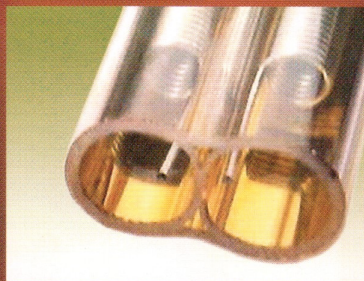


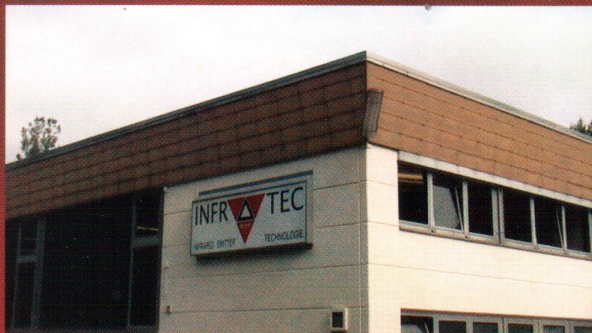
ALTOTEC

..... excellence in heating & finishing

Electrical Infrared



Gas Infrared



A joint venture with

INFRATEC
INFRARED EMITTER GmbH TECHNOLOGIE

Infratec Infrarot Strahler GmbH

“Heat transfer by radiation is experienced by all but understood by few !”

Infra red energy is transmitted by one body to another that is at a slightly lower temperature. The energy absorbed by the second body is converted into heat. The most common phenomenon of this principle known to all of us is the heat received by us from the sun.

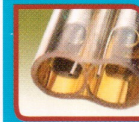
In the total electromagnetic spectrum the band of infra red waves is next to that of visible light and generally spreads from 0.6 μm to 10 μm . However, for industrial applications, the entire range is not useful and classification of the infra red radiation for industrial application is as below.

Type	Emitter temp.	Wave length range
Short Wave	1800 to 2400° C	0.6 to 1.6 μm
Medium Wave and quick medium wave IR	800 to 950° C	1.8 to 3.5 μm
Long Wave	300 to 400° C	3.5 to 6.0 μm

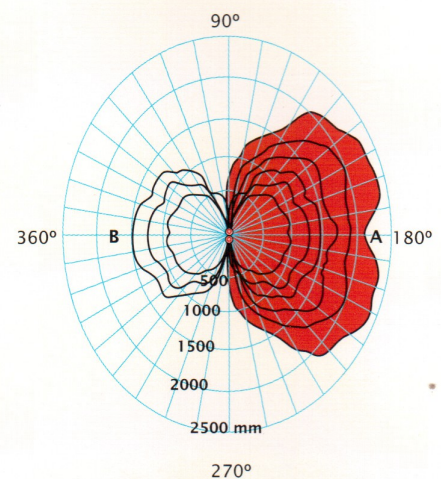
Conventional thinking would associate a higher emitter temperature with a higher transfer efficiency. Thus on the face of it, short wave infra red would appear to be better than medium wave radiation. However, the actual functioning is quite different. Two bodies are essential for affecting heat transfer by radiation. Empirical results and text book data show that paints, powders, water film, plastics, rubber, textiles & others in the CH band exhibit maximum absorption characteristics in the infra red range 2.0 to 3.0 μm . This wavelength matches with the radiation emitted by a medium wave radiator. Thus, exposure of a painted article, to short wave radiation is only wasteful as the recipient does not absorb the short wave radiation with equal efficiency.

“The most important criterion is matching wave length of emission from radiator to the absorption wave length of the article being heated. In other words this is the game of matching wavelengths.”

In heat transfer by infra red radiation, the energy transmitted by the radiator is marginally lost to the surroundings, partly reflected from the surface and remaining enters the object where it is converted into heat. The depth of the penetration and conversion in to heat depends upon various factors like the thickness and thermal conductivity of the material, its colour and the ratio of mass to surface area exposed to the radiator. However, IR radiation cannot reach in to shadowed areas where the light cannot reach. For such areas, help of other heat transfer methods has to be taken.

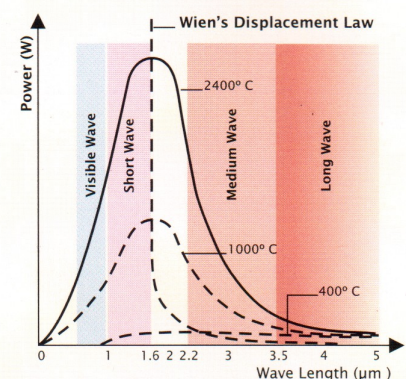


Electrical
Infrared



Power distribution (relative values) of twin-tube IR emitters

A - With gold reflector
B - without gold reflector



Co-relation of wave length & filament temperature with Emitter power out put

Automobile Refinishing

We are manufacturer of Infra red heating system for "paint touch up" applications for auto-mobile industries. Infra red heating is very effective for paint touch up and produces excellent surface finish due to its controlled and quick heating. The module has a medium wave infra red heaters (make M/s. Infratec, Germany) and it is mounted on the trolley which is either overhead or ground type. Vertical up down movement of the module is controlled by special "gas spring" actuator and angular movement of IR module around its axis is controlled by self locking arrangement. This enables to move module to any position simply by hand and does not require any tools or spanner. Our system is used friendly and gives only soft glow which is easy on eyes. Short wave IR module gives out bright glow which is disturbing to the operator. We provide non contact type pyrometric temperature sensor to sense actual temperature of object. This signal is given to temperature controller which displays the temperature value and issues command to raise/lower power to infra red module so as to maintain the temperature at the set value. Independent process timer can be provided to switch off the IR module when preset time elapses. Laser lamp helps to precisely align the module with the touch up area.



