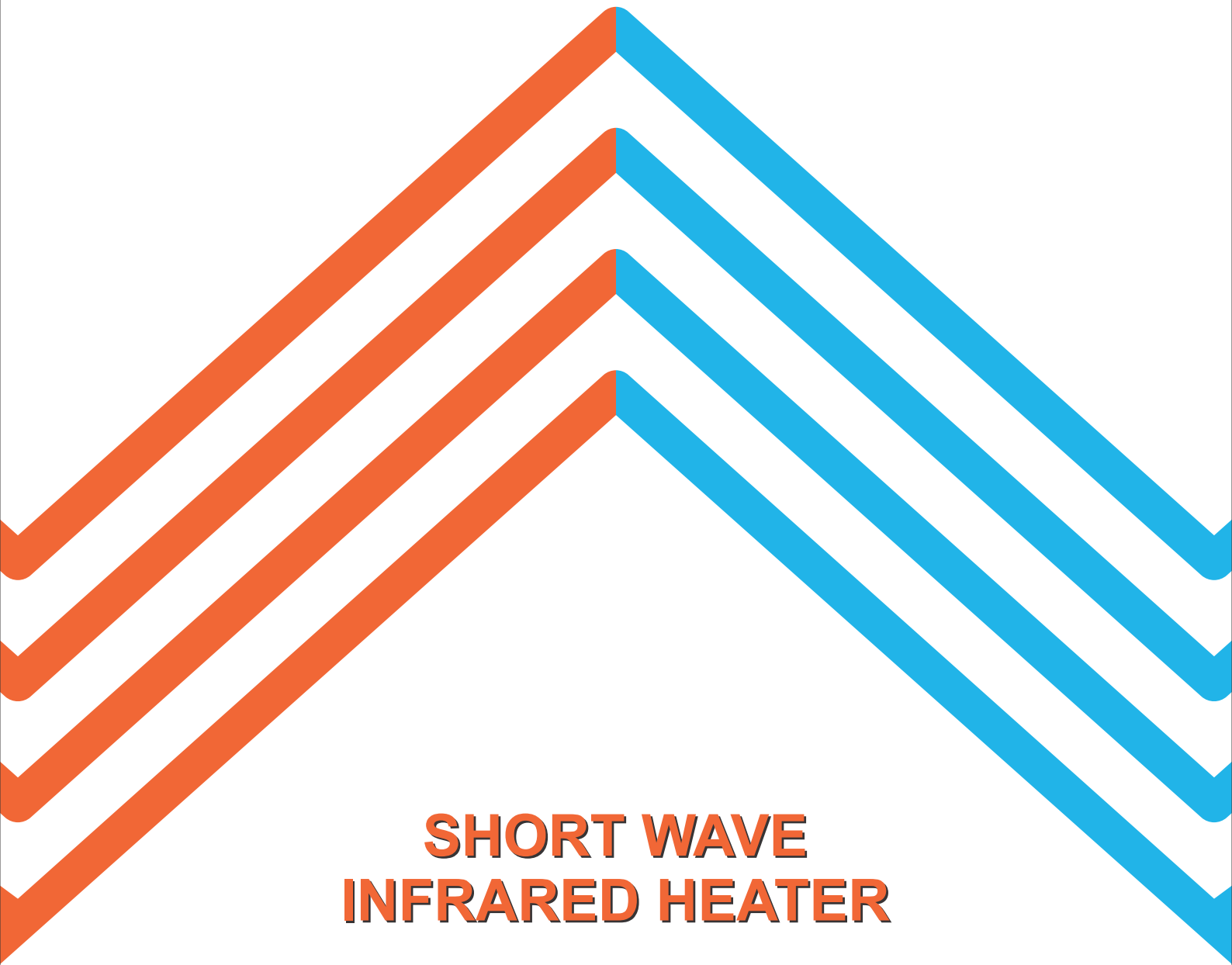




**ACE HEAT TECH**



**SHORT WAVE  
INFRARED HEATER**

**INFRARED HEATING SYSTEMS**



	Contents	Page No.
1.	About us.....	3-4
2.	Basic of Infrared Radiation ? .....	5
3.	Applications .....	6-7
4.	Short Wave Infrared Heaters without Coating .....	8-10
5.	Short Wave Infrared Heaters with Coating .....	11-12
6.	Short Wave Infrared Heating Modules.....	13-14
7.	Short Wave Infrared Carbon Heaters .....	15
8.	Short Wave Twin Tube Infrared Heaters .....	16-17
9.	Accessories .....	18

# About Us



Figure 1: Ace Heat Tech

As the world turned in time over the new millennium, India saw a new chapter being written in quality heating with Ace Heat Tech being formed, in the year 2000.

We started quality in electric Infrared Heaters custom built heaters & industrial temperature controllers loaded with advance features.

Ace Heat Tech regularly undertakes assessment of process heating and control requirements of infrared heating solution with wide variety of clients spanning diverse sectors. Besides, it also conducts studies to keep abreast of the demands of various sectors. This has helped the company gain in-depth experience and proficiency in developing practical solutions for clients. Besides offering high-quality infrared heaters in various configurations and voltage ranges, Ace Heat Tech also offers its clients service and support related to its product offerings.

