

SYLVANIA

Infra Red lamps

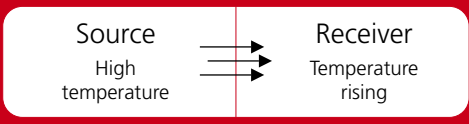


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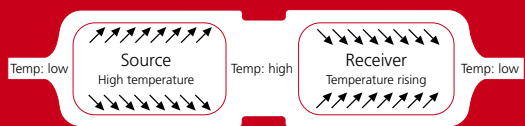
INTRODUCTION

Thermal energy can be produced by various different technologies, such as the combustion of fuels, electrical methods, frictional energy, chemical reactions etc. Once the heat has been generated it is generally desired to transfer this energy to an object whose temperature is to be increased. This can be accomplished by one of three different mechanisms:

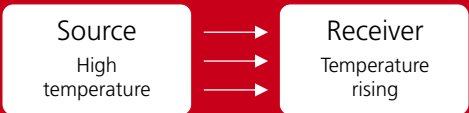
1 Conduction: Direct contact is established between the heat source and a cooler object, and thermal energy is transferred across the boundary.



2 Convection: This is a mechanism of heat transfer through a fluid (i.e. gases, air, liquids), and it involves the heating of the fluid which then flows away and transfers its heat to another object.



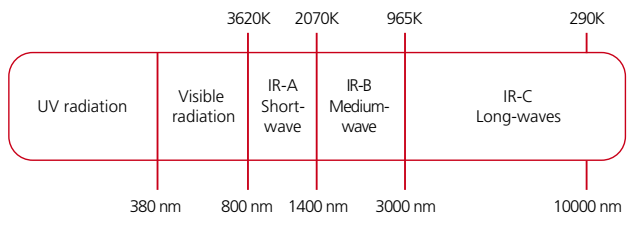
3 Radiation: This is a contactless method of heat transfer in which thermal energy is transmitted in the form of electromagnetic radiation. A high temperature object radiates heat through a medium which is transparent to this radiation (i.e. air), and objects which absorb the radiation will be heated.



The infra-red domain can be divided into three distinct ranges according to wavelength, specified in fractions of a metre.

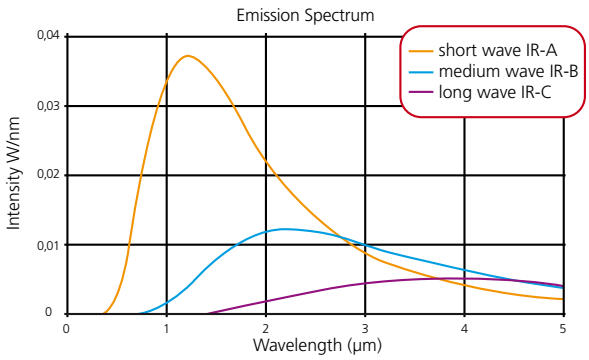
$$1\text{m} = 1,000\text{mm} = 1,000,000\mu\text{m} = 1,000,000,000\text{nm}.$$

- **Short wave IR-A: (780-1400nm):** This is produced by infra red lamps operated at a high colour temperature of around 2200K, which results in the generation of short wavelength radiation. The radiant efficiency is very high at around 92%. The heat source is a coiled tungsten wire sealed into a quartz tube, typically also filled with halogen gases. When energised it provides instantaneous heat, and typical IR lamps radiate most of their energy in this region.
- **Medium wave IR-B (1400-3000nm):** By reducing the temperature of the heat source, the radiation is shifted to longer wavelengths. At a typical colour temperature of around 1300K the radiant efficiency decreases to 60%, but this is countered by the fact that certain materials are better at absorbing IR-B than IR-A radiation. A quartz emitter is typically used.
- **Long wave IR-C (3000 -10000nm):** At still lower temperatures, the heat source is only capable of producing low energy long-wavelength radiation. The source is a coil of resistance wire whose temperature is so low that it does not have to be sealed into a lamp to prevent its oxidation. Often the resistance wire is moulded into a ceramic panel. The radiant efficiency is about 40%, and long wave IR sources are characterised by their slow response times of several minutes.



