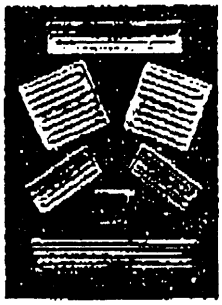
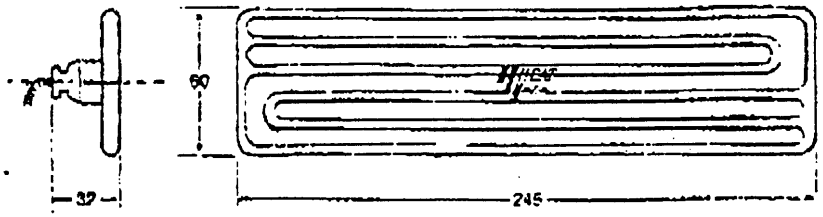
STANDARD RANGE VOLTAGE 220V or 240V

704 7666
704 7678
704 7680



FSF (FULL SIZE FLAT ELEMENT) 245 x 60mm



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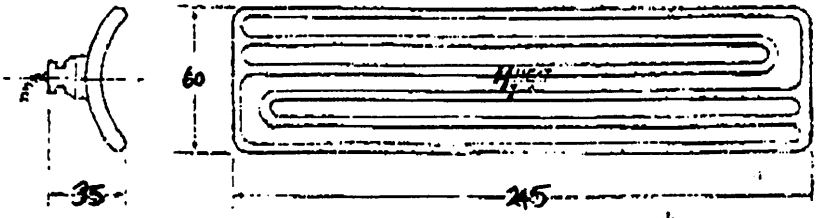
FSC (FULL SIZE CURVED ELEMENT) 245x 60mm



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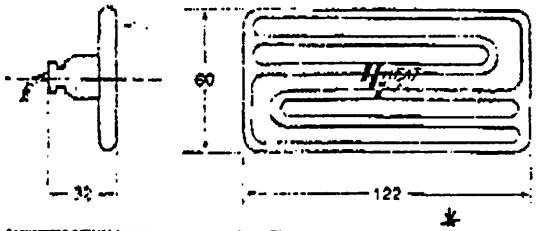
RATING (WATTS)
MEAN SURFACE TEMP °C
PEAK WAVELENGH µm

Rating (Watts)	150	250	300	350	400 *	500	650 *	750	1000 *
Mean surface temperature °C	260	370	400	430	460	500	580	615	700
peak wavelength µm	5.4	4.5	4.3	4.1	3.9	3.7	3.4	3.2	3

HSF (HALF SIZE FLAT ELEMENT) 122 x 60mm



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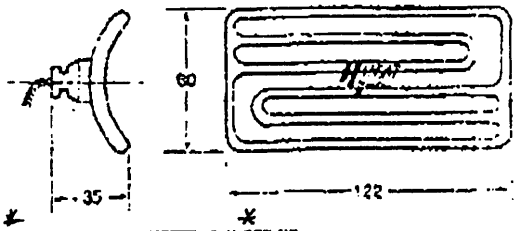
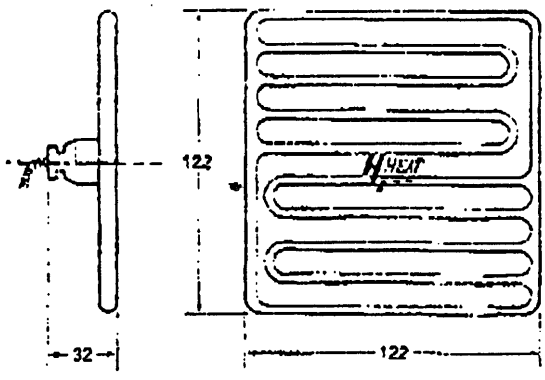
HSC (HALF SIZE CURVED ELEMENT) 122 x 60mm

