**Finned Tubular Heaters**

**Design Features**
- Copper brazed steel fins on steel sheath standard. Aluminum based protective coating available.
- Stainless steel fins on stainless alloy sheath standard.
- .315, .430, & .475 Sheath diameters standard. .260 & .375 diameters optional. .625 diameter is special order in limited lengths.
- 5/16" fins standard on .315 diameter units, 3/8" fins on .430 & .475 diameter heaters. See physical specifications for optional sizes.
- Monel fins on Monel sheath available on special order only. Consult Tempco for details.
- 4.5-5 fins/in standard. 3.5-6 fins/in optional
- Steel finned catalog heaters have brazed brass bulkheads. Welded steel or staked bulkheads available. Stainless steel welded bulkheads are standard on cataloged stainless steel finned heaters. Fittings will have UNF threads unless custom threads are specified. See page 10-16B.
- Custom Mounting Brackets can be provided. See page 10-16C.

**Construction Characteristics**

THF finned heaters are constructed using Tempco’s robust tubular element as the basis of construction. Fin material is continuously spiral wound tightly onto the element surface to increase the convective surface area for air and non-corrosive gas heating. Fin spacing and size have been tested and selected to optimize performance. Steel finned units are then furnace brazed, bonding the fins to the sheath to increase conductive efficiency. This allows higher wattage levels to be achieved in the same flow area and produces lower sheath temperatures prolonging heater life. For higher temperature or more corrosive applications, stainless steel fins securely wound on alloy sheath are available. Application conditions such as vibration and toxic/flammable media should be taken into consideration when installing heaters. Protective coatings are available for use on steel finned heaters for mildly corrosive or high humidity applications.

Finned tubular elements are safer to operate than open coil heaters as the risk of fire from combustible particles in the flow stream and electrical shock is minimized. Increased service life and less maintenance required due to the rugged finned element construction. Power loading (w/in) of finned tubulars can be matched to any open coil installation. Pressure drop when using finned elements will be slightly more than with open coil but normally not enough to matter. It varies with flow velocity ranging from .04"H2O at 500 fpm to about .30"H2O at 1500 fpm when elements are banked together in several rows for duct heaters.

The finned tubular elements are normally used in forced or free convective air applications at low to medium temperatures. Typical applications are for heating indoor clean air from ambient conditions up to 250/275°F for steel finned units & to 550°F for stainless fins. Steel finned heaters can be operated up to 750°F on sheath and stainless steel finned heaters used up to 1200°F (1000°F UL limit) sheath temperatures. Nominal sheath watt density and recommended operating conditions for the cataloged heaters are included in the table headings & footnotes. Lower airflows will require lower watt density ratings. Consideration should be given to using un-finoned alloy sheath tubular elements for heating to higher outlet air temperatures or if operating in higher ambient air. Application conditions of flow velocity and inlet/outlet temperatures will govern sheath watt density to be used. The airflow graphs and examples presented will help with determining proper heater watt density. The cataloged designs are suitable for most low temperature applications that will be encountered.

**Finned Tubular Heaters** are UL recognized for US and Canada in many design variations up to 85W/in². 480V maximum. The UL File Number is E65652 (CCN KSOT2/KSOT8).

If you require UL, CSA, or other NRTL agency approvals, please specify when ordering.

View Product Inventory @ www.tempco.com
Tubular Heaters

**Finned Tubular Heaters**

**Typical Applications**
- Convective air & gas heating in ducts
- Load resistor banks
- Moisture removal (dehumidification)
- Curing ovens & plastics dryers
- Low/medium temperature heat treating
- Convection ovens for food preparation
- Exhaust gas heating
- Forced air electric heaters
- Heat pump auxiliary systems
- Return air heating
- Inert Industrial process gas heating
- Organic Resins & Paint curing, baking, & drying
- Autoclaves
- Film & ink drying
- Hopper heating
- Chemical processing & core drying
- Food Roasting & baking
- Textile & Varnish drying
- Heating for rail & marine applications

