



INVERTER HEAT PUMP  
AIR COOLED  
FOR OUTDOOR INSTALLATION  
**ELFOEnergy Edge EVO**



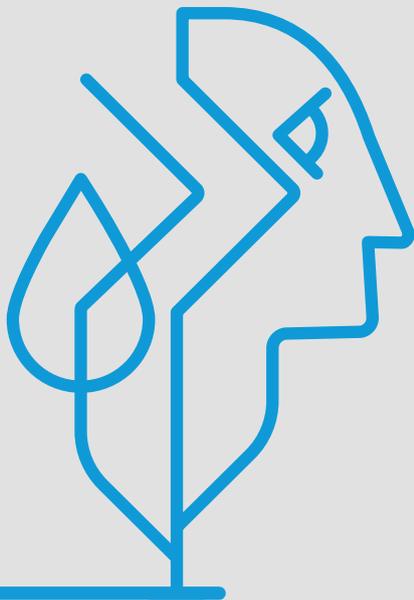
*Inspiring Solutions since 1989*

ALWAYS READY FOR THE FUTURE

# INSPIRING SOLUTIONS

In over 30 years of working on the design, manufacturing and distribution of air conditioning and handling systems, combining high efficiency with minimal environmental impact, Clivet has developed solutions to ensure sustainable comfort and the well-being of people and the environment.

Designing and developing year-round air conditioning solutions with innovative technologies are part of Clivet's DNA, which means the company has always been ready for the future.

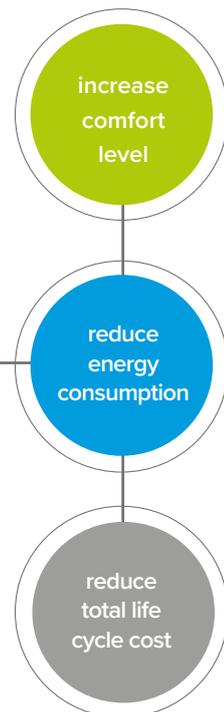


## COMFORT FOR THE PLANET & PEOPLE

## OUR VALUES

IN THE RESIDENTIAL, COMMERCIAL AND INDUSTRIAL SECTORS

Increasing comfort, saving energy and providing customers with the best value for the entire life cycle of the system: these are the values that inspire our systems for the residential, services and industrial sectors.



