

RENEWAL AIR

Guide 2026
Products and Systems

Contents

CLIVET

IMPORTANCE OF VENTILATION

HOME PRODUCTS FOR AIR RENEWAL

VRF PRODUCTS FOR AIR RENEWAL

APPLIED PRODUCTS FOR AIR RENEWAL

This document is printed every year and presents all Clivet's products with the aim of providing a basis for decisions and evaluations.

More detailed and systematically updated information is available in the "PRODUCTS" section of www.clivet.com and on the Clivet Apps, which can be downloaded for free from the App Store and Google Play

Clivet

53.500 m²

of plants between Feltre (Belluno) and Verona (AHU production)

8

Branches: Great Britain, Germany, India, Russia, UAE, China, Balkans and France

1000+

employees in Italy and abroad

2023

The first sustainability report

Sales

100+

countries we export to

700+

Professionals worldwide

- Sales network
- Distributors and wholesalers
- Installers
- Service Centres

Midea

2016

Strategic alliance with Midea Group

2024

Midea Group
53,12 BN € of Midea Turnover
277 Fortune Global 500

MBT Climate

2025

MBT Climate, the European umbrella organisation of Midea Building Technologies (MBT), is born



Everything we do, we do
because we believe that a
comfortable world
is a free world.

We create spaces where people can truly
feel free
at home, at work, everywhere.

Our HVAC solutions deliver seamless
comfort, so natural it disappears. You're left
free to focus, create, and simply be.

Because when you're comfortable you're
free.
And that's everything.



Our vision

Comfort for the planet
and people.



Our mission

Blending natural comfort
into life through innovation.

How do our solutions create natural comfort?

They respect the environment, being designed for purity and minimal impact.

They fit everywhere, integrating easily into any context.

They are simple by nature, combining intuitive comfort and maximum ease of use.

They are designed for maximum efficiency, optimising performance and reducing consumption.

The values that guide us

We're life-friendly above all else.

We listen, collaborate, and design thoughtful solutions that generate value and meet people's needs across our entire ecosystem.

We honour our roots and lead by example.

We view our origins and local values as unique strengths that we will always uphold.

Led by ambition, anchored in integrity.

A strong ambition for innovation and growth drives us without compromising our values.

Strive for efficiency to provide simplicity.

We believe that efficiency is key to making life easier and more viable.

Technologies for a complete proposal

Heating, cooling, air renewal and domestic hot water production

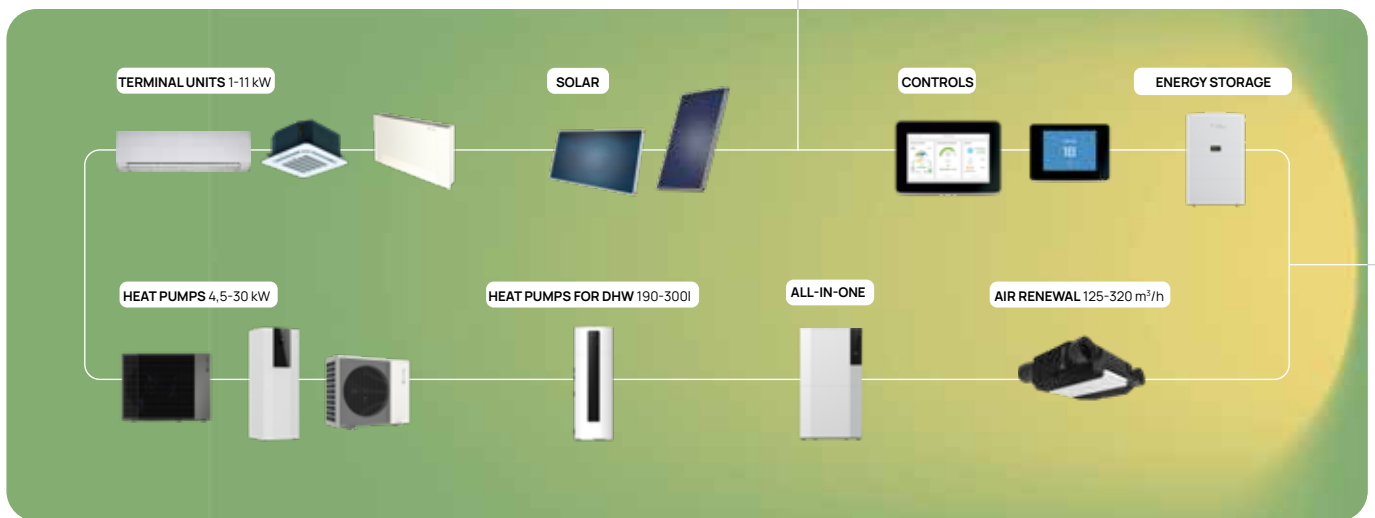
CLIVET

APPLIED

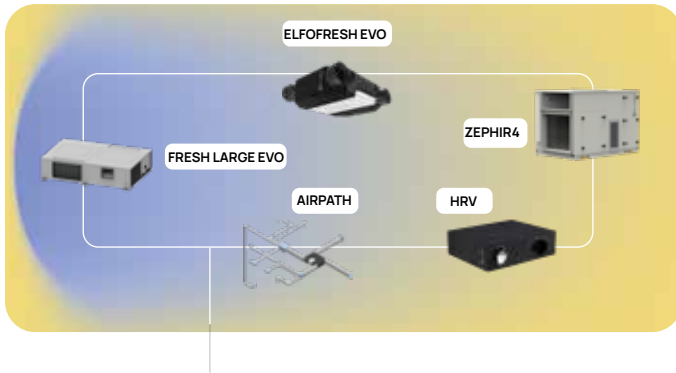


Hydronic

HOME



AIR RENEWAL



DIGITAL SOLUTION

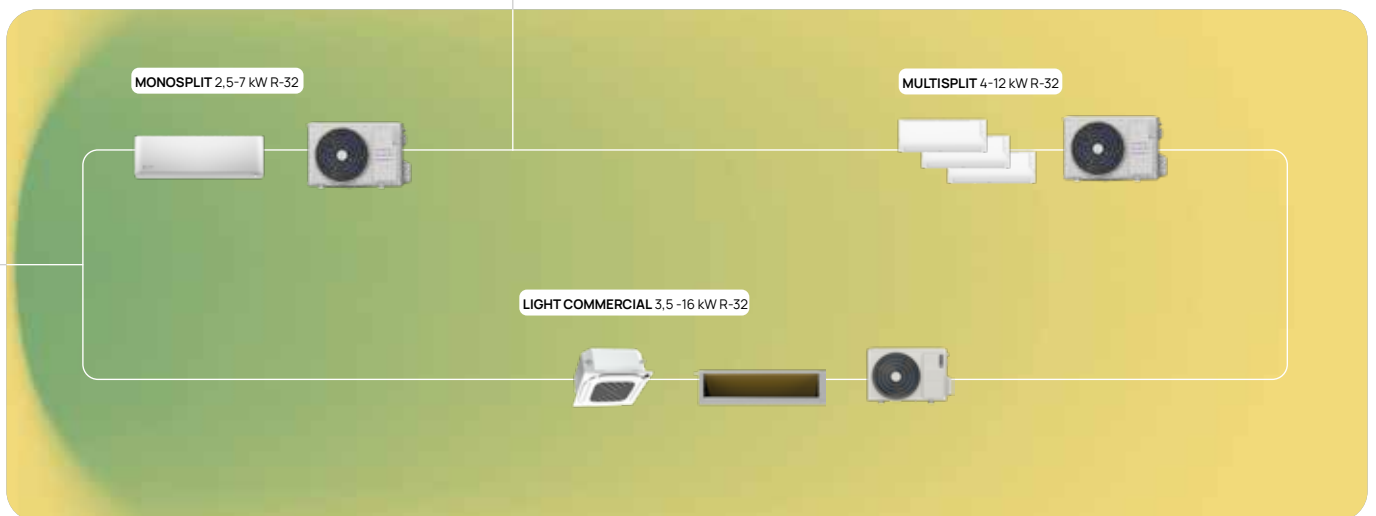


VRF



Direct expansion

SPLIT



Available only in some countries: please check with our sales team if Clivet direct expansion VRF and SPLIT systems are available in your country.

1.4 Certifications



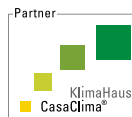
They optimise the solution based on the needs of the various applications and integrate it in specialised products and in complete dedicated systems:



With the aim of providing Customer satisfaction, Clivet S.p.A. has supplemented and certified its Quality, Environment and Safety Management Systems, in accordance with the ISO 9001, ISO 14001 and ISO 45001 International Standards.



Clivet is committed in promoting the green building principles and has become a member of GBC Italia. This organization collaborates with GBC Italia,, the U.S. nonprofit organization that promotes worldwide the LEED® system of independent certification.



In 2015, Clivet became a partner of CasaClima, as a result, Clivet is now part of a network of companies renowned for their technical expertise and constant focus on sustainable home management. Where applicable.

1.4 Certifications



KEYMARK is a mark recognized in many European countries for the provision of incentives for the installation of heat pumps for room heating and the production of domestic hot water.

The countries that recognize the mark and the Certified Products are available on

<https://keymark.eu/en/products/heatpumps/heat-pumps>

Where applicable.



Clivet participates in the EUROVENT "Liquid Chilling Packages and Hydronic Heat Pumps", "Rooftops", "Air Handling Units", "Fan Coil Units" and "VRF" Certification programmes. The products concerned feature in the EUROVENT guide to certified products and on the website www.eurovent-certification.com. The programmes cover up to the limits set by the purpose of each programme.

Where applicable.



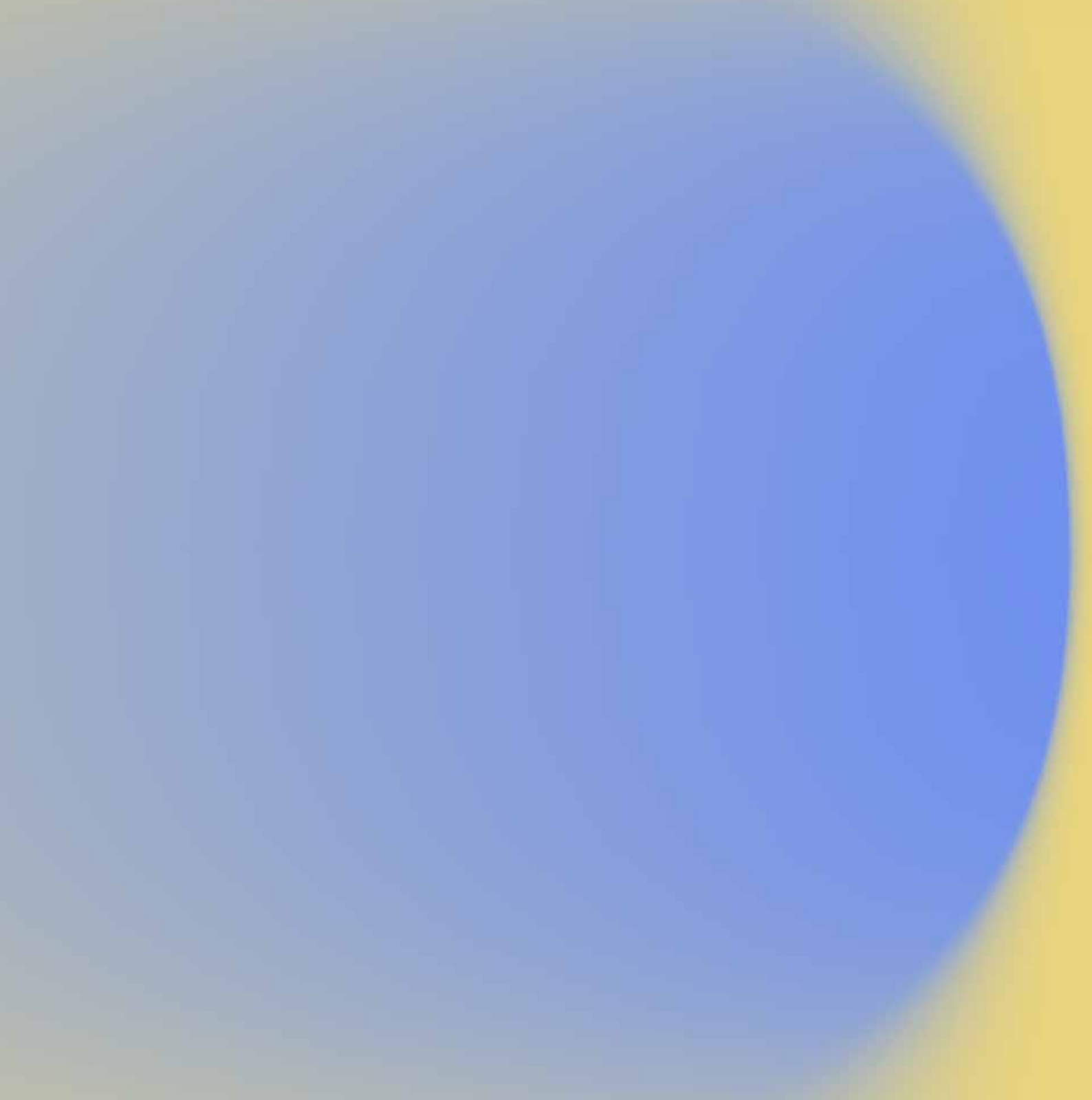
The wide range of Clivet products and complete systems comply with the requirements of the implementing measures for ErP (Energy related Products) Directives 2009/125/EC (Eco-design) and 2010/30/EU (Energy labelling), whose purpose is to reduce the energy consumption of products for heating, cooling, ventilation and hot water production, encouraging the user towards energy-efficient choices.

Directives 2009/125/EC and 2010/30/EU include the following Regulations: (EU) 206/2012, (EU) 626/2011; (EU) 811/2013, (EU) 812/2013, (EU) 813/2013, (EU) 814/2013; (EU) 1253/2014, (EU) 1254/2014; (EU) 2016/2281.



Clivet is involved in the BEYOND GREEN project to promote sustainability and the circular economy together with the other members of SAFE, the consortium system for the circular economy which works to raise public awareness regarding environmental issues, management and valorisation waste, education and training on environmental protection, research on environmental protection.





RENEWAL AIR

In recent years, indoor air quality has become a major issue in people's lives. This growing interest is partly linked to a greater awareness of the effects that indoor pollutants have on the health, well-being and productivity of occupants. But it also relates to a constant demand for higher levels of performance in systems that improve the indoor environment.

According to standard UNI-CTI 10339, the term "air quality" refers to the ability of air to meet certain purity requirements. It must not contain gases, vapour, micro-organisms, smoke or other particulate matter in concentrations likely to cause damage to health or to create discomfort.

The increasing attention to this issue is due to two concurrent factors that have grown in prominence over time and become of central importance today:

- ✓ People spend a large amount of their time in closed spaces (up to 90%)
- ✓ Indoor settings contain increasing amounts and concentrations of pollutants. A study by the Royal College of Pediatrics and Child Health and the Royal College of Physicians has found that the indoor environment is now 5 to 13 times more polluted than the outdoor environment. This is due to many factors, including office equipment such as printers and copiers, cleaning products, emissions from furniture and floors, and the CO₂ produced in crowded spaces.

