infra-SOLS

Infrared radiators

Marine & Habitat

MARINE DEPARTMENT

Infrared radiators

Comfortable, healthy and economic heat

The best marine heating !

INFRASOLS - 6 rue des Rivières - **37140 Chouzé sur Loire**

09 88 05 33 34 / 06 08 68 07 85

Contact : roger.amirault@infrasols.fr - **www.infra-sols.fr**

RCS Tours - SIRET : 797 955 382 00016 - APE 4752B - N° TVA intracommunautaire : FR 24 803 117 712

LE NOUVEAU CHAUFFAGE INFRAROUGE

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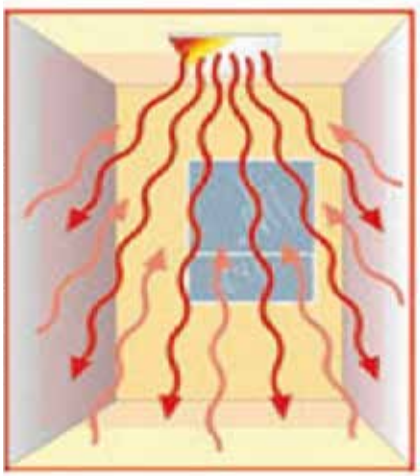
THE PRINCIPLES OF THE NEW LONG INFRARED HEATING – – NCIR
WHAT IS NEW ABOUT NCIR COMPARED WITH 'OLD STYLE' INFRARED ?

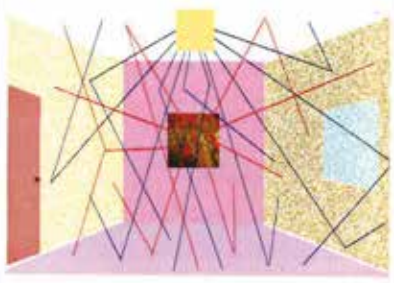
The radiator releases infrared rays that warm materials and persons like the sun.
In turn, these become emitters and thus gradually release heat.
Black Sun radiators transmit 80% of their energy in the form of 'far or long' radiation and 20% in the form of convection.
Older generations of infrared heaters comprised resistances issuing infrared rays with a very low output.
Essentially they were convectors with a radiating portion.
Moreover, they are near infrareds (see below).

CHARACTERISTICS OF INFRARED RADIATION



INFRARED HEATING

Schematic of heaters radiation
can be hang to wallor ceiling.



The radiation length flugtuates between 3,00 to 8,00 meters.According to wall's reflection, articles and furnitures in the room.

For your heaters, choose a regulation :
Deport thermostats for better economy, programmable radio or connect thermostats on power plug.

Infrared radiation (IR) is a non-ionising electromagnetic radiation similar to visible light, with a longer wavelength, just above the colour red in visible light, and hence invisible: IR radiation covers a wavelenght range between 700 and 1000 nanometres (nm, millionth of millimetre).
Infrared radiation types are distinguished by their wavelength and intensity.
Infrared rays are divided into three types: 'near' IRA (700-1400nm), 'mid' IRB (1400-3000nm) and 'far' IRC (3000-10000nm), beyond which we have submillimeter microwaves.
The main property of infrared is the thermal radiation which produces warmth for heating, drying…when it is absorbed by a body or materials, notably in 'far' IR rays which offer an air reach over several meters.
IR heating radiation principles. Can be located on the wall or ceiling as desired.
Radiation length varies between 3m and 8m according to the reflection from walls, objects and furniture in the room.
For your radiators, use a control: remote/radio programmable/plug-in thermostats for greater savings.)

ANOTHER WAY TO THINK ABOUT HEATING

At home, only heat what needs heating! Would you raise the temperature of your kitchen to 100 C degrees to boil a pan of water?
Whereas traditional convection heating is designed to heat the air of a given volume, e.g. a room and its contents, the new infrared heating directly warms materials and persons.
Hence the heat is transmitted directly between the radiator and the person.
Moreover, some places are difficult or impossible to insulate (cave/underground dwellings, large exhibition halls, work stations in garages/workshops, etc).
In all cases, infrared heating is also an appropriate response.

