



BARCELONA 1943

INDUSTRIAL COMFORT

HEAT DIVISION

IES Soler is backed by a long track record in developing customised and innovative solutions for all types of processes in the field of Industrial Electric Heat, both nationally and internationally.

From the general manufacturing programme of Industrias Eléctricas Soler, S.A. in this catalog we present the standard products for application in Industrial Comfort. Their composition, design and high level technology make them ideal for quick installation and in areas with harsh environmental conditions.

We offer comprehensive services at each stage of the project, adapting it to the clients' needs and considering all dimensions of the business. We anticipate changes in the environment, responding quickly and effectively to the challenges that our clients pose.

If you cannot find the product you want, or you need more customized or complex installations, ask our R&D Department for help.



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CERTIFICATIONS • QUALITY



The certifications IES SOLER has obtained so far are proof of its strict quality standards and its commitment to society and the environment. These certifications recognise our competence in facing the industry's challenges safely and responsibly in Spain and worldwide.



ISO 9001:2015
ISO 14001:2015



European Directive
93/68/CEE



ATEX 2014/34/UE
IECEX / IEC



AER-PE

Portable Electronic Fan Heater

Electric fan heaters made of steel sheet epoxy painted in RAL-9006, protected with a layer of varnish and injected polyamide front profile.

They have an automatic thermal protector that will disconnect the equipment in the event of overheating. The AER-PE portable model has digital control included.

It comes with a three-position adjustable support.

Technical specifications

- ✓ Protection degree | **IP34**
- ✓ Temperature range | **5°C to 35°C**
- ✓ Frequency | **50/60Hz**
- ✓ Temperature limiter | **120°C**
- ✓ Tilt support | **8/16/24°**



For use in factories, industrial buildings, shops, marquees, livestock farms, building sites and other temporary facilities.

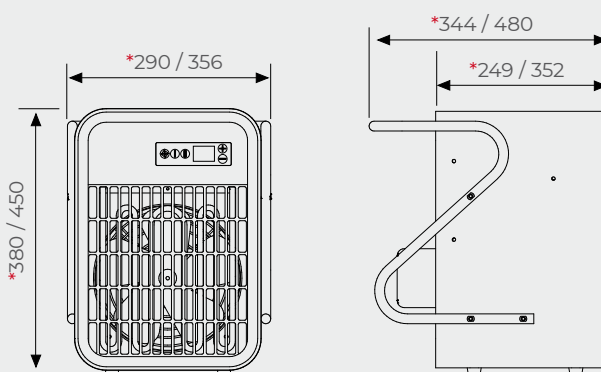


Customised on demand.



Dimensions (mm)

* Dimensions of small model 82002 and 82013



TYPE	CODE	V	KW	STAGES	FLOW RATE	NOISE LEVEL	KG
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AER-PE3	82002	230	3,2	1,6/3,2	300 m³/h	45,2 dB (A)	10
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The single-phase model includes a 1.5 m cable and plug.

AER-PE5	82013	3N~400	5,25	5,25	400 m³/h	48,2 dB (A)	11
AER-PE6	82023	3N~400	6	3/6	840 m³/h	49,7 dB (A)	16
AER-PE9	82033	3N~400	9	4,5/9	840 m³/h	49,7 dB (A)	16
AER-PE12	82043	3N~400	12	6,1/12	1050 m³/h	52,2 dB (A)	18
AER-PE15	82053	3N~400	15	9/15	1050 m³/h	52,2 dB (A)	18

AER-PE5	82012	3~230	5,25	5,25	400 m³/h	48,2 dB (A)	11
AER-PE6	82022	3~230	6	3/6	840 m³/h	49,7 dB (A)	16
AER-PE9	82032	3~230	9	4,5/9	840 m³/h	49,7 dB (A)	16
AER-PE12	82042	3~230	12	6/12	1050 m³/h	52,2 dB (A)	18

AER-ME

Wall-mounted Electronic Fan Heater

Electronic fan heaters made of steel sheet epoxy painted in RAL-9006, protected with a layer of varnish and injected polyamide front profile.

They have an automatic thermal protector that will disconnect the equipment in the event of overheating.

The AER-ME portable model does not have digital control included in the equipment, **but it is essential for its operation**. You can control up to five heaters within the same room.

It comes with a three-position adjustable support.

Technical specifications

- ✓ Protection degree | **IP34**
- ✓ Temperature range | **5° to 35°C**
- ✓ Frequency | **50/60Hz**
- ✓ Temperature limiter | **120°C**
- ✓ Tilt support | **8/16/24°**



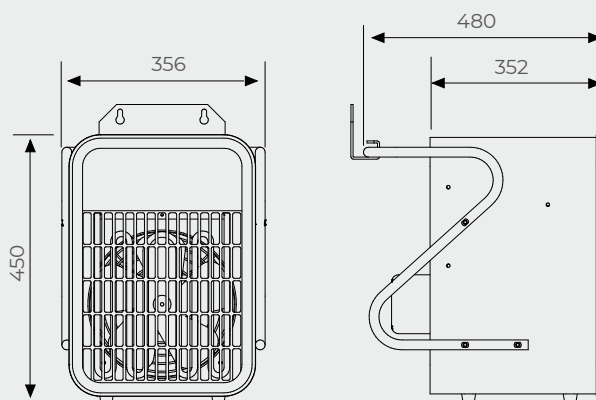
For use in factories, industrial buildings, shops, marquees, livestock farms, building sites and other temporary facilities.



Customised on demand.