Exposure to indoor pollutants can result in impaired hearing, sight and smell. If they exceed a certain level of concentration, they can trigger various sensory reactions, including headaches, nausea, fatigue, and irritation to the eyes, throat and airways, or produce biological effects in certain parts of the body, such as the skin, the nervous system and the respiratory system. In some cases, these conditions can become acute or chronic.

Air quality problems are increasingly linked to the phenomenon known as "Sick Building Syndrome", where many occupants report a lack of well-being without being able to pinpoint its cause.



Health impact

The danger of these particles is linked to their size, and to their ability to enter the body through the respiratory system and gradually permeate our internal organs:

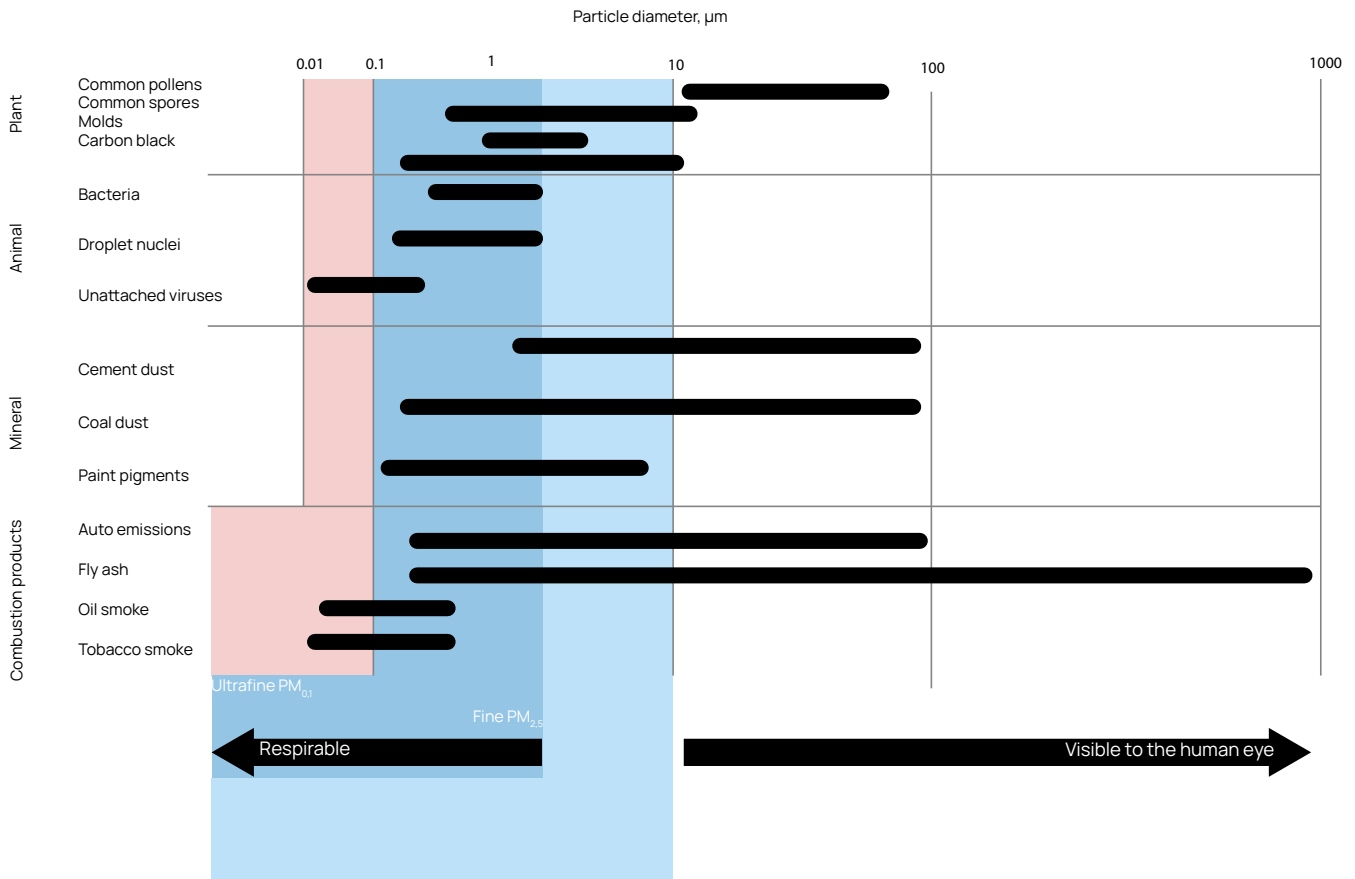
- ✓ PM₁₀: Particles below 10 µm in diameter can get into the respiratory tract and may lead to reduced lung function.
- ✓ PM_{2.5}: Particles below 2.5 µm in diameter can penetrate the airways and cause reduced lung capacity, skin conditions and problems with vision.
- ✓ PM₁: Particles below 1 µm in diameter are the most dangerous category. They are small enough to enter the bloodstream and cause cancer, cardiovascular problems and dementia.

Particulate matter type

The effects of particulate matter on health have been closely studied over the last twenty years, and a correlation has been discovered between the level of risk and the size of particle involved. For this reason, standard EN ISO 16890 classifies particulate matter in terms of the size of its constituent particles, and uses the term ePMx to describe the efficiency of an air cleaning device:

Class	Particle μm size
ISO ePM10	$0.3 \leq x \leq 10$
ISO ePM2,5	$0.3 \leq x \leq 2.5$
ISO ePM1	$0.3 \leq x \leq 1$

The following diagram illustrates this by showing the typical size of the most common particles from various sources.



There are three different strategies for eliminating and controlling pollutants in indoor environments:

- ✓ Containing sources of pollution by banning the use of potentially harmful materials
- ✓ Diluting contaminants by constantly exchanging the inside air with fresh outdoor air
- ✓ Removing pollutants by the use of indoor air filtration and/or air renewal systems

Strategies for diluting contaminants

Natural ventilation air renewal

In closed spaces with a heating system without any form of controlled mechanical ventilation, the only way to change the air is by opening the windows. However, this method has a number of disadvantages:

The incoming air is unfiltered

It can cause great discomfort to the occupants if there is a significant difference in temperature between the inside and outside environments

It is extremely inefficient from the energy point of view as the thermal power contained in the expelled air is not recovered.

For these reasons, it is important to have a system with controlled mechanical ventilation, which allows you to change the air while also recovering the heat from the outward flow, leading to considerable savings on energy costs.



CMV with passive recovery

CMV (Controlled Mechanical Ventilation) with passive recovery allows you to change the air and recover the energy used for heating or cooling that it contains, doing so with an average level of efficiency. The presence of a special ventilation device also enables filtration of both air flows.



CMV with active recovery

CMV with active thermodynamic recovery extracts the stale air and recovers the energy contained in it in a very efficient way, ensuring the air stays warm or cool even in spring and autumn. The inclusion of a special ventilation device also enables filtration of both air flows.



Filtering equipment

The growing focus on the issue of ventilation is also reflected in the increasing number of regulations in this area. These include standard EN 16798 of 2019, a replacement for EN 13779, which allows one to choose the degree of filtration in ventilation systems. The standard refers to the new classification in relation to particle size set out in EN 16890, and distinguishes outdoor and indoor environments in terms of their level of pollution:

The external environment (OutDoor Air) is classified as ODA1, ODA2 and ODA3, with growing annual mean concentrations of PM10 and PM2.5.

The indoor environment (Supplied Air) is classified as SUP1, SUP2, SUP3, SUP4, SUP5, with growing target annual mean concentrations of PM10 and PM2.5.

The following table shows the minimum degree of filtration expected from each application, in terms of the external air quality and the target conditions for the indoor space.

		Target conditions indoor air						
				SUP1	SUP2	SUP3	SUP4	SUP5
		PM _{2,5}	µg/m ³	≤ 2.5	≤ 5	≤ 7.5	≤ 10	≤ 15
		µg/m ³	PM ₁₀	≤ 5	≤ 10	≤ 15	≤ 20	≤ 30
Outdoor air conditions	ODA1	≤ 10	≤ 20	ePM ₁ 60%	ePM ₁ 50%	ePM _{2,5} 60%	ePM ₁₀ 60%	ePM ₁₀ 50%
	ODA2	≤ 15	≤ 30	ePM ₁ 80%	ePM ₁ 70%	ePM _{2,5} 70%	ePM ₁₀ 80%	ePM ₁₀ 60%
	ODA3	> 15	> 30	ePM ₁ 90%	ePM ₁ 80%	ePM _{2,5} 80%	ePM ₁₀ 90%	ePM ₁₀ 80%

N.B.: Concentrations of PMx particulate matter are reported in terms of an annual mean value.

For the convenience of the reader, the filtration levels of the various products in this catalogue are provided using both the terminology of the new standard (EN ISO 16890) and the preceding one (EN 779).

Clivet has always had a particular focus on IEQ (Indoor Environmental Quality) for its residential, commercial and industrial applications. The company has developed a range of innovative CMV (Controlled Mechanical Ventilation) systems over the years, particularly designed for rapid installation. These are highly efficient stand-alone systems, which use different recovery methods (active or passive), as well as different air cleaning systems to control the level of pollutants. The main types of these are:

Electrostatic filters - Electronic filters

The electrostatic filters in Clivet products can capture particles from 0.01 µm to 100 µm and ensure highly efficient levels of filtration, with ISO ePM1 90% (ISO EN 16890). The powerful microbicidal effect is achieved through a treatment process in several stages. In the first phase, the particles are positively charged by electrodes, creating a potential difference of 10'000 V in the air flow. Next, the particles are captured in a collection unit that can be easily washed clean. In addition to its highly efficient filtration, this type of filter has very low pressure drops, ensuring considerable savings on the cost of ventilation. A recent introduction to the market are electronic filters with iFD technology; these use the same concept of filtration and achieve similar efficiency, but offer extra advantages with regard to installation and maintenance.

The following models offer the option of configuring the electrostatic filters: ELFOFRESH EVO (iFD technology), FULLNESS (iFD technology), FRESH LARGE EVO (iFD technology), ZEPHIR3 e ZEPHIR4

UV-C Lamps with germicidal effect

UV-C lamps use ultraviolet radiation to purify the air from the development of bacteria, moulds, fungi and viruses. This technology has been familiar for many years and is already used to sanitize objects and surfaces, and to purify water. Recent Japanese(1) and Italian(2) studies have shown its efficacy with regard to Covid-19, indicating the dosage of UV-C rays required to inactivate the virus. The bactericidal and virucidal action is achieved with low pressure mercury lamps through the direct radiation of the air flow with a wavelength of 254 nm. Since it is installed inside the air handling unit, the system is safe for staff and ensures significantly lower running costs and protection against infectious diseases such as legionellosis and tuberculosis.

1. Rapid inactivation of SARS-CoV-2 with Deep-UV LED irradiation. Faculty of Medicine, University of Miyazaki, Japan.

2. UV-C irradiation is highly effective in inactivating and inhibiting SARS-CoV-2 replication. Italian National Institute for Astrophysics (INAF), Department of Biomedical and Clinical Sciences L. Sacco, University of Milano, Istituto Nazionale dei Tumori Milano Italia.

Photocatalytic oxidation

Photocatalytic oxidation technology imitates what happens in nature through photocatalysis, i.e. the combination of the sun's UV rays, moisture in the air and certain naturally occurring noble metals. Photocatalytic oxidation modules sanitise both the flow of air and the surfaces of ventilation ducts by decomposing pathogens such as germs, bacteria, viruses and odours. The devices consist of a special UV lamp and a catalyst structure consisting of a metal alloy with a titanium dioxide honeycomb matrix. The combination of these two components allows for the production of hydroxyl radicals and hydrogen peroxide which contribute to the decomposition of pathogens. The modules can be provided for sanitising the internal surfaces and flow of air in the Air Handling Units.

Unit range by air flow rate

		m ³ /h												
Serie		200	270	300	400	500	800	1000	1300	1500	2000	2090	2200	
HOME	ELFOFRESH EVO 		✓											
	FULLNESS 						✓							
VRF	HRV-3 	✓		✓	✓	✓	✓	✓		✓	✓			
	HRV-DX-3 					✓		✓						
	HRV-DXL-3 									✓				
	AQX VRF Standard 													
	AQX VRF Custom 									✓	✓	✓	✓	✓
APPLIED	FRESH LARGE EVO 					✓		✓			✓			
	ZEPHIR3 								✓				✓	
	ZEPHIR4 													
	AQX 								✓	✓	✓	✓	✓	
	CLA 								✓	✓	✓	✓	✓	

CLIVET

1.8 The Clivet range

2300	2890	3000	3100	4020	4600	5000	5580	7000	7200	7500	7750	9500	10000	10770	12000	12500	15000	20000	48000	100000
✓			✓																	
		✓				✓			✓			✓			✓	✓	✓			
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
						✓		✓				✓					✓			
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: The values given in the table refer to the nominal flow rates of each size.

HOME

Name	Image	Description
<p>FULLNESS</p>	<p><i>NEW</i></p> 	<p>Packaged, full-inverter, dual-duct air-to-air heat pump for heating, cooling, air renewal and domestic hot water</p>
<p>ELFOFRESH EVO</p>		<p>Indoor unit equipped with renewal air intake fan, vitiated air exhaust fan, filtering system, thermodynamic heat recovery and DC inverter Rotary compressor.</p>
<p>FRESH LARGE EVO (See the Applied section)</p>		<p>Indoor unit equipped with supply air fan, exhaust fan, filtering system, thermodynamic heat recovery, and DC inverter Rotary compressor.</p>
<p>AIRPATH</p>	<p><i>NEW</i></p> 	<p>Air distribution system for use in combination with Clivet ventilation products such as FULLNESS, ELFOFRESH EVO and FRESH LARGE EVO Size1</p>

Applications	Key features
<p>For rooms from 70 to 180 m²</p> <ul style="list-style-type: none"> ✓ Stand-alone residential ✓ Small business 	<ul style="list-style-type: none"> ✓ Management of temperature, humidity, air quality and domestic hot water in a single solution ✓ Eco-friendly refrigerant R454C ✓ DHW temperature up to 70°C ✓ Heating and DHW operation down to -20 °C outside air ✓ No outdoor unit and no room terminal for air conditioning ✓ Electronic filters with iFD technology (ISO 16890 ePM1 90%) (optional)
<p>For rooms from 70 to 180 m²</p> <ul style="list-style-type: none"> ✓ Stand-alone residential ✓ Small business ✓ Bars and restaurants ✓ School buildings ✓ Offices 	<ul style="list-style-type: none"> ✓ Thermodynamic recovery ✓ Full Inverter technology ✓ Flexible installation ✓ Refrigerant R32 ✓ Fulfills more than 85% of the building's thermal requirements on its own ✓ Air humidity control ✓ Free-cooling ✓ Electronic filters with iFD technology (ISO 16890 ePM1 90%) (optional)
<p>For rooms from 250 to 2000 m²</p> <ul style="list-style-type: none"> ✓ Small business ✓ School buildings ✓ Offices ✓ Gymnasiums ✓ Medical clinics 	<ul style="list-style-type: none"> ✓ Thermodynamic recovery ✓ Refrigerant R32 ✓ Electronic filters with iFD technology (ISO 16890 ePM1 90%) (optional) ✓ Double set of airflows ✓ Wide Operating Temperature Range ✓ Suitable for both residential and light commercial applications.
<p>For rooms from 90 to 600 m²</p> <ul style="list-style-type: none"> ✓ Stand-alone residential ✓ Small business ✓ Bars and restaurants ✓ School buildings ✓ Offices 	<ul style="list-style-type: none"> ✓ Distribution via both false ceiling and floor ✓ Antistatic, antibacterial ducts ✓ Wide range of air outlets and diffusion grilles

FULLNESS

Reversible air-to-air heat pump, monobloc unit with dual ducting for heating, cooling, air renewal and domestic hot water



One unit to meet all your needs

With a capacity exceeding 5 kW, FULLNESS is the ideal solution for both modern homes of 70 m² and high energy-efficient buildings, such as passive houses, of up to 180 m². Thanks to its integrated heat pump, it is able to meet the air-conditioning, ventilation and domestic hot water loads completely autonomously.

