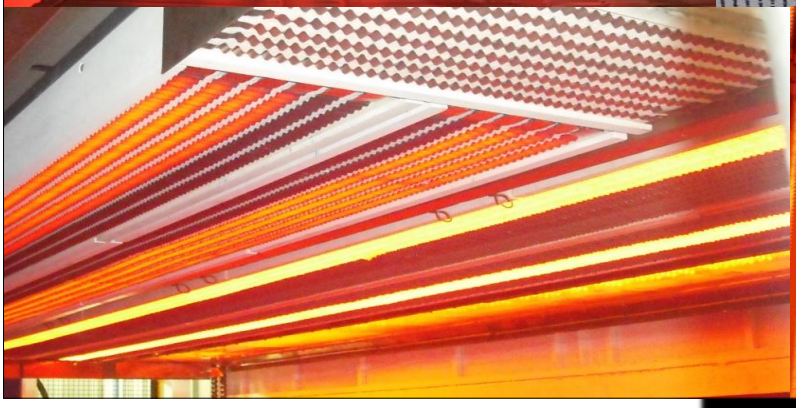
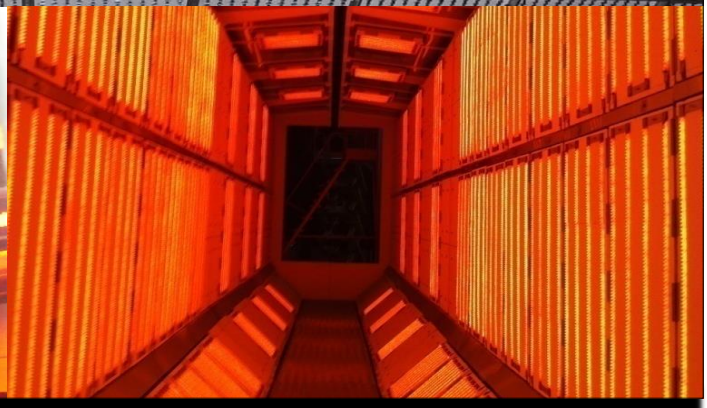
SOPARA

Infrared heating technologies

MEDIUM-WAVE INFRARED HEATERS



Our range of standard products

INFRAROUGE

INFRARED ▪ INFRAROSSO ▪ INFRAROT ▪ INFRARROJO

MEDIUM WAVE INFRARED HEATERS

The SOPARA medium-wave infrared heaters are known for their high performances: long-term reliability, high efficiency, fast response and good absorption of materials.

Long-term reliability

The heating elements are ribbons made of a robust and long-lasting material. The ribbons are insensitive to thermal shocks and provide a long-term reliability of the IR heaters.

High efficiency

The radiation efficiency is above 90% (the assessment was conducted by an independent laboratory). The quality of the insulating materials used and the very high radiation yield of the heating ribbons guarantee an exceptional efficiency that will allow you to make significant energy savings.

Short response time

This feature is crucial for the safe operation and the economic efficiency of every production line. The very low thermal inertia allows the metal ribbons to heat up and cool down within seconds. So in case of a temporary interruption of operation, there is no risk of burning a product that would stay longer than it should under the heaters turned off.

For discontinuous heating processes, the short response time allows the heating elements to reach high temperatures very quickly. Therefore, it is not necessary to preheat these elements and they are turned on only during the heating cycle. Energy consumption is minimized.

Good heat absorption of materials

Designed to reach 800°C, the heating elements radiate in the medium to long wavelength spectrum (2,6 to 9,6µm). This infrared emission spectrum is very well absorbed by most materials. This results in an efficient and quick heating process.

Uniform thermal radiation

The heating ribbons are evenly distributed over the radiating surface, which guarantees a homogeneous heating. The medium-wave radiation created by the SOPARA heaters has the same effect on dark or bright surfaces; this eliminates any risk of local overheating.

