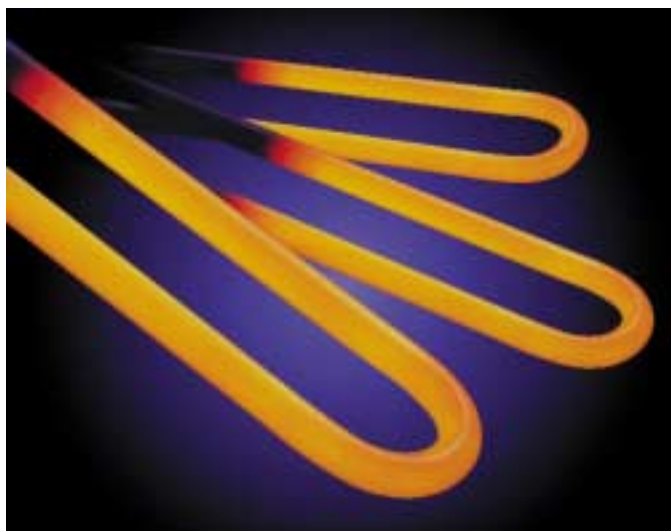


# HIGH TEMPERATURE TUBULAR HEATER

## High Temperature Tubular Ideal For Applications Resulting In Sheath Temperatures To 982°C (1800°F)



Watlow Hannibal manufactures high temperature tubular heaters to bridge the gap between standard tubular heaters and Watlow multicell heaters. This new tubular is well suited for process air heating applications in excess of 704°C (1300°F), resulting in a maximum sheath temperature of 983°C (1800°F). Controlled lab testing between the new design and current tubular designs shows an increase in life of approximately 50 percent.

The high temperature tubular consists of an engineered tubing with an outer sheath of Inconel® 600 and a special internal construction. The outer sheath offers high temperature capabilities and reduced oxidation, as well as corrosion resistance.

The new tubular offering is available in 10.9 mm (0.43 in.) and 9.52 mm (0.375 in.) diameters that are configurable either as formed tubulars or process heaters. Consult the Watlow Heater's catalog for standard options and bending parameters. The heaters can also be welded to flanges and plates for mounting purposes. Maximum sheath length available is 275 inches for the 10.9 mm (0.43 in.) and 9.52 mm (0.375 in.) diameters. Contact the factory for longer sheath lengths.

### Applications

- High temperature ovens and furnaces
- Radiant heating
- Drying
- Environmental—VOC abatement
- Process air heating: duct heaters, circulation heaters
- Vacuum applications
- Flue gas cleaning (desulphurization)
- Fluidized beds

Inconel® is a registered trademark of the Inco family of companies.

### Features and Benefits

#### Inconel 600 sheath material and a special internal construction

- Assures high temperature performance and corrosion protection in tough applications

#### Available in 9.52 mm (0.375 in.) and 10.9 mm (0.43 in.) diameters

- Can be configured to existing tubular designs that may be experiencing short life

#### Dual ended termination

- Can be installed into flanges and screw plugs similarly to standard product configurations

