

## Process Air Heaters Overview

- **Fintube® Heaters**
- **Finstrip® Heaters**
- **Circular Finstrip® Heaters**
- **High Temperature Duct Heaters**
- **Medium Temperature Duct Heaters**
- **Low Temperature Duct Heaters**



Heat processing applications vary widely from industry to industry. Curing, drying, heat treating, comfort heating, sterilizing and bonding represent just a few of the many uses for electrically heated air. Applications vary in temperature from super cool cryogenic to high temperatures up to 1200°F. Chromalox electric heaters can also be designed to heat special atmospheres such as argon or nitrogen. Special materials and custom designs are available for marine applications, power plants or hazardous applications.

Chromalox can supply individual finned elements for use in OEM equipment or entire duct heater assemblies where we have complete control over the product including the elements, frames and controls. Chromalox has earned an outstanding reputation for exceptional quality, reliability and long life.

### Finned Heating Elements

**Finstrip® Elements** — Superior to open coil elements, the heating coil is completely encased in a metal sheath, minimizing a shock hazard due to accidental contact with the heater. The rigid metal sheath minimizes hot spots and electrical shorting, likely with open coil elements. Application temperatures to 565°F are typical using finned strip units.

**Fintube® Elements** — The finned tubular design provides the same benefits as the finned strip heater and additional features, allowing for special bending configurations to provide higher concentrations of installed kW for a given area. The elements can be supplied with bulkhead threaded fittings, and may include optional hermetically sealed terminals, or extra heavy wall thickness for use in atmospheres containing hazardous fumes or gasses. Element diameters of 0.315" and 0.475" are standard, with high temperature aluminum painted steel sheath and furnace brazed fins being the most common materials. Stainless Steel or MONEL® sheath and fins are also available for corrosive environments.

### Duct Heater Assemblies

**High Temperature** — Type ADHT is designed to provide outlet air temperatures up to 1200°F using conservatively rated, low watt density, INCOLOY® tubular elements. The heater includes three inches of high temperature rated insulation below the mounting flange to reduce heat transfer to the wiring enclosure. The elements are prewired and

subdivided into 48 Amp maximum circuits in compliance with the National Electrical Code. The heater is provided with a Type "K" thermocouple attached to the sheath of one element to be used with a Chromalox high limit control.

**Medium Temperature** — Application temperatures to 750°F are common for ADH type duct heaters which feature INCOLOY® sheath tubular heating elements. These versatile units are fully assembled and prewired with the elements subdivided into 48 Amp maximum circuits in compliance with the National Electrical Code.

**Low Temperature** — Outlet air temperatures to 440°F are typical for types CAB, CABB and DAB which use finned strip heater elements in an assembly which is then inserted in and bolted to existing ductwork.

### Process Air Heaters — Selection Guidelines

Type	Feature	kW Rating	Model	Page
Fintube®	0.475" Fintube®	0.47 - 10	FTS & FTI	E-3
	0.315" Fintube®	0.5 - 6.2	FTS & FTI	E-4
	0.475" Single End	0.5 - 4.3	SFTS & SFTI	E-5
	0.315" Single End	0.3 - 2.4	SFTS & SFTI	E-7
Finstrip®	Finstrip®	0.2 - 4.1	OTF	E-9
	Circular Strip	1.9 - 5.0	KSEF	E-11
Air Duct	Medium Temperature	5 - 270	ADH	E-14
	High Temperature	5 - 300	ADHT	E-15
	Low Temperature	6 - 100	CAB & CABB	E-17
	Round Duct	2.5 - 5	DAB	E-19
Custom Air Heating Solutions				E-20

PROCESS AIR AND RADIANT

## FT Series Fintube® Air Heaters Overview

- Many Sheath and Fin Materials Available
- 475 - 10,000 Watts
- 120, 240 and 480 Volt
- 750 to 900°F Max. Sheath Temp.

### Applications

- Drying
- Heat Treating
- Annealing
- Load Banks
- Curing Ovens, Dryers, Ducts, etc.

### Features

**Versatile** — Ideal for both comfort and industrial process air applications. Aluminum painted steel (FTS), MONEL® (FTI) or Stainless Steel (FTSS) sheath and fin material are available. Contact your Local Chromalox Sales office for price and availability.

**Fins** greatly increase surface area and permit faster heat transfer to the air, resulting in lower element surface temperatures.

**Construction** — Element is constructed like the standard tubular element with the addition of continuous spiral fins (4 - 5 per inch) permanently furnace brazed to the sheath.

**High Watt Density** permits use of fewer elements or higher concentration of installed kW for a given area.

Figure 1 — Dimensions (Inches)

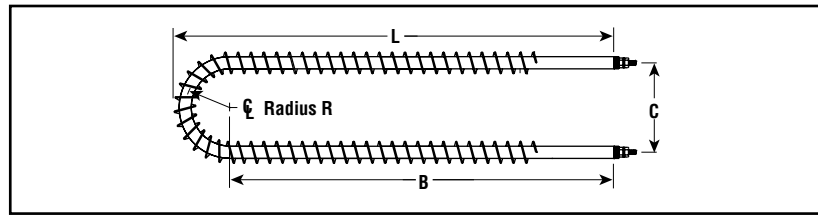
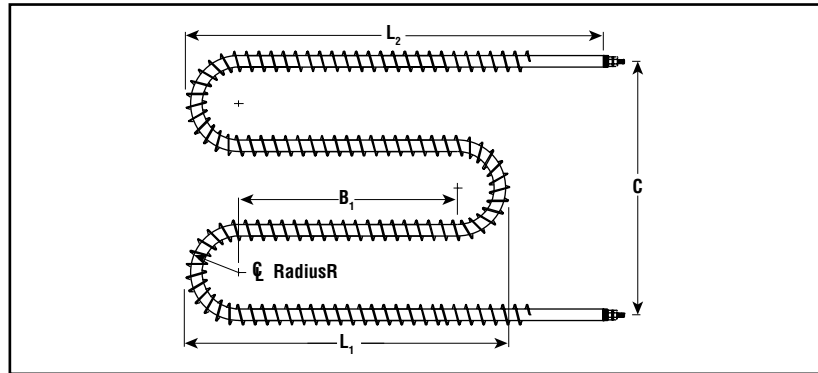


Figure 2 — Dimensions (Inches)



**Easy Installation** — Bending configurations can be designed to fit either round or rectangular ducts. Tight element bends are repressed in hydraulic presses after bending to assure recompaction of refractory material to eliminate hot spots and electrical insulation voids.

**Power Connections** should be made with alloy wire.

**Overtemperature Protection** — A high limit temperature cutout is recommended.

**Bending** — Fintube® elements may be field or factory bent according to the following parameters:

### Factory & Customer Bending (In.)

Element Dia. (In.)	Min. Factory		Min. Customer	
	C	R	C	R
<b>Figure 1</b>				
0.315	2	1	2-5/16	1-5/32
0.475	2	1	3-3/8	1-11/16
<b>Figure 2</b>				
0.315	6	1	6-15/16	1-5/32
0.475	6	1	10-1/8	1-11/16

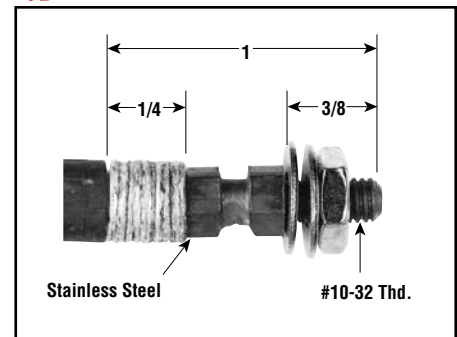
**Note** — The start of any bends should be no closer than 3-7/16" for 0.475" dia. or 3-5/8" for 0.315" dia. elements, from the end of the sheath to prevent the heating element/cold pin junction from being located in a bend.

**Special Features** — Sheath material (i.e. Stainless Steel), threaded fittings, length, diameter, volts, watts, special bends, terminals, terminal enclosures, brackets, spacers, etc. Contact your Local Chromalox Sales office for price and availability.

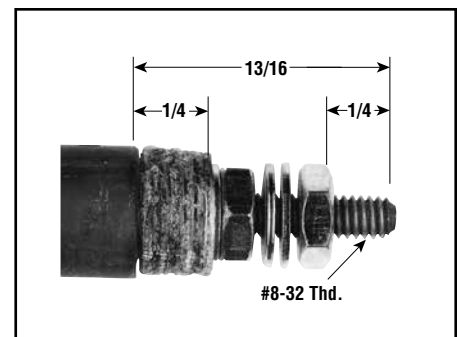
### Standard Terminal Construction

**Standard Terminal Construction** — Type 3 terminals are standard on 0.315" diameter sheaths and Type 4 terminals for 0.475" diameter sheaths.

### Type 3 Terminal — Dimensions (In.)



### Type 4 Terminal — Dimensions (In.)

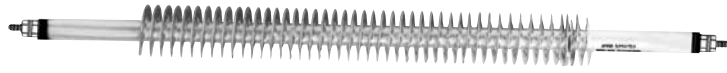


**Special Terminal Construction** — Many types of terminals are available to suit different applications. See Tubular section in this catalog for selection.

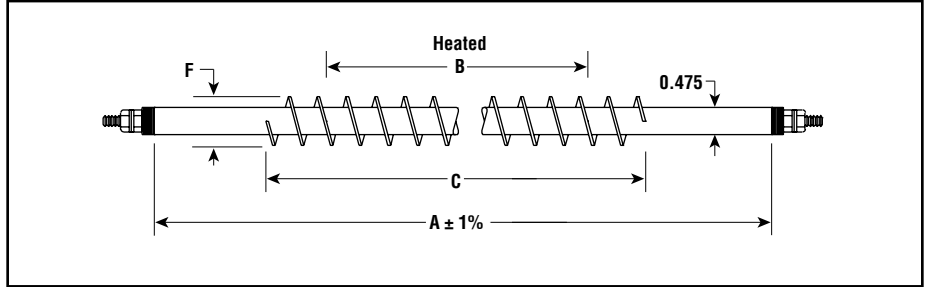




## FTS & FTI .475" Dia. Fintube® Heaters



### Dimensions (Inches)



- Steel Sheath (type FTS)
- MONEL® Sheath (type FTI)
- 475 - 10,000 Watts
- 120, 240 and 480 Volt
- 60 W/In<sup>2</sup>
- 750°F Max. Sheath Temp. (type FTS)
- 900°F Max. Sheath Temp. (type FTI)

### Applications

Best suited for the following applications where space is limited.

- Drying
- Heat Treating
- Annealing
- Load Banks
- Curing Ovens, Dryers, Ducts, etc.

### Advantages

The metal sheath isolates and protects the resistor wire from the environment. At the same time it maximizes heat transfer capability to the work. Fintube® elements can be bent to put the heat where it works best.

Fins greatly increase surface area and permit faster heat transfer to the air, resulting in lower element surface temperatures. High watt density permits use of fewer elements and a higher concentration of installed kW for a given area.

Fintube® heaters are ideal for both comfort and industrial process air applications.

### Features

**Type 4 Terminals** — Standard. Integral parts of the element are of high strength to resist bending during tightening of the wiring connections. Type 4 terminal is a threaded extension of the cold pin. See standard terminal detail in the FT Series Overview.

**Work Temperatures** — See Allowable Watt Density & Heater Selection Graphs G-151 through G-156 in Technical section of this catalog.

**Bending** — Customer's minimum bending radius, see Factory and Customer Bending Table in the FT Series Overview.

**Stainless Steel Sheath** — Optional. Contact your Local Chromalox Sales office.

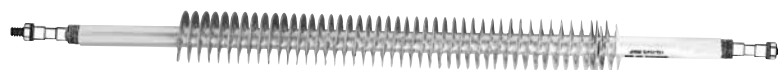
**Special Features** — Sheath material, threaded fittings, length, volts, watts, brackets, etc. Contact your Local Chromalox Sales office for price and availability.

### Specifications and Ordering Information

Watts	Volts	Dimensions (In.)				Model	Stock	PCN	Wt. (Lbs.)
		A	C	F	B				
<b>FTS — Steel Sheath (approximately 60 W/In<sup>2</sup>) — 0.475" Diameter</b>									
475	120	12	7-1/2	1.14	5-5/8	FTS-012475	NS	334019	1
725	120	15	10-1/2	1.14	8-5/8	<b>FTS-015475</b>	<b>S</b>	<b>334027</b>	1
1,450	120	24	19-1/2	1.14	17-5/8	FTS-024475	NS	334051	2
1,450	240	24	19-1/2	1.14	17-5/8	FTS-024475	NS	334060	2
2,450	120	36	31-1/2	1.14	29-5/8	FTS-036475	NS	334094	3
2,450	240	36	31-1/2	1.14	29-5/8	<b>FTS-036475</b>	<b>S</b>	<b>334107</b>	3
3,450	240	48	43-1/2	1.14	41-5/8	FTS-048475	NS	334131	3
5,000	240	63	58-1/2	1.14	56-5/8	<b>FTS-063475</b>	<b>S</b>	<b>334158</b>	5
5,000	480	63	58-1/2	1.14	56-5/8	FTS-063475	NS	334166	5
7,000	240	86	81-1/2	1.14	79-5/8	FTS-086475	NS	334190	7
7,000	480	86	81-1/2	1.14	79-5/8	FTS-086475	NS	334203	7
10,000	240	119	115-1/2	1.14	112-5/8	FTS-119475	NS	334254	9
10,000	480	119	115-1/2	1.14	112-5/8	FTS-119475	NS	334262	9
<b>FTI — MONEL® Sheath (approximately 60 W/In<sup>2</sup>) — 0.475" Diameter</b>									
475	120	12	7-1/2	1.14	5-5/8	FTI-012475	NS	334705	1
725	120	15	10-1/2	1.14	8-5/8	FTI-015475	NS	334713	1
1,450	120	24	19-1/2	1.14	17-5/8	FTI-024475	NS	334748	2
1,450	240	24	19-1/2	1.14	17-5/8	FTI-024475	NS	334756	2
2,450	120	36	31-1/2	1.14	29-5/8	FTI-036475	NS	334780	3
2,450	240	36	31-1/2	1.14	29-5/8	FTI-036475	NS	334799	3
3,450	240	48	43-1/2	1.14	41-5/8	FTI-048475	NS	334828	3
5,000	240	63	58-1/2	1.14	56-5/8	FTI-063475	NS	334844	5
5,000	480	63	58-1/2	1.14	56-5/8	FTI-063475	NS	334852	5
7,000	240	86	81-1/2	1.14	79-5/8	FTI-086475	NS	334887	7
7,000	480	86	81-1/2	1.14	79-5/8	FTI-086475	NS	334895	7
10,000	240	119	115-1/2	1.14	112-5/8	FTI-119475	NS	334940	9
10,000	480	119	115-1/2	1.14	112-5/8	FTI-119475	NS	334959	9
<p><b>Stock Status:</b> S = stock NS = non-stock  <b>To Order</b> — Specify model, PCN, watts, volts and quantity.</p>									

## FTS & FTI

### .315" Dia. Fintube® Heaters



- Steel Sheath (type FTS)
- MONEL® Sheath (type FTI)
- 500 - 6,200 Watts
- 120, 240 and 480 Volt
- 60 W/In<sup>2</sup>
- 750°F Max. Sheath Temp. (type FTS)
- 900°F Max. Sheath Temp. (type FTI)

### Applications

Best suited for the following applications where space is limited.

- Drying
- Heat Treating
- Annealing
- Load Banks
- Curing Ovens, Dryers, Ducts, etc.