PERFORMANCES

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Indications for an enclosed room	
Heating power	Heated surface area
200 Watts	3 to 6 m^2
300 Watts	4 to 8 m^2
400 Watts	6 to 12 m^2
500 Watts	8 to 14 m^2
600 Watts	12 to 18 m^2
800 Watts	14 to 22 m^2
1000 Watts	16 to 28 m^2

Black Sun Heating's technology is also of interest on land. By avoiding the use of forced hot air, the system does not raise dust and heats materials directly. Hence naval shipyards employ it for the painting of ships.
We equipped a hall for the Belgian navy to this end. With 360 'Varmigo' panels, we have accelerated the drying process and gained 13 degrees within this huge hull, providing stability and robustness. The workers have also gained productivity as they can work in winter.

ENVIRONMENT / CLIMATE

0 carbon emissions

No CO2, no fine particles, no nitrates

INFRARED

100% recyclable

Garantie 10 YEARS

Our equipment is guaranteed for 10 years.

Odourless, silent.
No forced air = no dust/pollen/mite circulation.

GARANTIE +2 GARANTIE

Electric regulation modules.

Remote control of your long black sun infrared heating.

%

No dampness with our system. The interior of your vessel will remain dry. A soaked oilskin dries out in six minutes.

IP 67

We meet IP67 standards.

No maintenance, compact, readily installed and integrated in your electric network.

An end to pointless fuel consumption in our ports: with InfraSols you can charge at berth in 220 V by also avoiding the overload on your electricity network.

No fuel to heat your office. 0 CO2 emissions from our equipment.

MADE IN EUROPE

Our equipment is assembled in Belgium at **Black Sun Heating.**

BLACK SUN HEATING

Parts suppliers are located in Marne la Vallée and Alsace to ensure responsiveness and reduced supply times.

SUR MESURE

We can offer tailored manufacturing to provide an efficient means to heat your vessel.

THE RADIATOR RANGE - 12V, 24V, 230V

200 W
300x300 mm
Low tension

400 W
350x350 mm
Low tension

2000 W decorated - hand painted – 600-1200mm

LED Surround

Mirror-look

For terraces

CUSTOMER REFERENCES

BERNARD DE RAVIGNAN

-InfrasSOLS – IS: Mr de Ravignan, you are well known in the sailing world but could you present yourself briefly to a broader public?;
Bernard de RAVIGAN – JdeR: 'Let's say a dedicatee of the high seas, sailing adventures and real encounters).
-IS: You were already equipped with heating. Why did you seek out a new system?
JdeR : 'La Cardinale is a 16m steel schooner ideally suited to our type of sailing. Over five years we have sailed through the channels of Patagonia, circumnavigated Cape Horn a number of times and undertaken two two-month expeditions in Antarctica. We needed a second heating system and we were attracted by the technical simplicity of Infrasols' radiators as presented made by Roger Amirault at the Crouesty Boat Show. On board, we now have a Reflex fuel heating system plus the 9 highly efficient Infrasols radiating panels. Installation was easy.'
IS: You have been using this Infrasol heating for five years, how has it worked out? Has it provided anything in addition to your other types of heating?
JdeR: 'Basically, very ease to use and highly efficient: oilskins are dried out despite hostile external conditions. Inside, it is comfortable! 'A ray of sunshine on board'.. Technically, it is a simple piece of equipment. No mechanical parts and hence no decay. Heat regulation is very easy to control. Maintenance is limited and this is reassuring.
IS: Would you recommend this set-up to other sailors?
JdeR: 'Yes, of course! It is clean and safe, with no risk of overheating or loss of energy on line. The system can be adapted to any type of vessel, subject to good control of the batteries and their suitability to the given power.
IS: Do you have any anecdotes in this respect?
JdeR: 'Well, yes, if you like. Stop-over guests immediately expressed their pleasure. When they joined us on board they noticed the difference with their own yachts: this prompted skippers to ask about the Infrasols system. La Cardinale was often chosen as the 'port local' for its pleasant heat and comfort'.

OLIVIER CREIGNON – 56552 BELZ

Our yacht is a Cornish Crabber 22. The IR radiator and thermostat were installed at the shipyard of origin in England.
The heating has worked well for six years. It is installed in the saloon of a 6.7m yacht based in La Trénité. The heating is connected to the 220V network and functions when we are berthed at the pontoon of a port. At the start and end of the season, it easily heats the whole boat, and without occupying any floor space. It also dries the air in the interior, which is agreeable and practical. The radiator is attached to the saloon wall and the frosted glass finish is discreet and suits the cosy atmosphere of our mahogany interior.

