SYSTEMA

HEATING COOLING GREEN ENERGY

OHA 18-36

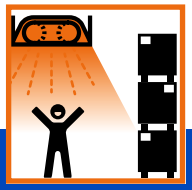
Industrial heating of small, medium and large environments from 54 to 100kW

FAST AND EASY INSTALLATION

HIGH EFFICIENCY AND EMISSIVITY

SILENT AND HEALTHY

LOW MAINTENANCE



FAST AND HIGH THERMAL COMFORT

LOW RUNNING COSTS

GENERAL FEATURES

The OHA 18-36 is a radiant heating system that is flexible in its installation and comes in a more compact version than the OHA RHE and OHA URHE models, making it available for smaller rooms to be heated.

Stainless steel combustion chamber, 5 years guaranteed

The **OHA 18-36** consists of a newly developed, high-efficiency burner body to be positioned outside the building. Modular elements are connected to this to form the heating system inside the room.

The heating system consists of: emitter tubes, reflector dish, cover, thermal insulation and support brackets. The coupling of the various elements is designed to ensure maximum thermal efficiency at ground level, while minimising heat loss upwards.

In order to guarantee maximum safety, the system has a low-pressure operation with respect to the environment, controlled and managed by an innovative electronic control, made with top quality materials and equipped with a forced exhaust of combustion products.

CALIBRATION AND REGULATION WITH INVERTER

COMBUSTION EFFICIENCY

UP TO 94,6%

WHICH MEANS ENERGY SAVING

HOW IT WORKS

The **OHA** radiant strip is a product made by Systema S.p.A. that uses the most natural heating technology possible, heat radiation like the sun. **OHA** is ideal for heating large areas quickly, economically, quietly and environmentally friendly.

Radiation does not generate any convective motion of the air, typical of traditional heating systems, because there is no ventilation in the room to be heated.

Heating occurs through the transfer of energy by means of electromagnetic waves, known as radiation (infrared radiation, i.e. heat), which enables the transport of thermal energy in a straight line at the speed of light. Radiation directly heats surfaces, being partly absorbed by objects and partly reflected back to affect other objects.

The **OHA** radiation system allows precise localisation of the surfaces to be heated without any stratifying effect, avoiding costly energy losses and concentrating the heating in the areas that require it, allowing the possibility of zone heating. The lack of air movement also makes the rooms healthier by avoiding the movement of annoying dust inside them, not least the rapidity in switching on and setting up the system allowing interesting savings in consumption.

ADVANTAGES

- **Gas line and burners installed outside the building to be heated**
- **Ideal for high height, medium and large surface areas, and even in the presence of large heat losses**
- **Ecological and environmentally friendly, low consumption and low smoke emission levels**
- **Flexibility and versatility in the realisation of the internal heating circuit**
- **Possibility of creating zone systems with partial or differentiated heating**
- **Easy and quick installation and maintenance**
- **Quiet and healthy operation**
- **Rapid commissioning of the rooms to be heated**
- **MODBUS and LAN interface for PC-based supervision and control systems**

FIELDS OF USE

- **Industry and mechanical workshops**
- **Aerospace industry**
- **Production of steels, aluminium and alloys**
- **Ceramic Industry**
- **Factories, Logistics, Distribution Centres, Warehouses and Depots**
- **Animal husbandry, Breeding**
- **Agriculture**
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- **Multipurpose centres**

ADVANTAGES OF USING OHA 18-36

HIGH COMBUSTION YIELD

The **OHA 18-36** offers high combustion efficiencies, the inverter control guarantees precise calibration for maximum efficiency for all possible cascades and lengths foreseen by the radiant circuit, always offering the maximum performance achievable by the installed heating system.

FAST INSTALLATION AND COMMISSIONING

It only needs a gas/electricity connection and a flue gas outlet, and installation is practical:

1. **assemble the brackets**
2. **assemble the pipe**
3. **assemble the hoods**
4. **adjust it in the first ignition,**

and in about 15 minutes its heat can already be felt.

HIGH HEAT EXCHANGE

The Ø180 mm radiant circuit has an output of 3kW/m **3kW/m, which simultaneously provides uniform heat throughout the circuit and heats the room evenly**

QUIET FUNCTIONING

OHA 18-36 does not move any air and for this reason **it is has a very quiet functioning**. It could be installed in gyms and sport areas without any annoying noise in functioning

SPACE SAVING: NO NEED OF CENTRAL HEATING

OHA 18-36 can also be installed completely inside buildings, with the exception of sports facilities and basements. Thanks to its special features, it avoids floor space and allows people to carry out their activities without any type of obstacle. It can be installed without the need for a central heating plant, and in the case of extensions or modifications it is easy to move to heat new areas.