No outdoor unit

Unlike common heat pumps, FULLNESS packs all its technology into a single indoor unit that can be installed in a technical room or basement, or recessed into a wall. This allows outdoor spaces such as gardens, façades or balconies to be kept unobstructed.

Operating principle

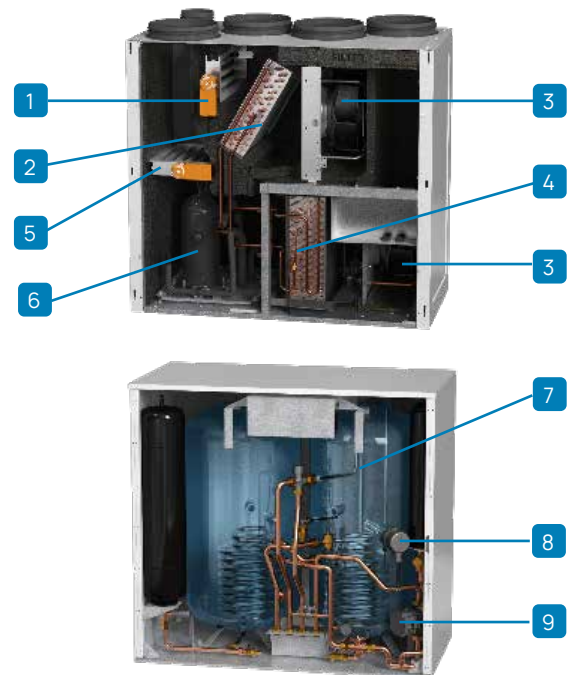
- 1 Extracted, treated and recirculated air flow rate
- 2 Extracted and exhausted air flow rate
- 3 Ventilation airflow
- 4 Source-side air flow rate



Innovative technology

- 1 Recirculation damper
- 2 Supply air handling coil
- 3 DC inverter fan with constant flow
- 4 Extraction heat exchanger
- 5 Outdoor air damper
- 6 Inverter compressor

- 7 DHW tank
- 8 DHW back-up heater
- 9 DHW pump



Efficient all year round

Winter: While the air is heated, the same energy is used to simultaneously and continuously produce domestic hot water, thereby improving the system's efficiency and reducing energy consumption.

Summer mode: 100% of the heat extracted from the rooms is recovered and used to produce domestic hot water at zero cost.

Mid-seasons: When the outside air is already at a suitable temperature, the unit operates in free-cooling mode, activating the compressor only if there is a demand for DHW supplementation.

Electronic filters with iFD technology (optional)

High performance electronic filters with iFD technology can be provided for optimal air purification:

- Degree of filtration equivalent to that of conventional E10 filters (ISO 16890 ePM1 90%)
- Low pressure drops
- Ease of maintenance and regeneration.

Configurations

VERSION:		FIFD	Electronic filter with iFD technology, offering 90% efficiency on PM1.
PDCATA	Standard Unit, Air-to-Air Heat Pump, and Air Renewal		
PDCATAR	Air-to-Air heat pump unit, renewal and heat exchanger for domestic hot water	CONTA5	Device for monitoring the energy released to the environment and the energy consumed.

Accessories



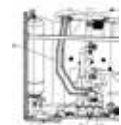
MAS200X

200-litre DHW tank module for all-in-one units



VIRX

Shut-off valves



KTCATX

Technical water connection pipe kit with stacked units

Technical data

Size		3.1			
Ventilation	Adjustable supply air flow rate	Minimum / Maximum	m ³ /h	400 - 800	
	Source-side air flow rate	Minimum / Maximum	m ³ /h	600 - 1200	
	Available pressure	Water content	Pa	180	
	Adjustable supply air flow rate	Minimum / Maximum	m ³ /h	0 - 320	
	Filters type	-	-	Folded filter	
	Filtration class	-	-	ePM10 50%	
Heating	Heating capacity	Ambient air 20 °C/50% UR	Nominal	kW	5.21
	COP	Outdoor air 7 °C/6 °C WB	Nominal	-	3,13
	Heating capacity	Ambient air 20 °C/50% UR	Nominal	kW	5.00
	COP	Outdoor air -5 °C/80% UR	Nominal	-	2,34
Cooling	Cooling capacity	Ambient air 26 °C/50% UR	Nominal	kW	5.00
	EER	Outdoor air 35 °C/50% UR	Nominal	-	2,46
DHW	Net tank capacity		l	200	
	Mixed Water at 40°C (V40)		l	231	
	Heating time		h:min	02:36	
Electrical Power for Meter Sizing (Heat Pump Only)			kW	3,08	
Electrical Power for Meter Sizing (Heat Pump + DHW Module only, with Boost Function)			kW	5,08	
Seasonal efficiency Medium climate	Heating Air 7 °C	Energy class	-	A	
		Annual energy consumption	kWh	2227	
		SCOP	-	2,90	
		ηsh (seasonal efficiency)	%	113	
	Cooling Air 35 °C	Energy class	-	B	
		Annual energy consumption	kWh	1144	
		SEER	-	3,79	
		ηsc (seasonal efficiency)	%	148,5	
	DHW	Energy class	-	B	
		Withdrawal profile	-	XL	
Power supply	Voltage/Frequency/Phases	V/Hz/n°	230/50/1		
Expansion Vessel Capacity		l	15		
Sound power	Silent / Maximum	dB(A)	50 / 55		
Sound pressure @1 m	Silent / Maximum	dB(A)	40 / 45		
Operating range					
Operating range (Indoor air)	Heating	Minimum / Maximum	°C	15 / 30	
	Cooling	Minimum / Maximum	°C	16 / 35	
Operating range (outdoor air)	Heating	Minimum / Maximum	°C	-20 / 35	
	Cooling	Minimum / Maximum	°C	16 / 45	

Data calculated in accordance with EN 14511:2022, with reference to an available pressure of 50 Pa

ELFOFRESH EVO

Mechanical ventilation unit with thermodynamic heat recovery



Thermodynamic recovery

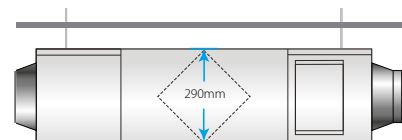
ELFOFRESH EVO uses the technology of active thermodynamic recovery to introduce air at a temperature above room temperature during heating and below room temperature during cooling. In this way, in addition to the ventilation load, it is able to meet up to 85% of the building's thermal requirements and reach 100% mid-season.

Inverter technology

Inverter technology allows the unit to operate even at reduced power and ensure high performance at any time of the year. The compartment is insulated for maximum silence.

Installation flexibility

The unit is easy to install in a false ceiling as it measures only 290 mm in height and weighs just 44 kg.



Free cooling

During summer, when it is warm outdoors, the thermodynamic circuit is not activated. This means that the air, once filtered, is introduced directly into the room, reducing the thermal load of the system.

Refrigerant R32

The refrigeration circuit uses environmentally friendly R32 refrigerant which has:

- Low GWP (Global Warming Potential)
- Improved performance in extreme conditions
- Smaller refrigerant charge
- High coefficient of heat exchange

Built-in Wi-Fi for connection to the dedicated APP

The MSmarthome APP can be used to manage these main functions:

- Switching on and off
- Changing summer/winter mode
- Setting "ventilation only" mode
- Enabling of silent mode
- Setting the desired temperature

No cross contamination

The air intake and air extraction sections are fully separated.

Electronic filtration with iFD technology (optional)

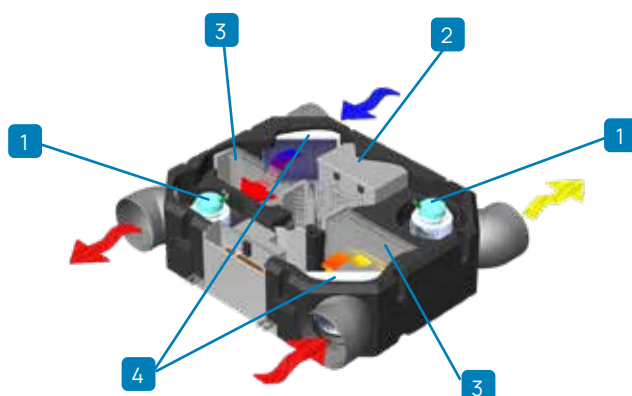
High performance electronic filters with iFD technology can be provided for optimal air purification:

- Degree of filtration equivalent to that of conventional E10 filters (ISO 16890 ePM1 90%)
- Extremely low pressure drops
- Ease of maintenance and regeneration



Simplifies the system and increases its efficiency

The components are all housed in a single unit. In addition, the energy generated by the active thermodynamic recuperator reduces the capacity and therefore the cost of the optional air conditioning system.



- 1 DC inverter fan with constant flow
- 2 Inverter DC rotary compressor
- 3 Air-gas finned exchanger
- 4 Air filter

Technical data

Size			Size 2					
	Settable air flow		m ³ /h	125	150	210	270	320
	Available pressure	Nominal / Maximum	Pa	50 / 120				
Ventilation	Fresh Air	-	-	100%				
	Filters type	-	-	Folded filter				
	Filtration class	-	-	PM10 50%				
Winter recovery	Heating capacity	Ambient Air 20 °C/50% UR	kW	1,42	1,55	1,86	2,05	2,49
	COP	Outdoor air 7 °C/6°C WB	-	3,09	3,69	4,13	4,93	4,61
	Heating capacity	Ambient Air 20 °C/50% UR	kW	1,97	2,1	2,21	2,37	2,45
	COP	Outdoor air -5 °C/80% UR	-	4,93	4,04	4,7	6,5	7,66
Summer recovery	Cooling capacity	Ambient Air 27 °C/50% UR	kW	1,57	1,64	1,73	1,92	2,23
	EER	Outdoor air 35 °C/40% UR	-	4,34	3,15	3,26	3,5	2,77
Electrical power for meter sizing			kW	1,08				
Power supply		Voltage/Frequency/Phases	V/Hz/n°	230/50/1				
Sound power			Minimum / Maximum	47 / 58				
Sound pressure @1 m			Minimum / Maximum	34 / 45				
Operating range								
Operating range (Indoor air)	Heating	Minimum / Maximum	°C	15 / 30				
	Cooling	Minimum / Maximum	°C	16 / 30				
Operating range (outdoor air)	Heating	Minimum / Maximum	°C	-20 / 28				
	Cooling	Minimum / Maximum	°C	16 / 45				

Data according to EN 14511: 2022 and referred to available pressure of 50 Pa.

Configurations

TYPE OF INSTALLATION:

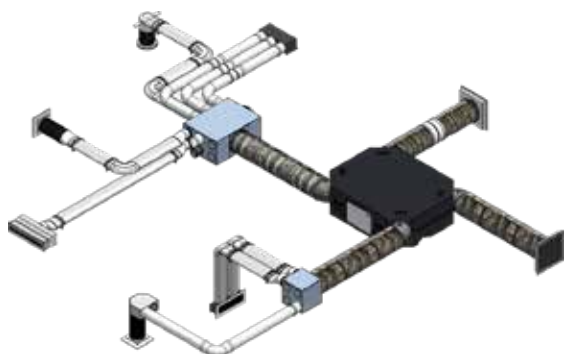
- false ceiling (standard)
- EI in-view installation

AIR FILTRATION:

- Standard filter (standard)
- FIFD Electronic filter with iFD technology (ISO 16890 ePM1 90%)

AIRPATH

Air distribution system
























Antistatic and antibacterial























At the heart of AIRPATH are antistatic and antibacterial ducts. This advanced technology prevents the build-up of dust and the growth of pathogens inside the ducts, ensuring a hygienic and clean air flow at all times.

Flexible combination options

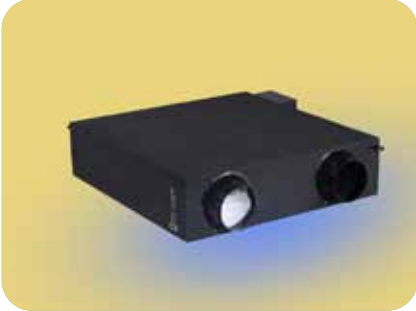

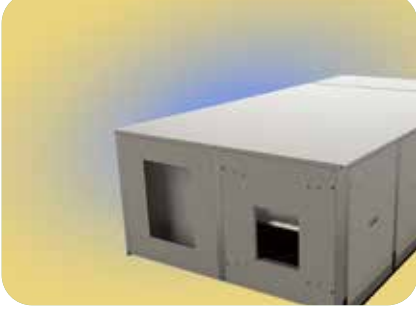
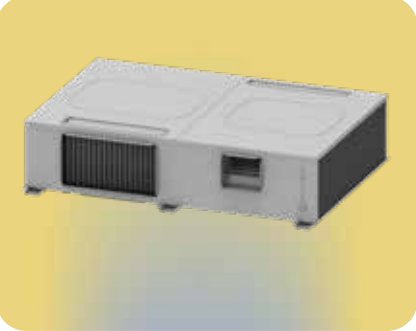
AIRPATH is the ideal solution for combining with other Clivet ventilation products. The wide range of grilles and ducts can be easily combined with FULLNESS, ELFOFRESH EVO and FRESH LARGE EVO Size 1.

