SPHERA EVO BOX

SRHME-BC + MDAN-YMi 2.1 - 5.1

Product Presentation

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SPHERA EVO

Contents

1. **The New Split Air to Water Heat Pump**
2. Key Technology
3. Features & Specifications
4. Applications
5. Conclusions

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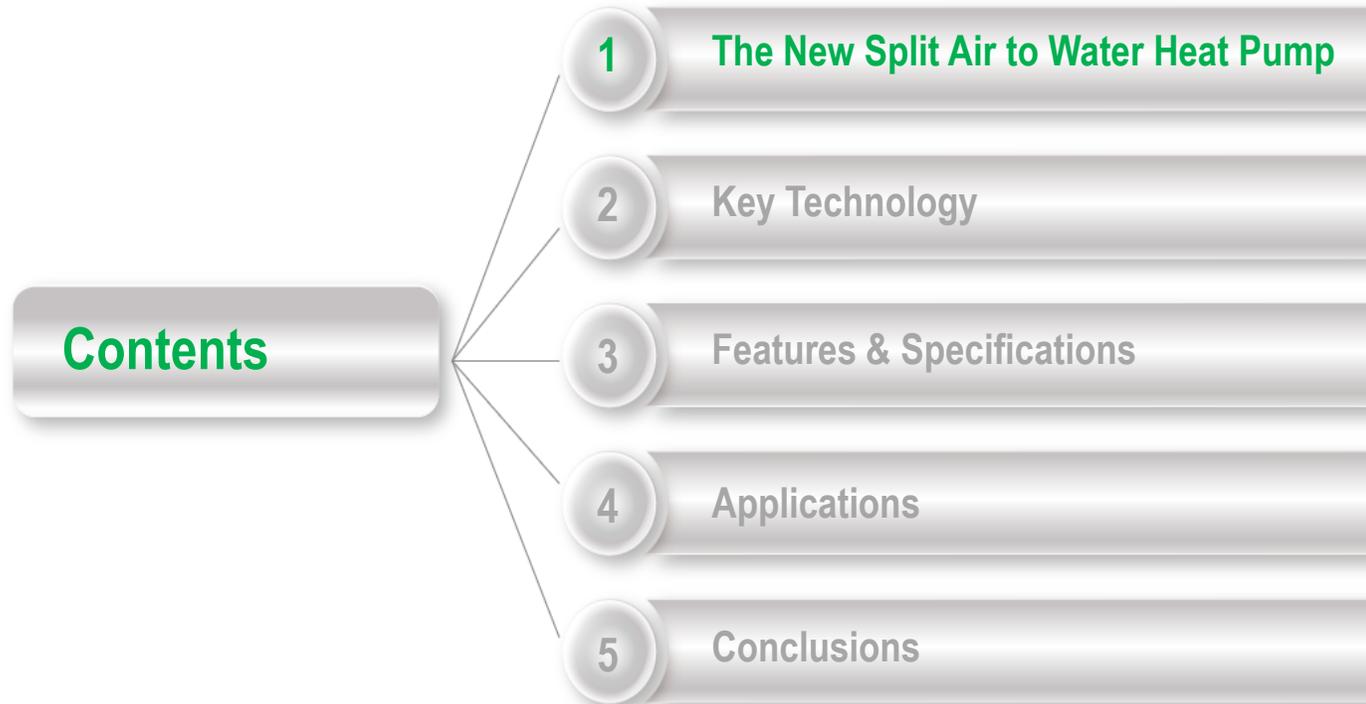
INTEGRATED SOLUTION FOR EACH APPLICATION:
Heating, Cooling and Domestic Hot Water

- **SPHERA EVO** it is the integrated system that provide heating, cooling and domestic hot water for all the family.

- **A total comfort solution** for the whole year

- It **completely replaces** the traditional fuel/gas boilers

SPHERA EVO : Applications

Each version of SPHERA EVO has been carefully designed to meet in the best way the different demands of all type of residential homes.

Medium-Low consumption single-family Houses and Offices

SPHERA EVO BOX Comfort is suitable for commercial application as offices or houses with specific DHW volume required.

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SPHERA EVO: New refrigerant R-32

SPHERA EVO is the sustainable solution for the all year round comfort thanks to the new ecological **refrigerant R-32:**

- Low GWP (Global Warming Potential): -70% compared to R-410A

- Better performance under severe conditions

- Less charged volume is needed in the system

- Higher heat transfer coefficient

FULL DC INVERTER TECHNOLOGY

- New **R-32 refrigerant**

- **4 capacity sizes** to cover all needs

- **Class A+++** on heating mode BT (LWT 35°C)

- **Class A++** on heating mode MT (LWT 55°C)

