



EFFICIENT AND LOW
ENVIRONMENTAL IMPACT
NEW CHILLERS



AIR CONDITIONING
AND AIR QUALITY
PARTNER

Inspiring Solutions since 1989

Regulation developments: refrigerants



Scroll inverter compressor chillers and heat pumps

| R-32 | GWP | flammability | series |
|------|-----|-------------------|---|
| | 675 | LIGHTLY flammable | ELFOEnergy Sheen EVO, ELFOEnergy Storm EVO WSAT-YSi / WSAN-YSi / WSAT-YES / WSAN-YES / WSAT-YES FC |



Scroll compressor chillers and heat pumps

| R-410A | GWP | flammability | series |
|--------|------|---------------|---|
| | 2088 | NOT flammable | SPINchiller ³ WSAT-XSC3 / WSAN-XSC3 / WSAN-XSC3 MF / WSAT-XSC3 FC |

| R-32 | GWP | flammability | series |
|------|-----|-------------------|---|
| | 675 | LIGHTLY flammable | SPINchiller ⁴ WSAT-YSC4 / WSAN-YSC4 |



Screw compressor chillers

| R-134a | GWP | flammability | series |
|--------|------|---------------|---|
| | 1430 | NOT flammable | SCREWLine ³ SCREWLine ⁴ WDAT-SL3 FC / WDAT-iL3 WDH-SB4 |

| R-513A | GWP | flammability | series |
|--------|-----|---------------|---|
| | 631 | NOT flammable | SCREWLine ⁴ -i WDAT-iK4 / WDH-iK4 |

| R-1234ze | GWP | flammability | series |
|----------|-----|-------------------|---------------------------------------|
| | 7 | LIGHTLY flammable | SCREWLine ⁴ -i WDAT-iZ4 |



Centrifugal compressor chillers

| R-134a | GWP | flammability | series |
|--------|------|---------------|------------------------------|
| | 1430 | NOT flammable | Centrifugal Chiller WCH-i |

| R-1234ze | GWP | flammability | series |
|----------|-----|-------------------|-----------------------------------|
| | 7 | LIGHTLY flammable | Centrifugal Chiller HFO WCH-iZ |



low environmental impact refrigerants

For many decades, global policies to contain climate change have also affected refrigerants used in air conditioning. After cancelling the destructive effect on the atmospheric ozone layer (ODP = 0), laws and regulations are strongly oriented towards eliminating the greenhouse effect, measured by the GWP (Global Warming Potential) parameter and among the main causes of global warming. In Europe, The current F-Gas Regulation (EU Reg. 517/2014) provides for the gradual reduction of the placing on the market of greenhouse effect refrigerants (phase down), through quote allocated to each European country and other constraints on the use of refrigerants. The objective

is to reduce carbon dioxide equivalent emissions by 80% within 2031.

It is therefore essential to adopt the latest generation of high efficiency products equipped with low GWP refrigerants in air conditioning systems.

Clivet is at the forefront, already being able to provide solutions with low environmental impact:

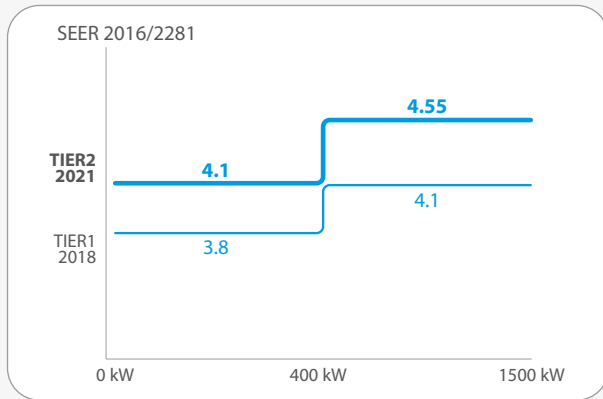
- ✓ units with scroll compressors with R-32 refrigerant;
- ✓ units with screw compressors with R-1234ze and R-513A refrigerants.

Regulation developments: energy efficiency

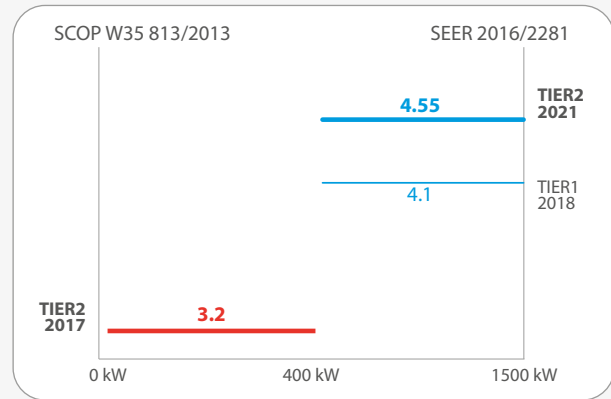
AIR

Air-cooled chillers and heat pumps

chillers



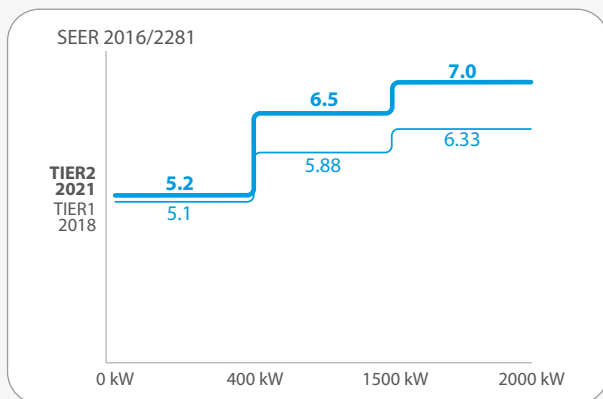
heat pumps



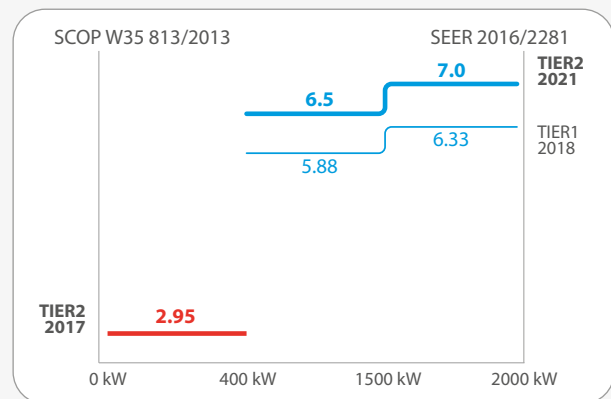
H2O

Water-cooled chillers and heat pumps

chillers



heat pumps



The Ecodesign 2009/125/EC regulatory framework establishes consistent EU-wide standards for the improvement of product performance in terms of environmental impact, including HVAC equipment. For each product family, specific European legislation has been implemented under Directive 2009/125/EC.

