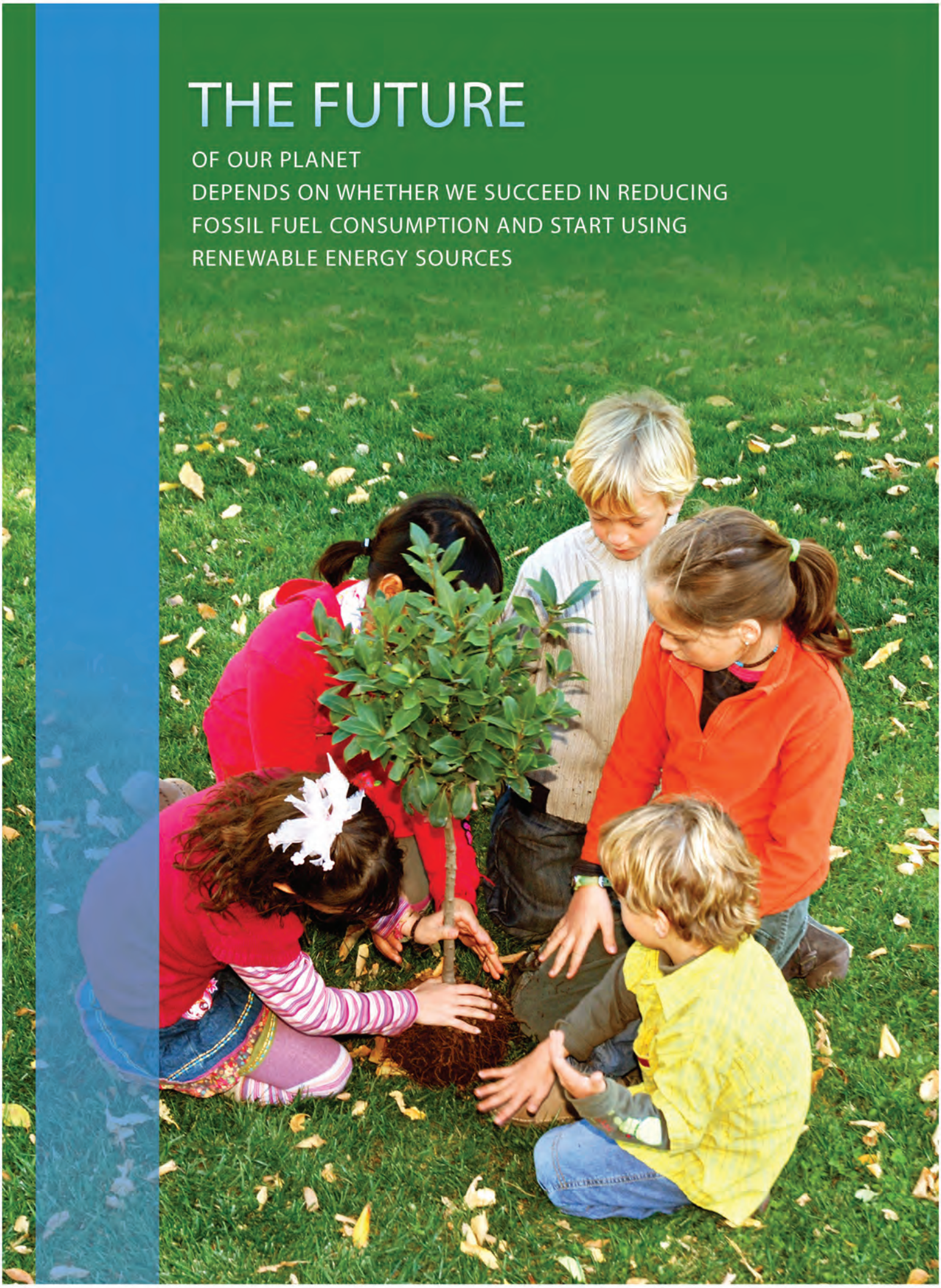
# ELFOSystem GAIA

## Heat pump systems for residential mono-family comfort

CLIVET®

# THE FUTURE

OF OUR PLANET
DEPENDS ON WHETHER WE SUCCEED IN REDUCING
FOSSIL FUEL CONSUMPTION AND START USING
RENEWABLE ENERGY SOURCES



# ECOLOGICAL AWARENESS

## SUSTAINABLE BUILDINGS

The best renewable Energy is the one that is not used: a battle that is being fought on two fronts.

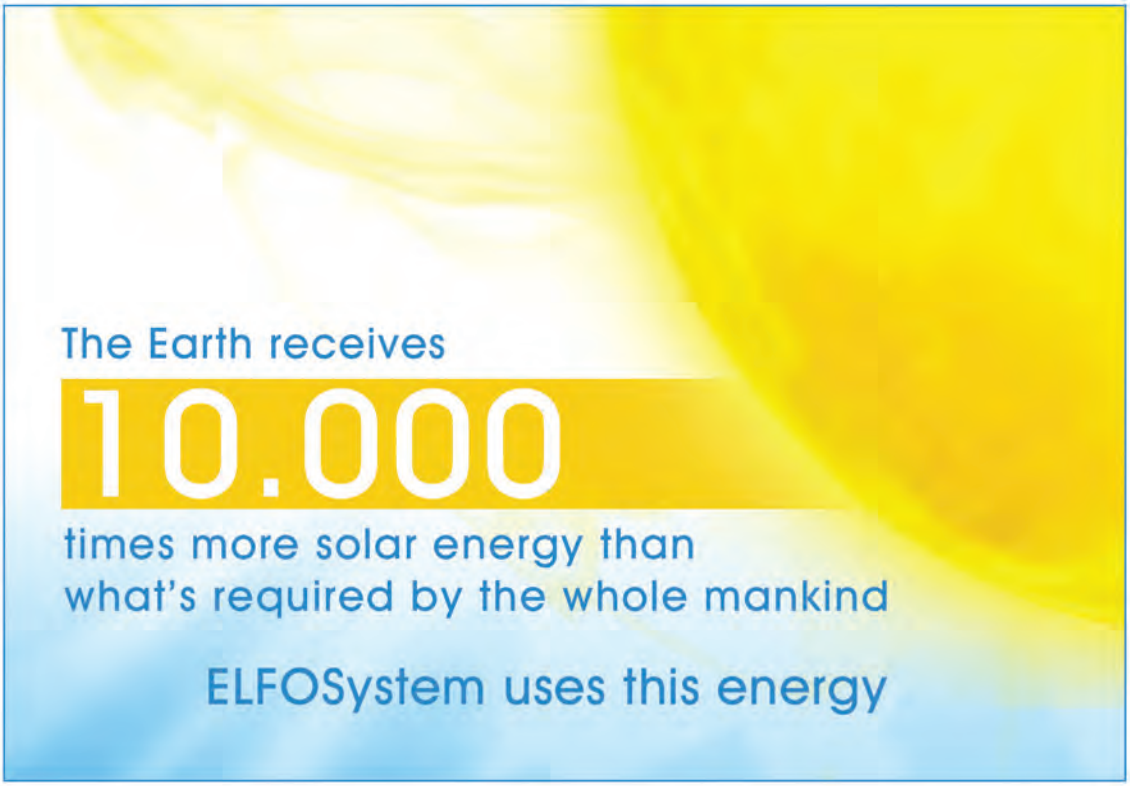
A reduction in energy consumption thanks to buildings with innovative insulation systems and high efficiency installations.

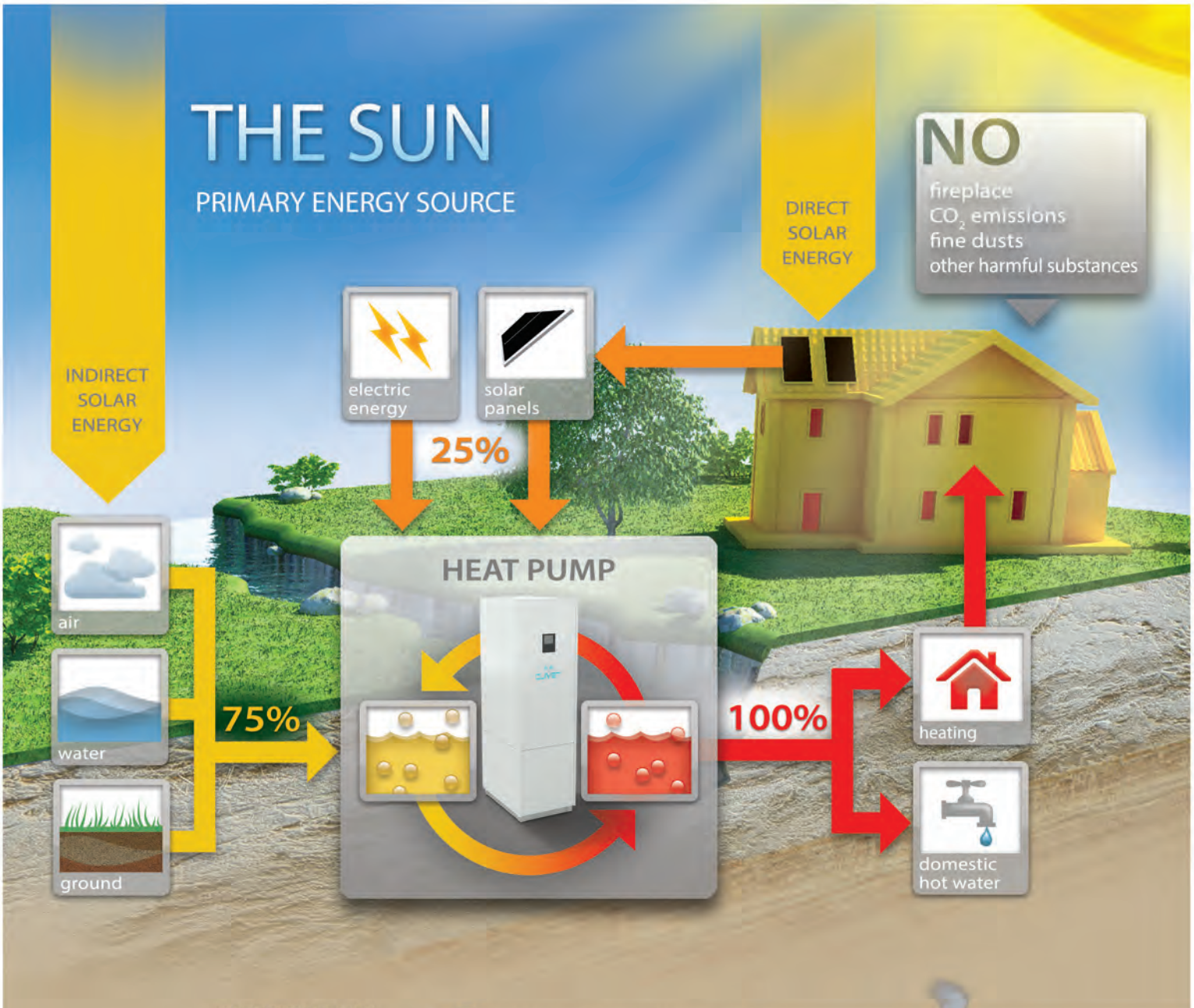
The use of renewable, ecofriendly and free energy sources, which reduce our dependency on fossil fuels.

# ENERGY

## renewable sources and efficient use

Clivet complete system uses renewable energy from the sun, which is stored in the air, water and ground or captured directly by the solar thermal and photovoltaic panels. All the elements of the system are designed to ensure that the building's energy requirements are met as efficiently as possible, with the necessary quantities of energy being distributed only where and when required. It does not emit $CO_2$, fine dust or other harmful substances. It reduces indirect $CO_2$ emissions by over 50%. It does not use gas or other fossil fuels, meaning that there is no risk of harmful substances leaking into the environment.

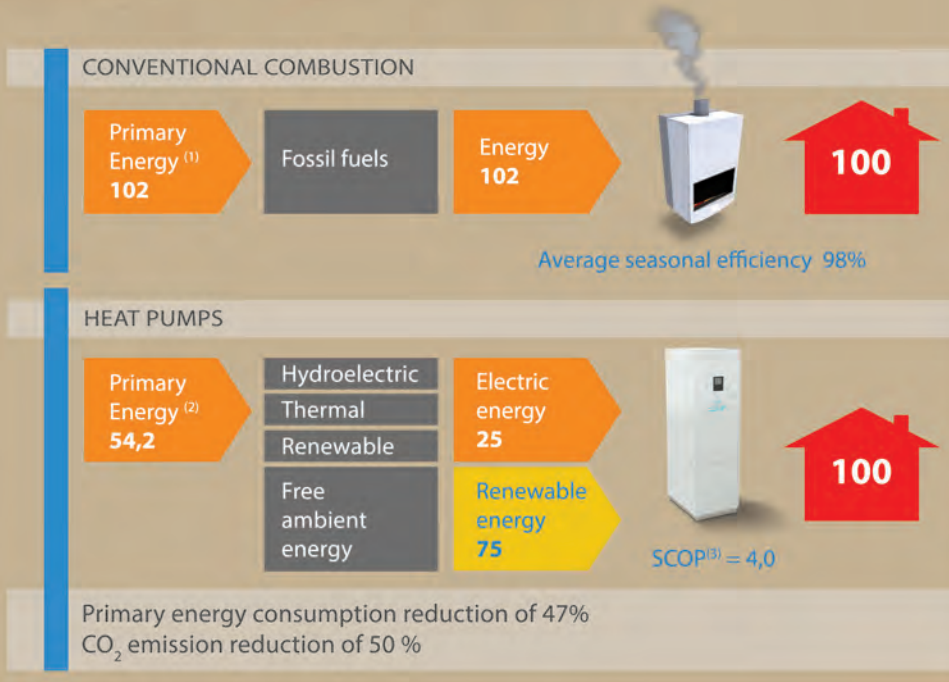





HEAT PUMPS USE
INDIRECT SOLAR ENERGY

Over 75% of the energy used by heat pumps is free and unlimited because it comes from the sun and it is stored in the air, water and ground. Using just 25% electricity, it is raised to an optimum level for summer and winter comfort.

The RES DIRECTIVE (Renewable Energy Sources) was approved on 23rd April 2009 by the European Parliament, acknowledging ambient heat as a form of renewable energy. The heat pumps, using the heat contained in the air, water and ground, therefore draw their effect from a renewable source.




(1) Can be used in its natural form
(2) Conversion factor of 2,17 between electricity available to the network and primary energy used for its production.
(3) Seasonal coefficient of performance

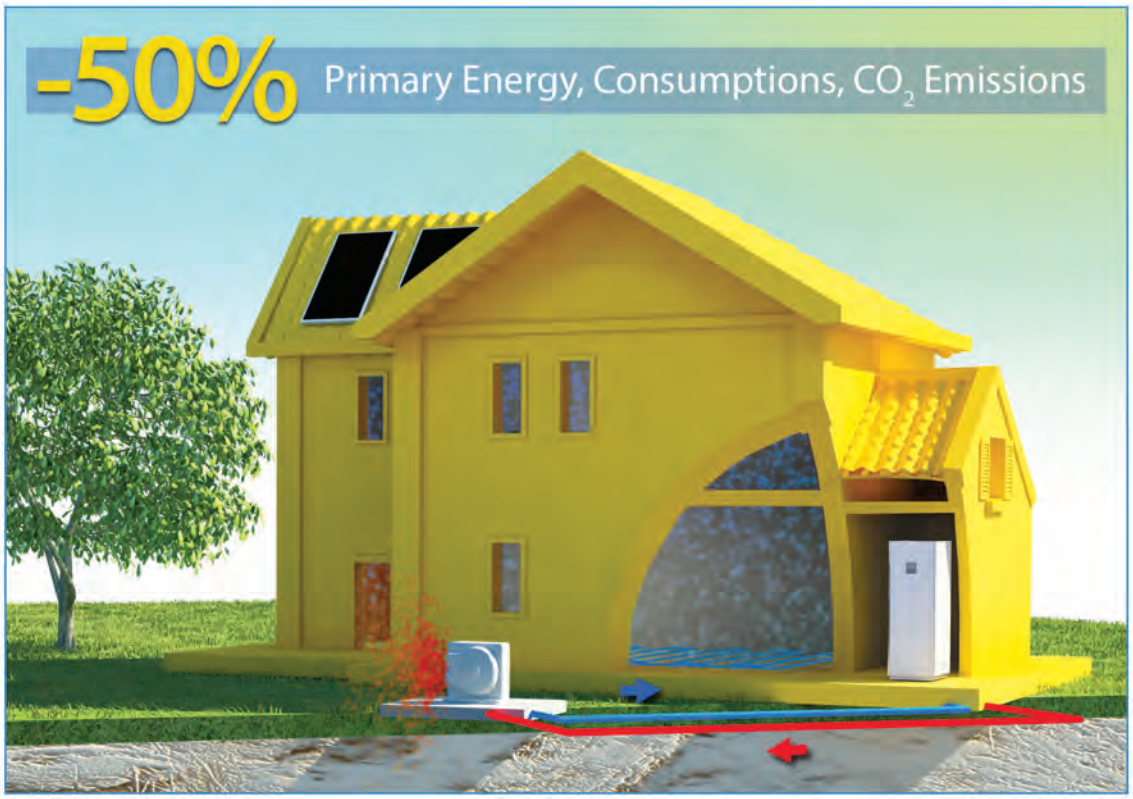
# HEAT PUMPS

## GUARANTEE YEAR ROUND COMFORT BY USING FROM 75% TO 100% RENEWABLE ENERGY

A single system for heating and cooling.

In winter, heat pumps take energy from outside and transfer it inside the building.

In summer, the heat pumps can reverse their operation and transfer heat from inside the building to the outside, thereby providing indoor cooling.




ELFOSYSTEM CAN ALSO USE DIRECT SOLAR ENERGY

ELFOSystem GAIA is different from all the other heat pumps available on the market, as it can be connected directly to the solar thermal panels. In this case, domestic hot water is produced free of charge for most of the year.

If combined with solar photovoltaic panels, it can lead to a complete indipendence from fossil fuels.

# COMFORT

Protect your wellbeing

ELFOSystem contols and manages ALL aspects of Comfort:

- TEMPERATURE
- HUMIDITY
- AIR RENEWAL AND QUALITY
- QUIET OPERATION
- DOMESTIC HOT WATER

# ELFOSystem, 365 days a year

The ideal climate is available all year round with ELFOSystem, as if time was stopping to allow a relaxing ambient that is not dependant from external factors.

# ELFOSystem, fresh and clean air

Odours and harmful elements build up when there is no air renewal at home. The recent trend of increasing thermal insulation in the home makes controlled mechanical ambient air renewal even more important. Introducing untreated fresh air is not always good for your health and involves high energy costs.
Elfo System rejects air from inside the building and introduces purified outdoor air, using a recovery system that is based on the heat pump principle.

# ELFOSystem

## Why an industrialized system?

Clivet chooses and optimizes the best technological solutions and integrates them into a pre-assembled system. Therefore it offers to engineers, installers, maintainers and to the users of the same installation the maximal efficiency and a single point of contact.

### TOTAL PRECISION AND DESIGN COMPETENCE

The project of every Clivet systems is created by the experience of a team made of technicians and engineers.

### REDUCTION OF THE INSTALLATION TIME

Clivet will take care of selecting the components and of pre-assembling the hydraulic and electrical connections. Cost and time savings offer a major competitiveness to installers and the whole cost reduction for the customer.

### COMFORT AND ENERGY SAVING GUARANTEED

The system is the result of a design, testing and optimization process that can be obtained only with the help of professional laboratories and industrial instrumentation.

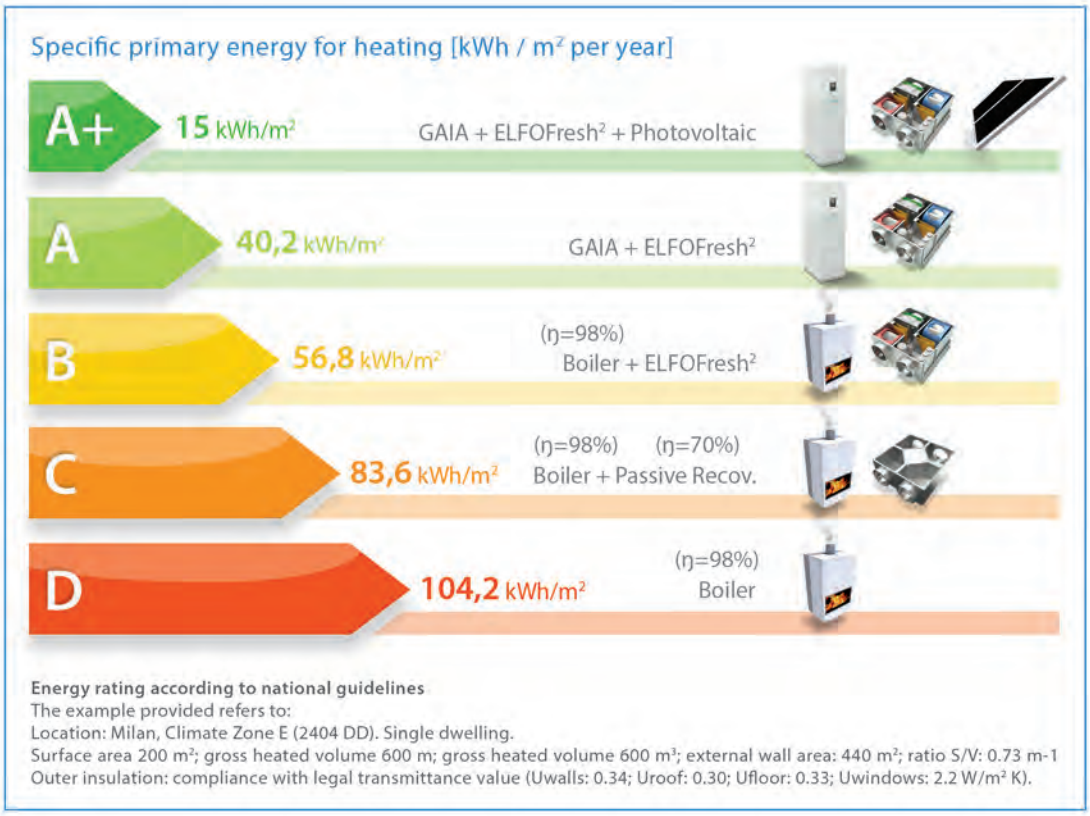
### REDUCTION OF DIMENSIONS

Less space dedicated to the system means more space for living in the house.

# MORE VALUE to your house

The European Union has issued a directive (2002/91/CE) which requires buildings to have an energy efficiency certificate, based on primary energy requirement.

The value of a house also depends on this. ELFOSystem, with primary energy consumption of 50% lower than traditional boiler solutions in a similar building, permits higher energy ratings. ELFOSystem contributes to increase the energy efficiency and the value of the property, with a return on the investment being achieved within 3-4 years on average.




**Energy rating according to national guidelines**
The example provided refers to:
Location: Milan, Climate Zone E (2404 DD). Single dwelling.
Surface area 200 m²; gross heated volume 600 m; gross heated volume 600 m³; external wall area: 440 m²; ratio S/V: 0.73 m-1
Outer insulation: compliance with legal transmittance value (Uwalls: 0.34; Uroof: 0.30; Ufloor: 0.33; Uwindows: 2.2 W/m² K).

# CLIVET, an industrial partner specialized

With more than 20 years of experience in the year round airconditioning systems Clivet is the European leader in designing and delivering the heat pump systems for your comfort. The group has a staff of 550 employees in Italy and more than 150 abroad. Clivet headquarters in Italy has an operational area of over 50.000 m².

This important structure and its experience allow Clivet to be the ideal partner for every successful project.

# SOLUTIONS FOR NEW HOUSES

## THE FOUR ELEMENTS OF **ELFOSystem GAIA**

### **HEATING/COOLING PRODUCTION** GAIA Aria or GAIA Acqua

Production of the necessary energy for heating, cooling and domestic hot water production by means of high energy efficiency heat pumps.

### **AIR QUALITY** ELFOFresh²

Air renewal and purification in controlled conditions and heat recovery from the exhaust air.

