



INVERTER AIR COOLED  
HEAT PUMP AND CHILLER  
FOR OUTDOOR INSTALLATION

# ELFOEnergy Storm 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.

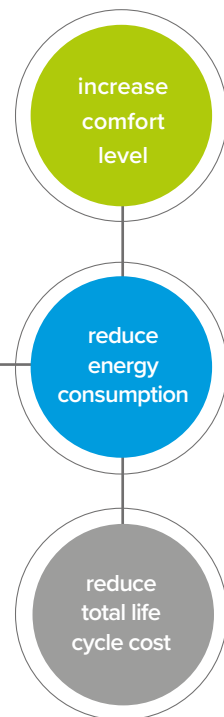


## COMFORT FOR THE PLANET & PEOPLE

## 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

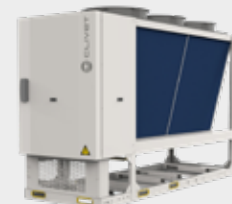


5 kW

ELFOEnergy Edge EVO R-32



ELFOEnergy Sheen EVO R-32



90 kW

ELFOEnergy Storm EVO R-32

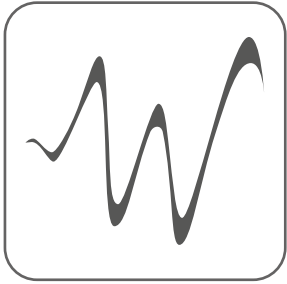
## New hydronic range

ELFOEnergy Storm EVO is the new range of high efficiency packaged units for commercial and industrial applications. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle.

Available in both heat pump and liquid chiller versions.

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

- ✓ integrated hydronic group
- ✓ inertial storage tank
- ✓ 3-way valve for domestic hot water (heat pump version only)



### INNOVATIVE CONTROL TECHNOLOGY

ELFOEnergy Storm EVO is the new energy reference for liquid chillers and heat pumps in its category. 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

The 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 (STANDARD FOR HEAT PUMP VERSION)

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.



### MICROCHANNEL BATTERY

Long Life Alloy aluminium battery for higher corrosion resistance and longer life.

- ✓ E-coated coating possibilities
- ✓ -30% refrigerant charge compared to traditional solutions.

Available only for liquid chiller version.



### REFRIGERANT CIRCUIT

Refrigerant circuit is completed with:

- ✓ electronic expansion valve
- ✓ economizer exchanger (sizes 25.2-30.2-35.2) to increase the unit efficiency
- ✓ cooling system of the control panel by means of undercooled liquid

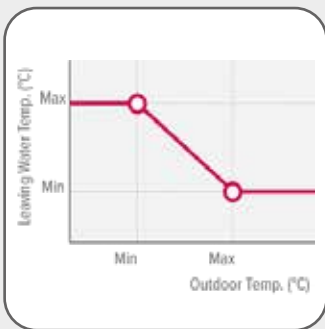
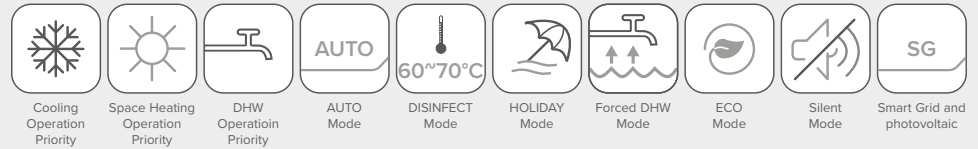
# Comfort for all needs



## USER INTERFACE

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

User interface intergrated in the unit can be also remoted, further simplifying the unit management.



## CLIMATE CORRELATION CURVES

In both heating and cooling modes, user can set on user interface a fix set-point or a climate correlation curve, just simply defining two desired operating points. With this function available as standard, the system will set the outlet water temperature according to the outdoor ambient temperature automatically. In cooling operation, if outdoor temperature increases, outlet water set-point will decrease automatically to allow a higher cooling capacity to the system. As well, in heating operation, if outdoor temperature decreases, outlet water set-point will increase automatically to allow a higher heating capacity to the system.



