity) and XC (Operation in maximum comfort mode) operating modes.

⚠ Place the probes in a position that represents the conditions of the environment served
⚠ Serial connection with the unit by customer

MDMADX

Management of advanced ambient monitoring devices

By selecting this option, it is possible to provide an advanced environmental monitoring system with an ambient design interface. The remote probes (up to 4) are capable of measuring various parameters and provide a complete picture of ambient conditions such as:

- Temperature and humidity
- Concentration of Carbon Dioxide (CO_2)
- Concentration of Volatile Organic Compounds (VOC)
- Concentration of Carbon Monoxide (CO)
- Concentration of Nitrogen Dioxide (NO_2)
- Concentration of Methane (CH4)
- Sound level
- Atmospheric pressure

The parameters are recorded by the software and can be consulted via BMS or the Clivet EYE platform for PCs. On the latter, in addition to entering the details of each probe, it is possible to view the values measured during the last month and export the data of the 24 hours preceding the selected day.
The advanced monitoring devices comply with the requirements of LEED, WELL and Fitwell certifications.
The average of the values recorded by the probes can only be used for thermoregulation in the MC (Operation at maximum available capacity) and XC (Operation in maximum comfort mode) operating modes.

⚠ Place the probes in a position that represents the conditions of the environment served

Accessories separately supplied

IOTX

IoT industrial module for cloud based interoperability & services

This device allows the monitoring and the remote control the unit via Clivet Eye, the supervision cloud system for Clivet units.
With IoT module (i-LINK) it will be possible to monitor and manage the unit through the mobile app Clivet Eye and the dedicated web page.

- ⚠ IoT module to be provided for each unit to be remotely monitored.
- ⚠ Internet ethernet connection in charge of customer.
- ⚠ Clivet Eye management is alternative to an external BMS supervision system.
- ⚠ Installation is a responsibility of the Customer.

Web interface at www.cliveteye.com.
Clivet Eye app available in Google Play and Apple Store

SIX

Service interface (1.5 metre cable)

The device allows full control of the unit for start-up and maintenance operations by authorised technical personnel. It must be connected to the outside of the unit via the RJ45 connector and the 1.5m length connection cable that can be further extended. The device can be easily attached to the unit's surface by the magnetic mount. It is weatherproof thanks to the IP68 protection rating. The controller has a backlit screen, convenient buttons, a graphic interface with menus and submenus for navigation.

- ⚠ All the features of the device can be replicated with a normal laptop connected to the unit with an Ethernet network cable and an Internet browser.

RPRCMX

Remote refrigerant leak detector for supply, additional to the standard supplied detector in the compressor compartment

In addition to the standard device installed in the compressor compartment (see RPM option), with this solution it is possible to install an additional leak detector on the processing side.
Activation threshold at concentrations >15% LFL.
If a leak is detected, the unit is immediately switched off and a specific alarm is displayed.
In addition to the attention to environmental impact, this solution serves to reduce the frequency of periodic checks required by the F-GAS directive.

- ⚠ With reference to the use of A2L refrigerants, the application and installation of these units must comply with the safety standards of EN 378-1.
- ⚠ The presence of this detector has no impact on the definition of the minimum surface areas required for the ambients served.
- ⚠ The device is not part of the unit's primary safety chain
- ⚠ Installation by customer, refer to installation manual.

AMMX

Rubber antivibration mounts

AMMSX

Anti-seismic antivibration kit

AMMBX

Spring-loaded antivibration dampers for unit and humidification module

AMMUX

Anti-seismic spring-loaded base vibration dampers for humidification unit and module

The rubber antivibrating dampers are to be mounted on designated areas on the support brackets. Their function is to dampen the vibrations produced by the unit by reducing the noise transmitted to the support structures.
They are elastic bodies that can dampen axial and tangential stress and their physical and mechanical properties remain constant over time thanks to the highly resistant materials they are made of. As an alternative to the basic rubber antivibration dampers, rubberised neoprene bands placed under the support stringers can be used (not supplied by Clivet)

- ⚠ Installation to be carried out by the customer

PREAEX **Provision for external resource control for fresh air pre-treatment**

Through a 0-10V signal it is possible to control an external resource to pre-treat the fresh air, in cooling or heating mode. The machine thermoregulation manages this signal independently according to the specific operating conditions.
This solution is useful for applications in extreme temperature environments that occur with high frequency. By pre-treating the outside air, it will therefore be possible to supplement the capacity of the main unit or work directly in its place.
The signal can be configured during start-up depending on the ambient air temperature.