Accessories

	DAIR50X	AIRJET 50/I supply diffuser - white frame and black inside
	DAIR80X	AIRJET 80/I supply diffuser - white frame and black inside
	GAIR50X	Intake grille + extractable filter AIRJET 50/A - white frame and black inside
	GAIR80X	Intake grille + extractable filter AIRJET 80/A - white frame and black inside
	PAIR50X	Suction/supply plenum with AIRJET 50 control damper - rear connection
	PAIR80X	Suction/supply plenum with AIRJET 80 control damper - rear connection
	GAVEX	White rectangular perforated supply/intake grille 350x130mm
	GIVEX	White rectangular die-cut supply/intake grille 350x130mm
	FREX	Filter for rectangular grilles 350x130mm (box of 5 pieces)
	TACRX	DN125 adjustable circular air terminal in ABS with rear deflector and mounting bracket included
	FT125X	Filter for DN125 air terminal (box of 5 pieces)
	VIQX	DN125 adjustable square air terminal in ABS with mounting bracket included
	TFT90X	DN90 round flexible tube in a 50m coil
	ITTX	Insulation for DN90 round hose in coils of 15m
	CBT90X	Connector to distribution box for DN90 round tube
	GIUTX	Connecting joint for DN90 round tube
	CT90X	Printed curve of 90-degree angle for DN90 round tube
	A90DTX	Flat single-hose 90° adapter for DN125 air terminal
	TACTX	Cap for DN90 round hose (5 pieces)
	ANFTX	DN90 O-Ring seal (box of 10 pieces)
	REGPX	DN90 constant automatic flow-rate controller, range 20-50 m ³ /h
	BD14CX	Distribution box of DN200 joint with 14 connections
	BD8CX	DN200 distribution box with 8 connections
	GIU150X	M/M joint for 150 mm pipe
	GIU200X	M/M coupling for 200 mm pipe
	GIU250X	M/M coupling for 250 mm pipe
	TFPNX	132x52mm hose in coils of 20m



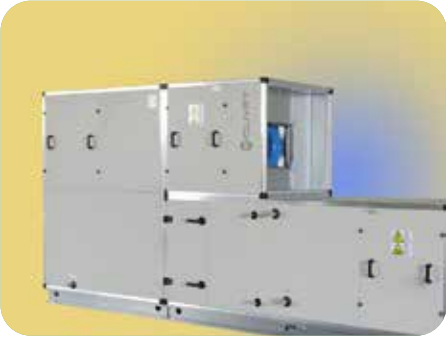
	ITPX	Insulation in 20 m coils for 132x52 mm flat hose
	COBPX	Connector to distribution box for flat tube
	GIUPX	Connection joint and seal for flat hose (box of 10 pieces)
	CVP90X	Vertical 90-degree curve for flat tube
	COP90X	Horizontal 90-degree curve for flat tube
	CTP180X	Joint for 180-degree flat tube rotation
	R2520X	DN250-DN200 Reducer
	R150X	DN200-DN150 Reducer
	RTPTX	Round/flat tube connecting joint
	ANFPX	Fixing ring for flat hose (box of 10 pieces)
	A90GP2X	90° flat dual-hose adapter for 350x130mm flat grille
	A90GP3X	Round hose adapter with 3 90° connections for 350x130 mm flat grille
	ADMPX	Flat single-hose straight adapter for DN125 air terminal
	A90DPX	DN90 round double-hose 90° adapter for DN125 air terminal + cap
	DY200X	DN200-DN200-DN200 Y-branch
	DY250X	DN250-DN200-DN200 Y-branch
	GIBEX	Brushed stainless steel supply/intake grille 350x130mm of aesthetic design with linear slots
	GABEX	Rectangular brushed stainless steel supply/intake grille 350x130mm of aesthetic design with circular slots
	GIDEX	White rectangular supply/intake grille 350x130mm of aesthetic design with linear slots
	GADEX	White rectangular supply/intake grille 350x130mm of aesthetic design with circular slots
	TFIS200X	Exhaust / return square wall grig with circular coupling DN200
	PA90GP2X	Adapter extension for 350x130 mm flat grilles

VRF

Name	Image	Description
HRV-3		<p>Ducted indoor unit equipped with renewal air intake fan, vitiated air exhaust fan, filtering system, passive heat recovery unit and bypass damper for free-cooling.</p>
NEW HRV-DX-3		<p>Ducted indoor unit equipped with renewal air intake fan, vitiated air exhaust fan, filtering system, passive heat recovery unit, VRF direct expansion coil and bypass damper for free-cooling.</p>
NEW HRV-DXL-3		<p>Ducted indoor unit equipped with renewal air intake fan, vitiated air exhaust fan, filtering system, passive heat recovery unit, VRF direct expansion coil and bypass damper for free-cooling.</p>
FRESH LARGE EVO (See the Applied section)		<p>Indoor unit equipped with supply air fan, exhaust fan, filtering system, thermodynamic heat recovery, and DC inverter Rotary compressor.</p>

Applications	Key features
<ul style="list-style-type: none"> ✓ Stand-alone residential and centralized ✓ Restaurants (small, medium-sized) ✓ Offices (small, medium-sized) ✓ Bars ✓ Banking agencies ✓ Medical / dental practices ✓ Schools ✓ Shops ✓ Hotels 	<ul style="list-style-type: none"> ✓ Wide range of air flow rates available ✓ Installation flexibility ✓ Light and compact unit ✓ CO₂ sensor included as standard ✓ Free-cooling ✓ F7 supply filters (optional)
<ul style="list-style-type: none"> ✓ Banking agencies with thermo-hygrometric control ✓ Executive offices ✓ Inpatient rooms and outpatient clinics ✓ Nursing homes ✓ Historical buildings (libraries, museums, etc.) ✓ Hotels 	<ul style="list-style-type: none"> ✓ Installation flexibility ✓ F9 (HRV-DX-3) and F7 (HRV-DXL-3) supply air filters ✓ Direct expansion coil (R410A/R32) ✓ Free-cooling ✓ Bioxigen purification system included as standard (HRV-DX-3) and optional (HRV-DXL-3)
<p>For rooms from 250 to 2000 m²</p> <ul style="list-style-type: none"> ✓ Small business ✓ School buildings ✓ Offices ✓ Gymnasiums ✓ Medical clinics 	<ul style="list-style-type: none"> ✓ Thermodynamic recovery ✓ Refrigerant R32 ✓ Electronic filters with iFD technology (ISO 16890 ePM1 90%) (optional) ✓ Double set of airflows ✓ Wide Operating Temperature Range ✓ Suitable for both residential and light commercial applications.

VRF

Name	Image	Description
ZEPHIR3 (See the Applied section)		Single full inverter unit for primary air with active thermodynamic circuit and 100% renewal with purified and air-conditioned outdoor air
ZEPHIR4 (See the Applied section)		
AQX VRF Standard		Air handling units in 7 predefined configurations combined with VRF systems
AQX VRF Custom		Fully configurable air handling units combined with VRF systems

Applications

Key features

- ✓ Schools
- ✓ Office blocks
- ✓ Commercial buildings
- ✓ Public buildings
- ✓ Nursing homes
- ✓ Gymnasiums
- ✓ Medical clinics

- ✓ Active Thermodynamic Recovery
- ✓ Inverter compressors
- ✓ Precise control of temperature and humidity conditions at air intake in both heating and cooling mode
- ✓ Additional available capacity for indoor air conditioning
- ✓ Standard electronic filters
- ✓ Modulating re-heating, free heat from condenser
- ✓ Free-cooling

Only for ZEPHIR4:

- ✓ Eco-friendly R32 refrigerant
- ✓ T2 / TB2 certified casing according to UNI EN 1886
- ✓ Operating range down to -20°C in heating mode

- ✓ Goods sorting warehouses
- ✓ Office blocks
- ✓ Commercial buildings
- ✓ Healthcare facilities
- ✓ Industry
- ✓ Process industry

- ✓ Complete handling of air at high flow rates
- ✓ Direct expansion coil
- ✓ F7 supply filters
- ✓ Rotary enthalpy recovery unit
- ✓ Mixing damper with integrated CO₂ sensor
- ✓ Free-cooling

- ✓ Goods sorting warehouses
- ✓ Office blocks
- ✓ Commercial buildings
- ✓ Healthcare facilities
- ✓ Industry
- ✓ Process industry

- ✓ Complete handling of air at high flow rates
- ✓ Direct expansion coil
- ✓ Maximum degree of customisation for fans, heat recovery units, filters, humidifiers, pre and post heating sections, internal sheet metal panels, sound attenuators, etc.

HRV-3

DC INVERTER



Enhanced Efficiency

The heat recovery ventilator (HRV) can greatly reduce energy losses and room temperature fluctuations that come with the ventilation process. The HRV's strong performance is a result of the advanced technology incorporated into its design. The heat exchanger core is made of specially treated paper which gives enhanced temperature and humidity control, while improving comfort levels too.

Installation flexibility and silent operation

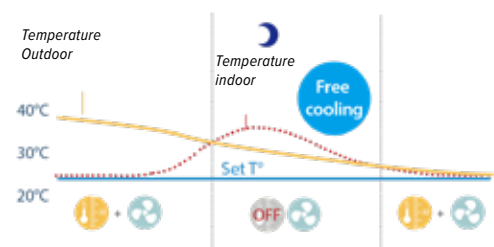
The minimum height of 272 mm and the weight of 51 kg allow the HRV to be installed even in confined spaces. Soundproofing ensures silent operation.

Eco-design

The unit complies with regulation (EU) 1253/2014 requirements for ventilation units.

Free cooling mode

During Summer, when outdoor temperature is lower than indoor temperature like at night, free cooling mode allows to cool down the rooms reducing the running costs.



Multiple operating modes

Operation with heat recovery:

The flows of incoming and outgoing air pass close to each other, allowing heat transfer between the two channels.

During summer, incoming air is cooled by the indoor air being exhausted and in winter, incoming air is warmed.

Bypass mode

In mild climates or seasons, where temperature and humidity differences between indoors and outdoors are small, the HRV can work as a conventional ventilation fan bypassing the heat exchanger core.

In standard bypass mode the supply and exhaust fans run at the same speed.

Auto mode:

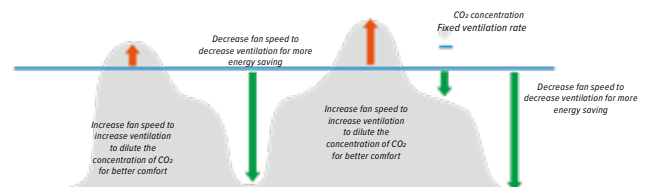
The controller chooses heat exchange mode or bypass mode according to the temperature difference between outdoors and indoors. Both fans are regulated automatically.

Operation with positive or negative pressure:

These modes allow to control room pressure balance. In positive pressure mode the supply fan is set to run faster than the exhaust fan, in negative pressure mode is the opposite.

Integrated CO₂ sensor

The integrated CO₂ probe activates a special function that allows the unit to be managed by modulating the ventilation speed according to the air quality detected in the environment, automatically providing the required exchange of outdoor air according to actual needs.



High degree of filtration

In addition to the G4 filter standard supplied in the unit, an F7 filter can also be installed on the supply line to maximise the ambient air quality.

Smart input/output contacts

Practical connectors are available as standard on the electronic boards to manage the following: INPUT:

INPUT: remote on/off and forcing negative pressure operation

OUTPUT: alarm and preheating activation.

Flexible control

In addition to the independent control by its own remote controller, the unit can be managed also at a system level along with other indoor units via third generation centralized controller.

Accessories

WDC3-86S2	Wired controller	HRV500(B)-GLW(F7)	F7 filter (size D500)*
WDC3-120T	Wired controller with weekly schedule	HRV800(B)-GLW(F7)	F7 filter (size D800)*
HRV200(B)-GLW(F7)	F7 filter (size D200)*	HRV1000(B)-GLW(F7)	F7 filter (size D1000)*
HRV300(B)-GLW(F7)	F7 filter (size D300)*	HRV1500(B)-GLW(F7)	F7 filter (size D1500)*
HRV400(B)-GLW(F7)	F7 filter (size D400)*	HRV2000(B)-GLW(F7)	F7 filter (size D2000)*

*2x F7 filters are necessary for sizes D200-D300, 4x F7 filters are necessary for sizes D400-D2000

Technical data

Size		D200	D300	D400	D500	D800	D1000	D1500	D2000
Nominal air flow	m ³ /h	200	300	400	500	800	1000	1500	2000
External static pressure	Pa	100	90	100	90	140	160	180	200
Power input	W	70	100	110	150	320	380	680	950
Current	A	0,64	0,84	0,97	1,2	2,4	2,9	3,8	5,7
Temperature exchange efficiency ⁽¹⁾	%	79,5	75,5	77,7	80,6	78,7	82,8	75,5	77,2
Enthalpy exchange efficiency ⁽¹⁾	%	75,0	72,1	73,5	74,0	72,3	76	69,4	74,7
Dimensions (Width x Height x Depth)	mm	1195x272x784	1195x272x898	1276x272x1189	1311x390x1090	1311x390x1270	1311x390x1510	1740x615x1344	1811x685x1545
Fresh Air Diameter	mm	Ø144	Ø144	Ø198	Ø244	Ø244	Ø244	346x326	346x326
Weight	kg	51	57	72	62	77	85	168	195
Sound pressure level ⁽²⁾	dB(A)	33/29.5/25.5	36.5/33.5/30	36.5/32/28	36/30.5/24.5	42/39/34	44/39/33.5	51.5/46.5/41.5	53/48.5/42.5
Sound power level ^{(2) (3)}	dB	45	48	48	50	55	54	69	70
Operating temperature range ⁽⁴⁾	°C	-7 ~ 43	-7 ~ 43	-7 ~ 43	-7 ~ 43	-7 ~ 43	-7 ~ 43	-7 ~ 43	-7 ~ 43
Power supply		220-240/1~/50							

For HRV-2B-Mi D200~D2000 3 fan speeds are available (Hi, Med, Low). The parameters in the table are measured at high fan speed and with standard G4 filter, please refer to the technical manual for data at other conditions.

- (1) Sizes D200: indoor air temperature 20°C DB/12°C WB; fresh air temperature 7°C DB. Sizes D300-2000: Indoor air temperature 25°C DB/14°C WB; Fresh air temperature 5°C DB.
- (2) Sound levels are measured 1.5 m below the center of the unit in an anechoic room.
- (3) Data refer to the 3 fan speeds, in descending order.
- (4) DB temperatures with 80% RH or less.

HRV-DX-3

DC INVERTER

NEW



Enhanced Efficiency

Heat recovery ventilator with coil DX HRV-DX-3 combines technological advantages of enthalpic energy exchange between exhaust and supply air through a special core realized with pre-treated paper and of DX coil connected to VRF system to which is connected. Thus, the unit can both heat or cool and ventilate the rooms, improving both comfort and energy saving.

Installation flexibility

Due to a minimum height of 270 mm, the unit can be installed in limited false ceilings. As components are cabled and included in the unit, installation is simple as for other VRF indoor units since it is sufficient to perform electric and refrigerant connections with the system.

The units are compatible with both R410 and R32 systems.

High degree of filtration and air quality

The healthiness of the air and the minimum fouling of the exchanger are guaranteed by filters G3 (ISO 16890 Coarse 50%) and F9 (ISO 16890 ePM2.5 95%) on the supply section and G3 (ISO 16890 Coarse 50%) on the exhaust section, in order to increase the air quality supplied to the environment. For maximum air quality, the Bioxigen® purification system is included, which allows, through a controlled bipolar ionization process, multiple benefits such as an antibacterial effect and the removal of odors, pollutants, mold and pollen.

