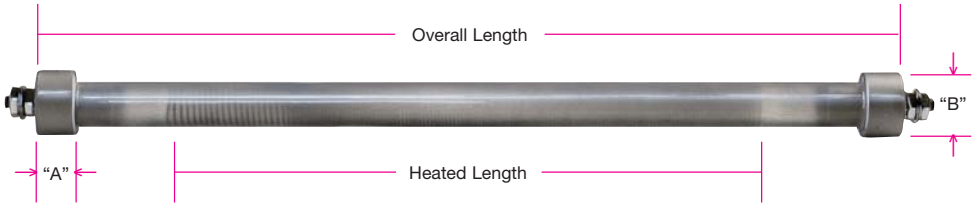
Radiant Process Heaters

Radiant Quartz Heaters

Vitreous Silica Quartz Tube



Ceramic End Cap Dimensions

Quartz Tube O.D.	"A"	"B"
3/8"	3/8"	5/8"
1/2"	1/2"	7/8"
5/8"	1/2"	7/8"

Tempco Radiant Quartz heaters are one of the most efficient sources of radiant energy. Quartz heaters can deliver near and far infrared wavelengths, which is more effective than a single wavelength, capable of generating full heat output capacity in 40 to 50 seconds and cool-down in less than 15 seconds. They offer excellent life characteristics whether operated continuously or intermittently with a quick heat and cool down response time. For most efficient heating and longer operating life, quartz heating applications should be rated around 35 to 40 watts per square inch.

Our radiant quartz heaters are specially designed for applications that require infrared radiant heating. Quartz Heaters consist of a helically wound resistance coil housed in a pure vitreous silica fused quartz tube. The heating coil is specially designed to provide long life at rated voltage. The quartz tubing is terminated with specially designed ceramic insulating caps that allow the quartz tubing to breathe. The ceramic caps are securely fastened to the quartz tube with high temperature cement, providing excellent support to the power connecting termination.

Quartz heating elements do not give off an objectionable glare because of a very low emission in the visible spectrum. Optimum design provides a clear red color on the translucent quartz tube when operating at full voltage, providing an infrared wavelength at energy peak of 2.5 to 3.0 microns. The wavelength is almost completely absorbed by the process, and considered best for most industrial applications.

Typical Applications

- *Shrink Packaging Tunnels*
- *Laminating*
- *Thermoforming*
- *Plastic Forming*
- *Fusing Plastics*
- *Vulcanizing Rubber*
- *Sterilization*
- *Sealing*
- *Food Warming*
- *Thawing*
- *Electrostatic Copying Equipment*
- *Food Processing*
- *Drying Photo Film Equipment*
- *Curing Rubber*
- *Drying Textiles*
- *Drying Lacquers and Paints*
- *Drying Sand Cores*
- *Space Heaters*
- *Thermal Copying Equipment*

QUARTZ HEATER SPECIFICATIONS

Dimensional

Diameters: 3/8", 1/2" and 5/8"

Max. Length: 3/8"dia. 50", 1/2" dia. 100", 5/8" dia. 100"

Length Tolerance: Minimum ±1/8" up to 12" long, ±2% over 12" long

Electrical

Max. Volts: 480 Volts

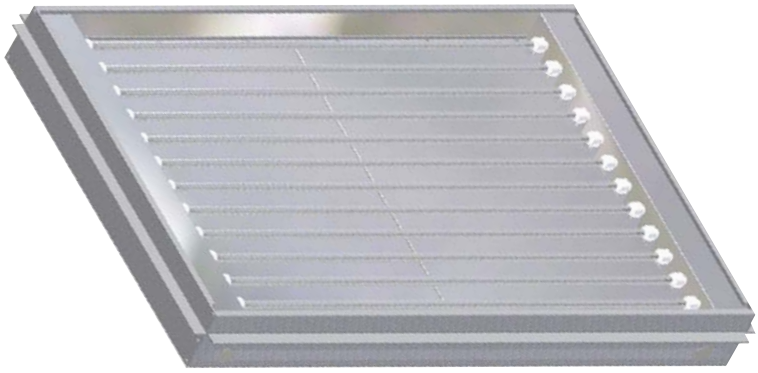
Max. Amperage: 20 Amps

Resistance Tolerance: +10%, –5%

Wattage Tolerance: +5%, –10%

Max Watt Density: 40 Watts/in²

***Warning:* Quartz Heaters Are Designed to be Used in a Horizontal Position Only**



ARA Array Panel with 1/2" Dia. Quartz Heaters

Custom 4" high ARA panels with 1/2" diameter T2 Quartz elements are available. Tempco will design and build to your specifications. Consult us with your requirements. (See ARA panels page 7-5)

Single Element and Dual Element 1/2" Dia. Quartz Heaters in Universal 2000 Housing—See pages 7-90 and 7-91

Product Inventory Available for Viewing and Selection @ www.tempco.com

Vitreous Silica Quartz Tube

Standard Sizes and Electrical Ratings

Vitreous Silica Quartz Tube heaters listed have Type T1 termination.