- ⚠ Operating mode (heating or cooling) can be set during start-up
- ⚠ The sizing of the supplementary resource is under customer responsibility
- ⚠ Installation of the supplementary resource is under customer responsibility
- ⚠ The unit is supplied with flanges on the fresh air section and an outside air probe to be installed upstream of the supplementary resource

Dimensional drawings

CPAN-iY Size 1

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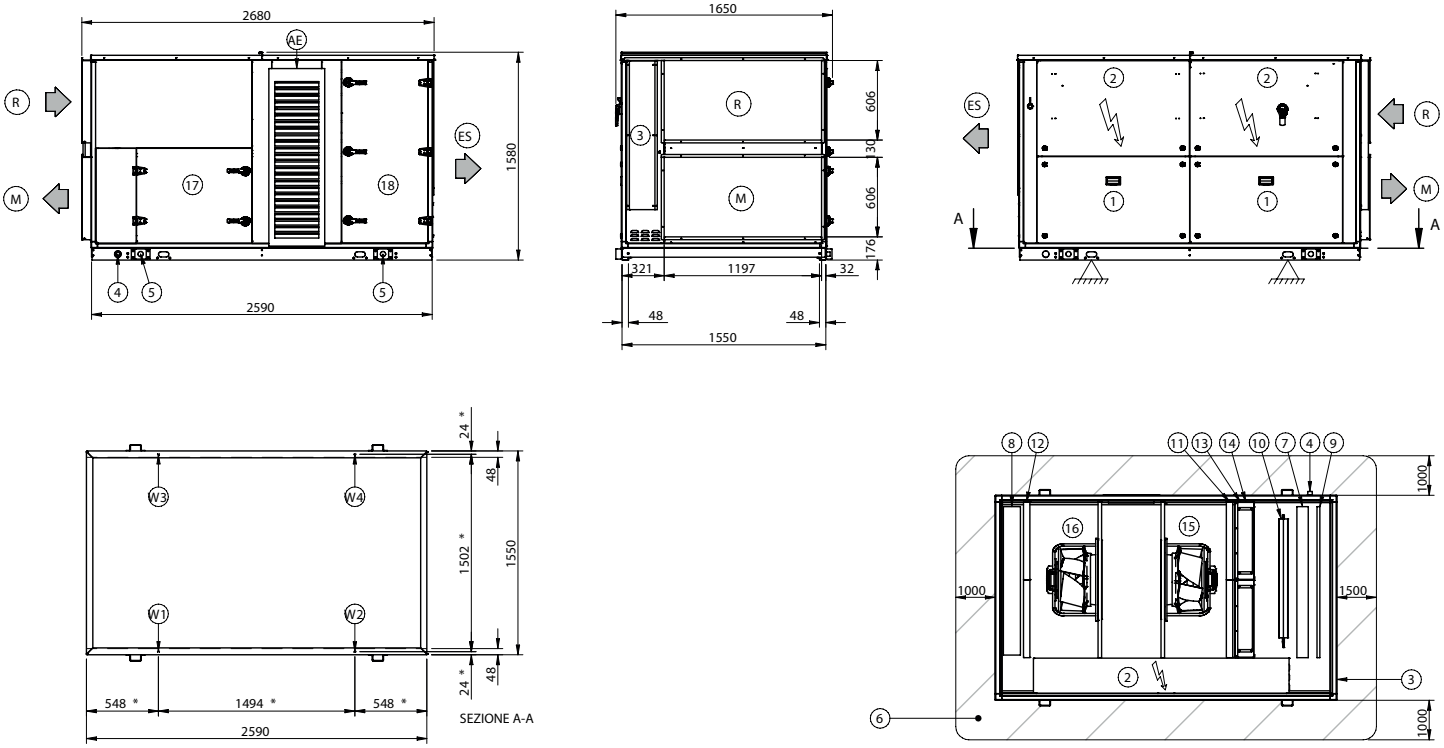


1. Compressor compartment
2. Electrical panel
3. Power input
4. Condensate drain
5. Liftin breackets (Removables)
6. Functional clearances
7. Treatment coil
8. Expulsion coil
9. Re-heating coil
10. Heating elements (optional)
11. Supply G4 air filters (standard)
12. Exhaust G4 air filters (standard)
13. IFD electronics filters(standard)
14. F7/F9 filters(optional)
15. Electric fan supply
16. Exhaust electric fan
17. Access for inspection of coils / filters / heaters / supply fan
18. Access for inspection of coils / filters / heaters / exhaust fan