Bypass for free cooling

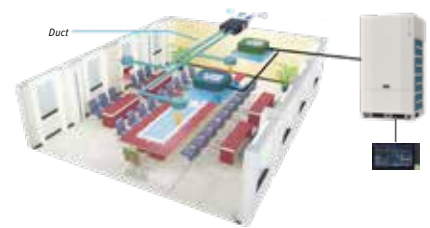
During summer, when external temperatures are lower than internal, air is diverted, excluding the recovery, directly to the ambient, reducing the requested load of the installation and enhancing energy efficiency.

3 fan speeds

The unit is equipped with DC fan with 3 speeds available optimizing the air flow rate according to the requests.

Control included and flexible control

Wired controller to manage the unit is supplied with the unit. Moreover, the unit is totally compatible with VRF control systems via centralized controls or BMS together with other indoor units of the system.



Accessories

WDC3-86S	Wired controller (already supplied with standard version)
WDC3-120T	Wired controller with weekly schedule
BIOX-DX	Bioxigen purification system® (already supplied with standard version)
PRE-DX-500	Electric pre-heater (size D500)

PRE-DX-1000	Electric pre-heater (size D1000)
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Technical data

Size		HRV-DX-3-XY	D500	D1000
Cooling ⁽¹⁾	Capacity	kW	3,0	5,8
	Power input	W	150	390
	Temperature exchange efficiency	%	76,0	76,0
	Enthalpy exchange efficiency	%	63,0	60,0
Heating ⁽²⁾	Capacity	kW	2,5	5,2
	Power input	W	150	390
	Temperature exchange efficiency	%	76,0	76,0
Pipe connections	Enthalpy exchange efficiency	%	67,0	62,0
	Liquid	mm	Ø 6,35	Ø 6,35
	Gas	mm	Ø 12,7	Ø 12,7
Nominal air flow		m ³ /h	500	1000
External static pressure		Pa	92	115
Sound pressure level ⁽³⁾		dB(A)	39	43
Dimensions (Width x Height x Depth) ⁽⁴⁾		mm	1764x250x995	2064x388x1330
Weight		kg	90	110
Fresh Air Diameter		mm	Ø 200	Ø 250
Operating temperature range ⁽⁵⁾		°C	-15 - 40	-15 - 40
Power supply		V/Ph/Hz	220-240/1~/50	

(1) Capacities calculated with inlet coil air 28,5°C DB, 50% UR. Exchange efficiencies calculated with outdoor temperature 32°C DB 50%UR; inlet air 26°C DB 50% UR.

(2) Capacities calculated with inlet coil air 28,5°C DB, 50% UR. Exchange efficiencies calculated with outdoor temperature 32°C DB 50%UR; inlet air 26°C DB 50% UR.

(3) Sound values are measured at a position 1m from service side of casing, with ducted supply, exhaust, return and fresh air, at nominal conditions.

(4) Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments

(5) For ambient temperatures below -5°C, it is recommended to use a unit with pre-heating heater

HRV-DXL-3

DC INVERTER



Enhanced Efficiency

Heat recovery ventilator with coil DX HRV-DXL-3 combines technological advantages of enthalpic energy exchange between exhaust and supply air through a special core realized with pre-treated paper and of DX coil connected to VRF system to which is connected. Thus, the unit can both heat or cool and ventilate the rooms, improving both comfort and energy saving.

Even wider range

In addition to the 500 and 1000 m³/h units in the HRV-DX-3 range, the HRV-DXL-3 range can handle air flow of up to 3100 m³/h, thereby further expanding the range of air handling units that can be combined with Clivet VRF systems. These new units are also compatible with both R410A and R32 refrigerant systems.

High degree of filtration and air quality

The healthiness of the air and the minimum fouling of the exchanger are guaranteed by filters F7 (ISO 16890 ePM1 55%) on the supply section and M5 (ISO 16890 ePM10 55%) on the exhaust section, in order to increase the air quality supplied to the environment. For maximum air quality, the Bioxygen® purification system is available as an accessory, which allows, through a controlled bipolar ionization process, multiple benefits such as an antibacterial effect and the removal of odors, pollutants, mold and pollen.

Bypass for free cooling

During summer, when external temperatures are lower than internal, air is diverted, excluding the recovery, directly to the ambient, reducing the requested load of the installation and enhancing energy efficiency.

3 fan speeds

The unit is equipped with DC fan with 3 speeds available optimizing the air flow rate according to the requests.

Control included and flexible control

Wired controller to manage the unit is supplied with the unit. Moreover, the unit is totally compatible with VRF control systems via centralized controls or BMS together with other indoor units of the system.



Accessories

WDC3-86S	Wired controller (already supplied with standard version)	WDC3-120T	Wired controller with weekly schedule
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Configurations

Version	Clivet code	Bioxigen purification system®	Electric pre-heater pre-heating	Description
HRV-DXL-3-XY D1500	AAW3G60001	-	-	Standard unit
	AAW3G60002	•	-	Unit with Bioxygen purification system® included
	AAW3G60003	-	•	Unit with electric pre-heater included
	AAW3G60004	•	•	Unit with Bioxygen purification system® and electric pre-heater included
HRV-DXL-3-XY D2300	AAW3K60001	-	-	Standard unit
	AAW3K60002	•	-	Unit with Bioxygen purification system® included
	AAW3K60003	-	•	Unit with electric pre-heater included
	AAW3K60004	•	•	Unit with Bioxygen purification system® and electric pre-heater included
HRV-DXL-3-XY D3100	AAW3K70001	-	-	Standard unit
	AAW3K70002	•	-	Unit with Bioxygen purification system® included
	AAW3K70003	-	•	Unit with electric pre-heater included
	AAW3K70004	•	•	Unit with Bioxygen purification system® and electric pre-heater included

AQX VRF



Efficient and flexible

Direct expansion coil air handling units combine fresh air ventilation with the flexibility and air conditioning efficiency typical of Clivet VRF systems.

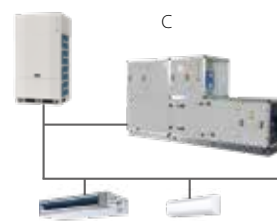
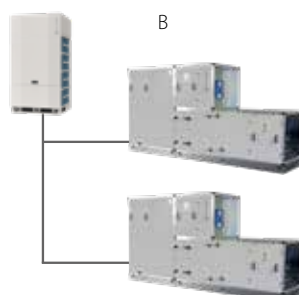
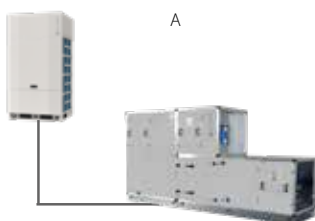
The unit is easy to install: thanks to the dedicated kit to manage air handling unit pre-cabled and included in AQX VRF, it is sufficient to connect it to VRF system from refrigerant and electrical point of view.

One solution, two possible configurations

Designed to control return air temperature, the solution is available in two versions:

- AQX VRF standard → 7 default configurations (3000, 5000, 7500, 10000, 12500, 15000, 20000 m³/h);
- AQX VRF custom → freely configurable to specific requirements (flow-rate range 350-61600 m³/h, capacity 1.8-270 kW), many accessories available.
- As much as 30% savings on ventilation.

AQX VRF air handling units are available in single configuration connected in a 1-to-1 combination to a dedicated VRF outdoor unit (A), or in multiple configuration with more AQX VRF units connected to the same VRF outdoor unit (B), or in mixed configuration with other VRF indoor units all managed by the same VRF outdoor unit (C).



If managed with other VRF indoor units, AQX VRF capacity must not exceed 30% of that of the outdoor unit

AQX VRF Standard

AQX VRF standard combinations with VRF outdoor units

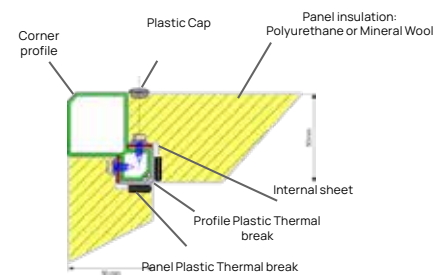
AQX VRF standard units are designed to be coupled with Clivet VRF outdoor units with the following combinations:

AQX VRF	3000	5000	7500	10000	12500	15000	20000
Outdoor unit	MSAN6-XMi 200T	MSAN6-XMi 260T MSAN8-X 252T CVT8-X 252T	MSAN8-X 400T CVT8-X 400T	MSAN8-X 500T CVT8-X 500T	MSAN8-X 615T CVT8-X 615T	CVT8-X 730T	CVT8-X 850T

Structure

Frame is composed of profiles having 50x50 mm sections for its light weight and extra corrosion resistance, ensuring the best thermal break. Profiles are double chamber type so that fixing screws are totally to have the maximum seal.

Closing panels are double skin type, with double sheet steel and insulation through polyurethane foam with gasket on all external perimeter for thermal break.



Filters

In order to provide quality of supply air, filter section is composed of synthetic G4 (ISO 16890 Coarse 60%) filters placed on exhaust and outdoor air sections and F7 (ISO 16890 ePM1 50%) rigid bag filter on supply air..

Fans

Supply and exhaust air fans are plug fan type, directly coupled to high efficiency EC brushless motor in order to ensure an external static pressure of 300 Pa.



Rotary enthalpic heat recovery

Energy recovery from indoor exhaust air is ensured by a rotary enthalpic heat recovery: in the first half of rotation, the sensible and latent heat is transferred to the heat-adsorbing materials of the wheel and gives that energy in the second part of rotation to the side that has lower energy.

The rotary wheel is composed of a special hygroscopic aluminum matrix designed with a special distribution to increase sensible and latent heat transfer area and efficiency.

Air circulation damper with integrated CO₂ probe

In addition to the bypass damper, AQX VRF air handling units are equipped as standard with a recirculation damper with an integrated CO₂ sensor. In this way, the fresh air flow is mixed with the return air from the environment at a variable percentage depending on the air quality measured in ppm of CO₂.

Besides a better energy efficiency, this system facilitates system start-up, accelerating steady operation of the plant

Integrated electrical box

Electrical panel, complete with VRF outdoor unit control interface, is included and pre-cabled inside the AQX VRF unit, strongly simplifying installing operations.

Technical data

Size		3000	5000	7500	10000	12500	15000	20000
Nominal air flow	m ³ /h	3000	5000	7500	10000	12500	15000	20000
Air flow range	m ³ /h	2400-3000	4000-5000	6000-7500	8000-10000	10000-12500	12000-15000	16000-20000
Max. external static pressure	Pa	300	300	300	300	300	300	300
Cooling ⁽¹⁾	DX coil capacity	kW	17,5	26	40	50	61,5	85
	Heat recovery capacity	kW	13	21,8	34,9	44,4	54,3	66,6
	Power input	kW	2,1	3,3	5,1	6,6	7,9	9,5
	Temperature exchange efficiency	%	73,3	73,5	77,9	73,9	73,4	74
Heating ⁽²⁾	DX coil capacity	kW	17,5	26	40	50	61,5	85
	Heat recovery capacity	kW	24,4	40,9	65,1	82,5	101,9	123,9
	Power input	kW	2,1	3,3	5,1	6,6	7,9	9,5
	Temperature exchange efficiency	%	73,3	73,5	77,9	73,9	73,4	74
Energy class	-	A+	A+	A+	A	A	A	A
Dimensions (Width x Height x Depth) ⁽³⁾	mm	2790x1580x1070	2840x1980x1320	3040x1930x1570	3140x2130x1820	3290x2380x1970	3140x2530x2170	3290x2680x2470
	kg	484	662	772	931	1131	1267	1567
	V/Ph/Hz				400/3~/50			

(1) Indoor temperature 27°C DB/50% R.H.; Outdoor temperature 35°C DB/50% R.H.

(2) Indoor temperature 20°C DB/50% R.H.; Outdoor temperature -5°C DB/80% R.H.

(3) Height including base

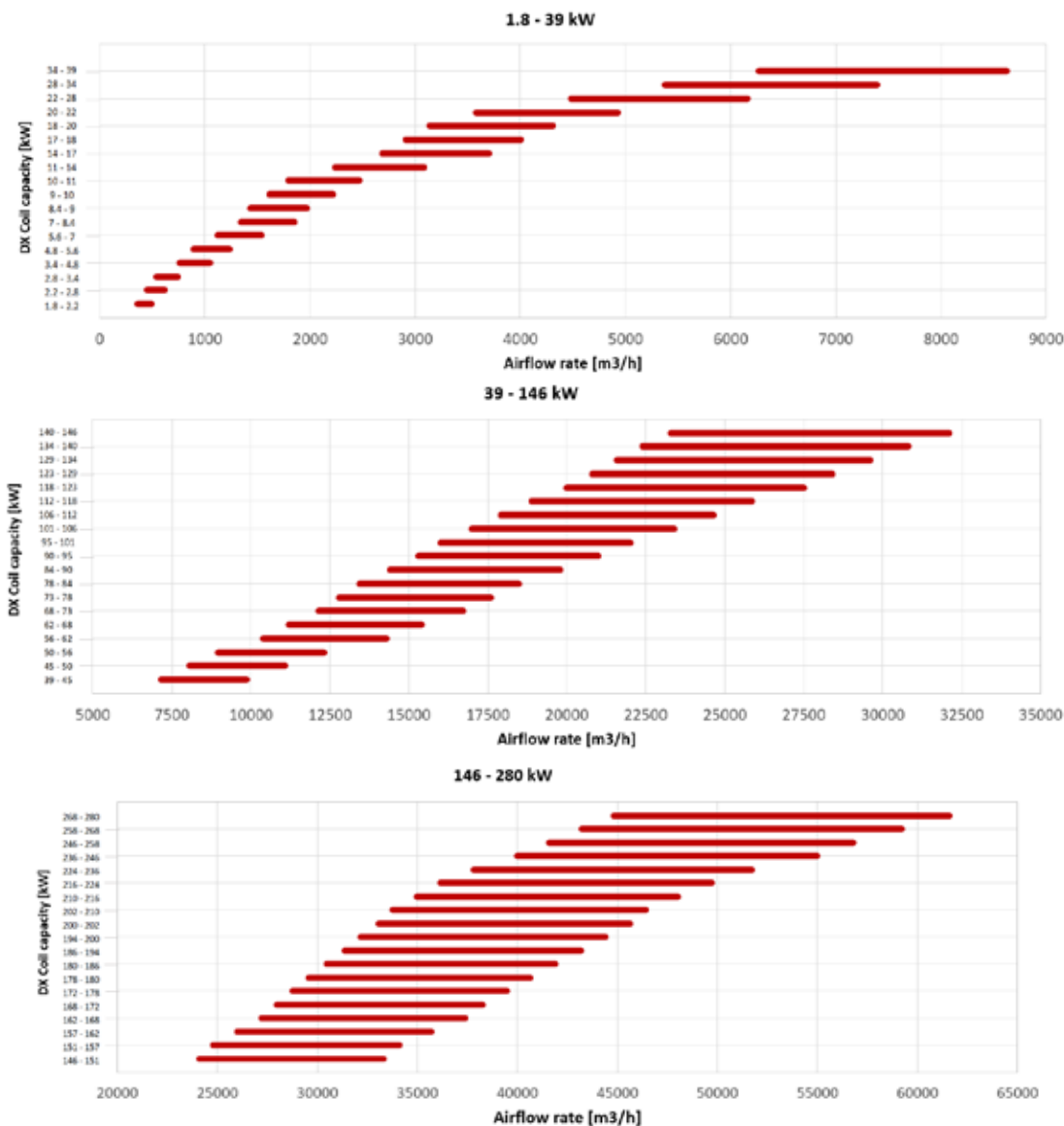
(4) Some technical specifications may vary if components are updated. Please refer to the AHU data sheet supplied with your order.

