



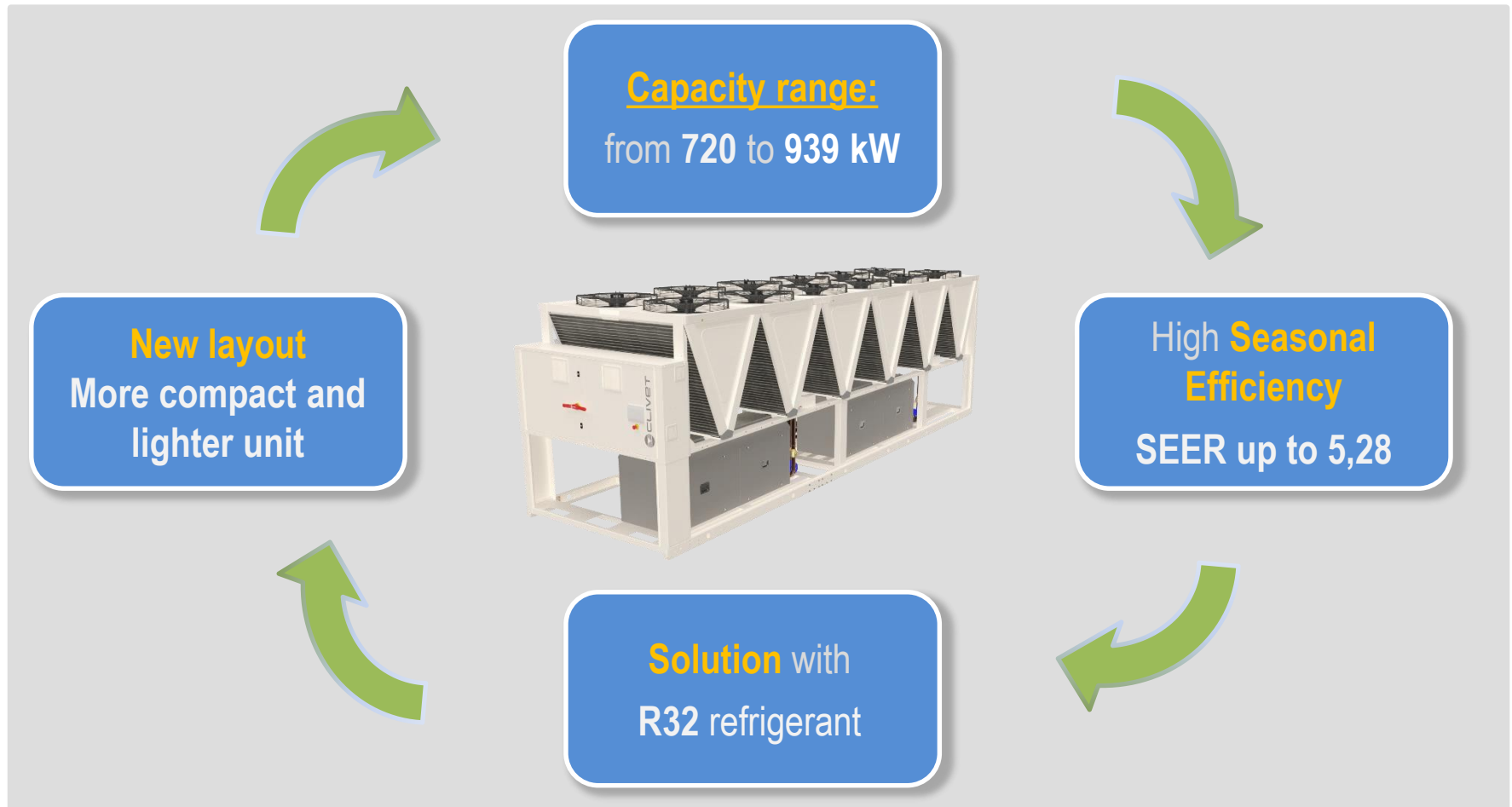
SPINchiller⁴

WSAT-YSC4 265.6 – 350.8

Product Presentation

SPINchiller⁴, Air source – Main Features

SPINchiller⁴ is the solution with scroll compressors and R32 refrigerant, ideal for multiple types of installation



SPINchiller⁴, Air source – Capacity Range

WSAT-YSC4 serie is available with 2 energy versions: **Excellence** and **Premium**

Excellence, Capacity range 720 – 939 kW:

SIZES	265.6	290.7	310.7	350.8
Cooling capacity	720	780	814	939
EER	3,10	3,01	2,92	3,00
SEER	5,28	5,26	5,23	5,22
N° compressors	6	7	7	8
N° circuits	2	2	2	2



Premium, Capacity range 720 – 939 kW:

SIZES	265.6	290.7	310.7	350.8
Cooling capacity	720	780	814	939
EER	3,10	3,01	2,92	3,00
SEER	5,03	5,01	4,98	4,94
N° compressors	6	7	7	8
N° circuits	2	2	2	2