LIGHTER AND MORE COMPACT

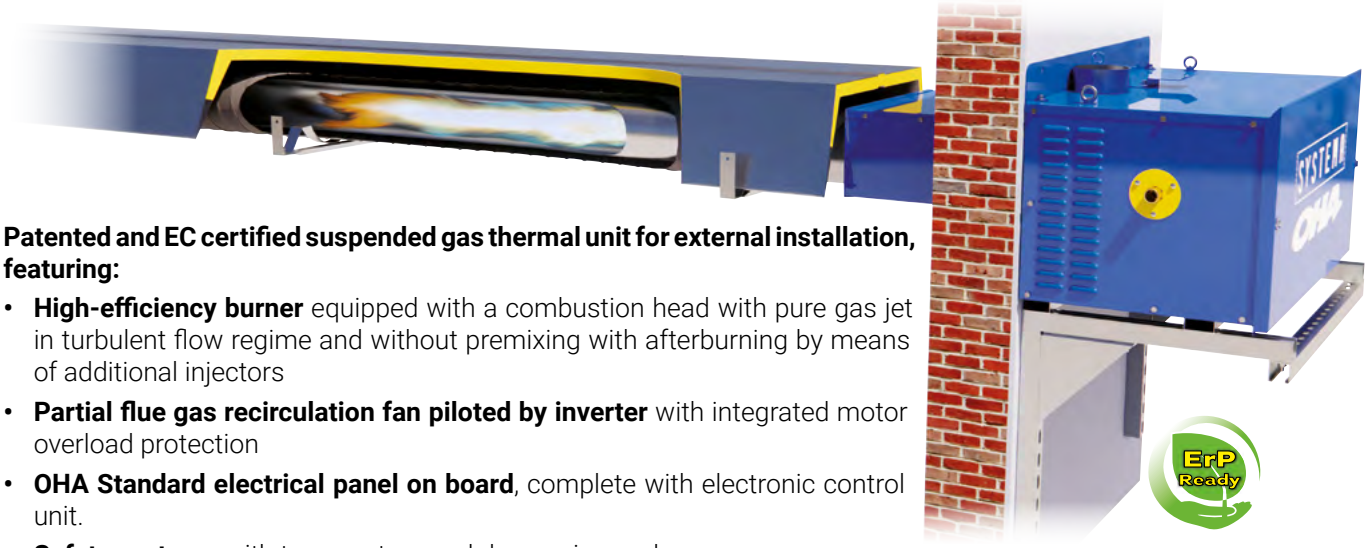
The OHA 18-36 is lighter, compared to other applications of the same type, the lower load on the building structure and the reduced dimensions allow a quick and simplified installation in a smaller space.

HIGHEST SAFETY IN THE FUNCTIONING

CE certification according to **(EU) 2016/426**, Gas Appliances Regulation **(GAR)**.
Electromagnetic Compatibility, Directive **(EMC) 2014/30/EU**.
Low Voltage Directive **(LVD) 2014/35/EU**.
Ecodesign Directive for energy-related products and subsequent amendments **2009/125/EC**.
Commission Regulation **(EU) 2015/1188** implementing Directive **2009/125/EC** of the European Parliament and of the Council with regard to ecodesign requirements for space heating appliances.

- Positive safety of the working thermostat
- Capillary probe for detecting flue gas temperature and working temperature, located inside the radiant circuit
- Burner lockout if the temperature of the carrier fluid rises above the nominal allowed operating values
- Electric panel door opening safety switch

TECHNICAL FEATURES



Patented and EC certified suspended gas thermal unit for external installation, featuring:

- **High-efficiency burner** equipped with a combustion head with pure gas jet in turbulent flow regime and without premixing with afterburning by means of additional injectors
- **Partial flue gas recirculation fan piloted by inverter** with integrated motor overload protection
- **OHA Standard electrical panel on board**, complete with electronic control unit.
- **Safety systems** with temperature and depression probes

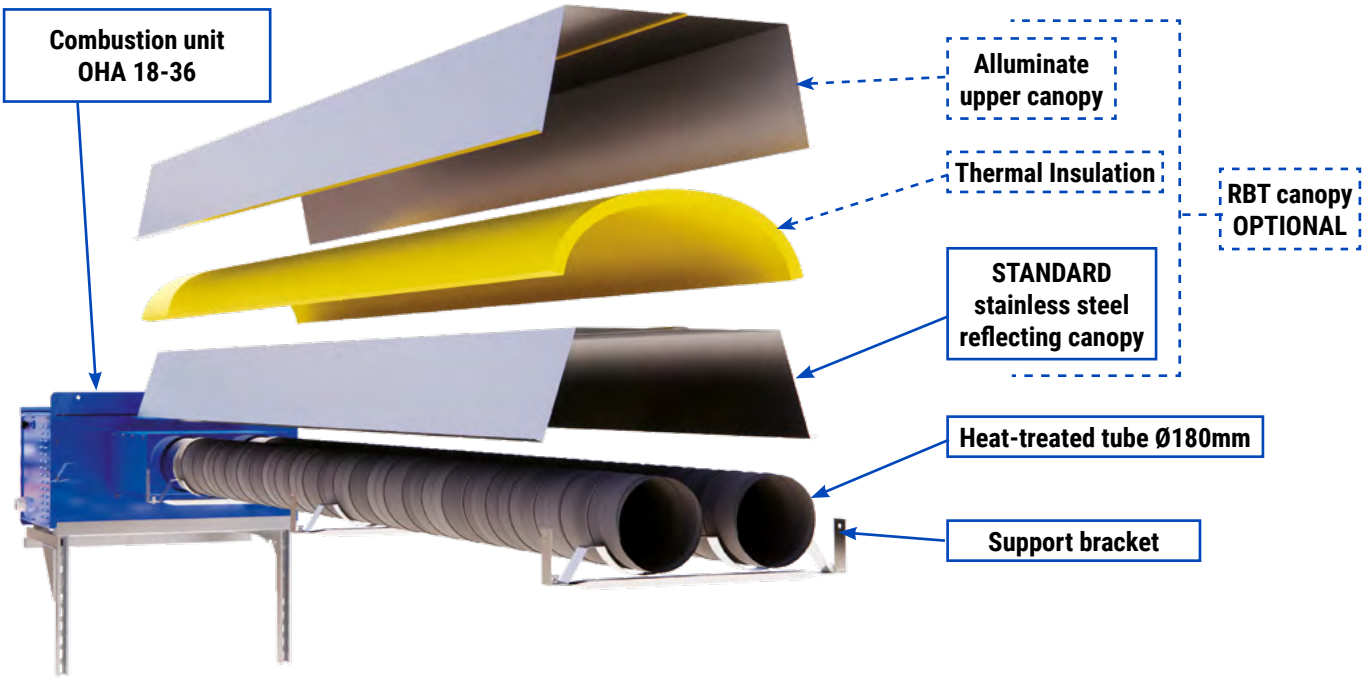
NEW!!