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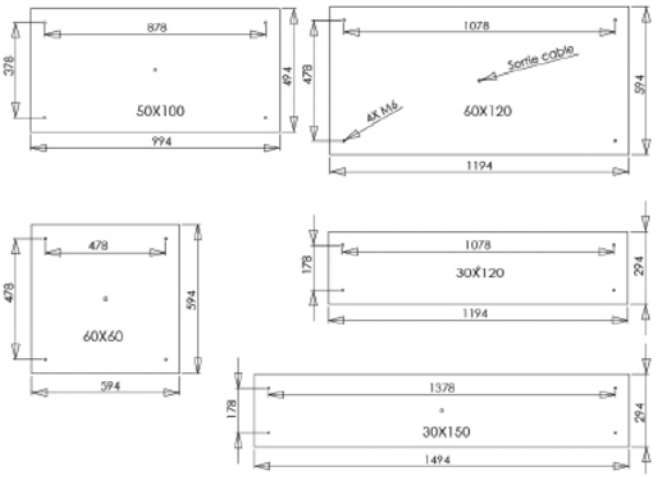
MARINE DEPARTMENT

Technical spécifications						
Model	Dimension (mm)			Weight (Kg)	Power (Watt)	
	Width	Length	Thickness		Start	Usual
Performance 30/120	294	1194	35	6	950	700
Performance 50/100	494	994	35	8,5	1350	1000
Performance 60/60	594	994	35	6	950	700
Performance 60/120	594	1194	35	12	1900	1400

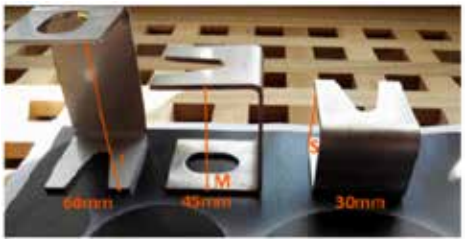
Standard spécifications		
Surface temperature	Adjust. from 120°C to 160°C(1)	
Tension	230 V	
Frequency	50 Hz	
Panel protection index	IP41	
Electrobox protection index	IP40	
Thermocontrol protection index	IP40	
Materials heating surface	Floated glass	
Materials rear insulation	Ultimate + plaque aluminium	
Frame materials	Aluminium	
IEC power cable	Section	3x1,5 mm
	Length	2000 mm
Maintenance	No	
Panel warranty	10 years	
Electronic warranty	2 years	

(1) Setting for installation beight according to European standards



Options	
Frame color	Alu silver by default or RAL optional
Glass colors available	Shiny white, Shiny black, Smoked mirror, Diamond Matt White
Mounting Brackets Inox Small (S)	35x40x30 mm (4x45 gr)
Mounting Brackets Inox Medium (M)	35x40x45 mm (4x53 gr) (2)
Mounting Brackets Inox Large (L)	35x40x60xmm (4x61 gr)
Inox angle 45 degree fixation	200x250x24 mm (2x890 gr)

(2) By default included



Warning

Plase read carefully the installation and operating instructions

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GARANTIE 2 ANS électronique

GARANTIE 10 ANS panneau

ALLIANCE VERTE PARTENAIRE

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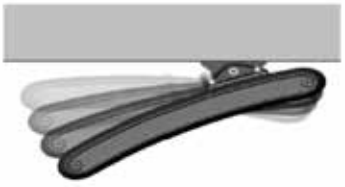
Technical spécifications						
Model	Dimension (mm)			Weight (Kg)	Power (Watt)	
	Width	Length	Thickness		Start	Usual
83x30	830	300	70	9	1100	1100
83x50	830	500	70	14	2200	2200

Options	
Optional color	White
Custom image / logo	Resolution 150 dpi to 100%
Tripod	Black
Tripod connection tube	Black
U support medium or large	Black or White
Remote control (RF)	ON/OFF Thermostat (2 years warranty

Warning

Please follow the installation and operating instructions



Standard spécifications		
Surface temperature	365°C	
Tension	230 V	
Frequency	50 Hz	
Protection rating	IP65 (Weatherproof)	
Materials heating surface	Enamelled steel	
Back insulation materials	Pyrogel + aluminium with alveoli	
Materials Framework	Aluminium with alveoli	
Power cable	Section	3x2,5 mm
	Length	1500 mm
Standard color	Black	
Maintenance	No	
Panel guarantee	5 years	