### **HEATING/COOLING DISTRIBUTION** ELFODistribution

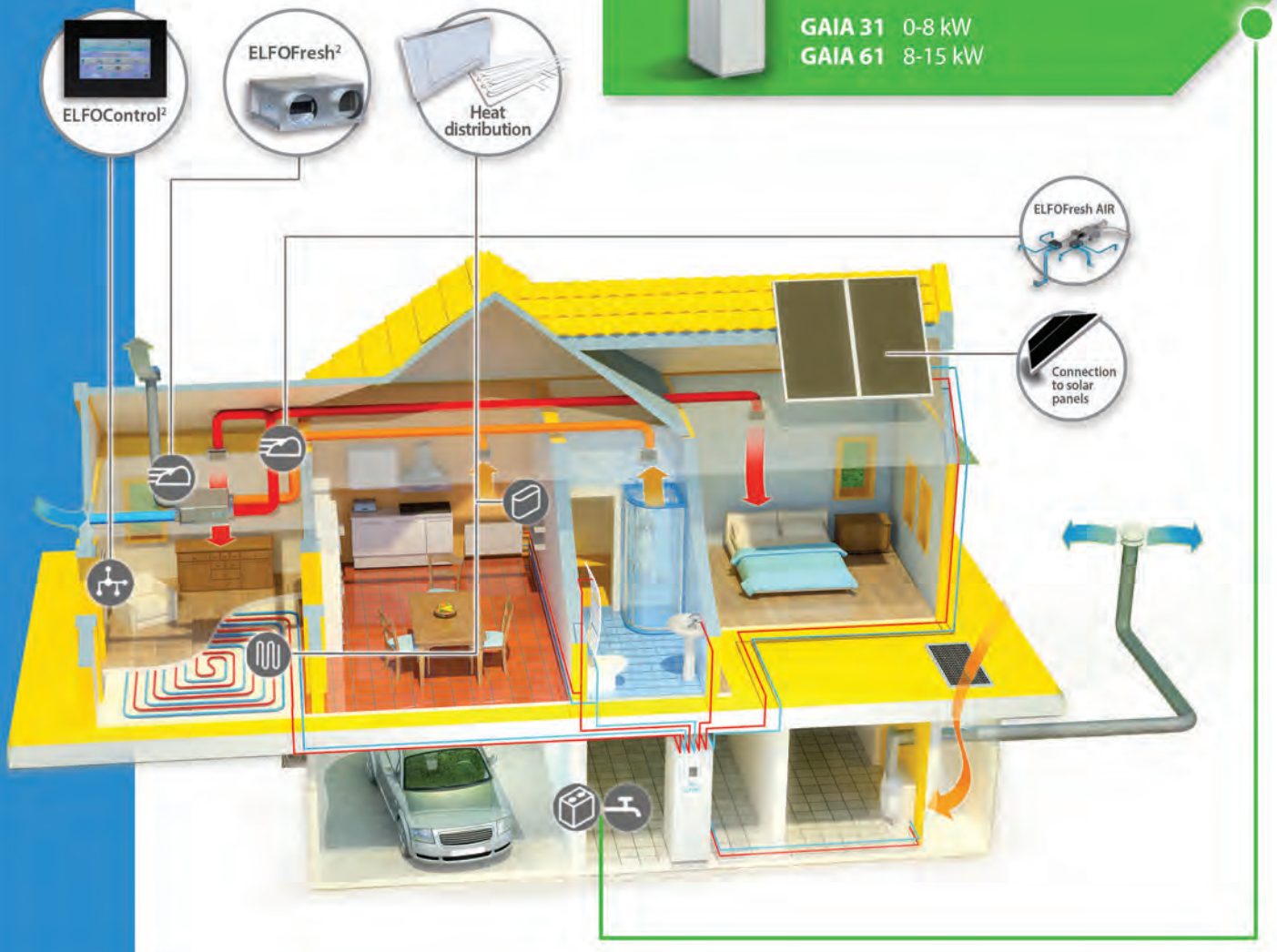
Heat distribution through fan coils, radiant panels or radiators.

### **SYSTEM CONTROL** ELFOControl²

Temperature control by means of a comfort control unit able to activate the various components of the system to reach the required level of comfort.

**GAIA**
Heat pump with connection to solar panels.

**GAIA 31** 0-8 kW
**GAIA 61** 8-15 kW



# RE-QUALIFICATION and HIGH CAPACITY

## THE FOUR ELEMENTS OF **ELFOSystem GAIA Maxi**

### **HEATING/COOLING PRODUCTION** GAIA MAXI

Cooling and heating energy production for heating, cooling and hot water production with a combined energy monoblock unit.

### **AIR QUALITY** ELFOFresh²

Air renewal and purification in controlled conditions and heat recovery from the exhaust air.

### **HEATING/COOLING DISTRIBUTION** ELFODistribution

Heat distribution through fan coils, radiant panels or radiators.

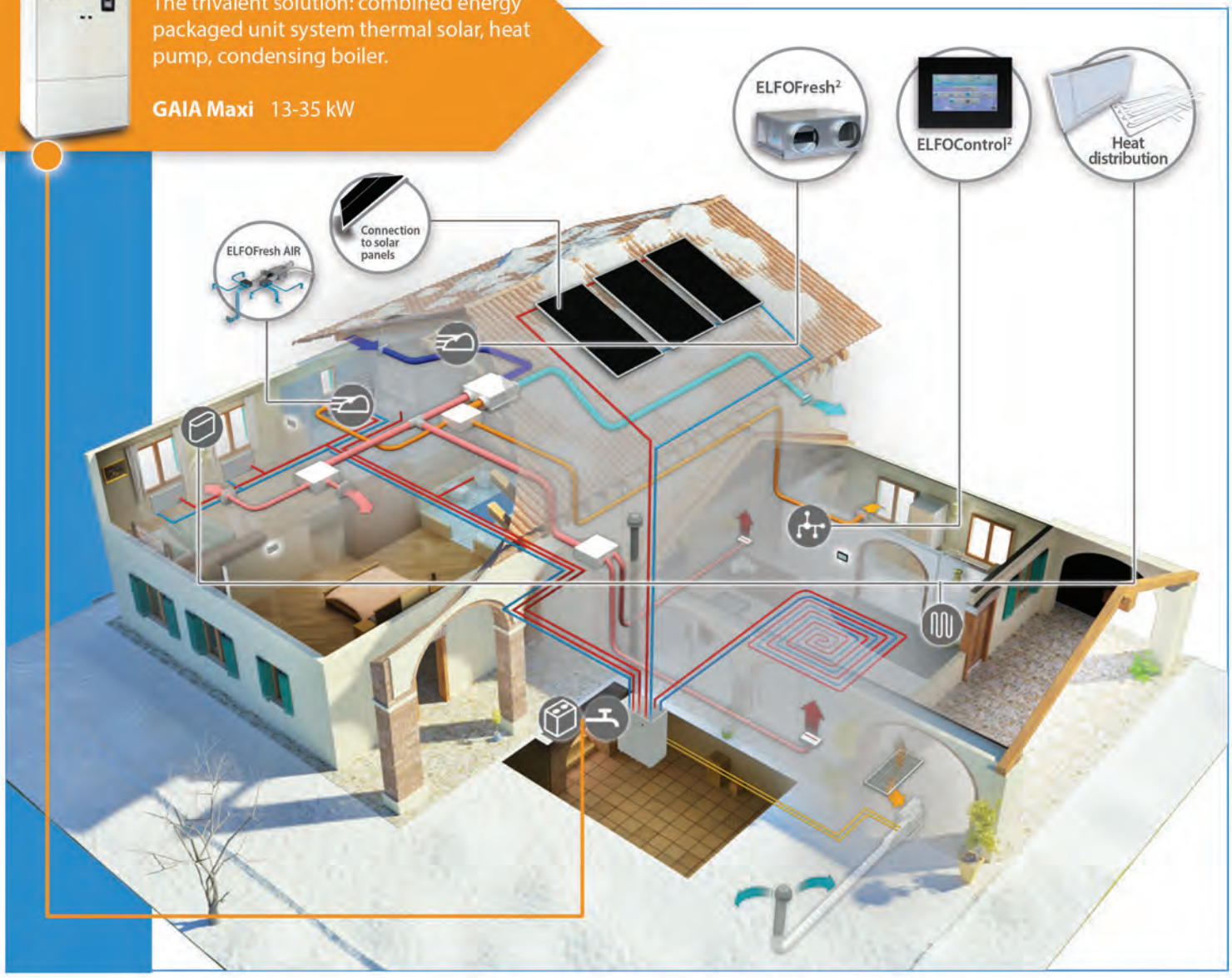
### **SYSTEM CONTROL** ELFOControl²

Temperature control by means of a comfort control unit able to activate the various components of the system to reach the required level of comfort.

**GAIA Maxi**

The trivalent solution: combined energy packaged unit system thermal solar, heat pump, condensing boiler.

**GAIA Maxi** 13-35 kW



# GAIA

## THE HEART OF ELFOSystem GAIA

HOT WATER PRODUCTION UP TO **60°C**

### The heat pump replacing the boiler and air conditioner

- PACKAGED RENEWABLE ENERGY UNIT FOR COMFORT
  all the system components are housed inside the unit
- BUILT-IN SYSTEM FOR THE RECOVERY OF SOLAR ENERGY FROM HEATING COLLECTORS
  free domestic hot water production using the energy captured by the solar panels
- BUILT-IN DOMESTIC HOT WATER PRODUCTION
- SYSTEM WITH THE BEST SEASONAL EFFICIENCY ON THE MARKET
  DC Inverter technology applied to the compressor, fan, system circulating pump and hot water circulating pump
- OPERATION WITH OUTDOOR AIR TEMPERATURES DOWN TO -22°C

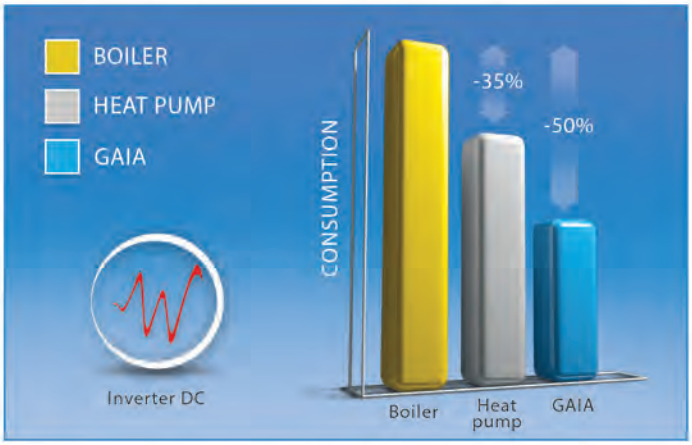
# Pre-assembled heating unit

Gaia goes away from the difficulties involved in choosing, installing and wiring in all the elements of a traditional system. Gaia includes all the components of the system, tested by Clivet, in a single unit.

Installation times are drastically reduced for a quality result.

The heating system takes up to 60% less space than a bulky traditional systems.


## Maximised seasonal efficiency




Direct current inverter technology applied to the compressor, circulating pump and fan. The speed of the various devices can be modulated on the basis of the actual energy requirements, allowing for a further reduction in consumption and a significant improvement in terms of seasonal efficiency.

## Fully automatic

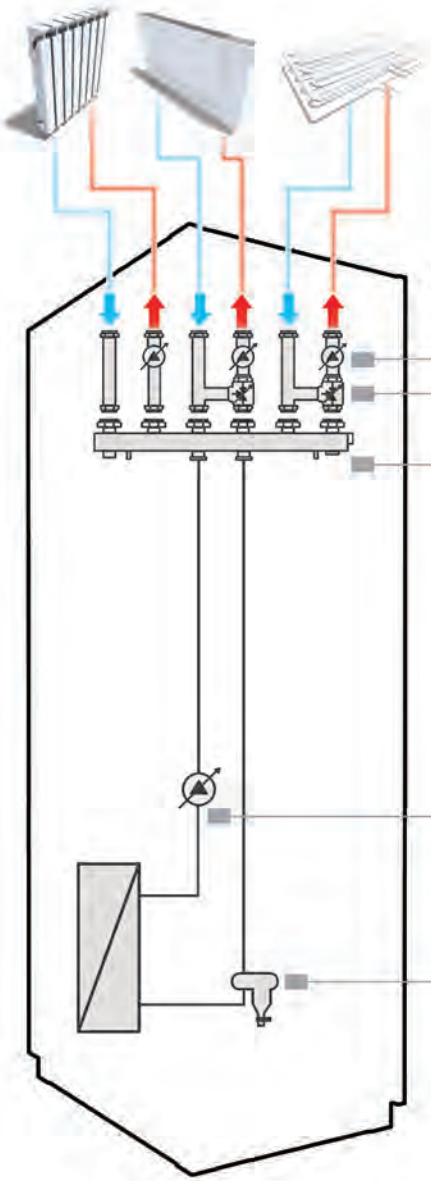
ELFOControl² is the "brain" behind your system, communicating with all the installed components. It checks the operating conditions of very single device and allows to adjust the operation of the entire system from a single control point that can set of all the desired parameters for the required comfort conditions.

# GAIA The unit that assures the best efficiency with a reduction of costs, space and installation time

The Directive for the eco-design of consuming energy products (2005/32/EC) will favour solutions with the best whole efficiency in terms of:

- GENERATION
- DISTRIBUTION
- EMISSION
- CONTROL

GAIA, beside being extremely efficient as per EuP directive, allows also improvements for installation time and spaces.



**EFFICIENT EMISSION**
The DC INVERTER zone circulators grant the automatic and continuous modulation of the water flow based on the actual temperature required. The water is supplied to the ambient terminals and to the heating distribution system in the most appropriate quantity and temperature for the best efficience for the heating diffusion.

**MIXING VALVES CONTROL**
They allow to obtain different temperatures of the water based on the type of terminal. They are integrated into the unit, without any external wiring.

**DISTRIBUTION integrated hydraulic disjunctor**
It ensures the hydraulic separation between the unit and the installation obtaining a lower energy dispersion outside the unit besides the reduction of installation time.

**EFFICIENT ENERGY generation**
The primary DC inverter circulator allows the DC Inverter compressor to work all the time with the maximum efficiency.

**CLEANING THE HYDRAULIC CIRCUIT**
GAIA is equipped of cleaning system of the hydraulic circuit, by means of sludge remover eliminates pollutants, rust and sludge deposits inside the installation that may cause considerable damages to the terminals, valves and exchangers, guaranteeing system performance and reliability over time.

**-60%**
SPACE OCCUPIED BY THE UNIT (*)

**-20%**
COMPLETE SYSTEM INSTALLATION TIME (*)

(*) Indicative comparison among traditional system with a condensation burner, storage tank with thermal solar panels, split air conditioners and air renewal system with cross flow recovery Vs ELFOSystem GAIA.

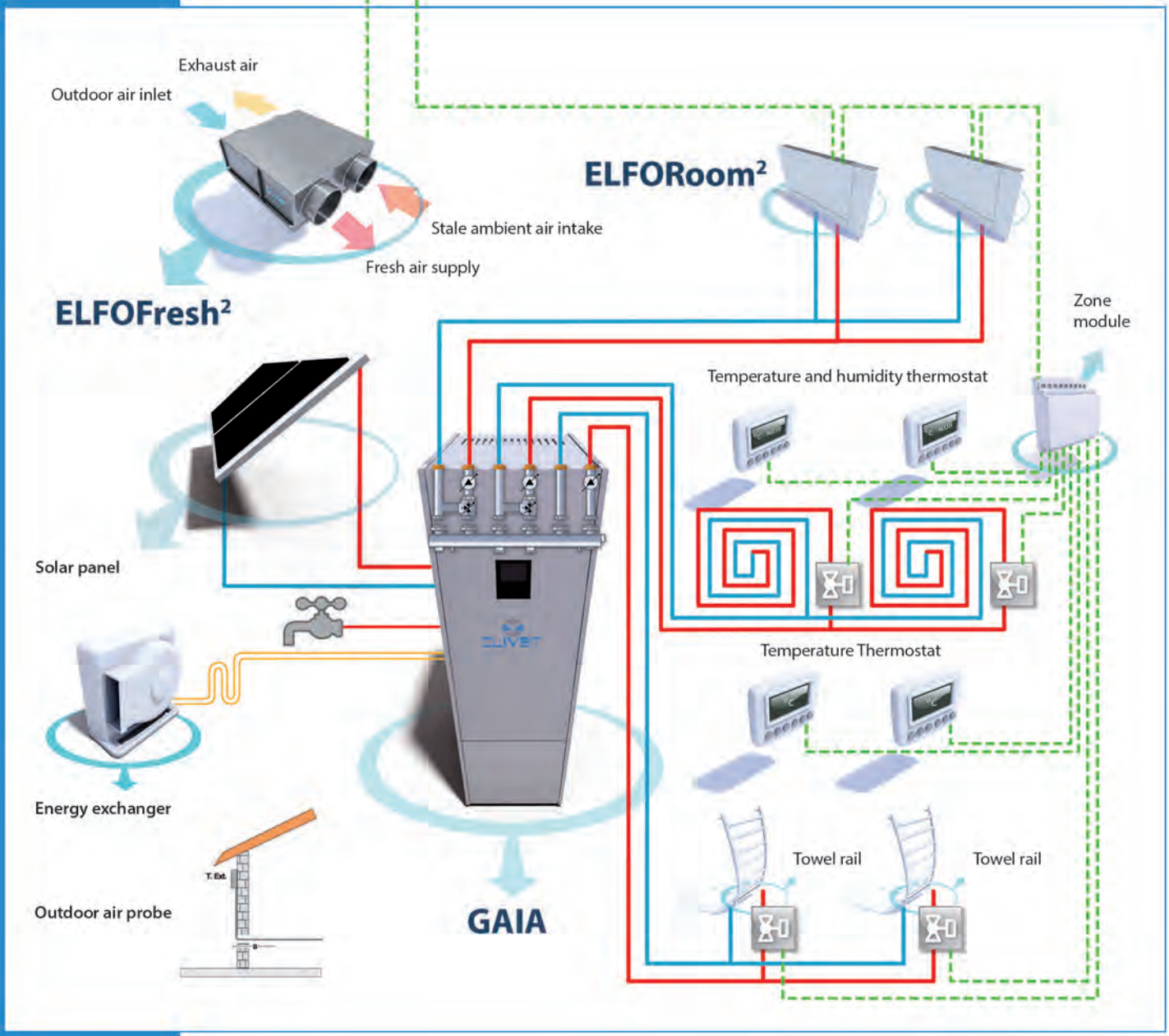
# ELFOSystem GAIA: the advantages of a complete solution

ELFOSystem GAIA allows many advantages by improving the residential comfort quality and improving the quality of design, installation, use and maintenance when compared to the competitors.

A single system based on the heat pump technology provides additional important advantages:

- Reduction of primary energy consumptions
- Reduction of the annual operating costs
- Reductions of $CO_2$ emissions

Many installations of ELFOSystem GAIA feature benefits of 50% if compared to the traditional systems with split air conditioner and boiler.



**AEROTHERMAL**

**"Air to Water" heat pump**

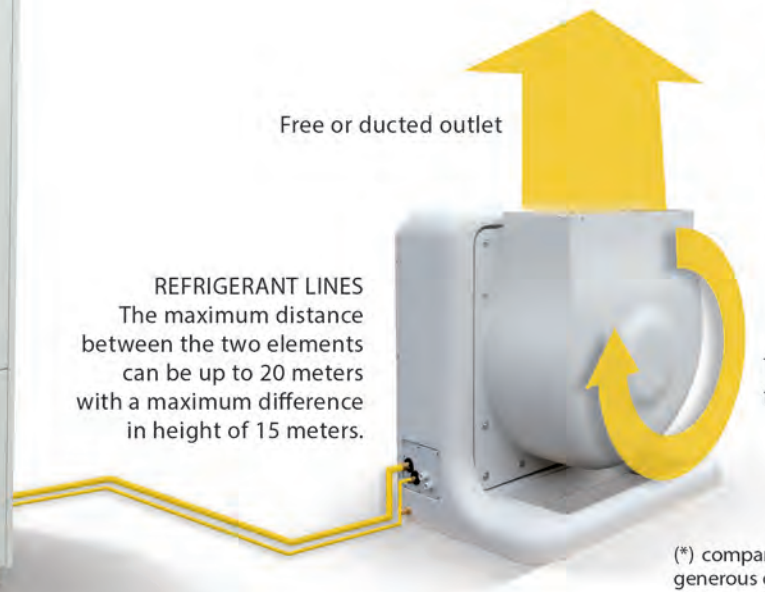
GAIA Aria version allows to recover the thermal and cooling energy contained in the outdoor air.

# GAIA Aria

GAIA Aria recovers the energy available in the air, even when outdoor air temperature is very rigorous down to -22 °C.

- The large heat Exchange surface helps increasing the efficiency of the system
- The special shape of the heat exchanger enables to reduce the energy for the defrost cycles
- The speed of the air flowing through the heat exchanger is reduced to guarantee a quiet operation
- The air diffuser that can be rotated allows to direct the airflow
- The heat exchanger shape avoids any negative incluences of prevailing winds that may impair the proper functioning of GAIA.
- The plastic frame eliminates problems of corrosion


## HEAT EXCHANGER




**+70%**
DEFROST CYCLE EFFICIENCY (*)

(*) compared to a traditional unit, thanks to the generous dimensions of the exchanger and to an accurate defrost setting.

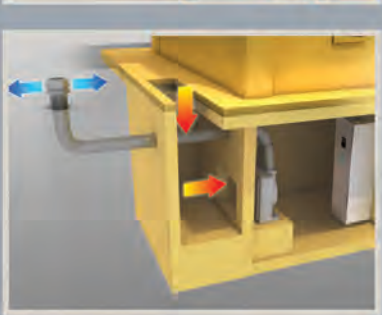
### HEAT EXCHANGER INSTALLED OUTSIDE

Close to an external wall with lateral exhaust air.

The air delivery duct and exhaust far from the dwelling.

### ENERGY EXCHANGER INSTALLED INSIDE

In the attic, with outdoor air intake through a window and lateral exhaust in the roof.



In the basement, with outdoor air intake through the fanlight and exhaust far from the dwelling, through an underground duct.

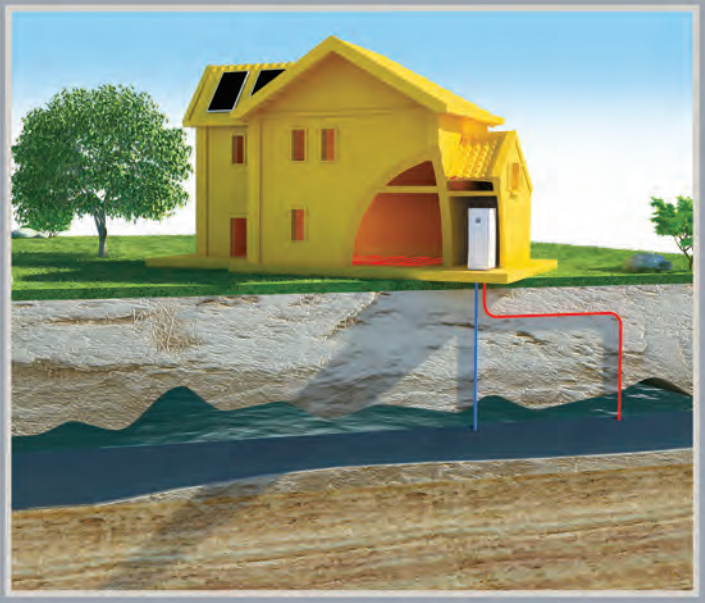
**GEOTHERMAL**
**HYDROTHERMAL**

**"Water to water" or "glycol to water" heat pump.**
In the Acqua version, GAIA offers thermal and cooling energy recovery for all applications using groundwater, well water or geothermal systems.

# GAIA Acqua

GAIA Acqua is an extremely flexible unit, sized to operate indifferently with geothermal probes or groundwater.
The standard unit is fitted with a source side DC motor circulating pump, which automatically modulates the water flow based on the temperature in order to optimise its performance.
GAIA Acqua is equipped, as an optional, with the natural cooling function which permits cooling without the need to activate the compressor.

GROUNDWATER ENERGY RECOVERY



GROUND SOURCE ENERGY RECOVERY

Vertical collectors

Horizontal collectors


## NATURAL COOLING FUNCTION (OPTIONAL)

The low ground or groundwater temperature can be used free of charge to cool rooms in the home. All the components are inside the unit.

(1) cooled water delivery (system)
(2) cooled water return (system)
(3) user side heat exchanger
(4) source side heat exchanger
(5) source water return
(6) source water delivery
(7) natural cooling plate heat exchanger
(8) 3-way diverter valves
(9) drain cocks

# GAIA MAXI

## THE HEART OF ELFOSystem GAIA Maxi

WATER PRODUCTION UP TO **70°C**

### Combined energy packaged unit system ideal for high capacity requirements

- **FOR HOUSES WITH HIGH USE OF CAPACITY**
  Ideal for large houses and restructurings without additional works on the envelope in rigid winter climate zones.

- **SINGLE UNIT SYSTEM FOR COMBINED ENERGY COMFORT**
  It integrates all system components in a single unit. It guarantees maximum reliability and simple installation and assures comfort and production of domestic hot water, favouring the use of renewable sources.

- **SOLUTION WITH THE BEST SEASONAL EFFICIENCY PRESENT ON THE MARKET**
  Thermal solar for the production of domestic hot water and system integration, highly efficient heat pump (COP>4.4) with DC Inverter technology applied to compressor, fan, circulators and integration condensing boiler with 108% yield.

# The trivalent solution: combined energy packaged unit system


## ELFOSystem GAIA Maxi

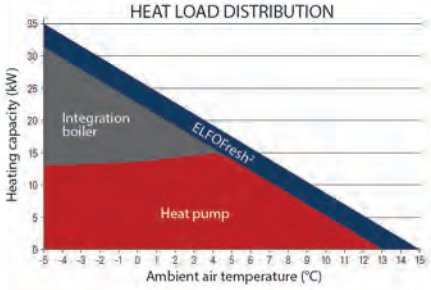
### new houses and re-qualification of existing buildings: the numbers certify the efficiency of GAIA Maxi

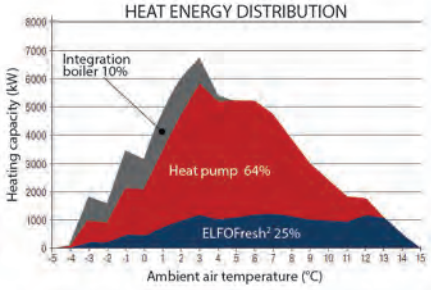
### Home with 35 kW with radiant panel system powered at 35 °C

ELFOSystem GAIA Maxi used in a home with low temperature radiant panels heating allows saving up to 45% of primary energy, of $CO_2$ emissions and working costs compared to a traditional solution with boiler and multisplit conditioner.