**TUBULAR ELEMENT SIZES & MATERIALS**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Material</th>
<th>Lengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>.315&quot;</td>
<td>Steel, 304L SS, 316L SS, Incoloy 840 and Incoloy 800</td>
<td>12” to 196” depending on sheath diameter</td>
</tr>
<tr>
<td>.375&quot;</td>
<td>Steel, 304L SS, 316L SS, Incoloy 840 and Incoloy 800</td>
<td>12” to 196” depending on sheath diameter</td>
</tr>
<tr>
<td>.430&quot;</td>
<td>Steel, 304L SS, 316L SS, Incoloy 840 and Incoloy 800</td>
<td>12” to 196” depending on sheath diameter</td>
</tr>
<tr>
<td>.475&quot;</td>
<td>Steel, 304L SS, 316L SS, Incoloy 840 and Incoloy 800</td>
<td>12” to 196” depending on sheath diameter</td>
</tr>
</tbody>
</table>

**Performance Ratings**

**Electrical Ratings**
- Maximum Voltage: Up to 600VAC (480V for UL)
- Resistance Tolerance: +10%, –5%
- Wattage Tolerance: +5%, –10%
- Sheath watt density range: 20-85 W/in² (2-13 W/cm²), @ 4.5 and 5 fins/inch

**Forming Limits**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Bend Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>.315&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>.375&quot;</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>.430&quot;</td>
<td>1.00&quot;</td>
</tr>
<tr>
<td>.475&quot;</td>
<td>1.21&quot;</td>
</tr>
</tbody>
</table>

**Surface Finishes**
Oven brazed steel finned units - standard
Copper brazed stainless steel fins using inert atmosphere - special
Bright annealed steel or stainless steel finned heaters
High heat aluminum painted steel
High heat flat black painted surface
Nickel plated finish.

**Notes**
- The above values are for factory formed heaters. Consult Tempco for field bending limits.
### Finned Tubular Heaters

#### Fitting Attachment Method — General Guidelines

These are guidelines only. Consult Tempco if you require assistance in determining the method best suited to your application.

- **Fittings Crimped**: Low pressure water (up to 80 psig) and non-pressure air applications
- **Fittings Brazed**: Non-ferrous alloys (copper) and dissimilar non-weldable metals
- **Fittings Welded**: High pressure liquids and gases, and high temperature applications

**Standard Bulkhead Fittings For Tubular Heaters — Round Flanged Standard**

<table>
<thead>
<tr>
<th>Tubular Diameter in mm</th>
<th>Fitting Material</th>
<th>Flange Type</th>
<th>“A” in</th>
<th>“B” in</th>
<th>“C” in</th>
<th>Thread Size (UNF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.315 8.0</td>
<td>Brass</td>
<td>Round</td>
<td>3/4</td>
<td>19</td>
<td>1/2</td>
<td>1/2-20</td>
</tr>
<tr>
<td>.315 8.0</td>
<td>Stn. Stl.</td>
<td>Round</td>
<td>3/4</td>
<td>19</td>
<td>1/2</td>
<td>1/2-20</td>
</tr>
<tr>
<td>.375 9.5</td>
<td>Brass</td>
<td>Round</td>
<td>3/4</td>
<td>19</td>
<td>1/2</td>
<td>1/2-20</td>
</tr>
<tr>
<td>.375 9.5</td>
<td>Stn. Stl.</td>
<td>Round</td>
<td>3/4</td>
<td>19</td>
<td>1/2</td>
<td>1/2-20</td>
</tr>
<tr>
<td>.430 10.9</td>
<td>Brass</td>
<td>Round or Hex</td>
<td>7/8</td>
<td>22</td>
<td>3/4</td>
<td>5/8-18</td>
</tr>
<tr>
<td>.430 10.9</td>
<td>Stn. Stl.</td>
<td>Round or Hex</td>
<td>7/8</td>
<td>22</td>
<td>3/4</td>
<td>5/8-18</td>
</tr>
<tr>
<td>.475 12.1</td>
<td>Brass</td>
<td>Round</td>
<td>7/8</td>
<td>22</td>
<td>3/4</td>
<td>5/8-18</td>
</tr>
<tr>
<td>.475 12.1</td>
<td>Steel</td>
<td>Round</td>
<td>7/8</td>
<td>22</td>
<td>3/4</td>
<td>5/8-18</td>
</tr>
<tr>
<td>.475 12.1</td>
<td>Brass</td>
<td>Round</td>
<td>1</td>
<td>25</td>
<td>3/4</td>
<td>3/4-16</td>
</tr>
<tr>
<td>.475 12.1</td>
<td>Stn. Stl.</td>
<td>Round</td>
<td>1</td>
<td>25</td>
<td>3/4</td>
<td>3/4-16</td>
</tr>
<tr>
<td>.625 15.9</td>
<td>Stn. Stl.</td>
<td>Round</td>
<td>1-1/8</td>
<td>29</td>
<td>3/4</td>
<td>7/8-14</td>
</tr>
</tbody>
</table>