## Strengths

- Professional business conduct
- Strong emphasis on quality is at the heart of all offerings
- Supported by a team of technocrats & expert engineers
- Service & support related to infrared heating solutions
- Wide distribution network in India
- Time bound delivery

## Our Vision

- To be the first choice in cost effective, ecological and healthy energy-efficient IR heating solutions.
- To provide global quality options in planning, designing, production, implementation and execution.
- To continue pioneering work and products that help to create better industries and healthier society.

## Our Mission

“We consistently produce high-standard designed infrared heaters that are industry benchmark in quality and performance in any and every kind of heating and drying task, we endeavor, to offer the widest range of installation, modifications or for extending machines and plants”

# About Us

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Figure 2: Ace Heat Tech - Staff



Figure 3: Ace Heat Tech - Fabrication

# Basic of Infrared Radiation?

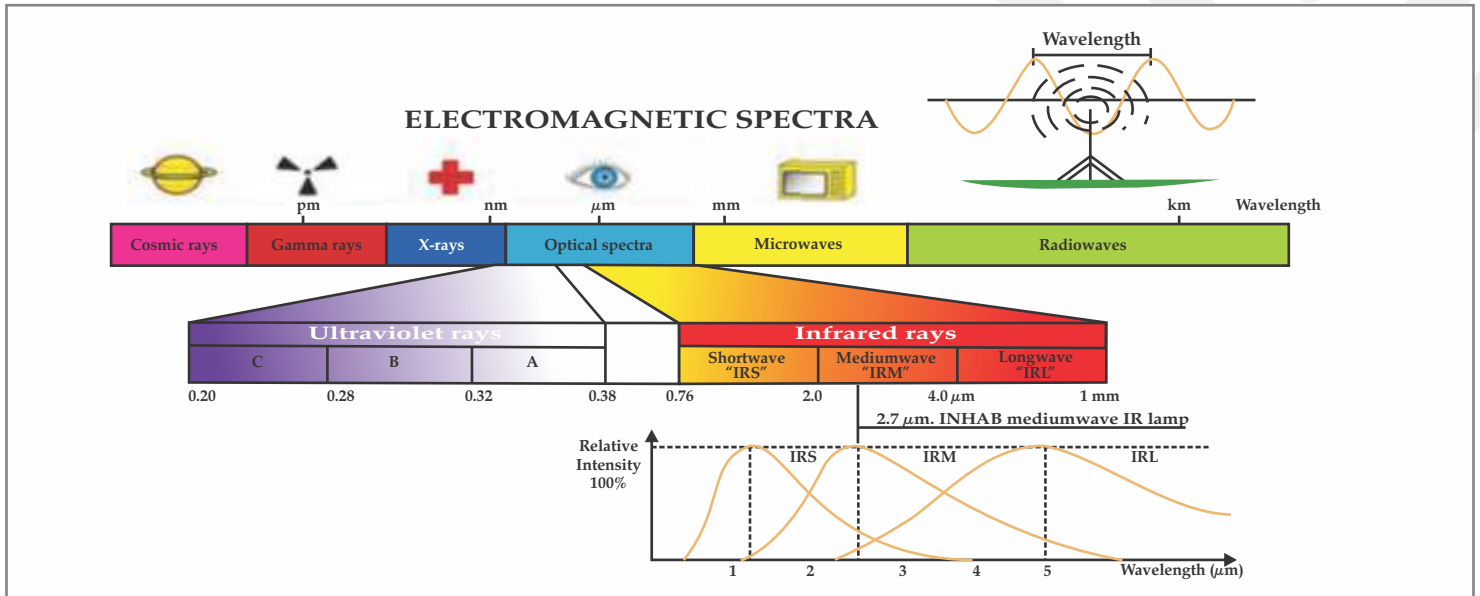


Figure 4: Electromagnetic Spectra

## Why Infrared ?

Benefits of short wave infrared radiation lamps compared with other radiating elements

**Efficiency :** 92% of the energy consumed is transformed into infrared radiation and hence into heat, ability to direct the radiation:

As with light, it is not affected by air currents, there is no loss of energy, and the heat is applied where it is needed.

**Versatility :** The power input can be adjusted between 0% and 100% without any effect on life span.

**Cleanliness and Safety :** No noise, dust or smoke.

**Compactness :** Optimal power density.

IRS-short wave.

IRM-medium wave.

IRL-long wave.

## Why Short Wave ?

Basically, the shorter the wave, the more easily it travel is through the air, Short wave infrared generates heat by heating the object it meets with, without heating the air around it, Even effective and instant heat without pre-heating. A good example for this mode of action is the effect that occurs when a person walks out of the shade into the sunlight. Although the ambient temperate remains the same, they feel the temperature as considerably warmer under direct solar radiation.

## What Are the Advantages ?

- **Immediate heat :** 90% of the heat is available within 1 second.
- **Efficiency :** 92% efficiency in emission of rays Over 85% of the energy is converted to heat.
- **Convenience :** No pre-heating and no heat dispersion
- **Versatility :** It is possible to heat just part of the surroundings, either inside or outside.
- **Individuality :** intensity adjustable from 0-100%.
- **Reliability :** Lamps last up to 7000h hours even when switched on and off frequently.