- Twin Rotary DC inverter compressor and DC inverter Fan

- Electronic pump with variable flow

- 3 Way Valve for Domestic Hot Water production and tank probe

- From **-25°C** in heating mode to **+46°C** in cooling mode

- **Silent** mode available during the night: **- 4 dB(A)**

- **ICE Protection System** to protect the outdoor unit

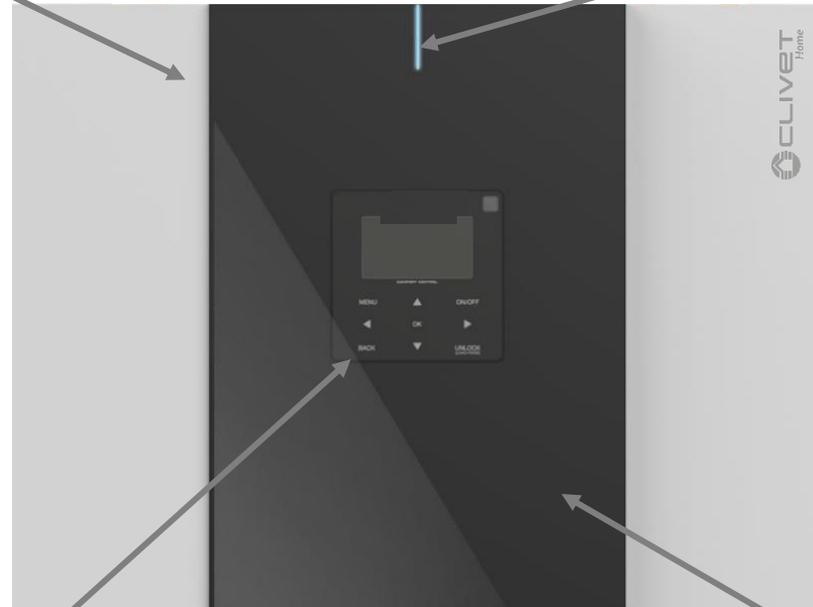Nominal heating capacity: (**A7/W35**) **4** to **10** kW

Nominal cooling capacity : (**A35/W7**) **4** to **10 kW**

NEW IDENTITY → Clivet ALTO Design

New Appearence

Led for status and alarm

New User Interface

Polycarbonate panel

SPHERA EVO : What is new?

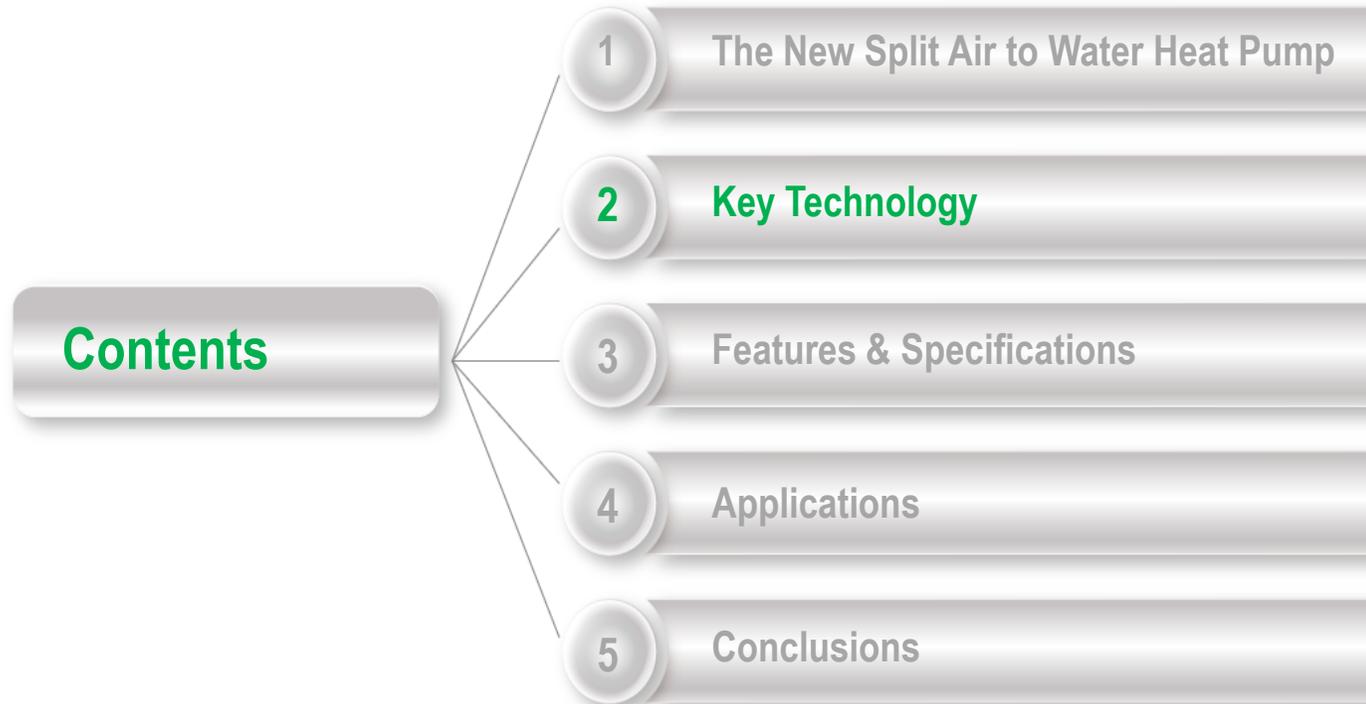**DISTINTIVE FEATURES** and differences compared to R-410A series

- More **value for Money**

- **Wi-Fi** Connection to use the dedicated **APP**

- **Smart Grid Function** management of the power supply for the photovoltaic and the power supply

- **Greater versatility**: Integrated DHW three way valve and tank probe

- Complete system with **dirt magnetic strainer** and **space expansion vessel**.