PAYBACK 2 YEARS

PRIMARY ENERGY $CO_2$ EMISSIONS WORKING COSTS -45%



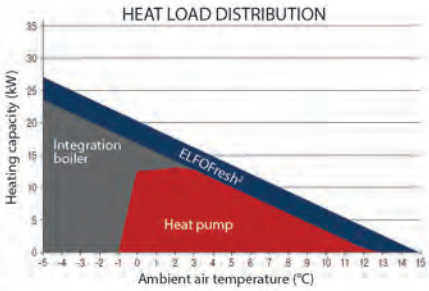

Data concerning a home in Milan, climate area E (2404 GG) with 600 m² surface and heating capacity requirement equal to 35 kW with application of RADIANT PANELS. ELFOSystem GAIA Maxi System: ELFOControl² + GAIA Maxi + ELFOFresh² 500. System for comparison: Boiler with 98% average seasonal yield + Multisplit conditioner + Recovery unit FI 70%. Cost of methane 0.08 €/kWh, Cost of electric energy with meter dedicated to the heat pumps 0.18 €/kWh.

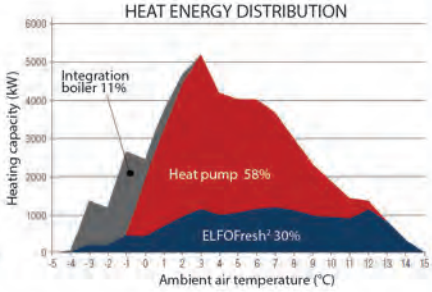
### Home with 27 kW with radiant panel system powered at 65 °C

When used in the energy re-qualification of a building in replacing the pre-existing generator with radiator system with high temperature, ELFOSystem GAIA Maxi assures a saving of 40% in using primary energy, of $CO_2$ emissions and in working costs.

PAYBACK 3* YEARS

PRIMARY ENERGY $CO_2$ EMISSIONS WORKING COSTS -40%




Data concerning a home in Milan, climate area E (2404 GG) with 400 m² surface and heating capacity requirement equal to 27 kW with application of RADIANT PANELS. ELFOSystem GAIA Maxi System: ELFOControl² + GAIA Maxi + ELFOFresh² 500+ ELFORoom². System for comparison: Boiler with 80% average seasonal yield + Multisplit conditioner + Recovery unit FI 70%. Cost of methane 0.08 €/kWh, Cost of electric energy with meter dedicated to the heat pumps 0.18 €/kWh.
*If we consider a system in heating only the payback of the solution ELFOSystem GAIA Maxi is 5 years.

# GAIA Maxi integrated domestic hot water and hydraulic distribution

**GAIA Maxi Integrates all system elements in a single unit**, it guarantees maximum reliability and simple installation and assures comfort and the production of domestic hot water, favouring the use of renewable sources. Thermal solar for the production of domestic hot water and system integration, highly efficient **heat pump** (COP>4.4) with DC Inverter Technology applied to compressor, fan, circulators and integration condensing boiler with 108% yield make **GAIA Maxi the solution with the best seasonal efficiency present on the market.**

BURN-PROOF THERMOSTATIC VALVE

CONDENSING BOILER

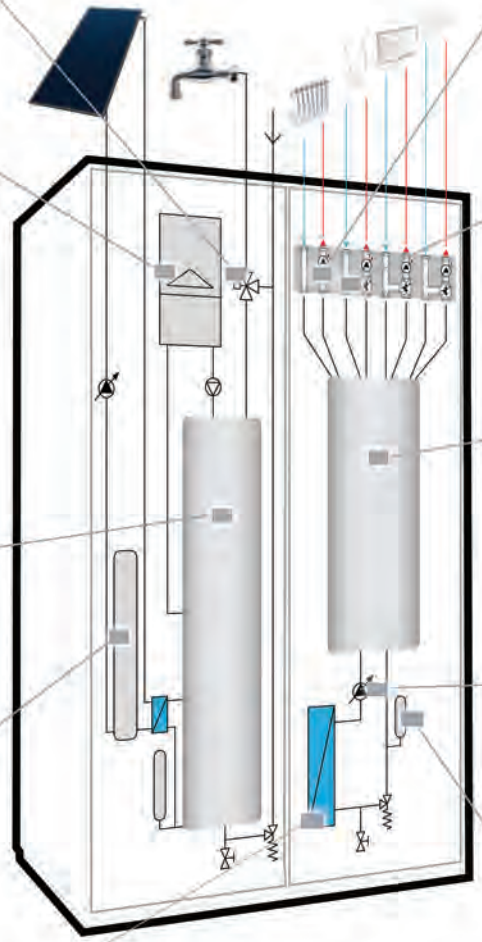
When the delivered heating capacity of the heat pump is insufficient or energetically disadvantageous, GAIA Maxi uses the condensing boiler for the production of domestic hot water for heating and for sanitary use.

280-LITRE DOMESTIC STORAGE TANK

DRAIN THERMAL SOLAR

The GAIA Maxi integrated "Drain Back" drain solar system, exploits the solar contribution for the production of DHW and integration on the heating system.

GAIA, THE FULL INVERTER DC HEAT PUMP



SECONDARY CIRCULATORS IN DIRECT CURRENT

AUTOMATIC MIXING VALVES

186-LITRE SYSTEM STORAGE TANK

PRIMARY CIRCULATOR IN DIRECT CURRENT

18-LITRE SYSTEM EXPANSION TANK

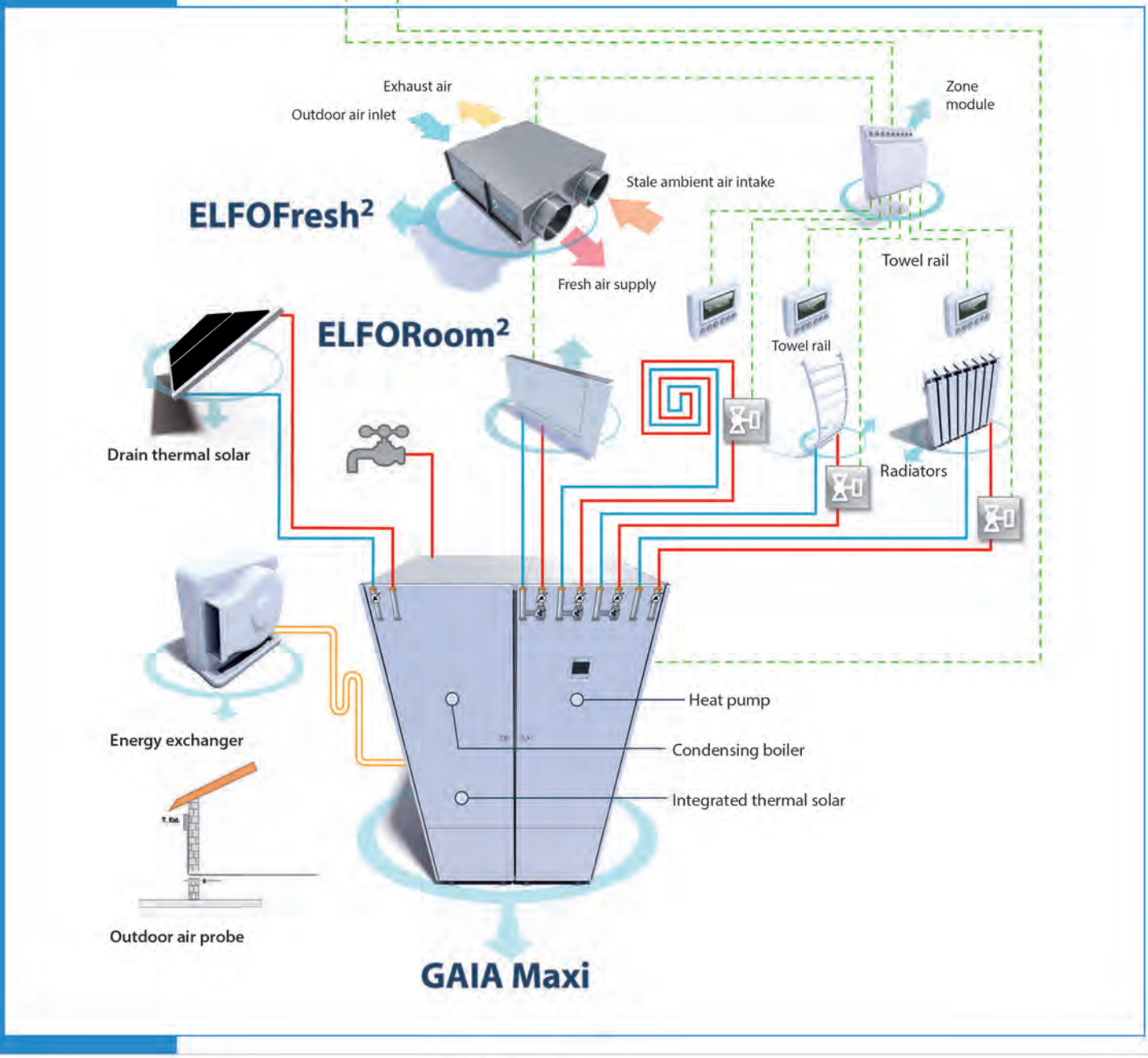
The heart of GAIA Maxi is GAIA, the heat pump for heating, cooling and domestic hot water production that applies the DC Inverter Technology to the compressor to supply exactly the requested capacity with the highest possible efficiency.

# ELFOSystem GAIA Maxi: combined energy and pay back

Energy upgrade of the existing buildings will contribute in substantial way to the environmental goals that Europe has set.

The results of making efficient the existing buildings will be achieved if the pay-back of the investment will be sustainable.

The ideal solution for buildings with high capacity demand is ELFOSystem GAIA Maxi, whose heart GAIA Maxi is the Monoblock combined power unit, combining all the advantages of energy efficiency of the heat pump technology, of the solar thermal energy and of the condensing combustion, exploiting the more efficient energy resource with the least environmental impact.



**AEROTHERMAL**

**"Air to Water" heat pump**
GAIA Maxi Aria version allows to recover the thermal and cooling energy contained in the outdoor air.

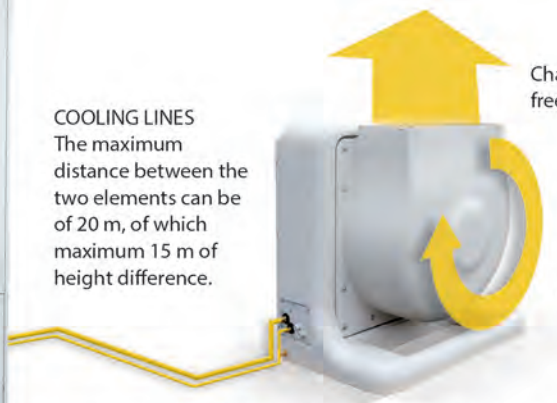
# GAIA Maxi flexible installation

It recovers the energy available in the air, even when outdoor air temperature is very rigorous down to -22 °C.

- The large heat Exchange surface helps increasing the efficiency of the system
- The special shape of the heat exchanger enables to reduce the energy for the defrost cycles
- The speed of the air flowing through the heat exchanger is reduced to guarantee a quiet operation
- The air diffuser that can be rotated allows to direct the airflow
- The heat exchanger shape avoids any negative incluences of prevailing winds that may impair the proper functioning of GAIA.
- The fully plastic frame eliminates problems of deterioration over time.

## ENERGY EXCHANGER

COOLING LINES
The maximum distance between the two elements can be of 20 m, of which maximum 15 m of height difference.



Channelled or free outlet supply

The supply can be turned on the 4 sides

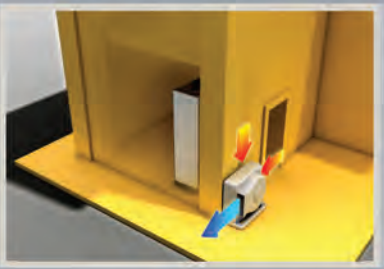
The connection between GAIA Maxi and the Energy Exchanger is of cooling type, avoiding any risk of freezing.

## GAIA MAXI IS MADE OF TWO SEPARABLE MODULES FOR ADAPTING TO EVERY INSTALLATION REQUIREMENT

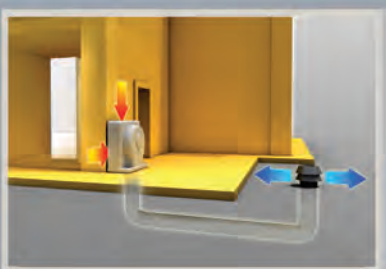
Heat pump module and domestic hot water module **installed separately along the same wall.**

Heat pump module and domestic hot water module **installed separately along different walls.**

### HEAT EXCHANGER INSTALLED OUTSIDE



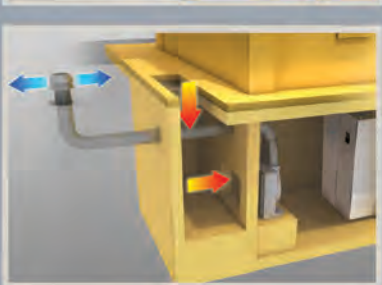
Close to an external wall with lateral exhaust air.



The air delivery duct and axhaust far from the dwelling.

### ENERGY EXCHANGER INSTALLED INSIDE

In the attic, with outdoor air intake through a window and lateral exhaust in the roof.



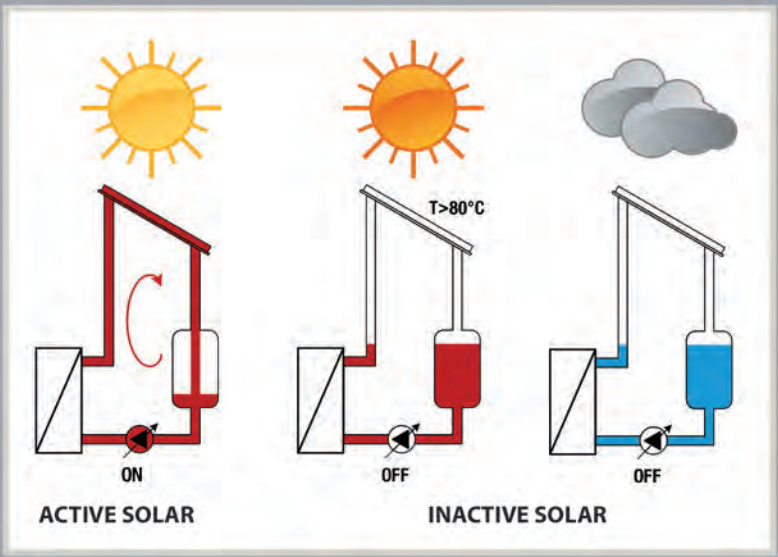
In the basement, with outdoor air intake through the fanlight and exhaust far from the dwelling, through an underground duct.

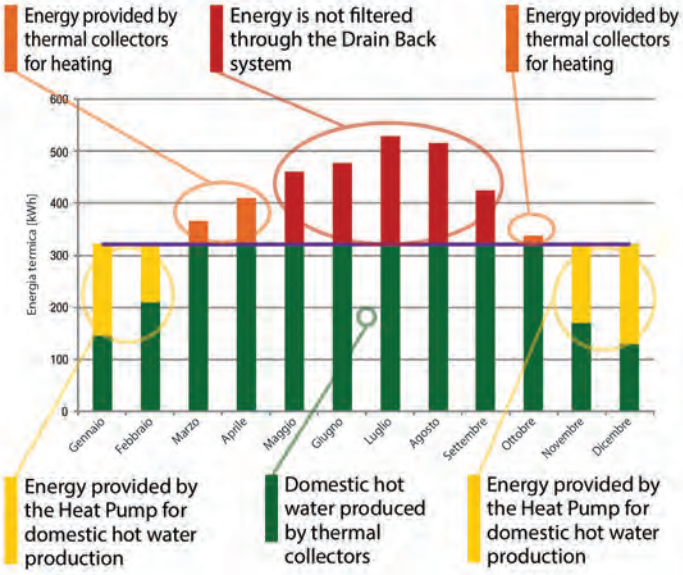
# Solar energy recovery integrated system

GAIA Maxi has been designed for connection to the **thermal solar panels** to further increase the use of renewable sources in the free production of domestic hot water and for the heating system.

## Integrated "Drain Back"

The GAIA Maxi integrated "Drain Back" drain system, differentiates from the traditional forced circulation systems in the managing of the inactive phases during which the solar circular can be drained to offer the necessary protection against risk of over-temperatures or freezing.
When the temperature of the water in the solar panels is too high, the GAIA Maxi control stops the solar pump to drain the circuit and protect the panels from the stagnation phenomena.
Draining also happens in case of low temperatures, in this way protecting the solar panel against the risk of its vector fluid freezing.




## Maximum exchange efficiency

The use of a plate exchanger dedicated to connection for the thermal solar panels allows maximising the efficiency of the heat exchange for the production of hot water, makes maintenance easier and does not influence the real storage volume.

## It satisfies over 70% of the requirement

Coverage of the heat energy requirement for the domestic hot water, captured through the thermal solar panels, is equal to 75%, the remainder only necessary during the winter months, is assured through the heat pump.

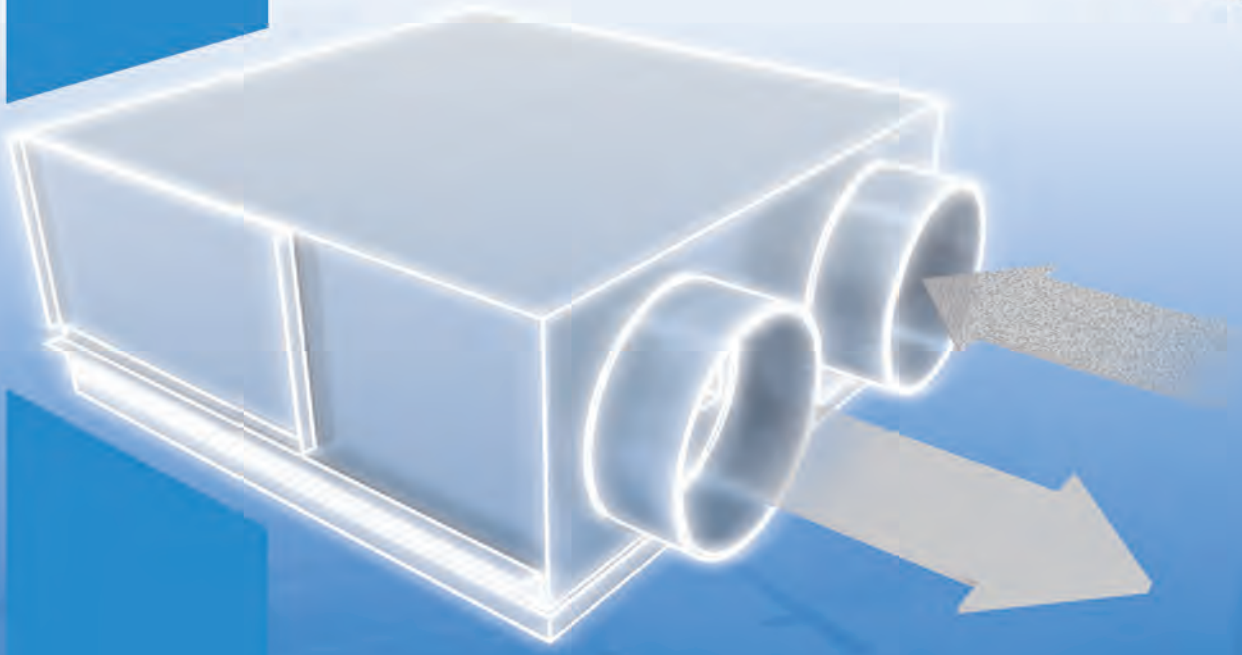
Geographical area north of Italy
- 5 users
- 3 flat solar panels (position 30° - South)

## Thermal solar integrated to system

During the heating season, when the request for domestic hot water is satisfied, GAIA Maxi is able to use the heat energy captured by the solar panels and stored in the domestic storage tank to satisfy the system's request.

# ELFOFresh²

New, clean and fresh
air at home



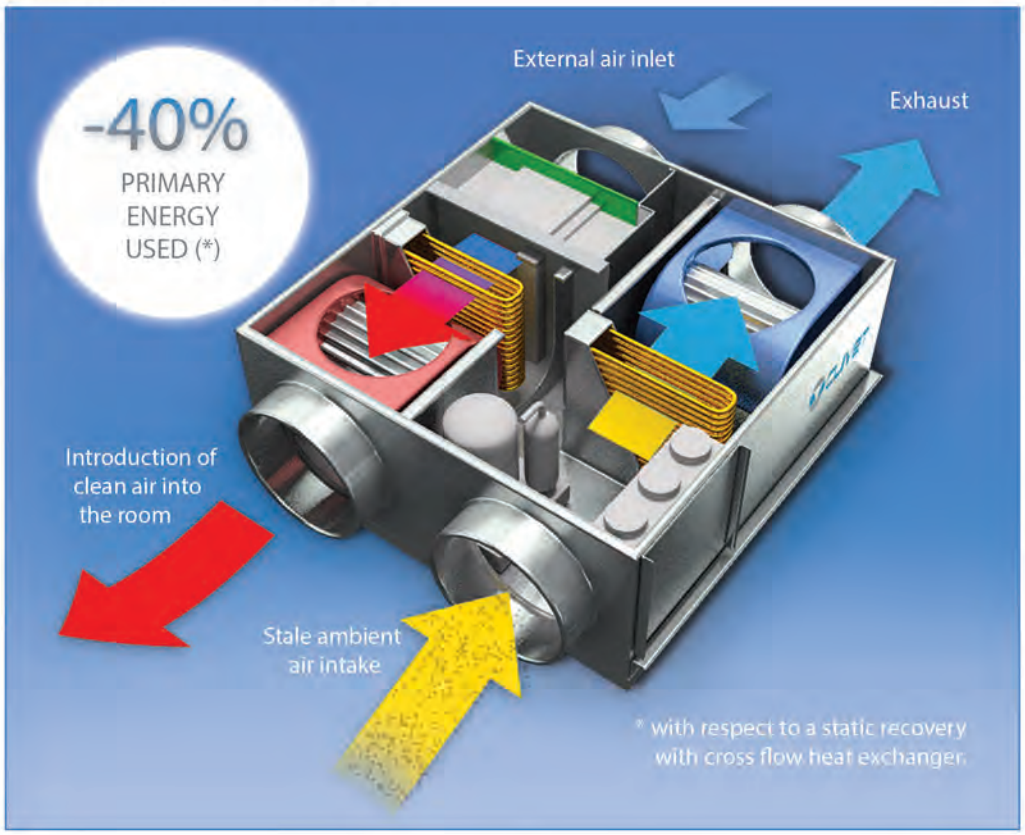
- ACTIVE THERMODYNAMIC RECOVERY
  Summer and winter
- IT COVERS UP TO 80% OF THE BUILDING'S HEATING REQUIREMENT
- ELECTRONIC FILTRATION
  For effective protection against even the most insidious pollutants (PM10, bacteria, pollen)
- DEHUMIDIFICATION
  In summer, ideal for combination with radiant cooling
- FREE COOLING

ELFOFresh² is the innovative air renewal and purification device for consistently clean air, at the right temperature and the right level of humidity, for total wellbeing at home.
ELFOFresh² is a reliable and economical choice, because it is no longer necessary to open the windows and to waste energy to allow fresh air to enter.

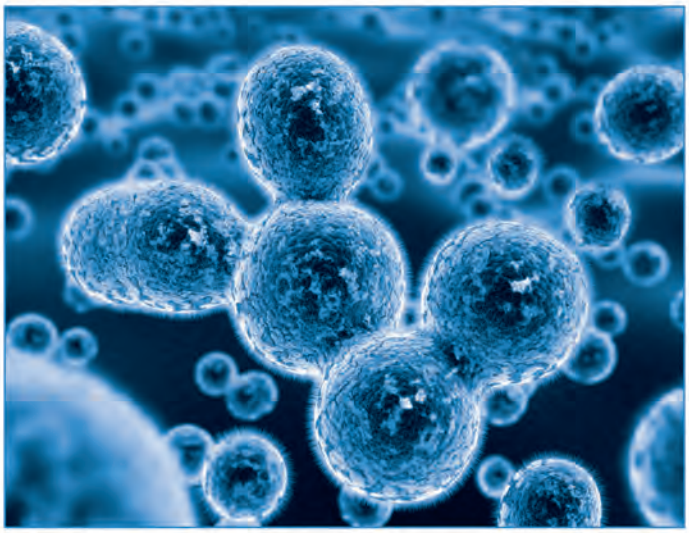
# GREATER COMFORT, GRATER WELLBEING

## Air renewal, purification and energy production

ELFOFresh² has a high efficiency cooling circuit, which absorbs the energy contained in the exhaust air and transfers it to the fresh air. In addition to recovering heat from the exhaust air, ELFOFresh² also generates a basis amount of energy, supplied to the building summer and winter. Thanks to its high energy efficiency, ELFOFresh² offers low energy consumption, consuming less than a conventional heat pump used as a main generator to produce the same amount of energy.




## Eliminates pollutants



ELFOFresh² rejects the stale air and introduces purified and conditioned fresh air. The harmful elements and smells present in the outdoor air are eliminated by the efficient filtration system. The electrostatic filter is easy to extract and can be fully restored through washing.