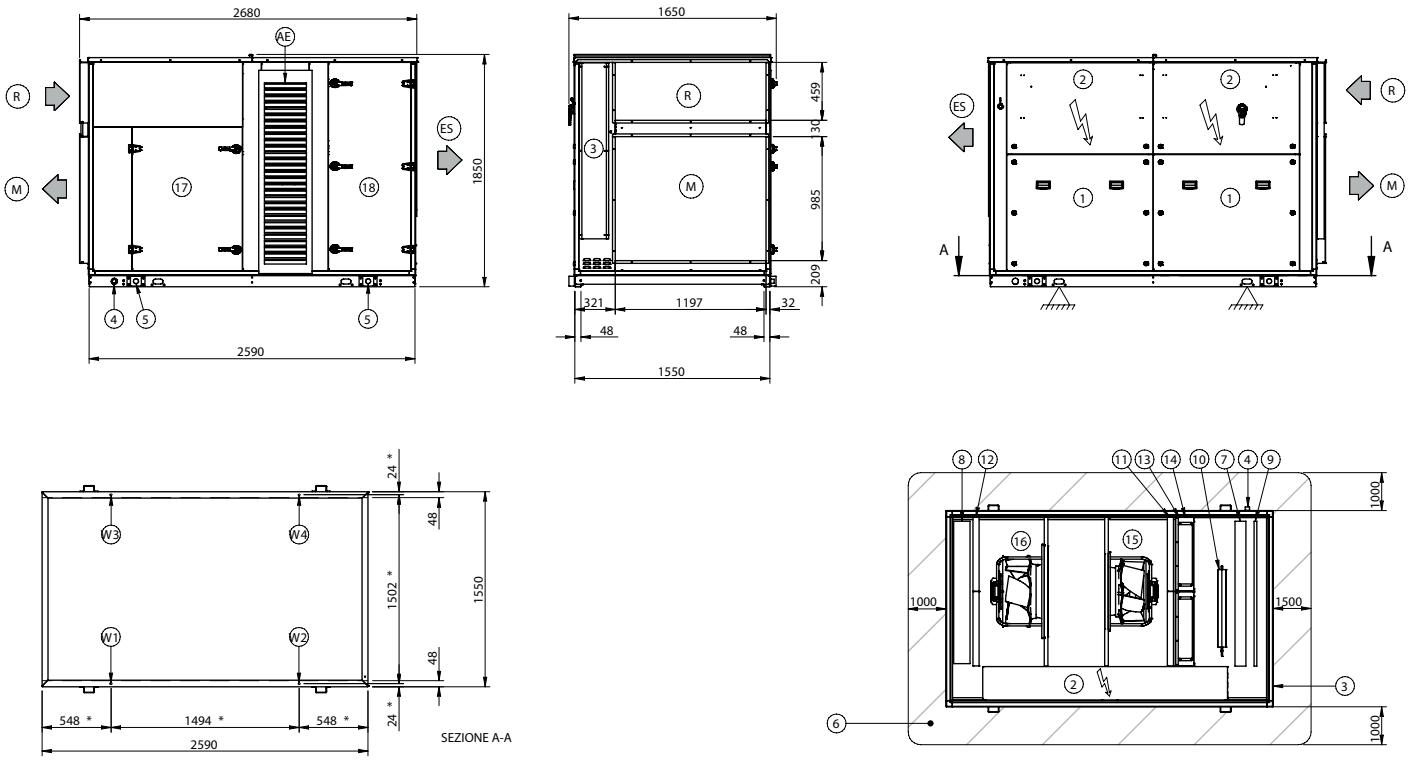
(R) Air return
(M) Air supply
(ES) Air expulsion
(AE) Outdoor air
(*) Vibration mounts position

WEIGHT DISTRIBUTION

Size		SIZE 1
W1 Support point	Kg	259
W2 Support point	Kg	257
W3 Support point	Kg	173
W4 Support point	Kg	172
Operation weight	Kg	860
Shipping weight	Kg	885

