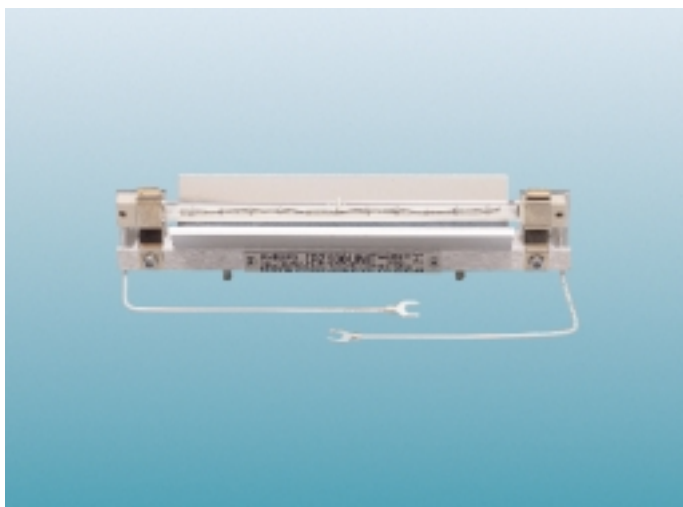


# Infrared heat lamps

# Reflectors and lampholders for halogen lamps



Reflector IRZ



Reflector IR3



Holder 6707

## Definition

Reflectors units suitable for one Quartz Infrared Halogen Lamp of either 500 W or 1000 W with SK15/Z cap. The lamps fit in holders on each side of the unit.

Lamp Holders for Quartz Infrared Halogen Lamps with X-clip or SK15/Z cap. Each lamp requires two holders.

## Description

Aluminium reflectors for one Quartz Infrared Halogen Lamp supplied with two screws for easy mounting on customed frame. High infrared reflective material above 90 %.

Infrared radiation can be directed specifically at the object.

Light and cost effective heating systems.

Easy mounting and easy maintenance.

Can be component for bigger radiant unit.



*Prolonged looking at the lamp during operation may result in damage to the eye.*



Holder 7646/00

# Infrared heat lamps

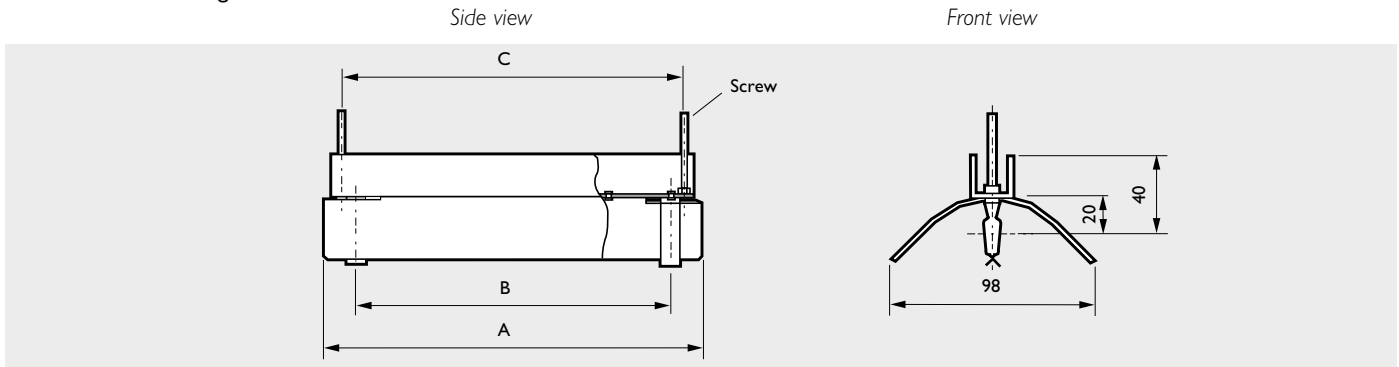
# IR3 Reflectors characteristics

Highly efficient parabolic reflector for 20 to 30 cm distances, made of anodized aluminium.  
 Its orange peal surface structure smoothen the irradiance curve of the heat distribution.  
 Its special design (shape and surface) achieves the most homogeneous irradiance over the heated surface in combined reflector arrangement: multiple crosswise or staggered installation (see calculations).

