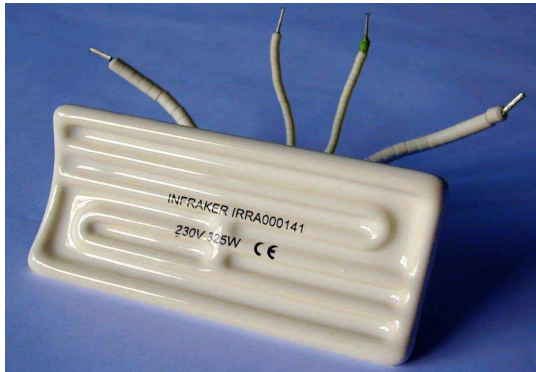


## Ceramic Infrared Heaters



### Features & Benefits

- ➔ Surface temperature to 750 °C.
- ➔ Mid-to-far wavelength infrared heat source provides uniform heat over a large area.
- ➔ Primary emission in the 3 - 10 micron range (no visible light), which is the most efficient wavelength for heating of plastics, paper, textiles, and drying of most solvents.
- ➔ Available with built-in type K thermocouple.
- ➔ Available in 122 x 60 mm, 245 x 60 mm, and 122 x 122 mm sizes.
- ➔ Available with pink surface that turns to gray when heating providing evidence of correct operation.
- ➔ Clean, non-contaminating, heat operation.
- ➔ Glaze-coated ceramic body with no surface flaking or oxidation as on metal sheath elements.
- ➔ Provides perfectly repeatable performance.
- ➔ Easily arranged in large arrays that may be set up and controlled in zones.
- ➔ Operating life over 5,000 hours minimizes machine downtime.
- ➔ Iron alloy element wire provides longer life than nickel-chrome alloy wires.
- ➔ Resistant to thermal shock. Heaters are not damaged if hit by water spray.

## Applications

### Plastics:

- Thermoforming
- Vacuum forming
- Curing extruded parts
- Drying
- Laminating

### Electronics:

- Preheat PCBs
- IR reflow ovens for SMT

### Paper:

- Speed drying coated paper
- Adhesive activation

### Textiles:

- Drying dyed/printed fabric
- Curing latex coatings

### Ceramic:

- Drying glazes/pigments

### Thin Film Deposition:

- Vacuum coating substrates

### Wood/Furniture:

- Heating bonded/painted/plastic coated components
- Drying same components

### Food:

- Warming
- Baking

### Paint:

- Drying lacquers/finishes
- Baking lacquers/finishes

### Packaging:

- Heat shrink
- Forming

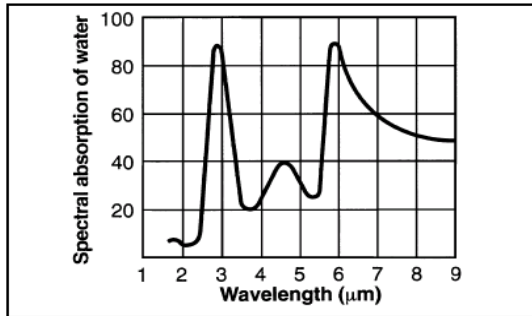
### Printing:

- Ink drying

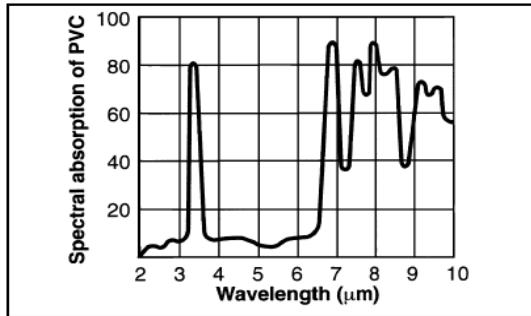
## Element Selection

	RATED POWER			
	122x60 mm:	200 W	325 W	500 W
	245x60 mm:	250 W	400 W	1000 W
Pre-heating sheet and panels in vacuum molding machines				
Manufacture of skin packs				
Jelling PVC paste coatings on fabrics				
Heather paper pulp before pressing				
Rapid drying of lacquered paper and card				
Rapid drying of gummed and adhesive coated paper				
Activating adhesives and hot seal coatings				
Drying plastic emulsions (latex coatings)				
Drying washed, dyed, finished textile fabrics				
Fixing nylon or perlon thread				
Heating and drying cemented wood or furniture components				
Drying skins, hides and spray colored leather				
Heating and drying cemented joints of shoes				
Drying sprayed-on glazes on ceramic tiles				
Drying and baking painted sheet metal components				
Heating substrates in vacuum chambers				

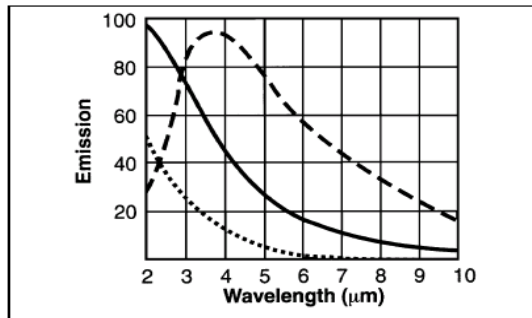
## Technical Data



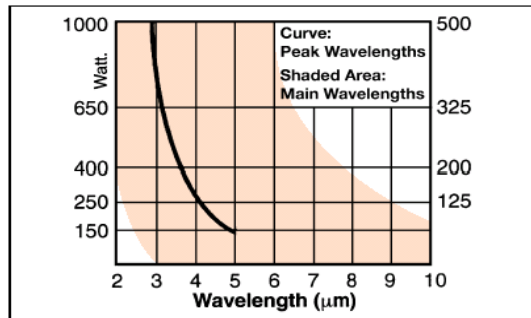
This diagram shows that water absorbs long wave infrared very well. Absorption maxima are approx. 3 and 6 μm.



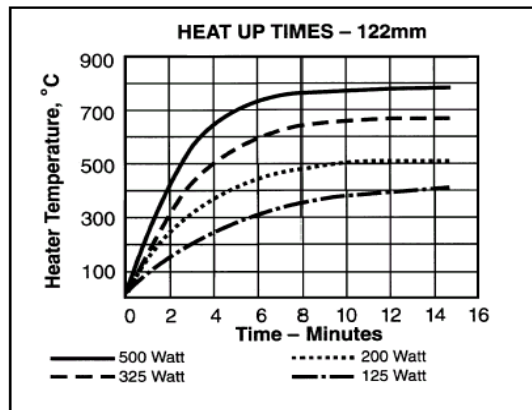
This is the spectral absorption of PVC. The main absorption range lies between 7 and 10 μm. The curves for other plastics exhibit a similar character.



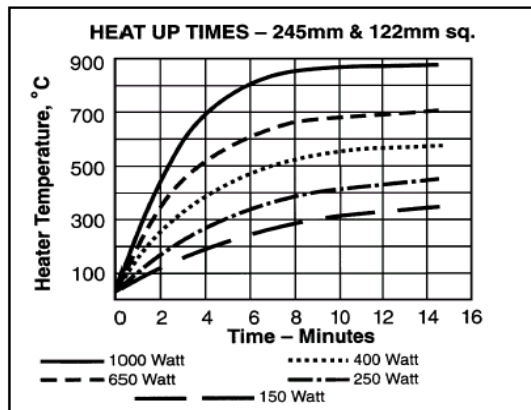
Emission spectrum of black body radiators. Dotted Line: 2100°C (as for visible radiators); Solid Line: 1100 °C (as for quartz radiators); Dashed Line: 510°C for ceramic radiators, best range 3 to 10 μm.



This graph enables peak wavelength and main wavelength to be determined for each radiator's power rating.