Dimensions (mm)



TYPE	CODE	V	kW	STAGES	FLOW RATE	NOISE LEVEL	KG
AER-ME6	82063	3N~400	6	3/6	840 m³/h	49,7 dB (A)	16
AER-ME9	82073	3N~400	9	4,5/9	840 m³/h	49,7 dB (A)	16
AER-ME12	82083	3N~400	12	6,12	1050 m³/h	52,2 dB (A)	18
AER-ME15	82093	3N~400	15	9/15	1050 m³/h	52,2 dB (A)	18
AER-ME6	82062	3~230	6	3/6	840 m³/h	49,7 dB (A)	16
AER-ME9	82072	3~230	9	4,5/9	840 m³/h	49,7 dB (A)	16
AER-ME12	82082	3~230	12	6/12	1050 m³/h	52,2 dB (A)	18

Accessories:

TYPE	CODE	DESCRIPTION
MANDO	19500	Digital electronic control, not included.

AER-PE27

Portable High Power Fan Heater

Electric portable fan heater made of steel sheet epoxy painted in RAL-9006, protected with a layer of varnish and aluminum front profile.

This model, like the rest of the AER-PE range, has digital temperature and ventilation control included in the equipment.

Manual reset thermal protector disconnecting the equipment in the event of overheating and timer to evacuate residual heat.

Technical specifications

- ✓ Protection degree | **IP34**
- ✓ Temperature range | **5° to 35°C**
- ✓ Frequency | **50/60Hz**
- ✓ Temperature limiter | **120°C**



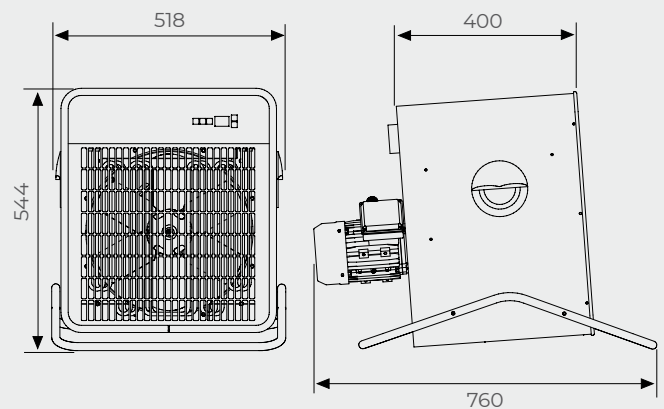
For use in drying plastered or painted areas, building sites, greenhouses, factories, industrial buildings, livestock farms and other temporary facilities.



Customised on demand.



Dimensions (mm)



TYPE	CODE	V	kW	STAGES	FLOW RATE	NOISE LEVEL	KG
AER-PE27	82055	3N~400	27	18/27	5750 m ³ /h	71 dB (A)	34



AER-785/6

Air Generator

Built in steel epoxy painted in RAL-9006 and protected with a layer of varnish.

Built-in control panel with electronic board to adjust the temperature and display to program the temperature and stages.

It is supplied with a Pt100 probe with a 2 m silicone cable (extendable up to 25m) that connects to the panel to regulate the ambient temperature "in situ" and a connector base and coupler according to IEC 60529 standard.

Manual reset thermal protector that will disconnect the equipment in the event of overheating and timer to evacuate residual heat.

Use with free inlet and outlet or with flexible hoses, which allow hot air to be recirculated and cold return air to be collected.

Technical specifications

- ✓ Protection degree | **IP34**
- ✓ Max. temp. AER785 | **150°C**
- ✓ Max. temp. AER786 | **250°C**
- ✓ Frequency | **50/60Hz**



Any closed space can quickly be transformed into a stove or dryer. Suitable for premises where gas or diesel cannot be used as an energy source. For use in drying ovens, anti-humidity cabins, paint drying, hot air cannon, in livestock farming, greenhouses, etc.

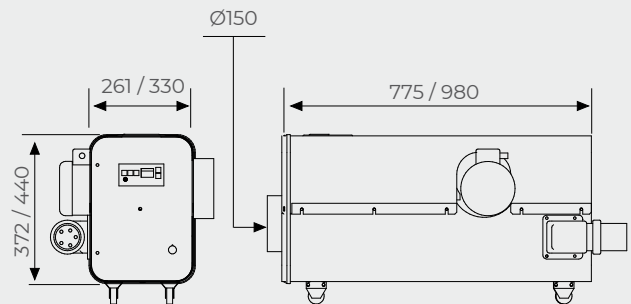


Customised on demand.



Dimensions (mm)

Both models are indicated.



TYPE	CODE	V	KW	STAGES	FLOW RATE	NOISE LEVEL	KG
AER-785	07853	3N~400	12	6/12	800 m³/h	65 dB (A)	37
AER-786	07863	3N~400	22,5	15/22,5	1380 m³/h	69 dB (A)	57

Accessories:

TYPE	CODE	DESCRIPTION	
CX	07891	Hose in red -60 to 300°C, Ø150mm and 4m.	1,85
A	07880	Clip fixation to the hose.	0,36



AER-G5

Fan Heater for Farm

Electric fan heater for farms, made of exterior quality sheet steel, rustproof epoxy in RAL-7001, with galvanised steel front grille and motor support made of zinc-plated steel.

Equipped with electrical resistances built in Ø8mm AISI-321 stainless steel tube.

It has a limiter that will automatically disconnect the heating unit if dangerous overheating occurs, and wich will reconnect it when it cools down.