The radiant energy produced by infra red halogen lamps has several advantages over other methods of generating heat, which transmit their energy by convection and conduction:

- Instant heat in milliseconds
- Dimmable: output can be adapted
- Heat can be focused and directed where it is needed
- Clean technology, no pollution or emissions
- Compact, compared to sources from combustion
- On/off switching does not affect lamp life, so that presence detection can be used



RUBY RED HALOGEN LAMPS



FEATURES

- Tubular envelope made from ruby red quartz (Ruby Slim)
- Secondary outer envelope made from red quartz (Ruby Jacket)
- Transmits virtually all infrared while blocking most visible light
- Instant on-off capability



Fig. 1

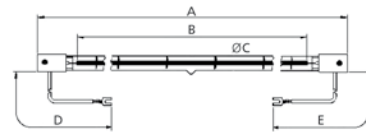


Fig. 2

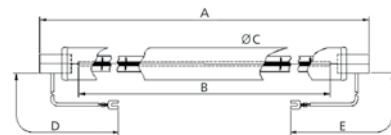
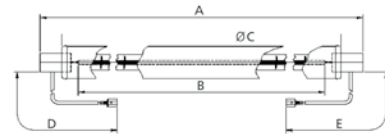


Fig. 3



APPLICATIONS

- Space heating of large rooms
- Outdoor heating of communal areas
- Energy efficient alternative to patio heaters

Ordering Code	Item description	W	V	Cap	Total Lamp Length A (mm)	Heating Length B (mm)	Diameter C (mm)	Finish
0033016	IR 1000W Ruby SK15 235V	1000	235	Sk15	353	280	10,5	Ruby Slim
0033017	IR 1200W Ruby SK15 235V	1200	235	Sk15	353	280	10,5	Ruby Slim
0033018	IR 1500W Ruby SK15 235V	1500	235	Sk15	346	270	20	Ruby Jacketed
0033019	IR 2000W Ruby SK15 235V	2000	235	Sk15	346	270	20	Ruby Jacketed

Ordering Code	Item description	Burning position	Average Lamp Life in h	Colour Temp. (K)	Cable X1 D (mm)	Cable X2 E (mm)	Cable Connection	Fig. N°	Packing Quantity
0033016	IR 1000W Ruby SK15 235V	Universal	5000	2450	230	230	Fork	1	10
0033017	IR 1200W Ruby SK15 235V	Universal	5000	2450	230	230	Fork	1	10
0033018	IR 1500W Ruby SK15 235V	Horizontal	5000	2350	230	230	Fork	2	10
0033019	IR 2000W Ruby SK15 235V	Horizontal	5000	2350	340	340	Tab	3	10

CLEAR QUARTZ HALOGEN LAMPS

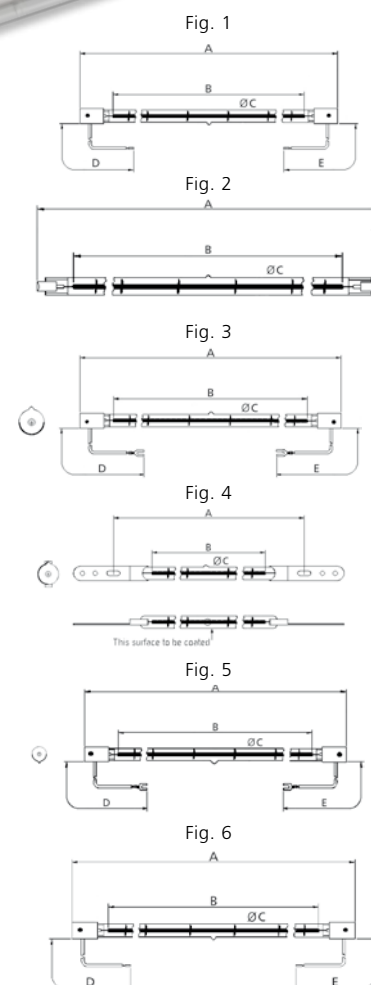


FEATURES

- Tubular envelope made from transparent clear quartz
- Transmits the full spectrum of visible and infrared radiation
- Clear lamps are the most efficient for transmitting infrared energy
- Instant on-off capability