CPAN-iY Size 2

DAA5O0002_00
DATA/DATE 18/09/2025



1. Compressor compartment
2. Electrical panel
3. Power input
4. Condensate drain
5. Liftin breackets (Removables)
6. Functional clearances
7. Treatment coil
8. Expulsion coil
9. Re-heating coil
10. Heating elements (optional)
11. Supply G4 air filters (standard)
12. Exhaust G4 air filters (standard)
13. IFD electronics filters (standard)
14. F7/F9 filters (optional)
15. Electric fan supply
16. Exhaust electric fan
17. Access for inspection of coils / filters / heaters / supply fan
18. Access for inspection of coils / filters / heaters / exhaust fan

(R) Air return
(M) Air supply
(ES) Air expulsion
(AE) Outdoor air
(*) Vibration mounts position

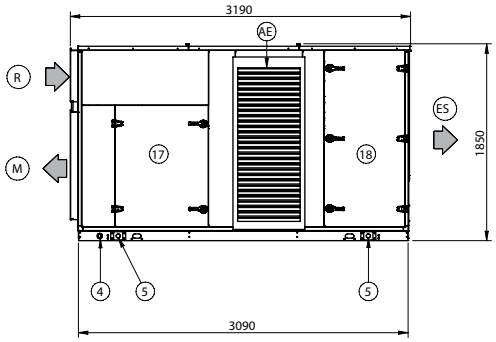
WEIGHT DISTRIBUTION

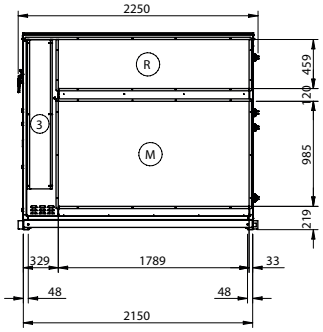
Size		SIZE 2
W1 Support point	Kg	284
W2 Support point	Kg	288
W3 Support point	Kg	201
W4 Support point	Kg	203
Operation weight	Kg	975
Shipping weight	Kg	1000

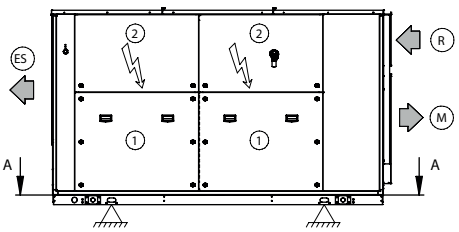
Dimensional drawings

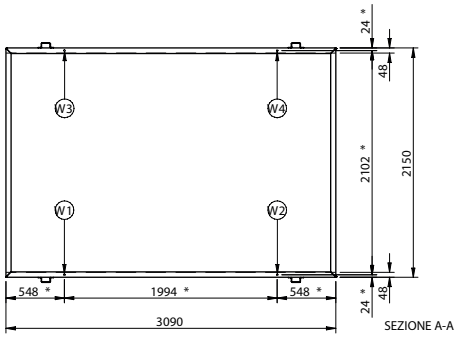
CPAN-iY Size 3

DAA5O0003_00
DATA/DATE 19/09/2025

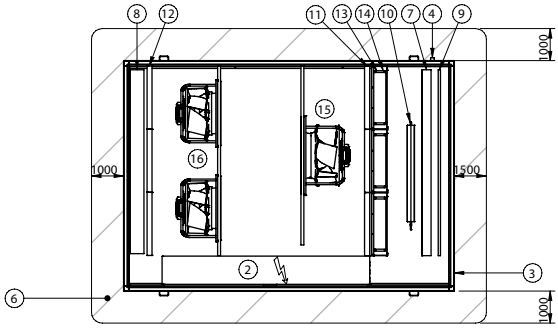








SEZIONE A-A



1. Compressor compartment
2. Electrical panel
3. Power input
4. Condensate drain
5. Liftin breackets (Removables)
6. Functional clearances
7. Treatment coil
8. Expulsion coil
9. Re-heating coil
10. Heating elements (optional)
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12. Exhaust G4 air filters (standard)
13. IFD electronics filters (standard)
14. F7/F9 filters (optional)
15. Electric fan supply
16. Exhaust electric fan
17. Access for inspection of coils / filters / heaters / supply fan
18. Access for inspection of coils / filters / heaters / exhaust fan

(R) Air return
(M) Air supply
(ES) Air expulsion
(AE) Outdoor air
(*) Vibration mounts position