- Additional **accessories**:

  o 200lt **DHW tank**

  o **External gas boiler** connection kit

  o 40lt **Buffer tank**

- Longer refrigerant line **up to 30m** and precharged for up to 15 m / 25 m of height difference

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SPHERA EVO : What is new?

SYSTEM COMBINATION

SPHERA EVO		2.1	3.1	4.1	5.1
Heating Capacity	Air 7 °C – Water 35°C	4,49 kW	6,32 kW	8,37 kW	10,3 kW
Outdoor Units	**MDAN-YMi**	2.1	3.1	4.1	5.1
Indoor Units	**SRHME-BC**	**A** (Pump with max 70 kPa)			
		A - 1PUM (Pump with max 100 kPa)			

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INNOVATIVE TECHNOLOGY

SPHERA EVO the new generation of residential heat pumps :

- **Wide power range with R-32,** widest range heat pump and DHW production from 4 to 10 kW.

- **DC Inverter technology,** ideal for the operation at partial load.

- **DHW production**, it provides heating, cooling and Domestic Hot Water as well, thanks to integrated 3 way valve. It is also possible to combine three different optional tanks with volume 200,300 and 500 liters, with solar exchanger as well.

- **High performances heat exchanger**, which permits to increase the performances and the operation limits.

- **Connectivity**: the **Wi-Fi** module is supplied as standard, in order to be able to manage the heat pump with the new dedicated **APP**

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WIDE OPERATING RANGE

- **Outdoor air temperature operating range**

SPHERA EVO operates with an inverter compressor optimally regulated according to the outdoor temperature, offering 80% of the nominal heating capacity of at **-7°C** and reliable anti-freezing protection.
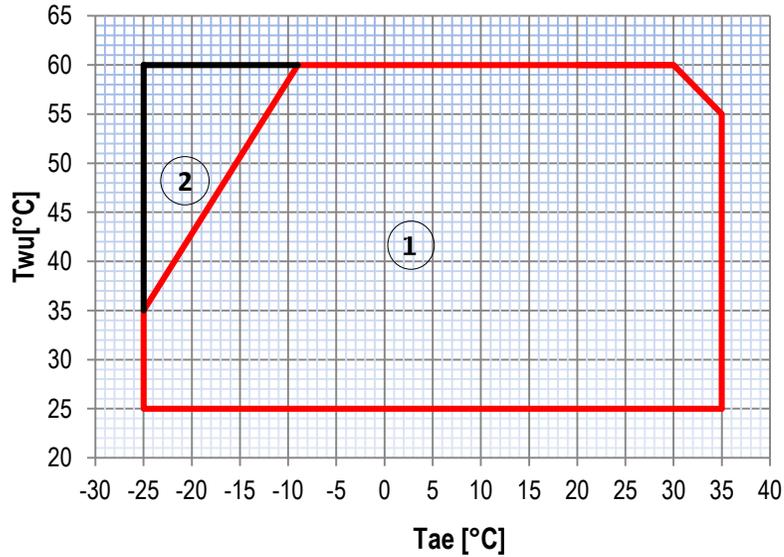
35 °C	43 °C	46 °C
-25 °C	-25 °C	-10°C
Riscaldamento	ACS	Raffreddamento
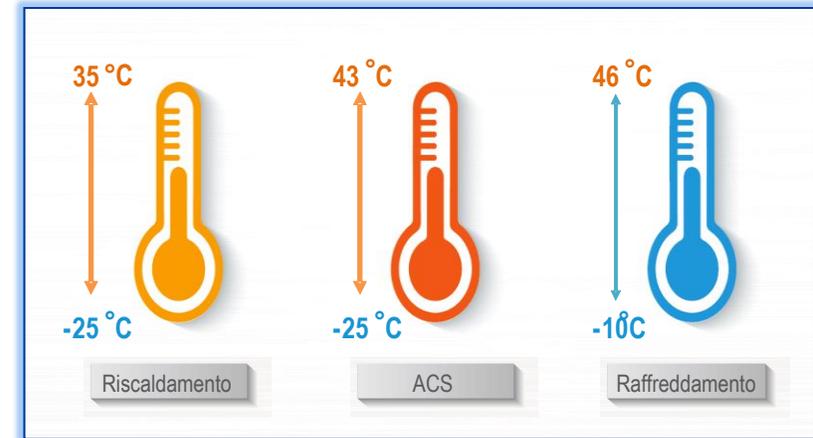
- **Leaving water temperature range**

SPHERA EVO can supply a minimum water temperature in cooling mode of 5°C and a maximum leaving temperature in heating mode of **60°C**.*.*