**Note**: Optional Larger Thread Sizes and Hex Flanged Bulkhead Fittings are available. Consult Tempco with your requirements.

### Tubular Heater Standard Mounting Methods

**TYPE MC — Mounting Collar**

Plated steel mounting collars are locked in place with a set-screw and serve as an adjustable stop for through-the-wall mounting. Collars are shipped in bulk unless otherwise specified. Mounting collars can be ordered with the heater or purchased separately.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>For Element Diameter</th>
<th>“A” Thick</th>
<th>“B” OD</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAS-108-102</td>
<td>.315</td>
<td>8.0</td>
<td>5/16</td>
</tr>
<tr>
<td>FAS-108-103</td>
<td>.315</td>
<td>8.0</td>
<td>5/16</td>
</tr>
<tr>
<td>FAS-108-104</td>
<td>.375</td>
<td>9.5</td>
<td>3/8</td>
</tr>
<tr>
<td>FAS-108-106</td>
<td>.375</td>
<td>9.5</td>
<td>3/8</td>
</tr>
<tr>
<td>FAS-108-102</td>
<td>.430</td>
<td>10.9</td>
<td>7/16</td>
</tr>
<tr>
<td>FAS-108-106</td>
<td>.475</td>
<td>12.0</td>
<td>7/16</td>
</tr>
<tr>
<td>FAS-108-102</td>
<td>.430</td>
<td>10.9</td>
<td>7/16</td>
</tr>
<tr>
<td>FAS-108-106</td>
<td>.475</td>
<td>12.0</td>
<td>7/16</td>
</tr>
</tbody>
</table>

**TYPE LR — Locator Washer**

Locator washers are permanently attached to the heater sheath by staking/crimping and are used to limit the movement of the heater while allowing for expansion and contraction of the heater sheath. When ordering, specify location from end of sheath.

---

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TYPE MF — Mounting Bracket

Tempco’s made-to-order mounting brackets are made from 18 gauge stainless steel for strength and stiffness. It is an economical way to mount the heater in non-presurizing, non-liquid applications. Unless otherwise specified, the bracket will be located 1/2” from the edge of the heater sheath. OEM quantity brackets are manufactured by Tempco on our own high speed precision N/C Turret Press. The standard method of attaching the tubular element to the bracket is staking or crimping.

The rectangular mounting bracket shown at right is a popular made-to-order design. Specify all dimensions shown when requesting a quote.

Custom brackets of any size, thickness or material can be supplied to meet your requirements.

Magnesium Oxide (MgO) is used as the insulating material in Tempco tubular heaters because of its excellent thermal conductivity and dielectric strength. However, MgO is hygroscopic and can absorb moisture from the atmosphere. This absorption of moisture may be detected when an Insulation Resistance (IR) test is done with a megohmmeter prior to energizing the heater circuit. In very humid environments, circuits utilizing a GFI (ground fault interrupter) for safety may experience nuisance tripping when energizing the heater.