	Short Wave Infrared	Medium Wave Infrared	Long Wave Infrared
Typical Source	IR Halogen Lamp	Quartz Heat Source	Resistance
Materials	Tungsten filament welded in a quartz tube	Filament in compound of Fe-Cr-Al in a quartz tube	Filament in compound of Fe-Cr-Al In a steel tube
Radiant Efficiecnyn	92%	60%	40%
Swith-on/ Swith-off times	1 second	30 seconds	5 mm

Figure 5: Comparison Table IRS, IRM & IRL

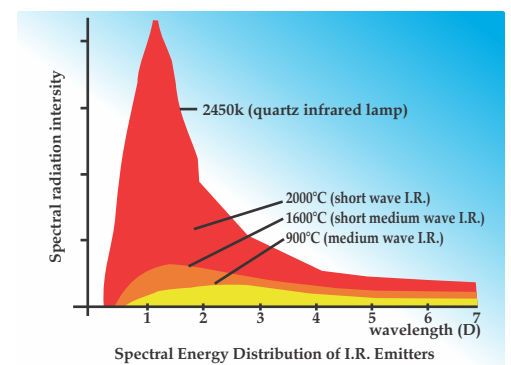


Figure 6: Spectral Energy Distribution of I.R. Emitters

# Applications

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Figure 7: Pet Bottles Machine



Figure 8: Screen Pad Printing Machine



Figure 9: Silicon Release Paper



Figure 10: Lamination Industrial Machine

# Applications



Figure 11: Infrared Dryer



Figure 12: Automobile Industry Paint Shop



Figure 13: Heating Chocolate Coating



Figure 14: Embossing of Textile

# Short Wave Infrared Heaters without Coating



Figure 15: Types of Short Wave Infrared Heaters



# Different Types of Caps for SWIR

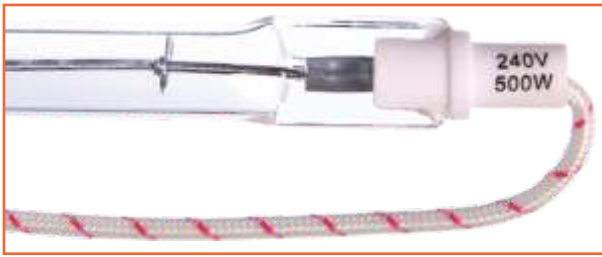
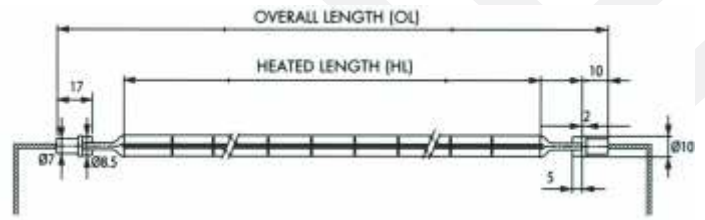


Figure 16: Small Round Ceramic Cap



Sr. No.	Heated Length HL (mm)	Overall Length OL (mm)	Wattage (W)	Voltage (V)
1	127	212	500	240
2	254	348	1000	240
3	406	500	1600	240
4	406	500	1600	415
5	508	626	2000	240
6	508	626	2000	415
7	635	728	2500	415
8	508	626	3000	240
9	765	875	3000	415
10	1020	1120	2000	240
11	153	223	1000	240
12	850	950	2000	240