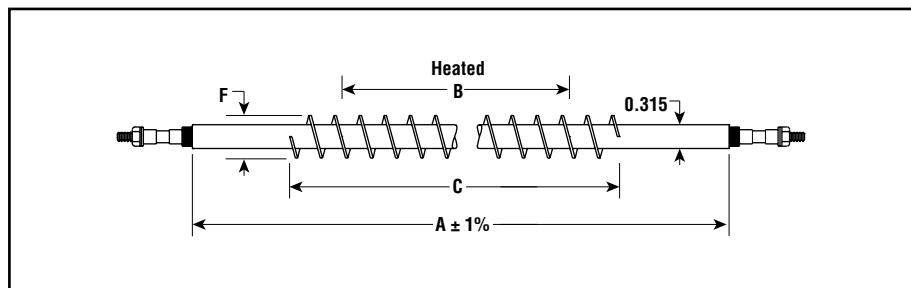
### Advantages

The metal sheath isolates and protects the resistor wire from the environment. At the same time it maximizes heat transfer capability to the work. Fintube® elements can be bent to put the heat where it works best.

Fins greatly increase surface area and permit faster heat transfer to the air, resulting in lower element surface temperatures. High watt density permits use of fewer elements and a higher concentration of installed kW for a given area.

Fintube® heaters are ideal for both comfort and industrial process air applications.

### Dimensions (Inches)



### Features

**Type 3 Terminals** — Standard. Integral parts of the element are of high strength to resist bending during tightening of the wiring connections. Type 3 terminal is a threaded extension welded to the cold pin. See standard terminal detail in the FT Series Overview.

**Work Temperatures** — See Allowable Watt Density & Heater Selection Graphs G-151 through G-156 in Technical section of this catalog.

**Bending** — Customer's minimum bending radius, see Factory and Customer Bending Table in the FT Series Overview.

**Stainless Steel Sheath** — Optional. Contact your Local Chromalox Sales office.

**Special Features** — Sheath material, threaded fittings, length, volts, watts, brackets, etc. Contact your Local Chromalox Sales office for price and availability.

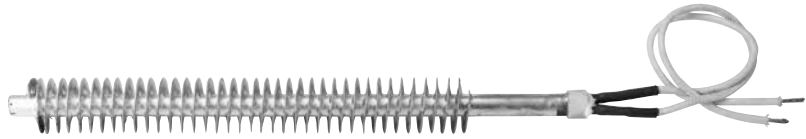
### Specifications and Ordering Information

Watts	Volts	Dimensions (In.)				Model	Stock	PCN	Wt. (Lbs.)
		A	C	F	B				
<b>FTS — Steel Sheath (approximately 60 W/In<sup>2</sup>) — 0.315" Diameter</b>									
500	120	15	10-1/2	0.844	8-1/4	FTS-015315	NS	334270	1
1,025	120	24	19-1/2	0.844	17-1/4	FTS-024315	NS	334297	1
1,025	240	24	19-1/2	0.844	17-1/4	FTS-024315	NS	334300	1
1,750	120	36	31-1/2	0.844	29-1/4	FTS-036315	NS	334334	2
1,750	240	36	31-1/2	0.844	29-1/4	FTS-036315	NS	334342	2
2,450	120	48	43-1/2	0.844	41-1/4	FTS-048315	NS	334377	2
2,450	240	48	43-1/2	0.844	41-1/4	FTS-048315	NS	334385	2
3,500	240	63	58-1/2	0.844	56-1/4	FTS-063315	NS	334406	4
3,500	480	63	58-1/2	0.844	56-1/4	FTS-063315	NS	334414	4
4,700	240	86	81-1/2	0.844	79-1/4	FTS-086315	NS	334449	6
4,700	480	86	81-1/2	0.844	79-1/4	FTS-086315	NS	334457	6
6,200	480	119	115-1/2	0.844	112-1/4	FTS-119315	NS	334502	8
<b>FTI — MONEL® Sheath (approximately 60 W/In<sup>2</sup>) — 0.315" Diameter</b>									
500	120	15	10-1/2	0.844	8-1/4	FTI-015315	NS	334967	1
1,025	120	24	19-1/2	0.844	17-1/4	FTI-024315	NS	334983	1
1,025	240	24	19-1/2	0.844	17-1/4	FTI-024315	NS	334991	1
1,750	120	36	31-1/2	0.844	29-1/4	FTI-036315	NS	335020	2
1,750	240	36	31-1/2	0.844	29-1/4	FTI-036315	NS	335038	2
2,450	120	48	43-1/2	0.844	41-1/4	FTI-048315	NS	335062	2
2,450	240	48	43-1/2	0.844	41-1/4	FTI-048315	NS	335070	2
3,500	240	63	58-1/2	0.844	56-1/4	FTI-063315	NS	335097	4
3,500	480	63	58-1/2	0.844	56-1/4	FTI-063315	NS	335100	4
4,700	240	86	81-1/2	0.844	79-1/4	FTI-086315	NS	335134	6
4,700	480	86	81-1/2	0.844	79-1/4	FTI-086315	NS	335142	6
6,200	480	119	115-1/2	0.844	112-1/4	FTI-119315	NS	335193	8

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, watts, volts and quantity.

## SFTS & SFTI

### .475" Dia. Single End Fintube® Heaters



- Steel Sheath (type SFTS)
- MONEL® Sheath (type SFTI)
- 500 - 4,350 Watts
- 120, 240 and 480 Volt
- 60 W/In<sup>2</sup>
- 750°F Max. Sheath Temp. (type SFTS)
- 900°F Max. Sheath Temp. (type SFTI)

#### Applications

Best suited for the following applications where space is limited.

- Drying
- Heat Treating
- Annealing
- Load Banks
- Curing Ovens, Dryers, Ducts, etc.

#### Advantages

**Versatile** — Ideal for both comfort and industrial process air applications.

**Single-End Terminals** simplify wiring and eliminate the need for return wire.

**Install More Elements in Same Space** as standard, double-end Fintube®.

**No Bending** required to put all terminals in the same plane.

**Smaller Heating Duct or Chamber** in some cases.

**Construction** — Element is constructed like the standard single-end tubular element with the addition of continuous spiral fins (4 - 5 per inch) permanently furnace brazed to the sheath.

**Fins** greatly increase surface area and permit faster heat transfer to the air, resulting in lower element surface temperatures.

**High Watt Density** permits use of fewer elements or higher concentration of installed kW for a given area.

**Lead Wires**, 10" long, with silicone-impregnated Fiberglas® sleeves. Maximum wire temperature is 200°C.

**Leads** are attached to terminals inside a ceramic terminal bushing.

#### Application Tips

**Terminal Block** should be on outside of duct or heating area.

**Element Supports** should be provided for every two feet of element length.

**Work Temperatures** — See Allowable Watt Density & Heater Selection Graphs G-151 through G-156 in Technical section.

**Special Features** — Sheath material, threaded fittings, length, volts, watts, brackets, etc. Contact your Local Chromalox Sales office for price and availability.

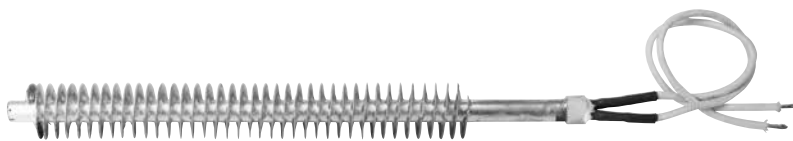
**Bending** is not recommended for single end elements. Contact your Local Chromalox Sales office.

**Stainless Steel Sheath** — Optional. Contact your Local Chromalox Sales office for price and availability.

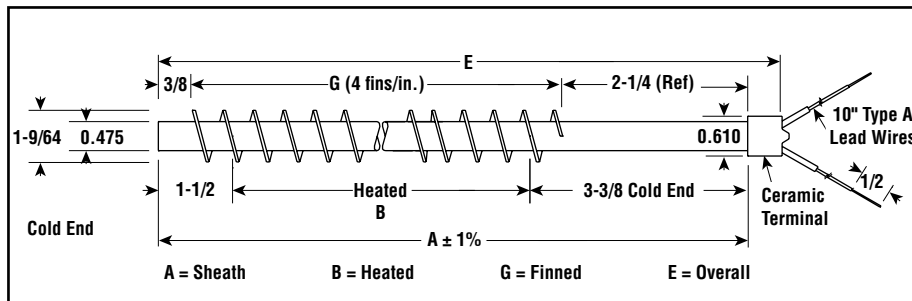
## SFTS & SFTI

.475" Dia. Single End Fintube® Heaters

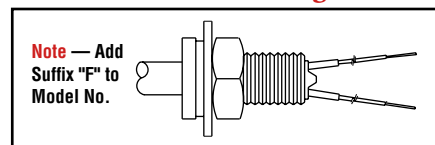
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Dimensions (Inches)



Terminal End with Fitting



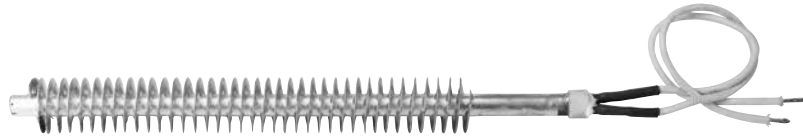
### Specifications and Ordering Information

Watts	W/In <sup>2</sup>	Volts	Dimensions (In.)				Model	Stock	PCN	Model	Stock	PCN	Wt. (Lbs.)
			A	B	E	G							
500	47	120	11-3/4	7-1/8	12-5/8	9-3/8	SFTS-12475	NS	222279	SFTI-12475	NS	222906	1
500	47	240	11-3/4	7-1/8	12-5/8	9-3/8	SFTS-12475	NS	222287	SFTI-12475	NS	222914	1
975	59	120	15-3/4	11-1/8	16-5/8	13-3/8	SFTS-16475	NS	222295	SFTI-16475	NS	222922	1
975	59	240	15-3/4	11-1/8	16-5/8	13-3/8	SFTS-16475	NS	222308	SFTI-16475	NS	222930	1
1,200	41	120	19-3/4	15-1/8	20-5/8	17-3/8	SFTS-20475	NS	222316	SFTI-20475	NS	222949	2
1,200	41	240	19-3/4	15-1/8	20-5/8	17-3/8	SFTS-20475	NS	222324	SFTI-20475	NS	222957	2
1,200	41	480	19-3/4	15-1/8	20-5/8	17-3/8	SFTS-20475	NS	222332	SFTI-20475	NS	222965	2
1,675	59	120	23-3/4	19-1/8	24-5/8	21-3/8	SFTS-24475	NS	222340	SFTI-24475	NS	222973	2
1,675	59	240	23-3/4	19-1/8	24-5/8	21-3/8	SFTS-24475	NS	222359	SFTI-24475	NS	222981	2
1,675	59	480	23-3/4	19-1/8	24-5/8	21-3/8	SFTS-24475	NS	222367	SFTI-24475	NS	222990	2
1,975	57	120	27-3/4	23-1/8	28-5/8	25-3/8	SFTS-28475	NS	222375	SFTI-28475	NS	223001	2
1,975	57	240	27-3/4	23-1/8	28-5/8	25-3/8	SFTS-28475	NS	222383	SFTI-28475	NS	223010	2
1,975	57	480	27-3/4	23-1/8	28-5/8	25-3/8	SFTS-28475	NS	222391	SFTI-28475	NS	223028	2
2,150	53	120	31-3/4	27-1/8	32-5/8	29-3/8	SFTS-32475	NS	222404	SFTI-32475	NS	223036	3
2,300	57	240	31-3/4	27-1/8	32-5/8	29-3/8	SFTS-32475	NS	222412	SFTI-32475	NS	223044	3
2,300	57	480	31-3/4	27-1/8	32-5/8	29-3/8	SFTS-32475	NS	222420	SFTI-32475	NS	223052	3
2,100	45	120	35-3/4	31-1/8	36-5/8	33-3/8	SFTS-36475	NS	222439	SFTI-36475	NS	223060	3
2,700	58	240	35-3/4	31-1/8	36-5/8	33-3/8	SFTS-36475	NS	222447	SFTI-36475	NS	223079	3
2,700	58	480	35-3/4	31-1/8	36-5/8	33-3/8	SFTS-36475	NS	222455	SFTI-36475	NS	223087	3
1,950	37	120	39-3/4	35-1/8	40-5/8	37-3/8	SFTS-40475	NS	222463	SFTI-40475	NS	223095	3
3,150	60	240	39-3/4	35-1/8	40-5/8	37-3/8	SFTS-40475	NS	222471	SFTI-40475	NS	223108	3
3,150	60	480	39-3/4	35-1/8	40-5/8	37-3/8	SFTS-40475	NS	222480	SFTI-40475	NS	223116	3
1,750	30	120	43-3/4	39-1/8	44-5/8	41-3/8	SFTS-44475	NS	222498	SFTI-44475	NS	223124	3
3,500	60	240	43-3/4	39-1/8	44-5/8	41-3/8	SFTS-44475	NS	222500	SFTI-44475	NS	223132	3
3,500	60	480	43-3/4	39-1/8	44-5/8	41-3/8	SFTS-44475	NS	222519	SFTI-44475	NS	223140	3
1,575	25	120	47-3/4	43-1/8	48-5/8	45-3/8	SFTS-48475	NS	222527	SFTI-48475	NS	223159	4
3,850	60	240	47-3/4	43-1/8	48-5/8	45-3/8	SFTS-48475	NS	222535	SFTI-48475	NS	223167	4
3,850	60	480	47-3/4	43-1/8	48-5/8	45-3/8	SFTS-48475	NS	222543	SFTI-48475	NS	223175	4
1,450	21	120	51-3/4	47-1/8	52-5/8	49-3/8	SFTS-52475	NS	222551	SFTI-52475	NS	223183	4
4,225	60	240	51-3/4	47-1/8	52-5/8	49-3/8	SFTS-52475	NS	222560	SFTI-52475	NS	223191	4
4,225	60	480	51-3/4	47-1/8	52-5/8	49-3/8	SFTS-52475	NS	222578	SFTI-52475	NS	223204	4
1,325	17	120	55-3/4	51-1/8	56-5/8	53-3/8	SFTS-56475	NS	222586	SFTI-56475	NS	223212	4
4,400	58	240	55-3/4	51-1/8	56-5/8	53-3/8	SFTS-56475	NS	222594	SFTI-56475	NS	223220	4
4,400	58	480	55-3/4	51-1/8	56-5/8	53-3/8	SFTS-56475	NS	222607	SFTI-56475	NS	223239	4
1,225	15	120	59-3/4	55-1/8	60-5/8	57-3/8	SFTS-60475	NS	222615	SFTI-60475	NS	223247	5
4,350	53	240	59-3/4	55-1/8	60-5/8	57-3/8	SFTS-60475	NS	222623	SFTI-60475	NS	223255	5
4,350	53	480	59-3/4	55-1/8	60-5/8	57-3/8	SFTS-60475	NS	222631	SFTI-60475	NS	223263	5

Stock Status: S = stock NS = non-stock  
To Order—Specify model, PCN, watts, volts and quantity.

## SFTS & SFTI

### .315" Dia. Single End Fintube® Heaters



- Steel Sheath (type SFTS)
- MONEL® Sheath (type SFTI)
- 325 - 2,400 Watts
- 120 and 240 Volt
- 60 W/in<sup>2</sup>
- 750°F Max. Sheath Temp. (type SFTS)
- 900°F Max. Sheath Temp. (type SFTI)

#### Applications

Best suited for the following applications where space is limited.

- Drying
- Heat Treating
- Annealing
- Load Banks
- Curing Ovens, Dryers, Ducts, etc.

#### Advantages

**Versatile** — Ideal for both comfort and industrial process air applications.

**Single-End Terminals** simplify wiring and eliminate the need for return wire.

**Install More Elements in Same Space** as standard, double-end Fintube®.

**No Bending** required to put all terminals in the same plane.

**Smaller Heating Duct or Chamber** in some cases.

**Construction** — Element is constructed like the standard single-end tubular element with the addition of continuous spiral fins (4 - 5 per inch) permanently furnace brazed to the sheath.

**Fins** greatly increase surface area and permit faster heat transfer to the air, resulting in lower element surface temperatures.