AQX VRF Custom

The most flexible air handling units that can be combined with VRF

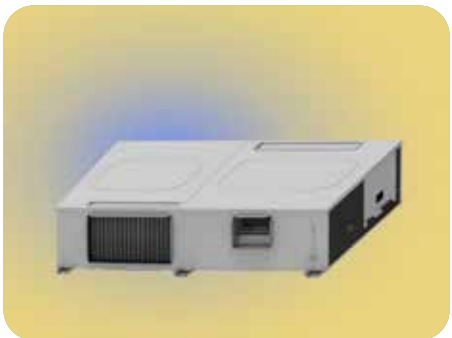




In addition to the standard AQX VRF version, multiple versions are available with direct expansion coil capacities ranging from 1.8 to 270 kW and air flow rates from 350 to 61600 m³/h, which can be combined with different accessories according to specific design requirements.

- Possible customizations can concern:
- Fans and motors
- Heat recovery section
- Filters
- Humidifiers
- Pre-heating, post-heating auxiliary sections
- Internal panels
- Silencers
- Additional accessories



Return air temperature control range. Refer to the installation manual for other types of control.

APPLIED

Name	Image	Description
FRESH LARGE EVO		<p>Indoor unit equipped with supply air fan, exhaust fan, filtering system, thermodynamic heat recovery, and DC inverter Rotary compressor.</p>
ZEPHIR3		<p>Single full inverter unit for primary air with active thermodynamic circuit and 100% renewal with purified and air-conditioned outdoor air</p>
ZEPHIR4		
AQX		<p>Suitable for both residential and light commercial applications.</p>
CLA		<p>Fully configurable air handling units for all markets that require characteristics different from those envisaged by Eurovent certification</p>

Applications

Key features

- ✓ Small business
- ✓ School buildings
- ✓ Offices
- ✓ Gymnasiums
- ✓ Medical clinics

- ✓ Thermodynamic recovery
- ✓ Refrigerant R32
- ✓ Electronic filters with iFD technology (ISO 16890 ePM1 90%) (optional)
- ✓ Double set of airflows
- ✓ Wide Operating Temperature Range
- ✓ Suitable for both residential and light commercial applications.

- ✓ Schools
- ✓ Office blocks
- ✓ Commercial buildings
- ✓ Public buildings
- ✓ Nursing homes
- ✓ Gymnasiums
- ✓ Medical clinics

- ✓ Active Thermodynamic Recovery
 - ✓ Inverter compressors
 - ✓ Precise control of temperature and humidity conditions at air intake in both heating and cooling mode
 - ✓ Additional available capacity for indoor air conditioning
 - ✓ Standard electronic filters
 - ✓ Modulating re-heating, free heat from condenser
 - ✓ Free-cooling
- Only for ZEPHIR4:
- ✓ Eco-friendly R32 refrigerant
 - ✓ T2 / TB2 certified casing according to UNI EN 1886
 - ✓ Operating range down to -20°C in heating mode

- ✓ Goods sorting warehouses
- ✓ Office blocks
- ✓ Commercial buildings
- ✓ Healthcare facilities
- ✓ Industry
- ✓ Process industry

- ✓ Complete handling of air at high flow rates
- ✓ Compatibility with water, steam and VRF systems
- ✓ Maximum degree of customization for fans, heat recovery units, filters, humidifiers, pre and post-heating sections, internal baffles, silencers, etc.

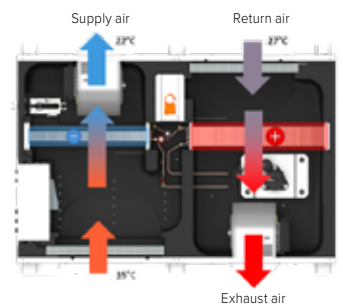
FRESH LARGE EVO



Active Thermodynamic Recovery

Fresh Large EVO uses active thermodynamic recovery technology to supply air with a temperature above room temperature during heating and below during cooling. In this way, in addition to the ventilation load, it is also able to meet part of the building's heating and cooling needs.

The air inlet and exhaust sections are separated to avoid contamination of the flows.



R32 inverter technology

Inverter technology allows the unit to operate even at reduced power and ensure high performance throughout the entire year.

The refrigeration circuit uses environmentally friendly R32 refrigerant which has:

- Low GWP (Global Warming Potential)
- Better performance in extreme conditions
- Low refrigerant charge
- High heat transfer coefficient

Wide Operating Temperature Range

Thanks to inverter technology, the operating range is particularly expanded. In heating mode, the unit is able to deliver neutral air to the environment even at -20°C of outside temperature and without the need for auxiliary thermal integrations.

Silent mode

To reduce noise, it is possible to set the Silent and Supersilent modes from an external signal or from the HMI.

Installation flexibility

The components are all housed in a single unit. In addition, the energy generated by the active thermodynamic recovery system reduces the capacity and therefore the cost of the optional air conditioning system.

The unit is optimised for easy floor or false ceiling installation. The lightweight EEP structure makes it easier to handle and ensures excellent acoustic and thermal insulation performance. Furthermore, with a height of only 300 mm, the first size also fits easily into residential applications.

Electronic filtration with IFD technology (Optional)

High performance electronic filters with iFD technology can be provided for optimal air purification:

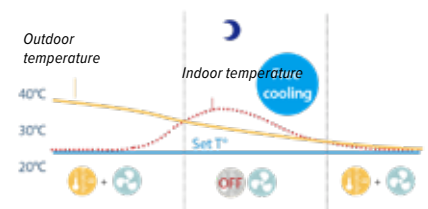
- Degree of filtration equivalent to that of conventional E10 filters (ISO 16890 ePM1 90%).

Extremely low pressure drop

Easy maintenance and regeneration

Free cooling

In the summer, when it is warm outdoors, the thermodynamic circuit is not activated. This means that the air, once filtered, is introduced directly into the room, reducing the thermal load of the system.



Second flow-rate setpoint

A second airflow value can be enabled via an external signal. Ideal for applications with independent rooms served by a single unit, such as classrooms with different occupancy levels.

Connectivity

For easy management in both residential and commercial environments, the unit is integrated into Clivet's main supervision systems: CONTRO4 NRG, CLIVET EYE, INTELLIAIR, platforms with Modbus protocol (standard supplied) and second-generation VRF centralized control systems, TC3-7 and IMMPRO2.

Dedicated control of conditions

The remote control room thermostat with room temperature and humidity probe connected to the unit allows you to:

- Desired temperature and humidity in the room.

Manual or automatic change of operation mode (Heating, cooling, ventilation).

- Manage diagnostics with a specific code for the type of error.

Versions and configurations

FC	Thermal free-cooling (Standard)	CRC	Remote control with user interface (Standard)
PCOSME	Constant airflow in supply and exhaust (Standard)	CMSC9	Serial communication module for Modbus supervisor (Standard)
PVARC	Variable supply and exhaust air flow with CO ₂ probe	IOTX	IoT industrial module for cloud based interoperability & services
PVARCV	Variable supply and exhaust air flow with remote CO ₂ +VOC probe	VRFGX	VRF Gateway Kit
PPAQC	Provision for CO ₂ probe signal	CUE1	External humidifier control with ON-OFF control
FM5S	M5 outdoor air filter (ISO 16890 ePM10 65%) (Standard)	CDP	Condensation drain pump, installed on the unit (Standard)
FM5R	M5 return air filter (ISO 16890 ePM10 65%) (Standard)	MEAX	Absorbed energy meter
F7B	High efficiency F7 air filter (ISO 16890 ePM1 60%)	ADOFX	Kit of antivibration mounts for ceiling installation
FELIFD	Electronic filter with iFD technology (ISO 16890 ePM1 90%)	APAVX	Kit of antivibration mounts for floor installation
FG3CX	Prefiltration for duct installation G3 (ISO 16890 Coarse 40%)		
II	Indoor installation (Standard)		

Technical data

Grandezze	CiSDN-YEF 1S	Size 1	Size 2	Size 3
Standard airflow				
Portata aria nominale	m ³ /h	500	1000	2000
Massima pressione statica mandata	Pa	250	425	300
Massima pressione statica ripresa	Pa	215	390	230
Cooling				
Potenza frigorifera	(1) kW	1,9	3,6	7,4
Potenza sensibile	(1) kW	1,9	3,6	7,2
EERc	(1) -	8,43	5,76	7,83
Potenza frigorifera (EN 14511:2022)	(2) kW	1,9	3,5	7,1
EER (EN 14511:2022)	(2) -	6,83	4,49	4,17
Potenza frigorifera massima	(3) kW	4,4	8,3	15,0
Heating				
Potenza termica	(1) kW	2,3	4,5	9,3
COPc	(1) -	6,94	6,60	7,12
Potenza termica (EN 14511:2022)	(2) kW	2,30	4,60	9,60
COP (EN 14511:2022)	(2) -	6,09	5,42	4,68
Potenza termica massima	(3) kW	3,9	7,8	15,6
Circuiti refrigeranti	Nr	1	1	1
N° compressori	Nr	1	1	1
Tipo compressori	(4) -	ROT	ROT	ROT
Tipo ventilatore mandata	(5) -	CFG/EC	CFG/EC	CFG/EC
Numero ventilatori mandata	Nr	1	1	1
Tipo ventilatore espulsione	(5) -	CFG/EC	CFG/EC	CFG/EC
Numero ventilatori espulsione	Nr	1	1	1
Alimentazione standard	V	230/1~/50	230/1~/50	230/1~/50
Livello di Potenza Sonora	(6) dB(A)	62	65	72
Portata aria minima	m ³ /h	300	700	1400
Portata aria massima	m ³ /h	720	1500	2500
Dimensioni (Lunghezza x Altezza x Profondità)	mm	1743x310x1220	1743x410x1220	1743x590x1220
Peso	kg	96	126	138
Alimentazione elettrica			230/1~/50	

La Direttiva Europea ErP (Energy Related Products), che comprende il regolamento delegato (UE) N. 2016/2281 della Commissione noto anche come Ecodesign Lot21, non prevede questa tipologia di Prodotto.

Prestazioni in raffreddamento: aria ambiente 27°C D.B./19°C W.B., aria entrante allo scambiatore esterno 35°C D.B./24°C W.B.

Prestazioni in riscaldamento: aria ambiente a 20°C D.B./12°C W.B., aria entrante allo scambiatore esterno 7°C D.B./6°C W.B.

(1) Temperatura aria di mandata 24°C in raffreddamento e 20°C in riscaldamento

(2) Dati calcolati in conformità alla norma EN 14511-2022, con riferimento ad una prevalenza

utile di 50 Pa

(3) Umidità specifica in mandata 11 g/kg in raffreddamento e Temperatura aria di mandata 30°C in riscaldamento

(4) ROT = Compressore rotativo

(5) CFG = Ventilatore Centrifugo; EC = Commutazione elettronica

(6) I valori di potenza sonora si riferiscono ad unità a carico nominale nelle condizioni nominali di prova. Le misure sono effettuate in accordo con la normativa UNI EN ISO 1914-1, alle condizioni nominali standard.

ZEPHIR3

DC INVERTER



The whole primary air system in a single stand-alone system

ZEPHIR3 contains all the components required to operate perfectly. These have already been optimised and tested by Clivet to ensure 100% efficient and reliable results. Built-in controls allow operation with constant supply temperature, at maximum available capacity, at high airflow. Central and local application.

Efficient and reliable

Reversible heat pump technology:

- Recovers energy from exhaust air, a heat source that is favourable and steady over time
- The active thermodynamic circuit produces capacity amplifying the energy contained in the exhaust air
- The capacity produced satisfies most of the whole system's demand
- Eliminate the waste typical of central systems, such as pumping, storage, thermal loss on the pipework
- As much as 30% savings on ventilation.

Self contained. Easy

It autonomously produces heating and cooling capacity to handle Primary Air:

- No connection to external heating and cooling stations
- 80% less works on site
- Industrial product optimised and tested to provide constantly reliable results.

Continuous humidity control

The quality of the air indoors depends largely on humidity: one of Primary Air system's main tasks is to control it. In summer mode, ZEPHIR3 uses a thermodynamic circuit to first attain the desired conditions of humidity, and then uses hot gas modulating post-heating to attain the desired temperature. This technology makes it possible to obtain the exact temperature conditions free of charge (no auxiliary heating system is necessary) and efficiently (it disposes of part of the heat attributed to the condenser). In winter mode, when required by the outdoor conditions and application of the system, ZEPHIR3 can humidify renewal air with the designated optional steam section with immersed electrodes or steam-powered section.



No cross contamination

A resistant steel wall keeps the two flows separate. All the technological components are located in individual compartments that can be easily accessed for routine maintenance.

Compact

Requires 50% less space compared with a primary air handling unit at modular sections. It has already all the settings and power components.

No waste filtration

High performance electronic filters with iFD technology come as standard to ensure excellent levels of air filtration:

- Degree of filtration equivalent to that of conventional E10 filters (ISO 16890 ePM1 90%)
- Extremely low pressure drops
- Easy maintenance and regeneration by washing.



ZEPHIR3+VRF unified control

The VRF gateway option makes it easy to manage the ZEPHIR3 units and also the VRF systems from the CCM270 and the IMMPRO2 centralized supervision control.