## OUR NUMBERS

**50.000 m<sup>2</sup>**  
OF PLANTS IN FELTRE,  
BELLUNO - ITALY

**610**  
EMPLOYEES IN ITALY  
AND ABROAD

**140**  
SERVICE CENTRES

**2016**  
A GROUP  
COMPANY OF  


**35**  
AGENCIES  
IN ITALY

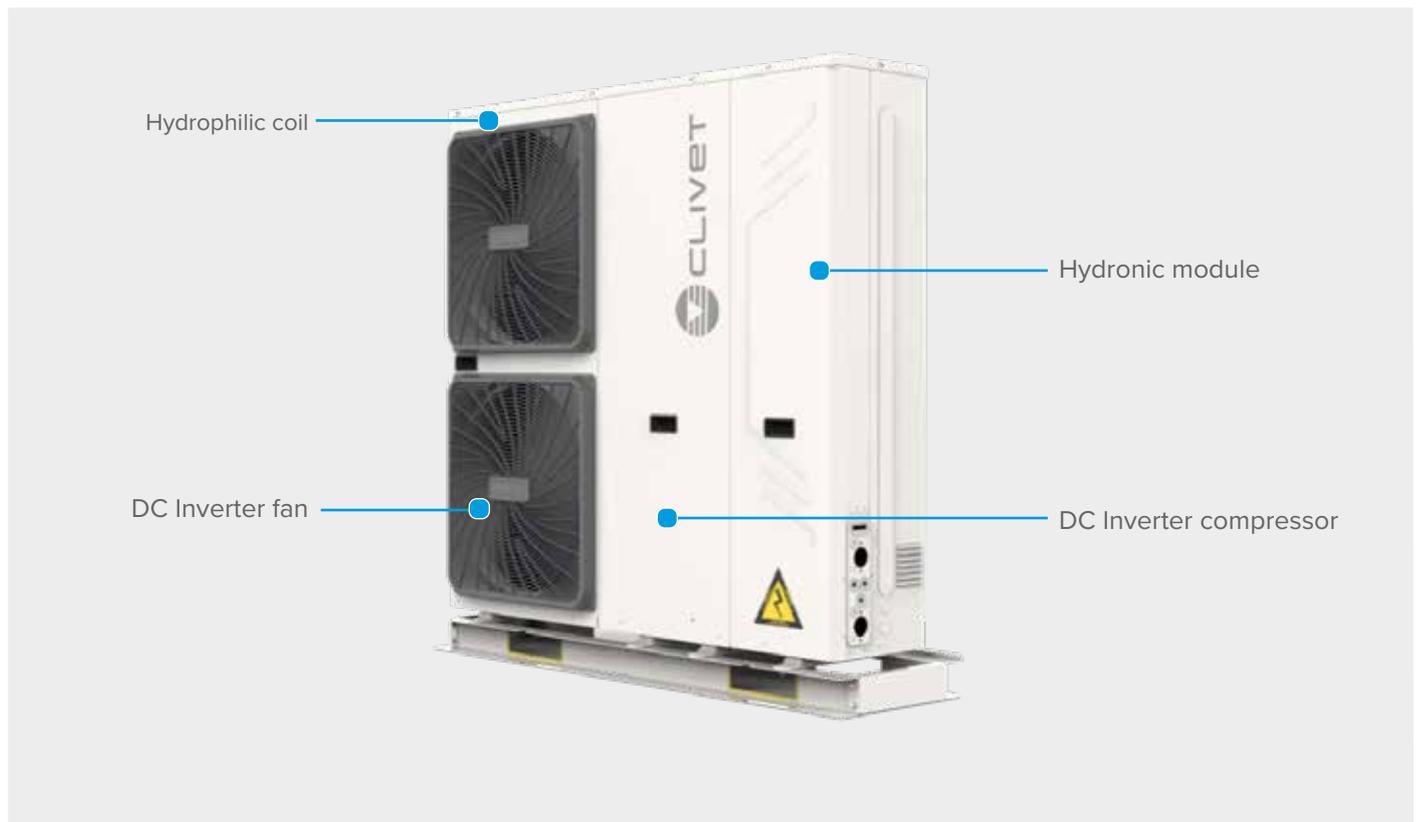
**80**  
COUNTRIES WE  
EXPORT TO

**7** BRANCHES:  
GREAT BRITAIN,  
GERMANY, INDIA,  
RUSSIA, UNITED ARAB  
EMIRATES,  
CHINA, BALKANS

**2015**  
CLIVET LIVE IS BORN

**2019**  
MIDEA GROUP #312 FORTUNE  
GLOBAL 500  
**39.581 \$M**  
MIDEA TURNOVER

# Main features



ELFOEnergy EVO R-32

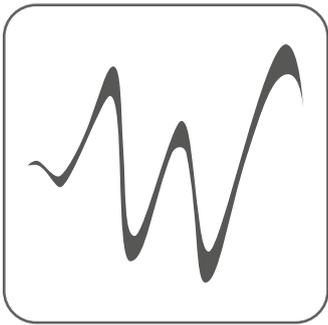


## New hydronic range

ELFOEnergy Edge EVO heat pumps are high efficiency packaged units for residential and light commercial applications. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle.

In addition to the standard components, they offer as an option:

- ✓ inertial storage tank underneath the unit
- ✓ 3-way valve for domestic hot water
- ✓ domestic hot water tank
- ✓ back-up heater for additional heating capacity
- ✓ hose kit for hydraulic connections

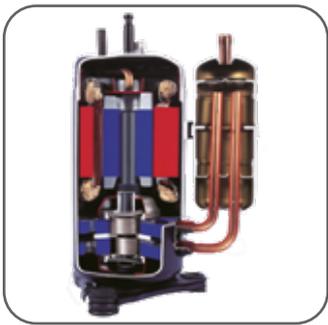


### INNOVATIVE CONTROL TECHNOLOGY

ELFOEnergy Edge EVO is the new energy reference for heat pumps.