Figure 17: Standard Sizes Availability



Figure 18: Big Round Ceramic Cap

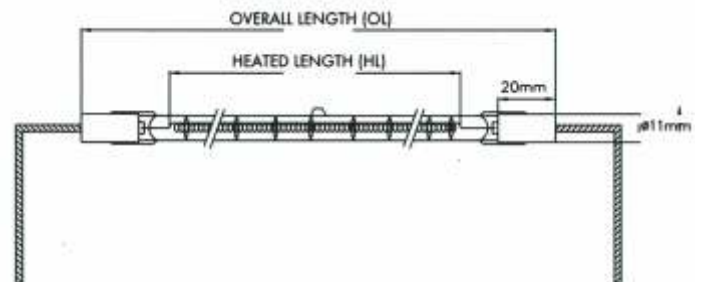


Figure 19: Double Round Ceramic Cap

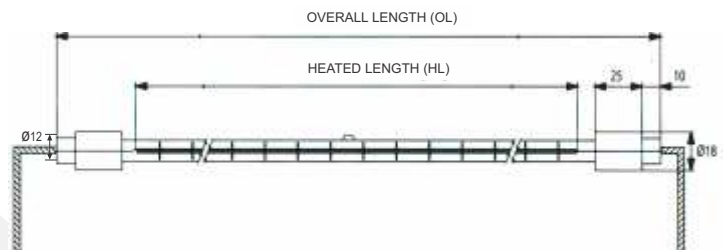




Figure 20: Metal Rod Type Holder

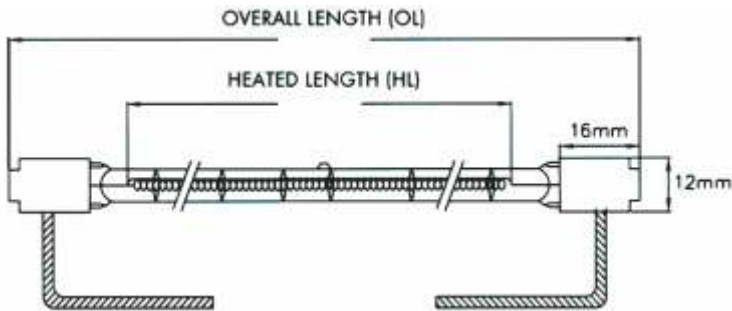
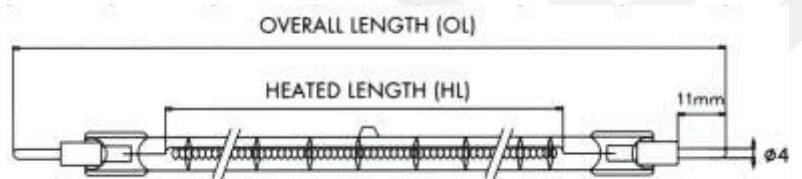
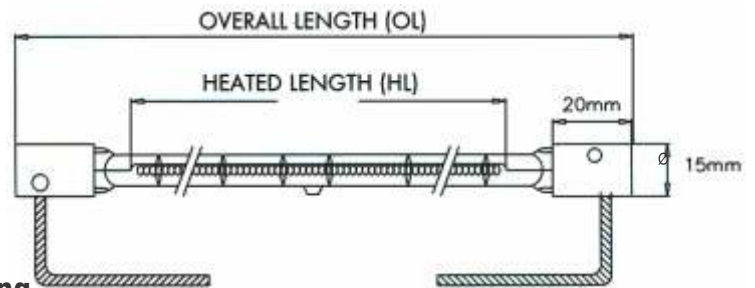


Figure 21: Metal Cap Bare Nickel Lead Wires



Figure 22: Rectangular Ceramic Cap without Coating



Sr. No.	Heated Length	Total Length	Wattage	Voltage
1.	153	223	1000	240
2.	254	348	1000	240
3.	508	626	2000	240
4.	635	728	2500	415

Figure 33: Standard Sizes Availability



Figure 24: Ruby Red Colour Infrared Heater

**R**uby Lamps emits warm red light and could be widely used in outdoor or indoor heating device. Ruby lamp delivers the heat to product fast and directly without heating the surroundings air due to the nature of radiation.

It has no dust or pollution during operation. Thus, it is not only an energy - efficiency system but also a clean and environmental friendly heating solutions.

# Short Wave Infrared Heaters with Coating



**Figure 24: Short Wave Infrared Heaters with Coating (Reflectors)**

All of our Emitters can be coated with a layer of Gold or Ceramic as reflectors. The Gold/Ceramic coating can concentrate the heat, increasing the effectiveness of the heat output. The emitters with coating are highly economical, converting practically all the consumed electrical power into heat.

For the emitters with high watt density or the surface temperature of the tube above 800°C, we suggest to use ceramic coating as reflector because the temperature resistance is up to 1000°C. In addition to 180° (half-tube) coating, we also manufacture 270° coating or other customer specified degrees.

Reflector : The Reflector are used to better efficiency and target on material through all transmission rays energy emitted by Infrared Lamp.

The High Efficient Reflector are as following:

- 1. Gold Reflector:** It is a Layer of Gold which is deposited on the layer of Infrared Glass Tube able to reflect more than 90% of IR radiation. to achieve the maximum working temperature of about 600°C.
- 2. White Reflector:** It is a Ceramic layer fixed on the Infrared Glass tube to reflect, emits reflects about 70% of radiation as compared to gold it is less effective to the material. It can withstand up to 900°C.
- 3. Ruby Reflector:** it is use mitigate the Infrared Radiation intensity of the filament. It is fixed all over the SW IR lamp in combination with another reflector.

**Advantages:**

1. Improved energy transmission on material
2. Reliable heating
3. Possible to obtain an additional distance irradiated energy.



**Figure 25: White Coated Small Round Ceramic Cap**

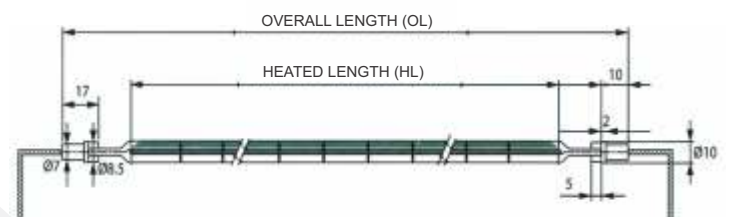




Figure 26: Gold Coated Small Round Ceramic Cap

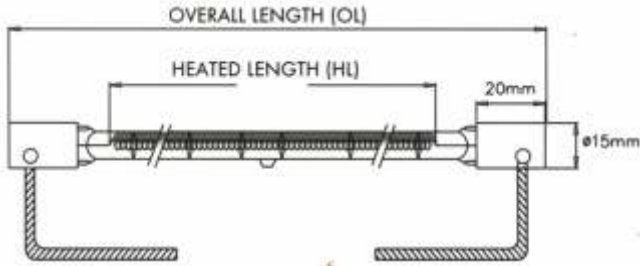
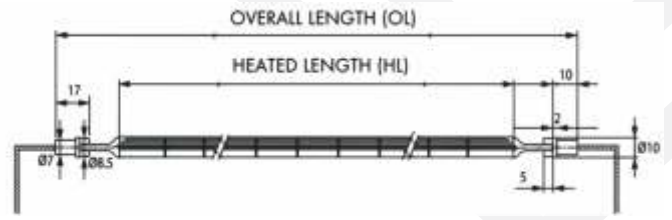