The Tempco manufacturing process produces a dry element with an IR of several thousand megohms minimum. However, after shipment and depending on humidity levels and storage time, a heater can absorb moisture and show a decrease in IR. In many cases, depending on the supply voltage and the application, the heater can be safely energized and will dry itself out.

If a heater has absorbed moisture, a safe and effective method of drying it out prior to installation is to bake it in an oven at 300°F (149°C) until an acceptable IR reading is obtained. When possible, removing the terminal hardware will expedite this process. If this method is not practical consult factory for other recommendations.

For applications where moisture absorption would be unacceptable Tempco has several optional element end seals to retard absorption of moisture in the MgO. If a true hermetic seal is required, ceramic to metal end seals (Type H) are available. With any of these seals, the maximum recommended termination temperature in the seal area must not be exceeded.

Style SS—Silicone Resin Seal
A brushed-on coating that penetrates the MgO, offering economical moisture protection under humid storage conditions.

**Maximum Usable Termination Temperature:** 390°F (200°C)
**UL Rated Maximum Termination Temperature:** 221°F (105°C)
- Type V2A: conformal coating
- Type V2B: silicone oil

Style SER—RTV Seal
RTV (room temperature vulcanizing) silicone rubber adhesive sealant provides a good moisture seal.

**UL Rated – Maximum Termination Temperature:**
- Type R: 302°F (150°C)
- Type R1: 392°F (200°C)

Style SEH—Epoxy Resin Seal
Epoxy resin provides a moisture resisting barrier.

**UL Rated – Maximum Termination Temperature:**
- Type V: 194°F (90°C)
- Type V1: 266°F (130°C)
- Type V4: 392°F (200°C)
Design Guidelines
The major factors that need to be considered when specifying THF finned tubular heaters are as follows:

- Minimum FPM airflow velocity at heater inlet. Is it continuous or fluctuating
- Inlet air temperature
- Outlet air temperature and temperature rise through heating elements
- Selection of element watt density to keep sheath material within its temperature limits
- Sheath material selection
- Condition of air or gas to be heated
- Mounting & airflow restrictions around elements
- KW sizing and # of circuits required (48 amp max/circuit)
- Temperature sensors & flow controls

Heater KW Sizing
Once the inlet temperature, outlet temperature, process CFM, and operating pressure are known, the KW required for the application can be determined using the following equations. If the process is heating air & operating from ambient temperature and atmospheric pressure (70°F +/- 10°F & 14.7 psi), the following formula can be used;

\[
KW = \left( \frac{SCFM \times (T2-T1)}{3190} \right) + S.F.
\]

Where:
- \(T2\) = °F outlet temperature
- \(T1\) = °F inlet temperature
- SCFM = standard air flow in cu.ft./min. at atmospheric pressure and ambient temperature
- S.F. = safety factor % to account for process losses

Converting CFM to SCFM
If the air heating process is pressurized or operating at an inlet temperature other than at or near ambient, the CFM at a point in the process with a known pressure & temperature must be used & converted to standard SCFM by the following formula;

\[
SCFM = 35.4 \times CFM2 \times \left( \frac{P2+14.7}{T2+460} \right)
\]

Where CFM2 is cu.ft./min. air flow at process pressure \(P2\).
- \(P2\) = process pressure (psig)
- \(T2\) = inlet °F or temperature at point of measured CFM2

Using the SCFM and the heater face flow area we can now calculate the air velocity in SFPM into the heater core as follows;

\[
SFPM = \frac{SCFM}{A1}
\]

Using the inlet air velocity at the heater and the maximum outlet temperature desired the maximum sheath watt density can now be determined from the following charts for the type of heater being specified. If a cataloged design is not suitable, the physical size and constraints of the application will dictate the final configuration and number of heaters required. For large installations, 3 phase circuits need to be balanced and all circuits limited no more than 48 amps per circuit. If voltages are higher than 250V, .375, .430, or .475 diameter elements are recommended.
Sheath Watt Density
The maximum sheath watt density to be specified is directly determined by the operating variables of FPM airflow velocity and inlet/outlet air/gas temperatures required. It must be selected such that sheath operating temperatures are not exceeded; 750°F for steel sheath-steel finned, or 1200°F for stainless steel/alloy sheath with stainless fins. Cataloged heaters are designed to operate within these parameters. The following charts will help guide the user in selecting proper watt density.