Environment and economy

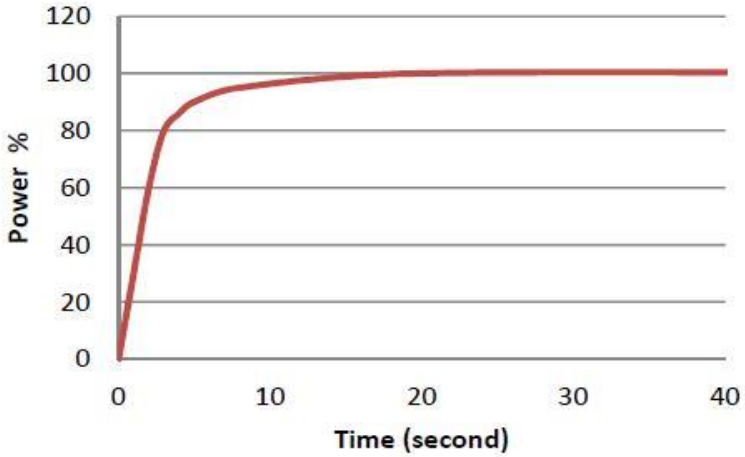
The very high radiation efficiency and the low thermal inertia result in reduced energy consumption (50 to 80% compared to long-wave infrared heaters or to convectional ovens).

A solution upon your needs

The SOPARA heaters are manufactured with customized dimensions. They can operate with any voltage supply. The useful power density reaches up to 60 kW/m². It is possible to group together several heaters in order to have very large heating panels.

Infrared panels can generate a uniform heating or can operate with separated heating zones. Each zone is independently controlled. In order to provide you with our quotation, we need the following information:

- power density (kW/m²)
- voltage supply
- approximate dimensions
- end-use / applications



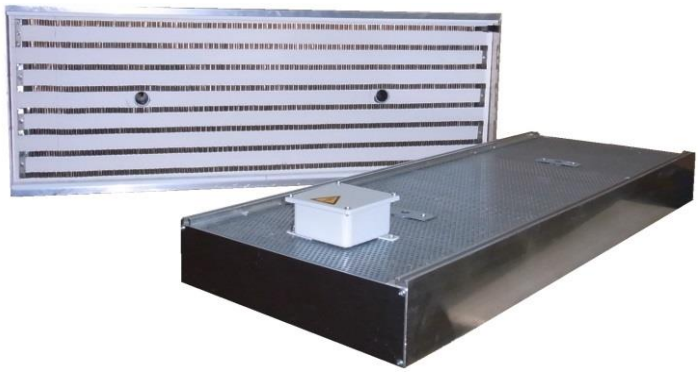
HIGH PERFORMANCE MEDIUM-WAVE IR HEATERS (IRM HP)

IRM COMPACT

- ✓ Low dimensions: length < 1m
- ✓ Very low thermal inertia < 5 seconds
- ✓ High radiation efficiency > 90 %
- ✓ Medium power density (40 kW/m²)
- ✓ Not suitable for a humid environment

IRM HP ALU

- ✓ Medium length heaters < 3m
- ✓ Very low thermal inertia < 5 seconds
- ✓ High radiation efficiency > 90 %
- ✓ Medium power density (up to 40 kW/m²)
- ✓ Not suitable for a humid environment

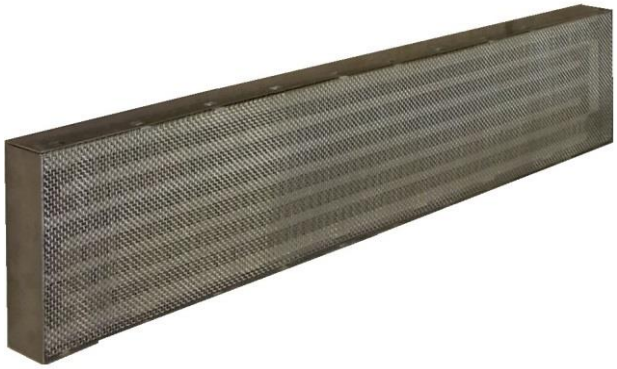


IRM HP CERA

- ✓ Long heaters – up to 6 m
- ✓ Very low thermal inertia < 5 seconds
- ✓ High radiation efficiency > 90 %
- ✓ High power density (up to 70 kW/m²)
- ✓ Suitable for a humid environment

IRM HP AGRO

- ✓ Short heaters < 1,5m
- ✓ Very low thermal inertia < 5 seconds
- ✓ High radiation efficiency > 90 %
- ✓ Medium and high power density (up to 60 kW/m²)
- ✓ Suitable for a humid environment
- ✓ Compliant with agri-food Regulatory Standards