Versions and configurations

ENERGY RECOVERY:

RTA Active thermodynamic recovery (Standard)

OPERATION:

RCM Refrigeration circuit with capacity modulation (Standard)

FCE Enthalpy free-cooling (Standard)

VERSIONE

RECH Hydronic recovery device for extended operating range

EPWRC EXTRAPOWER-C (with additional chilled water heat exchanger)

EPWRH EXTRAPOWER-H (with additional hot water heat exchanger, without electronic filters)

CIRCUITO AERAUICO:

FG4EE G4 class air filters on outdoor and exhaust air (Standard)

FELIFD Electronic filters with ifd technology (ISO 16890 ePM1 90%) (Standard)

CPHGM Hot gas re-heating coil with capacity modulation (Standard)

PSTAF Clogged filter differential pressure switch on extract and delivery (Standard)

PCOSME Constant airflow in supply and exhaust (Standard)

INSTALLAZIONE

IO Outdoor installation (Standard)

II Indoor installation

Accessories

CCA Copper/aluminium exchanger on exhaust air with acrylic lining

CEA Copper/aluminium exchanger on outdoor air with acrylic lining

CPHGMA Post-heating by hot gas recovery to modulation capacity in acrylic Cu/Al execution

PVARC Variable air flow on supply and exhaust with CO₂ probe

PVARCV Variable air flow on supply and exhaust with CO₂+VOC probe

PVARP Variable air flow on supply and exhaust air with supply pressure probe

MHSEX Immersed electrodes steam humidifying module

MOB Serial port RS485 with Modbus protocol

LON TP/FT serial port with LonWorks protocol

BACIP BACnet-IP serial communication module

VRFG VRF gateway

VSXSA Modification of the supply humidity ratio setpoint "X_SA" by an external signal: enable/disable via external contact or setpoint changing via Modbus and BACnet-IP protocol

DESM Smoke detector

AMRX Rubber antivibration mounts

AMRUX Rubber antivibration mounts for unit and humidification module

RSSX Remote supply air sensor

PTCO Set up for shipping via container

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

Accessories whose code ends with "X" are supplied separately

Technical data

Grandezze	CPAN-XHE3	Size 1	Size 2
Standard airflow			
Portata aria nominale	m ³ /h	1300	2200
Massima pressione statica esterna (mandata)	Pa	630	630
Massima pressione statica esterna (estrazione)	Pa	630	630
Use with fixed-point supply control (CS)			
Cooling			
Potenza frigorifera totale	(1) kW	10,6	17,5
Potenza postriscaldamento	(1) kW	2,7	4,2
Potenza assorbita compressori	(1) kW	2,9	4,9
EERc	(1) -	4,57	4,41
Heating			
Potenza termica	(2) kW	5,9	10,0
Potenza assorbita compressori	(2) kW	0,7	1,4
COPc	(2) -	8,38	7,45
Operation at maximum available capacity (MC)			
Cooling			
Potenza frigorifera totale	(3) kW	10,6	17,5
Potenza assorbita compressori	(3) kW	3,3	5,5
EERc	(3) -	3,25	3,18
Heating			
Potenza termica	(4) kW	10,5	17,8
Potenza assorbita compressori	(4) kW	2,3	3,8
COPc	(4) -	4,61	4,72
Operation in high air flow mode (HA)			
Cooling			
Potenza frigorifera totale	(5) kW	9,2	18,2
Potenza assorbita compressori	(5) kW	1,6	3,4
EERc	(5) -	5,89	5,38
Heating			
Potenza termica	(6) kW	6,0	11,1
Potenza assorbita compressori	(6) kW	0,5	1,3
COPc	(6) -	11,1	8,46
Circuiti refrigeranti	Nr	1	1
N° compressori	Nr	1	1
Tipo compressori	(7) -	ROT	SCROLL
Tipo ventilatore mandata	(8) -	RAD/EC	RAD/EC
Numero ventilatori mandata	Nr	1	1
Tipo ventilatore espulsione	(8) -	RAD/EC	RAD/EC
Numero ventilatori espulsione	Nr	1	1
Alimentazione standard	V	400/3~/50	400/3~/50
Livello di Potenza Sonora	(9) dB(A)	77	77
Portata aria minima	m ³ /h	1000	1600
Portata aria massima	(10) m ³ /h	1900	3500
Dimensioni (Lunghezza x Altezza x Profondità)	mm	1895x1025x950	1895x1625x950
Peso	kg	320	450
Alimentazione elettrica		400/3~/50	

La Direttiva Europea ErP (Energy Related Products), che comprende il regolamento delegato (UE) N. 2016/2281 della Commissione noto anche come Ecodesign Lot21, non prevede questa tipologia di Prodotto.

D.B. = Bulbo secco; W.B. = Bulbo umido; EERc = Efficienza termodinamica del sistema in raffreddamento; COPc = Efficienza termodinamica del sistema in riscaldamento.

(1) Temperatura aria esterna: 35°C D.B./24°C W.B.; Temperatura aria estratta: 26°C D.B.; Umidità specifica aria di mandata: 11g/kg; Temperatura aria di mandata: 24°C D.B.

(2) Temperatura aria esterna: 7°C D.B./6.0°C W.B.; Temperatura aria estratta: 20°C D.B./12°C W.B.; Temperatura aria di mandata: 20°C D.B.

(3) Temperatura aria esterna: 35°C D.B./24°C W.B.; Temperatura aria estratta: 26°C D.B.; Umidità specifica aria di mandata: 11g/kg

(4) Temperatura aria esterna: 7°C D.B./6.0°C W.B.; Temperatura aria estratta: 20°C

D.B./12°C W.B.; Temperatura aria di mandata: 30°C D.B.

(5) Temperatura aria esterna: 35°C D.B./24°C W.B.; Temperatura aria estratta: 26°C D.B.; Temperatura aria di mandata: 22°C D.B.

(6) Temperatura aria esterna: 7°C D.B./6.0°C W.B.; Temperatura aria estratta: 20°C D.B./12°C W.B.; Temperatura aria di mandata: 16°C D.B.

(7) ROT = Compressore rotativo; SCROLL = Compressore scroll

(8) RAD = Ventilatore radiale; EC = Commutazione elettronica

(9) I valori di potenza sonora si riferiscono ad unità a pieno carico, nelle condizioni nominali di prova. Le misure sono effettuate in accordo con la normativa UNI EN ISO 9614-1, alle condizioni nominali standard.

(10) Nell'utilizzo con alta portata aria, l'unità lavora sempre con questa portata

ZEPHIR4

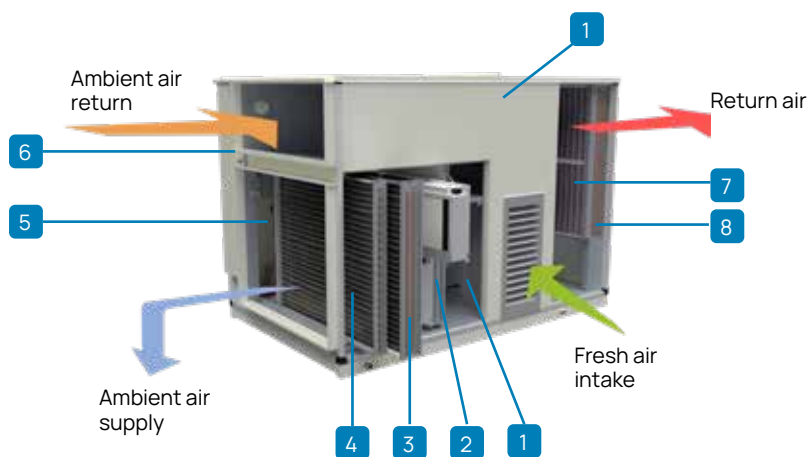


The entire fresh air system in a single stand-alone unit

ZEPHIR4 contains all the components required for operation. These have already been tested and optimised to ensure 100% efficient and reliable results.

The integrated reversible, full-inverter heat pump enables the following:

- Recover and amplify the energy contained in the ejected air, achieving efficiencies in excess of 100%
- Fully meet the ventilation load and most of the entire system's demand
- Eliminates the waste typical of centralised systems, such as pumping, storage, and losses on the network along which the fluids are distributed
- Ensure recovery without any contamination between the air flows, with low pressure drops, resulting in savings of up to 30% on ventilation costs



- | | |
|---|----------------------------------|
| 1 EC plug fan with constant flow | 5 Compressor compartment |
| 2 Standard Coarse 60% filtration + iFD electronics (ePM1 90%) | 6 Electric Control Box Case |
| 3 Handling coil | 7 Standard Coarse 60% filtration |
| 4 Standard post-heating coil | 8 Source coil |

Self contained. Easy

It autonomously produces heating and cooling capacity to treat primary air:

- No connection to external heating and cooling stations
- 80% less work required on site
- Requires 50% of the space of that of a modular air handling unit (and already has all the control and power components)

Electronic filtration with iFD technology

High performance electronic filters with iFD technology come as standard to ensure excellent levels of air filtration:

- Degree of filtration equivalent to that of conventional E10 filters (ISO 16890 ePM1 90%)
- Low pressure drops
- Ease of maintenance and regeneration



Certified high-performance structure

50-mm packaged structure with polyurethane insulation. TÜV NORD certified in accordance with UNI EN 1886, it ensures excellent insulation performance (T2), the absence of thermal bridges (TB2), and high mechanical robustness.

Humidity control

Summer mode: The thermodynamic circuit operates primarily to dehumidify the outside air to the desired setpoint. Once the correct humidity level has been reached, the hot-gas modulating post-heating system is activated to precisely regulate the supply temperature. This process takes place at zero cost, recovering heat that would otherwise be wasted.

Winter mode: The unit modulates its thermal output to heat the outside air to the set supply temperature, incorporating humidity control (where provided) via dedicated sections. Thanks to optimised control logic, the unit can operate in outdoor temperatures as low as -20°C without the need for any additional components.

'Maximum Capacity' (MC) mode

Unlike fixed-point control, the Maximum Capacity Available (MC) mode provides continuous feedback from the room (via the extracted air). This logic allows the unit to deliver its maximum performance when the deviation from the setpoint is significant, ensuring that comfort conditions are achieved in the shortest possible time.



UNIFIED CONTROL ZEPHIR4+VRF

The VRF gateway option makes it easy to manage ZEPHIR4 units and also the VRF systems from the CCM270 (V6 platform), TC3-7 (V8 platform) and IMMPRO2 control systems.

Versions and configurations

ENERGY RECOVERY:

RTA Active thermodynamic recovery (Standard)

OPERATION:

RCM Refrigeration circuit with capacity modulation (Standard)

FCE Enthalpy free-cooling (Standard)

INSTALLATION:

IO Outdoor installation

RPRC Compressors vane refrigerant leak detector (Standard)

AEREAULIC CIRCUIT

FG4EE G4 class air filters on outdoor and exhaust air (Standard)

FELIFD Electronic filters with ifd technology (ISO 16890 ePM1 90%) (Standard)

CPHGM Hot gas re-heating coil with capacity modulation (Standard)

PSTAF Clogged filter differential pressure switch on extract and delivery (Standard)

PCOSME Constant airflow in supply and exhaust (Standard)

CONNECTIVITY:

CMSC9 Serial communication module for Modbus supervisor (Standard)

Accessories

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

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

PVARC Variable air flow on supply and exhaust with CO₂ probe

PVARC2 Variable air flow on supply and exhaust with CO₂ probe

PVARCV Variable air flow on supply and exhaust with CO₂+VOC probe

PVARCV2 Variable air flow on supply and exhaust with double CO₂+VOC probe

PVARP Variable air flow on supply and exhaust air with supply pressure probe

PVMS Variable air flow on supply and exhaust by an external signal

PVARCX Variable air flow on supply and exhaust with remote CO₂ probe

MHSEX Immersed electrodes steam humidifying module

R5 Upward return

RSSX Remote supply air sensor

EHR Requested heating elements

PUE External humidifier management with 0-10V signal

CMSC11 Serial communication module for BACnet-IP supervisor

CMSC12 Serial communication module for BACnet-IP supervisor

DESM Smoke detector

NCRC Remote control with user interface: not required

MDMTX Management of ambient temperature probes

MDMTUX Management of ambient temperature and humidity probes

MDMADX Advanced monitoring and management ambient probes

IOTX IoT industrial module for cloud based interoperability & services

VRFV VRF gateway

CONTA2 Energy meter

CHMET Cooling and heating capacity meter

SIX Service interface (cable of 1,5 metres)

PREAEX External device management to pre-handle the renewal air

CEA Copper/aluminium exchanger on outdoor air with acrylic lining

CCA Copper/aluminium exchanger on exhaust air with acrylic lining

CPHGMA Hot gas re-heating Cu/Al coil with capacity modulation and acrylic lining

AMMX Spring antivibration mounts

AMMSX Anti-seismic anti-vibration kit

AMMBX Spring antivibration mounts for unit and humidifying module

AMMUX Anti-seismic spring antivibration mounts for unit and humidifying module

PTCO Set up for shipping via container

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

Accessories whose code ends with "X" are supplied separately

Technical data

Size	CPAN-iY	Size 1	Size 2	Size 3	Size 4
Standard airflow					
Nominal air flow	m ³ /h	5000	7000	10000	15000
Max external static pressure (supply)	Pa	720	740	830	740
Max external static pressure (extraction)	Pa	780	980	810	980
Use with fixed-point supply control (CS)					
Cooling					
Total cooling capacity	(1) kW	42,1	59,3	85,2	127,0
Re-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
EERc	(1) -	5,99	6,01	6,72	6,82
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
COPc	(3) -	11,00	9,83	9,05	9,92
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
Operation at maximum available capacity (MC)					
Cooling					
Total cooling capacity	(4) kW	43,1	60,7	86,1	129,0
Compressor power input	(4) kW	15,0	22,1	29,4	42,7
EERc	(4) -	2,87	2,75	2,93	3,01
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
COPc	(5) -	5,13	5,09	5,22	5,17
Operation at maximum comfort (XC)					
Cooling					
Total cooling capacity	(6) kW	42,1	59,3	85,2	127,0
Re-heating capacity	(6) kW	10,7	75,2	22,5	33,4
Compressor power input	(6) kW	7,3	10,4	13,3	19,6
EERc	(6) -	7,20	7,23	8,08	8,20
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
COPc	(7) -	9,44	9,09	8,56	9,30
Refrigeration circuits	Nr	2	2	2	2
No. of compressors	Nr	2	2	2	2
Type of compressors	(8) -	ROT	ROT	SCROLL	SCROLL
Type of supply fan	(9) -	RAD/EC	RAD/EC	RAD/EC	RAD/EC
Number of supply fans	Nr	1	1	1	2
Type of exhaust fan	(9) -	RAD/EC	RAD/EC	RAD/EC	RAD/EC
Number of exhaust fans	Nr	1	1	2	2
Standard power supply	V	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Sound power level	(10) dB(A)	80	82	85	88
Minimum air flow	m ³ /h	2300	5000	7000	10000
Maximum air flow	m ³ /h	6000	9000	13000	19000

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

DB = dry bulb; WB = wet bulb; EERc = Thermodynamic efficiency of the system in cooling; COPc = Thermodynamic efficiency of the system in heating

(1) Outdoor air temperature: 35°C D.B./ 24°C W.B; Exhaust air temperature: 26°C D.B. Supply air humidity ratio: 11g/kg; Supply air temperature: 24°C D.B.

(2) Data according to EN 14511-2022 and external static pressure 50Pa

(3) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 12°C W.B; Supply air temperature: 20°C D.B.

(4) Outdoor air temperature: 35°C D.B./ 24°C W.B; Exhaust air temperature: 26°C D.B. Supply air humidity ratio: 11g/kg

(5) Outdoor air temperature: 7°C D.B./6.0°C W.B.; Exhaust air temperature: 20°C D.B./12°C W.B; Supply air temperature: 30°C D.B.

(6) Outdoor air temperature: 35°C D.B./ 24°C W.B; Exhaust air temperature: 26°C D.B. Supply air temperature: 26°C D.B.

(7) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 13.8°C W.B; Supply air temperature: 22°C D.B.

(8) ROT = Rotary compressor; SCROLL = Scroll compressor

(9) RAD = Radial fan; EC = Electronically Commutated

(10) Sound pressure levels are referred to units operating at nominal load in nominal conditions. Measurements are carried out accordingly to UNI EN ISO 9614-1 at nominal standard

AQX VRF



Wide range for every eventuality

Clivet air handling units are available in 32 standard sizes capable of covering flow rates from 1500 to 100000 m³/h (with a coil crossing speed of 2.5 m/s) and are designed to meet any need in.