Chart 1 for steel (or SS) finned elements relates the maximum allowable sheath wsi to outlet air temperature that will be obtained at various air velocity levels. These curves are for 750°F (or lower) sheath operating temperature.

The following Examples Illustrate the Graph’s Use
Example 1
An application requires a heater to output 275°F air at an air velocity of 750 FPM. Entering the curves with 275°F, then up to 750 FPM level we find that a maximum of 62-64 wsi can be applied. Depending on voltage and space constraints either a .315 or .430 diameter catalog heater could be used.

Example 2
A curing oven needed 325°F outlet air at a minimum velocity of 1500 FPM. Entering chart at 325°F up to the 1500 FPM curve, we see that the heater could have a maximum of 70-72 sheath wsi. If a higher outlet air temperature is required, or if the airflow velocity is lower, then a reduced a sheath wsi would have to be specified.

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Chart 2 shows the relationship of maximum outlet air temperature obtained vs inlet air velocity at several sheath WSI levels.

This chart can be used for either steel or stainless steel finned elements operating at a maximum of 750°F and provides a way of establishing either airflow required or outlet temperature that will be obtained when sheath WSI is known for an application.

These curves show that to obtain a higher air outlet temperature at a constant FPM, the sheath WSI must be reduced to keep the element within the 750°F temperature limit of sheath & fin materials. These curves are for air entering a heater at or near ambient (60°-105°F).
Chart 3 is a plot of sheath temperature and sheath watt density at various levels of inlet forced air at 80°F. It can be used to determine a maximum allowable sheath wsi for heating applications not restricted to the steel sheath limit of 750°F. It can be used directly for most ambient air heating processes using Incoloy or Stainless Steel sheathed elements with stainless steel fins.

The following Example Illustrates the Graph’s use when Operating in a Higher Ambient

Application
A recirculating process oven with organic vapors, moisture & other air contamination present, requires 500°F air at a minimum flow velocity of 900 FPM. Can a Stainless steel finned alloy sheathed heater at 80 wsi be used?

Using the Graph
Entering this chart at 900 FPM and 80 wsi, we find the sheath temperature when operating at 80°F ambient will be 700°F. The ambient temperature difference from the graph value of 80°F to the new higher 500°F ambient is 420°F (500-80). The new sheath temperature when operating in the 500°F ambient will be approximately 1120°F. (700 + 420). This is just 80° lower than the 1200°F limit for a stainless steel finned heater.

To conserve heater life it would be best to use a lower watt density & operate the heater at the lowest point possible given voltage, size, and construction constraints of the application. Consideration should be given to increasing the air velocity or using un-finned alloy sheath tubular heaters for this application. (See page 11-104)

Tech note: The reverse is true if element is operating in an ambient lower than 80°F. The sheath temperature would be reduced by the difference in the temperatures. The WSI range shown on the chart is approximately 4.25 times an unfinned tubular. The data has been confirmed by Tempco lab testing on .430 & .475 diameter finned heaters with 4.5-5 fins/in.
.315 diameter elements are typically used for air heating from ambient to 250/275°F at a minimum airflow of 700 FPM.

Maximum sheath temperature is 750°F. Reduced sheath watt density (wsi) required for lower airflows.

.430 diameter elements are typically used for air heating from ambient to 275/300°F at a minimum airflow of 750 FPM.

Maximum sheath temperature is 750°F. Reduced sheath watt density (wsi) required for lower airflows.

.475 diameter elements are typically used for air heating from ambient to 450/500°F at a minimum airflow of 1400 FPM.