Figure 27: White Coated Rectangular Ceramic Cap



Figure 28: Gold Coated Rectangular Ceramic Cap

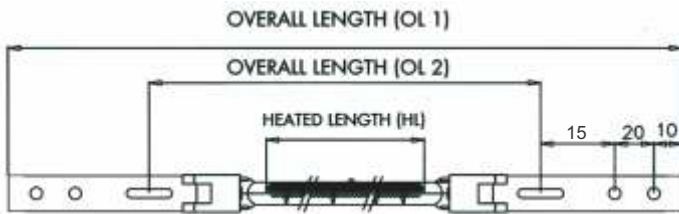
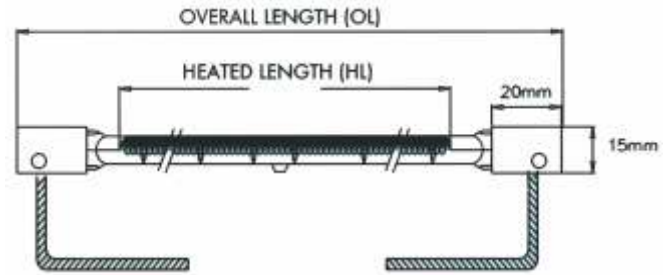
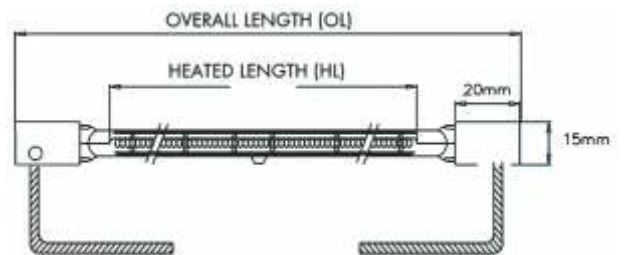


Figure 29: White Coated Metal Clip Type Holder



Figure 30: Double Gold Coated with Rectangular Cap



**Note:** Other than above types we can also supply Short Wave Infrared heaters in different shapes like Round,

C Shape, U shape etc. as per customer requirement.

# Short Wave Infrared Heating Modules

Infrared modules are the ideal solution in the application of infrared heat technology. They save the user design costs and time, but are substantially less expensive than complete infrared systems.

Wider Modules IRW type is available in above specification with same lengths of 145 mm (width) x 80 mm (depth).



Figure 34: Type-IRN (Narrow)

Module Code	Overall Dimensions (mm)			Heater Specification			
	Length	Width	Depth	Heater Used	Heated Length	Watts	Volt
IRN 500	310	80	55	SW 500	127	500	240
IRN 1000	460	80	55	SW 1000	254	1000	240
IRN 1600 S	610	80	55	SW 1600 S	406	1600	240
IRN 1600 D	610	80	55	SW 1600 D	406	1600	415
IRN 2000 S	725	80	55	SW 2000 S	508	2000	240
IRN 2000 D	725	80	55	SW 2000 D	508	2000	415
IRN 2500 D	825	80	55	SW 2500 D	635	2500	415
IRN 3000 D	975	80	55	SW 3000 D	765	3000	415

Figure 32: Standard sizes availability for Short Wave Infrared Modules



Figure 35: Type-IRW (Wider)

## Short Wave Infrared Modules

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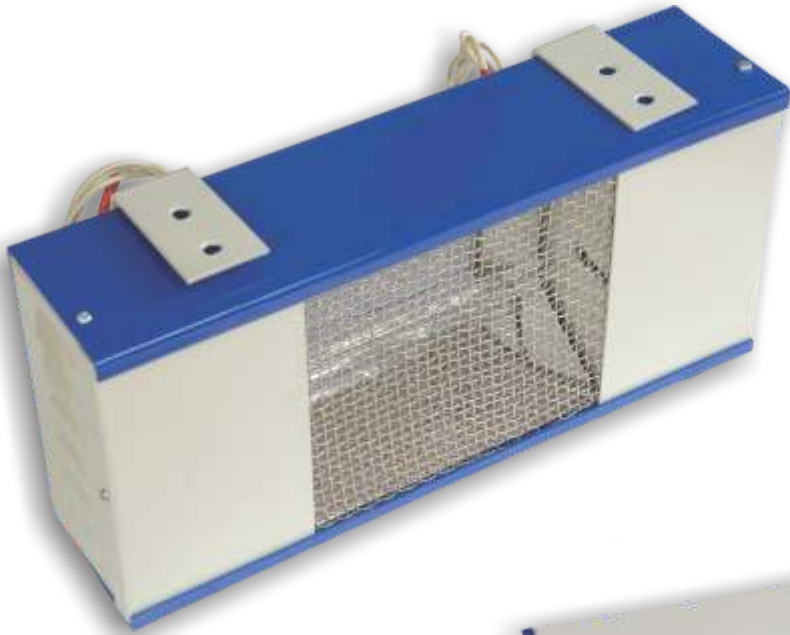


Figure 31: Short Wave Infrared Heating Modules with Mesh



Figure 33: Short Wave Infrared Heating Modules with Multiple Heaters

A background image showing a grid of glowing red and orange horizontal lines, representing infrared radiant energy.