Technical specifications

- ✓ Protection degree | **IP34**
- ✓ Max. temperature | **40°C**
- ✓ Frequency | **50/60Hz**
- ✓ Temperature limiter | **120°C**



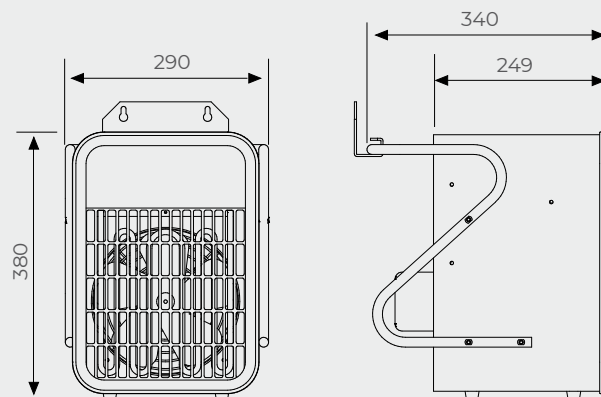
For use in the livestock sector in activities related to livestock farming. On farms for raising piglets and other animals.



Customised on demand.



Dimensions (mm)



TYPE	CODE	V	kW	rpm	FLOW RATE	NOISE LEVEL	KG
AER-G5	77157	3N~400	5,25	1300	400 m³/h	48,2 dB (A)	10

AER-EX

Explosion Proof Fan Heater

Explosion-proof fan heaters, built in RAL-9006 painted steel sheet and resistances finned for greater heat transfer.

Box painted in RAL-6018, ATEX certified (Ex db IIC T3 Gb or Ex db IIB+H2 T3 Gb / Ex tb IIIC T200°C Dd) in accordance with the directive 2014/34/EU and manufactured according to the EN60079-0/1/31 standard. ATEX certified helical fan, made of non-sparking aluminium and protected with anticorrosive paint free of ferrous components.

Technical specifications

- ✓ Protection degree | **IP66**
- ✓ Marked | **2GD IIB T3** 
- ✓ Ambient temperature | **-20 to 60°C**
- ✓ Frequency | **50/60Hz**
- ✓ Thermostat thermostat | **0-100°C**



For use in gaseous or dusty explosive atmospheres, gas stations, nut stores, paint stores, etc.

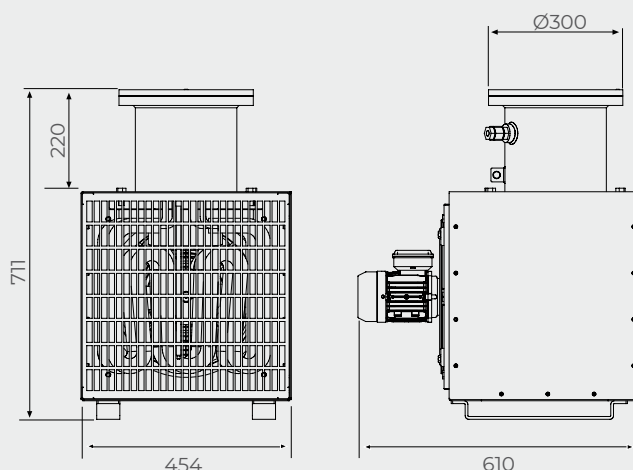


Customised on demand.



Dimensions (mm)

These correspond to the EX10060 model.
For the rest consult with the Technical Dept.



TYPE	CODE	V	KW	FAN	FLOW RATE	LIMITER	NOISE LEVEL	KG
AER-EX	EX100160	3N~400	3	HC-31-4T	2400 m³/h	130°C	54 dB (A)	65
AER-EX	EX100161	3N~400	6	HC-31-4T	2400 m³/h	130°C	54 dB (A)	65
AER-EX	EX100162	3N~400	9	HC-40-4T	4050 m³/h	195°C	60 dB (A)	85
AER-EX	EX100163	3N~400	12	HC-40-4T	4050 m³/h	195°C	60 dB (A)	85
AER-EX	EX100164	3N~400	15	HC-40-4T	3700 m³/h	195°C	60 dB (A)	85
AER-EX	EX100165	3N~400	20	HC-56-4T	11050 m³/h	195°C	70 dB (A)	85
AER-EX	EX100166	3N~400	30	HC-56-4T	13000 m³/h	195°C	72 dB (A)	150
AER-EX	EX100169	3N~400	40	HC-56-4T	13000 m³/h	195°C	72 dB (A)	150

AER-TE

Ceiling Fan Heater

Electronic, ceiling-mounted fan heater built in epoxy painted RAL-9006 steel sheet.

Designed to recirculate the hot air accumulated in the upper part towards the floor, projecting it in a fan shape using deflectors, thus distributing the air throughout the area.

Ventilation and power control is via remote electronic digital control, included in the equipment.

Technical specifications

- ✓ Protection degree | **IP33**
- ✓ Temperature range | **5° to 35°C**
- ✓ Frequency | **50/60Hz**
- ✓ Temperature limiter | **120°C**



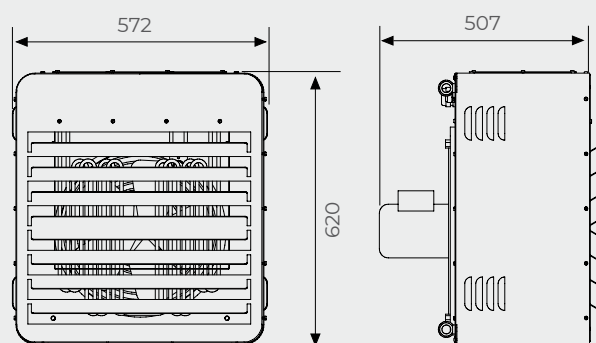
For use as heating in large industrial warehouses: hangars, shipyards, garages, electric power plant rooms, sports halls, hypermarkets, etc.