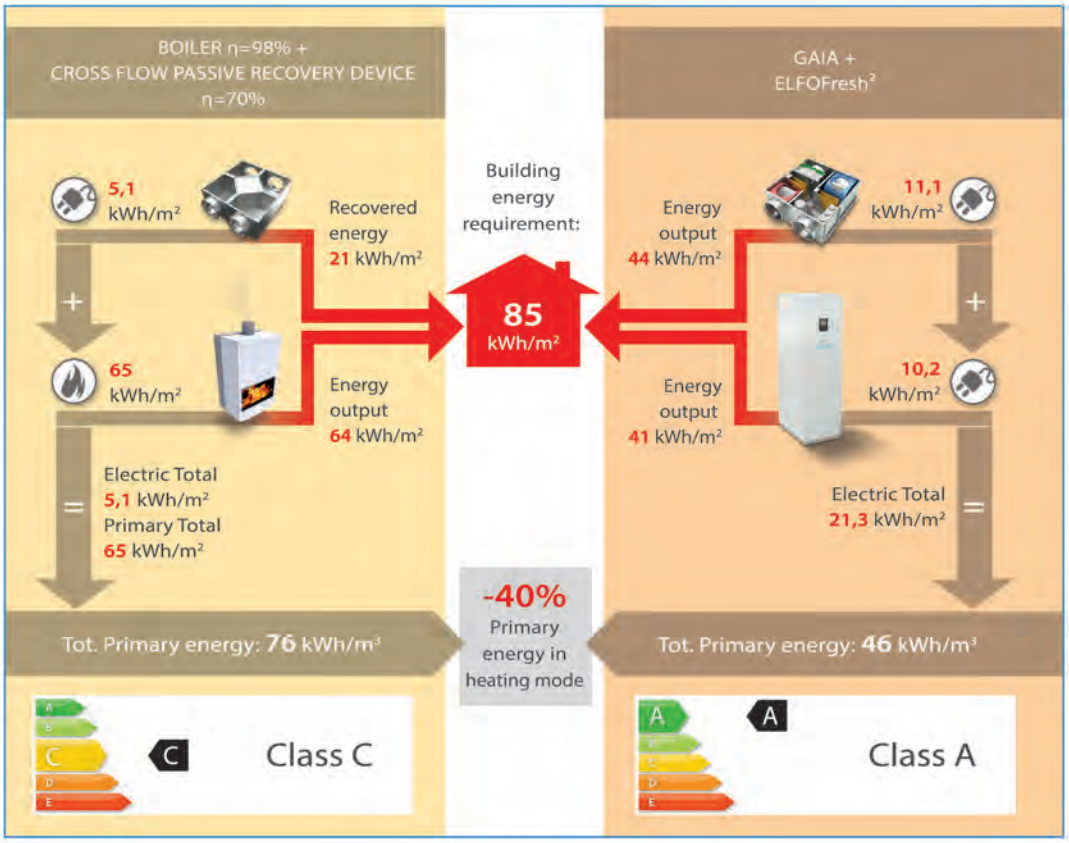
## Humidity control

During summer operation ELFOFresh², cooling the air renewal, makes the dehumidification increasing comfort.
The use of ELFOFresh² in cooling systems using underfloor, wall or ceiling heating, wall or ceiling makes it unnecessary to install the dehumidifier. In winter operation, thanks to the use of accessories dedicated, ELFOFresh² maintains a correct humidity value.

# ELFOFresh²

## Improves the building's energy rating

ELFOFresh² offers extraordinary energy efficiency, since it operates with an heat source, the exhaust air from the building, which is always better than outdoor air. During the winter, for example, it uses the exhaust air which is around 20°C, guaranteeing a COP of over 5,5.
ELFOFresh² reduces the ventilation load supplies additional energy, helping to maintain comfortable conditions. The result is an up to 40% reduction in primary energy consumption in heating mode compared to a traditional system.




## System simplification

ELFOFresh² is a single solution offering the functions provided in traditional systems by three elements: the passive heat recovery device, the split airconditioning and the dehumidifier. Together with GAIA, ELFOFresh² Guarantees year round ambient comfort and domestic hot water production in the most efficient way, considerably simplifying the building system. With just 3 elements, ELFOSystem generates comfort and energy savings superior to those offered by a traditional system, which needs to use a good 6 elements to guarantee a comparable performance.

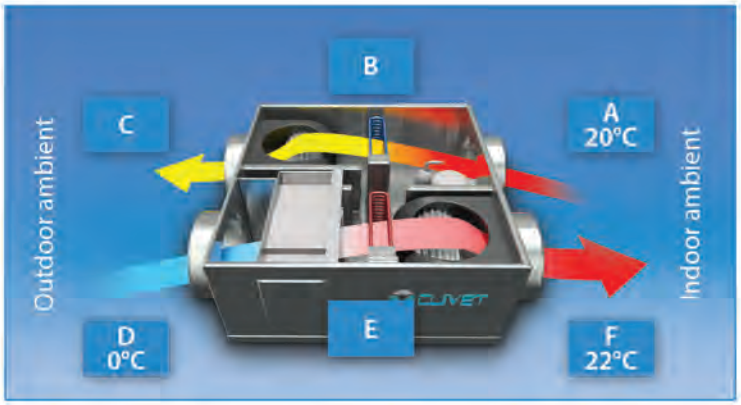
# THE SUMMER AND WINTER OPERATING PRINCIPLE

## Recovery which does not hinder ventilation

The controlled mechanical ventilation system with active recovery used by ELFOFresh² consists features heat exchangers with lower air side pressure drops than traditional systems, noticeably reducing the energy used for ventilation.
Traditional static recovery devices are subject to burdensome air flow pressure drops. They constantly hinder ventilation, generating higher electricity consumption and doing away with much of the energy effectively recovered over the year.
ELFOFresh², which offers active thermodynamic recovery, is equipped with high efficiency finned coils and guarantees very low pressure drops throughout the entire operating cycle.

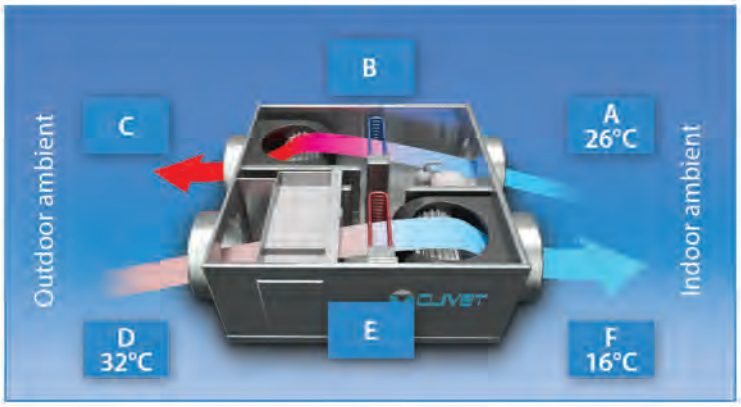
## Winter operation

The indoor air (A) flows through the evaporator coil (B) and transfers heat to the heat pump. Only then it is rejected (C). After having taken energy from the exhaust air, the refrigerant in the heat pump transfers it through the condenser coil (E) to the outdoor fresh air (D) before being introduced in the room (F).




## Summer operation

The cooling cycle is inverted thanks to the 4-way valve, so that the "cold" contained in the exhaust air (A) is recoverd in the condenser coil (B) before the air is rejected (C). The outdoor air (D) is filtered and then cooled and dehumidified, passing through the evaporator (E) before being introduced into the room (F).




## Free cooling: free comfort

During mid-seasons, the climate may be more pleasant outside than inside, especially in the evening.
In these situations, the clever design of ELFOFresh² allows to keep the required conditions in the rooms using outdoor air at no cost just using the fan.

# Air quality

## The indoors quality of the air is threatened by numerous pollutants

Our daily life leads us for business, relax or pleasure to spend 90% of our time indoors which accumulates many pollutants. The simple introduction of outside air to dilute indoor pollutants is not the right solution, because of the further pollutants contained in the outside air.


THE INTERNAL POLLUTANTS ACT ON OUR HEALTH AND ON THE BUILDING

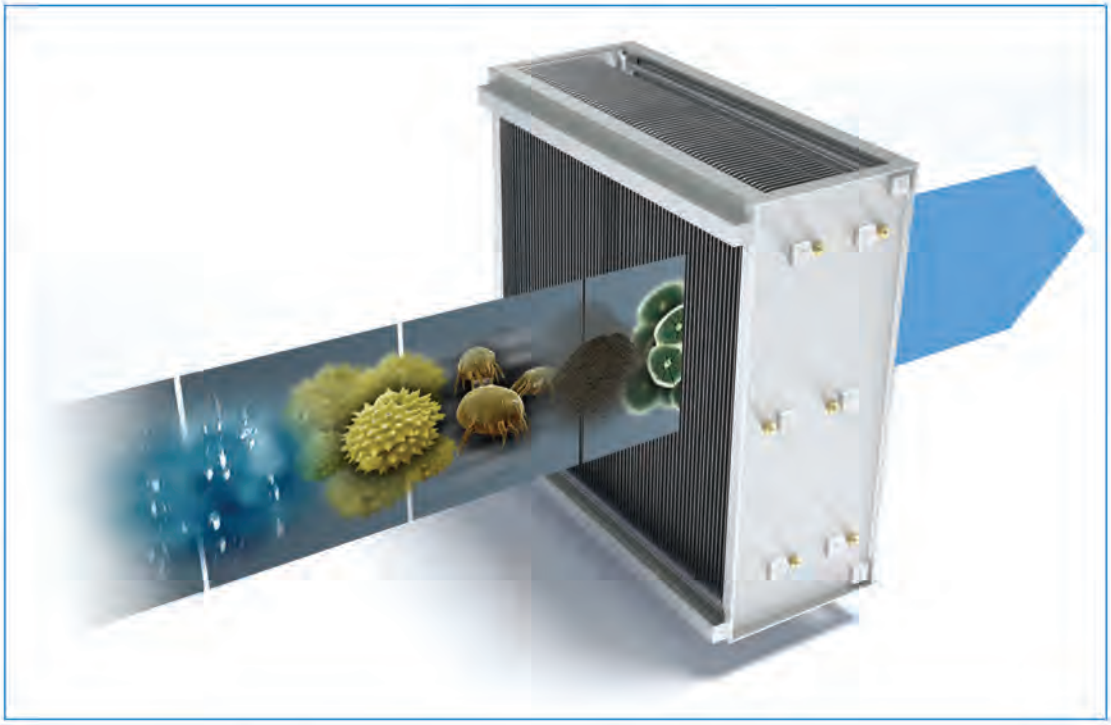
$CO_2$
DUST
TONER
MOULD
SMOKE

$O_3$
POLLEN
CO
PM10
$C_6H_6$
SOx NOx
VOC

THE EXTERNAL POLLUTANTS ARE DANGEROUS AND FEARSOME

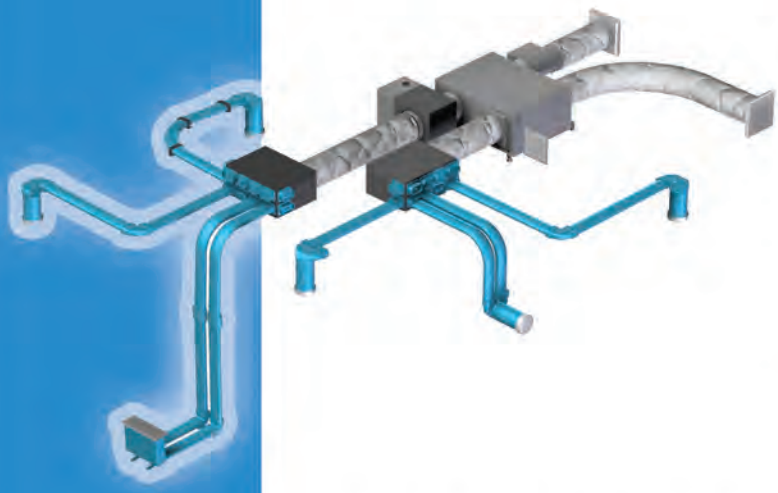
## High efficiency of filtration

The active electrostatic filters remove the particles in suspension from the air flow and they make them to fall down on plate collectors placed along the traversal direction. Thanks to this feature, the electrostatic filters offer very low pressure drops, almost constant during normal operating life ending when the thickness of the deposit starts to disrupt the electric field, rather than preventing the passage of air, as it is on "mechanical" filters.



# ELFOFresh Air

The exclusive air distribution system of ELFOFresh²



- **Flexible in installation**
  Thanks to the use of flexible and usable ducts.
- **Simple**
  In selecting the components and in the installation.
- **Air quality**
  Assured by the use of antistatic and antibacterial ducts.
- **Guaranteed result**

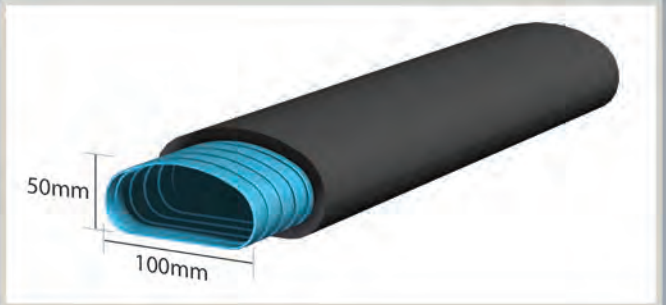
The modular system ELFOFresh Air is made of a reduced number of elements and it is easy to select and to configure. The Plug&Play connection of the different elements makes the system extremely easy and quick to install.
In new buildings and redevelopment works on existing buildings ELFOFresh Air is the best solution to fully enjoy the benefits of the ELFOFresh² ventilation system thanks to its stepped flexible ducts. These are ideal for underfloor applications, as well as for installations in attics and false ceilings. Specially designed grids and outlets can also be fitted and can be perfectly integrated in any kind of architectural context.

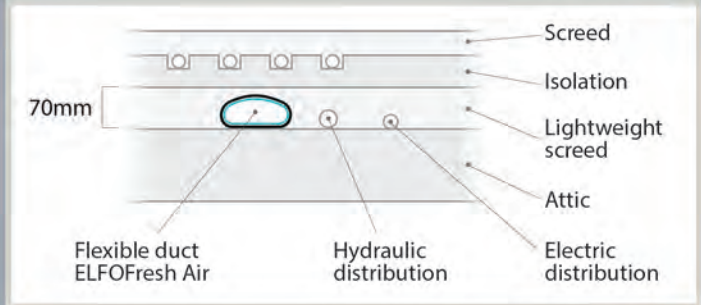
## ANTISTATIC AND ANTIBACTERIAL

The inner surface of the flexible ducts is lined with a special plastic film treated with silver ions that provides excellent antistatic and antibacterial properties and guarantees top hygiene levels of the treated air. Furthermore the internal smooth surface of the ducts ensures low pressure drops and therefore reduces consumptions for ventilation.

## SYSTEM EASY TO INSTALL THAT DOES NOT ADD CLEARANCES AVAILABLE ALSO UNDERFLOOR

ELFOFresh Air is the plug&play distribution system that reduces installation times by 50%. The simple and user-friendly connection between its elements guarantees a perfect seal and reliability of the distribution system.
The choice to only use flat flexible ducts allows to contain the space required for installation and leaves the designer and installer full freedom both in terms of design and installation of the air distribution system.

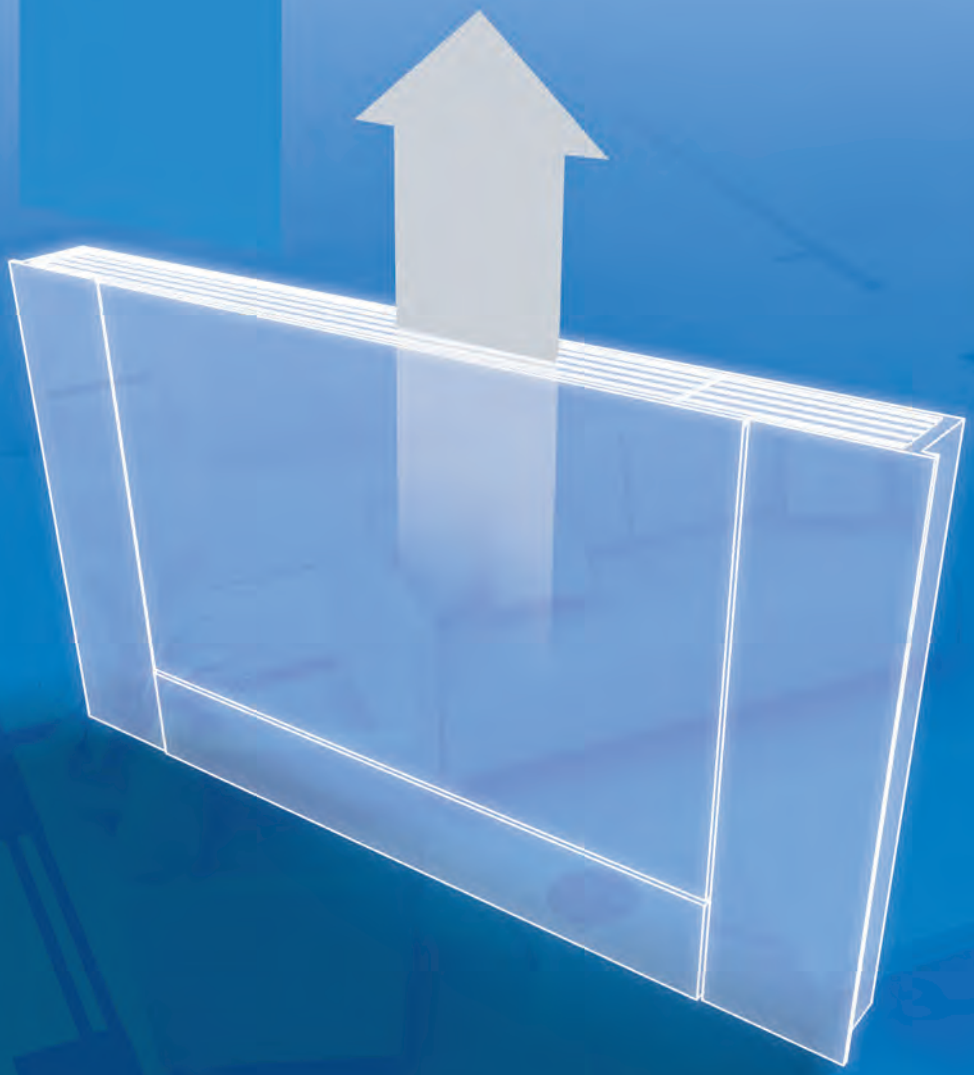


# ELFORoom²

Room terminals
ELFODistribution

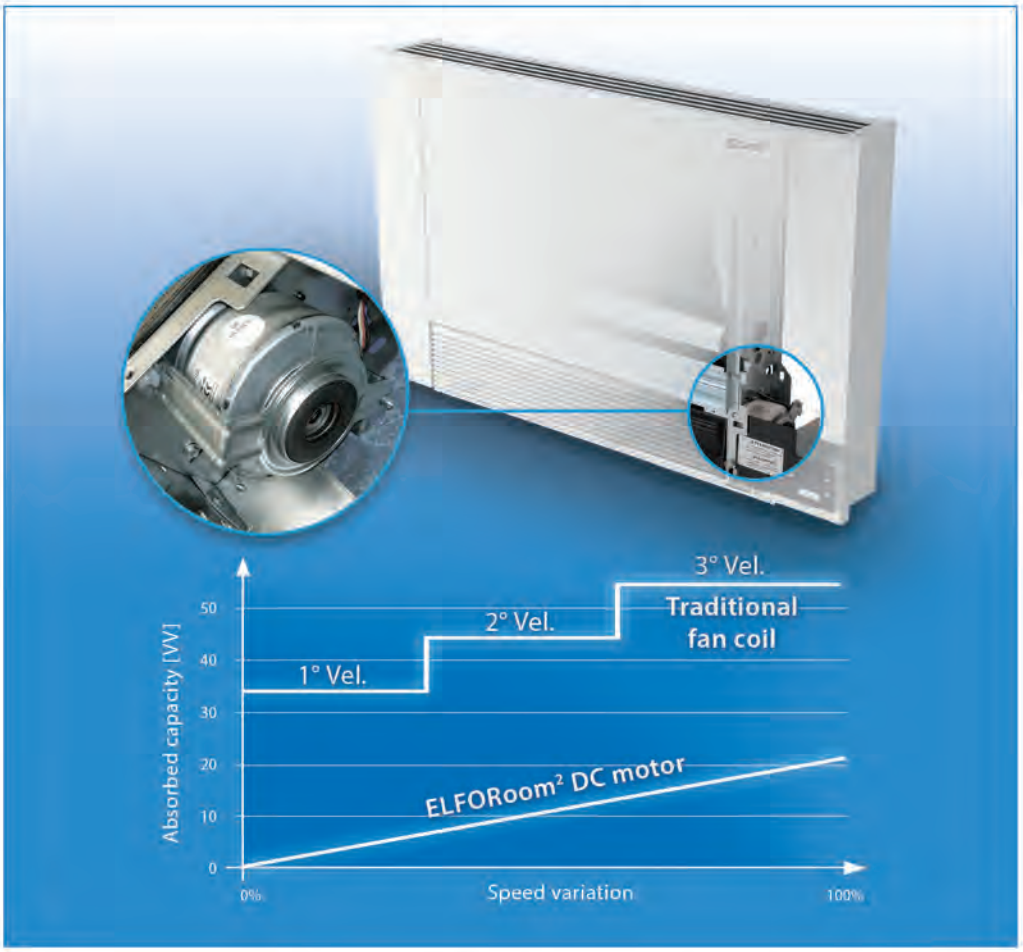
- UNIFORM TEMPERATURE
- LOWER ENERGY CONSUMPTIONS
- LESS NOISE
- LARGE AND EASY TO ACCESS FILTER



ELFORoom² is a clever combination of design and technology, ensuring a completely uniform temperature, constant air filtration and imperceptible noise levels.

# Consistently uniform temperature and lower energy consumption

Thanks to the continuous fan operation and the gradual spped variations, ELFORoom² guarantees constant air movement.
The exclusive fan electric motor of the ELFORoom² guarantees low energy consuptions thanks to the modulation of ventilation. The innovative technological solution considerably limits the energy generated for its correct operation, reducing the required power and the operating costs if compared to the traditional fan coils.




## Quiet operation

The continuously running fan allows to operate the fan coil at very low speeds, making the noise that it produces almost imperceptible.
ELFORoom² is equipped with a control system that permits the continuous adjustment of the rpm to suit the system requirements.

## It cleans the air as it controls the temperature

In addition to its complete and flexible temperature control, ELFORoom² also takes care of air quality. In fact, it is equipped with a large filter, easily accessible via the front panel, which ensures efficient air purification and makes it possible to reduce cleaning operations.

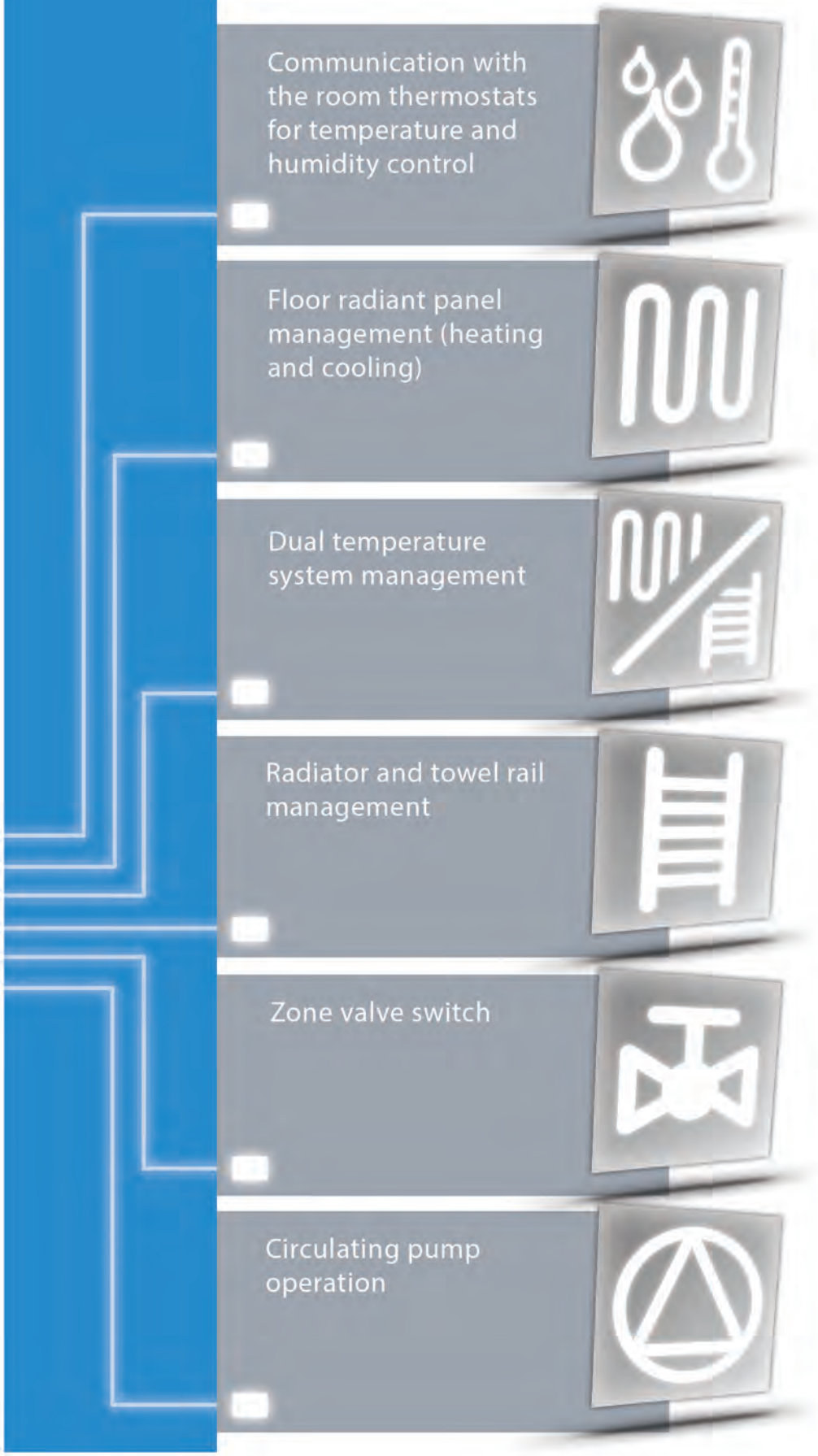
# ELFOControl²

The future is already at home

- FULL SYSTEM CONTROL
- HOURLY PROGRAMMING
- COMFORT LEVEL CUSTOMISATION
- ENERGY OPTIMISATION
- TOUCH SCREEN DISPLAY
- ANDROID SYSTEM


ELFOControl² is the "brain" behind your system, communicating with all the installed components. It checks the operating conditions of very single device and allows to adjust the operation of the entire system from a single control point that can set of all the desired parameters for the required comfort conditions.