Infrared Radiant Energy

Figure 36: Infrared Radiant Energy

# Short Wave Infrared Carbon Heaters



Figure 37: Short Wave Infrared Carbon Heaters

The carbon infrared Heaters emitters feature a unique design of the heating filament that combines the effective medium-wave radiation with very short response times in the seconds range.

The Carbon Heater unique design provides higher radiation density and improved mechanical construction stability.

Sr. No.	Heated Length	Total Length	Wattage	Voltage
1.	127	212	500	240
2.	254	348	1000	240
3.	406	500	1200	240
4.	508	626	2000	240
5.	635	728	2500	240
6.	635	728	2500	415

Figure 38: Standard Sizes Availability

# Short Wave Twin Tube Infrared Heaters



Figure 39: Twin Tube Gold Coated Short Wave Infrared Heaters

This is made up of 8-shape High-Purity clear quartz twin tube, each tube has Heating Coil of Tungsten material which runs in U shape in the tube which is filled with halogen gas.

- Power Density up to  $150\text{KW/m}^2$  is achieved. Heating up and cooling down time is approximately one second
- These heaters are available with Gold reflector and without reflector
- Reflector is in the form of Gold Coating on outer rear side of the tube
- Due to reflector heat loss from backside is prevented and thus power saving is achieved
- This also results in making surrounding work area cooler
- This also increases the efficiency and directionality of the heater
- **There are two standard sizes 11 mm x 23 mm and 15 mm x 32 mm in cross section. Maximum length available is 2000 mm**