**High Watt Density** permits use of fewer elements or higher concentration of installed kW for a given area.

**Lead Wires**, 10" long, with silicone-impregnated Fiberglas® sleeves. Maximum wire temperature is 200°C.

**Leads** are attached to terminals inside a ceramic terminal bushing.

#### Application Tips

**Terminal Block** should be on outside of duct or heating area.

**Element Supports** should be provided for every two feet of element length.

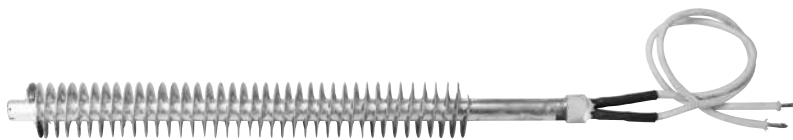
**Work Temperatures** — See Allowable Watt Density & Heater Selection Graphs G-151 through G-156 in Technical section.

**Special Features** — Sheath material, threaded fittings, length, volts, watts, brackets, etc. Contact your Local Chromalox Sales office for price and availability.

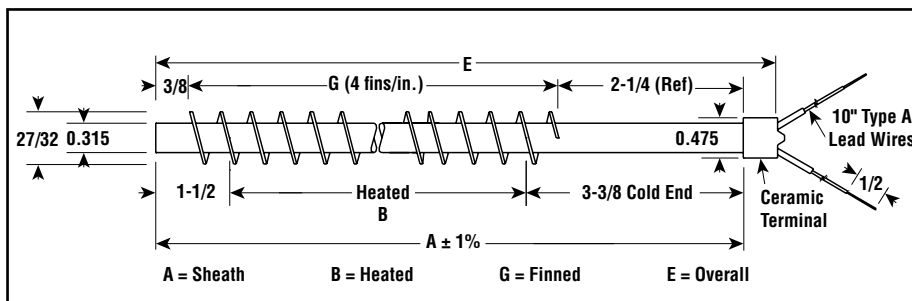
**Bending** is not recommended for single end elements. Contact your Local Chromalox Sales office.

## SFTS & SFTI

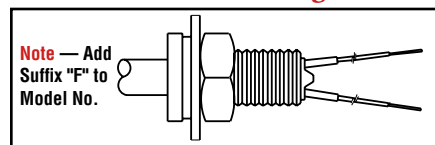
.315" Dia. Single End  
Fintube® Heaters (*cont'd.*)



*Dimensions (Inches)*



*Terminal End with Fitting*



### Specifications and Ordering Information

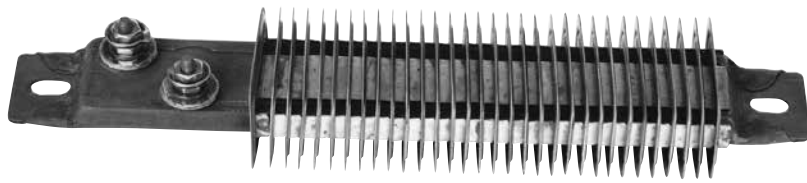
Watts	W/In <sup>2</sup>	Volts	Dimensions (In.)				Steel Sheath			MONEL® Sheath			Wt. (Lbs.)
			A	B	E	G	Model	Stock	PCN	Model	Stock	PCN	
325	45	120	11-7/8	7-1/4	12-5/8	9-1/2	SFTS-12315	NS	222017	SFTI-12315	NS	222640	1
325	45	240	11-7/8	7-1/4	12-5/8	9-1/2	SFTS-12315	NS	222025	SFTI-12315	NS	222658	1
500	45	120	15-7/8	11-1/4	16-5/8	13-1/2	SFTS-16315	NS	222033	SFTI-16315	NS	222666	1
500	45	240	15-7/8	11-1/4	16-5/8	13-1/2	SFTS-16315	NS	222041	SFTI-16315	NS	222674	1
700	46	120	19-7/8	15-1/4	20-5/8	17-1/2	SFTS-20315	NS	222050	SFTI-20315	NS	222682	1
700	46	240	19-7/8	15-1/4	20-5/8	17-1/2	SFTS-20315	NS	222068	SFTI-20315	NS	222690	1
1,200	63	120	23-7/8	19-1/4	24-5/8	21-1/2	SFTS-24315	NS	222076	SFTI-24315	NS	222703	1
1,150	60	240	23-7/8	19-1/4	24-5/8	21-1/2	SFTS-24315	NS	222084	SFTI-24315	NS	222711	1
1,200	52	120	27-7/8	23-1/4	28-5/8	25-1/2	SFTS-28315	NS	222092	SFTI-28315	NS	222720	1
1,300	56	240	27-7/8	23-1/4	28-5/8	25-1/2	SFTS-28315	NS	222105	SFTI-28315	NS	222738	1
1,200	45	120	31-7/8	27-1/4	32-5/8	29-1/2	SFTS-32315	NS	222113	SFTI-32315	NS	222746	2
1,600	59	240	31-7/8	27-1/4	32-5/8	29-1/2	SFTS-32315	NS	222121	SFTI-32315	NS	222754	2
1,200	39	120	35-7/8	31-1/4	36-5/8	33-1/2	SFTS-36315	NS	222130	SFTI-36315	NS	222762	2
1,900	61	240	35-7/8	31-1/4	36-5/8	33-1/2	SFTS-36315	NS	222148	SFTI-36315	NS	222770	2
1,200	34	120	39-7/8	35-1/4	40-5/8	37-1/2	SFTS-40315	NS	222156	SFTI-40315	NS	222789	2
2,200	63	240	39-7/8	35-1/4	40-5/8	37-1/2	SFTS-40315	NS	222164	SFTI-40315	NS	222797	2
1,200	31	120	43-7/8	39-1/4	44-5/8	41-1/2	SFTS-44315	NS	222172	SFTI-44315	NS	222800	2
2,250	58	240	43-7/8	39-1/4	44-5/8	41-1/2	SFTS-44315	NS	222180	SFTI-44315	NS	222818	2
1,200	28	120	47-7/8	43-1/4	48-5/8	45-1/2	SFTS-48315	NS	222199	SFTI-48315	NS	222826	2
2,400	56	240	47-7/8	43-1/4	48-5/8	45-1/2	SFTS-48315	NS	222201	SFTI-48315	NS	222834	2
1,200	26	120	51-7/8	47-1/4	52-5/8	49-1/2	SFTS-52315	NS	222210	SFTI-52315	NS	222842	2
2,400	51	240	51-7/8	47-1/4	52-5/8	49-1/2	SFTS-52315	NS	222228	SFTI-52315	NS	222850	2
1,150	23	120	55-7/8	51-1/4	56-5/8	53-1/2	SFTS-56315	NS	222236	SFTI-56315	NS	222869	3
2,400	47	240	55-7/8	51-1/4	56-5/8	53-1/2	SFTS-56315	NS	222244	SFTI-56315	NS	222877	3
1,075	20	120	59-7/8	55-1/4	60-5/8	57-1/2	SFTS-60315	NS	222252	SFTI-60315	NS	222885	3
2,400	44	240	59-7/8	55-1/4	60-5/8	57-1/2	SFTS-60315	NS	222260	SFTI-60315	NS	222893	3

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, watts, volts and quantity.

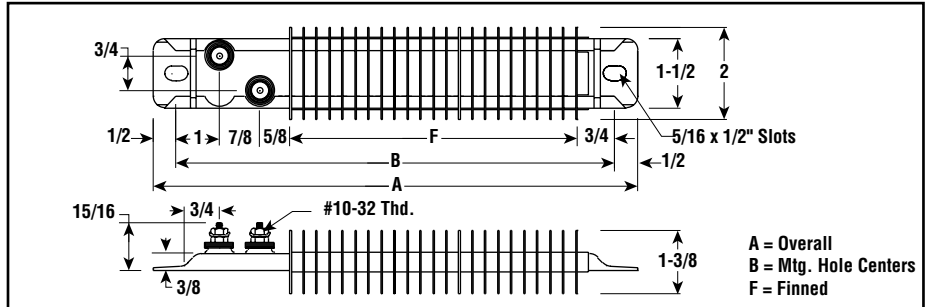


## OTF Finstrip® Air Heater

- Rust-Resisting Iron or Chrome Steel Sheath
- 250 - 4,150 Watts
- 120 and 240 Volt
- Single Phase
- 225 - 565°F Max. Work Temp.
- 1-1/2" Strip with Fins 2" Wide



Dimensions (Inches)



### Applications

- Mount across Air Stream within Forced Air Ducts
- Use in Dryers, Ovens and other Process Air Heating Equipment
- Comfort Heating in Ducts, Load Banks and Humidity Controls
- Many Air Blast and Convection requirements can be accommodated by the wide range of lengths, wattages and watt densities available.

### Application & Selection Guidelines

**Maximum Work Temperatures** — Finstrip® elements can generally be used in the applications above, at maximum temperatures, without exceeding their capability, if properly installed according to instructions packed with heater.

Air Velocity (Ft./Sec.)	Max. Outlet Air Temp. (°F)	
	Iron Sheath	Chrome Steel Sheath
Free Air	225	315
16	460	565

**Note** — Maximum temperatures are based on 15 W/In<sup>2</sup> density for iron sheath and 20 W/In<sup>2</sup> density for chrome steel sheath. If elements have a lower watt density, work temperature may be increased; if watt density is higher, work temperature should be lower.

See Allowable Watt Density & Finstrip® Heater Selection Graphs G-107S and G-108S in the Technical section of this catalog.

### Specifications and Ordering Information

Watts	W/In <sup>2</sup>	Volts	Dimensions (In.)			Model	Stock	PCN	Wt. (Lbs.)
			A	B	F				
<b>Rust-Resisting Iron Sheath — for Max. Sheath Temp. to 750°F</b>									
250	11	120	10-1/2	9-1/2	6-1/4	OTF-10	S	128004	2
350	15	120	10-1/2	9-1/2	6-1/4	OTF-10	S	128012	2
600	26	120	10-1/2	9-1/2	6-1/4	OTF-10	S	128020	2
250	11	240	10-1/2	9-1/2	6-1/4	OTF-10	S	128039	2
350	15	240	10-1/2	9-1/2	6-1/4	OTF-10	S	128047	2
600	26	240	10-1/2	9-1/2	6-1/4	OTF-10	S	128055	2
500	18	120	12	11	7-3/4	OTF-12	S	128063	2
750	27	120	12	11	7-3/4	OTF-12	S	128071	2
250	9	240	12	11	7-3/4	OTF-12	S	128080	2
500	18	240	12	11	7-3/4	OTF-12	S	128098	2
750	27	240	12	11	7-3/4	OTF-12	S	128100	2
900	24	120	14	13	9-3/4	OTF-14	S	128119	2
500	13	240	14	13	9-3/4	OTF-14	NS	128127	2
900	24	240	14	13	9-3/4	OTF-14	S	128135	2
325	8	120	15-1/4	14-1/4	11	OTF-15	S	128143	3
1,000	25	120	15-1/4	14-1/4	11	OTF-15	S	128151	3
1,000	25	240	15-1/4	14-1/4	11	OTF-15	S	128160	3
500	10	120	17-7/8	16-7/8	13-5/8	OTF-18	S	128178	3
1,000	20	120	17-7/8	16-7/8	13-5/8	OTF-18	S	128186	3
1,300	26	120	17-7/8	16-7/8	13-5/8	OTF-18	NS	128194	3
500	10	240	17-7/8	16-7/8	13-5/8	OTF-18	S	128207	3
1,000	20	240	17-7/8	16-7/8	13-5/8	OTF-18	S	128215	3
1,300	26	240	17-7/8	16-7/8	13-5/8	OTF-18	S	128223	3
1,000	17	240	19-1/2	18-1/2	15-1/4	OTF-19	S	128240	3
1,500	26	120	19-1/2	18-1/2	15-1/4	OTF-19	S	128231	3
1,500	26	240	19-1/2	18-1/2	15-1/4	OTF-19	S	128258	3
1,000	16	240	21	20	16-3/4	OTF-21	NS	128266	3
1,550	26	240	21	20	16-3/4	OTF-21	NS	128274	3
750	10	240	23-3/4	22-3/4	19-1/2	OTF-24	S	128282	4
1,000	14	240	23-3/4	22-3/4	19-1/2	OTF-24	NS	128290	4
1,800	25	240	23-3/4	22-3/4	19-1/2	OTF-24	S	128303	4
1,250	16	240	25-1/2	24-1/2	21-1/4	OTF-25	NS	128602	4
2,000	26	240	25-1/2	24-1/2	21-1/4	OTF-25	S	128610	4
700	8	120	26-3/4	25-3/4	22-1/2	OTF-26	NS	128629	4
700	8	240	26-3/4	25-3/4	22-1/2	OTF-26	NS	128637	4
1,350	16	240	26-3/4	25-3/4	22-1/2	OTF-26	S	128645	4
2,000	24	240	26-3/4	25-3/4	22-1/2	OTF-26	NS	128653	4
1,500	16	240	30-1/2	29-3/8	25-1/4	OTF-30	S	128952	4
2,350	25	240	30-1/2	29-3/8	25-1/4	OTF-30	S	128670	4
1,000	9	240	35-7/8	34-7/8	30-5/8	OTF-36	S	128688	5
1,800	16	240	35-7/8	34-7/8	30-5/8	OTF-36	NS	128696	5
2,850	26	240	35-7/8	34-7/8	30-5/8	OTF-36	NS	128709	5
2,000	16	240	38-1/2	37-5/8	33-1/4	OTF-38	S	128960	5
3,100	25	120	38-1/2	37-5/8	33-1/4	OTF-38	NS	128717	5
3,100	25	240	38-1/2	37-5/8	33-1/4	OTF-38	S	128725	5
3,450	26	240	42-1/2	41-3/8	37-1/4	OTF-43	S	128733	6

FINSTRIP®

## OTF Finstrip® Air Heater (cont'd.)

### Features

**Durability** is assured by rugged Chromalox strip heater with locked-on aluminized steel fins.

**Rapid Heat Transfer** to air from large finned area.

**Large Selection** of lengths, wattages and watt densities.

### Options

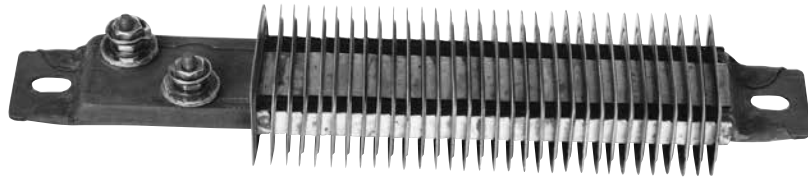
**Secondary Insulation Bushings** are needed at each end of Finstrip® elements when connected in series on line voltages 300V and above. To accommodate bushings, a 17/32 x 11/16" mounting hole in tabs should be specified for elements. A secondary bushing set (PCN 255716) should be specified. Each set includes two bushings and hardware for one heater.

**Removable Terminal Covers (OT-AC-1)** — Shipped unassembled (PCN 129242).

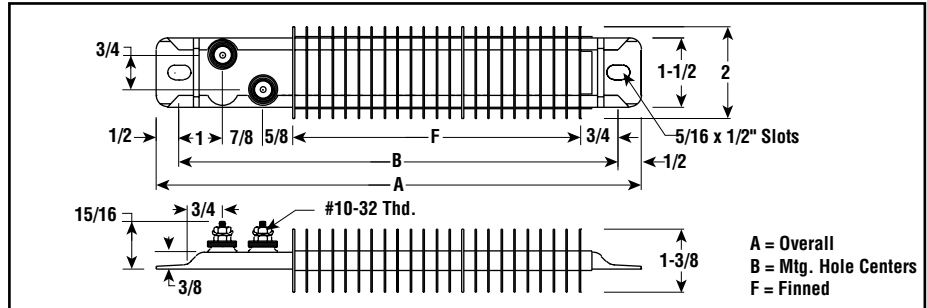
**Ceramic Post Terminal Insulators** — Nickel plated steel hardware (PCN 259805). Stainless Steel hardware (PCN 255732).