Customised on demand.



Dimensions (mm)



TYPE	CODE	V	KW	STAGES	FLOW RATE	NOISE LEVEL	KG
AER-TE	10333	3N~400	12	6 / 12	2600 m³/h	56 dB (A)	38
AER-TE	10353	3N~400	18	9 / 18	2600 m³/h	56 dB (A)	38
AER-TE	10373	3N~400	24	12 / 24	2600 m³/h	56 dB (A)	38
AER-TE	10332	3~230	12	6 / 12	2600 m³/h	56 dB (A)	38
AER-TE	10352	3~230	18	9 / 18	2600 m³/h	56 dB (A)	38
AER-TE	10372	3~230	24	12 / 24	2600 m³/h	56 dB (A)	38

CEM

Convector

A solid and watertight unit, built with finned elements and chassis in RAL 7011 grey painted steel and polyester terminal protection box.

It includes an automatic reset limiter thermostat and start/stop switch, 1.8m output cable and 16A Schuko plug.

The unit comes with a safety thermostat set at 140°C to guarantee that the surface temperature does not exceed 65°C in occupied places, as indicated by regulations.

Its operation can be continuous without overheating. Horizontal working position.

Technical specifications

- ✓ Protection degree | **IP53**
- ✓ Max. Temperature | **65°C**
- ✓ Temperature limiter | **140°C**
- ✓ Standard | **UNE-EN 60355-2**



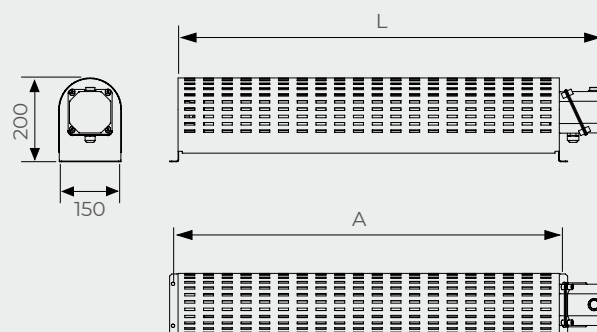
Ideal for drying chambers or medium and low temperature ovens, warehouses, cabins and cranes.



Customised on demand.
For premises with risk of explosion, ask for extra information.



Dimensions (mm)



TYPE	CODE	V	W	(A)	(L)	KG
CEM	07202	230	250	434	500	6
CEM	07212	230	750	434	500	7
CEM	07222	230	400	684	750	8
CEM	07232	230	1200	684	750	6,5
CEM	07242	230	600	934	1000	7,5
CEM	07252	230	1800	934	1000	8,5



PR

Portable Radiant Panel

Built in Ø8mm AISI 321 tube and RAL9006 painted steel chassis.

It has a knob adjust the necessary inclination for a better reach.

It includes a stainless steel reflective screen to obtain good radiation diffusion, a protective grid, an ergonomic handle for easy transport and a 1.5 m long H05RN 3x1.5 mm² connection cable.

Technical specifications

- ✓ Protection degree | **IP33**
- ✓ Construction | **Class II**
- ✓ Tilt support | **Max. 30°**



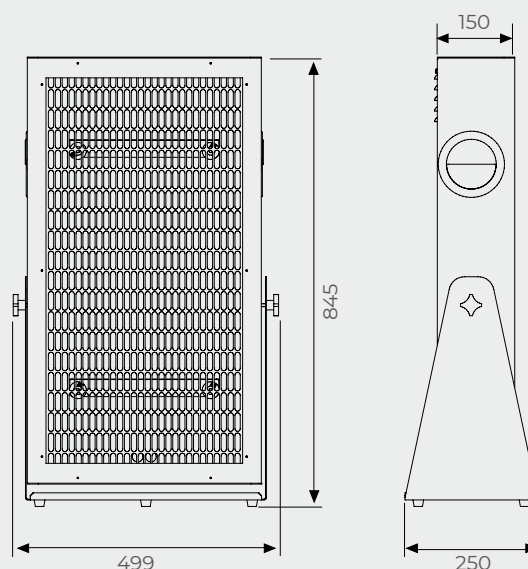
Recommended for heating in specific areas where a heat point is necessary and the air in the premises does not need to be heated.



Customised on demand.



Dimensions (mm)



TYPE	CODE	V	kW	WAVELENGTH	KG
PR	34102	230	3,5	1.5 to 7 um	11

RI-S / RI-D

Industrial Infrared Radiator

Specially designed for heating in areas where thermal comfort levels have to be improved without the need to heat the entire volume. Its function is to heat the material.

Built in anodised aluminium profile and tubular resistance in Ø8mm AISI309 stainless and refractory steel. Two models, the RI-S with a single heating element and the RI-D composed of two heating elements. Both can be grouped to form panels.

Technical specifications

- ✓ Protection degree | **IP30**
- ✓ Efficiency 100%
- ✓ Adjustable panels



Suitable for multiple applications, such as self-service hot tables, work lines, changing rooms, etc.