APPLICATIONS

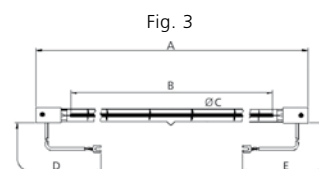
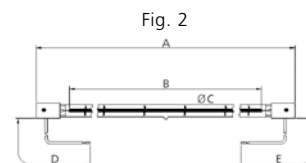
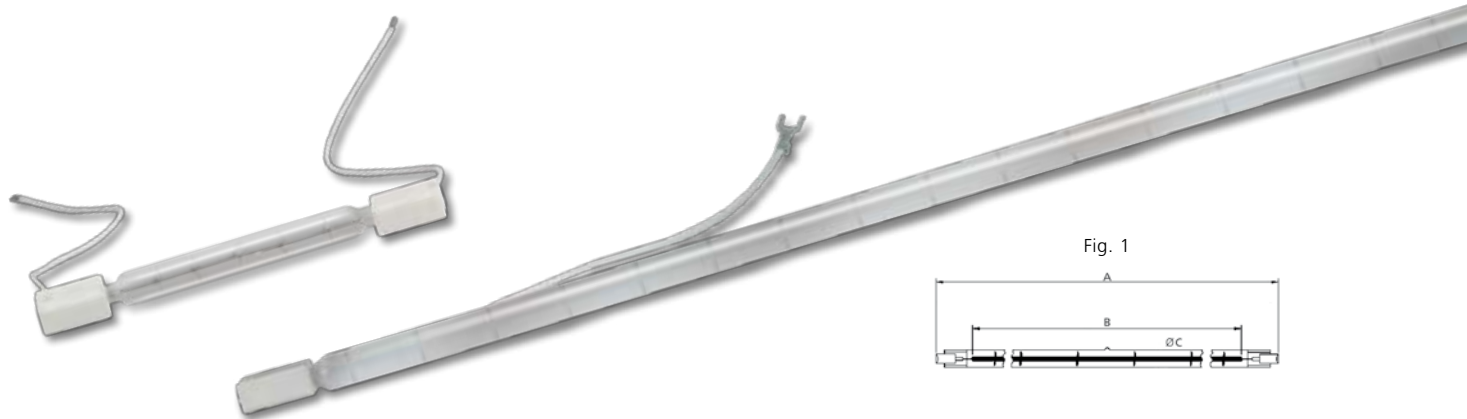
- The glare from the visible light component restricts these to industrial applications, eg
- Drying of paints in tunnels and automotive body shops
- Heating of plastics for PET bottle blowing
- High speed drying in paper production mills
- Drying of lacquers and printing inks
- Baking and curing of powder coatings
- Thermal sterilisation



Ordering Code	Item description	W	V	Cap	Total Lamp Length A (mm)	Heating Length B (mm)	Diameter C (mm)	Finish
0033020	IR 300W CL SK15 230V	300	230	SK15	120	60	10,5	Clear
0033021	IR 300W CL R7s 230V	300	230	R7s	117,6	60	10,5	Clear
0033022	IR 500W CL R SK15 240V	500	240	SK15	216	176	10,5	Reflector
0033023	IR 1000W CL R X 240V	1000	240	Metal strap X	370	270	10,5	Reflector
0033024	IR 1000W CL SK15 235V	1000	235	SK15	353	280	10,5	Clear
0033025	IR 1000W CL R SK15 235V	1000	235	SK15	353	280	10,5	Reflector
0033026	IR 1200W CL R SK15 235V	1200	235	SK15	222	157	10,5	Reflector
0033027	IR 2000W CL R SK15 235V	2000	235	SK15	353	270	10,5	Reflector

Ordering Code	Item description	Burning position	Average Lamp Life in h	Colour Temp. (K)	Cable X1 D (mm)	Cable X2 E (mm)	Cable Connection	Fig. N°	Packing Quantity
0033020	IR 300W CL SK15 230V	Horizontal	2000	2550	140	140	Splice	6	50
0033021	IR 300W CL R7s 230V	Horizontal	5000	2550	NA	NA	NA	2	100
0033022	IR 500W CL R SK15 240V	Horizontal	5000	2450	230	230	Fork	3	10
0033023	IR 1000W CL R X 240V	Universal	5000	2450	NA	NA	NA	4	10
0033024	IR 1000W CL SK15 235V	Universal	5000	2400	230	230	Fork	1	10
0033025	IR 1000W CL R SK15 235V	Universal	5000	2400	230	230	Fork	3	10
0033026	IR 1200W CL R SK15 235V	Universal	5000	2600	140	140	Fork	5	10
0033027	IR 2000W CL R SK15 235V	Horizontal	5000	2700	230	230	Fork	3	10

INFRA RED CABIN HALOGEN LAMPS



FEATURES

- Tubular envelope made from translucent (satin) or clear quartz
- Emits both visible light and infra red radiation
- Rapid on-off capability
- No pre heating of the cabin needed