The inverter system precisely adjusts the rotation frequency of the compressor according to the energy demand, offering:

- ✓ Reduced start-up time and less frequent start/stop
- ✓ Comfort conditions are achieved in less time than a system without inverter
- ✓ Lower levels of temperature fluctuation during operation



### DC INVERTER COMPRESSOR

Twin rotary DC Inverter compressor with permanent magnet brings quality, reliability, high performances at partial loads and a particularly silent operation. In fact, it is installed on anti-vibration mounts and it is wrapped in a special sound-absorbing hood.

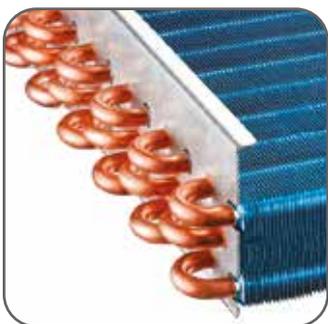
The full-DC frequency conversion system dramatically reduces the energy consumption by more than 30%.



### DC INVERTER FAN

DC brushless fan motors help to meet heating and cooling demands with low noise emission and low power consumption.

Both fans and fan guards are designed with CFD technology, ensuring silent and highly efficient operation.



### HYDROPHILIC COIL

External exchanger is made by:

- ✓ inner threaded copper pipes that optimise the heat exchange efficiency
- ✓ aluminum fins

Hydrophilic treatment allows the correct evacuation of condensing water and largely prevents ice formation.



### HYDRONIC MODULE

Integrated hydronic module with DC circulation pump, expansion vessel and water flow switch. These hydraulic components are already included in the unit to guarantee:

- ✓ High reliability
- ✓ Space reduction
- ✓ Quicker and easier maintenance of the hydraulic circuit

## USER INTERFACE



New generation wired user interface offers a complete control solution, thanks to the function keys, the graphic display and the multilevel menu.

The remote control and the integrated thermostat further simplify the unit management.



## CONTROL WITH APP

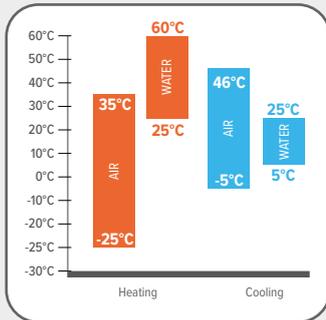
ELFOEnergy Edge EVO is equipped with WiFi connection for connection to the dedicated APP, which allows to manage all the main functions of the heat pump, such as set-point management and the scheduling of the various operating modes.

## COMPATIBLE WITH ELFOControl<sup>3</sup> EVO

The standard equipment also includes the modbus connection, for connection to the ELFOControl<sup>3</sup> EVO and other supervisory systems with this type of protocol. Advanced control system to manage the operation of the entire system.

- ✓ High seasonal efficiency thanks to the optimization algorithms possible through the control of all system components.
- ✓ Optimization of efficiency and operation of the units
- ✓ Improved comfort (temperature, humidity, air quality, domestic hot water)
- ✓ Simple to use and complete plant management
- ✓ Safe operation thanks to the choice of the most suitable energy source for every environmental condition.





## EXTENDED OPERATION RANGE

ELFOEnergy Edge EVO offers complete solution to any needs requested by the plant, being able to operate in heating, cooling and domestic hot water mode.

In all operating modes, wide operation ranges are guaranteed both in terms of outdoor air temperature and supply water temperature.

Compressor and heat exchangers are sized only to guarantee the best performances. For example, they allow to supply a heat capacity of 80% at -7°C.

## DOMESTIC HOT WATER PRODUCTION



ELFOEnergy Edge EVO heat pumps can produce domestic hot water up to an outdoor temperature of -25°C.

The temperature of the water produced can reach 60°C even during summer when outdoor temperature reaches 30°C, and 55°C with up to 43°C outdoor air temperature.

This allows to use heat pumps throughout the year and to be perfectly adapt either to configurations of systems with radiant panels and terminal units or to new or renovated buildings.

To ensure a better production efficiency and therefore to reduce operation costs, thanks to the experience on the monitored systems, Clivet recommends to define the set point of the domestic hot water between 48-50°C.



## EXCELLENT QUIETNESS

The particular constructive features of ELFOEnergy Edge EVO, beyond increasing the efficiency of the unit, minimize the sound level making it particularly silent.