### Applications

- Plastic thermoforming,
- Textile industry: drying textile materials,
- Floor covering: heat treatment of carpets and various floor covering.

### Technical and ordering data



Dimensions in mm

Reflector	Ordering number	A	B	C
IR3 236*98	9145.100.00300	236	196	215
IR3 366*98	9145.100.00400	366	326	345

### Lamp fitting:

Type	Power	voltage	for lamp type	Burning position	finish
IR3-236*98	500W	235V	13169Z	horizontal	Clear
			13169Z/98	horizontal	Reflector
IR3-366*98	500W	235V	15016Z	horizontal	HeLeN
			15007Z	horizontal	HeLeN
	2000W	235V	13402Z	universal	Clear
			15009Z	universal	HeLeN
			15004Z	horizontal	HeLeN
14103Z/98	horizontal	Reflector	15005Z	horizontal	HeLeN
			13168Z/98	universal	Reflector

When operating : check that reflector temperature stays below 250 °C.

### Calculations with IR3 reflectors in multiple staggered installation

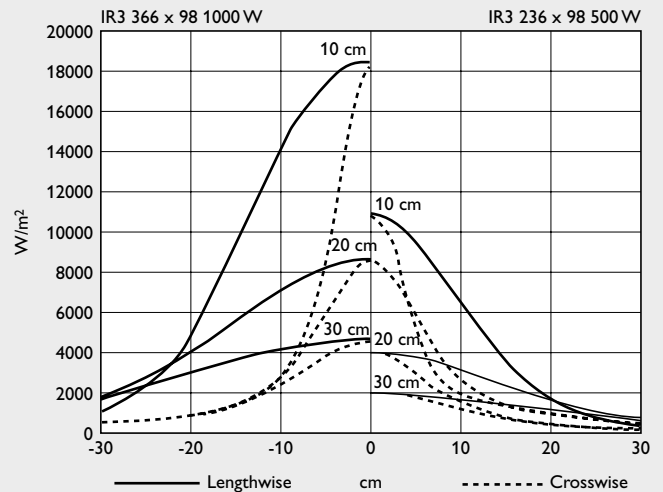
D :	Average uniform irradiance in W/m <sup>2</sup>			Center to center (cm)	
	10 cm	20 cm	30 cm	LW	CW
IR3 236*98	14 000	12 000	10 000	24	11
IR3 366*98	20 000	18 000	15 000	39	11

Indicative value

### Irradiance distribution curve for one unit

Irradiance distribution at 10, 20 and 30 cm, cross wise and length wise for:

- lamp 1000 W 13402Z (left)
- lamp 500 W 13169Z (right)



Indicative value



# Infrared heat lamps

# IRZ Reflectors characteristics

Aluminum reflector suitable for one Quartz Infrared Halogen Lamp, it offers a good uniformity of the infrared radiation on short distances, about 20 cm.

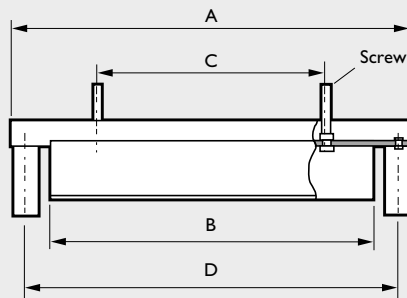
Small dimension of the reflector enables high power densities when installed in combination (see calculations). To optimize radiation output, you may use lamps with white reflector (.../98).

## Applications

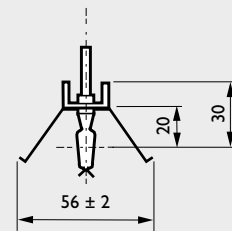
- Catering: food grilling and fast food industry, food warming (20 to 30 cm).
- Various industrial processes.