SPINchiller⁴, Air source – Low environmental impact

R32 = Solution with low environmental impact

The environmental benefits of R32 compared to R-410A

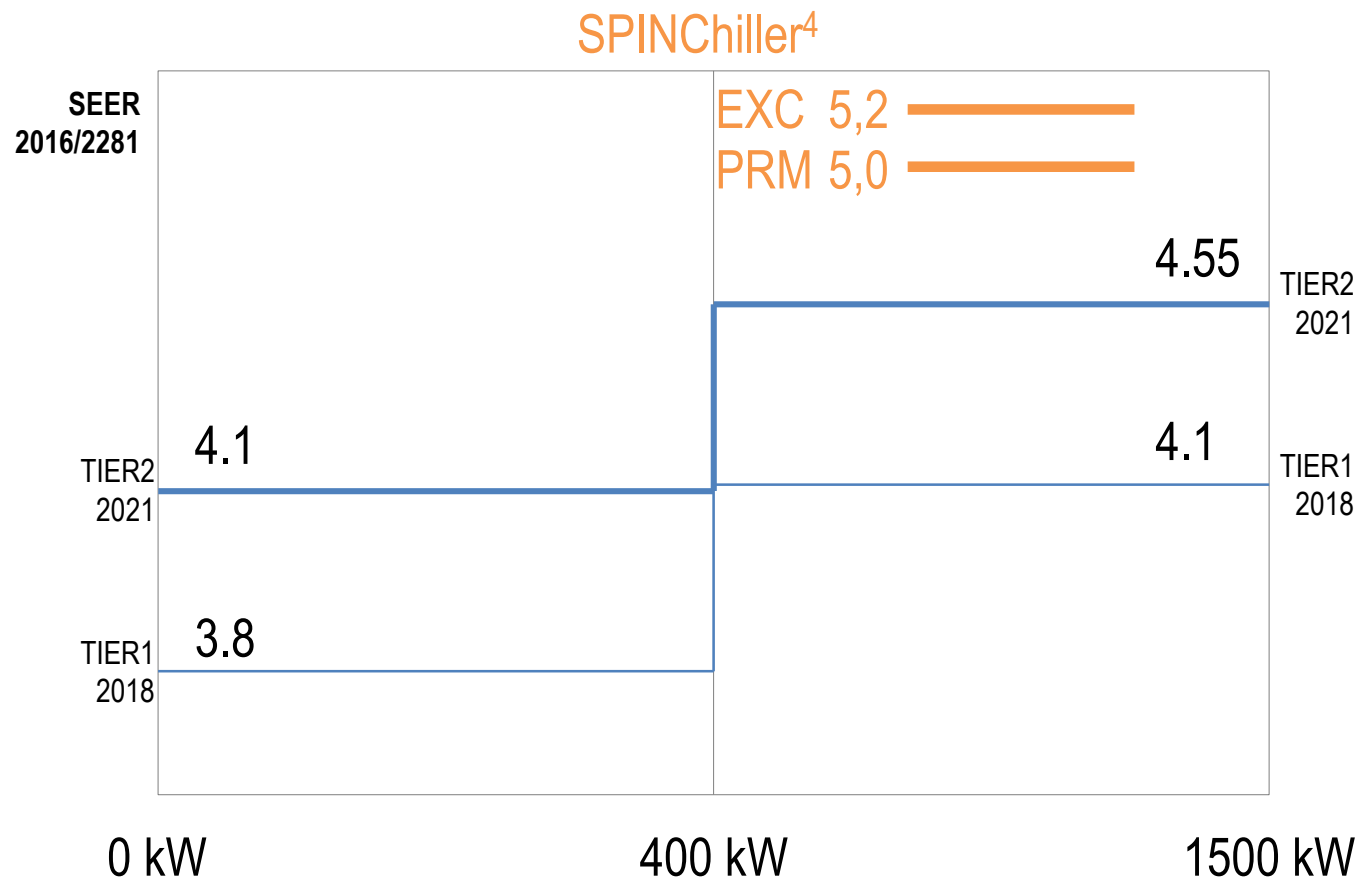
Refrigerant		
Refrigerant type	HFC	HFC
GWP	675	2088
Dispersion in the atmosphere (year)	4,9	16,95
ASHRAE 34, ISO 817 classification	A2L	A1



SPINchiller⁴, Air source – Seasonal Efficiency (Comfort application)