The European Regulation n.813/2013 entered into force in September 2015 (for all heat pumps with capacities lower than 400 kW) and the European Regulation 2016/2281 entered into force on 1 January 2018 (for all liquid chillers

and heat pumps with capacities above 400 kW) introduce a minimum seasonal efficiency threshold.

Each regulation has its own implementation plan, generally divided into two time phases (known as Tier).

From 1st January 2021 even stricter and more difficult parameters.

All the products Clivet is developing already comply with all these European regulations.

ELFOEnergy Sheen EVO

Air cooled liquid chillers with scroll inverter technology for commercial and industrial installations

WSAT-YSi

Cooling only

Range 43,0 to 98,0 kW - Seasonal efficiency SEER up to 5,37

R-32: GWP = 675, lightly flammable

Low environmental impact solution

MICROCHANNEL COIL (WSAT-YSi)

- ✓ Long Life Alloy for higher corrosion resistance and a longer lifespan
- ✓ Up to 30% of refrigerant charge reduction compared to traditional coils
- ✓ Protective treatment for industrial and marine environments available (E-Coated)

DC INVERTER FAN

Low noise emission and low power consumption.

WIDE OPERATION RANGE IN COOLING

- ✓ Operation ranges outdoor air temperature from -20°C to +48°C;
- ✓ Supply water temperature down to -8°C.

EXCELLENT QUIETNESS

In addition to standard configuration are available 2 additional acoustic configurations:

- ✓ Silenced with sound levels reduced by -8 dB
- ✓ Super-silenced with sound levels reduced by -10 dB.

BUILT-IN SOLUTION FOR HYDRONIC ASSEMBLY AND SYSTEM TANK

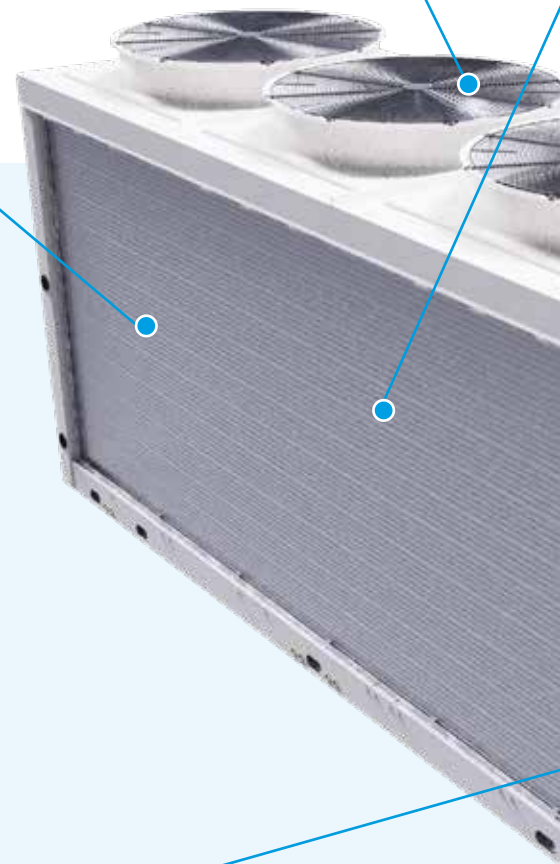
- ✓ Hydronic assembly with 1 inverter pump or 1 on/off pump available.
- ✓ 145, 160 or 275 litre steel storage tank available.

PLATE HEAT EXCHANGER

Maximizes the thermal efficiency thanks to large exchange surfaces.

ELECTRONIC EXPANSION VALVE

Quickly and precisely adapts to the effective load required.



SHEEN EVO 2.0

Air cooled heat pumps with scroll inverter technology for commercial and industrial installations

WiSAN-YSE1

Reversible heat pump

Range 24,1-94,2 kW - Seasonal efficiency up to SEER 4,81 - SCOP 4,54

Available in the Excellence and Premium version

R-32: GWP = 675, lightly flammable

Low environmental impact solution

CONDENSING COILS (WiSAN-YSE1)

Copper/Aluminium coils with hydrophilic treatment, which facilitates the condensate drain, decreasing the defrosting times.

Protective treatments of the condensing coils are also available for aggressive environments.

NEW FEATURES

- ✓ Auxiliary generator management
- ✓ SG Ready Function
- ✓ EVU Lock Function
- ✓ Demand Limit
- ✓ Energy meter
- ✓ Compatible with supervision systems using Modbus or Bacnet protocols

WIDE OPERATION RANGE IN HEATING

- ✓ Operation ranges outdoor air temperature from -20°C to +44°C;
- ✓ Supply water temperature down to +60°C.

EXCELLENT QUIETNESS

In addition to standard configuration is available one additional acoustic configuration:

- ✓ Super-silenced with sound levels reduced by -6 dB(A)

MODULARITY

- ✓ Management of up to 16 units in a local network.

DC INVERTER COMPRESSOR

Twin rotary and scroll DC inverter compressors for high performances at partial loads and a particularly silent operation.

USER INTERFACE

New generation wired user interface offers a complete control solution. Ready for remote use.



ELFOEnergy Storm EVO

Air cooled liquid chillers and heat pumps with scroll inverter technology for commercial and industrial installations

WSAT-YES

Cooling only

Range 53,3 to 85,0 kW - Seasonal efficiency SEER up to 4,89

R-32: GWP = 675, lightly flammable

Low environmental impact solution

WSAN-YES

Reversible heat pump

Range 53,3 to 85,0 kW - Seasonal efficiency up to SEER 4,64 - SCOP 4,08

R-32: GWP = 675, lightly flammable

Low environmental impact solution

FREE COOLING VERSION

- ✓ Direct FREECOOLING system recovers cold from the external environment and reduces the operation of the compressors until they stop completely.
- ✓ In continental climates (air temperatures often lower +15°C) the saving with FREE-COOLING is higher than 40%.