IRM COMPACT

Description

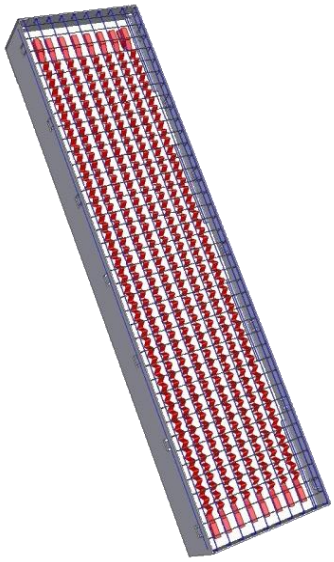
Medium-wave infrared heater (2.6 microns) composed of:

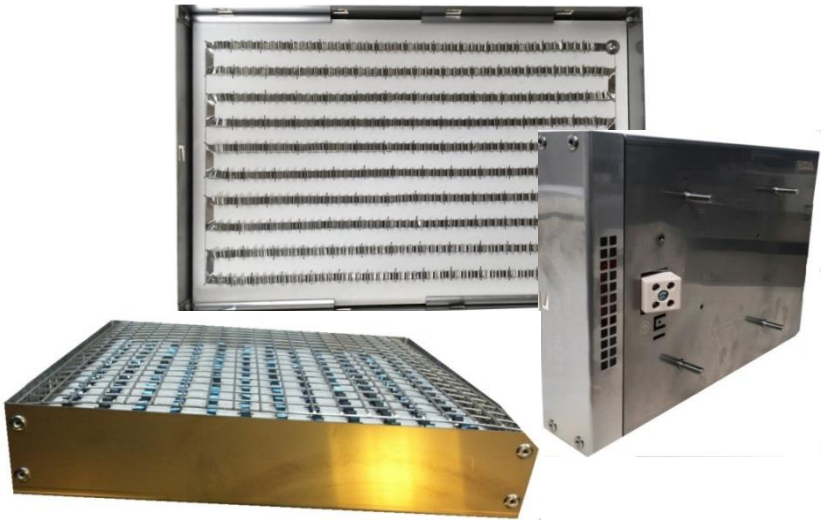
• 1 heating drawer equipped with corrugated heating ribbons with low thermal inertia (≈ 5 sec.)

• 1 stainless steel frame (thickness 50mm) + attachment points through studs

• 1 ceramic terminal for electrical connection on the back side (the Customer is responsible for the safety of the electrical installation in compliance with applicable standards in the country)

• Heaters with or without grid on the front side (available as option)





Standard dimensions

* Other dimensions, voltage and power ranges are available on request. Please, ask us.

Lg x La	Power	Voltage	Current	Reference
250X250	2500W	240V	11A	CO2.5PM002525
300x200	2000W	240V	11A	CO2.0AM03020
300x225	2000W	240V	11A	CO2.0AM03025
500X120	2500W	240V	11A	CO2.5PM05012
750X120	2500W	240V	11A	CO2.5PM07512

Pictures are non-binding

IRM HP ALU

Description

Medium-wave infrared heater (2.6 microns) composed of:

- 1 heating drawer equipped with corrugated heating ribbons with low thermal inertia (≈ 5 sec.)
- Aluminium frame + groove for M6 screws + stainless steel grid (as option)
- Electrical connections in a box on the back side of the frame
- Cable gland for customer cable

Standard dimensions

All dimensions up to 3 meter long.

Voltage and power ranges are available on request.

IRM HP ALU 230V Mono

Lg x La	Power
600x500	Available standard power:
1000x300	4,5 kW / 19 A
1400x300	6 kW / 26 A
1600x300	7 kW / 31 A
2200x200	8 kW / 35 A 9 kW / 40 A

IRM HP ALU 400V 1Ph.

Lg x La	Power
1000x300	Available standard power:
1400x300	7,5 kW / 19 A
1600x300	9,5 kW / 24 A
2000x250	11,5 kW / 29 A
2250x250	13,5 kW / 34 A
2500x250	15,5 kW / 39 A

IRM HP ALU 400V 3Ph.

Lg x La	Power
1600x350	Available standard power:
1800X350	14 kW / 21 A
2000x350	17,5 kW / 26 A
2250X300	21 kW / 31 A
2500x300	24,5 kW / 36 A
2800X300	28 kW / 41 A 34,5 kW / 50 A

Pictures are non-binding

IRM HP CERA

Description

Medium wave infrared heater (2.6 microns) composed of:

- 1 heating drawer equipped with corrugated heating ribbons with low thermal inertia (≈ 5 sec.).
- Ceramic flanks that enclose the heating drawer
- Mechanically welded frame, painted (high temperature paint) + attachment points with electrical insulation
- Electrical connections attached by means of insulators on the back side of the frame
- Heaters without grid on the front side (available as option)

Standard dimensions

All dimensions up to 6 meter long.