- Size: in addition to the standard sizes it is possible to set up any section with a 50 mm pitch in terms of both height and width.
- Structure: the frame is available in 50 or 60 mm versions and the insulation of the panelling can be in polyurethane or rock wool.
- Design: The internal components such as fans, filters, humidifiers, batteries, sound attenuators and dampers are available in various solutions and positions.

By being flexible in all these respects, the air handling units can meet all system requirements and perfectly respond to the disparate needs of the market.

Indoor or outdoor installation

All the air handling units are suitable for installation either indoors or outdoors. For installation outdoors, the units are protected against weathering damages through:

- A protective scratch-resistant plastic coating on the outer sheet metal of the panels
- Walkable aluminium roof
- Anti-fingerprint coating supplied as standard
- Technical compartment for the valves and regulating components, available in various depths and lengths

Selection Software

The Clivet CTAPRO selection software helps the customer to quickly ascertain his technical needs and perform an economic assessment of the costs of each air handling unit. It is a complete tool for configuring any type of product and meeting the strictest design requirements. The result is a complete economic offer that includes all the data and technical drawings, details of the components of the unit, the relative air handling and the fan performance curves.



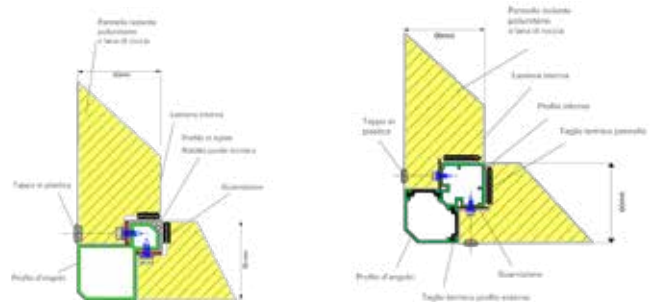
Structure

The load-bearing structure of the air handling units is available in 50x50 or 60x60mm versions and ensures maximum rigidity and lightness. The profiles, panels and corners can be combined perfectly and guarantee excellent sound insulation and air-tightness in all cases:

The 50x50 or 60x60 profiles have a double chamber to conceal the fixing screws and avoid thermal bridges.

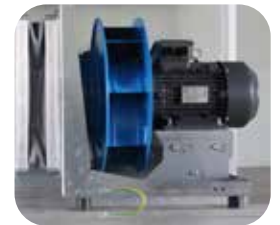
The three-way corners are made of fibreglass-reinforced nylon and with thermal cut.

The 50 or 60 mm sandwich with thermal cut, consist of a double sheet metal wall with polyurethane foam or mineral wool fibre insulation in between.



FAN section

The fan section plays a key role in the first stage of energy absorption. Fans are available with forward/backward curved blades, backward curved airfoil blades or plug fans. Available in different configurations, they can have belt and pulley transmission or can be directly coupled with motor (three-phase asynchronous, coupled with inverter or brushless EC).



Humidifying section

Clivet offers a wide range of humidification systems for its units to meet the specific needs of any customer. Available systems are both adiabatic or isothermal:

- Adiabatic humidification: it consists of an evaporator with honeycomb cellulose fibre pad to guarantee an efficiency of 60%, 70% and 80%. They can be equipped or without a circulation pump.
- Isothermal humidification: the steam is produced heating elements or immersed electrodes that heat up the surrounding water and produce saturated steam under pressure from 1 to 4 bar and a capacity of 500 kg/h.



Heat recovery section

In compliance with the laws in force and in response to the growing demand for energy-saving products, Clivet air handling units can be equipped with static heat recovery, rotary or glycol water coils:

- Static Recovery: cross-flow plate heat recovery unit without moving parts and therefore extremely safe and reliable.
- Rotary recovery: air-to-air heat recovery unit available in aluminium, hygroscopic matrix or adsorbent silicon and capable of exchanging sensitive and latent heat.
- Run around coils: recovery involving two heat exchangers, one for the renewal air and the other for the recirculation air. It ensures maximum cleanliness as the heat is transferred in a dedicated hydraulic circuit.



Filtering section

The filtering section is responsible for purification and quality of the air entering the building. Different types of filter are available, depending on the air quality and level of filtration required: cartridge, synthetic, zig-zag, rigid/soft bags, metallic, active absorber carbon and absolute. Electronic filters with a high degree of filtration and very low pressure drops are also available.

Side or front inspection doors simplify access and maintenance.



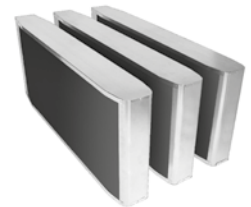
Heating and cooling section

The heating and cooling sections perform thermal treatment. There are various types of heat exchanger for heating and cooling: hot or chilled water, water at high temperature, steam and direct expansion. Standard coils are made with copper tubes and aluminium fins, but are also available in different materials, diameter, thickness and geometry. As an alternative to coils, the heating can also be provided by a gas burner section.



Sound attenuators section

The sound-absorbing section is designed to reduce sound pressure according to the design requirements. The septums are made of galvanized steel frames with mineral wool insulation and rock wool coating. They can be positioned in the return, exhaust or supply sections, and their dimensions are customizable according to the desired effect.



Air intake and extraction section

The airflow entrance and exit outside the AHU is realized by aluminium dampers with airfoil blades. The type of gasket used defines the air tightness of this section and the class of the dampers available: standard (class 2), TPE-V on blades (class 3), or TPE-V on blades and EPDM on shoulders (class 4).



Additional sections

The wide range of components does not regard only the sections described above. Also available are inspection doors (with or without lighting systems and viewing panels), mixing chambers with two or three dampers, droplet separators, UV lamps, photocatalytic modules, antifreeze sections and duct connection systems.

Control system

Clivet AQX and CLA units can be supplied with a pre-installed and fully integrated control system. The package allows remote control of probes, valves, actuators, pressure switches, dampers and many other parameters, as well as communication between the unit and the Building Management Systems via ModBus, LonWorks and BACnet protocols. The units are tested and subjected to pre-commissioning checks inside the factory in order to guarantee high reliability and quick and easy installation.



Hygienic air handling units

The AQX H version is available for applications that require high hygienic standards (pharmaceutical, hospital, food and microelectronic sectors). It guarantees maximum cleanliness and ease of maintenance in compliance with DIN 1946-4 and VDI 6022-1 standards. For more details, refer to the dedicated brochure by scanning the following QR code.



Accessories

The air treatment units of the AQX series are available with a vast range of accessories that can be selected directly with the selection software.

A few of the most common accessories are listed below:

- ✓ Weatherproof roof and control protection technical compartment;
- ✓ Weatherproof covers on the external air inlets and outlets
- ✓ Safety device for moving components
- ✓ Spotlights and viewing panel for inspection
- ✓ Inverters on the fan motors

Other accessories not found in the basic selection can be assessed on request.

Technical data

Size	Height [mm] (1)	Width [mm]	Airflow considering 2.2 m/s (2)	Airflow considering 2.5 m/s (2)
1	570	770	1300	1500
2	570	820	1500	1700
3	620	920	1700	2000
4	720	870	2000	2200
5	720	920	2300	2600
6	720	1020	2600	2900
7	820	970	3000	3400
8	820	1020	3400	3900
9	820	1170	3900	4400
10	920	1120	4400	5100
11	920	1220	5100	5800
12	1070	1220	5800	6600
13	1070	1370	6700	7600
14	1170	1370	7600	8700
15	1170	1570	8700	9900
16	1320	1570	10000	11400
17	1420	1620	11500	13100
18	1420	1770	13200	15000
19	1520	1820	15100	17100
20	1520	2070	17200	19600
21	1670	2120	19800	22400
22	1770	2220	22700	25800
23	1920	2370	25900	29500
24	2020	2470	29700	33800
25	2120	2620	34100	38700
26	2270	2820	39000	44300
27	2270	3170	44700	50800
28	2270	3570	51200	58200
29	2270	4020	58600	66600
30	2270	4570	67100	76300
31	2270	5170	76900	87400
32	2270	5870	88100	100200

The table shows external dimensions of the 32 standard sizes using the 50mm frame. For the 60 mm frame, 20 mm have to be added.

(1) Reported height does not consider the dimensions of the base frame that vary according to the size of the AHU. The dimensions of the base vary according to the size of the machine.

(2) Air flow rates are given in m³/h

	Individual control	Centralized			
		CCM180	CCM 270	TC3-7	TC3-10.1
FULLNESS	KJR-120LCC				
ELFOFRESH EVO	KJR-120H4/BMKO-E (Standard)				
HRV-3	WDC3-86S2 (Optional) / WDC3-120T (Optional)	Y(4)	Y(4)	Y	Y(5)
HRV-DX-3	WDC3-86S (Standard) / WDC3-120T (Optional)	Y(4)	Y(4)	Y	Y(5)
HRV-DXL-3	WDC3-86S (Standard) / WDC3-120T (Optional)	Y(4)	Y(4)	Y	Y(5)
ZEPHIR3	User interface PLC (Standard)		Y (2) (4)	Y (2) (4)	
ZEPHIR4	Interfaccia utente PLC (Standard)		Y (2) (4)	Y (2) (4)	
FRESH LARGE EVO	KJR-120H4/BMKO-E (Standard)		Y (2) (4)	Y (2) (4)	
AQX VRF	User interface PLC (Standard)		Y(4)	Y	Y(5)
AQX/CLA	User interface PLC (Standard with AQX/CLA regulated)		Y(4)	Y	Y(5)

(1) With limited functionality

(2) With VRF option

(3) Providing GWMOD(A) accessory

(4) Exclusively through PQE wiring between the outdoor and indoor units.

(5) Exclusively through M1-M2 wiring between the outdoor and indoor units

Cloud		Supervisor				BMS			
Included WiFi	GW3-Cloud	Clivet Eye	CONTROL4 NRG	IMMPRO2	INTELLIAIR	Modbus	Lonworks	Bacnet	Konnex
Y		Y	Y			Y			
Y		Y	Y			Y			
	Y(1)			Y		Y	Y	Y	Y
	Y			Y		Y	Y	Y	Y
	Y			Y		Y	Y	Y	Y
		Y		Y(4)	Y	Y	Y	Y	
		Y		Y(4)	Y	Y		Y	
Y		Y	Y	Y(4)	Y	Y			
					Y(3)	Y	Y	Y	
					Y	Y	Y	Y	

2.3 Best practice



NEGRELLI HIGH SCHOOL

Feltre, Belluno - Italy
High school
System: ELFOFresh EVO
Year: 2020



RESIDENZA+

Polegge, Vicenza - Italy
Residential complex
System: (11 ELFOFresh)
Year: 2020



CPC MODENA

Modena – Italy
Mechanical processing industry
Hydronic system Rooftop, Air renewal (6 SPINChiller³
MF, 3 SPINChiller³, 2 Spinchiller⁴ 2 ELFOEnergy
Medium, 2 ELFOEnergy Magnum, 1 CSNX-XHE2, 1
ZEPHIR)
Year: 2021



GROB ITALY

Pianezza, Turin - Italy
Production systems and automation industry
Enhanced VRF system + Rooftop (VRF and Mini VRF (4
ODU, 96 IDU), 4 ZEPHIR³, 2 HRV, 4 CSRN-XHE2 80.4)
Year: 2020



AMILCARE PONCHIELLI theatre

Cremona- Italy
VRF system (2MV6-XMI, 12 GWMN-2-XMI, 4 CNT2-2-XMI, 3
DZGF3B-2-XMI, 10 HRV-DX-2-XMI)
Year: 2021



SANTA MARGHERITA

Multi-tenant business centre
Enhanced Hydronic system (2 ELFOEnergy Ground Medium2
MF, fancoils, 2 ZEPHIR³)
Year: 2018

2.3 Best practice



CA' APOLLONIO HERITAGE HOTEL SPA & NATURE

Romano d'Ezzelino, Vicenza - Italy
Hotels
Enhanced VRF system (4 ODU e 40 IDU), 2 ZEPHIR,
1 ELFOFRESH EVO
Year: 2023



LIBRARY AND CIVIC CENTRE

Arese, - Italy
Library and civic centre A Class
Hydronic system + Packaged (1 ELFOEnergy Ground
Medium2, 1 ELFOEnergy Extended Inverter, 1 AQX, 1 Rooftop
CLIVETPack2)
Year: 2016



ENAP

Agen - France
Hydronic system - Air handling units AQX (72000 m³/h)
Year: 2020



PROFESSIONAL INSTITUTE "PUECHER OLIVETTI"

Milan - Italy
High school
System: ZEPHIR3
Year 2022



ABU DHABI PLAZA

Astana - Kazakhstan
Multifunctional complex
Hydronic system + Air handling units



ALDAR HEADQUARTERS

Abu Dhabi - UAE
Office complex
Hydronic system + Air handling units

2.3 Best practice



BURJ KHALIFA FOUNTAIN

Dubai- UAE
Fountain
Hydronic system + Air handling units



ITALY PALACE – EXPO MILANO 2015

Milan - Italy
Permanent exhibition hall
Hydronic system + UTA (2 multipurpose heat pumps, 7 AQX)
Year: 2015



LIBESKIND TOWER

Milan - Italy
Office complex
Hydronic system+ UTA (3 centrifugal chillers and 8 AQX)
Year: 2020



SALALAH shopping centre

Salalah - Oman
Shopping centre
Hydronic system +Primary Air (6 SCREWLine³, 44 UTA-AQX, 14 fancoil)
Year: 2021



CAGLIARI ELMAS AIRPORT

Cagliari - Italy
Airport terminal
Packaged system, VRF, Mini-VRF, ZEPHIR³ (27 Clivetpack2 between CSRN-XHE2 and CSNX-XHE2, 12 ELFODuct, 2 ZEPHIR³, 1 VRF system with M5-XMi + 5 Q4DN-XMi, 2 Mini VRF system with MSAN- XMi + 4 Q4AN-XMi + CN-XMi)



IMA LIFE

Castel San Pietro Terme, Bologna - Italy
Machine manufacturing industry
Packaged system, enhanced VRF system, hydronic (2 SPINChiller³ MF, 10 CSRN -XHE2, 1 CSRN-XHE2, 1 Spinchiller³, 1 AQX, 1 ELFOEnergy Medium, 1 ELFOEnergy Magnum, 1 VRF system MV6-XMi + with 11 DNB2-XMi, ZEPHIR³)
Year: 2020
Fresh air

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Clivet, in compliance with Regulation 517/2014, informs that its products contain or function with the use of fluorinated greenhouse gases: R-32 (GWP 675), R-410A (GWP 2087,5), R-134a (GWP 1430) and R-407C (GWP 1773,85), R-513A (GWP 631), R-1234ze (GWP 7).

Data contained in this catalogue are not binding and may be changed by the Manufacturer without notice.

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Updated data available on www.clivet.com

For over 35 years we have been offering solutions for sustainable comfort and the well-being of people and the environment

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