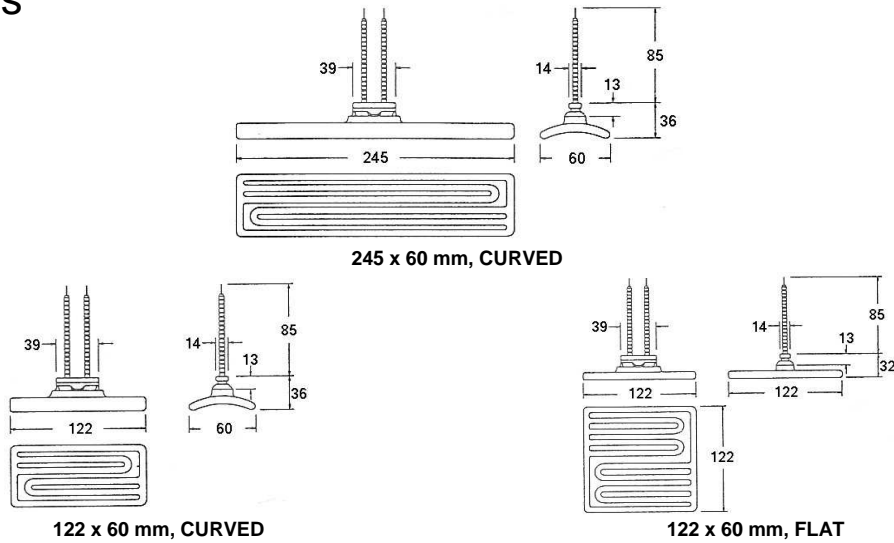


Temperatures are as indicated by cast in thermocouple. Surface temperatures will be slightly lower.



Temperatures are as indicated by cast in thermocouple. Surface temperatures will be slightly lower.

## Sizes



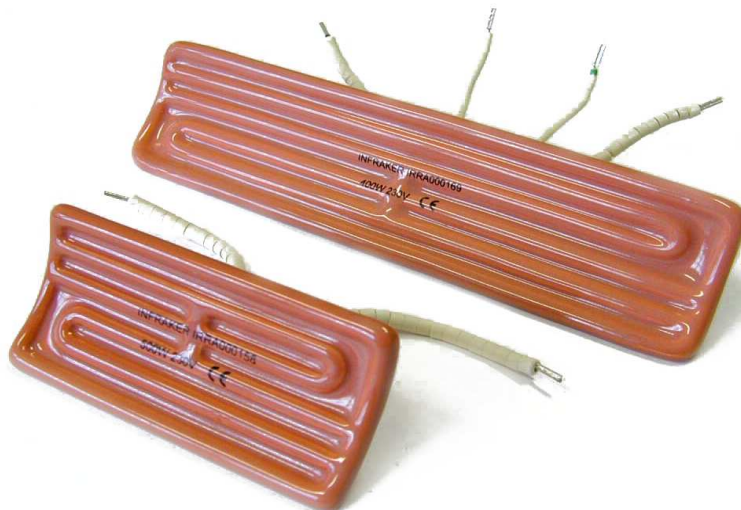
## Specifications & Part Numbers

Size (mm)	Face Shape	Power (W)	Tension (V)	Average Surface Temp. (°C)	Max. Allowed Surface Temp. (°C)	Peak Wave-length (µm)	Part No. without Thermocouple	Part No. with Thermocouple
122 x 60	Curved	125	230	420	550	4,3	IRRA000136	IRRA000137
		200	230	510	600	3,7	IRRA000138	IRRA000139
		325	230	630	700	3,2	IRRA000140	IRRA000141
		500	230	750	800	2,9	IRRA000142	IRRA000143
245 x 60	Curved	150	230	310	450	4,9	IRRA000144	IRRA000145
		250	230	420	550	4,3	IRRA000146	IRRA000147
		400	230	510	600	3,7	IRRA000148	IRRA000149
		650	230	630	700	3,2	IRRA000150	IRRA000151
		1000	230	750	800	2,9	IRRA000152	IRRA000153
122 x 122	Flat	400	230	510	600	3,7	IRRA000180	IRRA000175
		650	230	630	700	3,2	IRRA000181	IRRA000185
		1000	230	750	800	2,9	IRRA000184	IRRA000186