## ECO MODE

To encourage maximum energy savings, while maintaining acceptable comfort conditions, the ECO mode function is provided. With this function it is possible to define, during daily operation, a period in which it is necessary to maintain maximum comfort conditions (for example working hours in the office) and one in which energy saving is preferred (for example the night hours).



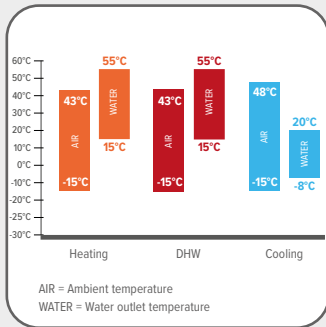
## CLIVET EYE

Clivet Eye is the Cloud-based monitoring system for the remote management of Clivet Applied and Residential air conditioning, heating, air renewal and domestic hot water production Units and Systems through smartphone, tablet and PC.

The benefits:

- ✓ improvement of customer service,
- ✓ in-depth remote analysis,
- ✓ faster reaction and intervention times,
- ✓ performance monitoring.





### EXTENDED OPERATION RANGE

ELFOEnergy Storm EVO, in its two versions heat pump and liquid chiller, 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 for the heat pump version.

### DOMESTIC HOT WATER PRODUCTION



ELFOEnergy Storm EVO heat pumps can produce domestic hot water up to an outdoor temperatures of -15°C.

The temperature of the water produced can reach 55°C even during summer when outdoor temperatures reach 30°C.

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.



### EVEN FOR LOW TEMPERATURE

The liquid chiller version (WSAT-YES) is also perfectly adapted for use in process cooling where the low temperature function (Brine) together with the addition of glycol to the thermo-vector liquid produces chilled water down to -8°C.



### EXCELLENT QUIETNESS

The particular constructive features of ELFOEnergy Storm 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 -6 dB
- ✓ Super-silenced: sound levels are reduced by -10 dB

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

# Modularity

In a rapidly changing world, new and intelligent solutions are necessary. This is joined by the request of a continuous operation without interruptions, combined with a simple and fast maintenance.

ELFOEnergy Storm EVO offers all these advantages thanks to unique solutions and a modular configuration that allows simple interconnection of all units.

The regulation can manage up to 16 ELFOEnergy Storm EVO units coupled 4 in 4.

## ✓ Increased system efficiency

The main energy efficiency features of ELFOEnergy Storm EVO are fully exploited in the modular configurations.

Considering the partial operation of a single unit in a 16-unit configuration, the system is able to reduce down to 2% the total cooling capacity. In fact, each unit is able to perfectly adjust its output thanks to the single advanced microprocessor that controls the process with optimal precision.

## ✓ Higher reliability

Beyond the reliability of multiple compressors, refrigerant circuits, electrical panels and control systems, it is even possible to add a further unit to act as a safety back-up.

In this case full performance is guaranteed even if a single unit fails, which can be repaired whilst the system is still operating: each unit in the multiple configuration is always able to operate independently.

## ✓ Reduced clearances

The compact design of the ELFOEnergy Storm EVO heat pumps allows a considerable reduction of clearances between one unit and the other in modular installations.

## ✓ Quick and simple installation

ELFOEnergy Storm EVO units are pre-wired in factory with fast connections between one unit and another. This guarantees a remarkable installation speed. ELFOEnergy Storm EVO also offers scalability: it is possible to add more units if the load need increases.



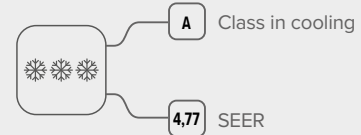
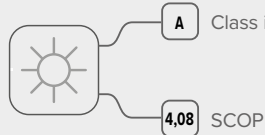


# Advantages of seasonal efficiency



## ERP COMPLIANT

ELFOEnergy Storm 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)



## LEED COMPLIANT

ELFOEnergy Storm EVO meets the LEED requirements related to "Minimum Energy Performance" and "Fundamental Refrigerant Management".