Dimensions (mm)



TYPE	CODE	LENGTH	KG
Grid accessory:			
R-500	03060	500	0,16
R-750	03070	750	0,20
R-1000	03080	1000	0,22
R-1250	33100	1250	0,30
R-1500	33200	1500	0,40

Support accessory:

S-309	03090	Aluminium	0,30
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TYPE	CODE	V	W	(A)	(L)	KG
Simple, with one heater element						
RI-S	33002	230	750	687	500	1,48
RI-S	33012	230	1100	937	750	1,76
RI-S	33013	400	1100	937	750	1,76
RI-S	33022	230	1500	1187	1000	2,12
RI-S	33023	400	1500	1187	1000	2,12
RI-S	33082	230	1900	1437	1250	2,30
RI-S	33083	400	1900	1437	1250	2,30
RI-S	33092	230	2300	1700	1500	2,50
RI-S	33093	400	2300	1700	1500	2,50

Double, with two heater elements

RI-D	33032	230	1500	687	500	1,63
RI-D	33042	230	2200	937	750	2
RI-D	33043	400	2200	937	750	2
RI-D	33052	230	3000	1187	1000	2,38
RI-D	33053	400	3000	1187	1000	2,38
RI-D	33063	400	3800	1437	1250	2,5
RI-D	33073	400	4600	1700	1500	2,76

RI-EXT

IP65 Infrared Radiator

The short-wave infrared radiator is designed to obtain heat immediately, avoiding energy loss and achieving considerable savings.

Built with an exterior Nylon and aluminium chassis and easy to use and install.

Incorporating long-lasting anti-glare quartz lamp (5000h), as well as power cable, 60 cm chains, protection grille and on-off switch.

Technical specifications

- ✓ Protection degree | **IP65**
- ✓ Quartz lamp | **5000h**
- ✓ Radiation | **Short-wave**

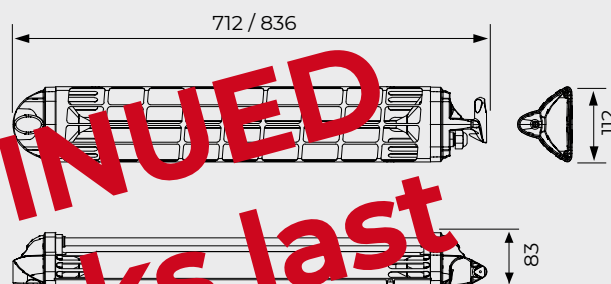


Suitable for multiple applications, such as bar terraces, sports locker rooms, halls, churches, convention centres, etc.



Dimensions (mm)

Both models are indicated.



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While stocks last



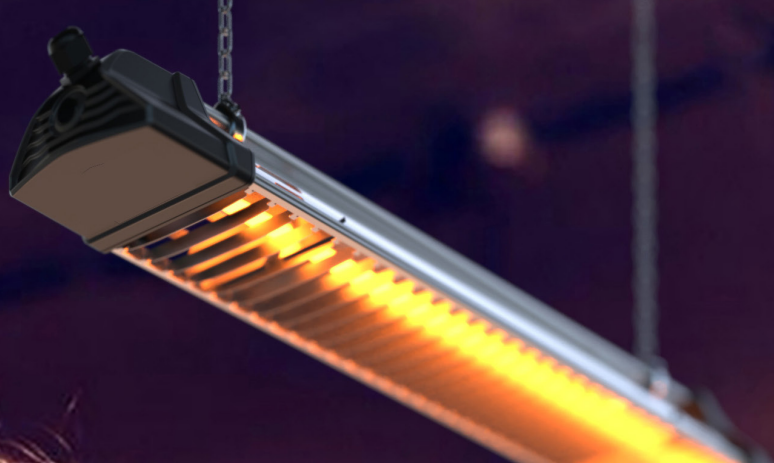
TYPE	CODE	V	W	COVERAGE	KG
RI-EXT	33303	230	1200	4 - 6 m ²	0,95
RI-EXT	33313	230	1800	8 - 10 m ²	1,00

Wall mounting accessory:

CODE	DESCRIPTION
33370	Wall support 768MN

Tripod mounting accessories:

CODE	DESCRIPTION
33360	Tripod Ø35 mm L-2100 - 2473
33350	Tripod support 768PN



RI-EXT2

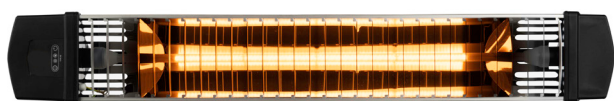
IP55 Infrared Radiator

Short wave infrared heaters are designed to provide immediate heat, avoiding energy loss and achieving considerable savings. They are made with an exterior chassis of aluminum Nylon PA enhanced with fiberglass. Easy to handle and install.

The radiator includes: power cable, protective grid, on-off switch, long-lasting anti-glare quartz lamp, chains (2x45cm), and wall bracket.

Technical specifications

- ✓ Protection degree | **IP55**
- ✓ Quartz lamp | **5000h**
- ✓ Radiation | **Short-wave**

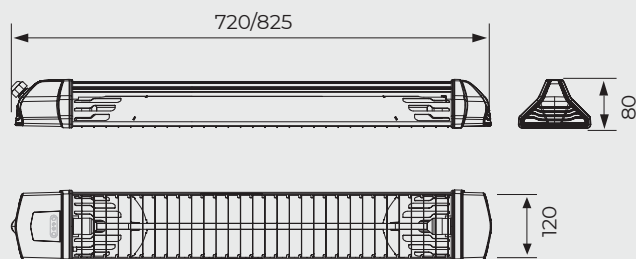


Suitable for multiple applications, such as bar terraces, sports changing rooms, halls, churches, convention centers, etc.