60 °C	55 °C	20 °C
25 °C	25 °C	0 °C
Riscaldamento	ACS	Raffreddamento
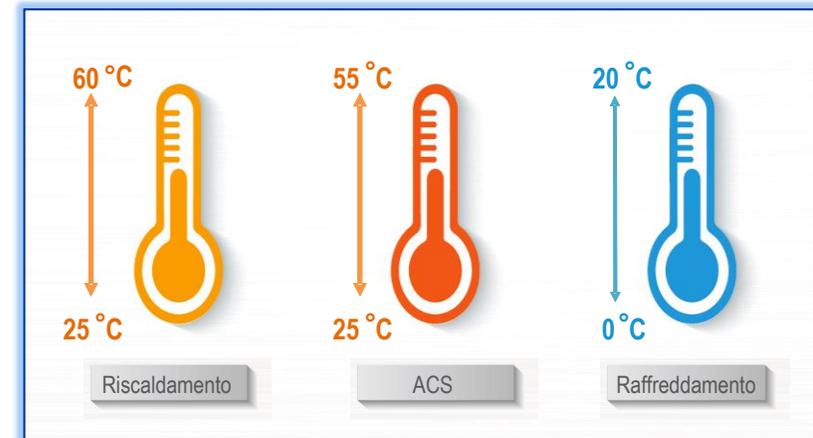
* The leaving water temperature range will differ when setting different mode.

WIDE OPERATING RANGE

Heating

DHW

DHW at 55°C from -9°C to 30°C of air temperature!

Cooling

Hot water production down to -25°C outdoor air temperature!
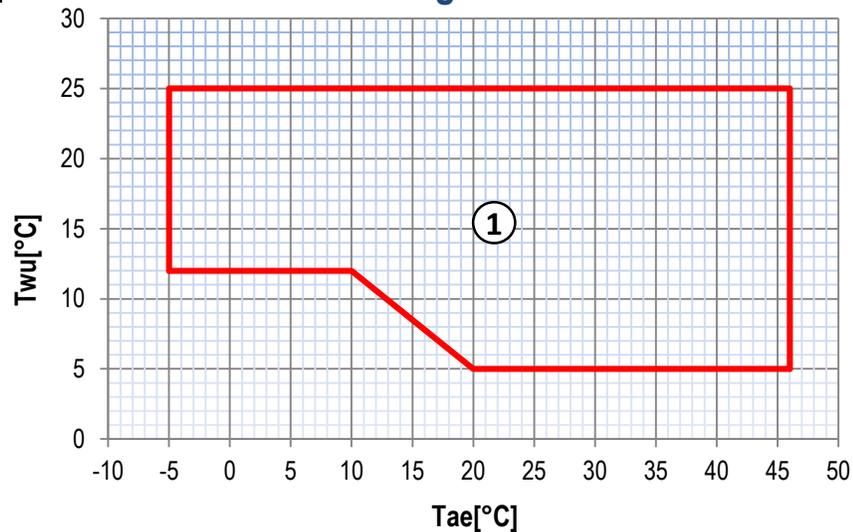
Twu [°C] = Leaving water temperature

Tw$_{DHW}$ [°C] = Domestic hot water temperature

Tae [°C] = Outdoor air temperature

① = Normal operating range

③ = Operating range with only back-up heater* or additional heating source

* Back-up heater supplied as separate optional
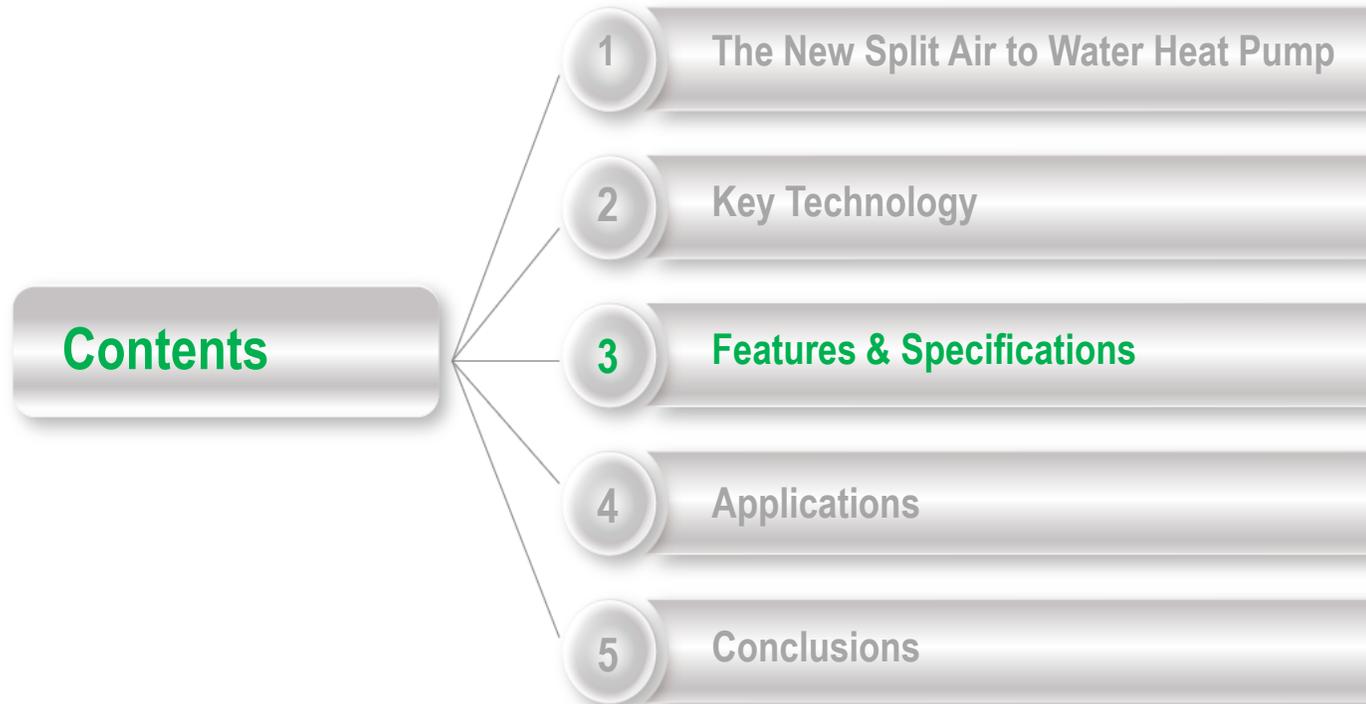
CERTIFICATIONS