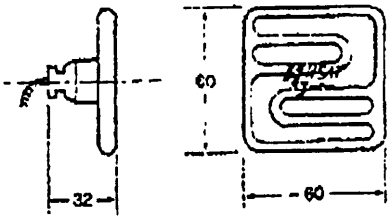


Rating (Watts)	125	150	200 *	250	325 *	375	400	500 *
Mean surface temperature °C	370	400	460	500	580	600	630	700
peak wavelength µm	4.5	4.3	3.9	3.7	3.4	3.3	3.2	3

SFE (SQUARE FLAT ELEMENT) 122 x 122mm



QSF (QUARTER SIZE FLAT ELEMENT) 60 x 60mm



Rating (Watts)	60	150	250
Mean surface temperature °C	200	490	650
peak wavelength µm	6.1	3.8	3.1

Rating (Watts)	150	200	250	300	350	400	500	650	750	1000
Mean surface temperature °C	260	320	370	400	430	460	500	580	615	700
peak wavelength µm	5.4	4.9	4.5	4.3	4.1	3.9	3.7	3.4	3.2	3

Heat is one of the oldest tools used by man. Since earliest times he has used heat to modify and transform the raw materials provided by nature to suit his purposes. Ancient man learnt to harden the tips of his wooden staves by immersing them in flames. He later learnt to harness the heat energy of fire to transform clay into pottery and to both extract and work metals.

Today, not only is heat still used in the production of metals and pottery, it is also used by virtually every manufacturing industry.

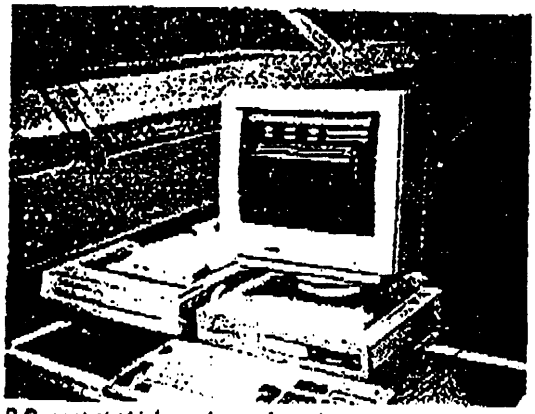
Although early man made good use of fire, modern industry requires more sophisticated heating methods. Many forms of heating are now used. Hassett International however, have exploited the technology of Electric Infra-Red heating to meet the requirements of modern manufacturers.

Electric Infra-Red Heating – The Modern Method

Infra-red heating is used in the manufacture of the clothes we wear, the utensils we cook with, the dishes we eat from, the cars we drive, the books, newspapers and magazines we read. It is used in the production of our furniture, our pharmaceuticals, our foodstuffs, our carpets, our wallpapers, our roof tiles, our electronic circuits and many other items of everyday life.

By the efficient utilisation of energy, infra red plays a vital role in helping manufacturers to:

- Reduce energy consumption.
- Improve efficiency.
- Increase throughput.
- Improve product quality
- Reduce manufacturing costs.



P.C. control of infra-red oven for polymer circuits.

Courtesy of BICC U.K.

Why Electric Infra-Red?

The three principal methods of heat transfer are

CONVECTION · CONDUCTION · RADIATION

Infra-red radiation is part of the electro-magnetic spectrum which also includes visible light, ultra-violet waves and radio waves.

Infra-red radiation, unlike convection or conduction, does not rely on any intervening medium to transfer heat from the infra-red source to the object being heated.

It is:

EFFECTIVE	Very high rates of heat transfer can be achieved.
EFFICIENT	Precise targeting and control is possible with minimal peripheral heat loss.
RAPID	Energy is transmitted at the speed of light from the emitter to the product.
CLEAN	No products of combustion. No forced air currents to convey contaminants to the product.