## Technical and ordering data

Side view



Front view



Dimensions in mm

Reflector	Ordering number	A	B	C	D
IRZ 500	9145.100.00100	230	170	120	196
IRZ 1000	9145.100.00200	360	300	250	326

## Lamp fitting:

Type	Power	Voltage	for lamp type	Burning position	finish
IRZ 500	500W	235V	13169Z/98	horizontal	Reflector
IRZ 1000	500W	235V	15016Z	horizontal	HeLeN
	1000W	235V	13195Z/98	horizontal	Reflector
			15007Z	horizontal	HeLeN
			13713Z/98	universal	Reflector
			15009Z	universal	HeLeN

When operating : check that reflector temperature stays below 250 °C.

## Calculations with IRZ reflectors in multiple staggered installation

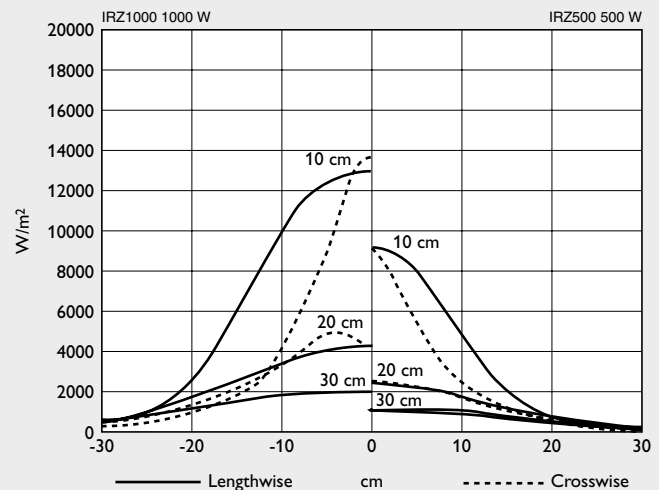
D :	Average uniform irradiance in W/m <sup>2</sup>			Center to center (cm)	
	10 cm	20 cm	30 cm	LW	CW
IRZ 500	21 000	16 000	13 500	23	6
IRZ 1000	28 000	23 000	17 000	38	6

Indicative value

## Irradiance distribution curve for one unit

Irradiance distribution at 10, 20 and 30 cm, cross wise and length wise for:

- lamp 1000 W 13713Z/98 (left)
- lamp 500 W 13401Z/98 (right)



Indicative value

## Aluminium lampholder 6707

Intended to hold Quartz Infrared Halogen Lamps with cables and SK15/Z cap.

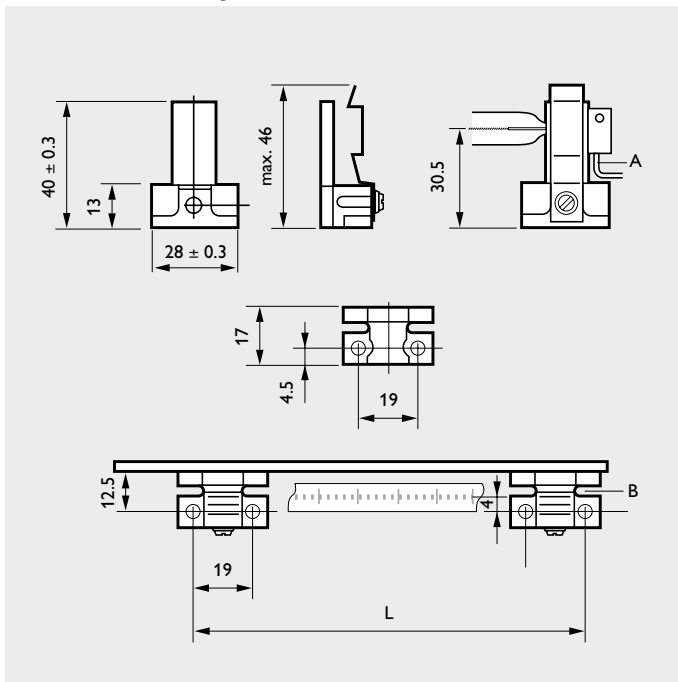
The connection cables (A) of the lamp should pass through the slots (B) of the holder (see drawing). Make sure that the two lamp holders are precisely in line with each other to avoid mechanical stress or torsion of lamp.