Eurovent Certification

**Keymark**
Oct 2020

EKO SKLAD
Dec 2020

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Newly designed User Interface

New generation User Interface, for internal installation, that guarantees a **complete control solution:**

- ON/OFF unit

- Operation Mode setting: cooling/heating/AUTO

- DHW setting

- Temp. setting: water outlet temp

- Time setting: 12H/24H

- Timer ON/OFF setting, Day/Weekly

- Display space heating/cooling and DHW set temperature

- Water tank temperature

- Display components status

- Query, malfunction Code, Parameter

- **Modbus** connection

- **WiFi** connection

- Management by **ELFOCONTROL³ EVO**
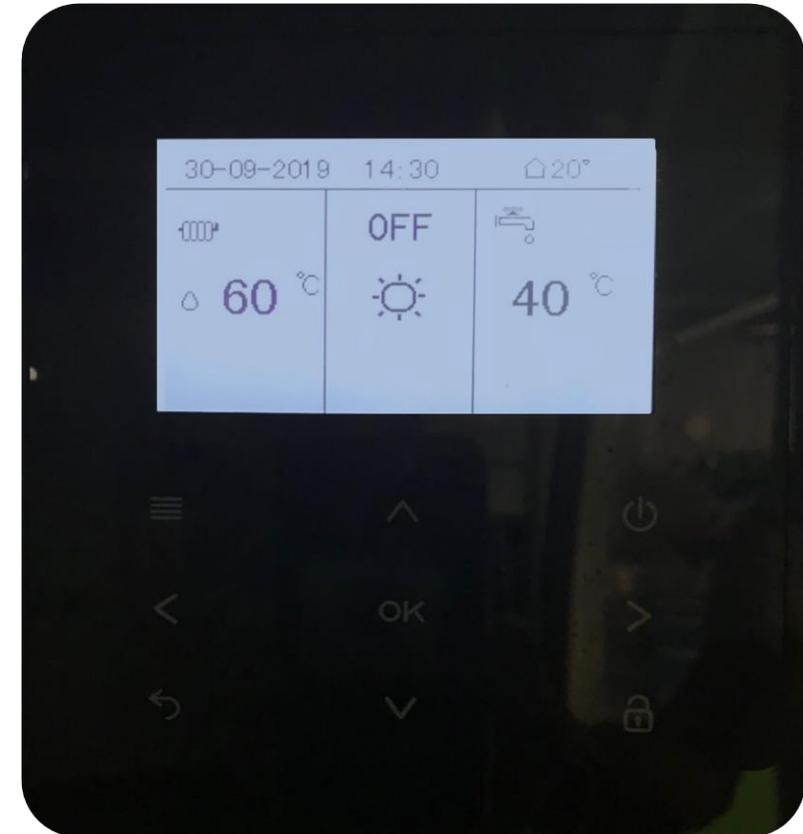
Two zone control (High and low temperature)

The unit manages **two different water temperature set-points:**

- **Zone A** High temperature managed by the thermostat (by customer)

- **Zone B** High temperature managed by the thermostat (by customer)

The kit is composed by :

- Thermostatic mixing valve

- Circulating pump for zone A and B (managed by the unit)

Climatic compensation with outdoor air temperature

In cooling/heating mode, the user can set the **desired climate correlation curve on 9 available** directly on the user interface. Then the system will set the outlet water temperature according to the outdoor ambient temperature automatically.
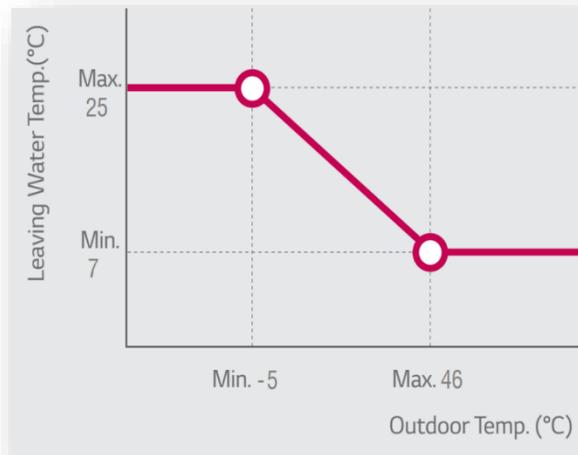