# ELFOControl² MANAGES THE ENTIRE SYSTEM

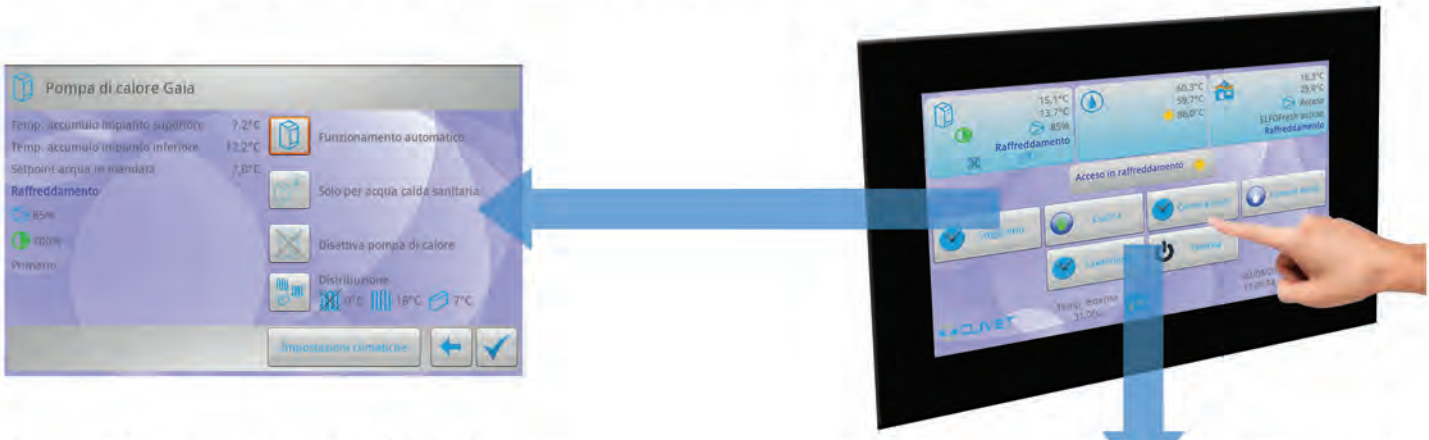



Elfocontrol² controls and manages all the components in the system, distributing exactly the right amount of energy required, when and where it is required, thus ensuring maximum system efficiency. The management of every single element and the possibility to customise the settings, also allows to obtain perfect levels of comfort for every requirement.

# Enjoy the comfort, let ELFOControl² deal with the rest

## The entire system at you fingertips

Even the best cooling system without a correct temperature control can generate discomfort instead of comfort, with ELFOControl² it is sufficient a simple touch screen to access the control of each single ELFOSystem part. ELFOControl² controls and manages the whole system smartly and efficiently to give always the best comfort at the lower cost.



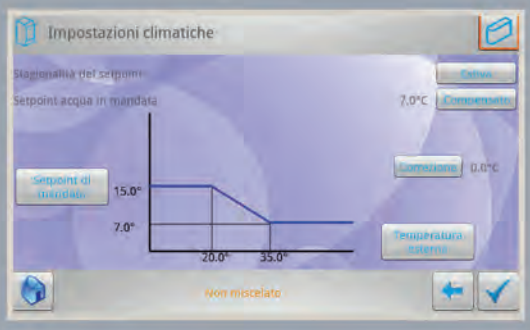

## Every climate area at hand

ELFOControl² manages up to 40 elements simultaneously leaving the user with the freedom of defining the wanted temperature for each individual area. With a few touches from the main screen it is possible:

- to define and manage up to 12 different climate areas
- program the comfort of the individual areas
- set the temperatures directly from touch screen or from the thermostat
- set different temperatures inside the same climate area


## Flexible and Programmable

The customising of the times and temperatures, room by room allows obtaining the perfect comfort for every requirement. ELFOControl² allows defining up to 10 customised timed programming. A different program can be associated to every day of the week, for optimising the functioning and efficiency of the entire system.

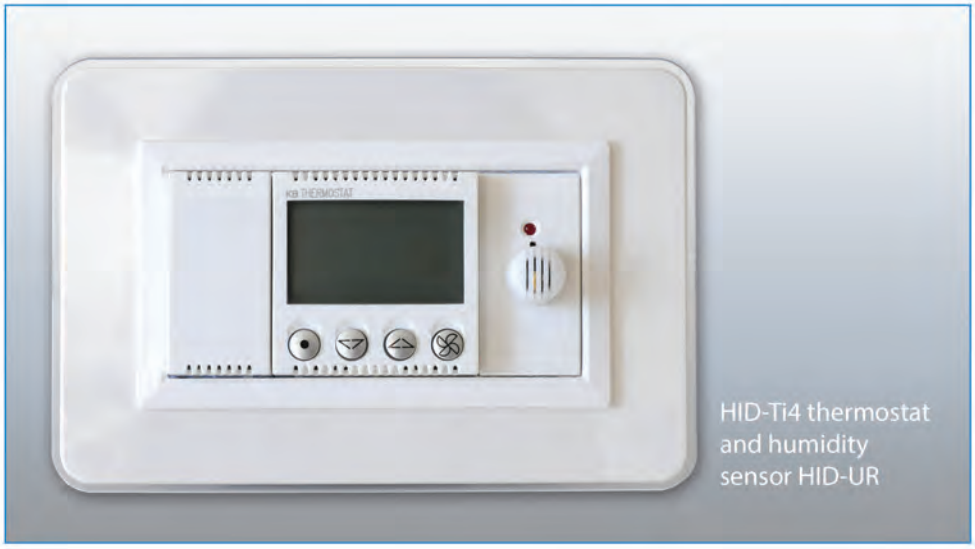

## Customisation of the comfort levels

Each of us differently perceives well-being, for this reason it is not easy to define comfort.
ELFOControl² allows the user to adjust all system settings and adjustments, even the most advanced, to its own requirements, to guarantee everyone with the ideal comfort.

# ELFOControl² manages comfort in your home

## New thermostats for temperature humidity management room by room

Through specific modules connected to temperature thermostat and possibly of humidity, the shut-off valves of the hydraulic circuits can be controlled, if the desired temperature has been reached and the pumps installed on GAIA will be activated or not.


HID-Ti4 thermostat and humidity sensor HID-UR

## Radiant Cooling adjustment

In case there is a radiant installation used also for cooling purposes, the humidity control is made by ELFOFresh2, while the water temperature of the water produced by GAIA is defined based on the outdoor temperature and modified based on dew point through the humidity level measured by the themostats.

# YEAR ROUND INDOOR COMFORT SYSTEMS: LOWER ENERGY CONSUMPTIONS

# ELFOSystem GAIA

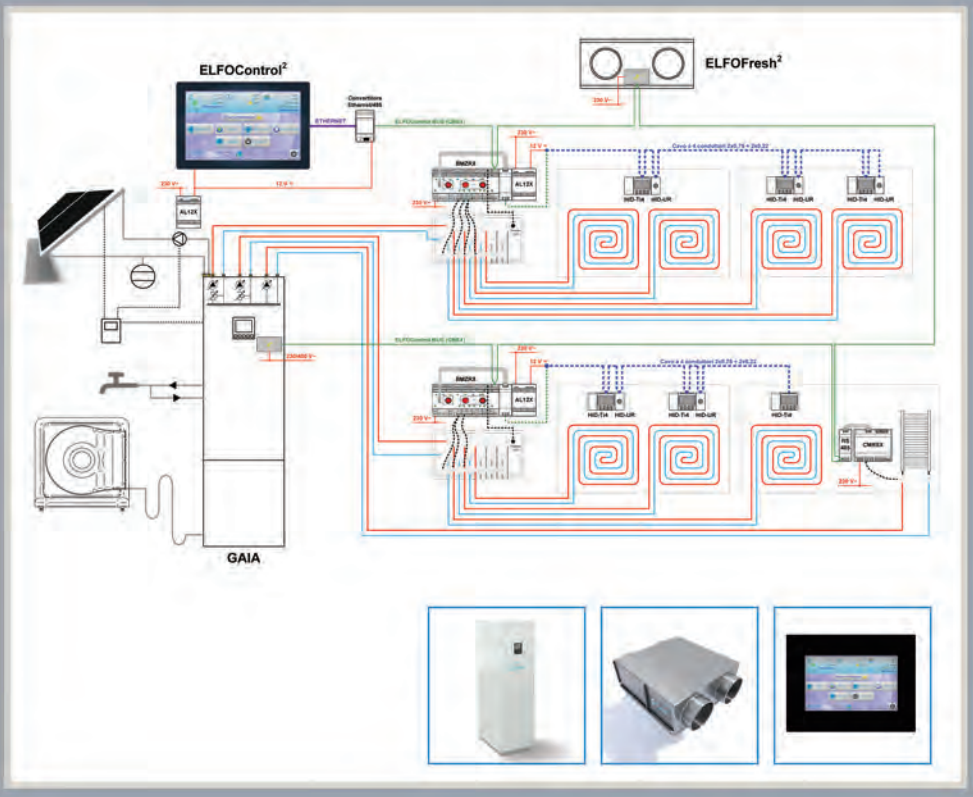
## Net zero Energy building

Newly built single-family house of 270 m2 Class A zero energy thanks to the use of the combination of heat pump, solar thermal and solar photovoltaics.

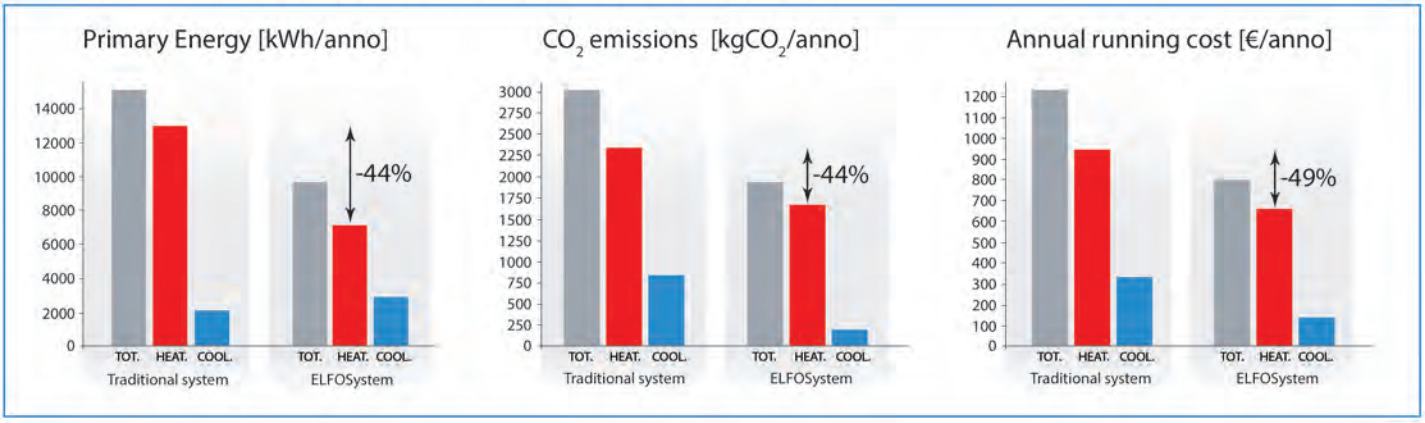
Number of rooms: 12
Year f construction: 2011
Surface: 270 m$^2$
Location: Cittadella (PD)
Climate zone: E – 2336 degrees by day

**System:**
**ELFOSystem of Clivet composed by**

- Heat pump system with inverter technology GAIA Aria 31 for heating, cooling, domestic hot water production
- Air renewal and purification system with active thermodynamic recovery ELFOFresh$^2$ 300
- Centralized control system ELFOCOntrol$^2$
- Radiant panels for cooling and heating distribution
- Solar system of 5m$^2$ for domestic hot water
- Photovoltaic system 5.7 KWp




## THE RESULTS: comparison with a traditional system



# ELFOSystem GAIA Maxi

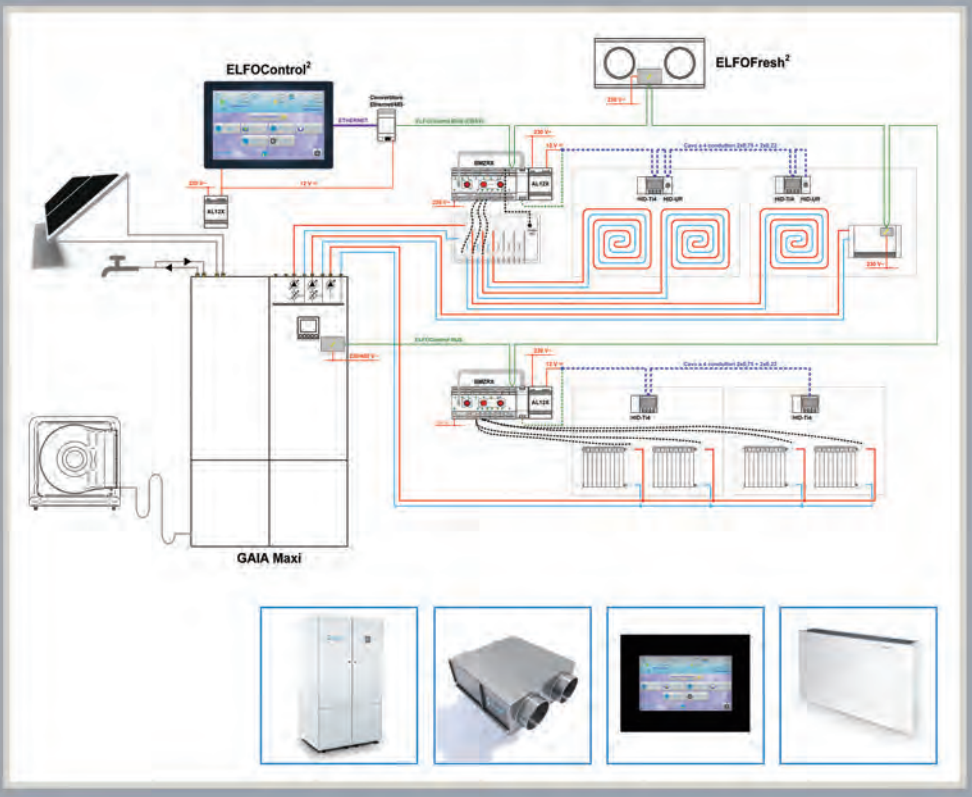
## High energy efficiency re-qualification

Single-family house of 400 m², earning two classes of energy efficiency even not intervening on the building thanks to the installation of ELFOSystem GAIA Maxi all year round air conditioning system

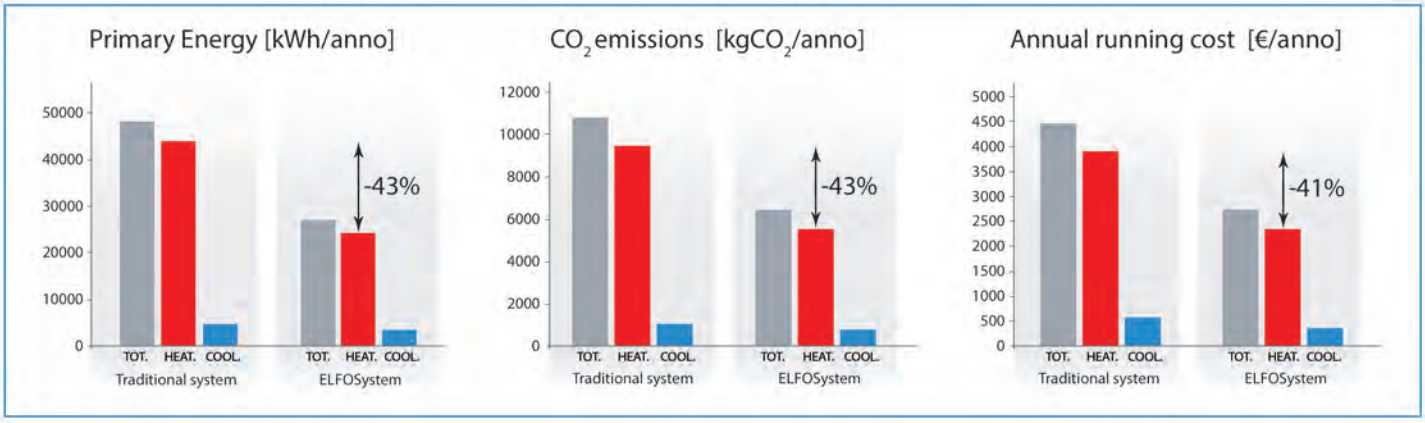
Number of rooms: 15
Year f construction: 1980 – Year of re-qualification: 2012
Surface: 400 m²
Location: Milano
Climate zone: E – 2404 degrees by day

**System:**
**ELFOSystem GAIA Maxi of Clivet composed by**

- Combined monoblock heat pump GAIA Maxi for heating, cooling, domestic hot water production
- Air renewal and purification system with active thermodynamic recovery ELFOFresh² 300
- Centralized control system ELFOControl²
- Radiant panels, radiators and ambient thermals for cooling and heating distribution (not cooling for radiators)
- Solar system of 5m² for domestic hot water
- Photovoltaic system 5.7 KWp




## THE RESULTS: comparison with a traditional system



# TECHNICAL DATA

Air to water heat pump

R-410A Refrig. R-410A

Herm. Rotary

Herm. Scroll

ELFOControl²

Full Inverter DC

# GAIA Aria 31-61 (MSER-XEE 31-61)

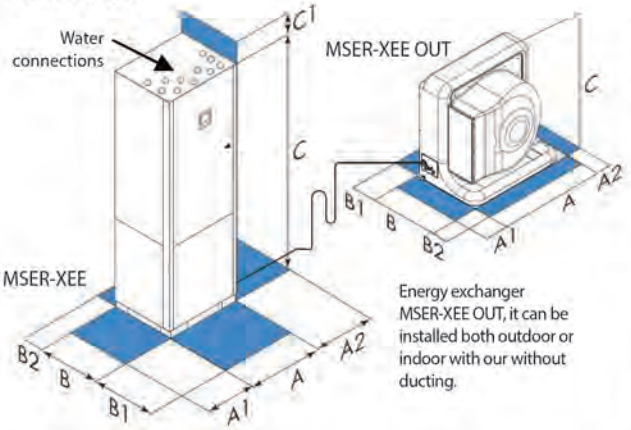
## Technical data

| Sizes | | | 31 | | | 61 | | |
|---|---|---|---|---|---|---|---|---|
| | | | Performances with RADIANT PANELS (1) | Performances with ROOM TERMINALS (2) | Performances with RADIATORS (3) | Performances with RADIANT PANELS (1) | Performances with ROOM TERMINALS (2) | Performances with RADIATORS (3) |
| Pt / Pa / COP @A+7°C | (4) | kW/kW/- | 7,30 / 1,62 / 4,51 | 6,80 / 1,96 / 3,47 | | 16,0 / 3,63 / 4,41 | 14,9 / 4,53 / 3,30 | 14,5 / 5,35 / 2,70 |
| Pt / Pa / COP @A+2°C | (4) | kW/kW/- | 6,22 / 1,59 / 3,86 | 5,80 / 1,94 / 2,97 | 6,37 / 2,30 / 2,76 | 12,5 / 3,32 / 3,67 | 11,7 / 4,14 / 2,75 | 11,1 / 4,90 / 2,16 |
| Pt / Pa / COP @A-5°C | (5) | kW/kW/- | 7,15 / 2,20 / 3,24 | 6,76 / 2,64 / 2,57 | 5,44 / 2,31 / 2,35 | 13,1 / 4,50 / 2,90 | 12,4 / 5,41 / 2,29 | 12,0 / 6,58 / 1,82 |
| Pf / Pa / EER @A+35°C | (4) | kW/kW/- | 8,20 / 2,16 / 3,80 | 5,81 / 1,93 / 3,01 | 6,27 / 2,95 / 2,15 | 17,7 / 4,90 / 3,61 | 13,5 / 4,64 / 2,92 | - |
| ESEER Eurovent | (6) | - | 7,94 | 5,25 | - | 7,42 | 5,22 | - |
| Pump available head | (7) | kPa | 32 | | - | 18 | | |
| Max fan ESP | | Pa | 90 | | | | | |
| Min outdoor air temp./max. water temp. (heating) | | °C | -22 / 60 | | | | | |
| Min. water temp. / max outdoor air | | °C | 5 / 53 | | | 3 / 54 | | |
| Sound level to a distance of 1m from the unit int/ext | | dB(A) | 36 / 54 | | | 37 / 52 | | |
| Domestic hot water storage tank capacity | | l | 186 | | | | | |
| Solar exchanger capacity | | W/K | 2703 | | | 3186 | | |
| Power supply | | V/Ph/Hz | 230 /1/50 | | | 230/1/50 - 400/3/50 | | |

**Data referred to the following conditions:**

(1) Radiant Panel: Heating performances with inlet water 30°C and outlet35°C and cooling with inlet water 23°C and outlet 18°C according to EN14511:2011.
(2) Room Terminals: Heating performances with inlet water 40°C and outlet 45°C and cooling with inlet water 7°C and outlet 12°C according to EN14511:2011.
(3) Radiators: Heating performances with inlet water 45°C and outlet 55°C according to EN14511:2011.
(4) Performances at Compressor nominal speed.
(5) Performances at Compressor max. speed.
(6) ESEER calculated according to Eurovent, for water produced at 18°C have been considered the partial loads defined by Eurovent for water produced 7°C.
(7) Available head referred to heating mode with inlet water 30°C and outlet35°C, External temperature -5°C.
Performances in compliance with EN14511:2011 where the input is given by the compressor input + fans power input + auxiliary circuit input + part of the power pump to provide the residual loss of charge including eventual defrosting in heating.

## Dimensions



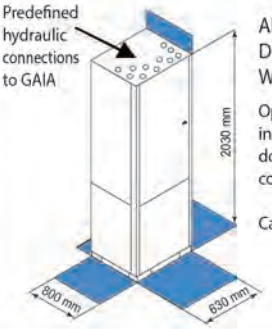

Energy exchanger MSER-XEE OUT, it can be installed both outdoor or indoor with our without ducting.

| MSER-XEE | | 31 | 61 |
|---|---|---|---|
| A - Length | mm | 630 | 630 |
| B - Width | mm | 800 | 800 |
| C - Height | mm | 2030 | 2030 |
| Oper. weight | kg | 430 | 460 |

| MSER-XEE OUT | | 31 | 61 |
|---|---|---|---|
| A - Length | mm | 860 | 1250 |
| B - Width | mm | 720 | 788 |
| C - Height | mm | 845 | 1304 |
| Oper. weight | kg | 58 | 105 |

The above datas are referred to the standard unit

## Optional accessory




ADDITIONAL DOMESTIC HOT WATER TANK

Optional accessory for installations with domestic hot water consumption

Capacity: 300-litre

CAUTION! The blue functional spaces can be occupied by furniture or other objects. For trouble-free operation they must be easy to remove. Maximum equivalent lines length 25m and max level difference 15m.

## Seasonal efficiency according to EN 14825 (it considers the unit capacity and the production and pumping electric absorbtion)

| | | | GAIA Aria 31 | | | GAIA Aria 61 | | |
|---|---|---|---|---|---|---|---|---|
| Climate band | Location | Design T°C | SCOP Radiant panels | SCOP Terminal units | SCOP Radiators | SCOP Radiant panels | SCOP Terminal units | SCOP Radiators |
| Colder | Helsinki | -22 | 3,22 | - | - | 3,31 | 2,80 | - |
| Average | Strasburgo | -10 | 3,76 | 3,35 | - | 3,94 | 3,44 | 2,96 |
| Warmer | Atene | 2 | 4,79 | 4,43 | 4,08 | 5,05 | 4,63 | 4,22 |

The table indicates the seasonal efficiency values in heating SCOP, calculated according to prEN14825, taking into account:
- a linear curve of heating capacity required by the building on the basis of the outdoor air temperature, from a maximum value (Pt) corresponding to the design winter outdoor temperature (Tae,h) to a nil value for an outdoor temperature of 15 °C.

SCOP was calculated on the the basis of the temperature of the hot water produced by the heat pump varying depending on the outdoor air temperature and on the type of terminal used (radiant panels, terminal units, radiators) according to prEN14825.

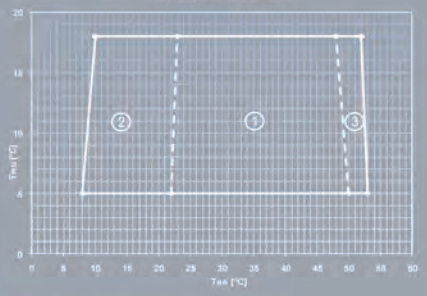
| | GAIA Aria 31 | GAIA Aria 61 |
|---|---|---|
| SEER Radiant Panels | 5,23 | 5,52 |
| SEER Terminal Units | 4,02 | 4,30 |

The table indicates the seasonal efficiency values in cooling SEER, calculated according to prEN14825, taking into account:
- a linear curve of cooling capacity required by the building on the basis of the outdoor air temperature, from a maximum value (Pf) corresponding to the design winter outdoor temperature (Tae,c) to a nil value for an outdoor temperature of 16 °C.