#### Bendable in standard formations

- Easy to apply in a wide variety of applications



HAN-HTT-0403

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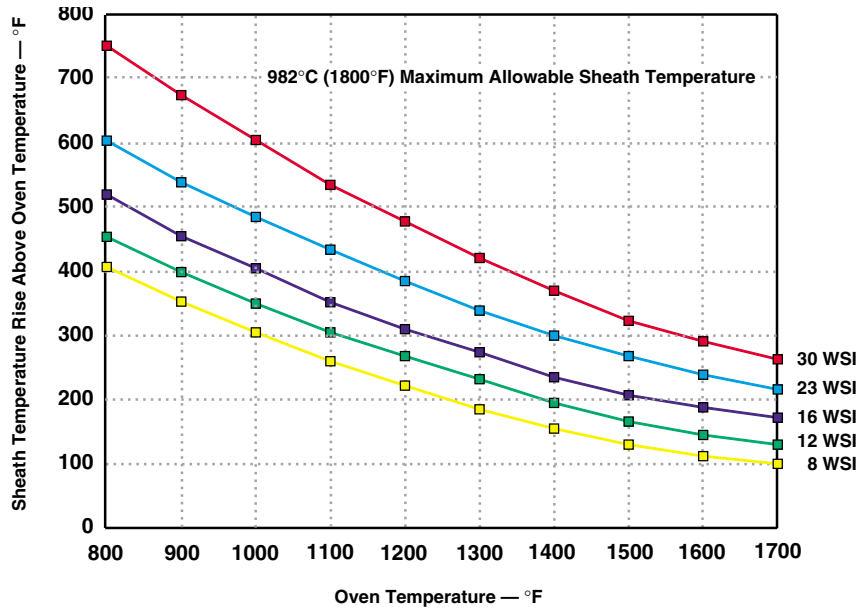
**North American Sales Offices:** Atlanta, (770)972-4948 • Austin, (512)249-1900 • Birmingham, (205)678-2358 • Charlotte, (704)573-8446 • Chicago, (847)458-1500 • Cincinnati, (513)398-5500 • Cleveland, (330)467-1423 • Dallas, (972)620-6030 • Denver, (303)798-7778 • Detroit, (248)651-0500 • Eastern Canada, (450)433-1309 • Houston, (281)440-3074 • Indianapolis, (317)575-8932 • Kansas City, (913)897-3973 • Los Angeles, (714)935-2999 • Louisiana, (318)864-2864 • Maryland/Virginia, (215)345-8130 • Minneapolis/Manitoba, (952)892-9222 • Nashville, (615)264-6148 • New England, (603)882-1330 • New York/New Jersey/Philadelphia, (215)345-8130 • New York, Upstate, (716)438-0454 • Ontario, (905)979-3507 • Orlando, (407)351-0737 • Phoenix, (602)298-6960 • Pittsburgh, (412)322-5004 • Portland, (503)245-9037 • Raleigh/Greensboro, (336)766-9659 • St. Louis, (314)878-4600 • Sacramento, (707)425-1155 • San Diego, (714)935-2999 • San Francisco, (408)434-1894 • Seattle, (425)222-4090 • Tampa/St. Petersburg, (407)647-9052 • Tulsa, (918)496-2826 • Western Canada, (604)444-4881 • Wisconsin, North (920)993-2161 • Wisconsin, South (262)723-5990

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## Sheath Temperature Versus Oven Temperature at Various Watt Density



The chart above should be used to verify the correct watt density for an oven application assuming no air flow. To use the chart, first select the oven process temperature on the X axis, using the chosen watt density read the sheath temperature rise above oven temperature from the Y axis. This number should then be added to oven temperature. If this number is greater than 982°C (1800°F), a lower watt density should be chosen.

### Heater Life Estimate Service

Watlow now provides an industry first service by offering the high temperature tubular. By providing operating parameters Watlow can provide customers with the estimated life of the heater. To get this information the following information should be provided:

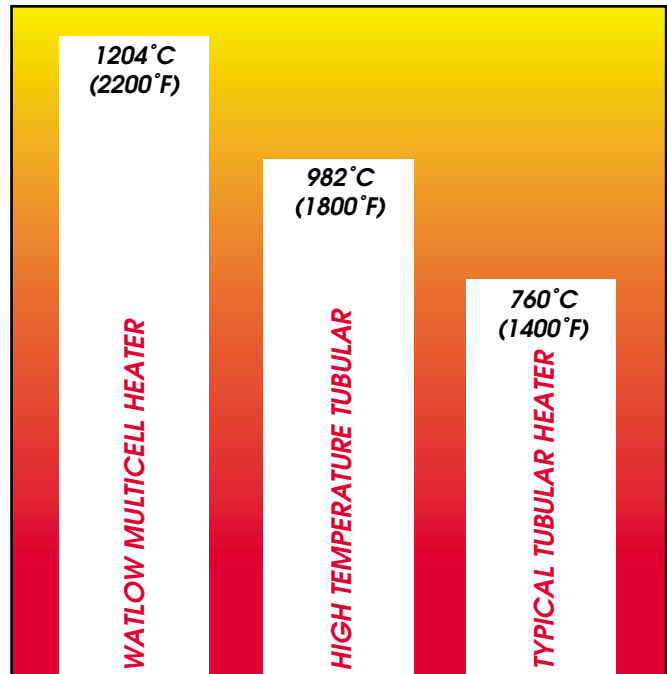
- Heater voltage
- Heater wattage
- Heater diameter 10.9 or 9.52 mm (0.430 or 0.375 in.)
- Heated length
- Bend configuration and dimensions (# of bends and radius)
- Application including process temperature
- Power switching device and cycle time (SCR, etc.)

### Ordering Information

To order please specify:

- Volts
- Watts
- Heater diameter 10.9 or 9.52 mm (0.430 or 0.375 in.)
- Termination type or style (studs, leadwire)
- Heated length
- Cold end length
- Overall sheath length
- Formation
- Mounting option (bulkheads, brackets, etc.)

## High Temperature Heater Comparisons



\*Assuming normal design practices.

Your Authorized Watlow Distributor is:

