

1/8-Inch FIREROD® Cartridge Heaters

Miniature FIREROD® Provides Maximum Performance Where Space is Limited

When an application requires heat delivered into a small space with minimum weight, the 1/8-inch diameter FIREROD® cartridge heater from Watlow® is the ideal solution.

This swaged constructed miniature cartridge heater features high watt density, high operating temperature capability and provides long life in applications where it is essential to have a very small size.

Like all Watlow FIRERODs, the 1/8-inch maximizes heat transfer utilizing resistance wiring close to the heater sheath, isolated by a thin layer of compacted MgO insulation.

For this and other Watlow heaters, customers can also specify lead length and choose from a variety of lead options. Leads can be insulated with fiberglass or PTFE or protected by stainless steel braid or hose.

Watlow's 1/8-inch FIRERODs also have an option many others lack: the ability to have an internal J or K-type thermocouple located near the tip of the heater.

Typical Applications

- Burn-in chip test system
- Mass spectrometry
- High-definition ink jet printers
- 3D printing, fused deposition modeling
- Gas chromatography
- Respiratory equipment
- Gas analyzers
- Freeze protection
- Packaging equipment



Features and Benefits

Miniature size

- Delivers high performance in a small package
- Supports a wide variety of application requirements

Low mass

- Provides quicker response time
- Increases heater life
- Lowers internal temperature

Swaged construction

- Provides higher watt density and higher temperature capabilities
- Allows maximum heat transfer
- Increases safety due to low leakage current

Optional internal thermocouple

- Reduces system footprint
- Measures temperature at point of application

Manufactured to the highest quality standards

- Outlasts competitors in life testing
- Backed by over 50 years of industry expertise

Numerous lead options available

- Designed for flexibility and performance

Specifications

Sheath

- Alloy 600 is standard
- 304 stainless steel is available

Maximum application temperature

- 1400°F (760°C)

Maximum voltage

- 240V

Maximum wattage at 240V

- 744 W

Maximum amperage

- 3.1 amp

Wattage tolerances

- +10 percent, -15 percent

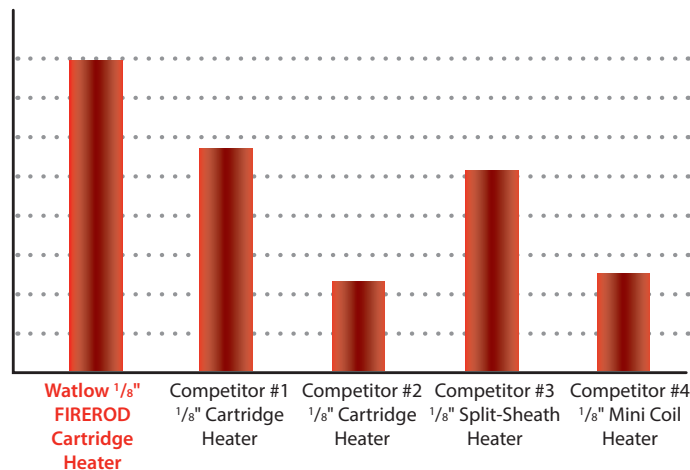
Dimensions

- Actual diameter is 0.122 in. (3.10 mm) $\pm$ 0.002 in. (0.05 mm)
- Minimum overall length is 0.875 in. (22.22 mm)
(Minimum length may change based on lead construction, volts and watts, please consult factory.)
- Maximum overall length is 12 in. (304.8 mm)
- Length tolerance 3.5 in. (89 mm) and less $\pm$ $\frac{3}{32}$ in. (2.4 mm)
- Length tolerance greater than 3.5 in. (89 mm) $\pm$ 3 percent

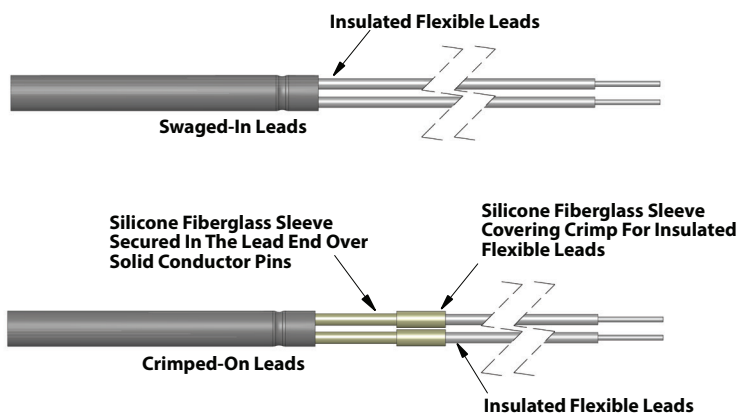
Construction

- Solid lead wire is standard, but stranded is available
- Lead options (see illustrations):
 - Crimped-on
 - Swaged-in
- Lead types are:
 - Fiberglass 482°F (250°C)
 - High temperature fiberglass 842°F (450°C)
 - PTFE 392°F (200°C)
- Moisture resistant option: Welded end-disk is standard with PTFE seal and leads available
- Internal thermocouple available
 - Thermocouple embedded in the end-disc "C" location
 - Thermocouple junction is grounded
 - Type J or K available (solid lead wire)
 - Swaged-in, fiberglass 482°F (250°C)
 - Swaged-in PTFE 392°F (200°C)
 - For available lengths, consult factory
- Lead protection options
 - Stainless steel braid crimped over lead end
 - Stainless steel flexible hose crimped over lead end
- Other options
 - Bent heaters, in no-heat section, up to 90° angle
 - One inch diameter mounting flange (FS flange)

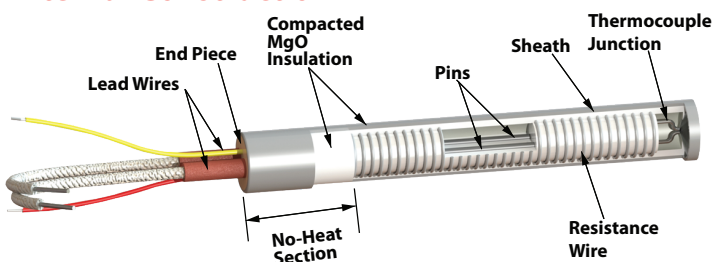
Average Hours of Operation During Stress Test Failure



Lead Options



Internal Construction



Watlow® and FIREROD® are registered trademarks of Watlow Electric Manufacturing Company.

Powered by Possibility

To be automatically connected to the nearest North American Technical Sales Office:

1-800-WATLOW2 • www.watlow.com
inquiry@watlow.com

International Technical Sales Offices:

China	+86 21 3532 8532	Italy	+39 02 4588841
France	+33 1 41 32 79 70	Japan	+81 3 3518 6630
Germany	+49 7253 9400 0	Korea	+82 2 2169 2600
India	+91 40 6661 2700	Mexico	+52 442 256 2200

Singapore	+65 6773 9488
Spain	+34 91 675 1292
Taiwan	+886 7 288 5168
UK	+44 115 964 0777