Voltage and power ranges are available on request.

IRM HP CERA 230V 1Ph.

Lg x La	Power
600x500	Standard power available
1000x300	4,5 kW / 19 A
1400x300	6 kW / 26 A 7 kW / 31 A
1600x300	8 kW / 35 A
2200x200	11 kW / 48 A

IRM HP CERA 400V 3Ph.

Lg x La	Power
1600x350	Standard power available
2000x350	14 kW / 21 A
2200x350	17.5 kW / 26 A 21 kW / 31 A
2500x300	24.5 kW / 36 A
2800x300	28KW / 41 A 35.5 kW / 50 A

IRM HP CERA 400V 1Ph.

Lg x La	Power
1000x300	
1400x300	Standard power available 7,5 kW / 19 A
1600x300	9,5 kW / 24 A
2000x250	11,5 kW / 29 A
2250x250	13,5 kW / 34 A
2500x250	15.5KW / 39 A 20 kW / 50 A

Pictures are non-binding

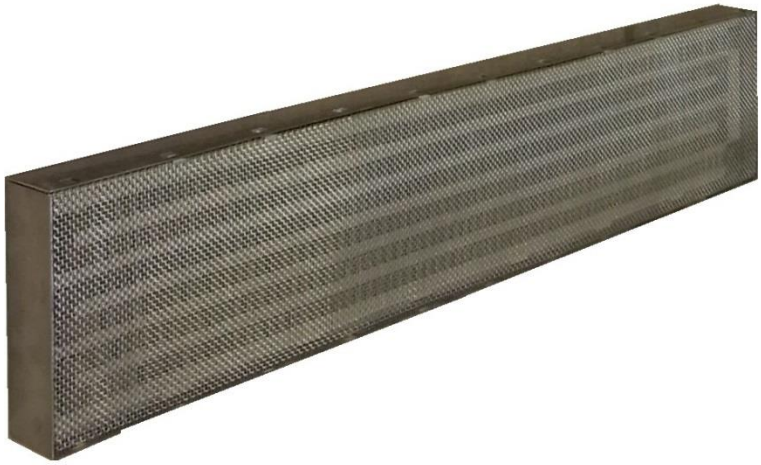
IRM HP AGRO

Description

Medium wave infrared heater (2.6 microns) composed of :

• 1 heating drawer equipped with corrugated heating ribbons with low thermal inertia (≈ 5 sec.), fixed on a non-fibrous insulation, used in the agri-food industry

- Stainless steel frame + attachment points equipped with insulators (double insulation assembly)
- Connection type: stainless steel on insulators
- Heaters with or without grid on the front side



Standard dimensions

Other power and voltage ranges are available on request.

Lg x La	Power	Voltage	Current	Reference
640X172	3500W	115V	31A	MF3.5FM06417
780X172	4000W	115V	31A	MF4.0FM07817
1000X172	6000W	200V	35A	MF6.0AM10017
1220X172	7000W	230V	33A	MF7.0PM12217
1220X172	7000W	430V	19A	MF7.0VM12217

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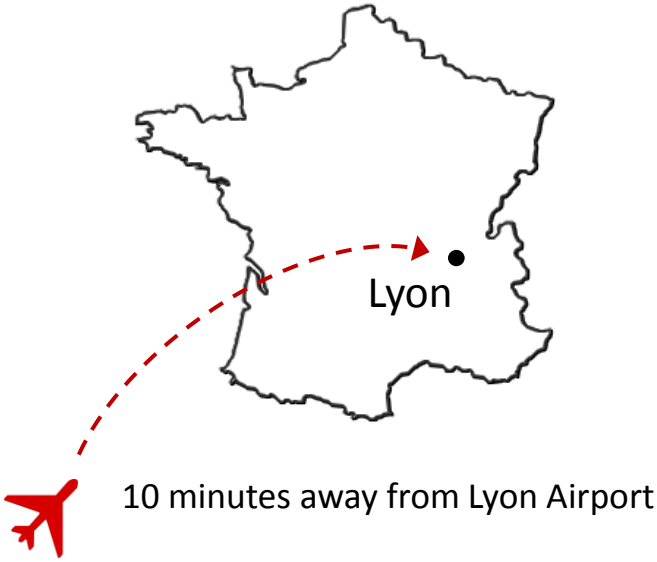

Designed and manufactured in France