NEW STRUCTURE OF THE RADIANT CIRCUIT

The assembly of the individual elements has been designed to ensure maximum efficiency on the ground, minimizing heat losses upwards.

New radiant circuit featuring:

- **New radiant circuit** with double seaming and diameter Ø180mm
- **New type of support brackets**
- **New reflecting canopy in 2 versions:** Standard in stainless steel, and RBT (optional) in stainless steel with thermal insulation and another upper canopy in aluminate
- **Nipples Joints** for connecting the internal radiant circuit



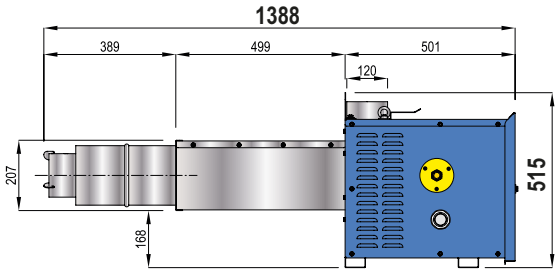
RANGE OHA 18-36

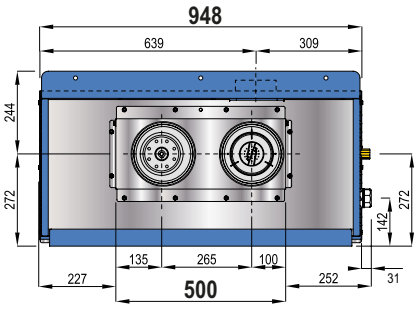
Model	Power	η_s	Radiant circuit length
OHA 36	100 kW	78,4	36 metres
OHA 30	90 kW	77,3	30 metres
OHA 24	72 kW	76,4	24 metres
OHA 18	54 kW	74,8	18 metres

η_s= Seasonal energy efficiency of area heating (≥74%) with installation outside the heated area

DIMENSIONS

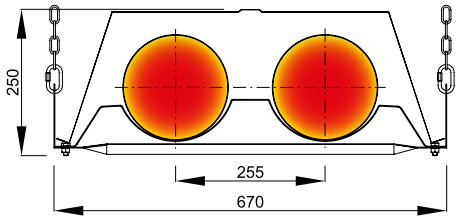
COMBUSTION UNIT





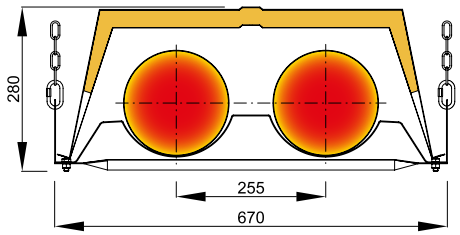
STANDARD RADIANT CIRCUIT

Weight of the STANDARD radiant circuit =15 kg/m



RBT RADIANT CIRCUIT (OPTIONAL)

Weight of the RBT radiant circuit =20 kg/m



Dimensions in mm

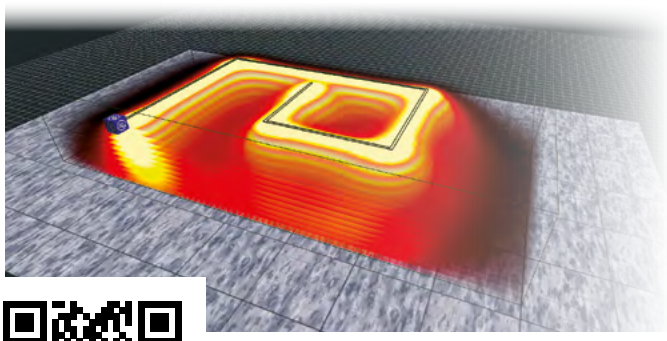
SYSTEMA RADIANT SOFTWARE

AUTOMATIC PLANT DIMENSIONING

The **design and calculation software** developed by Systema S.p.A. allows optimal plant dimensioning for heating all types of rooms. The software is equipped with a wide range of specific settings, which can be selected according to the needs of the room to be heated, allowing the right solution to be designed.

The software allows you to change the type, quantity, power and position of the products to be installed while maintaining the dimensions of the building, so that you can evaluate the most appropriate solution for the system to be heated.

By changing the dimensions of the 3D rooms to be heated, the software will automatically vary the number or power of the selected products to achieve the best thermal comfort.



To download the software, subscribe and fill the form on:

https://www.systema.it/en/login

CENTRALISED CONTROL

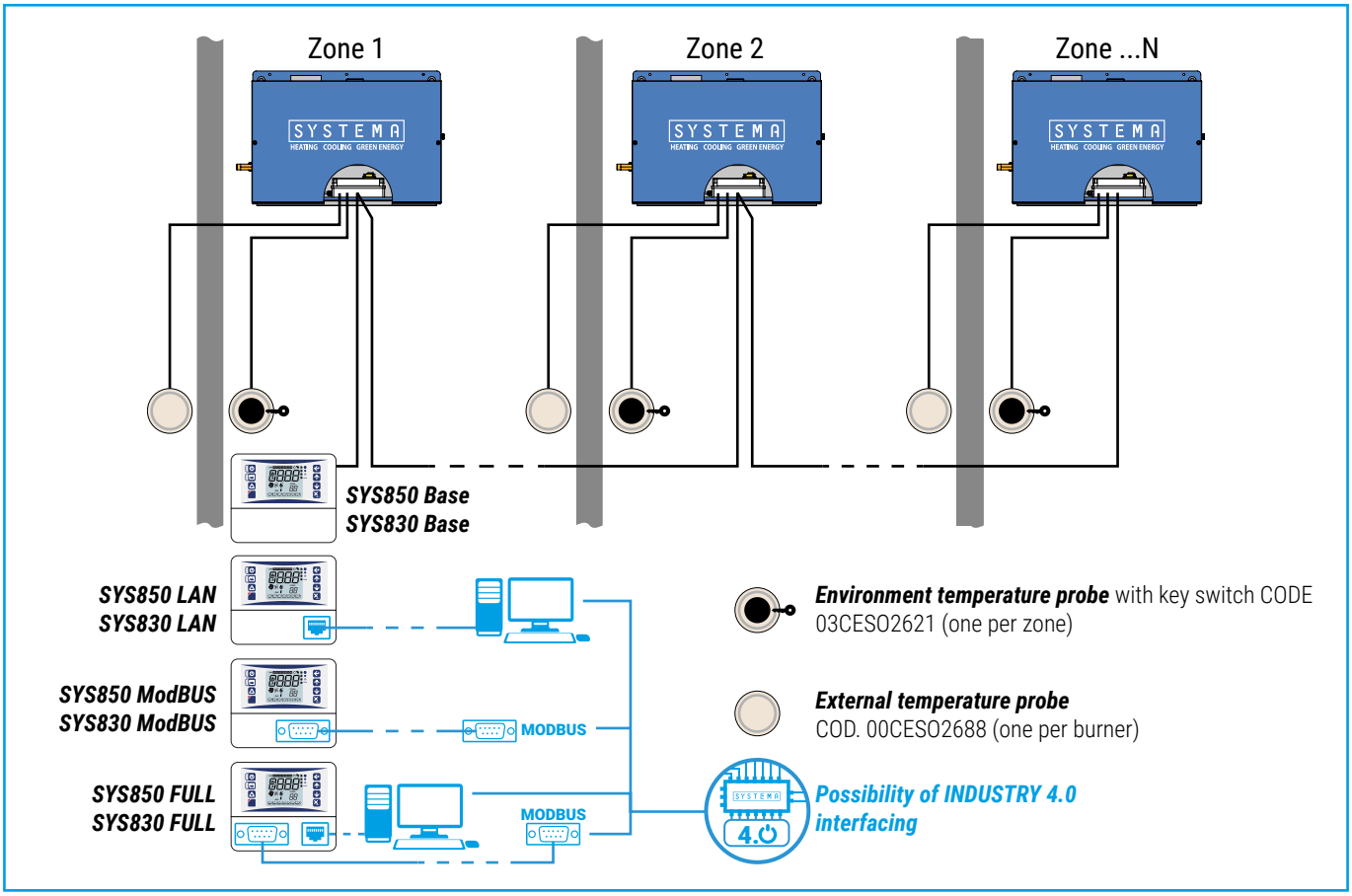
Control panel SYS850 controls up to 30 burners and
Control panel SYS830 controls up to 16 burners

In addition to the Basic versions also available:

LAN Ethernet (TCP-IP) for PC monitoring both in the network and via the internet with EYE-LAN software

Modbus equipped with specific communication port for control via Modbus

FULL equipped with both ***LAN Ethernet*** (TCP-IP) and ***Modbus*** port



Code	Description	Interface	Devices - zones
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00CEQU2675	Master Control Panel **SYS 830 LAN** type i²NET	LAN	16 - 16
00CEQU2676	Master Control Panel **SYS 830 ModBUS** type i²NET	MODBUS	16 - 16
00CEQU2677	Master Control Panel **SYS 830 FULL** type i²NET	LAN + MODBUS	16 - 16
05CEQU2715	Master Control Panel **SYS 850 BASE** type i²NET	-	30 - 30
05CEQU2718	Master Control Panel **SYS 850 LAN** type i²NET	LAN	30 - 30
05CEQU2721	Master Control Panel **SYS 850 ModBUS** type i²NET	MODBUS	30 - 30
05CEQU2727	Master Control Panel **SYS 850 FULL** type i²NET	LAN + MODBUS	30 - 30

All sys 830 and sys 850 switchboards are without environmental probes, which must be requested separately. The LAN and FULL versions include the EYE-LAN software for PC monitoring via network or internet.

SYSTEMA

HEATING COOLING GREEN ENERGY

OHA RHE

Inverter-controlled industrial radiant heating for medium and large spaces from 100 to 370 kW