Dimensions (mm)

Both models are indicated.



TYPE	CODE	V	W	COVERAGE	KG
RI-EXT2	33323	230	1200	4 - 6 m ²	0,90
RI-EXT2	33333	230	1800	6 - 8 m ²	1,00

Mounting accessories for umbrella:

CODE	DESCRIPTION
33701	Umbrella fixing support 868U

Tripod mouting accessories:

CODE	DESCRIPTION
33360	Tripod Ø35mm L-2100 - 2473
33351	Tripod support - 868P



RI-EXTL WRC

Infrared Radiator with remote control

The short-wave infrared radiator is designed to give heat immediately, avoiding energy loss and achieving considerable savings.

Built with an exterior chassis in Nylon and aluminium and easy to handle and install.

Extra-flat model (38 mm), designed to minimize load volume on the wall.

Supplied with remote control, including long-lasting anti-glare quartz lamp (5000h), as well as power cable, 60 cm chains, protection grille and on-off switch.

The CRC02 model incorporates a carbon lamp.

Technical specifications

- ✓ Protection degree | **IP55**
- ✓ Quartz lamp | **5000h**
- ✓ Radiation | **Short-wave**



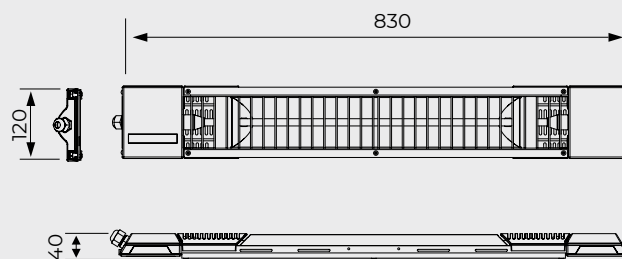
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Suitable for multiple applications, such as bar terraces, sports locker rooms, halls, churches, convention centres, etc.



Dimensions (mm)



TYPE	CODE	V	W	COVERAGE	KG
RI-EXTL WRC	33404	230	1200	4 - 6 m ²	1,20
RI-EXTL WRC	33413	230	1800	6 - 8 m ²	1,50
RI-EXTL CRC02	33414	230	1800	6 - 8 m ²	1,50 NEW

Wall mounting accessories:

TYPE	DESCRIPTION
33470	Wall support 4466

Tripod mounting accessories:

TYPE	DESCRIPTION
33360	Tripod Ø35 mm L-2100 - 2473
33351	Tripod support 868P
33470	Wall support 4466

RI-EXTP

Umbrella Infrared Radiator

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This is the smallest model in the outdoor infrared range.

With a Nylon exterior chassis and Ruby lamp (5000h), designed for horizontal or vertical.

Installation, it comes with wall bracket, switch and power cable.

Technical specifications

- ✓ Protection degree | **IP65**
- ✓ Ruby lamp | **5000h**
- ✓ Radiation | **Short-wave**

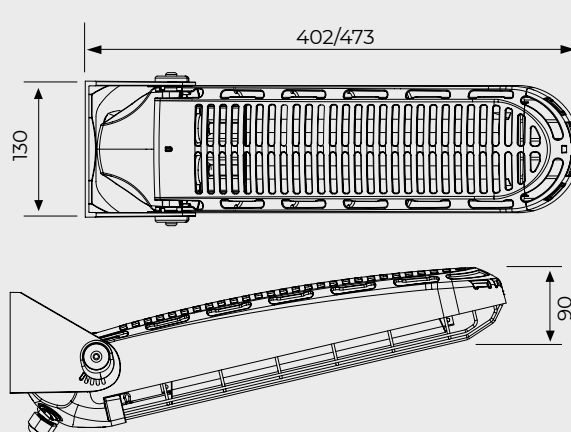


Recommended for outdoor environments such as terraces, gardens, awnings, etc.



Dimensions (mm)

Both models are indicated.



TYPE	CODE	V	W	COVERAGE	KG
RI-EXTP	33602	230	800	4 - 5 m ²	0,95
RI-EXTP	33612	230	1200	5 - 6 m ²	1,00

Wall mounted accessories:

CODE	DESCRIPTION
33360	Tripod Ø35 mm L-2100 - 2473
33670	Umbrella fixing support - 789

PIM / PIM+

Infrared Screen

High-power infrared radiators, designed for large areas and/or high traffic density.

PIM: Built in aluminium sheet, it incorporates a Gold lamp and is supplied with a wall or ceiling mount.

PIM+: Built in aluminium sheet and painted white, it incorporates a Gold Low Glare lamp (less light) and is supplied with a wall bracket and protective grille. The 6000 W models give a temperature increase of more than 18°C at a distance of 5 m.

Technical specifications

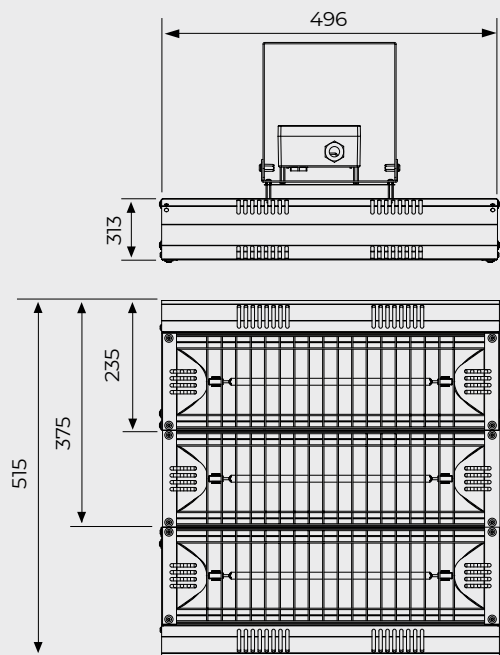
- ✓ Protection degree | **IP55**
- ✓ Installation height | **Up to 5 m**
- ✓ Radiation | **Short-wave**



Particularly suitable for mounting at high heights, such as industrial warehouses, auditoriums, sports equipment, even outdoors in ski resorts.