**Extra Long Finstrips** — Available in 48, 54, 64 or 72" length.

**MONEL® Sheath and Fins** — Contact your Local Chromalox Sales office for price and availability.



### Dimensions (Inches)



### Specifications and Ordering Information

Watts	W/in <sup>2</sup>	Volts	Dimensions (In.)			Model	Stock	PCN	Wt. (Lbs.)
			A	B	F				
<b>Chrome Steel Sheath — for Max. Sheath Temp. to 950°F</b>									
475	21	120	10-1/2	9-1/2	6-1/4	OTF-100	S	128311	2
725	32	120	10-1/2	9-1/2	6-1/4	OTF-100	S	128320	2
475	21	240	10-1/2	9-1/2	6-1/4	OTF-100	NS	128346	2
350	15	240	10-1/2	9-1/2	6-1/4	OTF-100	NS	128338	2
725	32	240	10-1/2	9-1/2	6-1/4	OTF-100	S	128354	2
700	25	120	12	11	7-3/4	OTF-120	NS	128362	2
900	32	120	12	11	7-3/4	OTF-120	S	128370	2
700	25	240	12	11	7-3/4	OTF-120	S	128389	2
900	32	240	12	11	7-3/4	OTF-120	S	128397	2
750	21	120	14	13	9-3/4	OTF-140	S	128400	2
1,100	31	120	14	13	9-3/4	OTF-140	S	128418	2
750	21	240	14	13	9-3/4	OTF-140	NS	128426	2
1,100	31	240	14	13	9-3/4	OTF-140	S	128433	2
850	20	240	15-1/4	14-1/4	11	OTF-150	S	128442	3
1,250	30	240	15-1/4	14-1/4	11	OTF-150	S	128450	3
750	15	240	17-7/8	16-7/8	13-5/8	OTF-180	S	128469	3
1,000	20	240	17-7/8	16-7/8	13-5/8	OTF-180	S	128477	3
1,550	31	240	17-7/8	16-7/8	13-5/8	OTF-180	S	128485	3
1,000	18	208	19-1/2	18-1/2	15-1/4	OTF-190	NS	128493	3
1,000	18	240	19-1/2	18-1/2	15-1/4	OTF-190	NS	128506	3
1,250	23	240	19-1/2	18-1/2	15-1/4	OTF-190	S	128514	3
1,700	31	240	19-1/2	18-1/2	15-1/4	OTF-190	S	128522	3
1,250	20	240	21	20	16-3/4	OTF-210	NS	128549	3
750	12	240	21	20	16-3/4	OTF-210	NS	128530	3
1,900	30	240	21	20	16-3/4	OTF-210	S	128557	3
2,200	31	240	23-3/4	22-3/4	19-1/2	OTF-240	S	128581	4
1,000	14	240	23-3/4	22-3/4	19-1/2	OTF-240	S	128565	4
1,450	20	240	23-3/4	22-3/4	19-1/2	OTF-240	NS	128573	4
1,500	19	240	25-1/2	24-1/2	21-1/4	OTF-250	NS	128750	4
2,400	30	240	25-1/2	24-1/2	21-1/4	OTF-250	S	128768	4
1,600	19	240	26-3/4	25-3/4	22-1/2	OTF-260	S	128776	4
2,500	30	240	26-3/4	25-3/4	22-1/2	OTF-260	S	128784	4
1,800	19	240	30-1/2	29-3/8	25-1/4	OTF-300	S	128792	4
2,800	30	240	30-1/2	29-3/8	25-1/4	OTF-300	S	128805	4
2,100	20	240	33-1/2	32-3/8	28-1/4	OTF-330	NS	128944	5
3,150	30	120	33-1/2	32-3/8	28-1/4	OTF-330	NS	128813	5
3,150	30	240	33-1/2	32-3/8	28-1/4	OTF-330	S	128821	5
1,500	13	240	35-7/8	34-7/8	30-5/8	OTF-360	NS	128830	5
2,300	20	240	35-7/8	34-7/8	30-5/8	OTF-360	NS	128848	5
3,450	30	240	35-7/8	34-7/8	30-5/8	OTF-360	S	128856	5
2,450	20	240	38-1/2	37-3/8	33-1/4	OTF-380	S	128864	5
3,600	30	240	38-1/2	37-3/8	33-1/4	OTF-380	NS	128872	5
4,150	30	240	42-1/2	41-3/8	37-1/4	OTF-430	S	128880	6
2,250	15	240	48	47	42-3/4	OTF-480	S	128979	8

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, watts, volts and quantity.



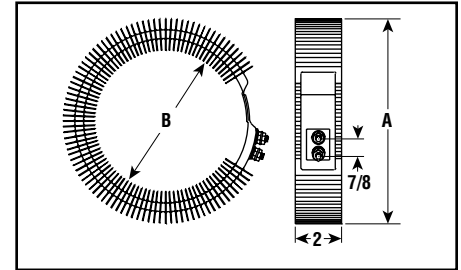
## KSEF

### Preformed Circular Finstrip® Air Duct Heater

- Rust-Resisting Iron or MONEL® Sheath and Fins
- 1,950 - 5,000 Watts
- 120 and 240 Volt
- Single Phase



Dimensions (Inches)



#### Applications

- Heat moving Air or Gas in Round Ducts
- Booster Heater in Process and Comfort Heating Ducts
- Convert existing Forced Air Dryers and Ovens

#### Application & Selection Guidelines

**Maximum Work Temperatures** — Finstrip® elements can generally be used in the following applications at maximum temperatures, without exceeding their capability, if properly installed according to instructions packed with heaters.

Air Velocity (Ft./Sec.)	Max. Outlet Air Temp. (°F)	
	Iron Sheath	MONEL® Sheath
4	—	250
9	150	370
16	250	450

**Note** — Maximum temperatures are based on 25 W/in<sup>2</sup>. If elements have a lower watt density, work temperature may be increased; if watt density is higher, work temperature should be lower.

**Note** — See Allowable Watt Density & Heater Selection Graphs G-107S and G-108S in the Technical section of this catalog.

#### Features

**Durability** is assured by rugged Chromalox strip heater with locked-on fins.

**Rapid Heat Transfer** to air from large finned area.

**Nested Elements** — Elements may be nested.

**Open Construction** — Requires mounting brackets to be fabricated by user.

#### Specifications and Ordering Information

Watts	W/in <sup>2</sup>	Volts	Dimensions (In.)		Model	Stock	PCN	Wt. (Lbs.)
			A	B				
<b>Rust-Resisting Iron Sheath — for Max. Sheath Temp. to 750°F</b>								
1,950	27	120	8-7/8	6-1/8	KSEF-24	NS	255548	3
1,950	27	240	8-7/8	6-1/8	<b>KSEF-24</b>	<b>S</b>	<b>255556</b>	3
2,500	26	120	10-3/4	8	KSEF-30	NS	255564	4
2,500	26	240	10-3/4	8	<b>KSEF-30</b>	<b>S</b>	<b>255572</b>	4
3,100	27	240	12-1/2	9-3/4	KSEF-36	NS	255580	5
3,700	26	240	14-1/2	11-3/4	KSEF-43	NS	255599	6
<b>MONEL® Sheath and Fins — for Max. Sheath Temp. to 900°F</b>								
1,950	27	120	8-7/8	6-1/8	KSEF-240M	NS	255601	3
1,950	27	240	8-7/8	6-1/8	KSEF-240M	NS	255610	3
2,500	26	120	10-3/4	8	KSEF-300M	NS	255628	4
2,500	26	240	10-3/4	8	KSEF-300M	NS	255636	4
3,100	27	240	12-1/2	9-3/4	KSEF-360M	NS	255644	5
3,700	26	240	14-1/2	11-3/4	KSEF-430M	NS	255652	6
4,000	25	240	16-1/4	13-1/2	KSEF-480M	NS	255660	7
4,500	25	240	18-1/4	15-1/2	KSEF-540M	NS	255679	8
5,000	23	240	21-5/8	18-7/8	KSEF-640M	NS	256911	10

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, watts, volts and quantity.

**Note** — Chromalox can supply other sizes and ratings. Contact your Local Chromalox Sales office.

FINSTRIP®

## ADH & ADHT Series

### High Temperature Air Duct Heaters

- 5 - 300 kW
- 240 and 480 Volt, Three Phase (Up to 600V Available)
- INCOLOY® Sheath Elements
- 800°F Max. Outlet Air Temp. (ADH)
- 1200°F Max. Outlet Air Temp. (ADHT)

#### Applications

- Heat Air for Drying and Curing operations up to 1200°F Air Temperature
- Heat Treating
- Reheating or Dehumidification
- Aircraft Manufacturing
- Autoclaves
- Annealing
- Drying
- Paint Baking or Drying
- Sterilizing

#### Features

##### Long Life Metal Sheath Tubular Elements

— High grade INCOLOY® sheath material for excellent corrosion/oxidation resistance at high operating temperatures.

**Sturdy Metal Sheath Elements** minimize problems associated with open coil resistance wire units.

**High Purity Magnesium Oxide** — The elements are filled with highest purity blends of magnesium oxide refractory (MgO) compacted to a rock hard density to ensure good thermal conductivity and electrical insulation resistance.

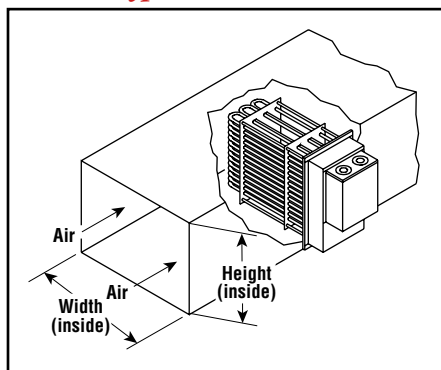
**Superior Grade Resistance Wire** — The heart of each heating element is made of high quality resistance wire for maximum life.

**Low Watt Density Resistor Wire** — Watt density on the heating coil is designed for low watt density operation by increasing the coil and wire diameter, and length of resistance wire to give maximum surface area and low operating coil surface temperature — providing longer coil life.

**Superior Construction at Element Bends** — All element bends are repressed in hydraulic



*ADH — Typical Installation*



presses after bending to assure recompaction of refractory material to eliminate hot spots and electrical insulation voids.

##### Low Wiring Compartment Temperatures

— Made possible by the addition of a one inch thick blanket of insulation in the terminal box. High temperature ADHT units include an additional three inches of insulation to help reduce duct heat losses.

**Meets NEC Wiring Requirements** — Heaters are subdivided into 48 Amp maximum circuits in compliance with the National Electrical Code.

##### Easy Access to Field Wiring Terminals

— Terminal housing is completely removable for maximum access to field wiring terminals. Individual terminal blocks with threaded stud type terminals are provided for each circuit to permit quick positive attachment of circuit wiring conductors.

##### Dirt & Dust Resistant Terminal Housing

— Made of solid heavy gauge aluminized steel, rather than perforated metal, to resist dirt and dust accumulation on the electrical connections and thus provide longer service life.

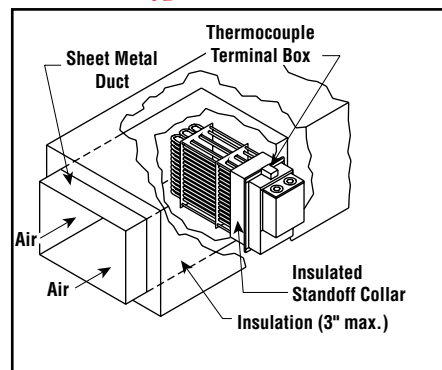
**Flange Mounting Gasket** — Packed separately with each duct heater to minimize air leakage between the flange and air duct.

**Tandem Mounting** — Multiple heaters may be mounted in tandem with each other provided the maximum recommended outlet air temperature is not exceeded.

**Element Support Plate** — A stainless steel element support plate is held in place with Stainless Steel support rods to provide structural stability.



*ADHT — Typical Installation*



**Pressure Drop** — See Pressure Drop Curve G-227-2 under Air & Gas Data in the Technical section of this catalog.

#### Options

**Gas Tight Design** — Threaded fittings with fiber washers attach heating elements to flange — prevents leakage of ducted air into terminal housing.

**Overtemperature Protection** — Thermocouple welded to the element sheath surface and wired to a terminal block allows for accurate overheat protection. Standard Type K thermocouple on ADHT high temperature heaters.

**Thermocouple Sensor** for air temperature control.

**Moisture or Explosion-Resistant Terminal Enclosures** are available for those applications requiring special terminal protection. Explosion-Resistant enclosure design meets requirements for Class I, Div.2, Group D area but does not carry any third party listing.

**CAUTION** — If atmosphere in duct contains combustible gases or vapors, sheath temperatures must be limited not to exceed 80% of the ignition temperature of the gas or the vapor involved. Check with your Local Chromalox Sales office for recommendations.

**Special Ratings, Sizes or Construction Materials** — Chromalox can fabricate a duct heater to your special rating, physical size or other specifications.

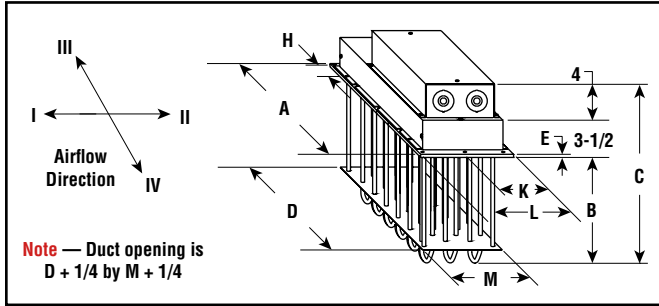
**Application Assistance** — Chromalox will assist you in the design or selection of equipment. Contact your Local Chromalox Sales office.



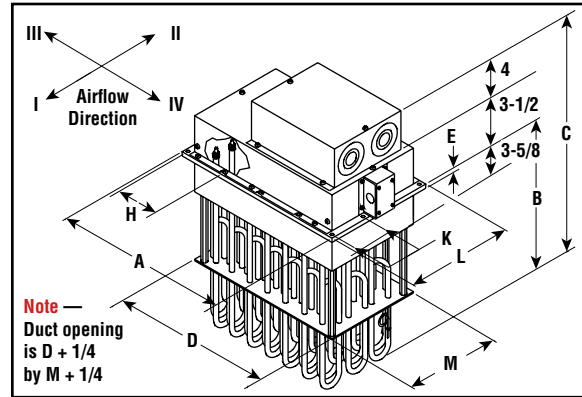
## ADH & ADHT Series

### High Temperature Air Duct Heaters (cont'd.)

ADH - Dimensions (Inches) (See Dimensional Table)



ADHT - Dimensions (Inches) (See Dimensional Table)