ErP Ready

FAST AND EASY INSTALLATION

2 kW/m

HIGH EFFICIENCY AND EMISSIVITY

SILENT AND HEALTHY

LOW MAINTENANCE

FAST AND HIGH THERMAL COMFORT

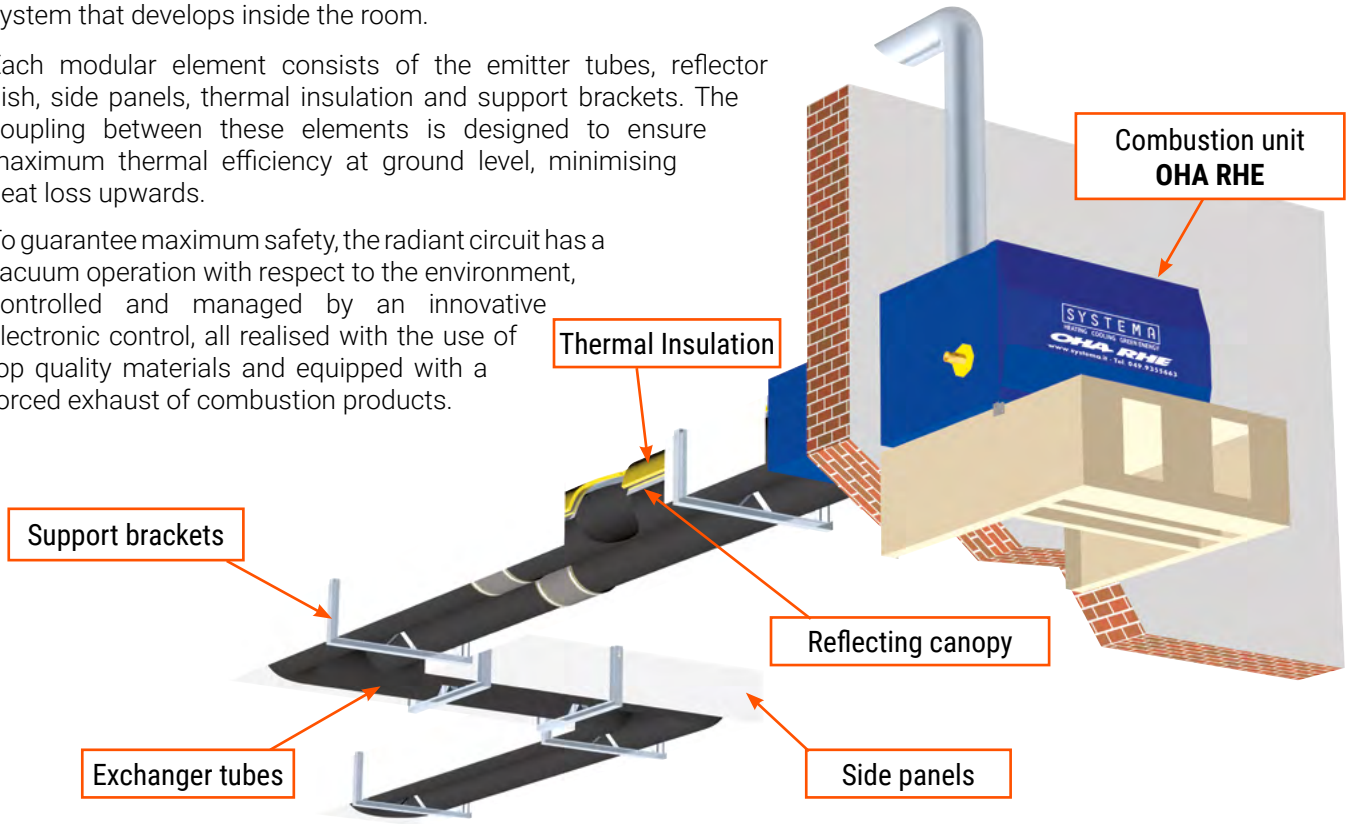
LOW RUNNING COSTS

GENERAL CHARACTERISTICS

The **OHA RHE** is a radiant heating system that is flexible in its installation, consisting of an innovative, high-efficiency burner body to be positioned outside the building, to which modular elements are connected to form the heating system that develops inside the room.

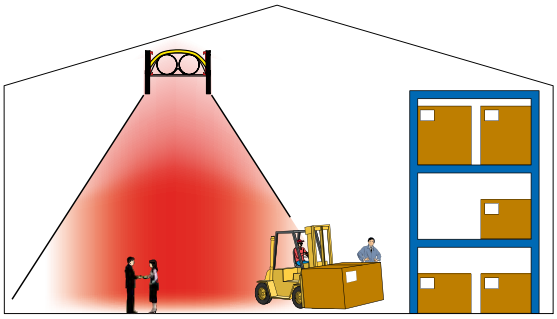
Each modular element consists of the emitter tubes, reflector dish, side panels, thermal insulation and support brackets. The coupling between these elements is designed to ensure maximum thermal efficiency at ground level, minimising heat loss upwards.

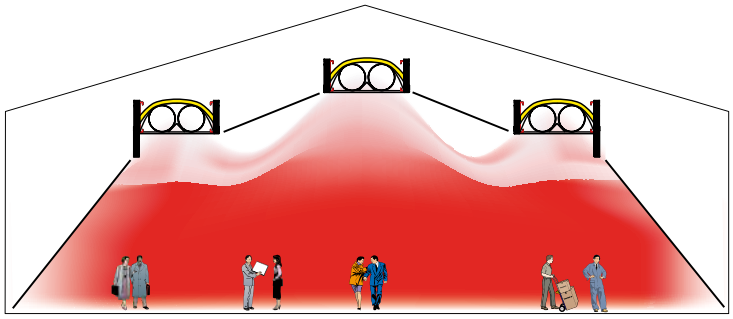
To guarantee maximum safety, the radiant circuit has a vacuum operation with respect to the environment, controlled and managed by an innovative electronic control, all realised with the use of top quality materials and equipped with a forced exhaust of combustion products.



MANAGEABLE HEAT + FLEXIBILITY OF USE

OHA RHE radiant strips allow the **zone heating**, concentrating the heat towards the floor and only where it is necessary, in order to differentiate the temperatures among the several areas of the same environment. As a consequence there will be a **lower energy consumption** and a high thermal comfort. **Environmental hygiene** is favoured by the absence of air movement and therefore of suspended dust, which is physiologically present in places used for industrial production.





HOW IT WORKS

The **OHA** radiant strip is a product made by Systema S.p.A. that uses the most natural heating technology possible, heat radiation like the sun. **OHA** is ideal for heating large areas quickly, economically, quietly and environmentally friendly.

Radiation does not generate any convective motion of the air, typical of traditional heating systems, because there is no ventilation in the room to be heated.