Dimensions (mm)



PIM



PIM +



TYPE	CODE	V	W	COVERAGE	KG
PIM1-20	33490	230	2000	9 - 12 m ²	1,75
PIM2-40	33510	230	4000	12 - 16 m ²	2,4
PIM3-60	33530	400	6000	16 - 20 m ²	3,0
PIM+1-20	33540	230	2000	9 - 12 m ²	1,9
PIM+-40	33550	230	4000	12 - 16 m ²	2,9
PIM+-60	33560	400	6000	16 - 20 m ²	3,6

PIM-DEEP

Maximum height Infrared Screen

PIM DEEP is the most complete range.

It differs from the rest mainly because it can be installed up to 7 metres high, horizontally or vertically.

Built in aluminium sheet and with an optional internal focus, to move the Gold lamp horizontally in two different positions depending on the desired heat concentration.

Technical specifications

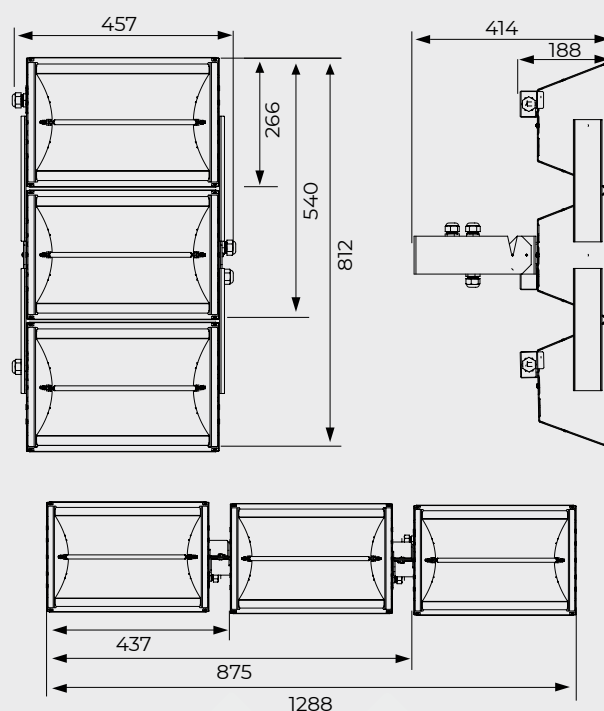
- ✓ Protection degree | **IP55**
- ✓ Installation height | **Up to 7 m**
- ✓ Tilt support | **Max. 45°**
- ✓ Radiation | **Short-wave**



Suitable for mounting at high heights, such as industrial warehouses, auditoriums, sports equipment, even outdoors in ski resorts.



Dimensions (mm)



Model **PIM L**
Horizontal mounting

Model **PIM P**
Vertical mounting

TYPE	CODE	V	W	COVERAGE	KG
PIM1-20 DEEP	33541	230	2000	6 m ²	2,5
Model P, vertical position:					
PIM2P-40 DEEP	33552	230	4000	12 m ²	4,22
PIM3P-60 DEEP	33562	400	6000	18 m ²	6,00
Model L, horizontal position:					
PIM2L-40 DEEP	33551	230	4000	9 m ²	3,93
PIM3L-60 DEEP	33561	400	6000	12 m ²	5,6

HOT-TOP

Black Heat Radiator

Long-wave infrared, another radiation heating system, gentle and broad.

Discreet design, without light or glare, adaptable to any environment.

It incorporates armoured heating elements siliconed to reach IP67 and preserve them from humidity and a heating screen that helps increase the radiant surface and spread the heat.

Better thermal performance than short-wave models. Supplied with wall support.

Technical specifications

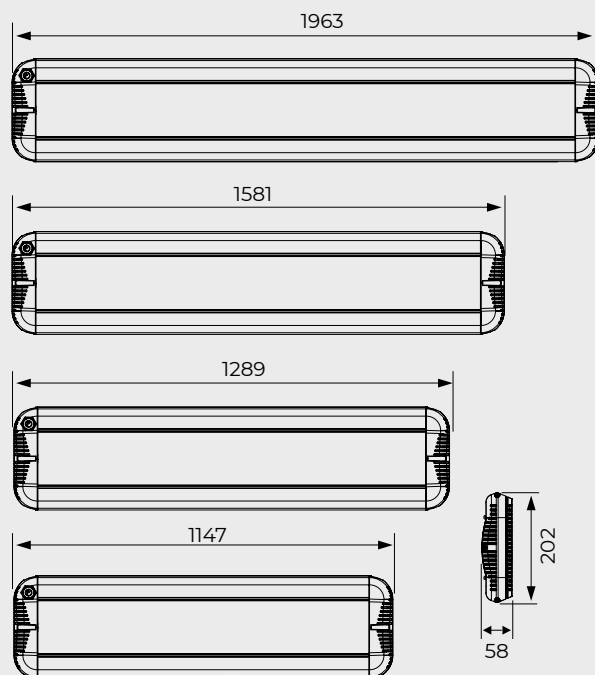
- ✓ Protection degree | **IP55**
- ✓ Armored heating elements
- ✓ Radiation | **Longe-wave**



Recommended for interiors and spaces where a discreet design and installation is required.