EXTENDED OPERATION RANGE

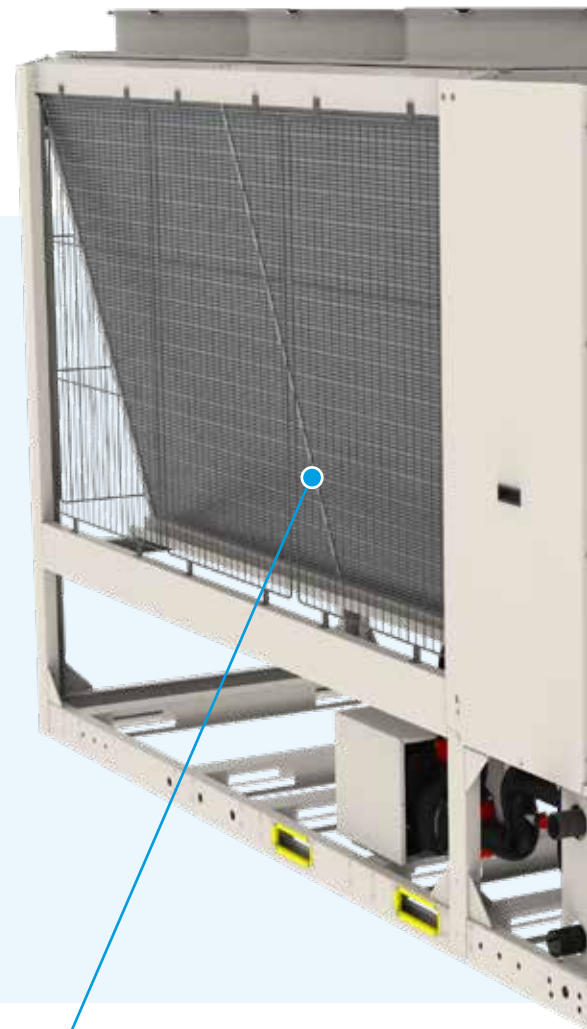
- ✓ Operation ranges outdoor air temperature from -20 to +48°C.
- ✓ Low temperature for use in process cooling, down to -8°C from -20 to +35°C.

INNOVATIVE CONTROL TECHNOLOGY

- ✓ 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

MICROCHANNEL COIL (WSAT-YES and WSAN-YES)

- ✓ Long Life Alloy for higher corrosion resistance and a longer lifespan
- ✓ Up to 30% of refrigerant charge reduction compared to traditional coils
- ✓ Protective treatment for industrial and marine environments available (E-Coated)



DC INVERTER FAN

Low noise emission and low power consumption.

USER INTERFACE

New generation wired user interface offers a complete control solution. Ready for remote use.

BUILT-IN SOLUTION FOR HYDRONIC ASSEMBLY AND SYSTEM TANK

- ✓ Hydronic assembly with 1 inverter pump available
- ✓ 170 or 275 litre steel storage tank available

EXCELLENT QUIETNESS

In addition to standard configuration are available 2 additional acoustic configurations:

- ✓ Silenced with sound levels reduced by -8 dB;
- ✓ Super-silenced with sound levels reduced by -12 dB.

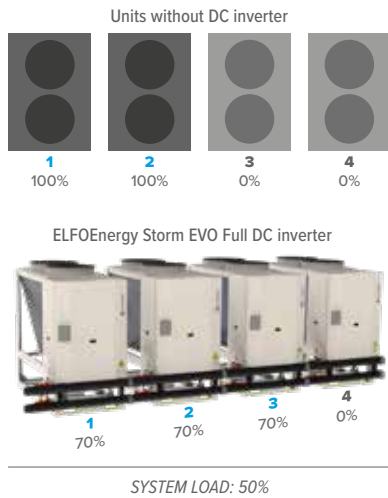
DC INVERTER COMPRESSOR

Quality, reliability, high performances at partial loads and a particularly silent operation.



ELFOEnergy Storm EVO: modularity

Management of up to 16 units in a local network with hydraulic connections of up to 4 units



HORIZONTAL SATURATION

More efficient system due to horizontal saturation logic. The supplied capacity is set by the master unit according to the flow temperature and the temperature set-point. The activation of the slave units follows the "first in first out" logic.

When the maximum installed capacity is not required, the modules do not operate at 100%.

Thanks to this operating logic, all units are operated at partial load, increasing the system's efficiency.



ADVANTAGES

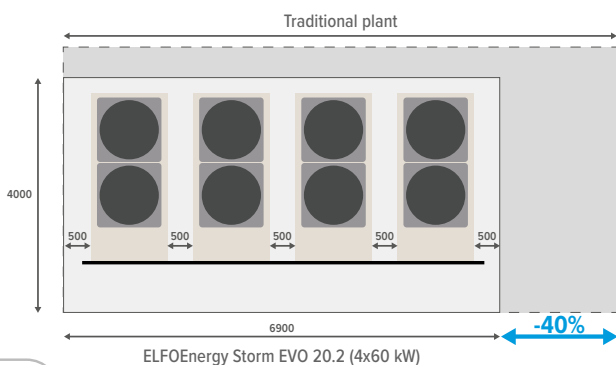
Compared to a monoblock solution with the same capacity, it offers:

- ✓ Reliability;
- ✓ Increased system efficiency;
- ✓ Reduced footprint.

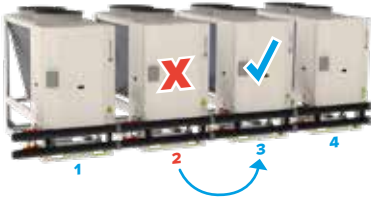
REDUCED SPACES

Up to 40% smaller footprint compared to a modular system with conventional chillers:

- ✓ Optimised airflow for minimum clearance;
- ✓ Specially developed design for modularity;
- ✓ Integrated system storage.