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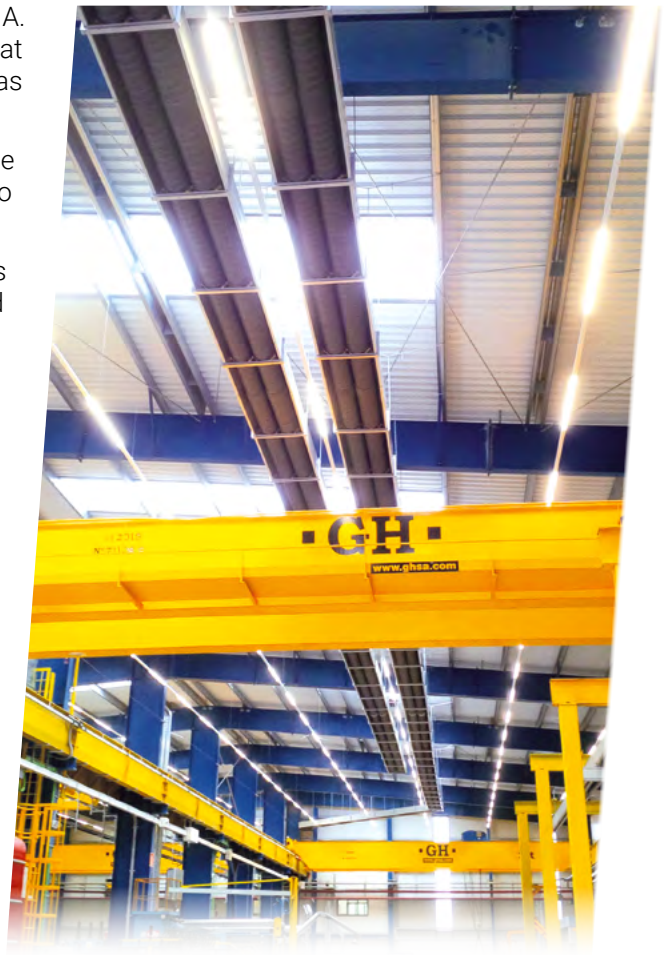

ADVANTAGES

- **Gas line and burners installed outside the building to be heated**
- **Ideal for high height, medium and large surface areas, and even in the presence of large heat losses**
- **Ecological and environmentally friendly, low consumption and low smoke emission levels**
- **Flexibility and versatility in the realisation of the internal heating circuit**
- **Possibility of creating zone systems with partial or differentiated heating**
- **Easy and quick installation and maintenance**
- **Quiet and healthy operation**
- **Rapid commissioning of the rooms to be heated**
- **MODBUS and LAN interface for PC-based supervision and control systems**

FIELDS OF APPLICATION

- **Industry and mechanical workshops**
- **Aerospace industry**
- **Production of steels, aluminium and alloys**
- **Ceramic Industry**
- **Factories, Logistics, Distribution Centres, Warehouses and Depots**
- **Animal husbandry, Breeding**
- **Agriculture**
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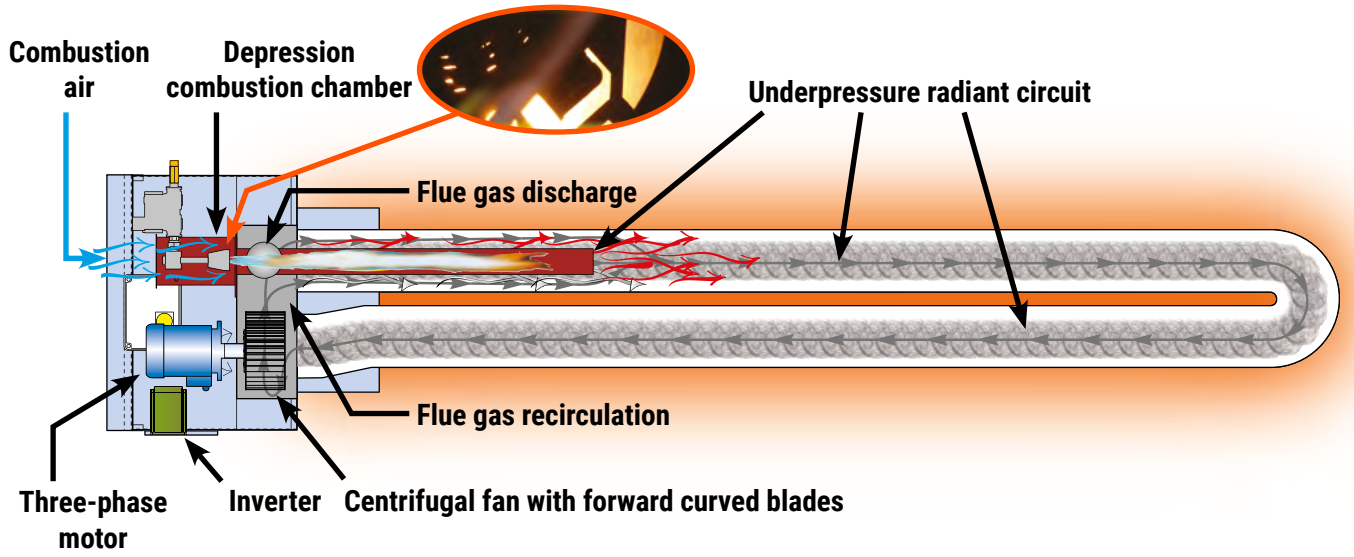
EFFICIENCY, SAFETY AND RELIABILITY

Meeting the high safety requirements laid down by the regulations for industrial and artisan environments, where radiant belts are installed, the OHA system has been designed to operate exclusively in negative pressure, thus guaranteeing maximum system reliability.