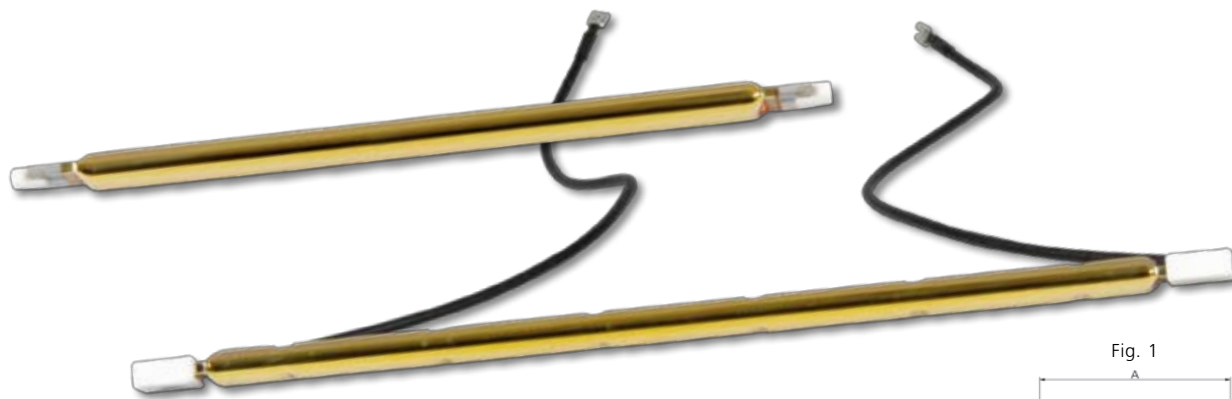
APPLICATIONS

- Personal care in infra-red cabins
- Optimised spectrum to penetrate deeper into the skin for more efficient heat dissipation
- Creates a softer and more pleasant heating sensation than regular lamps

Ordering Code	Item description	W	V	Cap	Total Lamp Length A (mm)	Heating Length B (mm)	Diameter C (mm)	Finish
0033028	IR 350W CL R7s 235V	350	235	R7s	185,7	115	10	Clear
0033029	IR 500W TL SK15 235V 700mm	500	235	SK15	787,5	700	11	Translucent
0033030	IR 500W TL SK15 235V 550mm	500	235	SK15	628,5	550	11	Translucent
0033031	IR 750W CL SK15 235V	750	235	SK15	787,5	700	11	Clear
0033032	IR 750W TL SK15 235V	750	235	SK15	787,5	700	11	Translucent
0033033	IR 750W CL SK15 235V	750	235	SK15	787,5	700	11	Clear
0033034	IR 1300W CL SK15 235V	1300	235	SK15	787,5	700	11	Clear

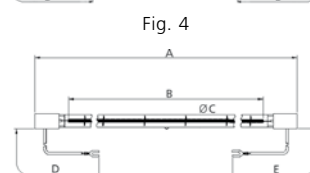
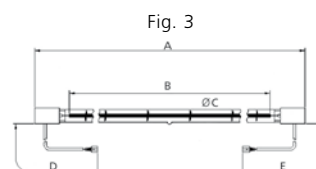
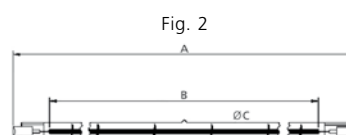
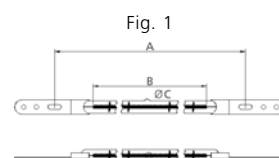
Ordering Code	Item description	Burning position	Average Lamp Life in h	Colour Temp. (K)	Cable X1 D (mm)	Cable X2 E (mm)	Cable Connection	Fig. N°	Packing Quantity
0033028	IR 350W CL R7s 235V	Universal	5000	1750	NA	NA	NA	1	80
0033029	IR 500W TL SK15 235V 700mm	Universal	5000	1750	1200	230	Splice	2	20
0033030	IR 500W TL SK15 235V 550mm	Universal	5000	1750	1200	230	Splice	2	20
0033031	IR 750W CL SK15 235V	Universal	5000	2000	1200	230	Splice	2	20
0033032	IR 750W TL SK15 235V	Universal	5000	1750	1200	230	Splice	2	20
0033033	IR 750W CL SK15 235V	Universal	5000	1750	1200	230	Splice	2	20
0033034	IR 1300W CL SK15 235V	Universal	5000	2000	230	230	Fork	3	20