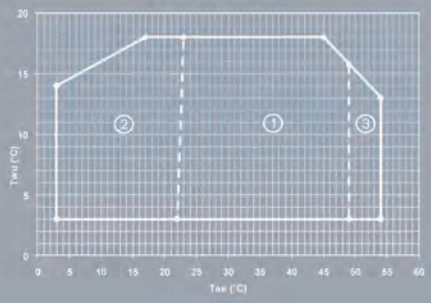
SEER was calculated on the basis of the temperature of the hot water produced by the heat pump varying depending on the hourly outdoor air temperature:
- fixed corresponding to 18°C with radiant panels, according to prEN14825.
- variable depending on the outdoor air temperature with terminal units, according to prEN14825.

### Cooling operating limits

GAIA Aria 31



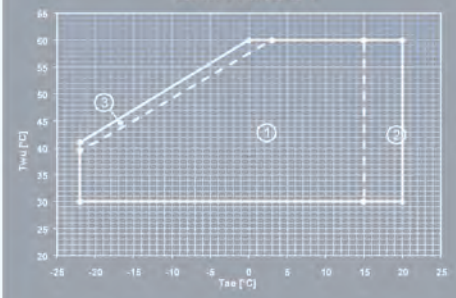

GAIA Aria 61



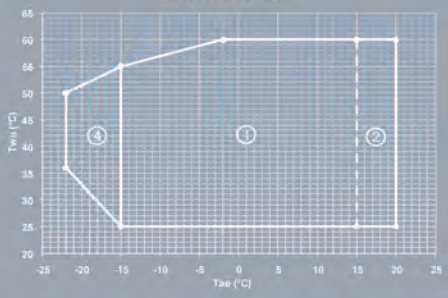

Twu [°C] = exchanger outlet water temperature
Twu [°C] = 3°C antifreeze safety set point
Tae [°C] = external exchanger inlet air temperature
(1) Normal field of operation
(2) Operation with modulating fans
(3) Operation with 100% working fans

### Heating operating limits

GAIA Aria 31



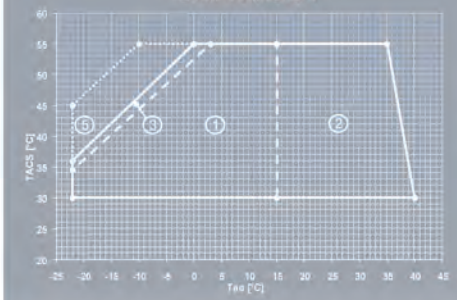

GAIA Aria 61



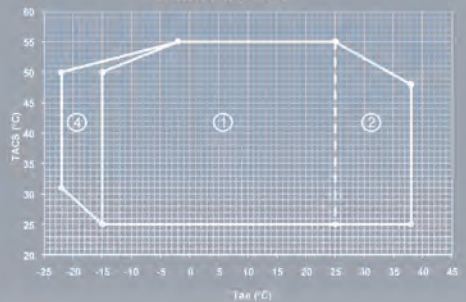

Twu [°C] = exchanger outlet water temperature
Tae [°C] = outdoor exchanger inlet air temperature
(1) Normal field of operation
(2) Operation with modulating fans
(3) Operation with 100% working fans
(4) Field of operation for short times (max 5000 hours)

### Domestic hot water operating limits

GAIA Aria 31



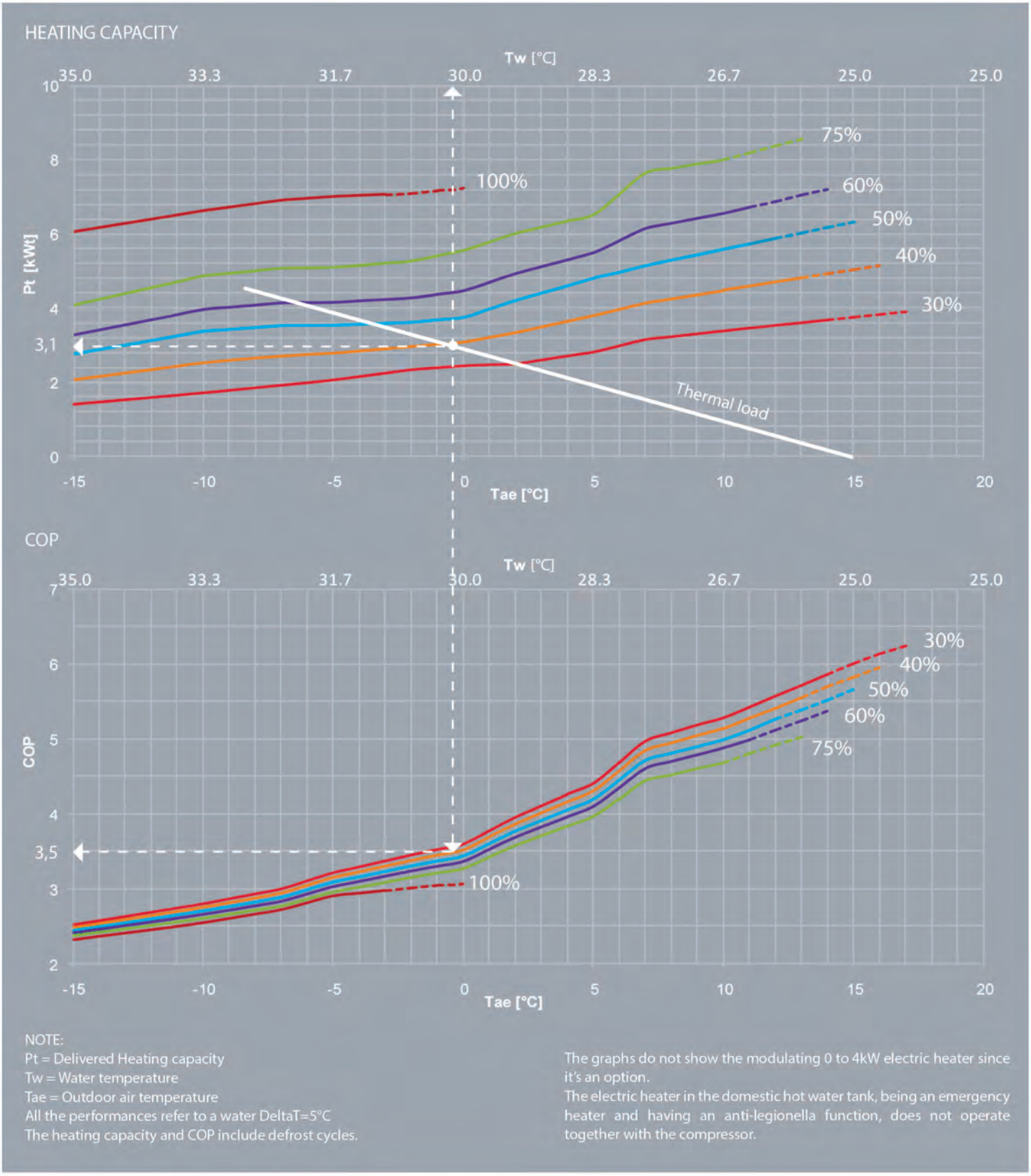

GAIA Aria 61




TACS [°C] = domestic hot water temperature
Tae [°C] = outdoor exchanger inlet air temperature
(1) Normal field of operation
(2) Operation with modulating fans
(3) Operation with 100% working fans
(4) Field of operation for short times (max 5000 hours)
(5) Field of operation with the use of the electric heater present in the hot water tank.

# GAIA Aria 31 HEATING PERFORMANCES

Into the technical documentation that is available on line all the technical data at different conditions are available. As an example, here are the heating performances for an application with radiant panels and water supply temperature variable with the ambient temperature. Design temperature -15°C.

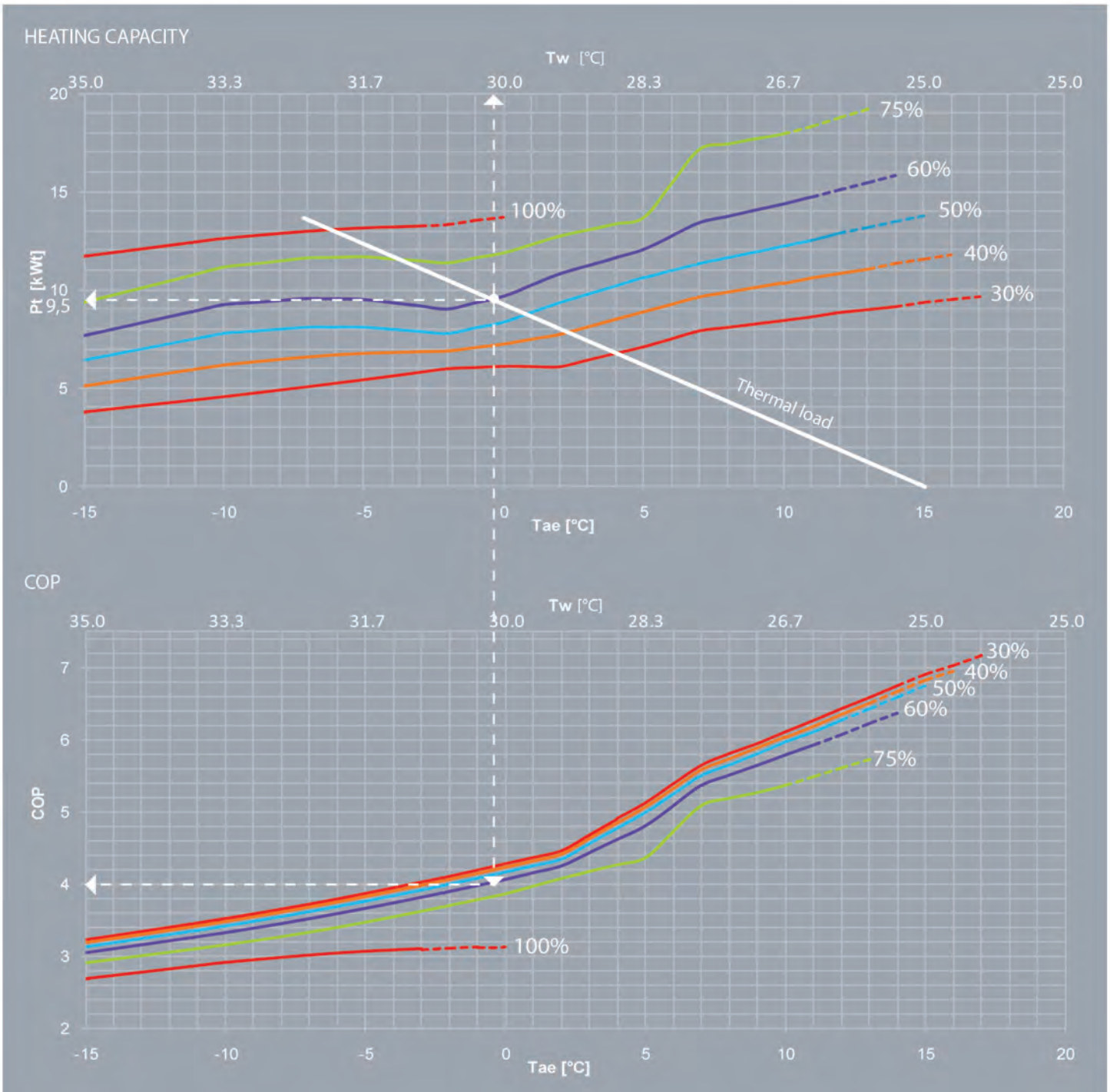



NOTE:
Pt = Delivered Heating capacity
Tw = Water temperature
Tae = Outdoor air temperature
All the performances refer to a water DeltaT=5°C
The heating capacity and COP include defrost cycles.

The graphs do not show the modulating 0 to 4kW electric heater since it's an option.
The electric heater in the domestic hot water tank, being an emergency heater and having an anti-legionella function, does not operate together with the compressor.

# GAIA Aria 61 HEATING PERFORMANCES

Into the technical documentation that is available on line all the technical data at different conditions are available. As an example, here are the heating performances for an application with radiant panels and water supply temperature variable with the ambient temperature. Design temperature -15°C




NOTE:
Pt = Delivered Heating capacity
Tw = Water temperature
Tae = Outdoor air temperature
All the performances refer to a water DeltaT=5°C
The heating capacity and COP include defrost cycles.

The graphs do not show the modulating 0 to 6kW electric heater since it's an option.
The electric heater in the Domestic hot water tank, being an emergency heater and having an anti-legionella function, does not operate together with the compressor.

Water to water heat pump

R-410A Refrig. R-410A

Herm. Rotary

Herm. Scroll

ELFOControl²

Full Inverter DC

# GAIA Acqua 31-61 (WSHR-XEE 31-61)

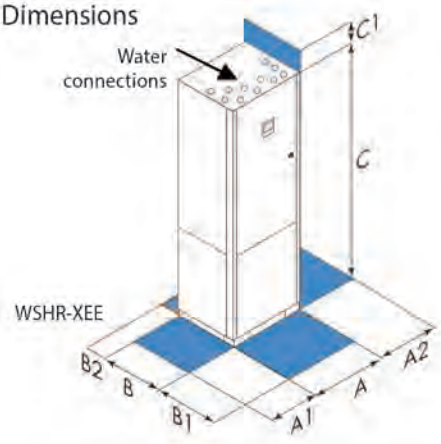
## Technical data

| Technical data | | | | 31 | | | 61 | |
|---|---|---|---|---|---|---|---|---|
| | | | Performances with RADIANT PANELS (1) | Performances with ROOM TERMINALS (2) | Performances with RADIATORS (3) | Performances with RADIANT PANELS (1) | Performances with ROOM TERMINALS (2) | Performances with RADIATORS (3) |
| **Groudwater** | | | | | | | | |
| Pt / Pa / COP @W10°C | (4) | kW/kW/- | 8.43/1,69/5,00 | 7,84/2,02/3,87 | 6,98/2,25/3,09 | 15,7/3,06/5,11 | 15,6/3,84/4,05 | 13,4/3,94/3,33 |
| Pf / Pa / EER @W35°C | (4) | kW/kW/- | 9,29/1,80/5,17 | 6,76/1,73/3,91 | - | 17,2/2,91/5,89 | 12,4/3,00/4,12 | - |
| ESEER Eurovent @W35°C | (5) | | 7,92 | 5,73 | - | 7,00 | 4,83 | - |
| Pump available head user side | (6) | kPa | 60 | 61 | 64 | 32 | 33 | 63 |
| Pump available head source side | (6) | kPa | 40 | 51 | 56 | 98 | 106 | 114 |
| **Geothermal** | | | | | | | | |
| Pt / Pa / COP @B0°C | (4) | kW/kW/- | 6,69/1,57/4,14 | 5,94/1,85/3,16 | 5,52/2,16/2,54 | 12,4/2,90/4,25 | 11,5/3,43/3,31 | 9,90/3,76/2,60 |
| Pf / Pa / EER @B35°C | (4) | kW/kW/- | 9,22/1,82/5,07 | 6,69/1,75/3,83 | - | 16,9/2,93/5,77 | 12,2/3,02/4,04 | - |
| ESEER Eurovent @B35°C | (5) | | 7,58 | 5,58 | - | 6,86 | 4,76 | - |
| Pump available head user side | (6) | kPa | 63 | 63 | 64 | 48 | 51 | 64 |
| Pump available head source side | (6) | kPa | 32 | 47 | 57 | 99 | 107 | 111 |
| Max water temp (heating) | | °C | 60 | | | | | |
| Min water temp (cooling) | | °C | 4 | | | | | |
| Sound level to a distance of 1mt | | dB(A) | 36 | | | 37 | | |
| Domestic hot water storage tank capacity integrated | | l | 186 | | | | | |
| Solar exchange capacity | | W/K | 2703 | | | 3186 | | |
| Power supply | | V/Ph/Hz | 230/1/50 | | | 230/1/50 - 400/3/50 | | |

**Data referred to the following conditions:**

(1) Radiant Panel: Heating performances with inlet water 30°C and outlet 35°C and cooling with inlet water 23°C and outlet 18°C according to EN14511.
(2) Room Terminals: Heating performances with inlet water 40°C and outlet 45°C and cooling with inlet water 7°C and outlet 12°C according to EN14511.
(3) Radiators: Heating performances with inlet water 45°C and outlet 55°C according to EN14511.
(4) Compressor nominal speed performances.
(5) ESEER calculated according to Eurovent, for water produced at 18°C have been considered the partial loads defined by Eurovent for water produced 7°C.
(6) Available head referred in heating mode.
Performances in compliance with EN14511:2011 where the input is given by the compressor input + fans power input + auxiliary circuit input + part of the power pump to provide the residual loss of charge including eventual defrosting in heating.

## Dimensions

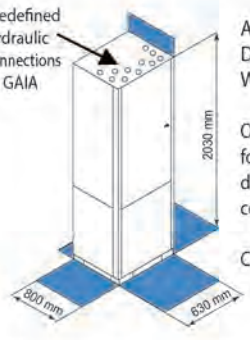



| MSHR-XEE | | 31 | 61 |
|---|---|---|---|
| A- Length | mm | 630 | 630 |
| B - Width | mm | 800 | 800 |
| C - Height | mm | 2030 | 2030 |
| Operating weight | kg | 430 | 460 |

The above datas are referred to the standard unit.

CAUTION!
The blue functional spaces can be occupied by furniture or other objects.
For trouble-free operation they must be easy to remove.

## Optional accessory




ADDITIONAL DOMESTIC HOT WATER TANK

Optional accessory for installations with domestic hot water consumption

Capacity: 300-litre

**According to the incentive requirements**

## Seasonal efficiency according to EN 14825 (it considers the unit capacity and the production and pumping electric absorption)

| | | | GAIA Acqua 31 Groundwater | | | GAIA Acqua 61 Groundwater | | | GAIA Acqua 31 Geothermal | | | GAIA Acqua 61 Geothermal | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Climate band | Location | Design T °C | SCOP Radiant Panels | SCOP Terminal Rooms | SCOP Radiators | SCOP Radiant Panels | SCOP Terminal Rooms | SCOP Radiators | SCOP Radiant Panels | SCOP Terminal Rooms | SCOP Radiators | SCOP Radiant Panels | SCOP Terminal Rooms | SCOP Radiators |
| Colder | Helsinki | -22 | 5,35 | 4,17 | 3,20 | 4,60 | 3,85 | 3,25 | 3,64 | 3,13 | 2,65 | 4,23 | 3,51 | 2,88 |
| Average | Strasburgo | -10 | 5,70 | 4,72 | 3,81 | 4,84 | 4,21 | 3,62 | 3,91 | 3,46 | 2,99 | 4,45 | 3,86 | 3,27 |
| Warmer | Atene | 2 | 6,08 | 5,36 | 4,68 | 5,04 | 4,60 | 4,17 | 3,99 | 3,70 | 3,41 | 4,65 | 4,23 | 3,82 |

The table indicates the seasonal efficiency values in heating SCOP, calculated according to prEN14825, taking into account:
- a linear curve of heating capacity required by the building on the basis of the outdoor air temperature, from a maximum value (Pt) corresponding to the design winter outdoor temperature (Tae,h) to a nil value for an outdoor temperature of 15 °C.

SCOP was calculated on the basis of the temperature of the hot water produced by the heat pump varying depending on the outdoor air temperature and on the type of terminal used (radiant panels, terminal units, radiators) according to prEN14825

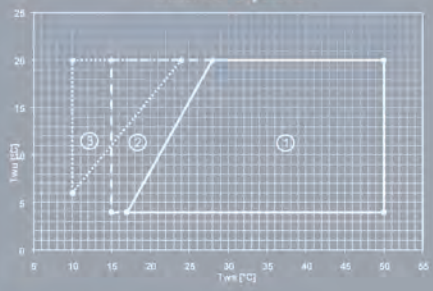
| | GAIA Acqua 31 Groundwater | GAIA Acqua 61 Groundwater | GAIA Acqua 31 Geothermal | GAIA Acqua 61 Geothermal |
|---|---|---|---|---|
| SEER Radiant Panels | 5,84 | 4,85 | 5,72 | 4,75 |
| SEER Terminal Units | 4,59 | 3,74 | 4,50 | 3,67 |

The table indicates the seasonal efficiency values in cooling SEER, calculated according to prEN14825, taking into account:
- a linear curve of cooling capacity required by the building on the basis of the outdoor air temperature, from a maximum value (Pf) corresponding to the design winter outdoor temperature (Tae,c) to a nil value for an outdoor temperature of 16 °C.

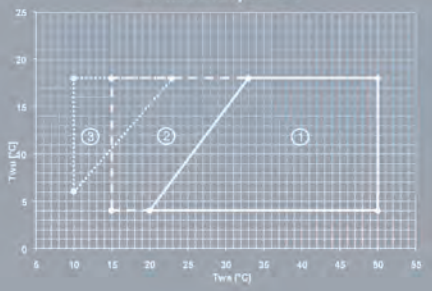
SEER was calculated on the basis of the temperature of the hot water produced by the heat pump varying depending on the hourly outdoor air temperature:
- fixed corresponding to 18°C with radiant panels, according to prEN14825.

### Cooling operating limits

GAIA Acqua 31



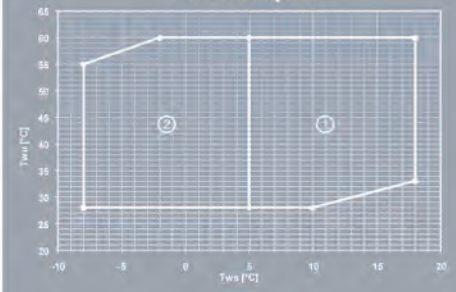

GAIA Acqua 61



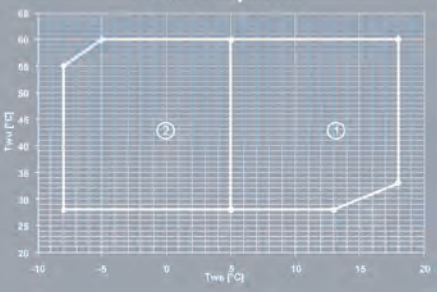

Twu [°C] = user side outlet water temperature
Tws [°C] = source side outlet water temperature
(1) Normal field of operation
(2) Field of operation with circulator or modulating control valve
(3) Field of operation enabled by the NATURAL COOLING function (optional)

### Heating operating limits

GAIA Acqua 31



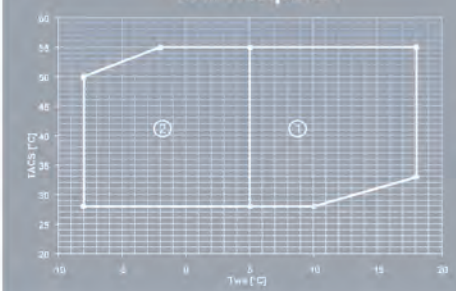

GAIA Acqua 61



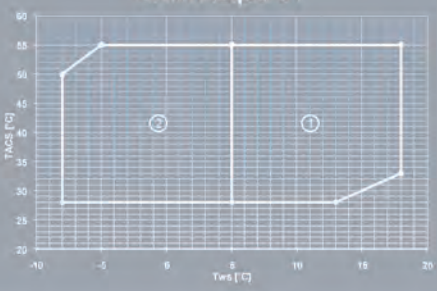

Twu [°C] = user side outlet water temperature
Tws [°C] = source side outlet water temperature
(1) Normal field of operation
(2) Field of operation in which the use of ethylene glycol is required due to the source side outlet water temperature

### Domestic water operation limits

GAIA Acqua 31




GAIA Acqua 61




TACS [°C] = domestic water temperature
Tws [°C] = source side outlet water temperature
(1) Normal field of operation
(2) Field of operation in which the use of ethylene glycol is required due to the source side outlet water temperature

Air to water heat pump

- R-410A Refrig. R-410A
- Herm. Scroll
- ELFOControl²
- Full Inverter DC

# GAIA MAXI Aria (MSER-XIN 61)

## Technical data

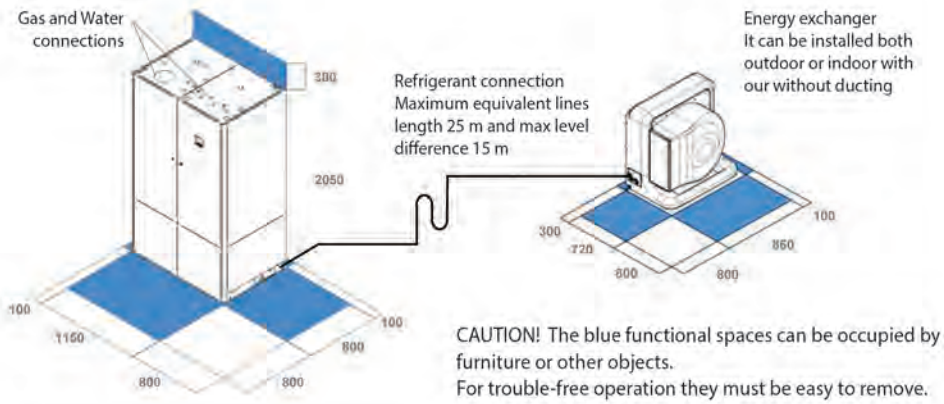
| Technical data Heat Pump | | Radiant panels (1) | Ambient terminals (2) | Radiators (3) |
|---|---|---|---|---|
| Pt / Pa / COP @A+7°C | kW/kW/- | 16 / 3,63 / 4,41 | 14,9 / 4,53 / 3,30 | 14,5 / 5,35 / 2,70 |
| Pt / Pa / COP @A+2°C | kW/kW/- | 12,5 / 3,32 / 3,67 | 11,7 / 4,14 / 2,75 | 11,1 / 4,90 / 2,16 |
| Pt / Pa / COP @A-5°C | kW/kW/- | 13,1 / 4,50 / 2,9 | 12,4 / 5,41 / 2,29 | 12,0 / 6,58 / 1,82 |
| Pf / Pa / EER @A+35°C | kW/kW/- | 17,7 / 4,90 / 3,61 | 13,5 / 4,64 / 2,92 | - |
| ESEER Eurovent | - | 7,42 | 5,22 | - |
| Pump available head | kPa | 28 | 34 | 62 |
| Max fan pressure head | Pa | | 90 | |
| Min air ext. temp / Max water Tem. | °C | -22 / 60 | | |
| Min water temp / Max ext air Tem. (cooling) | °C | 3 / 54 | | |
| Sound level to a distance of 1mt | dB(A) | 37 / 52 | | |
| System storage tank capacity | l | 186 | | |
| Domestic hot water storage tank capacity integrated | l | 280 | | |
| Solar exchange capacity | W/K | 3186 | | |
| Power supply | V/Ph/Hz | 400 / 3 / 50 + N | | |

| Technical data Boiler | | |
|---|---|---|
| Type of gas | | Methane, LPG |
| Nominal heat flow-rate | kW | 25,0 |
| Minimal heat flow-rate | kW | 3,3 |
| Nominal heat flow-rate 80°/60° | kW | 24,5 |
| Minimal heat flow-rate 80°/60° | kW | 2,9 |
| Nominal heat flow-rate 50°/30° | kW | 27 |
| Minimal heat flow-rate 50°/30° | kW | 3,6 |
| Thermal efficiency | % | 98 |
| Thermal efficiency | % | 108 |
| Thermal efficiency at partial load 30% | % | 108 |
| Gas connection diameter | | 3/4" (19,05 mm) |
| Concentric extraction/drain pipe diameter | mm | 80/125 |
| Min-max concentric length | m | 10 |
| Separate extraction/drain pipe diameter | mm | 80/80 |
| Min-max separate pipes length | m | 32 |

**Data referred to the following conditions:**

(1) Radiant Panel: Heating performances with inlet water 30°C and outlet 35°C and cooling with inlet water 23°C and outlet 18°C according to EN14511.
(2) Room Terminals: Heating performances with inlet water 40°C and outlet 45°C and cooling with inlet water 7°C and outlet 12°C according to EN14511.
(3) Radiators: Heating performances with inlet water 45°C and outlet 55°C according to EN14511.
(4) Compressor nominal speed performances.
(5) Compressor max speed performances.
(6) ESEER calculated according to Eurovent, for water produced at 18°C have been considered the partial loads defined by Eurovent for water produced 7°C.
(6) Available head referred in heating mode.
Performances in compliance with EN14511 where the input is given by the compressor input + fans power input + auxiliary circuit input + part of the power pump to provide the residual loss of charge including eventual defrosting in heating.