Quartz Tube Diameter	Overall Length in	Overall Length mm	Heated Length in	Heated Length mm	Watts	Part Number 120V	Part Number 240V
3/8"	14	355.6	12½	317.5	480	KRD00001	KRD00002
	20	508.0	18½	469.9	720	KRD00003	KRD00004
	26	660.4	24½	622.3	960	KRD00005	KRD00006
	38	965.2	36½	927.1	1450	KRD00007	KRD00008
	48	1219.2	46½	1181.1	1900	—	KRD00009
1/2"	18	457.2	16½	419.1	900	KRD00010	KRD00011
	20	508.0	18½	469.9	900	KRD00012	KRD00013
	26	660.4	24½	622.3	1200	KRD00014	KRD00015
	36	914.4	34½	876.3	1800	KRD00016	KRD00017
	38	965.2	36½	927.1	1800	KRD00018	KRD00019
	42	1066.8	40½	1028.7	1580	KRD00020	KRD00021
	48	1219.2	46½	1181.1	1820	KRD00022	KRD00023
	50	1270.0	48½	1231.9	2400	—	KRD00024
	54	1371.6	52½	1333.5	2060	—	KRD00025
	60	1524.0	58½	1485.9	2300	—	KRD00026
	66	1676.4	64½	1638.3	2540	—	KRD00027
	72	1828.8	70½	1790.7	2780	—	KRD00028
5/8"	24	609.6	21	533.4	1075	KRD00029	KRD00030
	26	660.4	23	584.2	1800	KRD00031	KRD00032
	30	762.0	27	685.8	1375	KRD00033	KRD00034
	38	965.2	35	889.0	2500	—	KRD00035
	42	1066.8	39	990.6	1975	KRD00036	KRD00037
	48	1219.2	45	1143.0	2275	—	KRD00038
	50	1270.0	47	1193.8	3400	—	KRD00039
	54	1371.6	51	1295.4	2575	—	KRD00040
	60	1524.0	57	1447.8	2875	—	KRD00041
	62	1574.8	59	1498.6	4200	—	KRD00042
	66	1676.4	63	1600.2	3175	—	KRD00043
	72	1828.8	69	1752.6	3475	—	KRD00044

Terminations

Type T3 End Caps with Slots

Slots in ceramic end caps are for mounting in grooved sheet metal housings. Coil tension and the slots hold the heater in place and allow for thermal expansion of the assembly. 1/4" quick-disconnect tabs standard for lead wire connection. Screw terminals optional.

Terminations

Type T1 Standard Termination

10-32 thread screw terminal standard termination.

Type T2 Panel Mount Bushings

10-32 thread screw terminals with extension bushings for CRA/TRH housing assemblies.

Type ST Tabs with Slotted Holes

1/2" wide × 3/4" long, with a 9/32" × 3/8" slot. Alternate mounting method.

Type FT Quick Disconnect Fuse Type

Fuse type connector provides ease of installation. Connectors are 3/8" OD × 1/2" long brass.

Type L1 Straight-Out Leads

10" flexible lead wire externally spliced standard. If longer leads are required, specify.

Type C4 Ceramic Caps with Leads

This termination provides 10-32 screw terminals insulated with ceramic terminal covers. Screws are prewired with 10" flexible lead wire. If longer leads are required, specify (also for T1 or T2).

Mounting Clamps can be found on page 7-77.

Ordering Information

Catalog Heaters

Order by Part number for standard heaters listed above.

Part Numbers listed are for heaters supplied with Type 1 Termination. For other terminations a Part Number will be issued at time of order.

Custom Engineered/Manufactured Heaters

Understanding that an electric heater can be very application specific, for sizes and ratings not listed, **TEMPCO** will design and manufacture a Radiant Quartz Heater to meet your requirements.
Standard lead time is 3 weeks.

Please Specify the following:

- ❑ Diameter
- ❑ Overall Length
- ❑ Heated Length
- ❑ Wattage
- ❑ Voltage
- ❑ Termination Type
- ❑ Lead Length if applicable
- ❑ Mounting Clamps (See page 7-77)