GOLD FILTER HALOGEN LAMPS



FEATURES

- Tubular quartz envelope with gold dichroic coating
- Blocks more light than Ruby quartz types, for lower glare
- Advanced vacuum-sputtered coating won't crack or peel
- Coating extends right over the tip-off area – no light leaks



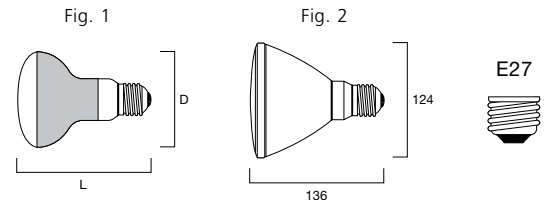
APPLICATIONS

- Gradually replacing ruby quartz types where reduced glare is desirable
- Creates comfort zones in the outdoor cold, ideal for patios, restaurants and cafés
- Efficient spaceheating in large buildings e.g. churches, halls, warehouses, garages, stadiums, exhibition halls etc
- Glare free de-icing of pedestrian walkways

Ordering Code	Item description	W	V	Cap	Total Lamp Length A (mm)	Heating Length B (mm)	Diameter C (mm)	Finish
0033035	IR 1000W Gold X 240V	1000	240	Metal strap X	370	280	12,5	Gold plated
0033036	IR 1300W Gold R7S 240V	1300	240	R7s	254	180	12,5	Gold plated
0033037	IR 1500W Gold SK15 240V	1500	240	SK15	353	280	12	Gold plated
0033038	IR 1500W Gold SK15 120V	1500	120	SK15	353	280	12	Gold plated
0033039	IR 2000W Gold SK15 240V	2000	240	SK15	353	280	12	Gold plated

Ordering Code	Item description	Burning position	Average Lamp Life in h	Colour Temp. (K)	Cable X1 D (mm)	Cable X2 E (mm)	Cable Connection	Fig. N°	Packing Quantity
0033035	IR 1000W Gold X 240V	Universal	5000	na	na	na	na	1	10
0033036	IR 1300W Gold R7S 240V	Universal	1000	na	na	na	na	2	100
0033037	IR 1500W Gold SK15 240V	Horizontal	5000	na	440	440	Tab	3	10
0033038	IR 1500W Gold SK15 120V	Horizontal	5000	na	300	300	Fork	4	10
0033039	IR 2000W Gold SK15 240V	Horizontal	5000	na	440	440	Tab	3	10

INFRA RED REFLECTOR INCANDESCENT LAMPS



FEATURES

- Integral reflector facilitates simple and economical installations
- Pre-focussed optics deliver intensely controlled radiation
- PAR38 lamps have a pressed hard glass bulb with precision-optical lens
- R125 and R95 lamps have a blown hard glass bulb for low cost applications
- E27 cap allows use in almost any suitable lampholder
- Instant heat after switch-on

APPLICATIONS

- Animal husbandry and other agricultural uses
- Food heating in the catering trade
- Wellness and medical applications for muscle relaxation
- Creates a pleasant warmth in bathroom drying areas
- Various industrial uses for drying, heating, vulcanizing, distilling, softening, melting, pasteurizing, polymerizing, evaporating, gelatinizing etc



Ordering Code	Item description	W	V	Cap	Total Lamp Length (mm)	Diameter (mm)	Finish
0033004	IR R95 100W	100	230	E27	130	95	Ruby
0033002	IR R125 150W	150	240	E27	185	126	Ruby
0033010	IR R125 175W	175	240	E27	185	126	Ruby
0033011	IR R125 250W	250	240	E27	185	126	Ruby
0033012	IR R125 300W	300	240	E27	185	126	Ruby
0033013	IR R125 375W	375	240	E27	185	126	Ruby
0033014	IR PAR38 150W	150	240	E27	135	122	Ruby
0033015	IR PAR38 175W	175	240	E27	135	122	Ruby

Ordering Code	Item description	Burning position	Average Lamp Life in h	Colour Temp. (K)	Fig. N°	Packing Quantity
0033004	IR R95 100W	Universal	5000	na	1	20
0033002	IR R125 150W	Universal	5000	na	1	12
0033010	IR R125 175W	Universal	5000	na	1	12
0033011	IR R125 250W	Universal	5000	na	1	12
0033012	IR R125 300W	Universal	5000	na	1	12
0033013	IR R125 375W	Universal	5000	na	1	12
0033014	IR PAR38 150W	Universal	5000	na	2	12
0033015	IR PAR38 175W	Universal	5000	na	2	12