Figure 40: Twin Tube Wave Infrared Emitters

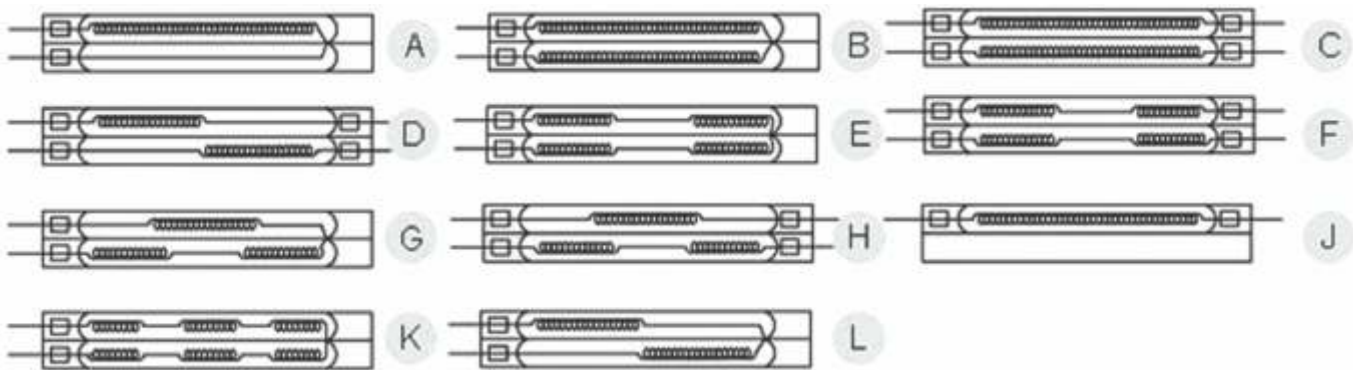


Figure 41: Various Design of Filament

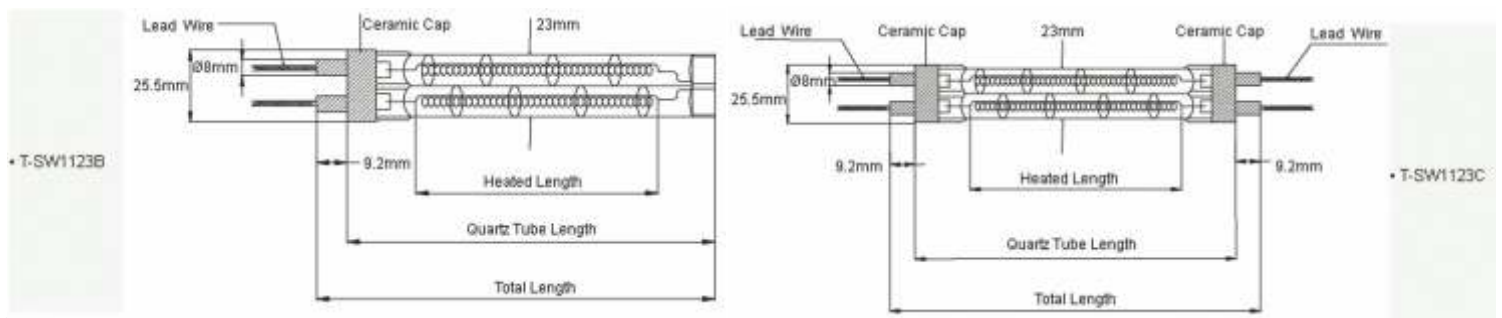


Figure 42: Various Design of Filament

- Color temperature 2400~2500°K
- IR wavelength between 1 to 2 $\mu$
- Using tungsten wire as filament
- Response time around 1~2 seconds
- Average working life 5000 hours
- Gold or Ceramic Coating at rear side as reflectors
- Dimensions 11 x 23mm
- Max. overall length up to 3M
- Vertical and Horizontal Emitters are available

# Accessories

## Mounting Clamps For Infrared Heaters



Figure 43: Clamp for Rectangular Ceramic Cap

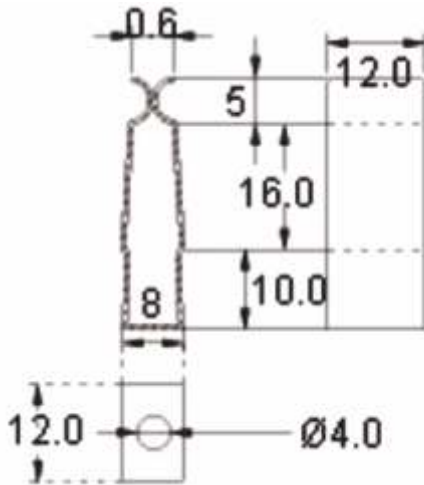


Figure 44: Clamp for Big Round Ceramic Cap

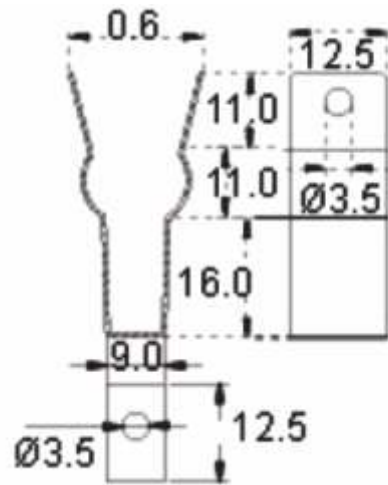


Figure 45: Clamp for Small Round Ceramic Cap

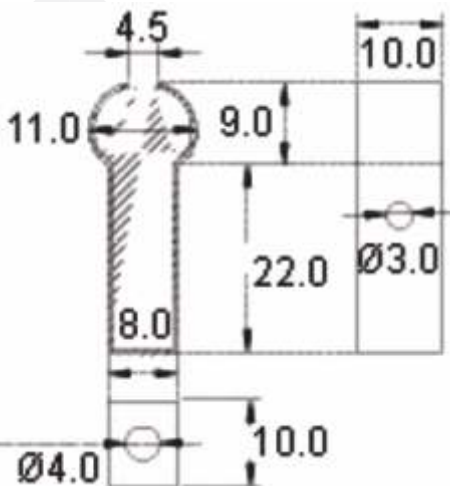


Figure 46: Clamp for Twin Tube 11x23mm

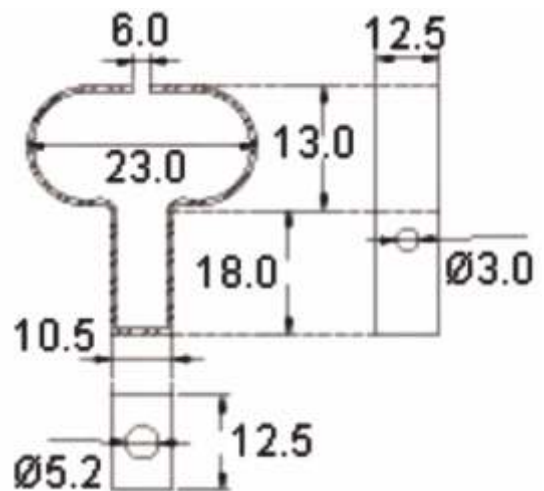


Figure 47: Clamp for Twin Tube 15x33mm

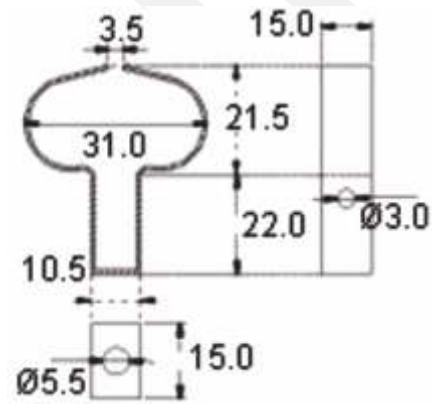
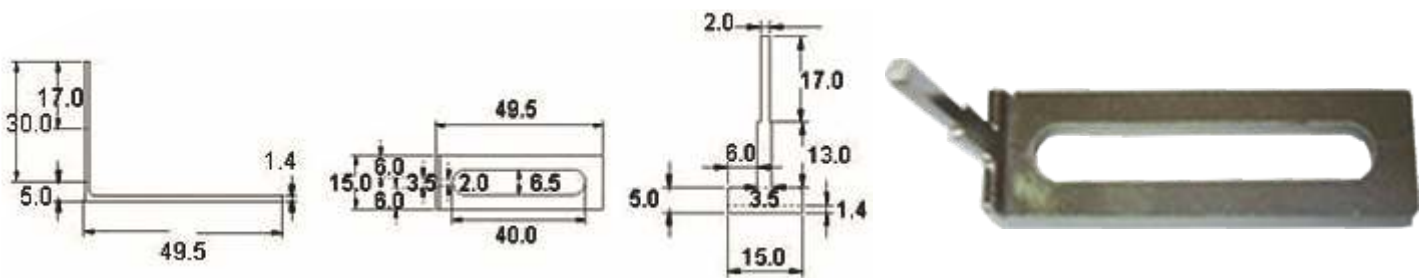