WSAT-YSC4 reaches very **high seasonal efficiency** values

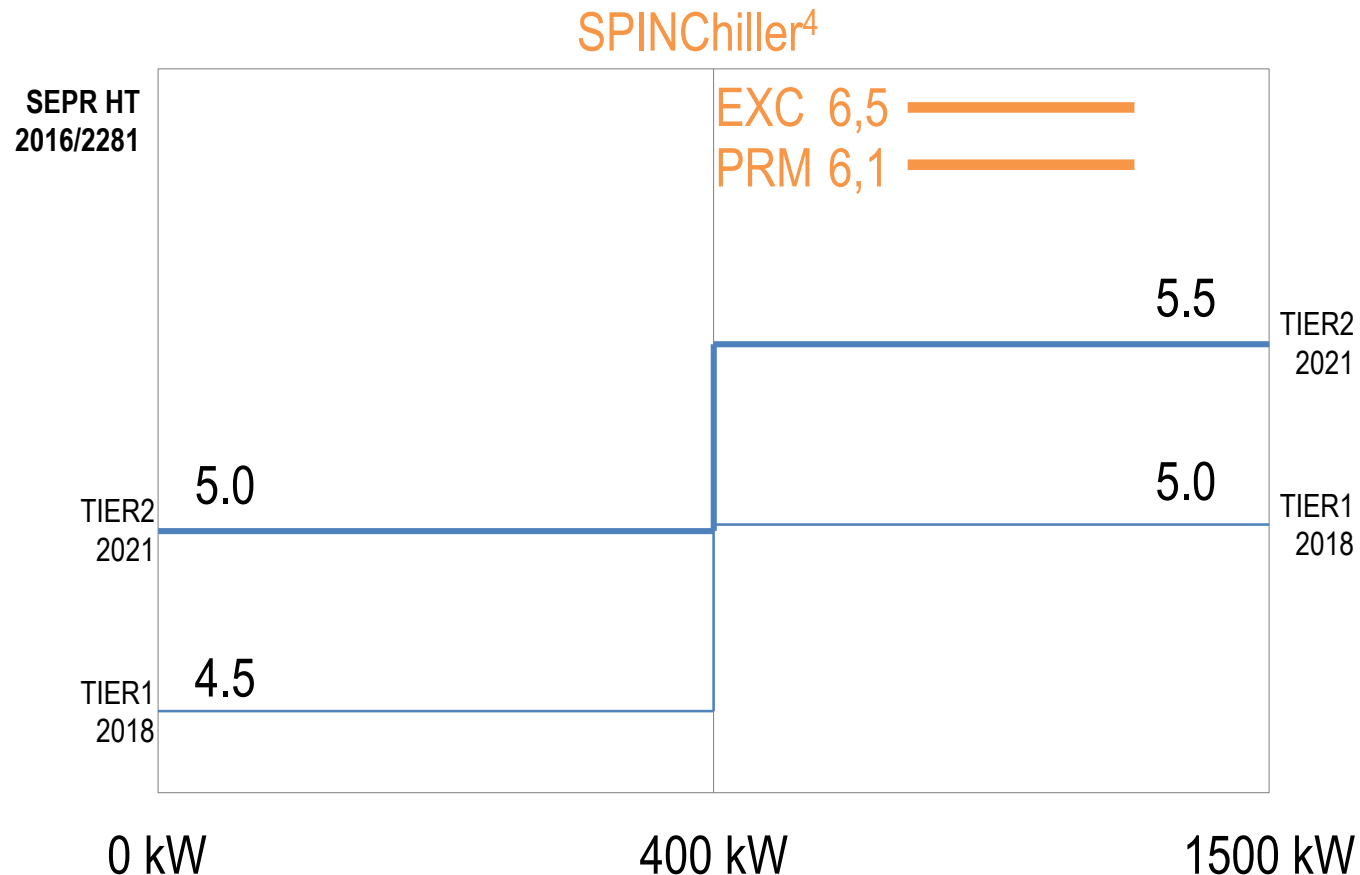
Both versions (**Excellence & Premium**) are already compliant to **2021 requirements (Tier 2)**



SPINchiller⁴, Air source – Seasonal Efficiency (Industrial application)

WSAT-YSC4 reaches very **high seasonal efficiency** values

Both versions (**Excellence & Premium**) are already compliant to **2021 requirements (Tier 2)**



SPINchiller⁴, Air source – Technologies for high efficiency

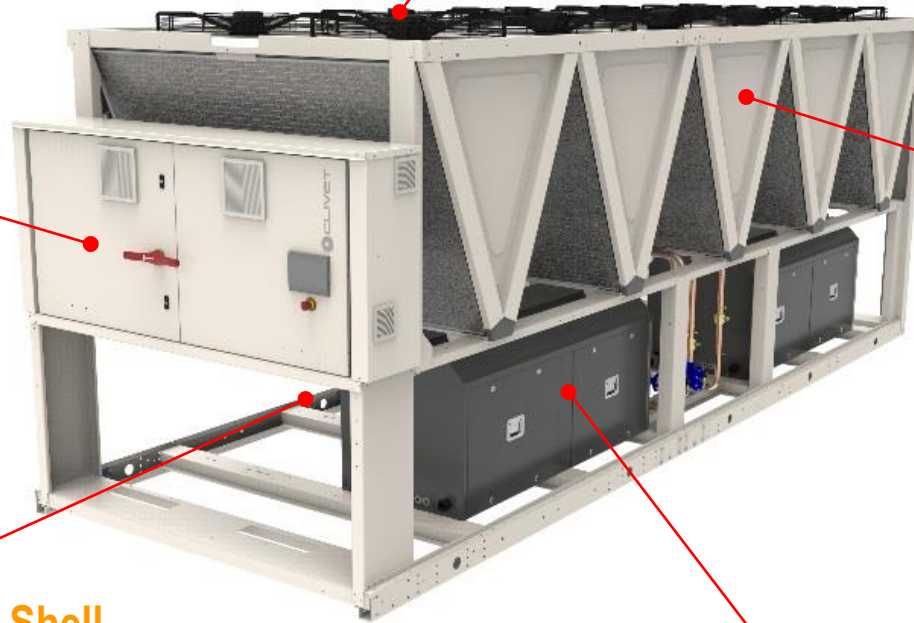
Excellence version: Fans with **variable speed control** (ECOBREEZE)
Premium version: Fans with **variable speed control** (PHASE-CUTTING)

Single power supply

Full aluminum
Micro-channel coils

High efficiency **Plate or Shell and Tube Exchanger** (standard Victaulic connections)

Multiscroll Compressors –
Up to 8 scroll compressors
on 2 refrigeration circuits



SPINChiller⁴, Air source – The Multiscroll technology

SPINChiller⁴ is equipped with more scroll compressors on the same refrigerant circuit:

Advantages:

- Perfectly match the cooling load of the plant in any condition
- Follow the load also with a great staging. Up to 8 capacity steps regulation
- Ensure high efficiency values, reducing operating costs, thanks to larger exchanging surface at partial load
- Reliability guaranteed thanks to the two independent refrigerant circuits

SPINchiller⁴, Air source – New layout

Full aluminium microchannel coils, with 'V' structure optimized to improve heat exchange