Dimensional Table ADH / ADHT

Cat. No.	Cat. No.	kW	No. Elem.	Dimensions (In.)								
				A	B	C	D	E	H	K	L	M
ADH-005	ADHT-005	5	3	5-5/8	20-3/8	28-1/8	4	1/4	2-1/2	3-1/2	11-1/8	9-1/2
ADH-010	ADHT-010	10	6	7-5/8	20-3/8	28-1/8	6	1/4	3-1/2	3-1/2	11-1/8	9-1/2
ADH-015	ADHT-015	15	9	9-5/8	20-3/8	28-1/8	8	1/4	3	3-1/2	11-1/8	9-1/2
ADH-020	ADHT-020	20	12	11-5/8	20-3/8	28-1/8	10	1/4	2-3/4	3-1/2	11-1/8	9-1/2
ADH-025	ADHT-025	25	15	13-5/8	20-3/8	28-1/8	12	1/4	3-1/4	3-1/2	11-1/8	9-1/2
ADH-030	ADHT-030	30	18	15-5/8	20-3/8	28-1/4	14	3/8	3-3/4	3-1/2	11-1/8	9-1/2
ADH-035	ADHT-035	35	21	17-5/8	20-3/8	28-1/4	16	3/8	4-1/4	3-1/2	11-1/8	9-1/2
ADH-040	ADHT-040	40	24	19-5/8	20-3/8	28-1/4	18	3/8	4-3/4	3-1/2	11-1/8	9-1/2
ADH-045	ADHT-045	45	27	21-5/8	20-3/8	28-1/4	20	3/8	5-1/4	3-1/2	11-1/8	9-1/2
ADH-050	ADHT-050	50	30	23-5/8	20-3/8	28-1/4	22	3/8	5-3/4	3-1/2	11-1/8	9-1/2
ADH-060	ADHT-060	60	36	27-5/8	20-3/8	28-1/4	26	3/8	4-1/2	3-1/2	11-1/8	9-1/2
ADH-070	ADHT-070	70	42	31-5/8	20-1/8	28-1/4	30	3/8	3-7/8	3-1/2	11-1/8	9-1/2
ADH-080	ADHT-080	80	48	35-5/8	20-3/8	28-1/4	34	3/8	4-3/8	3-1/2	11-1/8	9-1/2
ADH-090	ADHT-090	90	54	39-5/8	20-3/8	28-1/4	38	3/8	4-7/8	3-1/2	11-1/8	9-1/2
ADH-100	ADHT-100	100	60	43-5/8	20-3/8	28-1/4	42	3/8	5-3/8	3-1/2	11-1/8	9-1/2
-	ADHT-120	120	48	35-5/8	35	42-7/8	26	3/8	4-1/2	3-1/2	11-1/8	9-1/2
ADH-126	-	126	42	31-5/8	35	42-7/8	30	3/8	3-7/8	3-1/2	11-1/8	9-1/2
ADH-144	-	144	48	35-5/8	35	42-7/8	34	3/8	4-3/8	3-1/2	11-1/8	9-1/2
-	ADHT-160	160	48	35-5/8	35	42-7/8	34	3/8	4-3/8	3-1/2	11-1/8	9-1/2
ADH-162	-	162	54	39-5/8	35	42-7/8	38	3/8	4-7/8	3-1/2	11-1/8	9-1/2
-	ADHT-180	180	54	39-5/8	35	42-7/8	38	3/8	4-7/8	3-1/2	11-1/8	9-1/2
ADH-216	-	216	72	27-5/8	35	42-7/8	26	3/8	4-1/2	3-7/8	20	18-3/8
-	ADHT-240	240	72	27-5/8	35	42-7/8	26	3/8	4-1/2	3-7/8	20	18-3/8
ADH-270	-	270	90	33-5/8	35	42-7/8	32	3/8	5-1/2	3-7/8	20	18-3/8
-	ADHT-300	300	90	33-5/8	35	42-7/8	32	3/8	5-1/2	3-7/8	20	18-3/8

All Heaters can be mounted in any position; top, side or bottom entry. In high ambient temperature operations, least corrosive action and least oxidation to the terminals will occur if heaters are mounted with terminals in the coolest possible ambient, usually on bottom or side of duct. Minimum duct size is A or L dimension plus 3/8" and B dimension plus 1-5/8", and 3" for insulation housing.

Electrical Table for ADH and ADHT Duct heaters  
Number of Circuits

KW	No. Elements	240V 1Ph	240V 3 Ph	480V 1 Ph	480V 3 Ph
5	3	1	1	1	1
10	6	1	1	1	1
15	9	3	1	1	1
20	12	2	2	1	1
25	15	3	2	2	1
30	18	3	2	3	1
35	21	X	3	2	1
40	24	X	3	2	2
45	27	X	3	3	2
50	30	X	5	3	2
60	36	X	X	X	2
70	42	X	X	X	4
80	48	X	X	X	4
90	54	X	X	X	5
100	60	X	X	X	5
120	36	X	X	X	4
126	42	X	X	X	4
144	48	X	X	X	4
160	48	X	X	X	8
162	54	X	X	X	6
180	54	X	X	X	6
216	72	X	X	X	6
240	72	X	X	X	8
270	90	X	X	X	8
300	90	X	X	X	10

All standard circuits are maximum of 48 Amps  
For other # of circuits/amperage per circuit consult factory  
X denotes not standard

For selecting the proper control panel for use with the ADH and ADHT duct heaters, the number of circuits is of crucial importance. The Electrical table, at right, should be used for the purpose of determining the number of circuits in the panel.

**Field Wiring** — Refer to Graph ADHTB Terminal Box Temperature field wiring selection guide in the technical section of this catalog (Section I).

Gas tight construction should be considered if the gas pressure in the duct is at a higher relative pressure than in the terminal box which is at room air pressure. Refer to ADH/ADHT terminal box temperature and field wiring selection guide showing the temperature in the terminal box at various gas outlet temperatures. This guide is graph ADHTB located in the Air and Gas Heating section in the technical pages in the back of the catalog.

AIR DUCT

## ADH High Temperature Air Duct Heaters

- 5 - 270 kW
- 240 and 480 Volt, Three Phase (Up to 600V Available)
- INCOLOY® Sheath Elements
- 30 W/In<sup>2</sup>
- 800°F Max. Outlet Air Temp.

### Construction

**Rugged Construction Elements** — Sturdy 0.475" diameter INCOLOY® sheath tubular elements are mounted to a heavy 1/4 or 3/8" thick steel flange. Element fasteners allow for easy replacement.

**Corrosion-Resistant Terminal Enclosure** — The element terminal enclosure is made of 16 gauge high-temperature, corrosion-resistant steel and includes 1" thick high-temperature insulation to minimize temperatures in the wiring area.

**Wiring Box** — The 16 gauge wiring box encloses individual terminal blocks for each circuit. Threaded stud type terminals are provided to permit quick positive attachment of circuit wiring conductors.

### Mounting

**All Heaters** can be mounted in any position; top, side or bottom entry. In high ambient temperature operations, least corrosive action and least oxidation to the terminals will occur if heaters are mounted with terminals in the coolest possible ambient, usually on bottom or side of duct. Minimum duct size is A or L dimension plus 3/8" and B dimension plus 1-5/8".

### Application & Selection Guidelines

**Maximum Work Temperatures** — Type ADH heaters can generally be used at the following maximum temperatures, provided the minimum air velocity is maintained uniformly through the heater.

Air Velocity (Ft./Sec.)	Max. Outlet Air Temp. (°F)
4 - 36	800

**Note** — Maximum temperatures are based on 30 W/In<sup>2</sup>. If elements have a lower watt density, work temperature may be increased; if watt density is higher, work temperature should be lower.

**Note** — An airflow type switch or other device is recommended to protect against loss of airflow.

**Note** — See Allowable Watt Density & Heater Selection Graphs in the Technical section of this catalog.

Basic Model				Includes Thermocouple			Includes Gas Tight Fittings			Includes Thermocouple & Figs.		
Volts KW Phase	Model	PCN	SS	Model	PCN	SS	Model	PCN	SS	Model	PCN	SS
240V 5KW 1PH	ADH-005	210673	NS	ADH-005T	214770	NS	ADH-005F	215212	NS	ADH-005FT	215634	NS
240V 5KW 3PH	ADH-005	210681	NS	ADH-005T	214789	NS	ADH-005F	215220	NS	ADH-005FT	215642	NS
480V 5KW 1PH	ADH-005	210690	NS	ADH-005T	214797	NS	ADH-005F	215239	NS	ADH-005FT	215650	NS
480V 5KW 3PH	ADH-005	210016	NS	ADH-005T	214800	NS	ADH-005F	215247	NS	ADH-005FT	215669	NS
240V 10KW 1PH	ADH-010	210702	NS	ADH-010T	214818	NS	ADH-010F	215255	NS	ADH-010FT	215677	NS
240V 10KW 3PH	ADH-010	210710	NS	ADH-010T	214826	NS	ADH-010F	215263	NS	ADH-010FT	215685	NS
480V 10KW 1PH	ADH-010	210729	NS	ADH-010T	214834	NS	ADH-010F	215271	NS	ADH-010FT	215693	NS
480V 10KW 3PH	<b>ADH-010</b>	<b>210024</b>	<b>S</b>	ADH-010T	214842	NS	ADH-010F	215280	NS	ADH-010FT	215706	NS
240V 15KW 1PH	ADH-015	210737	NS	ADH-015T	214850	NS	ADH-015F	215298	NS	ADH-015FT	215714	NS
240V 15KW 3PH	ADH-015	210745	NS	ADH-015T	214869	NS	ADH-015F	215300	NS	ADH-015FT	215722	NS
480V 15KW 1PH	ADH-015	210753	NS	ADH-015T	214877	NS	ADH-015F	215319	NS	ADH-015FT	215730	NS
480V 15KW 3PH	<b>ADH-015</b>	<b>210032</b>	<b>S</b>	ADH-015T	214885	NS	ADH-015F	215327	NS	ADH-015FT	215749	NS
240V 20KW 1PH	ADH-020	210761	NS	ADH-020T	214893	NS	ADH-020F	215335	NS	ADH-020FT	215757	NS
240V 20KW 3PH	ADH-020	210788	NS	ADH-020T	214906	NS	ADH-020F	215343	NS	ADH-020FT	215765	NS
480V 20KW 1PH	ADH-020	210796	NS	ADH-020T	214914	NS	ADH-020F	215351	NS	ADH-020FT	215773	NS
480V 20KW 3PH	<b>ADH-020</b>	<b>210040</b>	<b>S</b>	ADH-020T	214922	NS	ADH-020F	215360	NS	ADH-020FT	215781	NS
240V 25KW 1PH	<b>ADH-025</b>	<b>210809</b>	<b>S</b>	ADH-025T	214930	NS	ADH-025F	215378	NS	ADH-025FT	215790	NS
240V 25KW 3PH	ADH-025	210817	NS	ADH-025T	214949	NS	ADH-025F	215386	NS	ADH-025FT	215802	NS
480V 25KW 1PH	ADH-025	210825	NS	ADH-025T	214957	NS	ADH-025F	215394	NS	ADH-025FT	215810	NS
480V 25KW 3PH	ADH-025	210059	NS	ADH-025T	214965	NS	ADH-025F	215407	NS	ADH-025FT	215829	NS
240V 30KW 1PH	ADH-030	210833	NS	ADH-030T	214973	NS	ADH-030F	215415	NS	ADH-030FT	215837	NS
240V 30KW 3PH	ADH-030	210841	NS	ADH-030T	214981	NS	ADH-030F	215423	NS	ADH-030FT	215845	NS
480V 30KW 1PH	ADH-030	210850	NS	ADH-030T	214990	NS	ADH-030F	215431	NS	ADH-030FT	215855	NS
480V 30KW 3PH	ADH-030	210067	NS	ADH-030T	215001	NS	ADH-030F	215440	NS	ADH-030FT	215861	NS
240V 35KW 3PH	ADH-035	210868	NS	ADH-035T	215036	NS	ADH-035F	215458	NS	ADH-035FT	215870	NS
480V 35KW 1PH	ADH-035	210876	NS	ADH-035T	215044	NS	ADH-035F	215466	NS	ADH-035FT	215888	NS
480V 35KW 3PH	ADH-035	210075	NS	ADH-035T	215052	NS	ADH-035F	215474	NS	ADH-035FT	215896	NS
240V 40KW 3PH	ADH-040	210884	NS	ADH-040T	215060	NS	ADH-040F	215482	NS	ADH-040FT	215909	NS
480V 40KW 1PH	ADH-040	210892	NS	ADH-040T	215079	NS	ADH-040F	215490	NS	ADH-040FT	215917	NS
480V 40KW 3PH	ADH-040	210083	NS	ADH-040T	215087	NS	ADH-040F	215503	NS	ADH-040FT	215925	NS
240V 45KW 3PH	ADH-045	210905	NS	ADH-045T	215095	NS	ADH-045F	215511	NS	ADH-045FT	215933	NS
480V 45KW 1PH	ADH-045	210913	NS	ADH-045T	215108	NS	ADH-045F	215520	NS	ADH-045FT	215941	NS
480V 45KW 3PH	ADH-045	210091	NS	ADH-045T	215116	NS	ADH-045F	215538	NS	ADH-045FT	215950	NS
240V 50KW 3PH	ADH-050	210921	NS	ADH-050T	215124	NS	ADH-050F	215546	NS	ADH-050FT	215968	NS
480V 50KW 1PH	ADH-050	210930	NS	ADH-050T	215132	NS	ADH-050F	215554	NS	ADH-050FT	215976	NS
480V 50KW 3PH	ADH-050	210104	NS	ADH-050T	215140	NS	ADH-050F	215562	NS	ADH-050FT	215984	NS
480V 60KW 3PH	ADH-060	210112	NS	ADH-060T	215159	NS	ADH-060F	215570	NS	ADH-060FT	215992	NS
480V 70KW 3PH	ADH-070	210948	NS	ADH-070T	215167	NS	ADH-070F	215589	NS	ADH-070FT	216004	NS
480V 80KW 3PH	ADH-080	210120	NS	ADH-080T	215175	NS	ADH-080F	215597	NS	ADH-080FT	216100	NS
480V 90KW 3PH	ADH-090	210139	NS	ADH-090T	215183	NS	ADH-090F	215600	NS	ADH-090FT	216119	NS
480V 100KW 3PH	ADH-100	210147	NS	ADH-100T	215191	NS	ADH-100F	215618	NS	ADH-100FT	216127	NS
480V 126KW 3PH	ADH-126	210956	NS	ADH-126T	215204	NS	ADH-126F	215626	NS	ADH-126FT	216135	NS
480V 144KW 3PH	ADH-144	210155	NS	ADH-144T	216936	NS	ADH-144F	216952	NS	ADH-144FT	216143	NS
480V 162KW 3PH	ADH-162	210163	NS	ADH-162T	216944	NS	ADH-162F	216960	NS	ADH-162FT	216151	NS
480V 216KW 3PH							ADH-216F	210171	NS	ADH-216FT	216928	NS
480V 270KW 3PH							ADH-270F	210180	NS	ADH-270FT	216160	NS

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, kW and quantity.

## ADHT High Temperature Air Duct Heater

- 5 - 300 kW
- 240 and 480 Volt, Three Phase (Up to 600V Available)
- INCOLOY® Sheath Elements
- 20 W/In<sup>2</sup>
- 1200°F Max. Outlet Air Temp.
- Insulated Standoff Collar

### Type ADHT

#### Construction

**Rugged Construction Elements** — Sturdy 0.475" diameter INCOLOY® sheath tubular elements are mounted to a heavy 1/4 or 3/8" thick steel flange. Element fasteners to allow for easy replacement.

**Corrosion-Resistant Terminal Enclosure** — The element terminal enclosure is made of 16 gauge high-temperature, corrosion-resistant steel and includes 1" thick high-temperature insulation to minimize temperatures in the wiring area.

**Wiring Box** — The 16 gauge wiring box encloses individual terminal blocks for each circuit. Threaded stud type terminals are provided to permit quick positive attachment of circuit wiring conductors.

**Insulation Housing** — Includes 3" of high temperature thermal insulation to reduce duct heat conducted into terminal enclosure.

**Overtemperature Protection** — A type K thermocouple is welded to the element sheath surface to sense element temperature, and is wired to a terminal block located on the outer surface of the terminal housing.

#### Mounting

Generally mounted to a field fabricated stand off collar from the ductwork to position the heater such that the 3" insulation housing is in the same plane as the duct insulation.

**All Heaters** can be mounted in any position; top, side or bottom entry. In high ambient temperature operations, least corrosive action and least oxidation to the terminals will occur if heaters are mounted with terminals in the coolest possible ambient, usually on bottom or side of duct. Minimum duct size is A or L dimension plus 3/8" and B dimension plus 1-5/8", and 3" for insulation housing.

### Application & Selection Guidelines

**Maximum Work Temperatures** — Type ADHT heaters can generally be used at the following maximum temperatures, provided the minimum air velocity is maintained uniformly through the heater. Maximum temperatures are based on 20 W/In<sup>2</sup>.