Cooling Operation
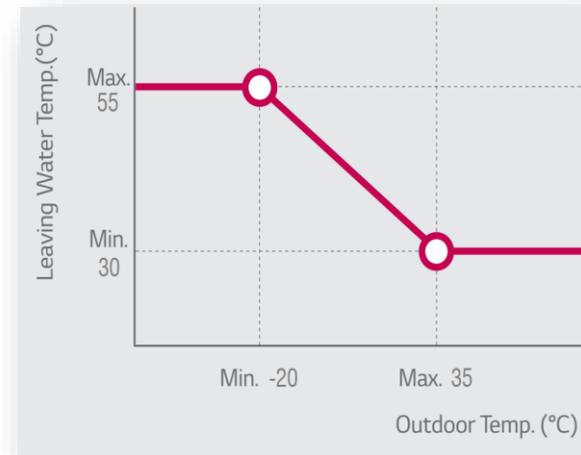
Heating Operation

- Cooling operation: if outdoor temperature increases, cooling capacity supplied will increase automatically in order to keep comfortable cooling performance.

- Heating operation: if outdoor temperature decreases, heating capacity supplied will increase automatically in order to keep comfortable heating performance.

ECO Mode

- In heating mode: during the daytime (7:00 – 22:00) the setting leaving water temperature will be 35°C in order to keep comfortable heating performance.

- And during the night time (22:00 – 7:00) the setting leaving water temperature will be 30°C in order to save energy.

- Above duration (7:00 – 22:00 – 7:00) as well the water temperature (e.g. 30°C or 35°C) **can be set on the User Interface automatically**.
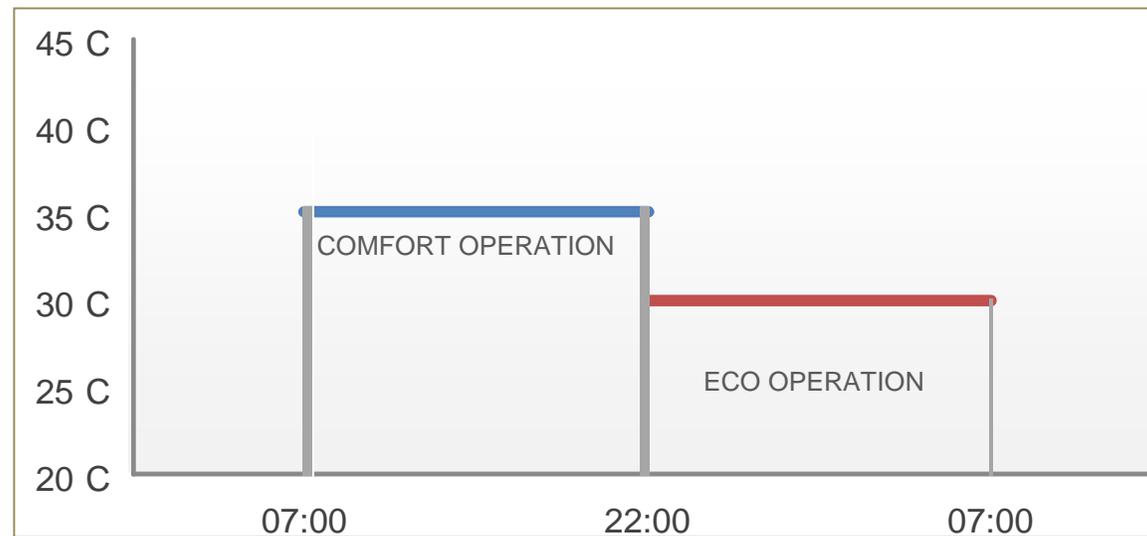
Silent mode

- Silent mode operation can reduce the noise level, which can be useful especially during the night time.

- When the silent mode operation starts, the outdoor unit will reduce the compressor and fan motor speed to lower the noise.

- The default silent mode operation duration is settable .

- **Two silent mode levels** are available: up to **-4 dB(A)** can be reduced compared with normal operation.

- There are two methods to set the silent mode: *Silent mode all time* and *Silent mode in timer* (two different timers can be set).
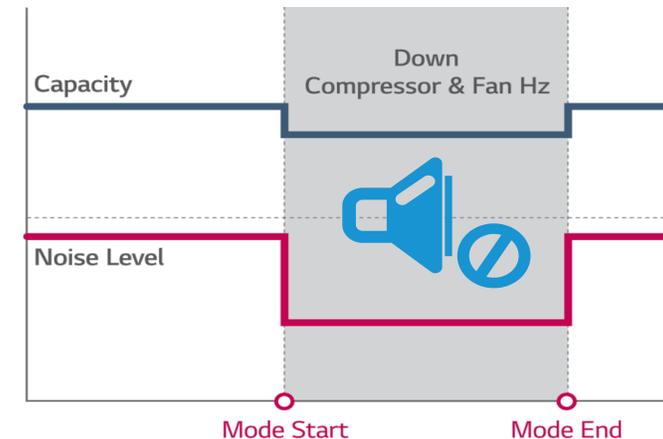
DHW Mode

SPHERA EVO produces Domestic Hot Water up to **55 °C**.