- Up to 30% of refrigerant charge reduction vs. traditional tube and fin coils
- Long Life Alloy (LLA) for higher corrosion resistance and longer life cycle
- **More compact and lighter unit**

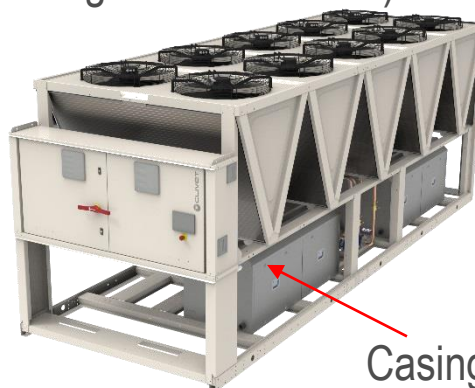


SPINchiller⁴, Air source – Acoustic configurations

ST = Standard acoustic version



SC = Compressor Soundproofing version
(same length of ST version)

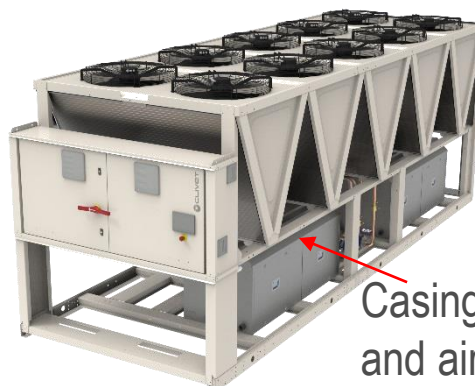


-3
dB(A)

Casing for compressors



EN = Supersilenced version
(same length of ST version)



-7
dB(A)

Casing for compressors
and air-flow reduction

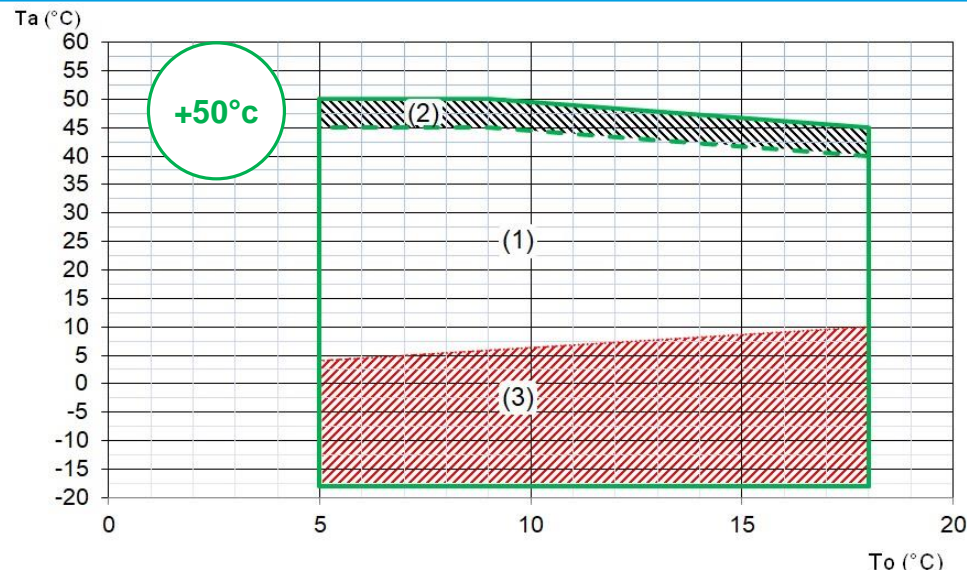
SPINchiller⁴, Air source – Operative range

EXCELLENCE / PREMIUM version

Acoustic configuration ST/SC

Minimum outdoor temperature = -18°C

Maximum outdoor temperature = +50°C

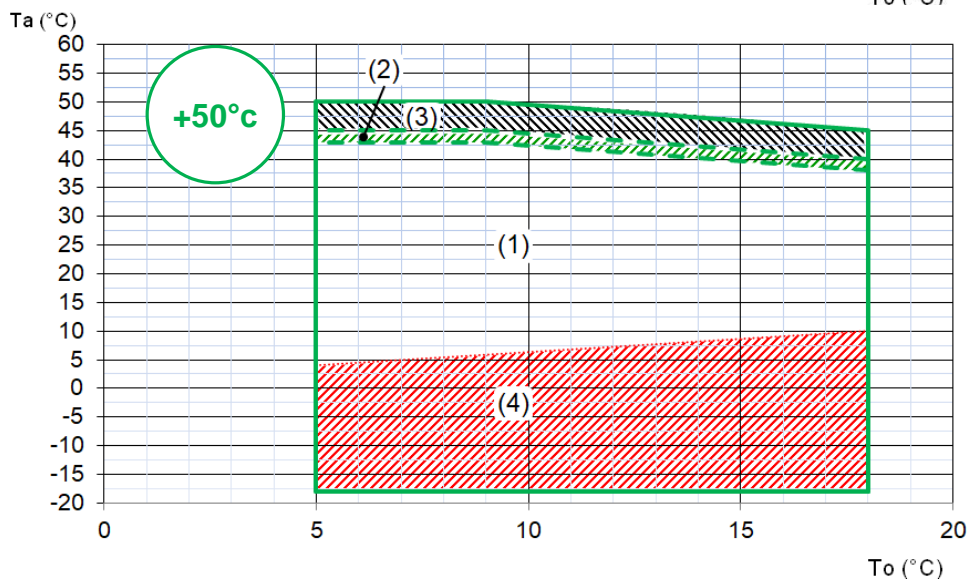


EXCELLENCE / PREMIUM version

Acoustic configuration EN

Minimum outdoor temperature = -18°C

Maximum outdoor temperature = +50°C



SPINchiller⁴, Air source – Perfect for Leed

Excellence and Premium versions are **compliant for LEED certification***

Prestazioni - Excellence

Configurazione acustica Standard (ST) / Insonorizzazione compressori (SC)