## Dimensions



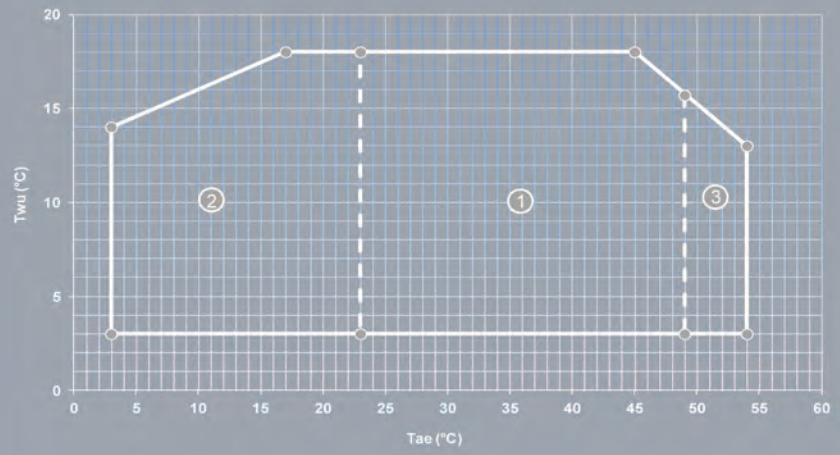

CAUTION! The blue functional spaces can be occupied by furniture or other objects.
For trouble-free operation they must be easy to remove.

| Sizes GAIA Maxi | | |
|---|---|---|
| Length | mm | 1150 |
| Width | mm | 800 |
| Height | mm | 2050 |
| Operation weight | kg | 1000 |

| Sizes Energy Exchanger | | |
|---|---|---|
| Length | mm | 1250 |
| Width | mm | 788 |
| Height | mm | 1304 |
| Operation weight | kg | 105 |

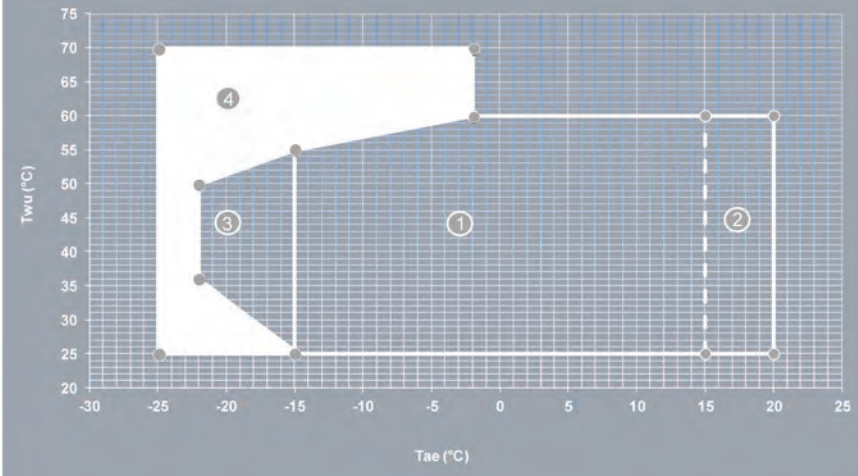
The above data are referred to the standard unit.

## Cooling operating limits



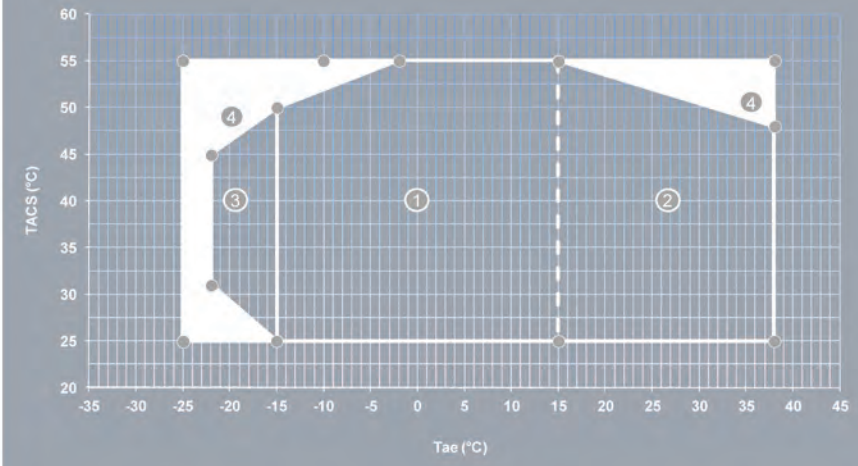

Twu [°C] = outlet water temperature from exchanger
Twu [°C] = 3°C antifreeze safety intervention
Tae [°C] = inlet air temperature to the external exchanger
(1)Normal operating range
(2)Operating with modulating fans
(3)Operating with fans at 100%

## Heating operating limits




Twu [°C] = outlet water temperature from exchanger
Tae [°C] = external exchanger inlet air temperature
(1) Heat pump normal functioning range with compressor at 75% and boiler when adjustment requires it
(2) Heat pump functioning with modulating fans and boiler when adjustment requires it
(3) Heat pump functioning range for short and temporary periods (max 5000 hours) and boiler when adjustment requires it.
(4) Functioning range extension with the gas boiler only as replacement of the heat pump.

## Domestic water production operating limits




TACS [°C] = domestic water temperature
Tae [°C] = external exchanger inlet air temperature
(1) Heat pump normal functioning range with compressor at 75% and boiler when adjustment requires it
(2) Heat pump functioning with modulating fans and boiler when adjustment requires it
(3) Heat pump functioning range for short and temporary periods (max 5000 hours) and boiler when adjustment requires it
(4) Functioning range extension with the gas boiler only as replacement of the heat pump

Water to water heat pump

R-410A Refrig. R-410A

Herm. Scroll

ELFOControl

Full Inverter DC

# GAIA MAXI Acqua (MSER-XIN 61)

## Technical data

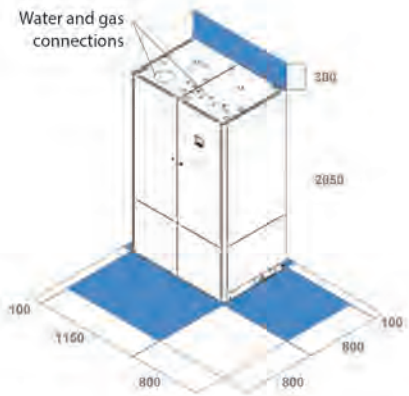
| Technical data Heat Pump | | | Performances with Radiant panels (1) | Performaces with Ambient terminals (2) | Permormances with Radiators (3) |
|---|---|---|---|---|---|
| **Groudwater** | | | | | |
| Pt / Pa / COP @W10°C | | kW/kW/- | 15,7/3,06/5,11 | 15,6/3,84/4,05 | 13,4/3,94/3,33 |
| Pf / Pa / EER @W35°C | (4) | kW/kW/- | 17,2/2,91/5,89 | 12,4/3,00/4,12 | - |
| ESEER Eurovent @W35°C | (4) | | 7,00 | 4,83 | - |
| Pump available head user side | (5) | kPa | 32 | 33 | 63 |
| Pump available head source side | (6) | kPa | 98 | 106 | 114 |
| **Geothermal** | (6) | | | | |
| Pt / Pa / COP @B0°C | | kW/kW/- | 12,4/2,90/4,25 | 11,5/3,43/3,31 | 9,90/3,76/2,60 |
| Pf / Pa / EER @B35°C | (4) | kW/kW/- | 16,9/2,93/5,77 | 12,2/3,02/4,04 | - |
| ESEER Eurovent @B35°C | (4) | | 6,86 | 4,76 | - |
| Pump available head user side | (5) | kPa | 48 | 51 | 64 |
| Pump available head source side | (6) | kPa | 99 | 107 | 111 |
| Max water temp (heating) | (6) | °C | 60 | | |
| Min water temp (cooling) | | °C | 4 | | |
| Sound level to a distance of 1mt | | dB(A) | 37 | | |
| System storage tank capacity | | l | 186 | | |
| Domestic hot water storage tank capacity integrated | | l | 280 | | |
| Solar exchange capacity | | W/K | 3186 | | |
| Power supply | | V/Ph/Hz | 400/3/50 + N | | |

| Technical data Boiler | | |
|---|---|---|
| Type of gas | | Methane, LPG |
| Nominal heat flow-rate | kW | 25,0 |
| Minimal heat flow-rate | kW | 3,3 |
| Nominal heat flow-rate 80°/60° | kW | 24,5 |
| Minimal heat flow-rate 80°/60° | kW | 2,9 |
| Nominal heat flow-rate 50°/30° | kW | 27 |
| Minimal heat flow-rate 50°/30° | kW | 3,6 |
| Thermal efficiency | % | 98 |
| Thermal efficiency | % | 108 |
| Thermal efficiency at partial load 30% | % | 108 |
| Gas connection diameter | | 3/4" (19,05 mm) |
| Concentric extraction/drain pipe diameter | mm | 80/125 |
| Min-max concentric length | m | 10 |
| Separate extraction/drain pipe diameter | mm | 80/80 |
| Min-max separate pipes length | m | 32 |

**Data referred to the following conditions:**

(1) Radiant Panel: Heating performances with inlet water 30°C and outlet 35°C and cooling with inlet water 23°C and outlet 18°C according to EN14511.
(2) Room Terminals: Heating performances with inlet water 40°C and outlet 45°C and cooling with inlet water 7°C and outlet 12°C according to EN14511.
(3) Radiators: Heating performances with inlet water 45°C and outlet 55°C according to EN14511.
(4) Compressor nominal speed performances.
(5) ESEER calculated according to Eurovent, for water produced at 18°C have been considered the partial loads defined by Eurovent for water produced 7°C.
(6) Available head referred in heating mode.
Performances in compliance with EN14511:2011 where the input is given by the compressor input + fans power input + auxiliary circuit input + part of the power pump to provide the residual loss of charge including eventual defrosting in heating.

## Dimensions

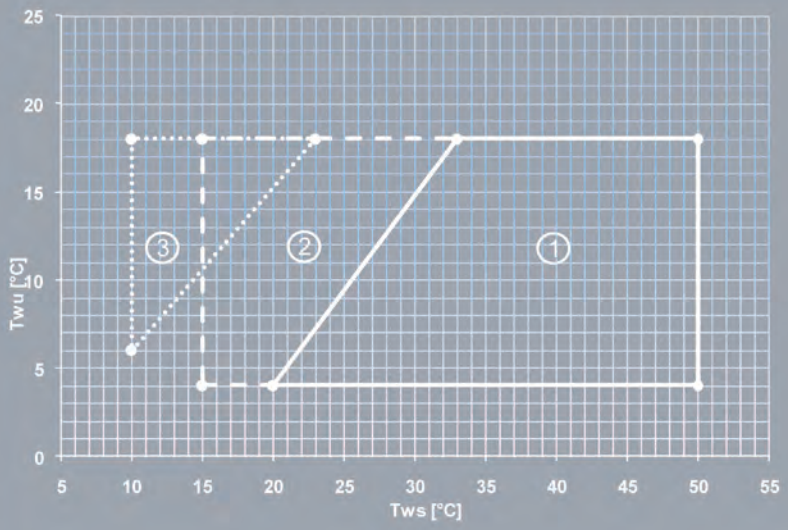



CAUTION!
The blue functional spaces can be occupied by furniture or other objects.
For trouble-free operation they must be easy to remove.

| Dimensions GAIA Maxi | | |
|---|---|---|
| Length | mm | 1150 |
| Width | mm | 800 |
| Height | mm | 2050 |
| Operating weight | kg | 1000 |

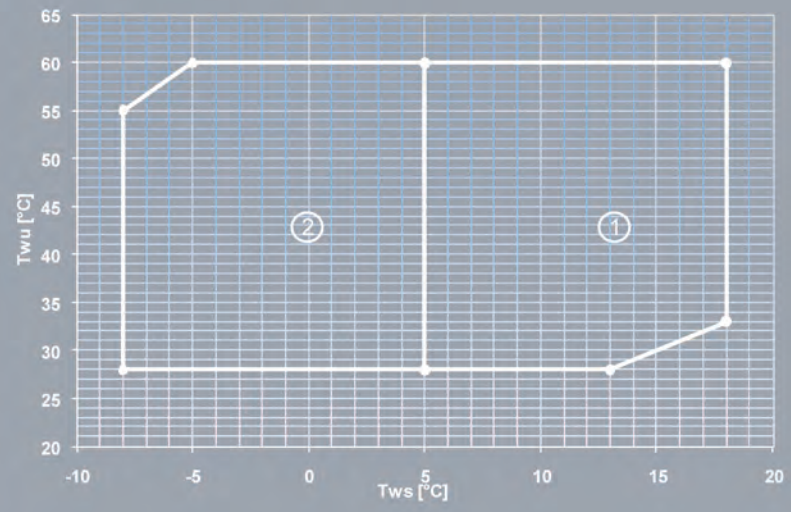
The above datas are referred to the standard unit.

## Cooling operating limits



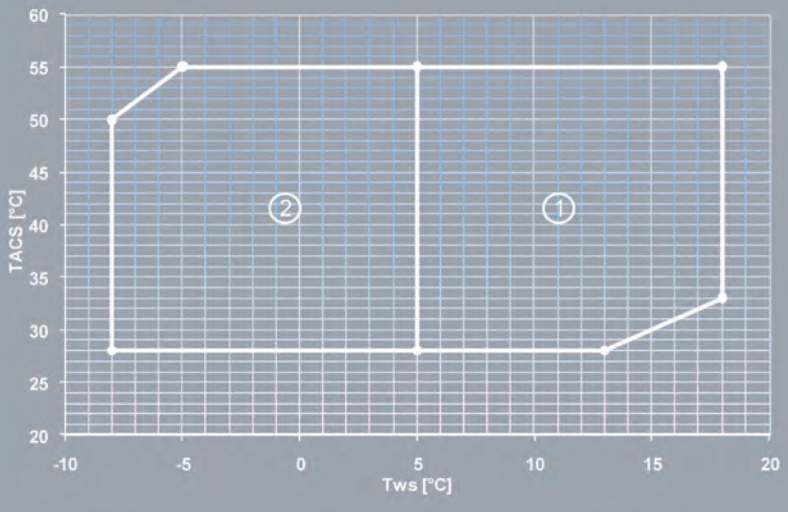

Twu [°C] = user side outlet water temperature
Tws [°C] = source side outlet water temperature
(1) Normal field of operation
(2) Field of operation with circulator or modulating control valve
(3) Field of operation enabled by the NATURAL COOLING function (optional)

## Heating operating limits




Twu [°C] = user side outlet water temperature
Tws [°C] = source side outlet water temperature
(1) Normal field of operation
(2) Field of operation in which the use of ethylene glycol is required due to the source side outlet water temperature

## Domestic water operation limits




TACS [°C] = domestic water temperature
Tws [°C] = source side outlet water temperature
(1) Normal field of operation
(2) Field of operation in which the use of ethylene glycol is required due to the source side outlet water

**Air renewal unit with active thermodynamic recovery**

- Refrig. R-134A
- Refrig. R-410A
- Internal Inst.
- ELFOControl²
- Herm. Rotative

# ELFOFresh² 70-650 (CPAN-U 70-650)

**CPAN-U 70-120**
Air flow rate from 70 to 120 m³/h

**CPAN-U 200 - 650**
Air flow rate from 200 to 650 m³/h

## Technical data

| Sizes | | | 70 | 120 | 200 | 300 | 500 | 650 |
|---|---|---|---|---|---|---|---|---|
| Refrigerant | | | R134a | | R410A | | | |
| Pf / Pa / EER | (1) | kW | 0.43 / 0.19 / 2.30 | 0.81 / 0.32 / 2.58 | 1.57 / 0.54 / 2.90 | 2.1 / 0.70 / 3.00 | 3.01 / 1.04 / 2.91 | 4.03 / 1.48 / 2.72 |
| Pf /Pa / EER | (2) | kW | 0,45 / 0.20 / 2.24 | 0.85 / 0.33 / 2.54 | 1.63 / 0.57/ 2.87 | 2.17 / 0.73 / 2.96 | 3.13 / 1.1 / 2.86 | 4.23 / 1.52 / 2.78 |
| Pt / Pa / COP | (3) | kW | 0.52 / 0.15 / 3.38 | 0.98 / 0.25 / 3.90 | 1.81 / 0.44 / 4.10 | 2.33 / 0.59 / 3.93 | 3.58 / 0.84 / 4.27 | 5.00 / 1.27 / 3.94 |
| Pt / Pa / COP | (4) | kW | 0.52 / 0.12 / 4.17 | 0,97 / 0.21 / 4.74 | 1.86 / 0.36 / 5.17 | 2.35 / 0.43 / 5.45 | 3.74 / 0.67 / 5.57 | 5.10 / 0.99 / 5.12 |
| Rated air flow | | m³/h | 70 | 120 | 200 | 300 | 480 | 650 |
| Fan power input | (5) | kW | 0.014 | 0.017 | 0.04 | 0.052 | 0.09 | 0.15 |
| Max ESP | | Pa | 120 | | | | | |
| Operating limit in heating mode | (6) | °C | -15 | | | | | |
| Operating limit in cooling mode | (7) | °C | 40 (38) | | | | | |
| Sound pressure level | (8) | dB(A) | 37 | 38 | 39 | 41 | 44 | 46 |
| Power supply | | V/Ph/Hz | 230/1/50 | | | | | |

**Data are referred to the following conditions:**

All the data are according to the norm EN14511:2011 and refer to an ESP of 40 Pa. When in cooling mode it is possible that the unit is operating at a reduced flow to ensure a specific humidity for the air introduced into the environment in keeping with the setpoint.
(1) Cooling capacity/Total power input/EER; Outdoor air temperature 30°C D.B. / 22°C W.B., Exhaust air temperature 27°C D.B. / 19°C W.B. Nominal air flow.
(2) Cooling capacity/Total power input/EER; Outdoor air temperature 35°C D.B. / 24°C W.B., Exhaust air temperature 27°C D.B. / 19°C W.B. Nominal air flow.
(3) Heating capacity/Total power input/COP; Outdoor air temperature 7°C D.B. / 6°C W.B., Exhaust air temperature 20°C D.B. / 15°C W.B. Nominal air flow.
(4) Heating capacity/Total power input/COP; Outdoor air temperature -5°C D.B. / -5.4°C W.B., Exhaust air temperature 20°C D.B. / 15°C W.B. Nominal air flow.
(5) Capacity referring to operation in heating mode in the conditions at point (3) Important: the COP and EER already include the fan power input. This information is provided for the purposes of energy certification softwares. If this information is taken into account, the COP used must be the COP without the fan power input.
(6) In locations where the outdoor air temperature falls below –5°C for a large number of hours per year, we recommend using the EHPCX accessory – ducted heater kit
(7) With RH = 40%; in brackets the limit at which a specific humidity of 10.5 g/kg is guaranteed for the air introduced into the room, with a 50% reduction in the maximum flow
(8) The sound levels refer to units at full loads, in the rated testing conditions. The sound pressure level refers to a distance of 1 m from the outer surface of the unit.

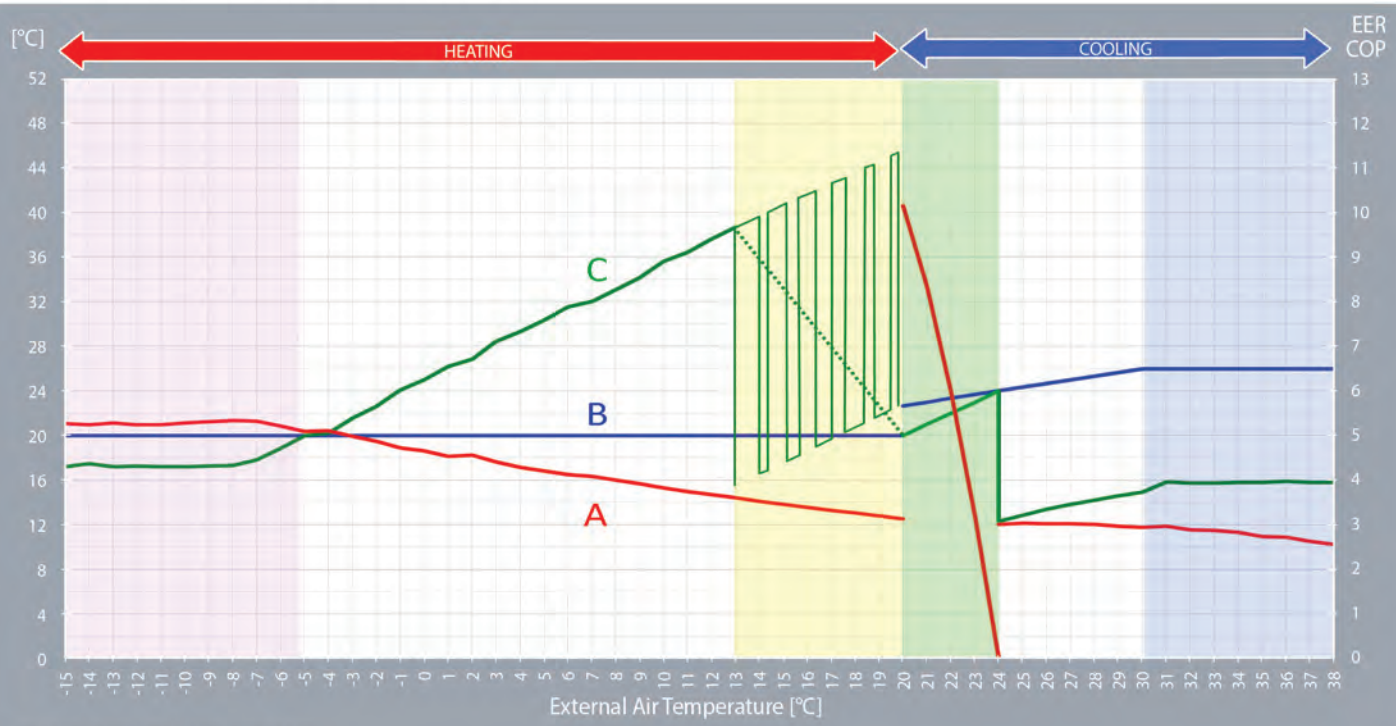
## Dimensions


| | Length (A)* | Depth (B) | Height (C) | Operating weight |
|---|---|---|---|---|
| Sizes | mm | mm | mm | kg |
| 70 | 800 | 690 | 266 | 37 |
| 120 | 800 | 690 | 266 | 40 |
| 200 | 922 | 704 | 364 | 70 |
| 300 | 922 | 704 | 364 | 75 |
| 500 | 1158 | 792 | 423 | 95 |
| 600 | 1158 | 792 | 423 | 100 |

* For sizes 200-650 data include the electrical panel installed on the unit as standard.
The above data refers to a standard unit.