Air Velocity (Ft./Sec.)	Max. Outlet Air Temp. (°F)
4	1050
9	1100
16	1150
25	1200
36	1200

**Note** — See Allowable Watt Density & Heater Selection Graphs in Technical section.

**Note** — An airflow type switch or other device is recommended to protect against loss of airflow.

Basic Model				Includes Gas Tight Fittings		
Volts KW Phase	Model	PCN	SS	Model	PCN	SS
240V 5KW 1PH	ADHT-005	216178	NS	ADHT-005F	216450	NS
240V 5KW 3PH	ADHT-005	216186	NS	ADHT-005F	216469	NS
480V 5KW 1PH	ADHT-005	216194	NS	ADHT-005F	216477	NS
480V 5KW 3PH	ADHT-005	210198	NS	ADHT-005F	216485	NS
240V 10KW 1PH	ADHT-010	216215	NS	ADHT-010F	216493	NS
240V 10KW 3PH	ADHT-010	216223	NS	ADHT-010F	216506	NS
480V 10KW 1PH	ADHT-010	216231	NS	ADHT-010F	216549	NS
480V 10KW 3PH	ADHT-010	210200	NS	ADHT-010F	216557	NS
240V 15KW 1PH	ADHT-015	216248	NS	ADHT-015F	216565	NS
240V 15KW 3PH	ADHT-015	216258	NS	ADHT-015F	216573	NS
480V 15KW 1PH	ADHT-015	216266	NS	ADHT-015F	216581	NS
480V 15KW 3PH	ADHT-015	210219	NS	ADHT-015F	216590	NS
240V 20KW 1PH	ADHT-020	216274	NS	ADHT-020F	216602	NS
240V 20KW 3PH	ADHT-020	216282	NS	ADHT-020F	216610	NS
480V 20KW 1PH	ADHT-020	216290	NS	ADHT-020F	216629	NS
480V 20KW 3PH	ADHT-020	210227	NS	ADHT-020F	216637	NS
240V 25KW 1PH	ADHT-025	216303	NS	ADHT-025F	216645	NS
240V 25KW 3PH	ADHT-025	216311	NS	ADHT-025F	216653	NS
480V 25KW 1PH	ADHT-025	216320	NS	ADHT-025F	216661	NS
480V 25KW 3PH	ADHT-025	210235	NS	ADHT-025F	216670	ST
240V 30KW 1PH	ADHT-030	216338	NS	ADHT-030F	216688	NS
240V 30KW 3PH	ADHT-030	216346	NS	ADHT-030F	216696	NS
480V 30KW 1PH	ADHT-030	216354	NS	ADHT-030F	216709	NS
480V 30KW 3PH	ADHT-030	210243	NS	ADHT-030F	216717	NS
240V 35KW 3PH	ADHT-035	216362	NS	ADHT-035F	216725	NS
480V 35KW 1PH	ADHT-035	216370	NS	ADHT-035F	216733	NS
480V 35KW 3PH	ADHT-035	210251	NS	ADHT-035F	216741	NS
240V 40KW 3PH	ADHT-040	216389	NS	ADHT-040F	216750	NS
480V 40KW 1PH	ADHT-040	216397	NS	ADHT-040F	216768	NS
480V 40KW 3PH	ADHT-040	210260	NS	ADHT-040F	216776	NS
240V 45KW 3PH	ADHT-045	216408	NS	ADHT-045F	216784	NS
480V 45KW 1PH	ADHT-045	216418	NS	ADHT-045F	216792	NS
480V 45KW 3PH	ADHT-045	210278	NS	ADHT-045F	216805	NS
240V 50KW 3PH	ADHT-050	216426	NS	ADHT-050F	216813	NS
480V 50KW 1PH	ADHT-050	216434	NS	ADHT-050F	216821	NS
480V 50KW 3PH	ADHT-050	210286	NS	ADHT-050F	216830	NS
480V 60KW 2-3PH	ADHT-060	210294	NS	ADHT-060F	216848	NS
480V 70KW 3PH	ADHT-070	216442	NS	ADHT-070F	216856	NS
480V 80KW 3PH	ADHT-080	210307	NS	ADHT-080F	216864	NS
480V 90KW 3PH	ADHT-090	210315	NS	ADHT-090F	216872	NS
480V 100KW 3PH	ADHT-100	210323	NS	ADHT-100F	216880	NS
480V 120KW 3PH	ADHT-120	210331	NS	ADHT-120F	216899	NS
480V 160KW 3PH	ADHT-160	210340	NS	ADHT-160F	216901	NS
480V 180KW 3PH	ADHT-180	210358	NS	ADHT-180F	216910	AS
480V 240KW 3PH				ADHT-240F	210366	NS
480V 300KW 3PH				ADHT-300F	210374	NS

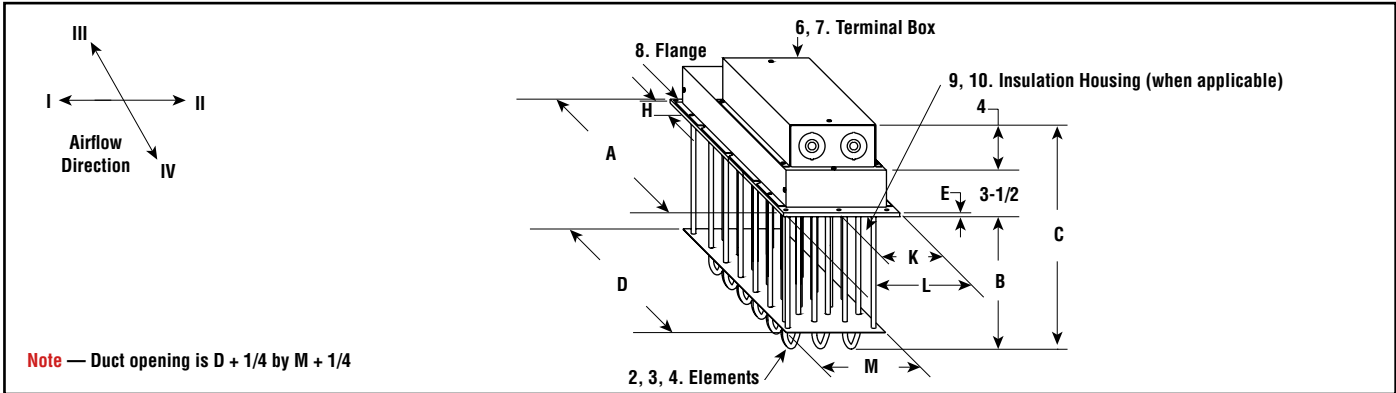
**Stock Status:** S = stock NS = non-stock  
**To Order** — Specify model, PCN, kW and quantity.

## Chromalox®

### Specification Data Sheet Tubular Air Duct Heaters

Form PF303

Customer Name: \_\_\_\_\_ Reference: \_\_\_\_\_ Date: \_\_\_\_\_



**Note** — Drawing Is For Illustration Purposes Only.

<b>Operating Conditions</b>		<b>5. TERMINAL SEALS:</b>		<input type="checkbox"/> None (Standard)
<b>1. APPLICATION (Describe in Detail):</b>		<input type="checkbox"/> Silicone Fluid (500°F)	<input type="checkbox"/> Silicone Resin (450°F)	
		<input type="checkbox"/> RTV (450°F)	<input type="checkbox"/> Epoxy (250°F)	
		<input type="checkbox"/> Other ( <i>Specify</i> )		
<b>2. AIR FLOW:</b>		<b>6. TERMINAL BOX CONSTRUCTION:</b>		
		<input type="checkbox"/> General Purpose (Standard)	<input type="checkbox"/> Moisture Resistant	
		<input type="checkbox"/> Explosion Resistant		
<b>3. INLET AIR TEMPERATURE:</b> _____ °F		<b>7. TERMINAL BOX MATERIAL:</b>		
<b>4. OUTLET AIR TEMPERATURE:</b> _____ °F		<input type="checkbox"/> 304 Stainless Steel	<input type="checkbox"/> 316 Stainless Steel	
<b>5. OPERATING TEMPERATURE</b> _____ psig.		<input type="checkbox"/> Other ( <i>Specify</i> )		
<b>6.</b> <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor		<b>8. FLANGE MATERIAL:</b>		
<b>7. DUCT DIMENSIONS:</b> L      W		<input type="checkbox"/> Steel (Std.)	<input type="checkbox"/> 304 Stainless Steel	
<b>8. AIR FLOW DIRECTION:</b> <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV		<input type="checkbox"/> 316 Stainless Steel		
<b>10. AMBIENT TEMPERATURE:</b> _____ °F		<b>9. INSULATION HOUSING: (Below Flange):</b>		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Height: _____ in. (3-5/8" Std.)		
<b>Heater Specifications (Check All That Apply)</b>		<b>10. INSULATION HOUSING:</b>		
<b>1. RATING:</b> Volts      Phase      Kilowatts		<input type="checkbox"/> 304 Stainless Steel (Std.) <input type="checkbox"/> 316 Stainless Steel		
No. of Electrical Circuits: <input type="checkbox"/> Standard		<input type="checkbox"/> Other ( <i>Specify</i> )		
<input type="checkbox"/> Other: No. Circuits:      kW/Circuits:		<b>11. OVERHEAT THERMOCOUPLE WELDED TO SHEATH:</b>		
<b>2. HEATING ELEMENTS:</b> <input type="checkbox"/> Tubular (Std.) <input type="checkbox"/> Finned Tubular		<input type="checkbox"/> Type J <input type="checkbox"/> Type K <input type="checkbox"/> Other ( <i>Specify</i> )		
<b>3. HEATING ELEMENT SHEATH MATERIAL:</b>		<b>12. HEATER DIMENSION (Inches):</b>		
Tubular:		D	E	H
<input type="checkbox"/> INCOLOY® (Standard) <input type="checkbox"/> 304 Stainless Steel		K	L	M
<input type="checkbox"/> 316 Stainless Steel		<b>13. AGENCY APPROVALS:</b>		
<input type="checkbox"/> Other ( <i>Specify</i> )		<input type="checkbox"/> None		
Finned Tubular:		<input type="checkbox"/> U.L. Component Recognized (Standard)		
<input type="checkbox"/> Steel <input type="checkbox"/> Ceramic-Coated Steel <input type="checkbox"/> MONEL®		<input type="checkbox"/> C.S.A. Certified (Standard)		
<input type="checkbox"/> 304 Stainless Steel <input type="checkbox"/> Other ( <i>Specify</i> )		<input type="checkbox"/> Other ( <i>Specify</i> )		
<b>4. HEATING ELEMENT WATT DENSITY:</b>		<b>14. OTHER SPECIAL FEATURES:</b>		
<input type="checkbox"/> 20 W/In <sup>2</sup> <input type="checkbox"/> 22 W/In <sup>2</sup> <input type="checkbox"/> 30 W/In <sup>2</sup>				
<input type="checkbox"/> Other ( <i>Specify</i> )		<b>17. MODEL NO.:</b>		



## CAB & CABB

### Low Temperature Air Duct Heaters

- Side Terminals (type CAB)
- Bottom Terminals (type CABB)
- 6 - 100 kW
- 120, 208, 240 and 480 Volt
- 1 or 3 Phase
- Rust-Resisting Iron or Chrome Steel Sheath Elements
- 440°F Max. Outlet Air Temp.

#### Applications

- Sole Heat Source
- Booster Heater in Process and Comfort Heating Ducts
- Convert existing Forced Air Dryers and Ovens
- With Blower and Duct, can be used to Fabricate simple Forced Air Drying Unit

#### Features

**Simple Duct Transition Sections** may be used to adapt standard heater sizes to various duct sizes to increase air velocities for better heat transfer, lower sheath temperature and longer element life.

**Field Wiring Terminals** — Heavy duty 3/8" diameter bolts of either brass (iron sheath units) or Stainless Steel (chrome steel sheath units) with necessary hardware are provided for field wiring connections. Terminals are located on the side for CAB units and on the bottom for CABB units, and should be on the outside of ducting.

**Fins** of aluminized steel are provided to improve heat transfer to the air.

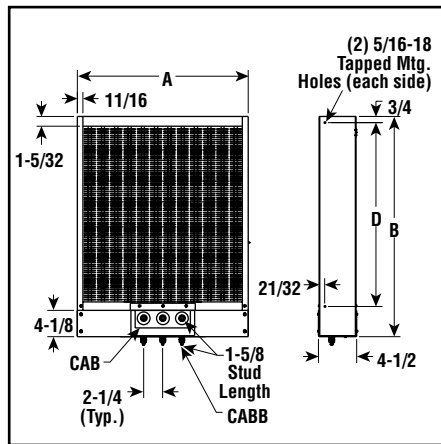
**Elements** are individually replaceable.

**Terminal Cover Option** is available to prevent accidental contact with live electrical terminals (PCN 269720), one (1) required per circuit.

**MONEL® Sheath and MONEL® Fins** are available for humid conditions. Model TDH heaters, using Fintube® elements are also available. Contact your Local Chromalox Sales office.



Dimensions (Inches)



#### Construction

**Rugged Finstrip® Elements** are mounted in a sturdy steel frame with narrow side of elements and fins facing the air flow.

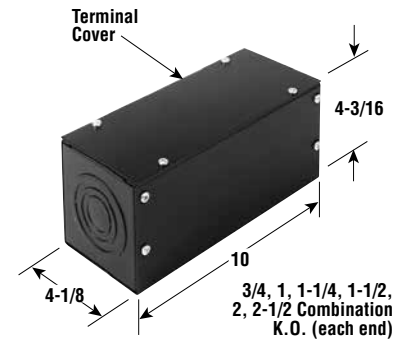
**Finstrip® Elements, Exclusive Construction** — High-quality, coiled resistor wire is uniformly spaced over the width and length of the Finstrip® element, then embedded in high-grade refractory material which insulates the wire and transfers heat rapidly. Refractory is then compressed to rock hardness and maximum density under tremendous hydraulic pressure to improve heat transfer from coil to sheath. Elements are oven baked at high temperatures to semi-vitrify and mature the refractory. Sheath material is either rust-resisting iron or chrome steel.

**Sturdy Steel Frame** — 14 gauge cold rolled steel painted with high heat resisting black enamel paint.

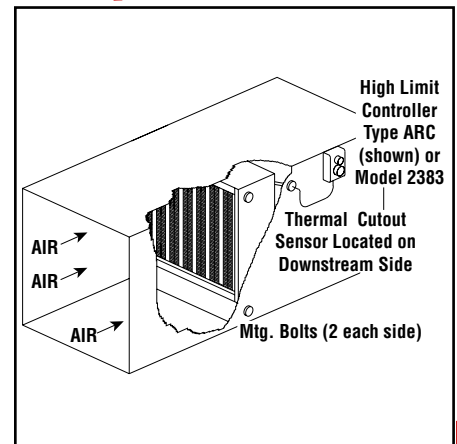
**Internal Electrical Connections** are made using a combination of buss bars and jumper straps consisting of either Manganese-Nickel or MONEL®.

#### Mounting

Always install heaters in duct work with terminal box on bottom of heater. Type CAB units should have field wiring terminals facing upstream to provide maximum cooling affect. Secure to duct work using mounting holes on both vertical sides of heater.



#### Overtemperature Protection



#### Application & Selection Guidelines

**Selection Heater Size** — Refer to Technical section for examples on determining kW requirements. For quick estimating purposes, the following formula may be used for air at standard conditions:

$$kW = \frac{SCFM \times \text{Temp. Rise } (^\circ F)}{3000}$$

**Maximum Work Temperatures** — Type CAB and CABB heaters can generally be used at the following maximum temperatures, provided the minimum air velocity is maintained uniformly through the heater.

Air Velocity (Ft./Sec.)	Max. Outlet Air Temp. (°F)	
	Iron Sheath	Chrome Steel Sheath
4	—	200
9	90	330
16	220	440

**Note** — Maximum temperatures are based on 26 W/In<sup>2</sup>. If elements have a lower watt density, work temperatures may be increased; if watt density is higher, work temperatures should be lower.

**Note** — See Allowable Watt Density & Heater Selection Graphs and Pressure Drop Curve G-112S1 under Air & Gas Heating Data in the Technical section of this catalog.