Grandezze			265.6	290.7	310.7	350.8
Potenza frigorifera (AHRI 550/590)	5	[kW]	714	774	809	933
Potenza assorbita totale (AHRI 550/590)	5	[kW]	230	256	276	310
COPR	5	-	3,11	3,02	2,93	3,01
IPLV	5	-	6,04	6,00	5,93	5,92

Prestazioni - Premium

Configurazione acustica Standard (ST) / Insonorizzazione compressori (SC)

Grandezze			265.6	290.7	310.7	350.8
Potenza frigorifera (AHRI 550/590)	5	[kW]	714	774	809	933
Potenza assorbita totale (AHRI 550/590)	5	[kW]	230	256	276	310
COPR	5	-	3,11	3,02	2,93	3,01
IPLV	5	-	5,72	5,72	5,67	5,63



*Satisfies prerequisites related to “Minimum Energy Performance” and “Fundamental Refrigerant Management”.
Also matches “Enhanced Refrigerant Management” parameters.

SPINchiller⁴, Air source – Technical Insights

Functionalities and options available



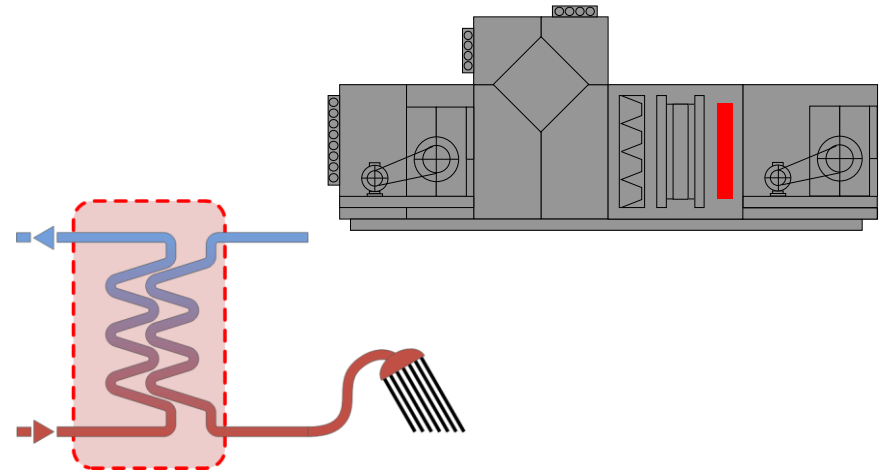
High efficiency of the heat recovery

Recovery of the condensing heat, in cooling mode

- **Partial recovery** = around 20% of the available heat rejection

It allows **free hot water production** for

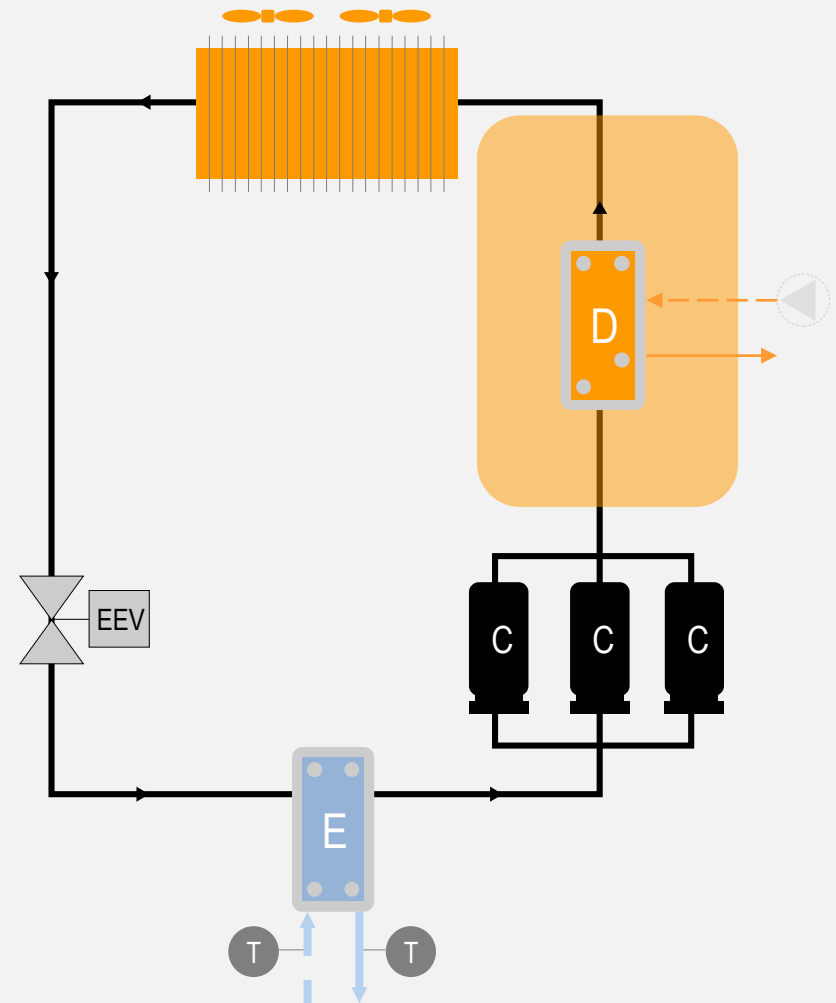
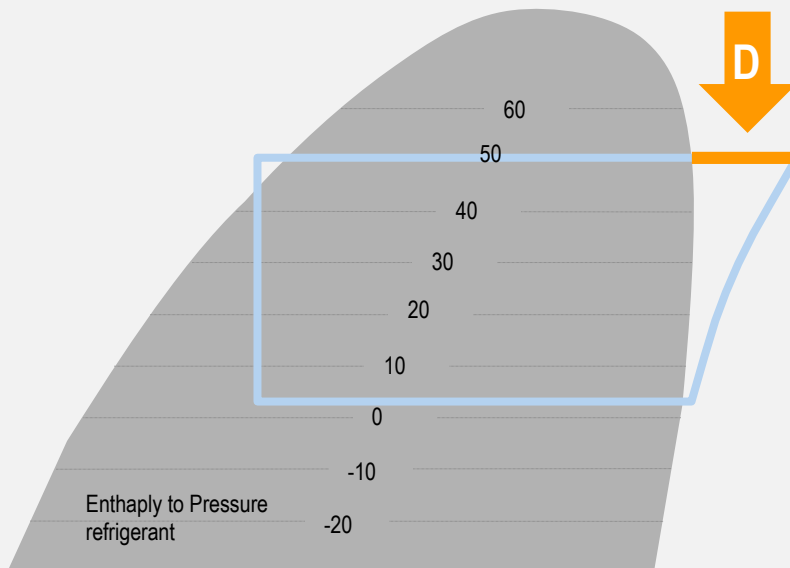
- **Re-heat** hot water coil
- **Domestic** hot water
- Other **processes** or **operation**