## Ceramic lampholder 7646/00

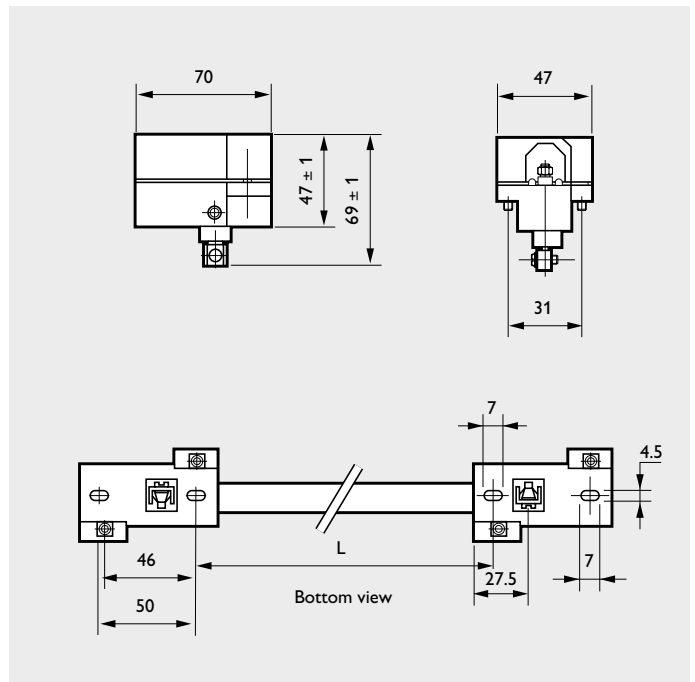
Intended to hold and connect Quartz Infrared Halogen Lamps with X clips.

Compensates thermal expansion of the system, therefore the holder should be connected to mains with cables. Protects the pinches of lamp from reflected radiations.

### Technical and ordering data



Dimensions in mm



### 6707 Dimensions and mounting

For type	Wattage	L nominal
13169Z	500W	222.5
13169Z/98	500W	220.0
15016Z	500W	352.5
13842Z	700W	208.0
13402Z	1000W	352.5
13195Z/98	1000W	352.5
13713Z/98	1000W	352.5
15007Z	1000W	352.5
15009Z	1000W	352.5
15004Z	1500W	352.5
14103Z/98	2000W	352.5
13168Z/98	2000W	352.5
15005Z	2000W	352.5

### 7646/00 Dimensions and mounting

For type	Wattage	L nominal
13169X	500W	191
13169X/98	500W	191
13195X	1000W	320
13195X/98	1000W	320
13713X	1000W	320
13713X/98	1000W	320
15008X	1000W	320
13168X	2000W	320
13245X	2000W	458
13245X/98	2000W	458
13765X	2000W	458
13765X/98	2000W	458
13565X	3000W	320
13230X	3000W	748
13230X/98	3000W	748

Type	Lamp cap	Material	Ordering number
6707	SK15/Z	Aluminium	9145 100 00500
7646/00	X clip	Steatite	9145 100 00600

# Infrared heat lamps

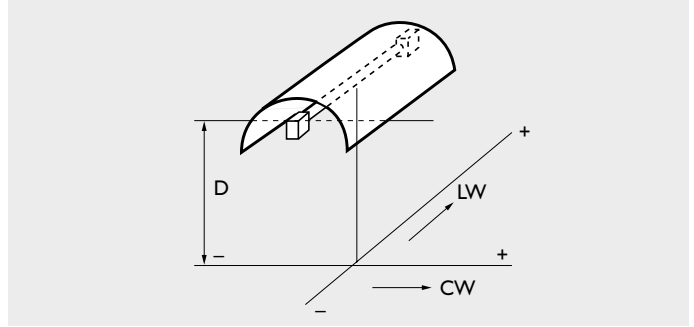
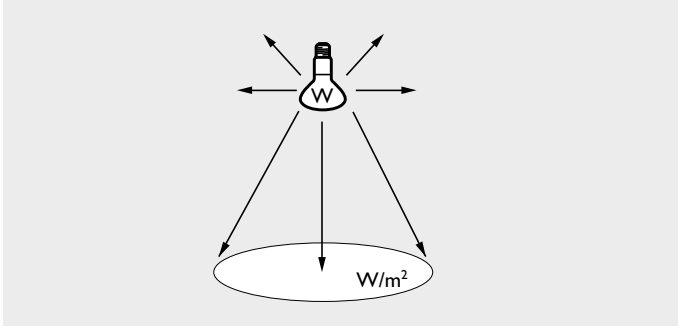
# Irradiance: definition, measurements and calculations