WEIGHT DISTRIBUTION

Size		SIZE 3
W1 Support point	Kg	366
W2 Support point	Kg	367
W3 Support point	Kg	263
W4 Support point	Kg	264
Operation weight	Kg	1260
Shipping weight	Kg	1300

CPAN-iY Size 4

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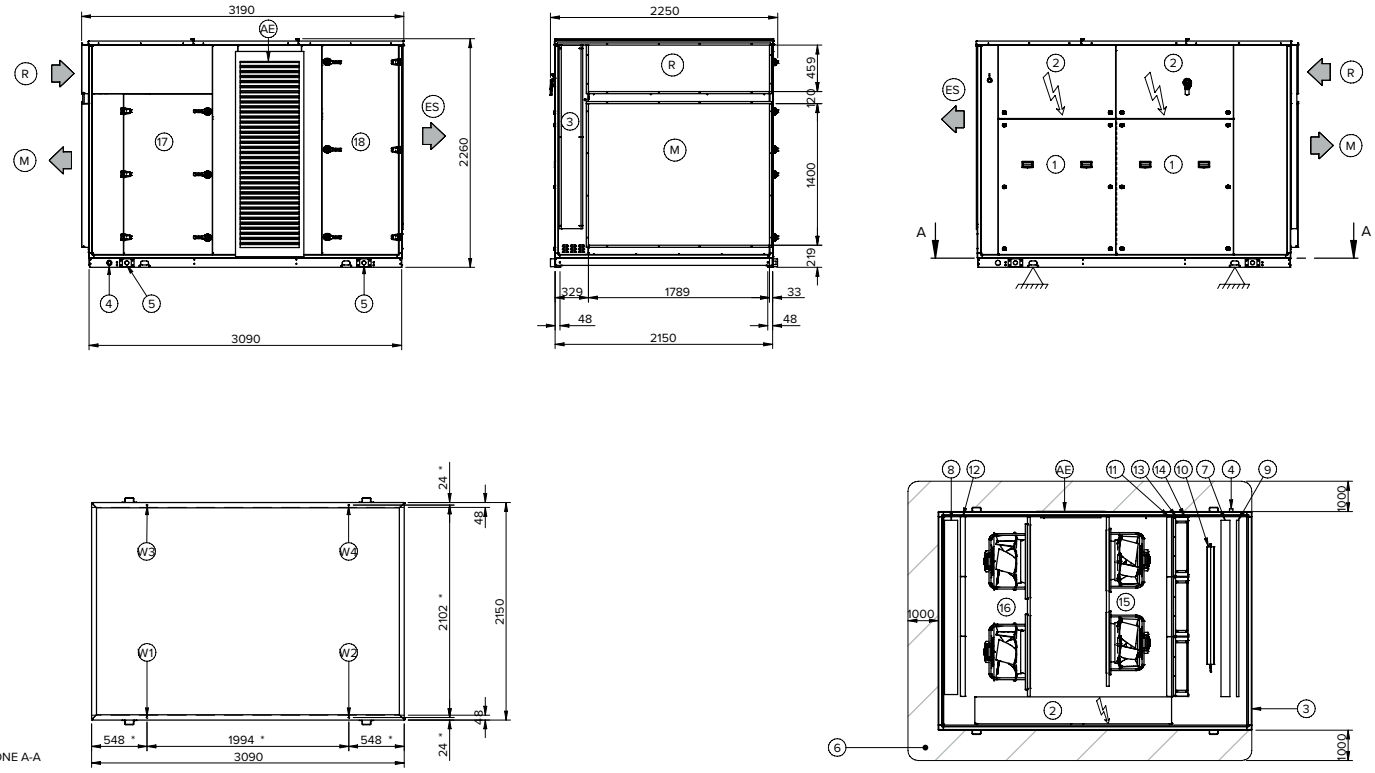
DATA/DATE 19/09/2025



1. Compressor compartment
2. Electrical panel
3. Power input
4. Condensate drain
5. Liftin breackets (Removables)
6. Functional clearances
7. Treatment coil
8. Expulsion coil
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18. Access for inspection of coils / filters / heaters / exhaust fan

(R) Air return
(M) Air supply
(ES) Air expulsion
(AE) Outdoor air
(*) Vibration mounts position

WEIGHT DISTRIBUTION

Size		SIZE 4
W1 Support point	Kg	451
W2 Support point	Kg	457
W3 Support point	Kg	343
W4 Support point	Kg	348
Operation weight	Kg	1600
Shipping weight	Kg	1640

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