High efficiency of the heat recovery

Partial Heat recovery (D)

- Around **20%** of the available heat rejection
- **Control** is activated by the User



Coil protection

E-coated protective treatment available for industrial and marine environments

- over 3000 hours of protection against salt spray (ASTM G85 A3 - SWAAT);
- over 2000 hours of protection against UV rays (ASTM G155-05a)

Atmospheric Corrosivity category (ISO 9223)	C1, C2	C3 (inland)	C3 (coastal)	C4	C5	CX
Corrosivity	Very low, Low	Medium	Medium	High	Very high	Extreme
Typical environments - examples	Indoor, Rural areas	Urban areas	Urban areas	Polluted Urban, industrial, coastal areas	Very high pollution & salt deposition areas	Extreme industrial, coastal areas
Microchannel coils (standard)	OK	OK	NR	NR	NR	NR
Microchannel coils with E-coated (option)	OK	OK	OK	OK	AP	AP

OK: Recommended;

AP: Acceptable, life may be shorter;

NR: Not possible

Simplifies and industrializes the plant

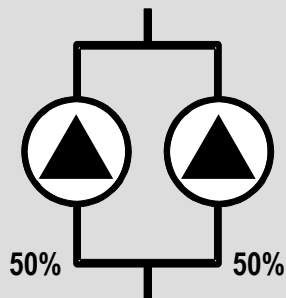
Optional integrated **pumping groups** save:

- Time and cost for the **set-up**
- Floor area for pumping equipment and relevant clearance

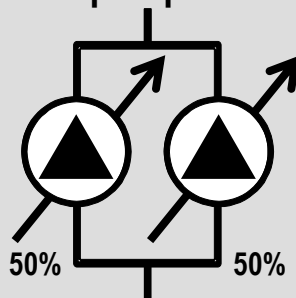
Options available:

Parallel operation

Hydropack
2 poms

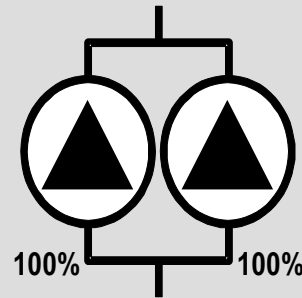


Hydropack
2 inverter
pumps

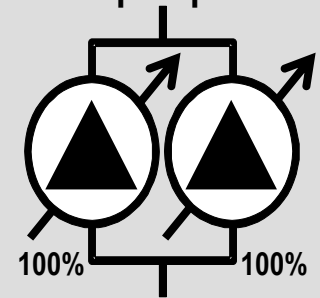


Stand by operation

Hydropack
1+1 pump



Hydropack
1+1 inverter
pump



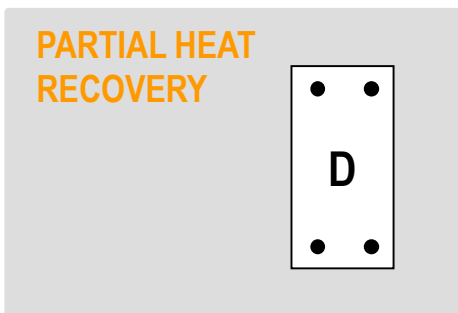
Simplifies and industrializes the plant

Storage Tank (optional):

- Recommended for applications with insufficient water content for the properly function of the unit

EXCELLENCE / PREMIUM	265.6	290.7	310.7	350.8
Storage Tank capacity [Liters]	750	750	750	1050

Option not compatible with the following hydronic options:

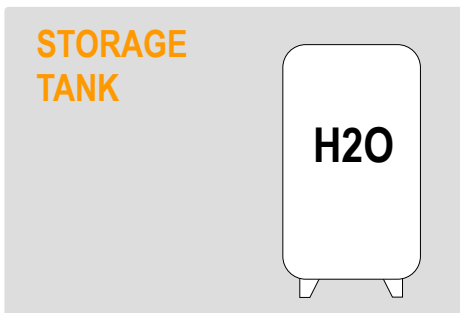


Simplifies and industrializes the plant

Shell & Tube exchanger (optional):

- Less affected by fouling
- Simple maintenance
- All water fittings are Victaulic
- The unit performances remain unchanged

Option not compatible with the following hydronic options:



Simplifies and industrializes the plant

Microchannel coils protection panels (optional):



Standard layout



Layout with **Microchannel coils protection panels**

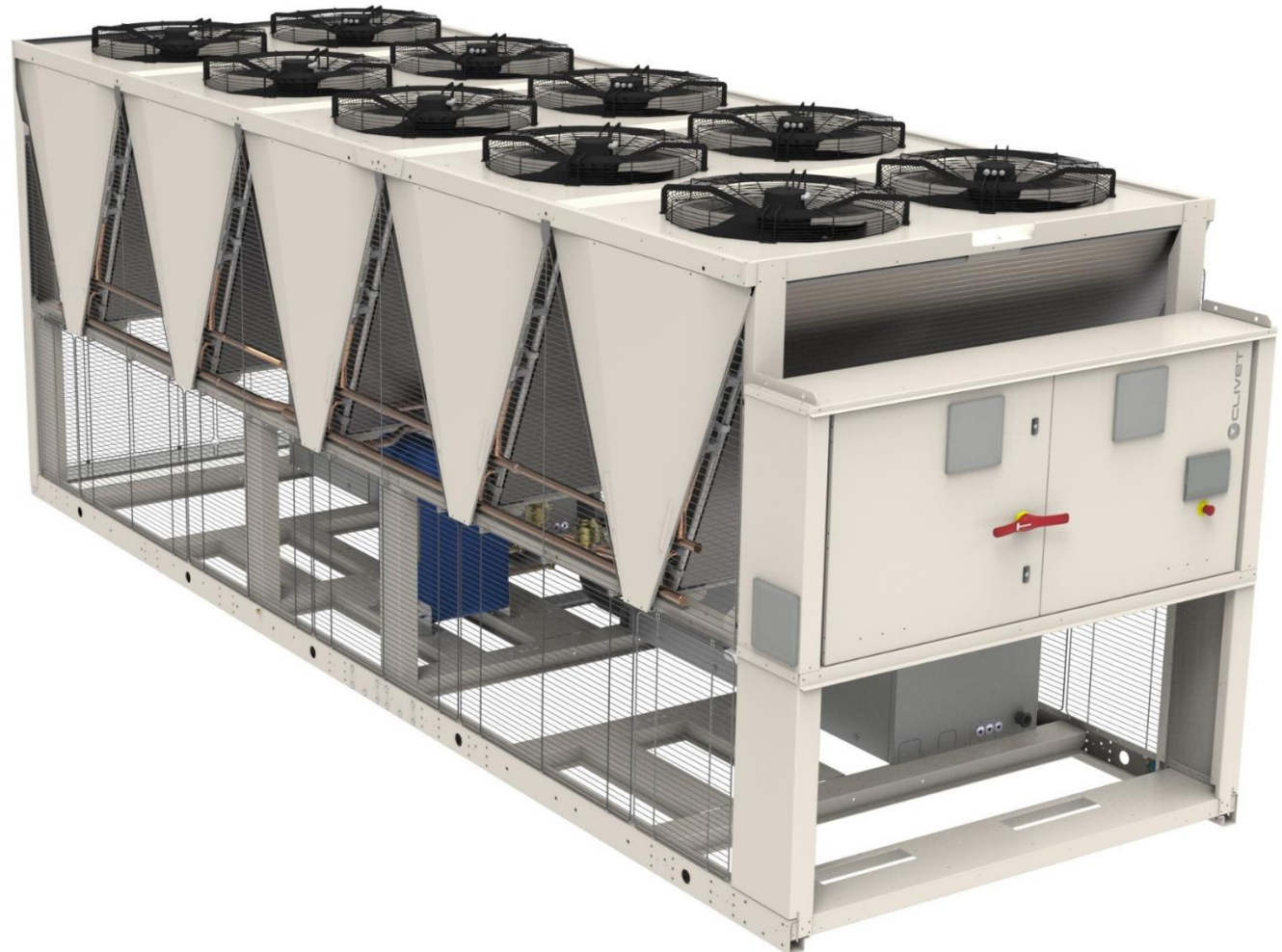
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Greater protection for transport and Users

Simplifies and industrializes the plant

Finned coil protection grilles and compressor compartment (optional):

Protection Grilles
cover also the back
part of the unit

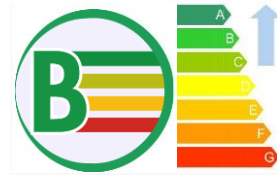


Ecoshare: Automatic management of a group of units

Modular system with **ECOSHARE** up to 7 units in local network

In comparison with a single unit of equivalent overall capacity it offers **many advantages** such as:

- **Increased energy efficiency**



- **Higher resilience**



ECOSHARE NETWORK

Ecoshare: Automatic management of a group of units

ECOSHARE functionality: automatic management of a group of units that operates on the same circuit, by means of the creation of a **CLIVET local network**.

The group control is assigned to a unit identified as **MASTER**.

The local network can be extended **up to 7 units (1 Master and 6 Slaves)**.