## CAB & CABB

### Low Temperature Air Duct Heaters (cont'd.)

#### Specifications and Ordering Information

kW	Volts	Phase	Amps/ Circ.	No. Circ.	No. Elem.	Dimensions (In.)			Rust-Resisting Iron Sheath Temperatures to 750°F			Chrome Steel Sheath Temperatures to 950°F			Wt. (Lbs.)
						A	B	D	Model	Stock	PCN	Model	Stock	PCN	
<b>CAB — Side Terminals (26 W/In<sup>2</sup>)</b>															
6	120	1	50	1	6	10-3/4	15-7/8	11-1/2	CAB-62	NS	260013	CAB-611	NS	260398	25
6	208	1	28.9	1	6	10-3/4	15-7/8	11-1/2	CAB-62	NS	260021	CAB-611	NS	260400	25
6	240	1	25	1	6	10-3/4	15-7/8	11-1/2	CAB-62	NS	260030	CAB-611	NS	260419	25
6	480	1	12.5	1	6	10-3/4	15-7/8	11-1/2	CAB-62	NS	260048	CAB-611	NS	260427	25
6	208	3	16.7	1	6	10-3/4	15-7/8	11-1/2	CAB-62	NS	260064	CAB-611	NS	260443	25
6	240	3	14.5	1	6	10-3/4	15-7/8	11-1/2	CAB-62	NS	260072	CAB-611	NS	260451	25
6	480	3	7.2	1	6	10-3/4	15-7/8	11-1/2	<b>CAB-62</b>	<b>S</b>	<b>260080</b>	<b>CAB-611</b>	<b>S</b>	<b>260460</b>	25
12	208	1	57.7	1	9	15-3/8	18-1/2	14-1/8	CAB-122	NS	260099	CAB-1211	NS	260478	35
12	240	1	50	1	9	15-3/8	18-1/2	14-1/8	CAB-122	NS	260101	CAB-1211	NS	260486	35
12	480	1	25	1	9	15-3/8	18-1/2	14-1/8	CAB-122	NS	260110	CAB-1211	NS	260494	35
12	208	3	33.4	1	9	15-3/8	18-1/2	14-1/8	CAB-122	NS	260128	CAB-1211	NS	260507	35
12	240	3	28.9	1	9	15-3/8	18-1/2	14-1/8	CAB-122	NS	260136	CAB-1211	NS	260515	35
12	480	3	14.5	1	9	15-3/8	18-1/2	14-1/8	<b>CAB-122</b>	<b>S</b>	<b>260144</b>	CAB-1211	NS	260523	35
15	208	1	72.1	1	9	15-3/8	21-5/8	17-1/4	CAB-152	NS	260152	CAB-1511	NS	260531	40
15	240	1	62.5	1	9	15-3/8	21-5/8	17-1/4	CAB-152	NS	260160	CAB-1511	NS	260540	40
15	480	1	31.3	1	9	15-3/8	21-5/8	17-1/4	CAB-152	NS	260179	CAB-1511	NS	260558	40
15	208	3	41.7	1	9	15-3/8	21-5/8	17-1/4	CAB-152	NS	260187	CAB-1511	NS	260566	40
15	240	3	36.1	1	9	15-3/8	21-5/8	17-1/4	CAB-152	NS	260195	CAB-1511	NS	260574	40
15	480	3	18.1	1	9	15-3/8	21-5/8	17-1/4	<b>CAB-152</b>	<b>S</b>	<b>260208</b>	<b>CAB-1511</b>	<b>S</b>	<b>260582</b>	40
20	208	3	55.6	1	12	20-1/8	21-5/8	17-1/4	CAB-202	NS	260216	CAB-2011	NS	260590	55
20	240	3	48.2	1	12	20-1/8	21-5/8	17-1/4	CAB-202	NS	260224	CAB-2011	NS	260603	55
20	480	3	24.1	1	12	20-1/8	21-5/8	17-1/4	CAB-202	NS	260232	CAB-2011	NS	260611	55
25	208	3	69.5	1	12	20-1/8	26-1/8	21-3/4	CAB-252	NS	260240	CAB-2511	NS	260620	65
25	240	3	60.2	1	12	20-1/8	26-1/8	21-3/4	CAB-252	NS	260259	CAB-2511	NS	260638	65
25	480	3	30.1	1	12	20-1/8	26-1/8	21-3/4	CAB-252	NS	260267	CAB-2511	NS	260646	65
30	480	3	18.1	2	18	29-1/2	21-5/8	17-1/4	—	—	—	<b>CAB-3011</b>	<b>S</b>	<b>279160</b>	75
40	208	3	55.6	2	18	29-1/2	27-3/8	23	CAB-402	NS	260275	CAB-4011	NS	260654	90
40	240	3	48.2	2	18	29-1/2	27-3/8	23	CAB-402	NS	260283	CAB-4011	NS	260660	90
40	480	3	24.1	2	18	29-1/2	27-3/8	23	CAB-402	NS	260291	<b>CAB-4011</b>	<b>S</b>	<b>260670</b>	90
50	208	3	69.5	2	18	29-1/2	33-1/8	28-3/4	CAB-502	NS	260304	CAB-5011	NS	260689	110
50	240	3	60.2	2	18	29-1/2	33-1/8	28-3/4	CAB-502	NS	260312	CAB-5011	NS	260697	110
50	480	3	30.1	2	18	29-1/2	33-1/8	28-3/4	CAB-502	NS	260320	CAB-5011	NS	260700	110
75	208	3	69.5	3	27	44-7/16	42-1/8	37-3/4	CAB-752	NS	260339	CAB-7511	NS	260718	200
75	240	3	60.2	3	27	44-7/16	42-1/8	37-3/4	CAB-752	NS	260347	CAB-7511	NS	260726	200
75	480	3	30.1	3	27	44-7/16	42-1/8	37-3/4	CAB-752	NS	260355	CAB-7511	NS	260734	200
100	208	3	92.6	3	27	44-7/16	47-1/2	43-1/8	CAB-1002	NS	260363	CAB-10021	NS	260742	220
100	240	3	80.3	3	27	44-7/16	47-1/2	43-1/8	CAB-1002	NS	260371	CAB-10021	NS	260750	220
100	480	3	40.1	3	27	44-7/16	47-1/2	43-1/8	CAB-1002	NS	260380	CAB-10021	NS	260769	220
<b>CABB — Bottom Terminals (26 W/In<sup>2</sup>)</b>															
6	240	3	14.5	1	6	10-3/4	15-7/8	11-1/2	—	—	—	CABB-611	NS	266546	25
6	480	3	7.2	1	6	10-3/4	15-7/8	11-1/2	—	—	—	<b>CABB-611</b>	<b>S</b>	<b>266554</b>	25
12	208	3	33.4	1	9	15-3/8	18-1/2	14-1/8	—	—	—	CABB-1211	NS	203860	35
12	240	3	28.9	1	9	15-3/8	18-1/2	14-1/8	—	—	—	CABB-1211	NS	203801	35
12	480	3	14.5	1	9	15-3/8	18-1/2	14-1/8	—	—	—	CABB-1211	NS	266562	35
20	480	3	24.1	1	12	20-1/8	21-5/8	17-1/4	—	—	—	<b>CABB-2011</b>	<b>S</b>	<b>266570</b>	55
25	480	3	30.1	1	12	29-1/2	26-1/8	21-3/4	CABB-252	NS	266626	<b>CABB-2511</b>	<b>S</b>	<b>266634</b>	65
40	480	3	24.1	2	18	29-1/2	27-3/8	23	CABB-402	NS	266669	CABB-4011	NS	266642	90
50	480	3	30.1	2	18	29-1/2	33-1/8	28-3/4	CABB-502	NS	266466	CABB-5011	NS	266407	110
75	480	3	30.1	3	27	44-7/16	42-1/8	37-3/4	CABB-752	NS	261120	CABB-7511	NS	261147	200
100	480	3	40.1	3	27	44-7/16	47-1/2	43-1/8	CABB-1002	NS	261139	CABB-10021	NS	261166	220

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, kW, volts and quantity.

#### Free Area for Air Flow

Model	Square Feet	Model	Square Feet
CAB-62 & 611	0.500	CAB-402 & 4011	3.29
CAB-122 & 1211	0.927	CAB-502 & 5011	4.13
CAB-152 & 1511	1.19	CAB-752 & 7511	8.25
CAB-202 & 2011	1.63	CAB-1002 & 10021	9.38
CAB-252 & 2511	2.07		

**Note** — The volume of air being circulated along with the free area for air flow (in table above) will enable you to calculate the air velocity over the heater.

## DAB

### Round Low Temperature Air Duct Heater

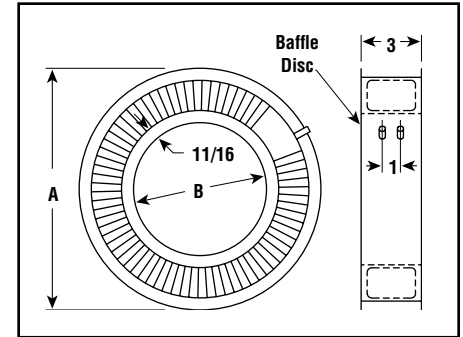
- 2.5 - 5 kW
- 240 Volt
- Single Phase
- Rust-Resisting Iron or MONEL® Sheath Elements

#### Applications

- Use in Dryers, Ovens and other Process Air Heating Equipment
- Comfort Heating in Ducts, Load Banks and Humidity Controls
- Sole Heat Source
- Booster Heater in Process and Comfort Heating Ducts



#### Dimensions (Inches)



#### Construction

**Rugged KSEF Koilfin® Elements** UL Recognized and CSA Certified, are enclosed in a spun steel round frame.

**Element** — Rust-Resisting Iron or MONEL® sheath.

**Mounting Gasket** — Furnished with each heater to minimize air leakage between the heater and the mounting surface or between heaters.

**Baffle** — Steel baffle furnished to close the center opening. When a multiple of units are interconnected, only the first and last heater are closed.

#### Features

**Easy Installation in Round Ducts** — Flange permits easy ganging of units to augment heating capacity.

**Air is Forced Over Elements Only** — The center opening of all DAB units may be closed with a sheet steel baffle furnished with the unit.

#### Application & Selection Guidelines

**Maximum Work Temperatures** — Finstrip® elements can generally be used at the following maximum temperatures, without exceeding their capability, if properly installed according to instructions packed with heaters.

Air Velocity (Ft./Sec.)	Max. Outlet Air Temp. (°F)	
	Iron Sheath	MONEL® Sheath
4	—	250
9	150	370
16	250	450

**Note** — Maximum work temperatures are based on 25 W/In<sup>2</sup>. If elements have a lower watt density, work temperature may be increased; if watt density is higher, work temperature should be lower.

**Note** — See Allowable Watt Density & Heater Selection Graphs in Technical section.

#### Specifications and Ordering Information

Watts	Volts	W/In <sup>2</sup>	Dimensions (In.)		Model	Stock	PCN	Wt. (Lbs.)
			A	B				
<b>Rust-Resisting Iron Sheath — for Max. Sheath Temp. to 750°F</b>								
2,500	240	27	12-3/16	6-9/16	DAB-30	NS	264014	6
3,000	240	27	13-15/16	8-5/16	DAB-36	NS	264030	10
4,000	240	25	17-11/16	12-1/16	DAB-48	NS	264057	14
5,000	240	27	19-11/16	14-1/16	DAB-54	NS	264073	16
<b>MONEL® Sheath — for Max. Sheath Temp. to 900°F</b>								
2,500	240	27	12-3/16	6-9/16	<b>DAB-30M</b>	<b>S</b>	<b>264022</b>	6
3,000	240	27	13-15/16	8-5/16	DAB-36M	NS	264049	10
4,000	240	25	17-11/16	12-1/16	DAB-48M	NS	264065	14
5,000	240	27	19-11/16	14-1/16	DAB-54M	NS	264081	16

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, watts and quantity.

**Note** — Chromalox can supply other sizes and ratings. Contact your Local Chromalox Sales office.

## Process Technologies

### Process Air Heating

In addition to our pressurized air or gas circulation heaters, described on previous pages, Chromalox designs and manufactures equipment to be installed on ducts and to heat air before its introduction into processes. Standard design duct heaters can be supplied for baking ovens up to 200°C as well as drying ovens.

Chromalox can design and supply heaters and controls for special applications and customer requirements.

Special criteria may include any of the following: High temperatures (up to 700°C), corrosive fluids, Slight overpressure and slight vacuum, vibration or seismic resistant, special voltage, high output capacity. etc.

#### *Our Capabilities*

##### Heating Elements

- With or without fins for heat dissipation
- Materials:
  - Stainless Steel 304L /316L /321
  - INCOLOY 800/825
  - INCONEL 600
  - Uranus 86
  - Other metals according to the characteristics of the surroundings (temperature, corrosion risks)

##### Casing:

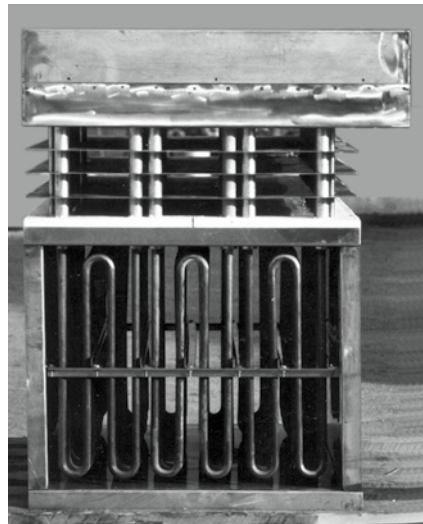
- With or without thermal insulation
- Reinforcement for pressure, seismic, shocks and vibration loadings
- Connect/on Box:
  - Stood off for high temperature, with or without cooling fins
  - Waterproof up to IP55
  - For hazardous areas
- Materials:
  - Galvanized steel
  - Painted steel
  - Stainless Steel 304 /304L /316L
  - Other metals according to the characteristics of the surroundings (temperature, corrosion risks)



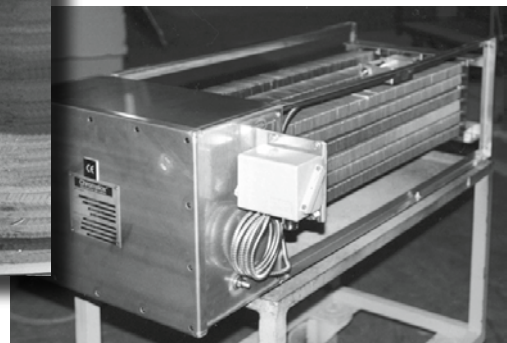
Duct Heater 4000 kW for Dehydration in the Agricultural Industry



Reinforced Duct Heater for Pressurized Flow



Duct Heater with Dissipation Plates for Outlet Temperature 650°C



Air heater for Nuclear, Bacteriological and Chemical Shelter

## Process Technologies Process Air Heating

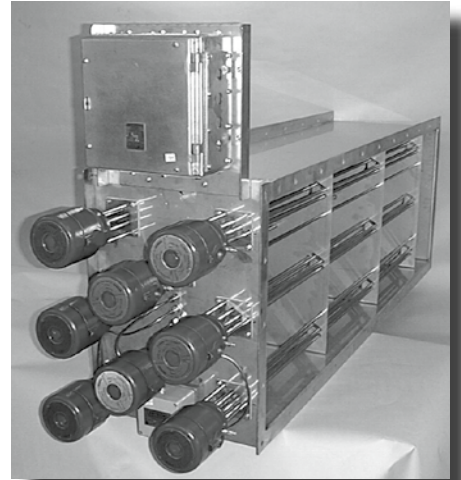
### *FP-AH*

#### **ATEX certified ExDE Air Duct Heaters**

- Air Duct Heaters for Hazardous Air in Hazardous Areas
- ATEX II 2 G - ExDEII C T1 to T6 Certified Heaters
- Painted Cast Iron Terminal Enclosure to IP66
- Integral Over-Temperature Protection Devices
- Certified to -50°C to +60°C with Increased Standoff Distance