## Definition

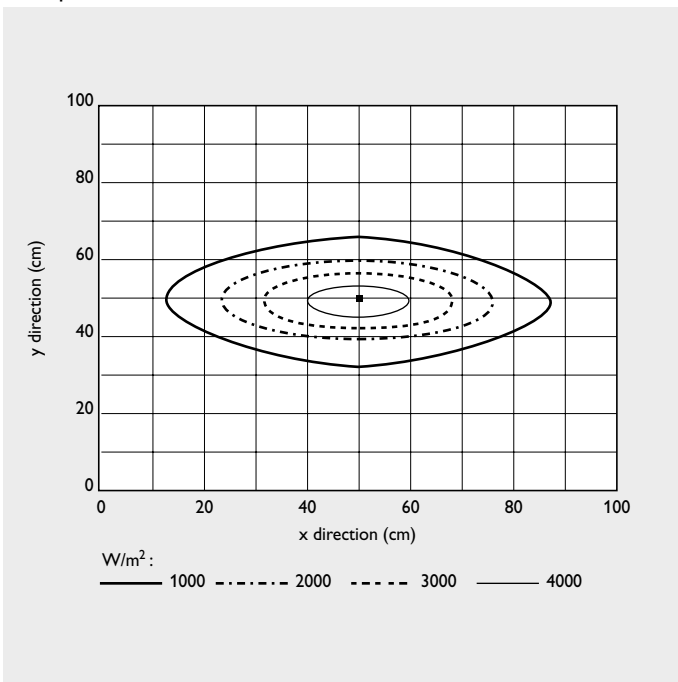
Irradiance : quotient of the radiated power received, by a given surface, by the area of that surface.  
Unit:  $W/m^2$ .

## Measurement

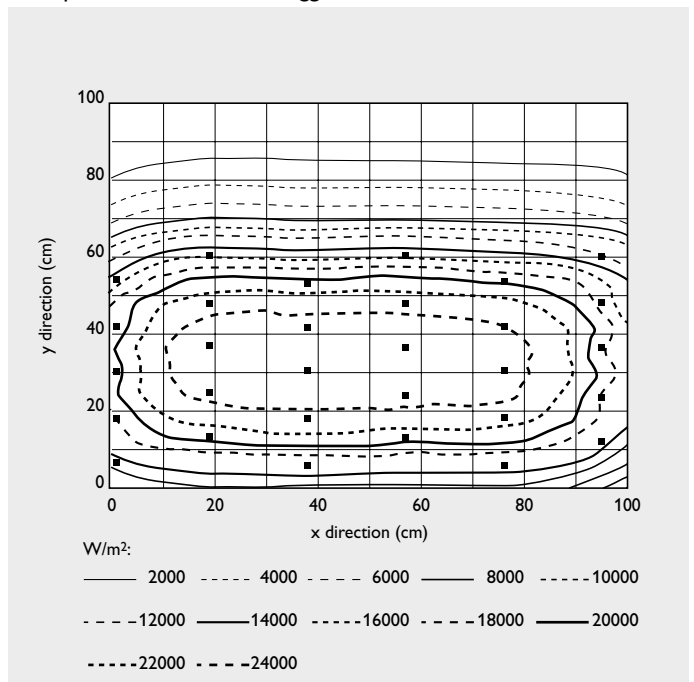
Irradiance is measured with a special calibrated sensor. At a given distance  $D$ , two measurements are necessary to modelise a radiator: the cross wise (cw) and the length wise (lw) measurements.