- **Maximum reliability** → Unexpected breakdown does not compromise the whole system
- **Distribution Principles:**
 - **Vertical saturation:** The unit is activated if the previous one is at full load
 - **Horizontal saturation:** Units are activated following the group maximum efficiency

Pumping group: for both distribution technologies it is possible to have either the pumping group **always activated** or activated **only when at least one compressor of the unit** (chiller, heat pump, multifunction, ecc.) **is in operation**.

Simplifies and industrializes the plant

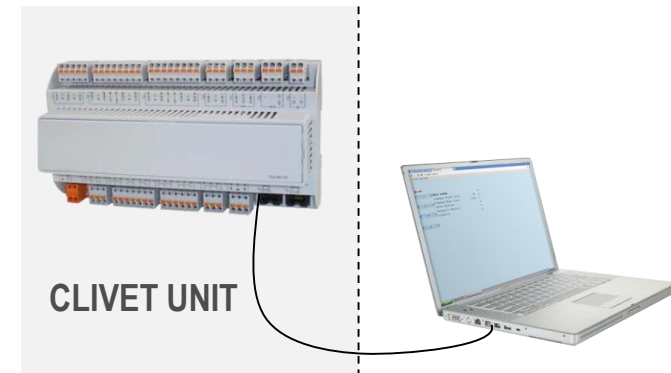
On board display

- Enables to interact easily and immediate with the unit



Connection to the PC through Ethernet port:

- Simplifies after-sales service thanks to the performing diagnostic, updating and for remote assistance tools



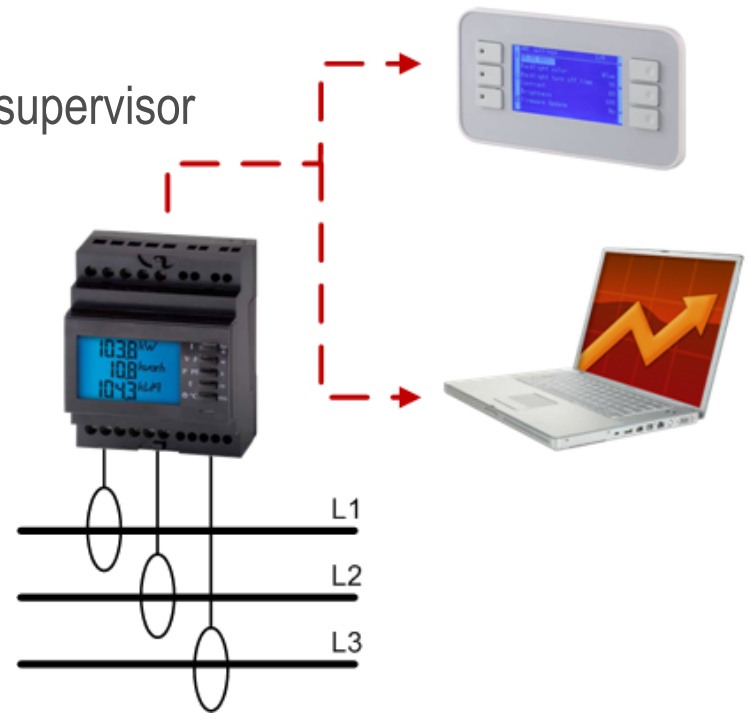
Simplifies and industrializes the plant

Energy measuring

- It **displays** the main unit's electrical parameters
- It **displays** them on the unit display
- It **transmits** them via the serial connection to the supervisor

The monitored **electrical parameters** are:

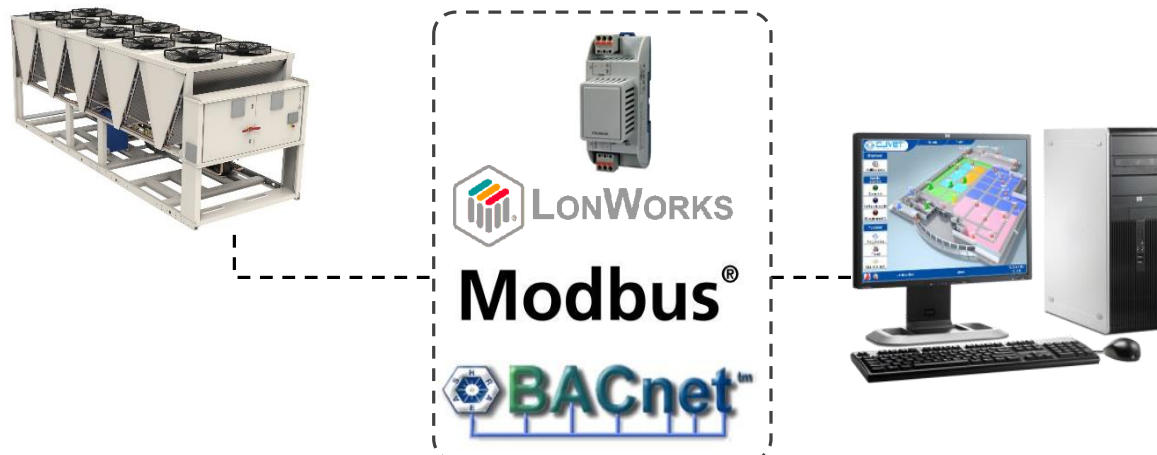
- Voltage/ Current/ Frequency
- Cosfe/ Harmonic components
- Power input/ Energy



Simplifies and industrializes the plant

The unit can be remotely managed by:

- optional **remote control**
 - replicates the on board user interface
- the **potential free contacts** as standard
- the **supervision system**
 - through different communication protocols



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