Applications that require great attention to sound levels find an answer to their needs in the 2 additional acoustic configurations of this series:

- ✓ Silenced: sound levels are reduced by -3 dB
- ✓ Super-silenced: sound levels are reduced by -5 dB

Sound level data of the two silenced acoustic configurations are available in the technical bulletin.

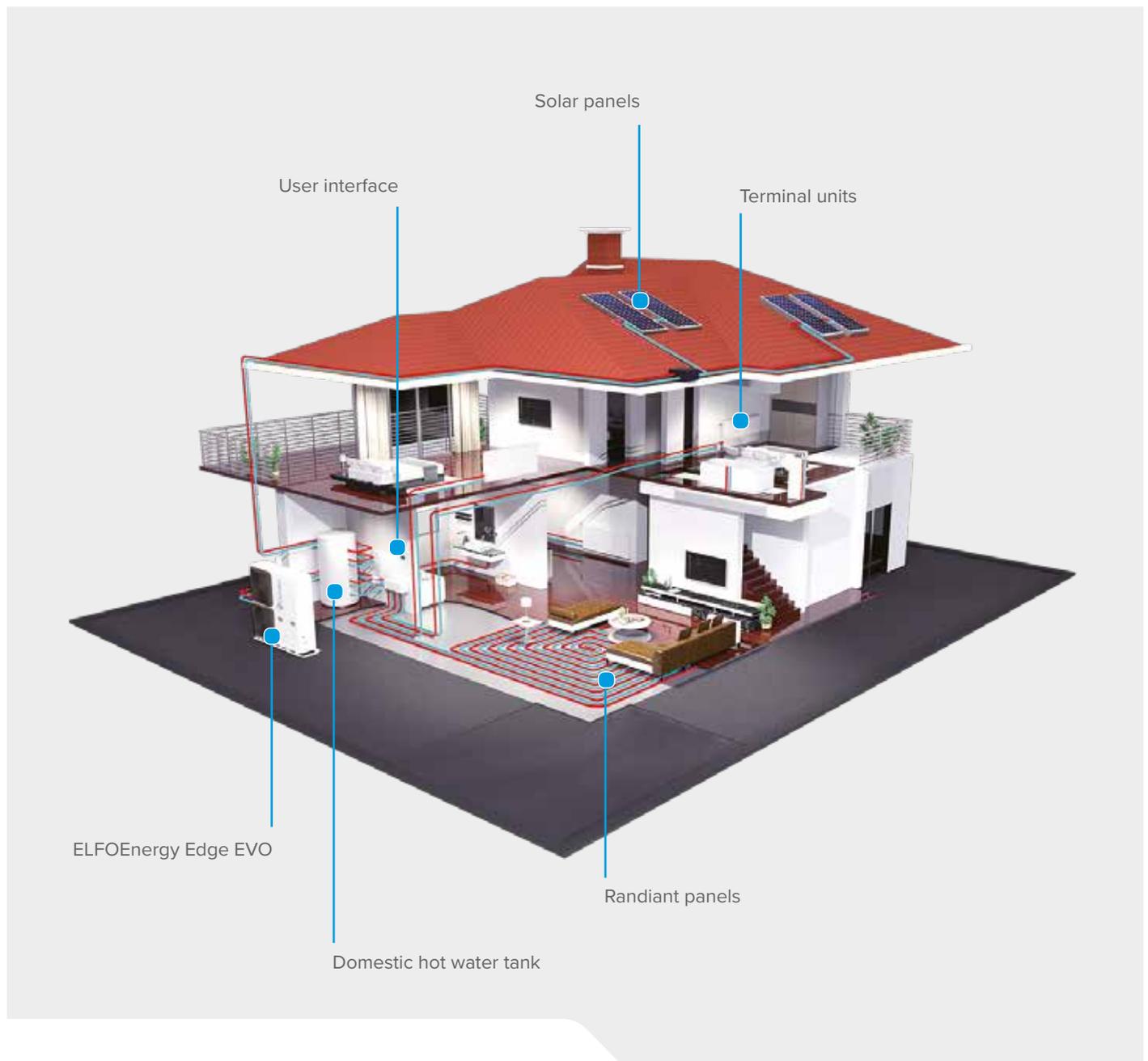
# Flexibility

ELFOEnergy Edge EVO is an integrated system that heats and cools space, as well as produces domestic hot water. It offers total comfort solution all year round. The system can completely replace the traditional gas or fuel boilers, but is also able to work together with them.