Example of calculation for one IR3 reflector at 30 cm

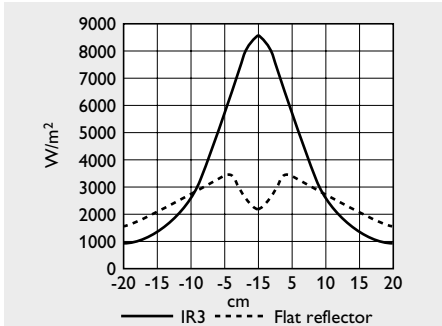


Example of calculation for staggered IRZ reflectors at 20 cm

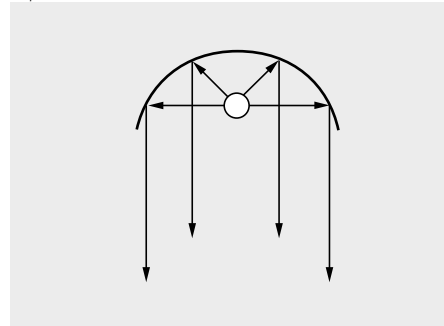


## Reflectors' contribution to irradiance

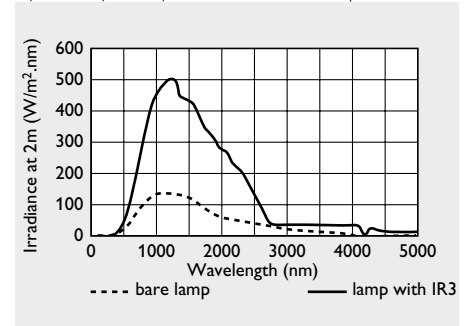
Parabolic IR3 contribution to irradiance:  
a better efficiency.



A focussed radiation.



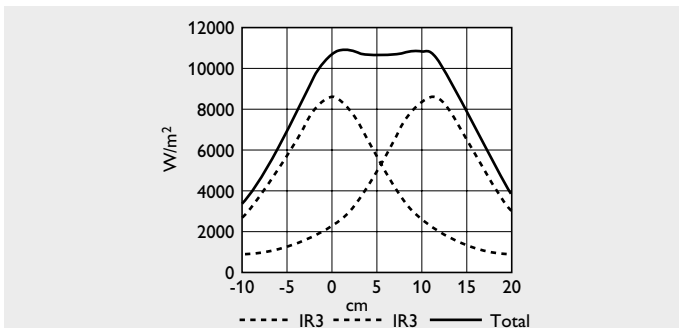
Influence of IR3 reflector on the emitted spectrum.



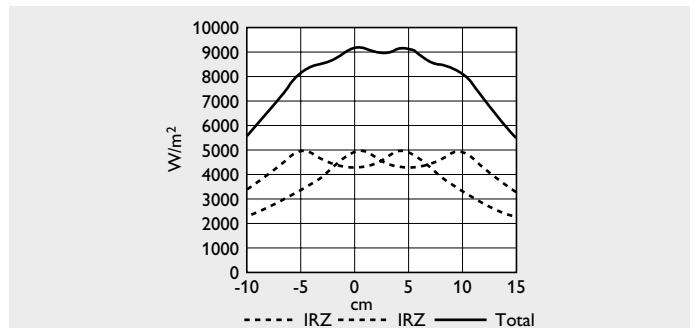
## Best use of reflectors

Reflectors combination: uniform irradiance by cross wise installation with IR3 and with IRZ.

Two IR3 reflectors D = 20 cm  
Center to center = 11 cm



Two IRZ reflectors D = 20 cm  
Center to center = 5 cm



## Use of vitroc ceramic to protect from dust

In dusty environment, vitroc ceramic may be used to protect the reflector and the lamp from dust thanks to the fact that 90 % of the short infrared emission is transmitted.

Preferable reflector arrangements above the operating belt