Camera combustione acciaio inox, garantita 5 anni

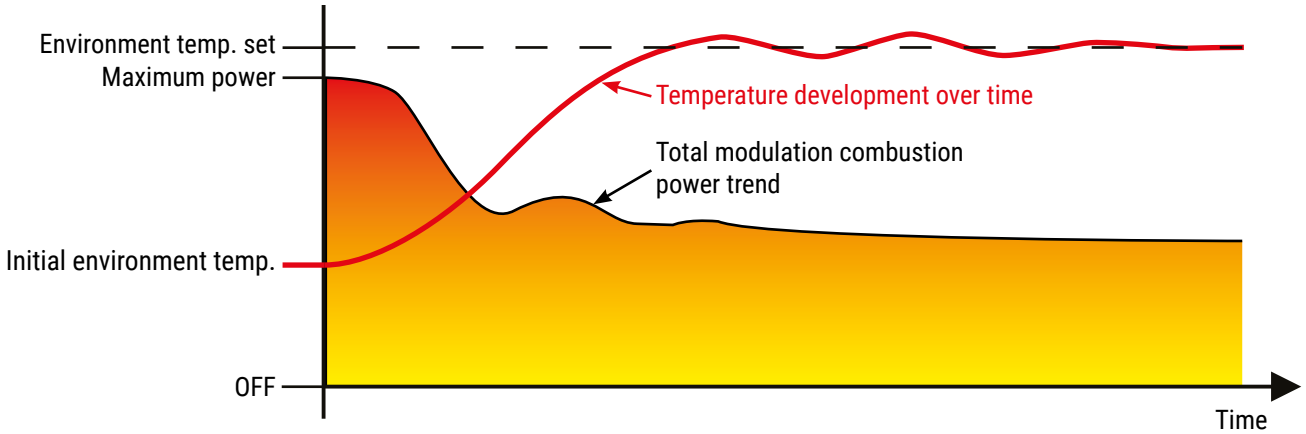
In this respect, studies and research have confirmed Systema's decision to use a burner which operates on the principle of forced aspiration, in a laminar-turbulent regime with afterburner.

The system operates at relatively low temperatures, in fact the temperature of the radiant strip tube is always below 400°C (maximum limit imposed by the product standard EN 17175:2019).



TYPICAL TEMPERATURE AND POWER TRENDS OVER TIME

Control and operation by means of a derivative-controlled processor specifically developed for controlling radiant energy systems



Since the radiation intensity is linked to the fourth power of the temperature of the tube's emitting surface, it is not advisable to go below a certain surface temperature, otherwise the emission efficiency (EN 15316-2) would drop considerably.

The continuous power modulation system (OHA RHE operation) is more efficient, as it has been specially designed for radiation systems; in fact, by keeping the temperature of the carrier fluid (flue gas) constant, over shooting is eliminated, thus maximising the yield of the system.

ADVANTAGES OF USING OHA RHE

- Significant reduction in electricity and gas consumption
- Optimum combustion efficiency, regardless of the length and shape of the radiant circuit
- Constant combustion efficiency even at medium/low temperatures
- Modulation of the carrier fluid, keeping the stoichiometric ratio constant and heating the environment homogeneously
- Constant radiation in the areas concerned
- Electronic management: Progressive electronic start-up, managed by inverter and constant control of start-up and operating times
- Predisposition for external temperature probe to optimise performance based on actual needs
- Application flexibility

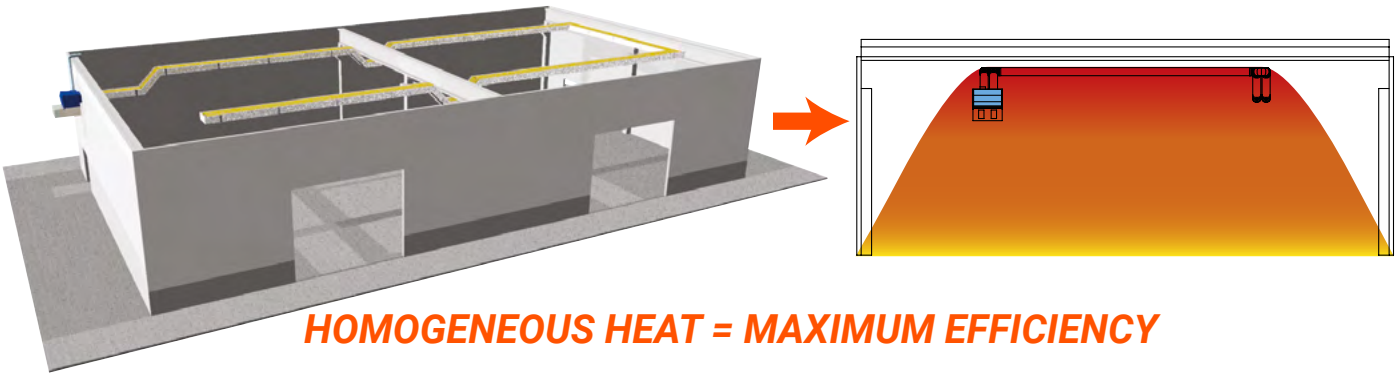
EFFICIENCY AND ENERGY SAVING

UP TO 15% GAS SAVINGS

UP TO 30% ELECTRICITY SAVINGS

+ COMFORT WITH OHA RHE:

OHA RHE'S TECHNOLOGY PROVIDES UNIFORM HEAT BY HEATING THE ROOM EVENLY.



HOMOGENEOUS HEAT = MAXIMUM EFFICIENCY

CERTIFIED APPLIANCE

- CE certification according to (EU) 2016/426, Gas Appliances Regulation (GAR)
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SECURITY

- Positive safety of the working thermostat
- Capillary probe for detecting flue gas temperature and working temperature, located inside the radiant circuit
- Burner lockout if the temperature of the carrier fluid rises above the nominal permitted operating values
- Main switch with door lock safety device

RANGE OHA RHE

Model	Power min-max	η_s	Virtual length of the U-shaped radiant circuit under ideal conditions *
OHA RHE 100-115	100-115 kW	79,5%	da 40 a 60 m
OHA RHE 100-150	100-150 kW	82,4%	da 55 a 80 m
OHA RHE 100-200	100-200 kW	83,7%	da 75 a 100 m
OHA RHE 200-250	200-250 kW	79,6%	da 90 a 120 m
OHA RHE 200-300	200-300 kW	81,7%	da 110 a 145 m
OHA RHE 200-400	200-370 kW	83,3%	da 130 a 160 m