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SIZES LIST / POWERS

	Reference	tension	Power		Surface	
			usual (1)	cable	type	color
		(Volts)	(Watt)	(mm2)		
	BAT_3535_12_01_R01					White
	BAT_3535_12_02_R01					Black
	BAT_3535_12_03_R01				glass	mirror
	BAT_3535_12_04_R01		100		metal	White
	BAT_3535_12_11_R01					White
	BAT_3535_12_12_R01					Black
	BAT_3535_12_13_R01				glass	mirror
	BAT_3535_12_14_R01	12 VDC	150		metal	White
	BAT_3535_24_01_R01					White
	BAT_3535_24_02_R01					Black
	BAT_3535_24_03_R01				glass	mirror
	BAT_3535_24_04_R01		100		metal	White
	BAT_3535_24_21_R01					White
	BAT_3535_24_22_R01					Black
	BAT_3535_24_23_R01				glass	mirror
35X35	BAT_3535_24_24_R01		200	2X1,5mm2	metal	White
	BAT_3560_24_41_R01					White
	BAT_3560_24_42_R01					Black
	BAT_3560_24_43_R04				glass	mirror
35X60	BAT_3560_24_44_R01	24 VDC	400	4X1,5mm2	metal	White

FULL RANGE OF PRODUCTS 220V WITH EXTERNAL ELECTRONIC

35X35	BAT_3535_220_21_R01	220 VAC	200	2X1,5mm2	glass	white
	Model with external electronic					
35X60	BAT_3560_220_41_R01	220 VAC	400	2X1,5mm2	glass	white
	Model with external electronic					

Accessories

BSHCZC1	CZC1	thermostat freewire

BSH450905	ELECTROBOX	External Electrobox for 220V

Each heater destined to the navigation, navy and nautical is duly double-checked in submersion (classe IP 67).

No CO2, No thin particle, No nitrate

NO EMISSION CARBON

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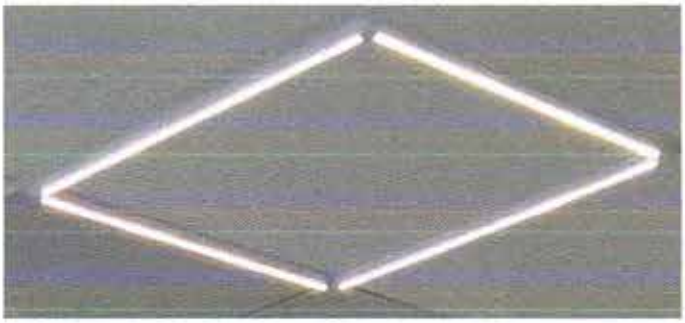
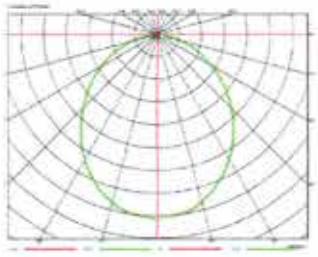
TECHNICAL SPECIFICATION OF PLEZURA PERFO-POP



First Paving stone of ceiling infrared heating + LED lighting

Ceiling frame
T15 or T24

Generals Specifications	Infrared Heating	LED Lighting
Format	546x546x16	595x595x12
Surface of radiation	542x542	575x(è(
Structure color	Lustreless	LUSTRELEDS
Isolating	Pyrogel XT10	
Adjusting driver	Lock power supply jack port 1	Lock power supply jack port 2
Powers	400W usual, 550 Start	40W
LED power		500-1050 mA +/- 5%
Range of tension	220 VAC	25~42VDC
Temperature of color	No visible radiation	Neutral White 4000°K
Flow		1600 4000 lm
IRC	120°	>82
Angle		90°
UGR		<19
Wear of life (70% at Ta=20°C)		50.000 hours
Operating temperature	-20~+130°C	-20~+40°C
Operating tension	210~230VAC	100~240VAC
Operating frequency	50~60Hz	50~60Hz
Regulation	Resistible type	1-10VDC
Total power	Up to 550W	Up to 44W
THD		>0.15
Power factor	> 0.9	>0.9
Ta, Tc		30°C, 70°C
Net weight	4.5 Kg	0.6 Kg
Conformity	CE 89/336/EEC & CE 73/23/EEC	CE, RoHS, IP20, CL2
Guaranties	Panel = 10 years, electronic = 2 years	LED = 5 years, driver = 2 years



Drive by a **Panelo**
Mural instruction
case or via domotic

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