To guarantee the maximum flexibility, ELFOEnergy Edge EVO can be combined together with:

- ✓ floor heating coils
- ✓ low temperature radiators
- ✓ terminal units
- ✓ domestic hot water tank
- ✓ mixed systems

It is also compatible with auxiliary heat source such as solar energy and boiler.

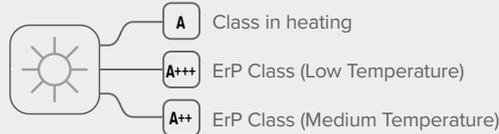


# Advantages of seasonal efficiency



## ERP COMPLIANT

ELFOEnergy Edge EVO is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output  $\leq 70$  kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output  $\leq 400$  kW at specified reference conditions)



## R-32

- ✓ Ecological refrigerant with a GWP (Global Warming Potential) of -70% compared to R-410a
- ✓ Better performance under severe conditions
- ✓ Less charged volume is needed in the system
- ✓ Higher coefficient on heat transfer



## TAX CREDIT

Due to its high efficiency, ELFOEnergy Edge EVO may be eligible for heat pump subsidies in Your Country

For most of the time the heat pump operates to meet half of the thermal load required by the building. Consequently, unit efficiency is no longer given by a single working point, but from seasonal efficiency.

ELFOEnergy Edge EVO not only complies with the ErP Directive, but exceeds 50% the minimum requirements of the European Directive:

- ✓ Seasonal efficiency: SCOP in A++ Class (A7/W55°C)
- ✓ Very high performances even in cooling: SEER 4.99 makes the heat pump comparable to a chiller.

# Technical data

## SIZE – WSAN-YMI

			21	31	41	61	71	81	
230/1/50	▶ Cooling capacity (EN14511:2018)	(1)	kW	4,85	6,30	7,95	10,9	12,9	13,8
230/1/50	Total power input (EN14511:2018)	(1)	kW	1,63	2,27	3,15	3,74	4,64	5,21
230/1/50	EER (EN14511:2018)	(1)	-	2,98	2,77	2,53	2,92	2,78	2,65
230/1/50	SEER	(4)	-	4,71	4,99	4,92	4,85	4,73	4,54
230/1/50	▶ Heating capacity (EN14511:2018)	(2)	kW	4,80	6,70	8,60	12,4	14,1	16,2
230/1/50	Total power input (EN14511:2018)	(2)	kW	1,33	1,88	2,50	3,52	4,06	4,72
230/1/50	COP (EN14511:2018)	(2)	-	3,60	3,57	3,44	3,53	3,47	3,43
230/1/50	Water flow-rate (User Side)		l/s	0,23	0,30	0,35	0,52	0,62	0,66
230/1/50	Useful pump discharge head		kPa	59,9	50,5	37,9	79,7	66,6	61,1
230/1/50	Sound pressure level	(3)	dB(A)	49	52	55	54	55	56
230/1/50	Refrigeration circuits						1		
230/1/50	No. of compressor						1		
230/1/50	Type of compressor						ROTARY INVERTER		
230/1/50	Standard air flow			3050	3050	3050	6150	6150	6150
<b>Directive ErP (Energy Related Products)</b>									
230/1/50	ErP Energy Class - AVERAGE Climate - W35			A+++	A+++	A+++	A++	A++	A++
230/1/50	ErP Energy Class - AVERAGE Climate - W55			A++	A++	A++	A++	A++	A++
230/1/50	SCOP - AVERAGE Climate - W35	(4)		4,48	4,49	4,51	4,30	4,35	4,30
230/1/50	SCOP - AVERAGE Climate - W55	(4)		3,23	3,24	3,22	3,23	3,26	3,27