ηS= Seasonal energy efficiency of area heating (≥74%) with installation outside the heated area

The values given are to be considered indicative, correct system sizing must be carried out by the Systema technical office.
*** Virtual length = Real length of the radiant circuit, increased by the lengths equivalent to the changes in direction: in the "U" double pipe model, 90° bend +3 metres; 180° bend +3 metres; "T" branch + 6 metres; 45° bend + 1,5 metres.**

ADAPTABLE TO ANY ARCHITECTURAL GEOMETRY

OHA radiant strips are suitable to heat buildings with particular shape, thanks to the ducts that **can be joined and fitted to any architectural geometry.**

SYSTEMA RADIANT SOFTWARE

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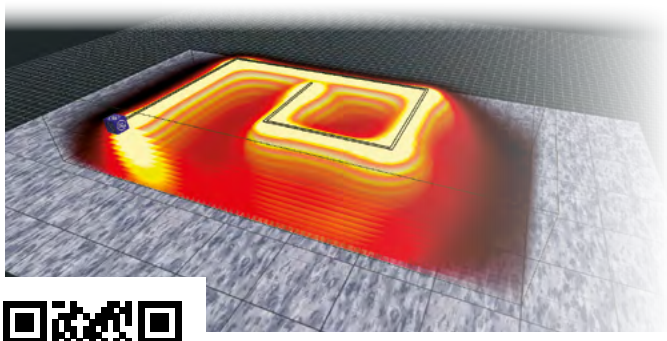

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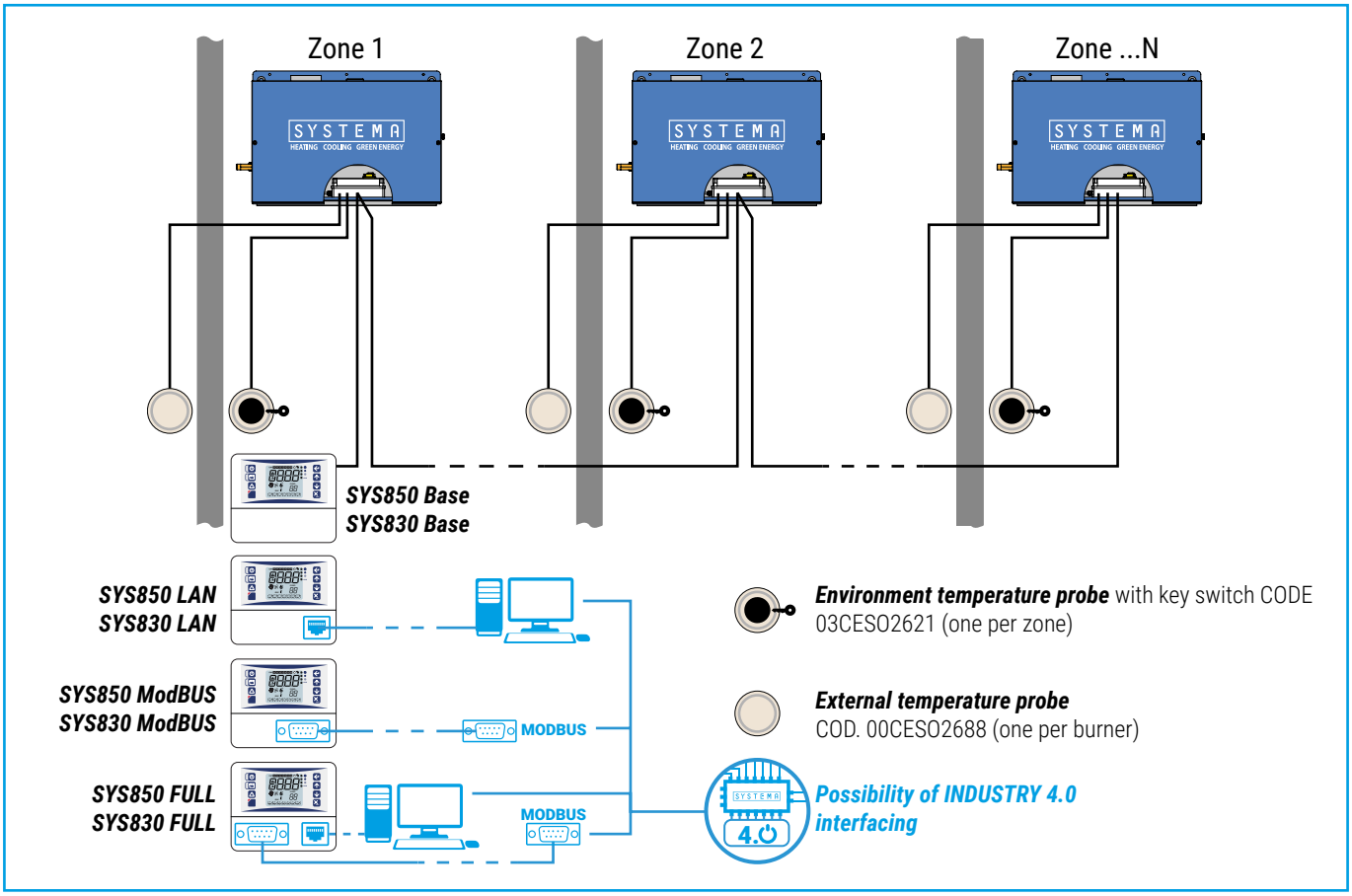

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05CEQU2718	Master Control Panel **SYS 850 LAN** type i²NET	LAN	30 - 30
05CEQU2721	Master Control Panel **SYS 850 ModBUS** type i²NET	MODBUS	30 - 30
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