- The DHW will have **the first priority** and stop running any other mode.

- Integrated **3 way valve .**

- Manage up to 4 kW Back-up electrical heater on the additional tank.

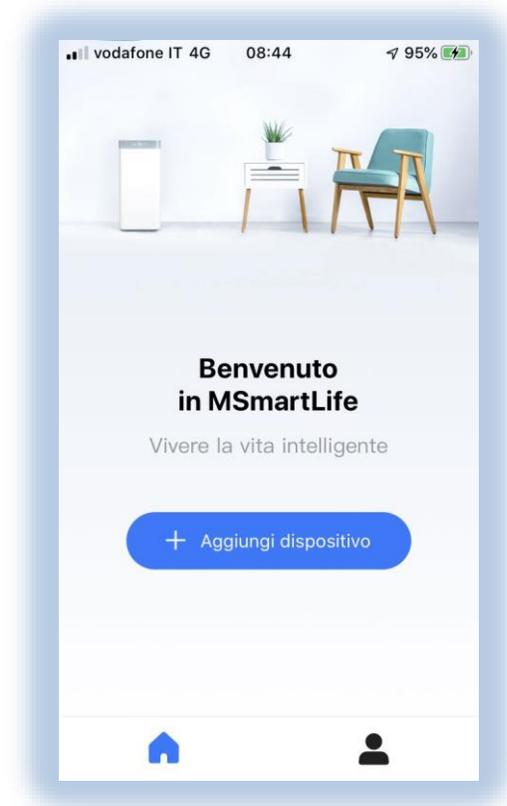- Anti legionella function, guarantee all the tank on temperature.
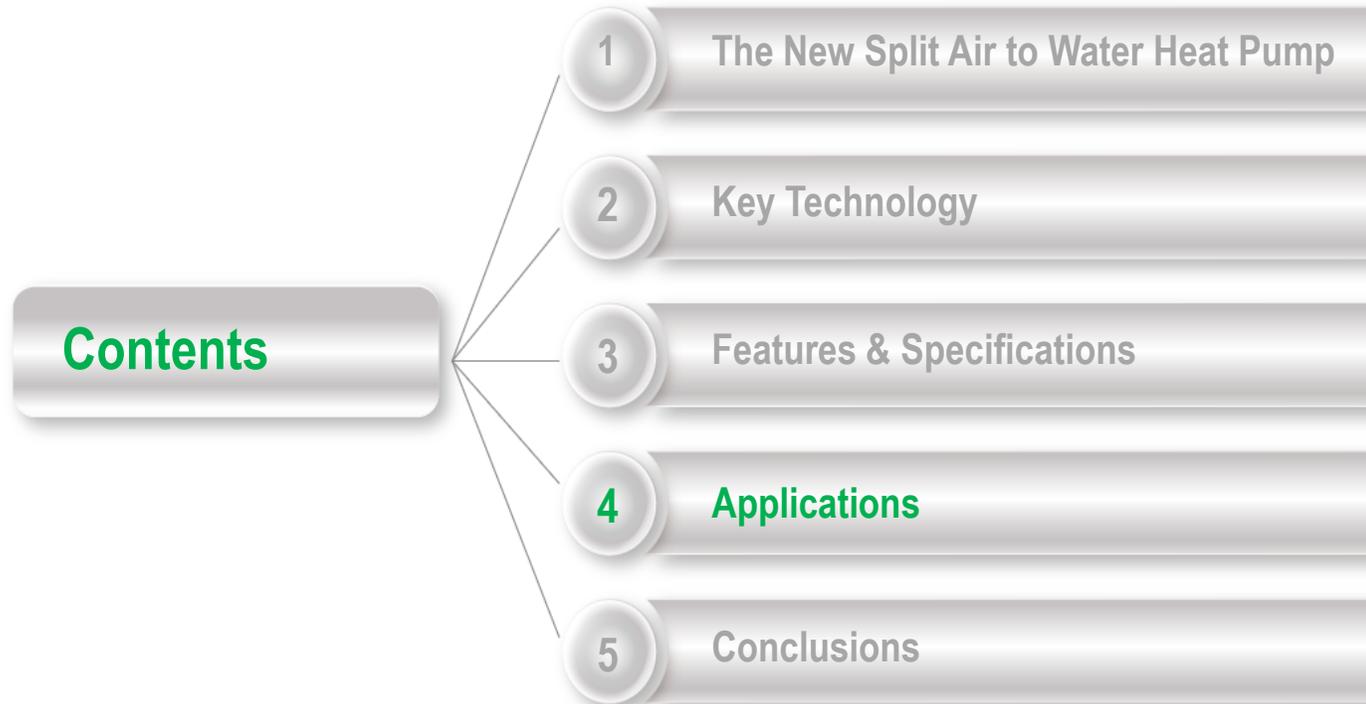
FEAUTURES & SPECIFICATIONS

APP

SPHERA EVO Can be managed by the new **APP**:

- Manage the set point for space heating and cooling.