MAXIMUM RELIABILITY



- ✓ In the event of failure of one unit within the modular system, another unit acts as a backup providing the required capacity, and ensures the continuity of the system;
- ✓ Separate power supply for each module (real electrical redundancy);
- ✓ Independent cooling circuits for each module (real mechanical redundancy).

PROTECTION MODE

- ✓ Protection mode intervenes to ensure the continuity of the system when a malfunction occurs in the Master unit;
- ✓ If the Master unit suffers a major failure it is still possible to manually assign the Master address to another module.



MODULARITY

Easy to design and install:

- ✓ Easy to configure and quick to install with plug & play;
- ✓ No additional software or electrical components required:
 - the modular system is easily set up on the user interface (one for the whole system)
 - only one communication cable to connect the various modules
- ✓ Hydraulic connections for modularity fast and easy to install (supplied by Clivet);
- ✓ Units can be configured with integrated 3-way valve and storage tank.



HIGH FLEXIBILITY



- ✓ Due to the combination of different sizes, ideal when the maximum installed capacity is required only for short periods during the year;
- ✓ Versions with different functionalities: chiller + free cooling;
- ✓ Each unit is independent because it has its own hydronic group (pumps and storage);
- ✓ The simple addition of further units adapts the output capacity to the actual needs of the building, diluting the investment over time.

Large EVO

Air cooled heat pumps with scroll inverter technology for commercial and industrial installations

WISAN-YEE1

Reversible heat pump

Range 115-233 kW - Seasonal efficiency up to 4,51 - SCOP 4,22

R-32: GWP = 675, lightly flammable

Low environmental impact solution

NEW FEATURES

- ✓ Auxiliary generator management
- ✓ SG Ready Function
- ✓ EVU Lock Function
- ✓ Demand Limit
- ✓ Energy meter
- ✓ Compatible with supervision systems using Modbus or Bacnet protocols

USER INTERFACE

New generation wired user interface offers a complete control solution. Ready for remote use.

BUILT-IN SOLUTION FOR HYDRONIC ASSEMBLY, SYSTEM TANK, PARTIAL RECOVERY AND DHW VALVE

- ✓ Available with standard or high head:
 - Hydropack with 1 inverter pump
 - Hydropack with 1 ON/OFF pump
 - Hydropack with 1+1 inverter pump (1 in stand-by)
 - Hydropack with 1+1 ON/OFF pump (1 in stand-by)
- ✓ Available 300 or 500 liter steel storage tank
- ✓ Partial recovery = about 24% of available heat;
- ✓ Management and production of domestic hot water with a 3-way valve

DC INVERTER COMPRESSOR

Four Full DC Inverter compressors for high performances at partial loads and a particularly silent operation, on two refrigerant circuits

ELECTRONIC EXPANSION VALVE

Quickly and precisely adapts to the effective load required.





DC INVERTER FAN

Low noise emission and low power consumption.

CONDENSING COILS

Copper/Aluminium coils with hydrophilic treatment, which facilitates the condensate drain, decreasing the defrosting times.

Protective treatments of the condensing coils are also available for aggressive environments.

WIDE OPERATION RANGE IN HEATING

- ✓ Operation ranges outdoor air temperature from -20°C to $+44^{\circ}\text{C}$;
- ✓ Supply water temperature down to $+60^{\circ}\text{C}$.

EXCELLENT QUIETNESS

In addition to standard configuration are available 2 additional acoustic configurations:

- ✓ Silenced with sound levels reduced by -8 dB
- ✓ Super-silenced with sound levels reduced by -10 dB .

MODULARITY

- ✓ Management of up 8 units in a local network.

PLATE HEAT EXCHANGER

Maximizes the thermal efficiency thanks to large exchange surfaces.



SPINchiller⁴

Air cooled liquid chillers and heat pumps with multiscroll technology for commercial and industrial installations

WSAT-YSC4

Cooling only

Range 222-675 kW - Seasonal efficiency SEER up to 5,00

Premium and Excellence version available

R-32: GWP = 675, lightly flammable

Low environmental impact solution

WSAN-YSC4

Reversible heat pump

Range 215-1260 kW - Seasonal efficiency up to SEER 4,90 - SCOP 4,10

Premium and Excellence version available

R-32: GWP = 675, lightly flammable

Low environmental impact solution

CONDENSING HEAT RECOVERY (OPTIONAL)

- ✓ Partial recovery = about 20% of available heat;
- ✓ Total recovery = 100% of available heat;
- ✓ Allows the free hot water production for:
 - re-heat hot water coil;
 - domestic hot water;
 - other processes or operation.

ADVANTAGES

- ✓ High energy efficiency;
- ✓ Great operating reliability;
- ✓ Maximum versatility of choice;
- ✓ Supplies the system with only the energy required, in all operating conditions;
- ✓ Follows the load even in conditions of strong partialisation;
- ✓ Guarantees high efficiency values reducing operating costs;
- ✓ Compact dimensions;
- ✓ Management up to 7 units in local network (ECOSHARE).



MULTISCROLL COMPRESSORS: UP TO 16 CAPACITY STEPS

SPINchiller⁴ uses up to 3 scroll compressors on four independent refrigerant circuits, for a better operational flexibility and very high efficiency in all load conditions. Modulation of capacity up to 16 steps and an extended operating range from +50°C (full load) to -10°C of external air temperature that are able to meet the needs of each system.

ECOBREEZE FANS WITH ELECTRICAL CONTROL

Electronically switched permanent magnet synchronous motor with integrated control electronics that enables:

- ✓ 70% increase in efficiency thanks to the absence of brushes and special power supply;
- ✓ Increase in service life;
- ✓ Reduction of the system's electrical effort, thanks to the Soft Start function.

PLATE / SHELL AND TUBE EXCHANGERS

SPINchiller⁴ is supplied as standard with a high performance plate heat exchanger.

To satisfy installations where the water characteristics are particular, such as in the presence of non-pure water that can cause possible incrustations, it is possible to choose the shell and tube exchanger.

High efficiency heat exchanger, which keeps the performance of the unit unchanged and equipped with Victaulic connections.