Hi-Heat Ceramic Infra-Red Emitters

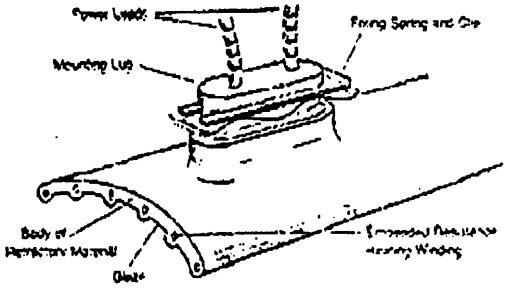
For the most effective utilisation of infra-red energy, it is best to match as nearly as possible the emission characteristics of the emitter with the absorption characteristics of the product to be processed. This is similar to selecting the correct waveband on a radio receiver to receive the transmissions from a particular radio station.

It is a characteristic of materials containing carbon that they will absorb infra-red radiation most readily on wavelengths between 3 and 10 microns. All organic materials contain carbon as do materials obtained from organic sources such as plastics, resins, paints and varnishes.

The greater part of the infra-red emission from Hassett Hi-Heat ceramic emitters fall between 3 and 10 microns. It will therefore be seen that for the heating of most common materials, the use of Hi-Heat emitters will provide optimum efficiency. As water and most solvents also have strong absorption bands between 3 and 10 microns Hi-Heat emitters are ideal for drying applications.

Construction

Hi-Heat ceramic emitters are manufactured by embedding a resistance heating spiral in a glazed body of refractory material thus ensuring protection against moisture, oxidisation and pollutants. The glaze, body and resistance spiral are carefully selected and matched to give the required spectral, electrical, mechanical and thermal properties.



On passing an electric current through the resistance spiral heat is generated. This is evenly distributed throughout the body and emitted from the surface as infra-red radiation. The glaze and body are chosen so as to have a high emissivity value which is approximately 96% of the theoretical ideal black body radiator.

Applications

Hi-Heat ceramic elements are available in a variety of sizes, shapes and power ratings. It is therefore possible to build up radiation fields of considerable uniformity giving an even heating effect over large areas.

Hi-Heat ceramic elements are used wherever uniformity of heating is critical and in this respect they are without equal in the heating of plastic materials for thermo-forming.

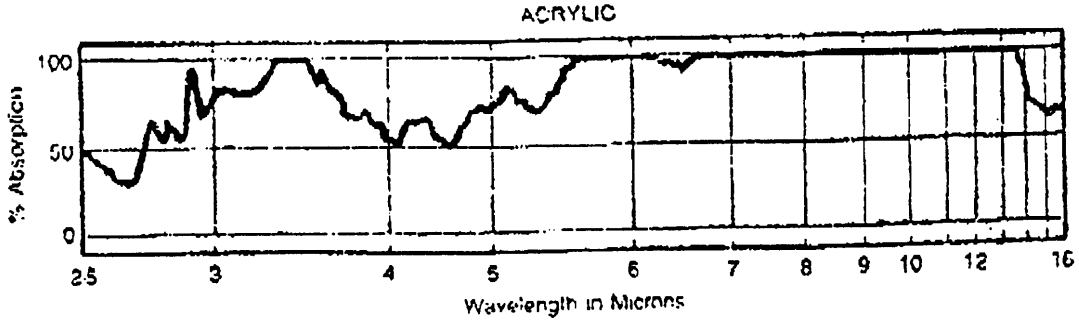
Heating banks may be zoned to provide heat precisely where required and edge losses compensated for. This is important in the processing of moving webs of material such as paper, textiles, floor coverings etc.

Other applications requiring precisely controlled heating include curing of powder coatings, paint, ink and varnish drying, solder reflow, stove enamelling, rubber vulcanising and adhesive drying.

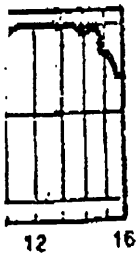
Because of their high resistance to moisture laden air and corrosive atmospheres, the elements are ideal for solvent removal, moisture evaporation and use in other adverse conditions which would preclude the use of other types of heaters.

Hi-Heat ceramic elements are ideal for use in the processing, cooking and warming of foods. They are clean and non-contaminating.

Hi-Heat ceramic elements are also used for the warming of livestock and indeed both animals and humans can benefit from the therapeutic effect of infra-red heating.



Polyethylene Terephthalate (POLYESTER)



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