Figure 48: Eng Stop for Twin Tube Emitters



## Ordering Information

Overall Length	Wattage	Type of Ceramic End Cap	Type of Coating - Gold / White
Heated Length	Voltage	Lead Wire Length	

## Notes

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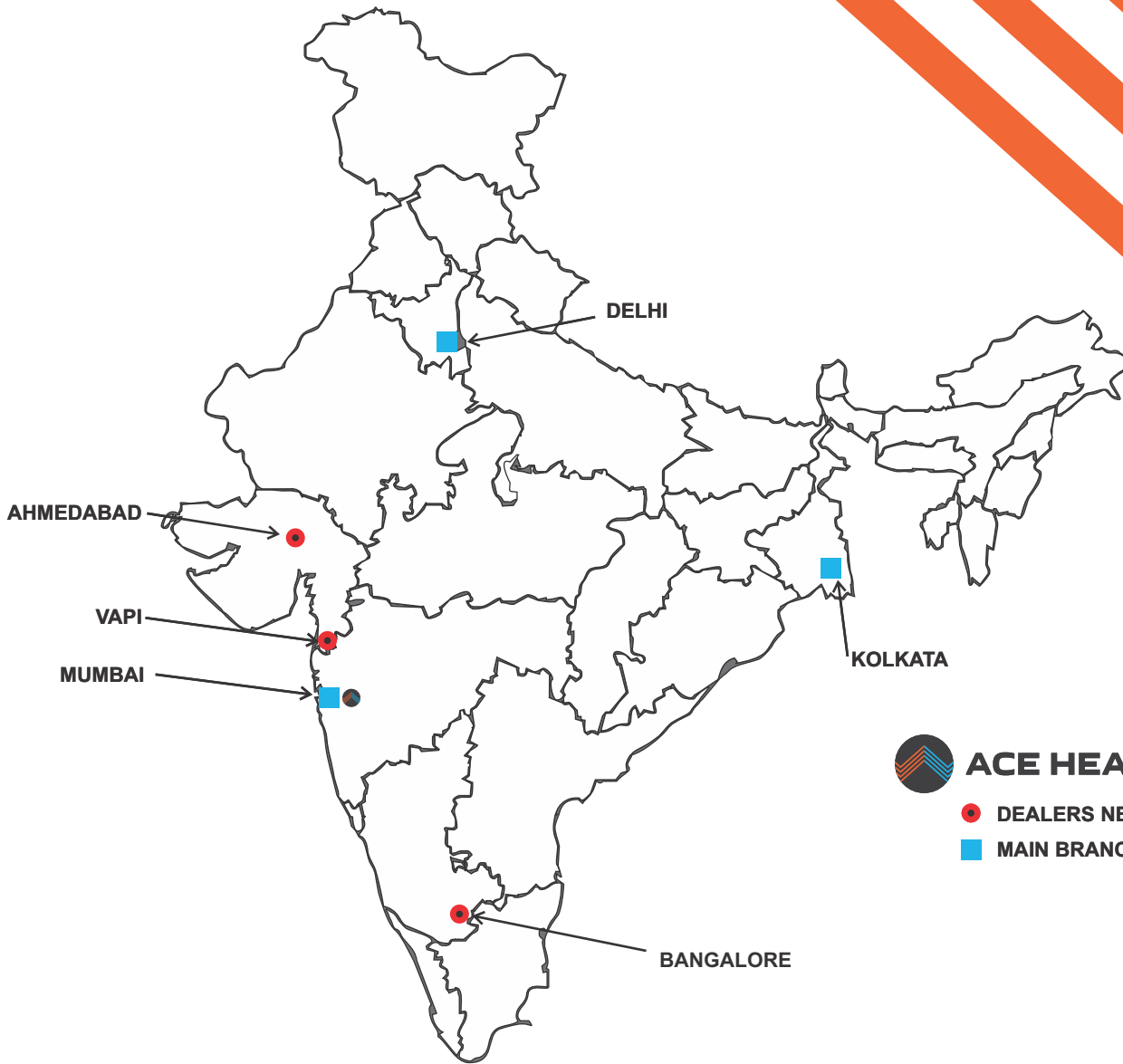
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**ACE HEAT TECH**

- DEALERS NETWORK
- MAIN BRANCHES



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