3 ACOUSTIC VERSIONS

- ✓ ST: unit without compressor soundproofing casing (Standard);
- ✓ SC: unit with compressor soundproofing -3dB(A) in comparison to ST;
- ✓ EN: unit with compressor soundproofing + antivibration joints: -7dB(A) in comparison to ST.

WIDE CAPACITY RANGE

Unità con 2 circuiti frigoriferi, da 3 a 6 compressori scroll:

| | WSAN | WSAT |
|-----|-----------|-----------|
| EXC | 215 - 655 | 222 - 675 |
| PRM | 235 - 630 | 232 - 644 |

Unità con 4 circuiti frigoriferi, da 8 a 12 compressori scroll:

| | WSAN |
|-----|------------|
| EXC | 710 - 1210 |
| PRM | 760 - 1260 |



NEW LAYOUT: MICROCHANNEL EXCHANGER (WSAT-YSC4)

- ✓ V-shaped arrangement to improve heat exchange and reduce overall dimensions and weights;
- ✓ Long Life Alloy for higher corrosion resistance and a longer lifespan;
- ✓ Up to 30% reduction in refrigerant charge compared to traditional coils.
- ✓ Protective treatment for industrial and marine environments available (E-Coated)

SCREWLine⁴-i

Air cooled liquid chillers with screw compressors and inverter technology for commercial and industrial installations

WDAT-iZ4

Range 204-1055 kW - Seasonal efficiency SEER up to 5,42

Excellence version available

R-1234ze: GWP = 7, lightly flammable

Zero environmental impact solution

WDAT-iK4

Range 281-1423 kW - Seasonal efficiency SEER up to 5,39

Excellence and Premium version available

R-513A: GWP = 631, non flammable

Low environmental impact solution

CONDENSING HEAT RECOVERY (OPTIONAL)

- ✓ Partial recovery = about 12% of available heat;
- ✓ Allows free hot water production for:
 - re-heating hot water coils;
 - domestic hot water;
 - other processes or operation.

ADVANTAGES

- ✓ High energy efficiency;
- ✓ Great operating reliability;
- ✓ Maximum versatility of choice;
- ✓ Supplies the system with only the energy required, in all operating conditions;
- ✓ Follows the load even in conditions of strong partialisation;
- ✓ Guarantees high efficiency values reducing operating costs;
- ✓ Ensures a null starting current;
- ✓ Compact dimensions;
- ✓ Management up to 7 units in local network (ECOSHARE).



SCREW INVERTER COMPRESSOR: CAPACITY LOAD FROM 100% TO 15%

SCREWLine⁴ uses inverter screw compressors for an improved operational flexibility and very high efficiency in all load conditions.

The capacity load from 100% to 15% and an extended operating range from +50°C (full load) to -10°C of external air temperature, are able to satisfy the needs of each system.

ECOBREEZE FANS WITH ELECTRIC CONTROL

Electronically switched permanent magnet synchronous motor with integrated control electronics that enables:

- ✓ 70% increase in efficiency thanks to the absence of brushes and special power supply;
- ✓ Increase in service life;
- ✓ Reduction of the system's electrical effort, thanks to the Soft Start function.



3 ACOUSTIC VERSIONS

- ✓ ST: unit without compressor soundproofing casing (Standard);
- ✓ SC: unit with compressor soundproofing -3dB(A) in comparison to ST;
- ✓ EN: unit with compressor soundproofing + antivibration joints: -7dB(A) in comparison to ST.

WIDE CAPACITY RANGE

WDAT-iZ4

- ✓ Single circuit
Single compressor:
200-510 kW
- ✓ Double circuit
Double compressor:
420-1050 kW

WDAT-iK4

- ✓ Single circuit
Single compressor:
280-600 kW
- ✓ Double circuit
Double compressor:
550-1420 kW



NEW LAYOUT: MICROCHANNEL EXCHANGER

- ✓ V disposition to improve heat exchange and reduce overall dimensions and weights;
- ✓ Long Life Alloy for higher corrosion resistance and a longer lifespan;
- ✓ Up to 30% reduction in refrigerant charge compared to traditional coils;
- ✓ Protective treatment for industrial and marine environments available (E-Coated).

SCREWLine⁴-i

Water cooled liquid chillers with screw compressors and inverter technology for commercial and industrial installations

WDH-iK4

Range 340-1520 kW - Seasonal efficiency SEER up to 8,60

Excellence version available

R-513A: GWP = 631, non flammable

Low environmental impact solution

SCREW INVERTER COMPRESSOR: CAPACITY LOAD FROM 100% TO 12%

SCREWLine⁴ uses inverter screw compressors for an improved operational flexibility and very high efficiency in all load conditions.

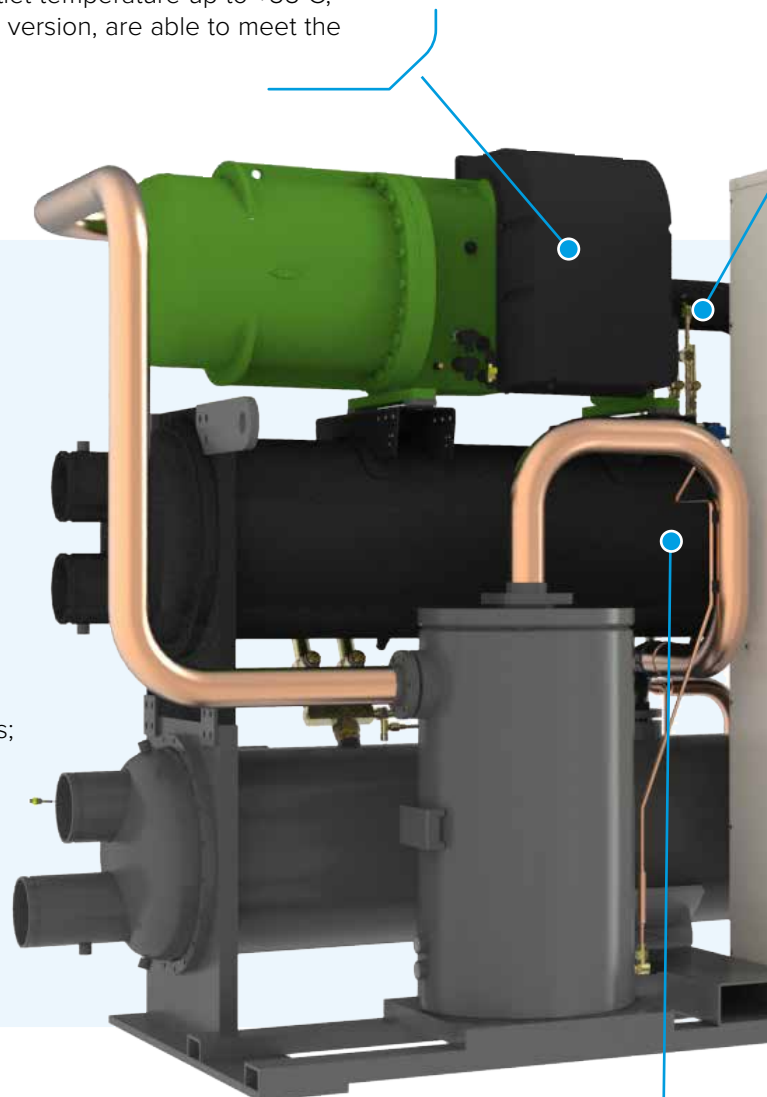
The capacity load from 100% to 12% and condenser water outlet temperature up to +55°C, extended up to +65°C with the high water temperature (HWT) version, are able to meet the needs of each system.

