

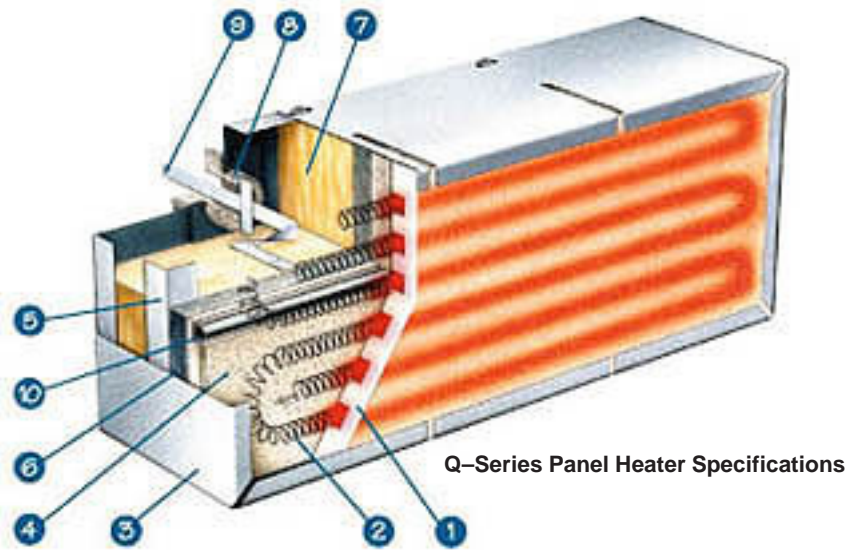
Q-Series Panel Heaters

Q-Series Panel Heater Models: QP and QH

The Q-Series infrared panel heaters offer the highest power density output available in an infrared panel heater. High-purity fused, translucent quartz is used for the heater's face.

Features:

1. Grooved, fused, translucent quartz emitter surface plate (QP/QH)
2. Precision-wound resistance wire
3. Heavy gauge aluminized steel frame
4. High-temperature, rigid refractory
5. Support angle to secure the quartz plate in the frame
6. Refractory blanket insulation layer
7. Bulk insulation to minimize back heat loss
8. Ceramic bushings to insulate terminals
9. Stainless steel terminals welded for long life
10. Quartz thermowell tube (optional)



Face Options

Opaque quartz is the standard face on the Q-Series panel heaters. For more than forty years, Solar Products has been an original manufacturer of fused silica (opaque quartz). The properties of quartz make it a very efficient radiator of infrared energy. Both our expertise with infrared heaters and ability to fuse quartz enable us to be the only company in the world to manufacture this unique heater. The back of each fused quartz face is precision machined to hold the resistance coil. With the coils resting in the grooves, the coils are surrounded by three walls of quartz, effectively maximizing the energy output of the heater. A reflective insulating fiber board is added behind the heating element to direct the infrared energy forward through the quartz face. Double layer insulation is installed behind the insulating board to decrease back heat loss. Aluminized steel casings and welded stainless steel terminations are standard throughout the heater.

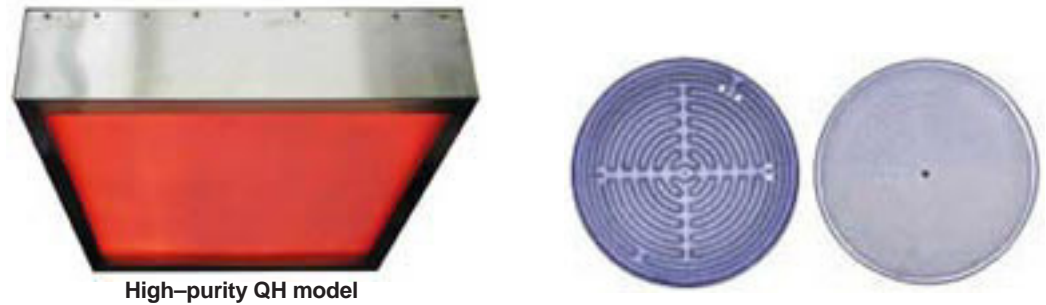
The orientation of the Q-Series heater must be controlled, as its heating elements are not cemented in place. Therefore, it is important to assure that the heating elements are not placed in a vertical orientation. That would eventually result in a slumping of the coils and a greatly reduced life expectancy.

Q-Series Specifications

The Q-Series heaters can be constructed as wide as 12" (305 mm) and as long as 24" (610 mm), though it is more common for the Q-Series heater to be produced 12" (305 mm) x 12" (305 mm) or smaller. The QP model has a maximum watt density of 40 watts/in² (62 kW/m²), and the QH model has a maximum watt density of 60 watts/in² (93 kW/m²). The Q-Series heaters have a durability defined by a typical life expectancy of 25,000 hours and a high radiant efficiency of 82%. Because the heater design does not depend on an external reflector, the heaters maintain a consistently high radiant efficiency over time. The Q-Series heat transfer rate for 60/in² (93 kW/m²) is 6.04 btu/sq. ft./sec. delivered to the product.

Quartz Grades

There are two grades of quartz available in the Q-Series heaters. The QP model uses 98.5% pure quartz, whereas the QH model uses a very high purity 99.998% quartz. The QH model is often used for semiconductor applications because of the quartz's high purity percentage, temperature uniformity, and ability to create unique shapes. The Q-Series heater is additionally used in several applications requiring high-intensity heat, such as high-speed drying and curing lines.



Q-Series Warm-up Curve

The warm-up curves are measured from heaters running facedown in open air. The thermocouple is located in a standard location inside a thermowell behind the coil. The curves will change depending on the environment and thermocouple location.