- Manage the set point for DHW

- Scheduling for:
  - Space
  - DHW
  - ECO Mode
  - Silent Mode

- Fast recharge for DHW

- Change mode

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CLIVET *Home*

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➢ **Standard indoor unit**

- Domestic Hot Water 3 Way valve integrated

➢ **Oversized Indoor Unit 1PUM**

- High pressure pump up to **100 kPa**
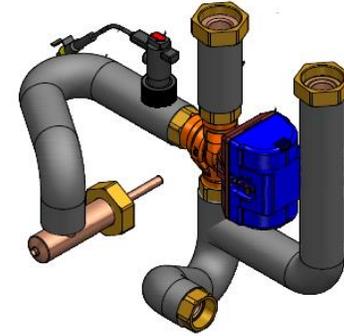
➢ **Auxiliary electric heater**

- Selectable electric heater 2, 4 kW Single phase
  6 and 9 kW Three phase (Power supply of the whole indoor unit)

ACCESSORIES

➢ **External gas boiler connection kit**

- The kit is composed by three way and pipes to connect the external gas boiler to produce DHW.

➢ **Two zones control kit**

- Separately kit to manage two zones with different setting temperature.

➢ **Buffer Tank**

- Space heating **40 liters** buffer tank, to install on the return side from the system. Studied to be positioned back to the unit.
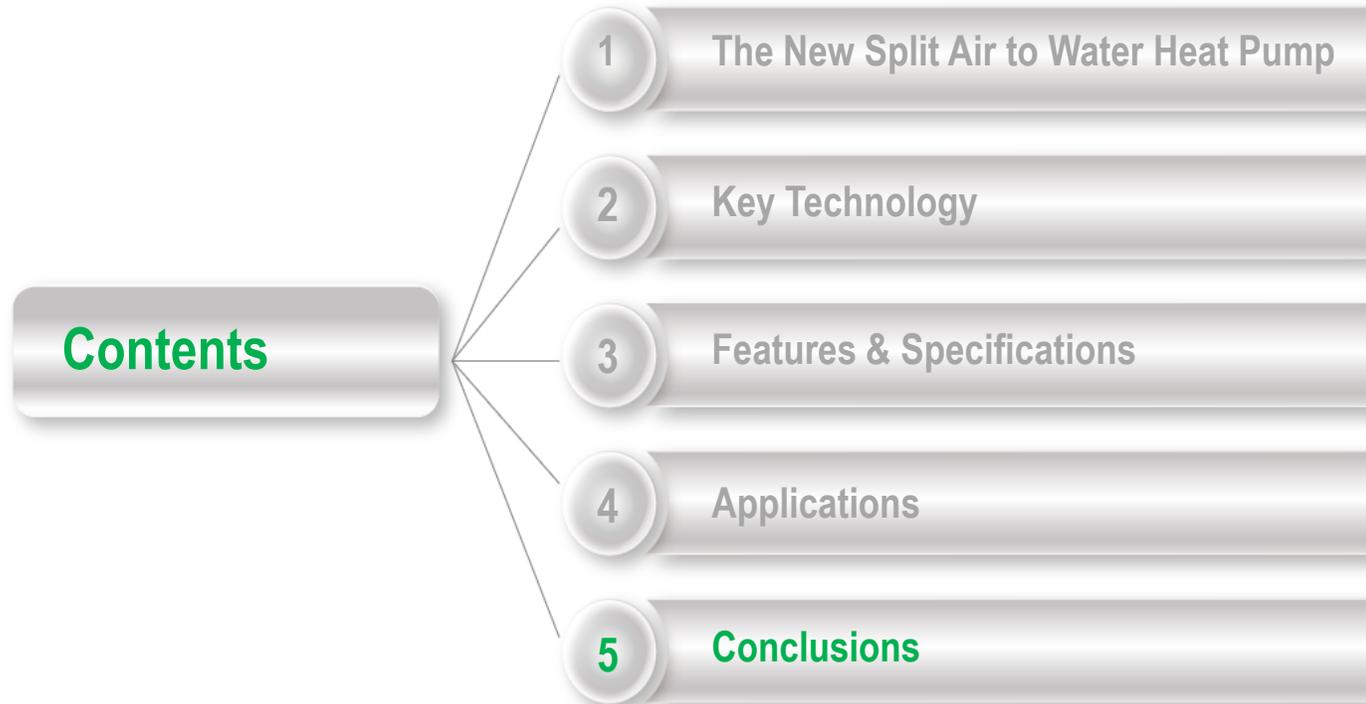
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ACCESSORIES

➢ **Additional Domestic Hot Water tank**

- Enameled steel Domestic hot water tank with capacity of 200 or 300 liters equipped with 2 kW back-up heater, magnesium anode.*

- Enameled steel Domestic hot water tank with capacity of 500 liters equipped with 3 kW back-up heater, magnesium anode.*

- Available with solar exchanger.

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- **Silent** mode available during the night: **- 4 dB(A)**

- **ICE Protection System** to protect the outdoor unit

R-32

DC Inverter

Thank you!

www.clivet.com