ADVANTAGES

- ✓ High energy efficiency;
- ✓ Great operating reliability;
- ✓ Maximum versatility of choice;
- ✓ Supplies the system with only the energy required, in all operating conditions;
- ✓ Follows the load even in conditions of strong partialisation;
- ✓ Guarantees high efficiency values reducing operating costs;
- ✓ Ensures a null starting current;
- ✓ Compact dimensions;
- ✓ Management up to 7 units in local network (ECOSHARE).

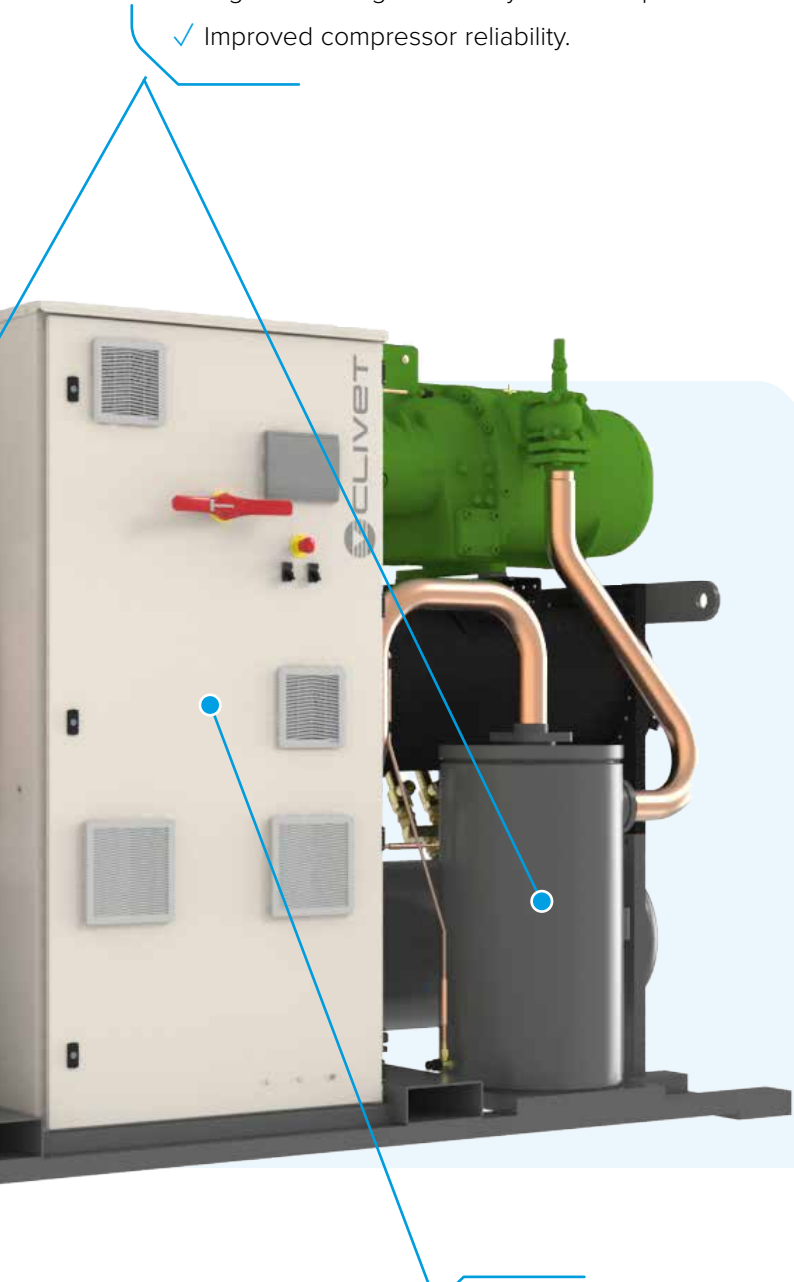
SPRAY EVAPORATOR

- ✓ The spray shell and tube evaporator is distinguished by the distribution system that injects the refrigerant in spray format. The surface of the heat exchange tubes, in which water circulates, is completely covered by a film of refrigerant, greatly increasing the efficiency of the heat exchange and reducing the refrigerating charge up to 40% compared to a flooded evaporator;
- ✓ The high heat exchange efficiency and the low superheat allow an evaporation temperature very close to the supply water temperature, increasing the overall efficiency of the unit.



OIL CIRCULATION SYSTEM

- ✓ Oil separators: one integrated in the compressor and the other one positioned between compressor and condenser
 - ✓ Oil recovery system: active in both separator and evaporator via jet-pump
- They ensure optimum lubrication of the compressor and prevent oil circulation in the refrigeration circuit. This leads to:
- ✓ Higher exchange efficiency at the evaporator and the condenser;
 - ✓ Improved compressor reliability.



2 ACOUSTIC VERSIONS

- ✓ ST: unit without compressor soundproofing casing (Standard);
- ✓ EN: Super-silenced acoustic configuration: -3 dB(A) in comparison to ST version.

WIDE CAPACITY RANGE

- ✓ Single circuit
Single compressor: 340-830 kW
- ✓ Double circuit
Double compressor: 705-1520 kW



3 OPERATING MODES

- ✓ Cooling only (OCO)
- ✓ Heating only (OHO)
- ✓ Operation with water circuit change-over (OHI)

Centrifugal Chiller

Water cooled liquid chillers with centrifugal compressors for industrial and commercial applications

WCH-i

Range 878-1933 kW - Seasonal efficiency SEER up to 9,06
R-134A: GWP = 1430, non flammable

WCH-iZ

Range 808-1599 kW - Seasonal efficiency SEER up to 9,64
R-1234ze: GWP = 7, lightly flammable
Zero enviromental impact solution

FALLING FILM EVAPORATOR (PATENTED)

- ✓ The Falling Film evaporator is distinguished by the patented refrigerant distributor, which injects from above a spray refrigerant. The surface of the heat exchange tubes, in which water circulates, is completely covered by a film of refrigerant, greatly increasing the efficiency of the heat exchange and reducing the refrigerating charge up to 40% compared to a flooded evaporator;
- ✓ The high heat exchange efficiency and the low superheat allow an evaporation temperature very close to the supply water temperature, increasing the overall efficiency of the unit.

ADVANTAGES

- ✓ High silence: sound pressure value (@ 1m) between 79 and 82 dB(A) and almost total absence of vibrations;
- ✓ Compact dimensions: length less than 4 metres. The space savings are an increasingly important aspect in the design of buildings;
- ✓ Maximum adaptability: the capacity load from 100% to 15% and condenser leaving temperature up to +40°C, are able to satisfy the requirements of multiple operating conditions;
- ✓ Several options and accessories to satisfy the needs of each system.



FREE STANDING INVERTER

The use of inverter technology makes it possible to adapt the rotation speed of the compressor to the real demand of the system:

- ✓ Capacity load from 100% to 15%;
- ✓ SEER up to 9,64;
- ✓ Linear inrush current;
- ✓ Control of the compressor operation conditions.

PATENTED TECHNOLOGY

HORIZONTAL BACK TO BACK CENTRIFUGAL COMPRESSOR

- ✓ Clivet developed the patented horizontally back-to-back compression technology;
- ✓ Balance the thrust forces for longer life span and improved efficiency by less seal leakage and no gear loss.



DOUBLE COMPRESSION STAGE

- ✓ The technology of two-stage compression with economizer fully demonstrates the advantage of aerodynamic design and brings higher efficiency to the system;
- ✓ Unique pipeline crossover, with large backflow radius to reduce flow losses and noise.

DIRECT DRIVE MOTOR COUPLING

- ✓ 2 bearings instead of 4 = more compact structure and smaller size;
- ✓ No transmission loss;
- ✓ More silent.



OIL CIRCULATION SYSTEM

It guarantees the optimal lubrication of the bearing and prevents oil circulation in the refrigeration circuit. This leads to:

- ✓ Higher exchange efficiency at the evaporator and the condenser;
- ✓ Improved compressor reliability.



ECONOMIZER

The economizer, supplied as standard, improves the efficiency of the compression and expansion process:

- ✓ 6% more efficient than single stage compression;
- ✓ The compression ratio is equally distributed between the two impellers, reducing the rotation speed by 40% and increasing reliability;
- ✓ Reliable, efficient and at three-stage separation economiser.

Best choice of each installation

AIR

The new Clivet chillers, with low environmental impact and already in compliance with the new European requirements, are designed to meet the different plant requirements.

Covering the same capacity range (50-90 kW and 200-700 kW), they have different characteristics and advantages for a precise choice according to the type of building.

RANGE
50-90 KW



kW
40 50 60 70 80 90 100

ELFOEnergy Sheen EVO SEER 5,00



ELFOEnergy Storm EVO SEER 4,85



ELFOEnergy Storm EVO FC SEER 4,50

| Series | Refriger. | Enviromental respect | Seasonal efficiency | Silence | Compactness | Saving on first investment |
|----------------------|-----------|----------------------|---------------------|---------|-------------|----------------------------|
| ELFOEnergy Sheen EVO | R-32 | ●●●● | ●●●●● | ●●●● | ●●●● | ●●●●● |
| ELFOEnergy Storm EVO | R-32 | ●●●● | ●●●●● | ●●●●● | ●●●●● | ●●●● |

The SEER data given refer to the average value.

RANGE
200-700 KW



kW
200 400 600 1000 1400

SCREWLine⁴-i EXC SEER 5,30



SCREWLine⁴-i EXC SEER 5,30



SCREWLine⁴-i PRM SEER 4,90



SPINchiller⁴ EXC SEER 4,85



SPINchiller⁴ PRM SEER 4,55

| Series | Energy version | Refriger. | Enviromental respect | Seasonal efficiency | Silence | Compactness | Saving on first investment |
|---------------------------|----------------|-----------|----------------------|---------------------|---------|-------------|----------------------------|
| SCREWLine ⁴ -i | EXC | R-1234ze | ●●●●● | ●●●●● | ●●● | ●●●● | ●●● |
| SCREWLine ⁴ -i | EXC | R-513a | ●●●●● | ●●●●● | ●●●●● | ●●●●● | ●●● |
| SCREWLine ⁴ -i | PRM | R-513a | ●●●●● | ●●●●● | ●●●●● | ●●●●● | ●●●●● |
| SPINchiller ⁴ | EXC | R-32 | ●●●●● | ●●●●● | ●●●●● | ●●●●● | ●●●●● |
| SPINchiller ⁴ | PRM | R-32 | ●●●●● | ●●● | ●●●●● | ●●●●● | ●●●●● |

- Very elevated
- Elevated
- High
- Medium
- Low

Industry and Large Commercial range

applications

kW

units



Air-condensed

22÷98



ELFOEnergy Sheen EVO
WSAT-YSi, WSAN-YSi



ELFOEnergy Storm EVO
WSAT-YES, WSAT-YES FC, WSAN-YES

115÷233



Large EVO
WiSAN-YEE1

239÷682



REMOTEX
MSRT-XSC3, MSRN-XSC3

216÷1350



SPINchiller⁴
WSAT-YSC4, WSAN-YSC4



SPINchiller³
WSAT-YSC3, WSAN-YSC3, WSAT-YSC3 FC, WSAN-XSC3 MF

204÷1523



SCREWLine⁴
WDAT-iZ4, WDAT-iK4



SCREWLine³
WDAT-iL3, WDAT-SL3 FC

211÷395



SPINchiller³
WSH-XSC3, WSHN-XSC3



Water-condensed

340÷1520



SCREWLine⁴
WDH-iK4



SCREWLine⁴
WDH-SB4

808÷1933



Centrifugal Chiller
WCH-iZ, WCH-i

Why Clivet?