Maximum sheath temperature is 1200°F. Reduced sheath watt density (wsi) required for lower airflows.
### Tubular Heaters

#### Finned Tubular Heaters

**Contact Information**
- Phone: (800) 323-6859
- Email: sales@tempco.com

**Standard (Non-Stock) Sizes and Ratings with Type T Termination**
- 62-64 Sheath Watt Density (wsi)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.315 Dia.</td>
<td>.315</td>
<td>.92</td>
<td>83⁄4</td>
<td>63⁄4</td>
<td>2</td>
<td>750</td>
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<tr>
<td>Steel Element</td>
<td>.315</td>
<td>.92</td>
<td>10 3⁄4</td>
<td>83⁄4</td>
<td>2</td>
<td>1500</td>
</tr>
<tr>
<td>.315</td>
<td>.92</td>
<td>14 3⁄4</td>
<td>12 3⁄4</td>
<td>2</td>
<td>2</td>
<td>1000</td>
</tr>
<tr>
<td>.315</td>
<td>.92</td>
<td>18 3⁄4</td>
<td>16 3⁄4</td>
<td></td>
<td>2</td>
<td>2000</td>
</tr>
<tr>
<td>.315</td>
<td>.92</td>
<td>26 3⁄4</td>
<td>24 3⁄4</td>
<td></td>
<td>2</td>
<td>3000</td>
</tr>
<tr>
<td>Steel Fins</td>
<td>.315</td>
<td>.92</td>
<td>34 3⁄4</td>
<td>32 3⁄4</td>
<td>2</td>
<td>4000</td>
</tr>
<tr>
<td>60 W/in</td>
<td>.315</td>
<td>.92</td>
<td>43</td>
<td>41</td>
<td>2</td>
<td>5000</td>
</tr>
<tr>
<td>.315 Dia.</td>
<td>.430</td>
<td>11 3⁄4</td>
<td>9 3⁄4</td>
<td></td>
<td>2</td>
<td>1500</td>
</tr>
<tr>
<td>Steel Element</td>
<td>.430</td>
<td>11 3⁄4</td>
<td>12 3⁄4</td>
<td></td>
<td>2</td>
<td>2000</td>
</tr>
<tr>
<td>.315</td>
<td>.430</td>
<td>21</td>
<td>19</td>
<td></td>
<td>2</td>
<td>3000</td>
</tr>
<tr>
<td>.430 Dia.</td>
<td>.430</td>
<td>27</td>
<td>25</td>
<td></td>
<td>2</td>
<td>4000</td>
</tr>
<tr>
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<td>32 3⁄4</td>
<td>31</td>
<td></td>
<td>2</td>
<td>5000</td>
</tr>
<tr>
<td>80 W/in</td>
<td>.430</td>
<td>39 3⁄4</td>
<td>37 3⁄4</td>
<td></td>
<td>2</td>
<td>6000</td>
</tr>
<tr>
<td>.475 Dia.</td>
<td>.475</td>
<td>10 3⁄4</td>
<td>8 3⁄4</td>
<td></td>
<td>2</td>
<td>1500</td>
</tr>
<tr>
<td>SS Element</td>
<td>.475</td>
<td>13 3⁄4</td>
<td>11 3⁄4</td>
<td></td>
<td>2</td>
<td>2000</td>
</tr>
<tr>
<td>.475</td>
<td>.475</td>
<td>18 3⁄4</td>
<td>16 3⁄4</td>
<td></td>
<td>2</td>
<td>3000</td>
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<td>.475</td>
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<td>24</td>
<td>22</td>
<td></td>
<td>2</td>
<td>4000</td>
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<tr>
<td>.475 Dia.</td>
<td>.475</td>
<td>29 3⁄4</td>
<td>27 3⁄4</td>
<td></td>
<td>2</td>
<td>5000</td>
</tr>
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<td>3/8 SS Fins</td>
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<td>33</td>
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<td>2</td>
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<tr>
<td>90 W/in</td>
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<td>40 3⁄4</td>
<td>38 3⁄4</td>
<td></td>
<td>2</td>
<td>7000</td>
</tr>
</tbody>
</table>

**.315 Diameter Elements**
- Typically used for air heating from ambient to 250/275°F at a minimum airflow of 700 FPM.
- Maximum sheath temperature is 750°F.
- Reduced sheath watt density (wsi) required for lower airflows.

