

CPHI

High Intensity Quartz Faced Radiant Heater

- 40 W/in²
- 1.6 - 4.8 kW
- 240 and 480 Volt
- 1 & 3 Phase
- 1750°F Max. Emitter Temp.
- 10" Long x 4 - 12" Wide

Applications

- Moisture Removal from Bottles, Cans and Components
- Drying Automobile Underseal, Adhesives, Lacquer, Printing Ink, Plastic Granules, Pharmaceuticals and Pottery to "biscuit" state
- Nylon and Dye Heat Setting
- Firing Vitreous Enamels
- Soften Plastics prior to Thermoforming
- Soldering and Brazing (i.e., reflow soldering on printed circuit boards)
- Heating for Shrink Fitting
- Sealing Glass to Metal
- Shrink and Blister Packaging
- Curing and Baking of PTFE coatings, mirror backings, PVC foil prior to lamination, resin coatings on paper, metal textiles and wood, paint finishes including powder coatings and enamel, shoe adhesives and fillings, latex backing for carpet
- Brown Food prior to Freezing
- Wherever Close Maximum Heat is Required, such as Process Boosting

Features

Highest Watt Density Available of any Medium Wave Infrared Radiant Panel Heater

— Due to thermal and electrical properties of the grooved quartz face plate, CPHI has the highest watt density (5.76 kW/Ft²) of any medium wave infrared radiant panel.

Uniform Radiation Pattern Assured with a wide flat infrared surface versus the line pattern given in normal radiant heaters. This eliminates uneven heating of the work and allows uniform heating of a stationary surface such as in an indexing process.

Lower Operating Cost with up to 80% of the input energy transmitted to and absorbed by the work material. The maximum amount of radiant energy is transferred to the work with very low heater convection losses. Typical installation distance of two to four inches from the work surface significantly reduces the energy input.

External Reflectors Not Required — The refractory board and bulk insulation behind the heating element help prevent back heat loss. This eliminates the need for external reflectors.

Costly Downtime Minimized — There is no deterioration of the output radiation level with heater life and no reflectors to clean which could cause downtime and increased maintenance costs. The unit is resistant to vibration because of the compact homogeneous construction.

Easy Installation — The light weight building block approach allows for a modular installation which is easily expandable.

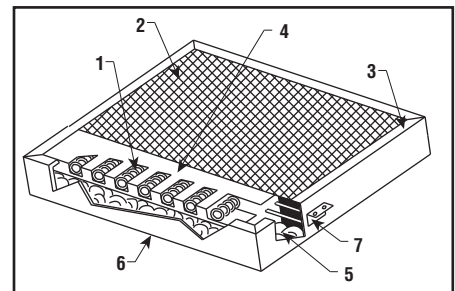
Note — CPHI heaters mount only so that the coil direction is in the horizontal plane.

Repeatable Process Performance Assured — Used with closed loop control, the system automatically compensates for ambient temperature ranges and line voltage fluctuations. Maximum energy transfer requires matching the peak wavelength output to the specific material absorption characteristics. Because the peak wavelengths of the flat surface heater are repeatable and adjustable, the quality output of the process is assured.

Construction

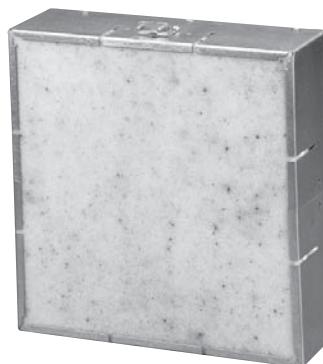
1. **Heating Element** — Precision iron base resistance wire, designed to give extended life and uniform emission over entire radiating surface.
2. **Emission Surface** — Grooved fused quartz face plate for CPHI type heaters. Special ratings with aluminum emission surfaces are available for applications such as in the food industry.
3. **Frame** — Heavy gauge, heat-resistant aluminized steel.
4. **Heating Element Support** — Fibrous ceramic material specially developed for high insulation qualities, durability, shock resistance, asbestos free.
5. **Insulation** — High temperature insulation to minimize heat loss from back of heater.
6. **Terminals** — Stainless Steel terminals in a 4 x 4" junction box are provided with CPHI type heaters.
7. **Thermowell** — Quality tubular quartz thermowell, with strain relief, to accept a Chromalox C-700JU or C-700KU thermocouple on units with suffix T in model number. Standard placement of thermowell is on side of heater. Specials are available with thermowell exiting back of heater.