PROFESSIONAL INSTALLATION

Clivet entrusts the proposal of its products to specialized professionals.

Clivet certified technicians carry out the first start-up of the installed unit, checking its correct installation and optimal operation.



WARRANTY

Clivet's After-Sales Service reaches its Customers through a well-organized support network that is always on hand, as high technology levels require fast and skilled services.

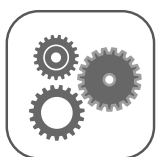
Learn more about the warranty and service conditions for your country by contacting the Distributor or the Branch closest to you.



ASSISTANCE AND MAINTENANCE

Clivet has a widespread network of service centers in Italy and abroad. This guarantees rapid interventions, limits travel expenses for any type of on-site intervention for repairs, modifications, verification of the condition of the unit.

For assistance or information on maintenance programs, contact the Authorized Service Center in your area.



SPARE PARTS

The original Clivet spare parts are available at the spare parts warehouse of the Clivet headquarters in Feltre, offering replacement spare parts even in the event of discontinued units.

On the Italian territory there are local warehouses, with the possibility of collecting the goods even on pre-holiday and public holidays.



CONNECTIVITY AND REMOTE UNIT MANAGEMENT

It allows the supervision of the systems through the main communication protocols (Modbus, LonWorks, BACnet). They are also available:

- ✓ Clivet Eye: remote management, analysis and troubleshooting service via Cloud for all Clivet HVAC systems;
- ✓ Intelliplant: Advanced Control module for the supervision and management of all the units and pumps of the large hydronic systems, optimises the efficiency of the Plant Room and reduces the energy consumption of the building.



EUROVENT CERTIFICATION

Clivet participates in the ECP Programme for "Liquid Chillers and Hydronic Heat Pumps". Check ongoing validity of certificate on www.eurovent-certification.com



LEED CERTIFICATION

Most Clivet models meet both prerequisites 2 and 3 of the Energy and Environment thematic area. They also meet the parameters of Credit 4 which allows to acquire 2 points (Leed 2009)



COMPLIANT WITH THE ECODESIGN DIRECTIVE 2021

Since 2018, the European Regulation 2281:2016, also known as Ecodesign LOT 21, has defined a minimum seasonal efficiency for placing liquid chillers on the European market. The minimum seasonal efficiency values will increase further from 2021 (Tier 2).

Clivet's SPINchiller, SCREWLine and Centrifugo units already comply with the more stringent requirements of 2021 with both the Excellence and Premium energy versions.

Best practice

Torre Libeskind

Milan, Italy
System: Centrifugal and AQX
Year: 2019



OFFICES

Bennet I Laghi

Erba, Italy
Systems: Hydronic
Year: 2020



RETAIL

Westend Shopping Center

Budapest, Hungary
System: Centrifugal
Year: 2020



RETAIL

**ALWAYS READY FOR
THE FUTURE**

INSPIRING SOLUTIONS

For 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.

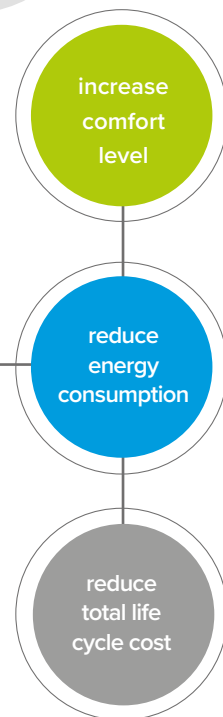


COMFORT FOR THE PLANET & PEOPLE

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.



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

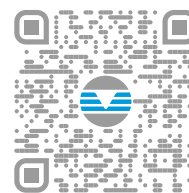
Reproduction, in whole or in part, is prohibited.

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

MideaGroup
humanizing technology



Valid from: April 2023
DF20G575GB-06



CLIVET S.p.A.

Via Camp Lonc 25, Z.I. Villapaiera 32032 - Feltre (BL) - Italy
Tel. +39 0439 3131 - info@clivet.it

CLIVET GMBH

Hummelsbütteler Steindamm 84,
22851 Norderstedt, Germany
Tel. +49 40 325957-0 - info.de@clivet.com

Clivet Group UK LTD

Units F5 & F6 Railway Triangle,
Portsmouth, Hampshire PO6 1TG
Tel. +44 02392 381235 -
Enquiries@Clivetgroup.co.uk

CLIVET LLC

Office 508-511, Elektrozavodskaya st. 24,
Moscow, Russian Federation, 107023
Tel. +7495 6462009 - info.ru@clivet.com

CLIVET MIDEAST FZCO

Dubai Silicon Oasis (DSO) Headquarter Building,
Office EG-05, P.O Box-342009, Dubai, UAE
Tel. +9714 3208499 - info@clivet.ae

Clivet South East Europe

Jarušćica 9b
10000, Zagreb, Croatia
Tel. +3851 222 8784 - info.see@clivet.com

CLIVET France

10, rue du Fort de Saint Cyr - 78180 Montigny le
Bretonneux, France
info.fr@clivet.com

Clivet Airconditioning Systems Pvt Ltd

Office No.501 & 502,5th Floor, Commercial -I,
Kohinoor City, Old Premier Compound, Off LBS
Marg, Kiroli Road, Kurla West, Mumbai
Maharashtra 400070, India
Tel. +91 22 30930200 - sales.india@clivet.com