**.430 Diameter Elements**
- Typically used for air heating from ambient to 275/300°F at a minimum airflow of 750 FPM.
- Maximum sheath temperature is 750°F.
- Reduced sheath watt density (wsi) required for lower airflows.

**.475 Diameter Elements**
- Typically used for air heating from ambient to 450/500°F at a minimum airflow of 1400 FPM.
- Maximum sheath temperature is 1200°F.
- Reduced sheath watt density (wsi) required for lower airflows.
## Tubular Heaters

### Finned Tubular Heaters

- **.315 Dia. Steel Element**
  - 5/16 Brazed
  - Steel Fins
  - Diameter: 60 W/in
  - Watts: 750
  - Part Number: THF00479

- **.430 Dia. Steel Element**
  - 3/8 Brazed
  - SteelFins
  - Diameter: 80 W/in
  - Watts: 1500
  - Part Number: THF00512

- **.475 Dia. SS Element**
  - 3/8 SS Fins
  - Diameter: 90 W/in
  - Watts: 750
  - Part Number: THF00554

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### Standard (Non-Stock) Sizes and Ratings with Type T Termination

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### Notes:
- .315 diameter elements are typically used for air heating from ambient to 250/275°F at a minimum airflow of 700 FPM. Maximum sheath temperature is 750°F. Reduced sheath watt density (wsi) required for lower airflow.
- .430 diameter elements are typically used for air heating from ambient to 275/300°F at a minimum airflow of 750 FPM. Maximum sheath temperature is 750°F. Reduced sheath watt density (wsi) required for lower airflow.
- .475 diameter elements are typically used for air heating from ambient to 450/500°F at a minimum airflow of 1400 FPM. Maximum sheath temperature is 1200°F. Reduced sheath watt density (wsi) required for lower airflow.
# Tubular Heaters

## Finned Tubular Heaters

**10-16 K**

(800) 323-6859 • Email: sales@tempco.com

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### Standard (Non-Stock) Sizes and Ratings with Type T Termination

**62-64 Sheath Watt Density (wsi)**

- .315 diameter elements are typically used for air heating from ambient to 250/275°F at a minimum airflow of 700 FPM. Maximum sheath temperature is 750°F. Reduced sheath watt density (wsi) required for lower airflows.

- .430 diameter elements are typically used for air heating from ambient to 275/300°F at a minimum airflow of 750 FPM. Maximum sheath temperature is 750°F. Reduced sheath watt density (wsi) required for lower airflows.

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[(800) 323-6859 • Email: sales@tempco.com](mailto:Email: sales@tempco.com)
### Tubular Heaters

**Standard (Non-Stock) Sizes and Ratings with Type T Termination**

62-64 Sheath Watt Density (wsi)

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<tr>
<th>Element Description</th>
<th>Watts</th>
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<tr>
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<td>2000</td>
<td>—</td>
<td>—</td>
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Finned Duct Heaters can be found on Page 11-113A and 11-113B
The Single-Ended Tubular Heater manufacturing and design process is similar to that of the double ended tubular heater. Single ended tubular heaters are made strictly per customer request, providing an economical alternative to cartridge heater applications, simplifying wiring and installation for applications requiring localized heat. Flanges, bulkhead and NPT fittings can be attached to the sheath for mounting or immersion heating applications.

**Specifications**
- **Diameters:** .315" - .430" - .475" - .490" - .625"
- **Material:** 304SS, 316SS, Monel, Steel
- **Min. Sheath Length:** 11"  **Max. Sheath Length:** 96"
- **Termination:** Lead Wires
- **Max. Volts:** 277 Vac  **Max. Amperage:** 30 Amp

**Ordering Information Single-Ended Tubular Heaters**

**Please Specify** the following:
- Sheath Material and Diameter
- Wattage and Voltage
- Heater Length and Cold Ends
- Terminations and Seals
- Bulkhead Fittings
- Mounting Flange

**WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.