Construction



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High Intensity Quartz Faced Radiant Heater *(cont'd.)*



CPHI heaters produce micron levels between 2.5 and 6.0. At these micron levels the majority of the CPHI heaters fall into the middle of the IR spectrum, categorizing them as medium wave heaters.

Single heating elements or multiple elements can be zoned and wired to achieve specific heating profiles.

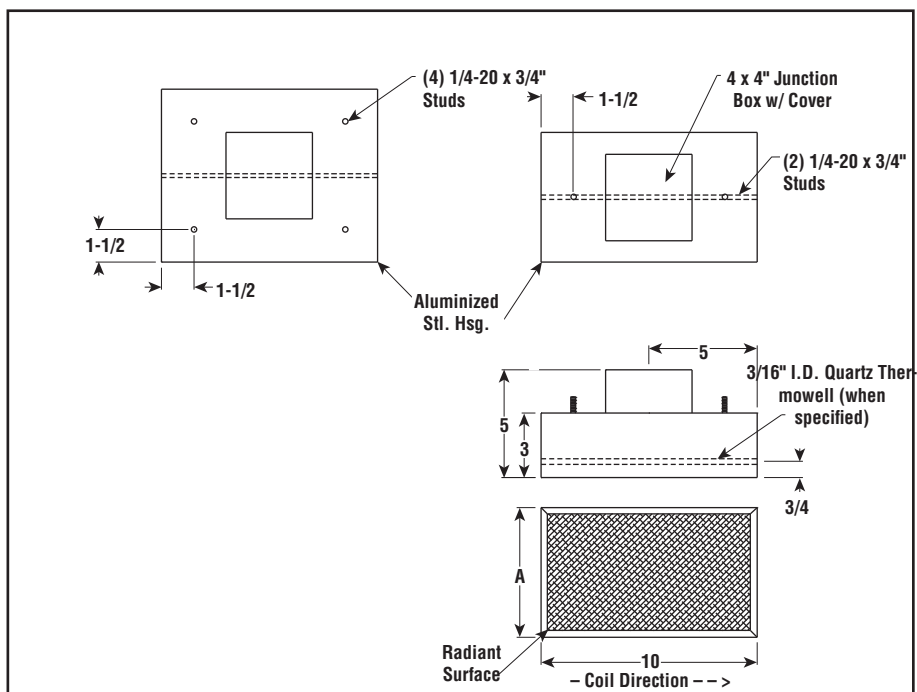
Outer edges of the element can have gradual increasing watt density to compensate for production edge losses.

Easy to Control — The use of time proportioning control with closed loop feedback, such as Chromalox 2104 temperature controllers, magnetic contactors or SCR power controllers assure easy and dependable system control. Thermowells may be offered in two locations in the heater interior. Suitable to accept Chromalox standard thermocouples, they sense emitter temperature ensuring accurate wavelength emission. Fast response time of the unit reduces thermal lag.

Overtemperature Control — It is strongly recommended that these units be controlled such that overheating and premature failure do not occur. This is of particular importance in oven usage, where high ambient temperatures exist.

CAUTION — Hazard of Fire. These radiant heaters must not be operated in the presence of flammable vapors, gases or combustible materials without proper ventilation and/or other safety precautions in compliance with either the National Fire Protection Bulletin 86A entitled "Ovens and Furnaces" or the authority having jurisdiction.

Dimensions (Inches)



Specifications and Ordering Information

kW	Volts	W/in ²	DIM (In.)		Thermowell	No. Mtg. Studs	Model	Stock	PCN	Wt. (Lbs.)
			A	B						
1.6	240	40	4	10	No*	2 ¹	CPHI-0424	NS	224549	3
2.4	240/480	40	6	10	No*	2 ¹	CPHI-0624	NS	224557	5
3.2	240/480	40	8	10	No*	4	CPHI-0824	NS	224565	6.5
4	240/480	40	10	10	Yes	4	CPHI-1024T	NS	224573	8
4.8	240/480	40	12	10	No*	4	CPHI-1224	NS	224581	9.5

Stock Status: S = stock NS = non-stock
To Order— Specify model, PCN, kW, volts, phase, and quantity.

1. For units with two mounting studs, locate each stud on the centerline of A dimension 1-1/2" in from the edge of the heater.

***Optional Features:**

- Thermocouple well comes standard on CPHI-1024T PCN 224573
- Thermocouple well - 3/16" I.D.
- Thermowells are available on all models. To order, add suffix "T" to model number.