Infrared Ground Trolley



Gas Infrared



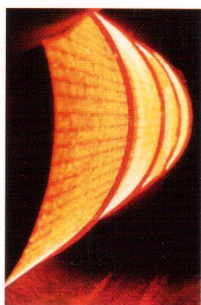
Gas Infrared Metal Fiber Burner

Unparalleled Experience in Infra - Red (IR) Technology

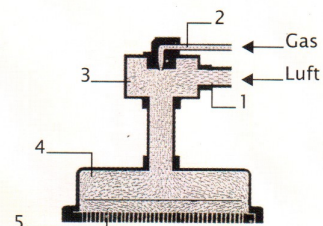
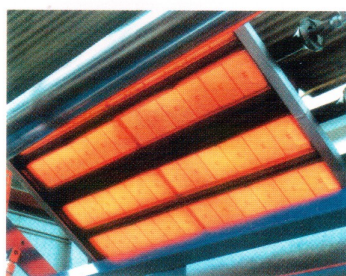
Gas Fired Infrared Radiator

Fuel-air mixture enters the gas IR from the back. It is allowed to pass through the Ceramic or wire mesh to the front of radiator and ignited on the surface on top. The ceramic plate/wire mesh glows red and emits medium wave infrared radiation. These burners are compatible for complete automation & safety monitoring. These are controllable over 40% to 100%.

Metal Fiber burner



Ceramic burner



- 1 Air feeding with aperture
- 2 Gas feeding with nozzle
- 3 Mixing chamber
- 4 Burner housing
- 5 Infrared burner plate

Principle of a gas infrared radiator with feeding the gas/air mixture

Type	Catalytic Burner	Ceramic Burner	Metal Fiber Burner	Metal Fiber Burner	Porous Burner
Kind	long wave Burner	medium wave burner	medium wave burner	medium wave burner	short wave burner
Wave length	3.3 - 5µm	2.4 µm	2.2 µm	2.2 µm	1.7 µm
Max. Burner Temperature	600° C/112 °F	950° C/1742 °F	1050° C/1922 °F	1050° C/1922 °F	1450° C/2642 °F
Max. Thermal Load	30kW/m ² 9500 BTU/ft ²	120 kW/m ² 38000 BTU/ft ²	200 kW/m ² 63400 BTU/ft ²	250 kW/m ² 79200 BTU/ft ²	1000 kW/m ² 317000 BTU/ft ²

Application Areas

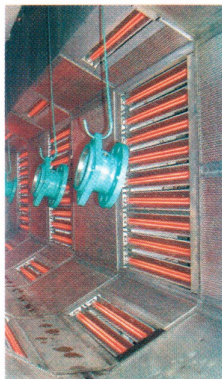
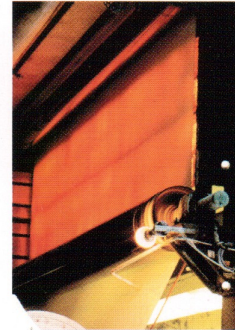
Overhead type touch-up trolley



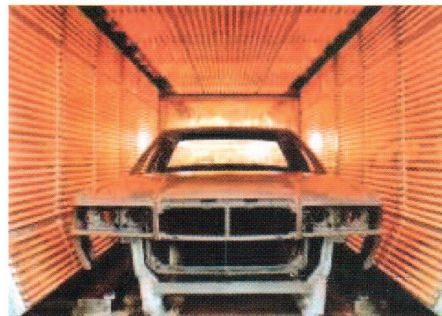
Drying of paints



Paper/Textile



Electric Infrared



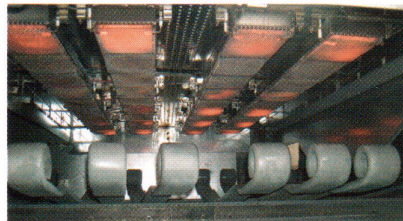
Infrared Paint Drying Booth



Gas Infrared Oven



Powder coating applicator



Gas Infrared Oven

Application Areas :

Textile/Paper drying, Carpet backing, Rubberizing processing, Drying of paints/powders varnishes and lacquers, moisture , Heating of plastic/Electronics/Wood/Food industries, Plastic foils/PVC sheet, Automobile refinishing touch-up

About Us

Altotec & Infratec Infrarot Strahler GmbH a joint venture was established in 1997. Infratec Infrarot Strahler GmbH has 20 years experience in the field of Industrial heating. We have our own manufacturing unit in Germany. We are one of the manufactures of infrared emitter with advanced technology in the world. To introduce this unique medium wave and short wave technology in Indian and Asian market Altotec started their operations with full local back up to get *German technology* and *German quality* at Indian prices.