## 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 Storm EVO may be eligible for heat pump subsidies in Your Country

Most of the time, the heat pump or liquid chiller 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 Storm EVO not only complies with the ErP Directive, but exceeds 50% the minimum requirements of the European Directive:

- ✓ Seasonal efficiency in heating: SCOP in A++ Class (A7/W35°C)
- ✓ Very high performances even in cooling: SEER up to 4,77.

# Technical data

## SIZE – WSAT-YES

			18.2	20.2	25.2	30.2	35.2
▶ Cooling capacity (EN14511:2018)	(1)	kW	53,1	59,2	72,2	77,5	85,1
Total power input (EN14511:2018)	(1)	kW	17,1	19,7	22,5	24,2	27,5
EER (EN14511:2018)	(1)	-	3,10	3,00	3,21	3,20	3,10
SEER	(4)	-	4,85	4,84	4,89	4,81	4,74
No. of compressors		Nr			2		
Refrigeration circuits		Nr			1		
Type of compressors			ROTARY INVERTER		SCROLL INVERTER		
Standard airflow		l/s	6889	6889	10333	10333	10333
Standard power supply		V	400/3/50+N				
Sound pressure level	(3)	dB(A)	64	65	62	65	67

## SIZE – WSAW-YES

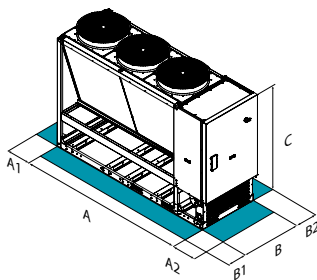
			18.2	20.2	25.2	30.2	35.2
▶ Cooling capacity (EN14511:2018)	(1)	kW	53,3	58,9	72,0	77,7	85,0
Total power input (EN14511:2018)	(1)	kW	18,1	20,3	22,9	25,1	29,2
EER (EN14511:2018)	(1)	-	2,95	2,90	3,15	3,10	2,91
SEER	(4)	-	4,57	4,51	4,64	4,62	4,50
▶ Heating capacity (EN14511:2018)	(2)	kW	53,0	66,0	79,3	84,7	91,0
Total power input (EN14511:2018)	(2)	kW	16,5	20,8	23,8	25,7	28,00
COP (EN14511:2018)	(2)	-	3,21	3,17	3,33	3,29	3,25
No. of compressors		Nr			2		
Refrigeration circuits		Nr			1		
Type of compressors			ROTARY INVERTER		SCROLL INVERTER		
Standard airflow		l/s	6889	6889	10333	10333	10333
Standard power supply		V	400/3/50+N				
Sound pressure level	(3)	dB(A)	65	65	66	67	67
Directive ErP (Energy Related Products)							
ErP Energy Class - AVERAGE Climate - W35		-	A++	A++	A++	-	-
SCOP - AVERAGE Climate - W35	(4)	-	3,93	3,91	4,08	4,07	4,06

- (1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B
- (3) 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

(4) 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).

## dimensions and clearances



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

### SIZE – WSAT-YES

		18.2	20.2	25.2	30.2	35.2
A - Length	mm	2364	2364	3220	3220	3220
B - Width	mm	1130	1130	1130	1130	1130
C - Height	mm	2152	2152	2155	2155	2155
A1	mm	800	800	800	800	800
A2	mm	800	800	800	800	800
B1	mm	500	500	500	500	500
B2	mm	500	500	500	500	500
Operating weight	kg	575	575	725	725	725

### SIZE – WSAW-YES

		18.2	20.2	25.2	30.2	35.2
A - Length	mm	2337	2337	3190	3190	3190
B - Width	mm	1130	1130	1130	1130	1130
C - Height	mm	2152	2152	2155	2155	2155
A1	mm	800	800	800	800	800
A2	mm	800	800	800	800	800
B1	mm	500	500	500	500	500
B2	mm	500	500	500	500	500
Operating weight	kg	580	580	780	780	780

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.

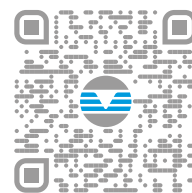
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Clivet, in compliance with Regulation 517/2014, informs that its products contain or operate with the use of fluorinated greenhouse gases.

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

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



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