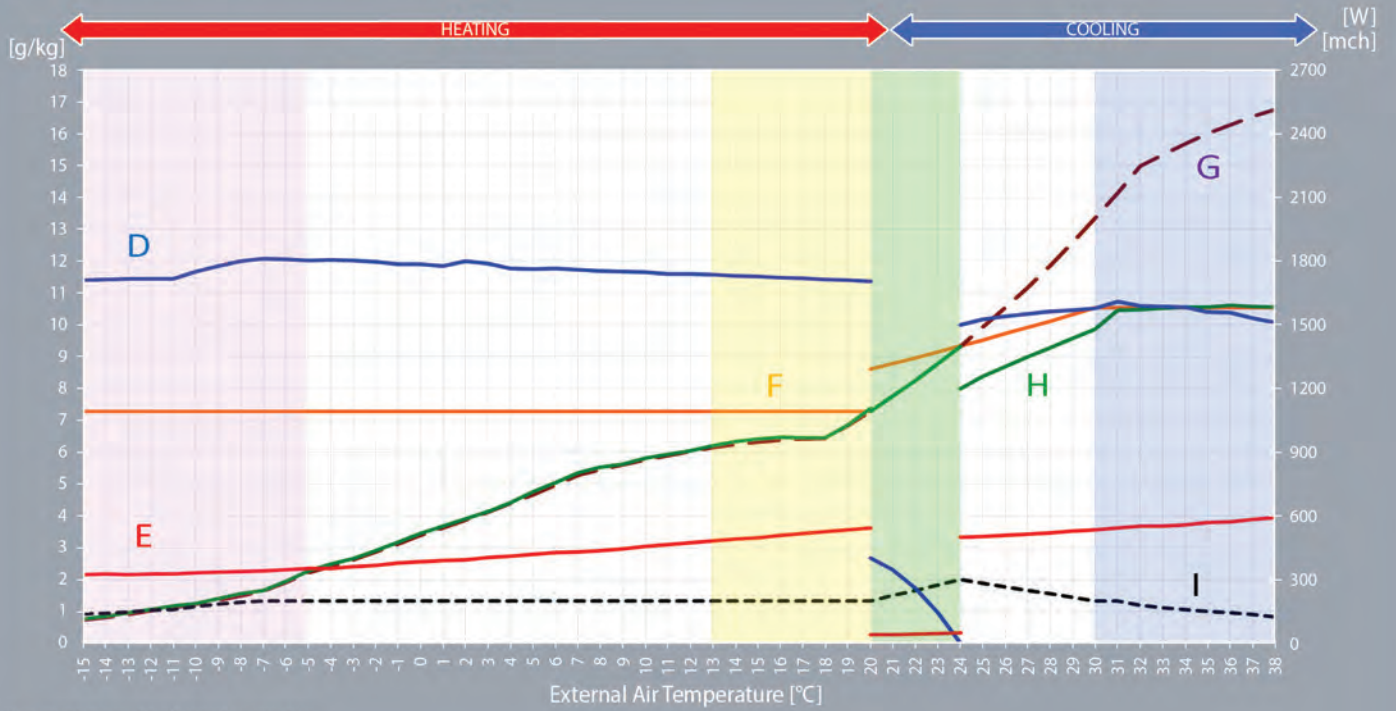
CAUTION!
In order to operate the unit in good conditions, it is fundamental that the clearance spaces indicated in yellow are observed.

## ELFOFresh² 200 operating criteria and performance




The chart shows the following variables:

**A** (A) Coefficient of performance in heating mode (COP) and in cooling mode (EER): it is the ratio between the power delivered and the power input of the compressor, auxiliary circuit and fans, in consideration of an ESP of 50 Pa;
**B** (B) Required ambient temperature
**C** (C) ELFOFresh² delivery air temperature in the room (°C)



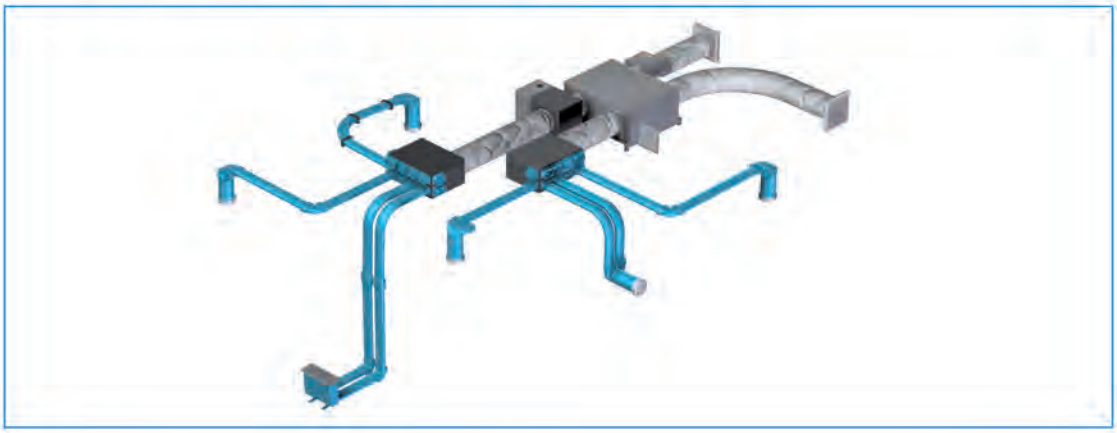

The chart shows the following variables:

**D** Heating/cooling performance (W)
**E** Power input (W)
**F** Internal relative humidity (g/kg)
**G** External relative humidity (g/kg)
**H** Supply relative humidity (g/kg)
**I** Supply air flow (mch

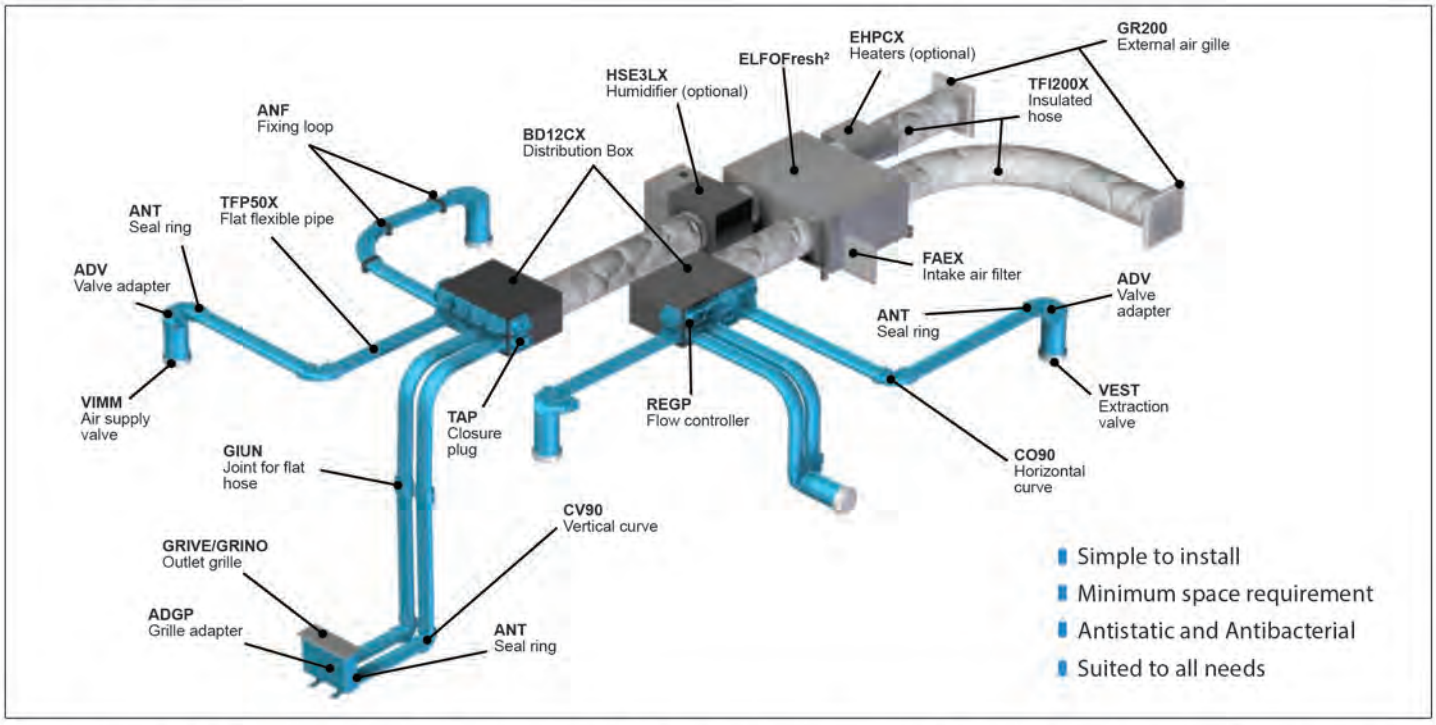
NOTE:
In locations where the outdoor air temperature falls below –5°C for a large number of hours per year, we recommend using the EHPCX accessory – ducted heater kit

**Air distribution system for ELFOFresh²**

# ELFOFresh Air



## Simple to install

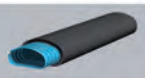
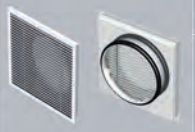



Issues related to the selection, size and installation of the air distribution and the elements fitted on a traditional system are eliminated thanks to ELFOFresh Air. A clever mix of functionality and reliability, ELFOFresh Air is the exclusive system that is perfectly combined with ELFOFresh² to provide fresh air in domestic settings.

## Guaranteed solution

With its ELFOFresh² complete solution, Clivet distinguishes itself also in the field of residential ventilation as its customers only need interact with one partner, with an all-in-one solution to meet the needs of the residential market in the best possible way. Just one partner means ensuring a quality result and service in a very short timeframe.

Accessories

| | | | |
|---|---|---|---|
| Indoor air distribution accessories |  | TFP50X | 50x100mm flat flexible tube in a 50m reel with insulation |
| |  | ANF | Fastening ring for flat flexible tube |
| |  | BD6CX | Distribution box with 6 connections |
| | | BD12CX | Distribution box with 12 connections |
| |  | ANT | Sealing ring for flat flexible tube |
| |  | CV90 | 90° vertical curved fitting for flat flexible tube |
| |  | CO90 | 90° horizontal curved fitting for flat flexible tube |
| |  | GIUN | Joint for flat flexible tube |
| |  | ADGP | Adapter for air renewal flat inlet grid |
| |  | GRIVE | RAL9010 painted metal grid for wall/floor |
| |  | GRINO | Stainless steel grid for wall/floor |
| |  | ADV | Adapter for inlet/extraction valves for wall/ceiling |
| |  | VEST | DN125 ABS extraction valve |
| |  | VIMM | DN125 ABS inlet valve |
| Outdoor air distribution accessories |  | GR150 | Wall-mounted square supply/return grid with circular DN150 connection |
| | | GR200 | Wall-mounted square supply/return grid with circular DN200 connection |
| | | GR250 | Wall-mounted square supply/return grid with circular DN250 connection |
| |  | TFI150X | DN150 insulated flexible tube (6m long) |
| | | TFI200X | DN200 insulated flexible tube (6m long) |
| | | TFI250X | DN250 insulated flexible tube (6m long) |
| |  | DY200 | DN200-DN200-DN200 Y-branch |
| | | DY250 | DN250-DN200-DN200 Y-branch |
| |  | R2520 | DN250-DN200 cross-section reduction |
| |  | GF150 | DN150 Female/Female joint |
| | | GF200 | DN200 Female/Female joint |
| | | GF250 | DN250 Female/Female joint |

Water room terminal

Refrig. WATER

ELFOControl²

# ELFORoom²

In-view vertical installation
with termostat on board (o recessed)

Vertical/horizontal in-view
with remote thermostat

Vertical/horizontal recessed installation
with remote thermostat

## Technical Datas

| Sizes | | | 3 | 5 | 11 | 15 | 17 |
|---|---|---|---|---|---|---|---|
| Cooling capacity | (1) | kW | 0,83 | 1,76 | 2,65 | 3,33 | 3,8 |
| Sensible cooling capacity | (1) | kW | 0,62 | 1,27 | 1,96 | 2,65 | 3,01 |
| Max electrical power input (with DC motor) | | kW | 0,012 | 0,018 | 0,020 | 0,027 | 0,030 |
| Heating capacity | (2) | kW | 0,94 | 1,98 | 2,72 | 3,46 | 4,12 |
| Max speed air flow | | l/s | 45 | 89 | 128 | 160 | 180 |
| Fan type | (3) | - | TGZ | | | | |
| Sound pressure level | (4) | dB(A) | 24,2 | 25,3 | 25,6 | 26,3 | 27,6 |
| Power supply | | V/Ph/Hz | 230 / 1 / 50 | | | | |

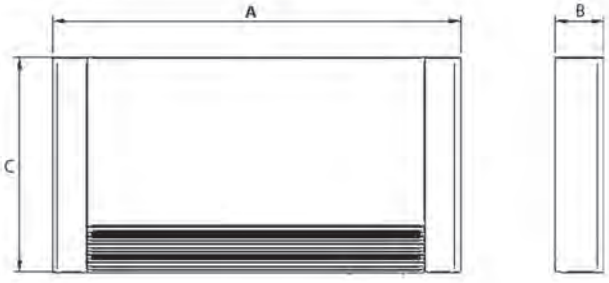
**Data referred to the following conditions:**

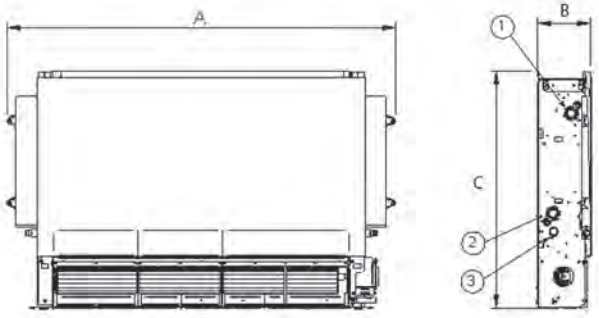
(1) Ambient air 27°C/19.5 W.B.; intlet water 7°C and outlet water 12°C
(2) Ambient air 20°C D.B.; inlet water 45°C
(3) TGZ = tangential fan
(4) Data referred to the min. fan speed, measured in an indoor ambient with a volume of 100 m³ and reverberation time of 0,5 seconds.

**Accessories:**

| | |
|---|---|
| **KCCDX** | Motor connection Kit for units with connections on the right side |
| **KV3BX** | 3 way valve Kit with electro thermal head and balancing 2 pipes version |
| **KV3B4X** | 3 way valve Kit with electro thermal head and balancing 4 pipes versions |
| **KPDX** | Plinth kit |
| **BACKVX** | Back aesthetic panel |
| **FXPPX** | Floor fixing bracket kit |
| **PMSTX** | Telescopic upper supply plenum kit |
| **KASPX** | Return plenum kit |
| **PR90MX** | Supply plenum kit at 90° |
| **GMX** | Kit supply grille wall mounted |
| **GRA1X** | Kit suction grille wall mounted |
| **CSFIX** | Formwork for uncased installation |
| **PCIX** | Uncased closure panel |
| **HID-T2X** | HID-T2 Thermostat (external, only temperature) |
| **HID-TI2X** | HID-Ti2 Thermostat (recessed, only temperature) |
| **HID-T3X** | HID-T3 Thermostat (external, temperature and humidity) |
| **HIDE1X** | HIDE1X Thermostat (external, only temperature) |
| **HIDE2X** | HIDE2X Thermostat (recessed, only temperature) |
| **HIDE3X** | HIDE3X Thermostat (external, temperature and humidity) |

## Dimensions




ELFORoom² In-view installation

| Sizes | | 3 | 5 | 11 | 15 | 17 |
|---|---|---|---|---|---|---|
| Length (A) | mm | 737 | 937 | 1137 | 1337 | 1537 |
| Depth (B) | mm | 131 | 131 | 131 | 131 | 131 |
| Height (C) | mm | 579 | 579 | 579 | 579 | 579 |
| Oper. weight | Kg | 17 | 20 | 23 | 26 | 29 |

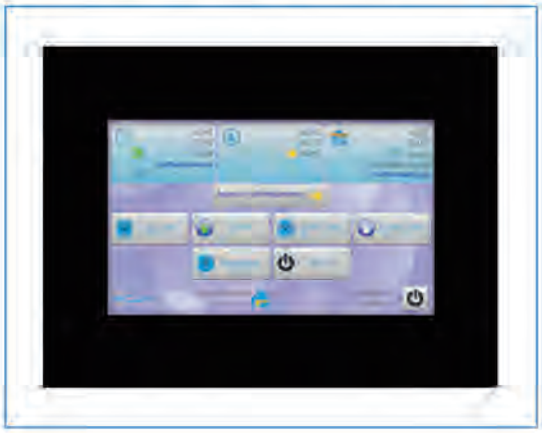
ELFORoom² recessed installation

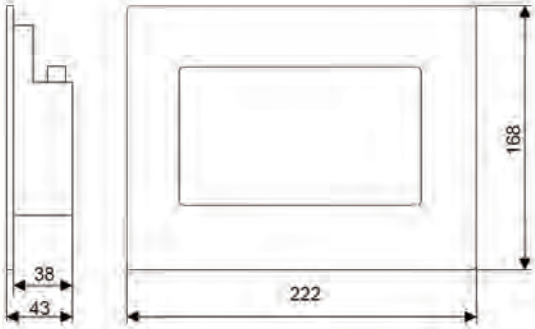
| Sizes | | 3 | 5 | 11 | 15 | 17 |
|---|---|---|---|---|---|---|
| Length (A) | mm | 527 | 727 | 927 | 1127 | 1327 |
| Depth (B) | mm | 126 | 126 | 126 | 126 | 126 |
| Height (C) | mm | 579 | 579 | 579 | 579 | 579 |
| Oper. weight | Kg | 9 | 12 | 15 | 18 | 21 |

Data referred to the standard unit.

**Control unit for independent residential systems**

# ELFOControl²






## Technical data

| | | |
|---|---|---|
| Display dimensions inches | inches | 7,2" |
| Display type | | TFT color |
| Power supply voltage | V | 12Vdc |
| Power | VA | 24VA |
| Protection rating | | IP 20 |
| Weight | Kg | 0.5 |

ELFOControl² is supplied with:
- 12Vdc AL12X power supply unit (4 DIN modules)
- Ethernet/485 converter (3 DIN modules)
- Cat. 5 UTP Ethernet cable (5m long)

NOTE: the maximum distance between the Ethernet/485 converter and ELFOControl² is 90 meters

## Elements for complete system management

| | Functionality | Dimensions |
|---|---|---|
| **Installazione** | | |
| CIECX: Recessed pre-installation box | Permits recessed installation of ELFOControl² | 216 x 168 x 73 mm |
| CBSX: Shielded cable for RS485 bus | Permits connection of all the devices comprising the system | Wire coil from 50 m |
| **Radiant panels – Ambient terminals** | | |
| BMZRX: Radiant area module with RS485 communication port | Module to manage up to 6 HID thermostats and 6 control outputs, shut-off valves to feed radiant panels, radiators or heating furniture | 157x90x60 mm |
| CMRSX: Single area module with RS485 communication port | Module to manage up to 1 HID thermostat and 1 control output, shut-off valves to feed radiant panels, radiators or heating furniture | 105 x 90 x 60 mm |
| KGPRX: Mixing unit control module 517 | Management module of a mixing group | 210 x 155 x 80 mm |
| **System components** | | |
| MIOX: Input/output module with RS485 communication port | Module for management of substitution generator (boiler), zone valves or boosters and remote consent | 70 x 85 x 65 mm |
| **Domestic hot water** | | |
| CACSX: Domestic hot water control 800 | Module that allows to manage domestic hot water for the ELFOEnergy Horus, Compact, Ground, Vulcan, Vulcan Medium units | 290 x 410 x 140 mm |
| ACS300X: 300 litre domestic hot water kit 1.231 | 300-litre domestic hot water storage tank without adjustment for heat pumps up to 10kWt | D.600 x 1615 mm |
| ACS500X: 500 litre domestic hot water kit 1.734 | 500-litre domestic hot water storage tank without adjustment for heat pumps up to 25kWt | D.750 x 1690 mm |
| ACS3SX: 300 litre domestic hot water kit without adjustment for heat pump 1.902 | 300-litre domestic hot water storage tank with coil for solar applications for heat pumps up to 10kWt | D.600 x 1615 mm |
| ACS5SX: 500 litre domestic hot water kit without adjustment for heat pump 2.576 | 500-litre domestic hot water storage tank with coil for solar applications for heat pumps up to 25kWt | D.750 x 1690 mm |
| **Thermostats** | | |
| HID-T2X: Electronic ambient control HID-T2 75 | Tempearture only thermostat – wall installation | 184 X 82 X 27 mm |
| HID-T3X: Electronic ambient control HID-T3 110 | Temperature and humidity thermostat – wall installation | 184 X 82 X 27 mm |
| HID-TI2X: Electronic ambient control HID-Ti2 120 | Temperature only thermostat – recessed installation | 65 x 45 x 54 mm |
| HIDTI4NX: HID-Ti4 Modbus electronic room control device black 244 | Temperature-only thermostat - recessed installation, black and can be connected to HID-URNX humidity sensor | 67 x 45 x 50 mm |
| HIDTI4BX: HID-Ti4 Modbus electronic room control device white 244 | Temperature-only thermostat - recessed installation, white and can be connected to HID-URBX humidity sensor | 67 x 45 x 50 mm |
| HIDURNX: Modbus HID-UR electronic room control device black 133 | Humidity sensor - uncased installation, black and can be connected to thermostat HID-Ti4NX | 22 x 45 x 50 mm |
| HIDURBX: Modbus HID-UR electronic room control device white 133 | Humidity sensor - uncased installation, white and can be connected to thermostat HID-Ti4BX | 22 x 45 x 50 mm |
| AL12X: Power supply unit for HID-Ti4 thermostats and HID-UR sensor | Power supply unit for HID-Ti4 thermostats and HID-UR sensor | 85 x 90 x 65 mm<br>4 DIN modules |

# THE FULL ELFOSystem RANGE

In addition to ELFOSystem GAIA, Clivet is able to supply a full range of heat pumps, air renewal units and room terminals to suit all system or installation application types.

**ELFOEnergy** HEATING/COOLING PRODUCTION

Air to water heat pump

Radiant panels or low temperature ambient terminals

**ELFOENERGY HORUS**

Heat pump suitable for systems with radiant panels and water terminal units, with a design that guarantees quiet operation

**ELFOENERGY EXTENDED INVERTER**

Inverter Heat pump optimised for cooling, suitable for systems with radiant panels and water terminal units.

**ELFOENERGY MEDIUM**

Air cooled Heat pump for outdoor installation.

High temperature radiators

**ELFOENERGY HORUS +**

Heat pump, optimised for heating, suitable for traditional systems with radiators, and guaranteeing maximum efficiency.

**ELFOENERGY VULCAN**

High temperature heat pump, for heating only, suitable for traditional systems with radiators.

**ELFOENERGY VULCAN MEDIUM**

High temperature heat pump: it's able to produce hot water at 60°C even when the outdoor temperature falls to -10°C. The ideal one-stop heating, cooling and hot water solution for centralised systems in residential complexes, hotels and community buildings.

Water to water heat pump

**ELFOENERGY GROUND**

The geothermal heat pump that can be used to heat and cool any kind of building, from new homes to renovation projects, using the free energy found in the ground or water and offering huge benefits in terms of energy saving.

**ELFOENERGY GROUND MEDIUM**

Water cooled heat pump for specific applications with ground water or geothermal, ideal for multi-family and commercial buildings.

AIR QUALITY
**ELFOFresh**

**ELFOFRESH LARGE**

Air renewal and purification unit with active thermodynamic recovery for indoor installation.

HEATING/COOLING DISTRIBUTION
**ELFODistribution**

**ELFOSPACE OUT-V OUT-H IN-V IN-H**

Water terminal unit for indoor horizontal or vertical visible or recessed installation.

**ELFOSPACE BOX2**

"Cassette"-type water terminal unit for indoor installation.

# SERVICES

Clivet has been operating on the Italian market for over 20 years, offering solutions for a range of different installation types and certified high efficiency heat pumps.
Our sales network covers the whole of Italy, providing our clients with commercial, technical and training support. Clivet's widespread distribution network offers its clients a highly professional service, providing them with highly detailed training in the products and systems. Consult the website www.clivet.com for information on local agents.


## 2 YEARS WARRANTY

Clivet produces his products with forefront technologies and materials and tests directly in his premises all the ready for shipment units, therefore assures to his customers the perfect state the products supplied. All the residential units have a 2 years warranty from start up date giving a further advantage to ELFOSystem on the quality and service side.

## AFTER-SALES SERVICE

Our 110 After Sales Service Centres spread all over Italy are available to answer your questions concerning Technical assistance and start-up. The correct start-up represents the basis of an efficient installation to get the customer satisfaction. On request Clivet offers to his customers a pre-start-up service in order to verify directly during the system installation that all the elements are properly prepared for a correct start-up.

**Call center: 199144663**

## ELFOSystem TRAINING

We dedicate part of our time for the training of installers and designers, organising specific courses comprised of a theory section, in which we present the systems, products and market opportunities, and a practical section, involving practice with the units themselves. Clivet training course is organized with courses for architects and designers and with three levels for installers:
- Basic Course for Installers to present the basic principles of the Clivet ELFOSystem
- Advanced Course, providing greater details about the system components, installation methods
- Specialized Course: Class A Installation course, with the aim to teach Autonomous Installers to be able to undertake installation, Start-up and Maintenance.

## OUR WEB SITE

**www.clivet.com**

We see the World Wide Web as the ideal means for communicating with our many stakeholders around the world. Our site provides exhaustive information on our products and their applications for designers, installers and customers.

## ELFOTool

ELFOTool is a simplified calculation Software allowing to:
- Perform an energy / environmental / economic comparison between ELFOSystem and a traditional system
- Wizard selecting the type and ELFOSystem elements

ELFOTool is on line available on www.clivet.com

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