Dimensions (mm)



TYPE	CODE	V	W	COVERAGE	KG
HOT-TOP15	33581	230	1500	5 m ²	5,7
HOT-TOP18	33582	230	1800	7 m ²	6,4
HOT-TOP24	33583	230	2400	9 m ²	7,8
HOT-TOP32	33584	230	3200	12 m ²	9,8

Accessories:

TYPE	CODE	DESCRIPTION
TWIN	33681	Double support 7704
EXTENSION	33683	Rear extension support 7706



FAN HEATERS

Power calculation: to reliably the characteristics and temperature losses of the premises, the following must be taken into account: orientation, type of walls (partition walls, exterior, etc.), insulation, construction materials, window surface, planned ventilation (m^3/h), etc.

WARNING: For precise calculation, consult the R.I.T.E regulation; a complete analysis by an architect or engineer responsible for the work is necessary.

As a guide, this formula can be used for a first estimate. How to calculate the power required to maintain the temperature:

$$\text{Power required (kW)} = \frac{\text{m}^3 \times \Delta^\circ\text{C} \times K}{1000}$$

m^3 Air volume: Capacity of the premises, Length x Width x Height of the premises.

Δ Temperature $^\circ\text{C}$: Temperature difference between the outside and inside of the premises.

K Constant:

- 1.25 W/m^3 Very well insulated premises: all walls and ceiling internal, one external. Maximum surface area with doors or windows in walls 15%.

- 1.75 W/m^3 Well-insulated premises: the ceiling and two or three walls face the outside, with a maximum of 30% of the walls give doors or windows.

- 2.20 W/m^3 Uninsulated room: room with uninsulated walls and ceiling but with internal lining.

- 3.50 W/m^3 All exterior premises: cabins or light metal or wood constructions, exposed on four sides.

EXAMPLE: Room of 20 x 10 x 3.5 m (700 m^3) without insulation ($K = 2.20$), with an exterior temperature of 5°C and wanting to maintain 20°C inside (Differential Temp. = 15°C)

$$\text{kW} = \frac{700 \times 15 \times 2,20}{1000} = 23,1 \text{ kW}$$

RESULT: The calculation indicates that a power of 24kW is necessary to achieve the temperature increase in one hour.

IES has a wide range of fan heaters (from 3.2 to 27kW) offering the possibility of purchasing one or more units depending on the characteristics of the installation.

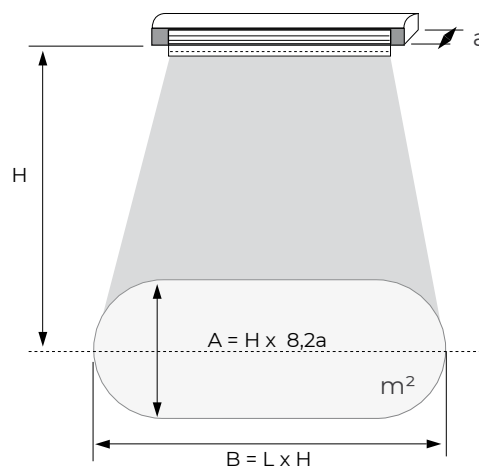
RADIATORS

Installation calculation: when carrying out an installation project, the capacity or volume of the premises is not taken into account but rather its area and even of this, only those places occupied by the personnel, since it is not necessary to heat empty spaces.

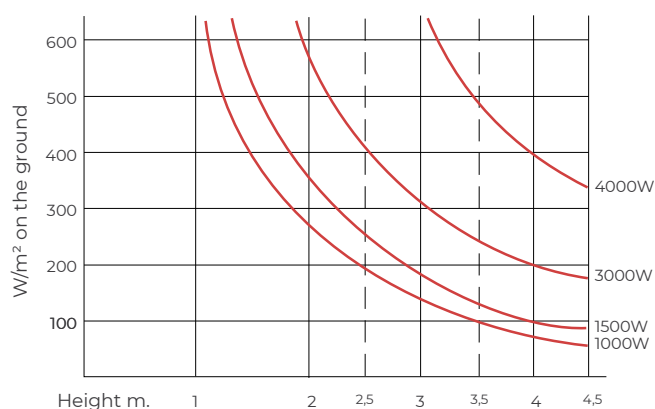
1. Calculate the area to be heated in m^2 (only occupied)
2. Set the heat density according to the characteristics of the premises:
 - Small and well insulated interiors 150 to 250 W/m^2
 - Large and well insulated interiors 200 to 300 W/m^2
 - Large and poorly insulated interiors 250 to 350 W/m^2
 - Exposed exteriors, "shock" effect 400 to 500 W/m^2
3. Determine the power, number and type of radiators according to the above data.
4. Determine installation height and inclination angle to obtain maximum performance. Typical installation height is between 2.5 and 3.5 m.
5. Distribute the radiators depending on the surface and available fixing locations. It is recommended to overlap the irradiated surfaces by 10% to obtain a continuous feeling of comfort.

EXAMPLE: The formula indicates the area irradiated horizontally.

$$(H \times 8,2a) \times (L \times H) = \text{m}^2$$



Grp.: Approximate height of radiators by W/m^2



DISTRIBUTOR:



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