## SIZE – WSAN-YMI

			61	71	81	91 *	101 *	121 *	141 *
400/3/50+N	▶ Cooling capacity (EN14511:2018)	(1)	kW	10,9	12,9	13,8	16,2	20,5	29,4
400/3/50+N	Total power input (EN14511:2018)	(1)	kW	3,72	4,62	5,19	5,41	6,98	13,0
400/3/50+N	EER (EN14511:2018)	(1)	-	2,93	2,80	2,66	3,00	2,93	2,25
400/3/50+N	SEER	(4)	-	4,85	4,73	4,54	-	-	-
400/3/50+N	▶ Heating capacity (EN14511:2018)	(2)	kW	12,4	14,1	16,2	18,2	22,1	30,3
400/3/50+N	Total power input (EN14511:2018)	(2)	kW	3,45	3,99	4,70	5,35	6,66	10,3
400/3/50+N	COP (EN14511:2018)	(2)	-	3,59	3,54	3,45	3,41	3,32	2,94
400/3/50+N	Water flow-rate (User Side)		l/s	0,52	0,62	0,66	0,77	0,98	1,40
400/3/50+N	Useful pump discharge head		kPa	79,7	66,6	61,1	n.d.	n.d.	n.d.
400/3/50+N	Sound pressure level	(3)	dB(A)	54	56	56	56	58	60
400/3/50+N	Refrigeration circuits						1		
400/3/50+N	No. of compressor						1		
400/3/50+N	Type of compressor						ROTARY INVERTER		
400/3/50+N	Standard air flow			6150	6150	6150	9800	11000	11300
<b>Directive ErP (Energy Related Products)</b>									
400/3/50+N	ErP Energy Class - AVERAGE Climate - W35			A++	A++	A++	A++	A++	A++
400/3/50+N	ErP Energy Class - AVERAGE Climate - W55			A++	A++	A++	A+	A+	A+
400/3/50+N	SCOP - AVERAGE Climate - W35	(4)		4,30	4,35	4,30	4,28	4,32	4,25
400/3/50+N	SCOP - AVERAGE Climate - W55	(4)		3,23	3,26	3,27	2,86	2,94	2,82

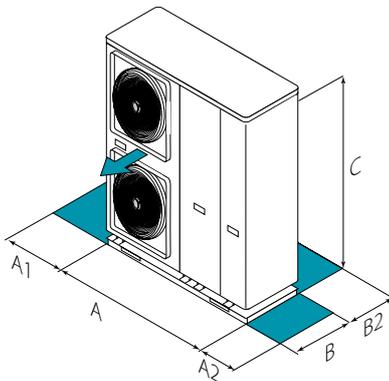
- Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C
- Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature 7 D.B. /6 (°C) W.B.
- The sound levels refer to the unit at full load, in the rated test conditions.  
The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C
- Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

230/1/50 Supply voltage 230/1/50  
400/3/50+N Supply voltage 400/3/50+N

\*Preliminary data, sizes available from the second half of 2020

## dimensions and clearances



### SIZE – WSAN-YMI

		21	31	41	61	71	81	91*	101*	121*	141*
A - Length	mm	1210	1210	1210	1404	1404	1404	1120	1120	1120	1120
B - Width	mm	402	402	402	405	405	405	440	440	440	440
C - Height	mm	945	945	945	1414	1414	1414	1558	1558	1558	1558
A1	mm	400	400	400	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400	400	400	400
B2	mm	300	300	300	300	300	300	300	300	300	300
230/1/50	Operating weight	kg	99	99	99	158	158	158	-	-	-
400/3/50+N	Operating weight	kg	-	-	-	172	172	172	169	169	169

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

230/1/50 Supply voltage 230/1/50  
400/3/50+N Supply voltage 400/3/50+N

\* Preliminary data, sizes available from the second half of 2020

### CAUTION!

For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

The data in this document is not binding and may be modified by the Manufacturer without notice.

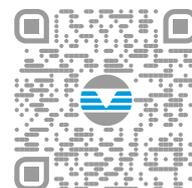
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Clivet, in compliance with Regulation 517/2014, informs that its products contain or operate with the use of fluorinated greenhouse gases.

FOR OVER 30 YEARS WE HAVE BEEN OFFERING  
SOLUTIONS TO ENSURE SUSTAINABLE COMFORT  
AND THE WELL-BEING OF  
PEOPLE AND THE ENVIRONMENT

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[www.clivet.com](http://www.clivet.com)



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