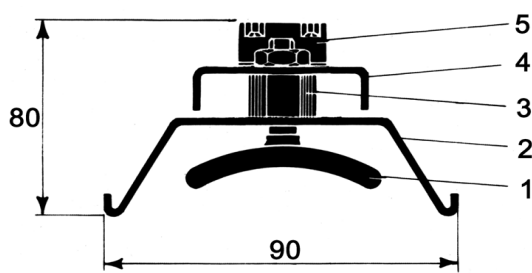
## Temperature-sensitive Colours

Our ceramic radiant infrared heaters are available also in temperature-sensitive colours: the heater is normally dark pink when cold, then turns grey when heated.

Therefore, the burned heaters can easily be located as they stay pink when the power is on.



## Reflector Assemblies



- ITEMS:  
 5 - Terminal Blocks  
 4 - Supporting Frame  
 3 - Spacers  
 2 - Reflector  
 1 - Heaters

Item	Part No.	Description	
1	see "Specifications"	Heater, size 245 x 60 mm (includes clip and spring for fixing)	
2	RIFL000001	Reflector (length 500 mm), for 2 heaters	
	RIFL000002	Reflector (length 750 mm), for 3 heaters	
	RIFL000003	Reflector (length 1000 mm), for 4 heaters	
	RIFL000004	Reflector (length 1250 mm), for 5 heaters	
	RIFL000005	Reflector (length 1500 mm), for 6 heaters	
	RIFL000006	Reflector (length 1750 mm), for 7 heaters	
	RIFL000007	Reflector (length 2000 mm), for 8 heaters	
3	ACCS000010	Spacer assembly (2 pcs for assemblies of 1-4 heaters, 3 pcs for assemblies of 5-8 heaters)	
4	SUPP000003	Supporting frame (length 500 mm), for 2 heaters	
	SUPP000004	Supporting frame (length 750 mm), for 3 heaters	
	SUPP000005	Supporting frame (length 1000 mm), for 4 heaters	
	SUPP000006	Supporting frame (length 1250 mm), for 5 heaters	
	SUPP000007	Supporting frame (length 1500 mm), for 6 heaters	
	SUPP000008	Supporting frame (length 1750 mm), for 7 heaters	
	SUPP000009	Supporting frame (length 2000 mm), for 8 heaters	
	SUPP000010	Supporting frame with extended length for mounting (length 580 mm), for 2 heaters	
	SUPP000011	Supporting frame with extended length for mounting (length 830 mm), for 3 heaters	
	SUPP000012	Supporting frame with extended length for mounting (length 1080 mm), for 4 heaters	
	SUPP000013	Supporting frame with extended length for mounting (length 1330 mm), for 5 heaters	
	SUPP000014	Supporting frame with extended length for mounting (length 1580 mm), for 6 heaters	
	SUPP000015	Supporting frame with extended length for mounting (length 1830 mm), for 7 heaters	
	SUPP000016	Supporting frame with extended length for mounting (length 2080 mm), for 8 heaters	
	5	MRST000005	Terminal block assembly, for heaters without thermocouple (1 pc for each spacer)
		MRST000003	Terminal block assembly, for heaters with thermocouple (1 pc for each spacer)

**NOTE:**

Above components, if ordered with the above part numbers, are delivered not assembled together.  
 To receive assembled reflector assemblies (one part number only), please specify while ordering.





As a dynamic and innovative Group, we pursue a policy of continuous product development and improvement. Our companies, therefore, reserve the right to amend the specifications without giving prior notice. Descriptions and data in this brochure are correct at the time of the issue but are subject to alteration. Details of any change are available on request.

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