#### **Variations Include**

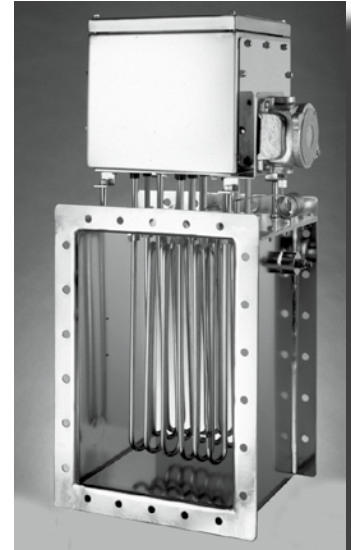
- Marine Finish
- Stainless Steel Duct



### *EP-AH*

#### **ATEX certified ExE Air Duct Heaters**

- Air Duct Heaters for Hazardous Air in Hazardous Areas
- ATEX II 2 G - ExE T1 to T6 Certified Heaters
- Stainless Steel Duct Section and Terminal Enclosure to IP66
- Integral Over-Temperature Protection Devices in ExDe Junction Box
- Certified for Ambient Temperatures -50°C to +60°C



PROCESS AIR  
AND RADIANT

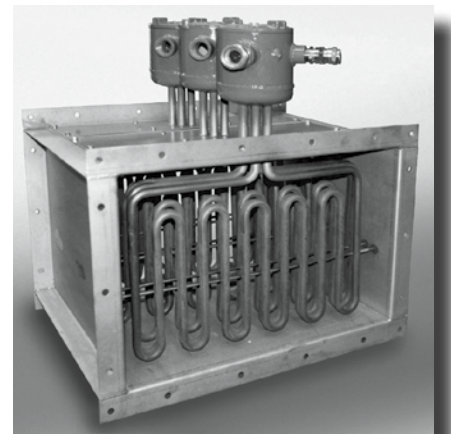
### *BAT-EX*

#### **ATEX certified ExD Air Duct Heaters**

- Air Duct Heaters for Non-Hazardous Air in Hazardous Areas
- ATEX II 2 G - ExD II B or II C T1 to T6 Certified Heaters
- For Ambient Temperatures -50°C to +60°C

#### **Variations Include**

- Stainless Steel Duct



## Process Technologies

### Process Air Heating

#### *Characteristics*

##### **Power**

Up to several megawatts per unit

- Voltage: Up to 3000 VAC / VDC
- Temperature: Up to 700°C

##### **Design**

Calculations by suitable software

- Thermal exchange
- Load supports
- Seismic resistance

##### **Construction**

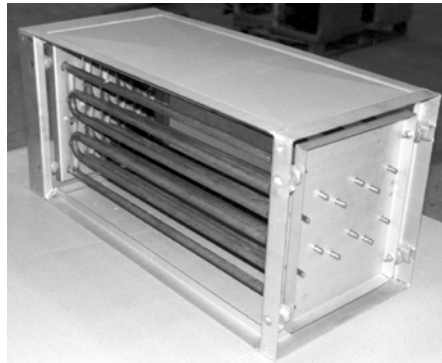
According to:

- The customer specification
- Specific standards:
  - Railway
  - Marine
  - Nuclear

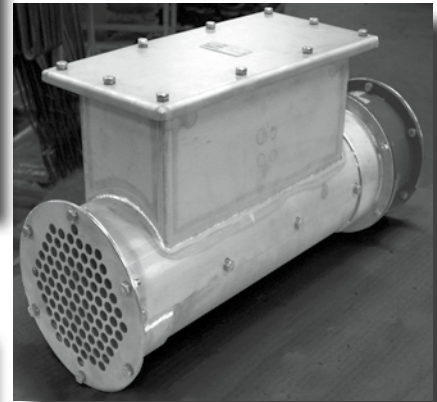
##### **Inspection**

Inspection by reputable organizations:

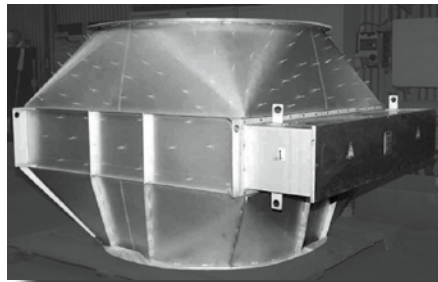
- VERITAS, DNV, SGS
- Lloyd's Register
- EDF / SQR



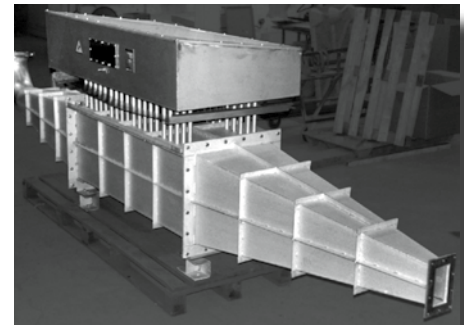
Air Heater for Railways



Fan Heater for Temperature Maintenance on Mechanisms of Heavy Vehicles



Duct Heaters 570 kW with Flanges  $\varnothing$  1600mm for Smoke Treatment



Duct Heater for Testing Propellers

## Process Radiant Heaters

### Overview

- Metal Sheath, Medium Intensity & Medium Wavelength
- Wide Area Quartz Panels
- Ceramic Panels



Chromalox has been recognized as the predominate source of metal sheath radiant heaters since 1948. Since that time, radiant heat has become the preferred process heating method for a multitude of applications in various industries. This is due to the unique properties of the infrared heating process which provide a number of significant advantages over other conventional heat transfer methods.

**High Efficiency** — Infrared heaters create radiant energy to directly heat the product as opposed to a convection oven which is dependent on air circulation as the heat transfer medium. This results in more efficient energy usage and lower operating cost. By eliminating the air medium, radiant heating also reduces the losses associated with hot air ovens.

**Shorter Oven Lengths** — As a result of the greater heating rates, most products can be heated much more rapidly than in a convection oven. Due to shorter product heating cycles using radiant heat, less oven length is required to do the job. This can result in an oven length reduction of 30 to 50% as compared to convection oven designs.

**Cleaner Environment** — There are no dirty or contaminating products of combustion present with electric infrared heaters. Since infrared is not dependent on air as the heat transfer method, the air circulation in an infrared oven is kept at a minimum. The greater the volume of air circulated and the faster it is circulated,

the greater the dirt factor and the product rejects due to dirt. Powder coatings and light weight materials can be heated rapidly due to low volume of air and low velocities.

**Close Product Temperature Control** — Infrared heat can be easily controlled and directed. Electric infrared heaters can be “zoned” to provide a high heating zone in one zone and a lower heating rate in another. Infrared heaters are very responsive to control changes; accurate and consistent product temperature control to within extremely close tolerances are possible.

**Lower Initial Cost** — Due to the simplicity of an electric infrared heating system, initial costs and maintenance costs are lower.

When infrared is the method deemed most suitable for your application, the Chromalox product line provides the largest selection of elements, fixtures and controls. There are many factors to consider: size, heater response, heater efficiency and heater pricing. Chromalox is a major supplier of INCOLOY® sheath, ceramic, quartz panel and ceramic composite panel types of elements.

## Process Radiant Heaters

### Technical & Application Data

Radiation is the process by which energy is transmitted through space without significant loss. Radiant energy is transferred from source (emitter) to receiver (absorber) in the form of electromagnetic waves. Heat is the result of absorption of this radiant energy by the receiver.

Radiation differs from convection and conduction because it does not require the presence of a medium (solid, liquid or gas) to transmit energy from the source to its final destination. By eliminating the heat transfer medium, radiant heating also eliminates the losses associated with other methods. Therefore, radiant heating provides maximum efficiency for your application.

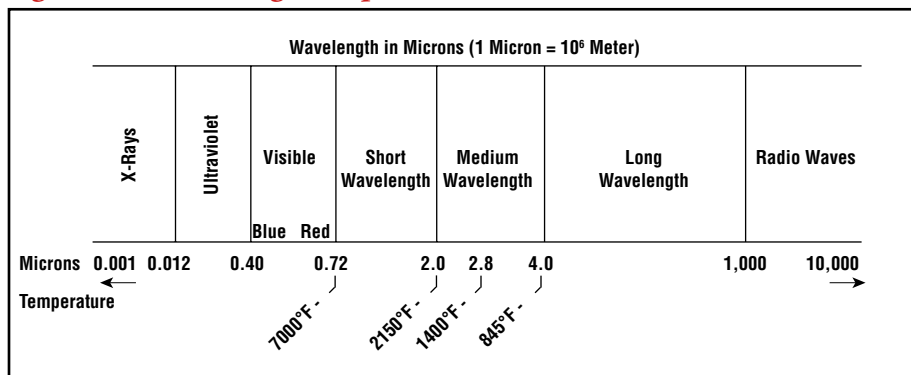
The **Electromagnetic Spectrum** covers the range of wave lengths of radiant energy. The infrared portion of the spectrum (0.72 to 1000 microns) includes those wavelengths which will produce heat upon being absorbed by an object (see Figure 1). The radiant energy, or wavelength, of an infrared element depends on its temperature: the higher the temperature, the shorter the peak wavelength. Infrared wavelengths are longer than visible light but shorter than microwaves. The energy output of a radiant source depends upon the absolute temperature of the source, raised to the fourth power. As source temperature increases, heating intensity becomes very great. The useful wavelengths for industrial applications are from 1 to 10 microns.

Infrared radiation is similar to visible light. It travels through space at the speed of light (186,000 miles/sec), moves in a straight line, can be focused by optical reflectors, will travel through a vacuum, and is absorbed, transmitted or reflected by objects or materials.

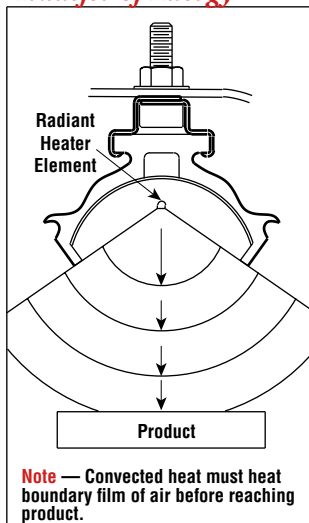
In order to heat a product, the waves must be absorbed. Usually less than 10% of the waves are reflected, and the other 90% is either absorbed by or transmitted through the material. The best way to determine the absorption efficiency of the product is through testing.

Radiant heating is suitable where immersion or direct contact heating is impossible, impractical or undesirable. When infrared is the method deemed most suitable for your application, the Chromalox product line provides the largest selection of elements, fixtures and controls. You should find the exact radiant heater which will best meet your

**Figure 1 — Electromagnetic Spectrum**



**Figure 2 — Transfer of Energy**

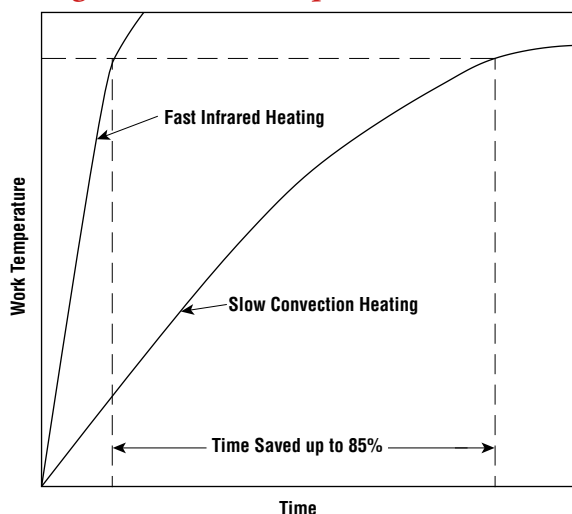


job requirement. If a specially designed heater is required, check with your Local Chromalox Sales office.

**Radiation Vs. Convection** — Convection and radiation are capable of transferring energy from a source to the work material without contact. They are naturally considered together when contact-free heating must be performed (see Figure 2). Due to the insulating effect of the boundary film of air which adheres tightly to all surfaces, gravity convection heating becomes exceedingly slow and more and more inefficient as production speeds increase (see Figure 3).

Forced convection of heated air directed at the work assists in breaking up the boundary film, but has the disadvantage of requiring enclosures and air handling equipment. If not recirculated, the spent heating medium must

**Figure 3 — Work Temperature Vs. Time**



be discharged with consequent heat loss. The desire for faster heating by this means tends toward higher velocities which may lead to higher oven losses and possible damage to delicate surfaces or contamination of the work by airborne dust.

One factor promoting efficiency of application in radiant heating is that radiation falling on an opaque surface is immediately absorbed and transformed into heat. The surface (and by thermal conduction, the internal body) is frequently heated above the surrounding ambient temperature. Where exhaust ventilation must be provided to remove volatiles, noxious fumes or moisture, lower ambient temperatures reduce the amount of heat carried away by the exhaust air and the necessity for extensive oven insulation.



## Process Radiant Heaters Selection Guidelines

- **Metal Sheath, Medium Intensity & Medium Wavelength**
- **Wide Area Quartz Panels**

### Selection Guidelines

The metal-sheath type heater is easily installed and may be operated in any position. The units may be mounted to form banks, tunnels or oven sections.

Chromalox offers heaters in two standard intensities. 1.83 kW per sq. ft. — type RAD. Adequate intensity for about 80% of all applications including finish curing.

3.66 kW per sq. ft. — type RADD, U-RAD and U-RAD-LT speed up webfed and conveyORIZED operations in which excessive temperatures

will not cause damage. Examples are water dry-off, shrink fitting and weld preheating.

Liquid-tight housings are available for single and double hairpin designs where moisture resistance is desired.

Wide area panels can give a wide, flat infrared radiation pattern where needed.

See the following selection guidelines to find more product information.

### Process Radiant Heaters — Selection Guidelines

Type	Feature	kW Rating	Model	Page
RAD Series	Mounting Methods			E-26
Metal Sheath/ Medium Wavelength/ Medium Intensity	Single Element - 1.83 kW/Ft <sup>2</sup>	0.4 - 4.5	RAD	E-27
	Double Element - 3.66 kW/Ft <sup>2</sup>	1.6 - 13	RADD	E-29
	Single Element - Single End	0.9 - 4.4	S-RAD	E-31
	Single Element - Hermetically Sealed	0.7 - 3.6	RAD-H	E-33
	Single Hairpin Element	0.8 - 3.6	U-RAD®	E-34
	Double Hairpin Element	1.6 - 7.2	U-RAD®	E-36
	Single Hairpin Assembly	0.8 - 3.6	RUTU	E-38
	Liquid-Tight, Single Hairpin	0.8 - 3.6	U-RAD-LT	E-39
	Liquid-Tight, Double Hairpin	1.6 - 7.2	U-RAD-LT	E-40
	Single Element, Double Hairpin	1.6 - 7.8	DU-RAD	E-42
	Three Element	3.2 - 15.0	DU-RAD	E-43
		Accessories		
Wide Area	CP Series	0.55 - 18	CPH, CPL, CPLI	E-48
	Quartz - High Intensity	1.8 - 4.8	CPHI	E-50

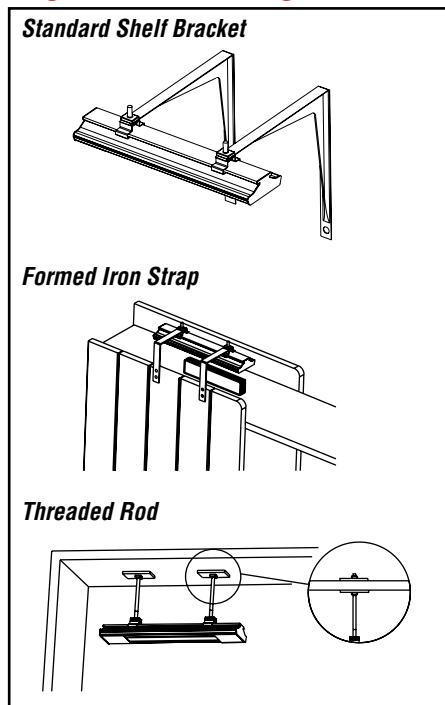
## RAD Series Radiant Heater Mounting Methods

- Single Heater Mounting
- Flat Heater Banks
- Large Oven Sections
- Formed Ovens

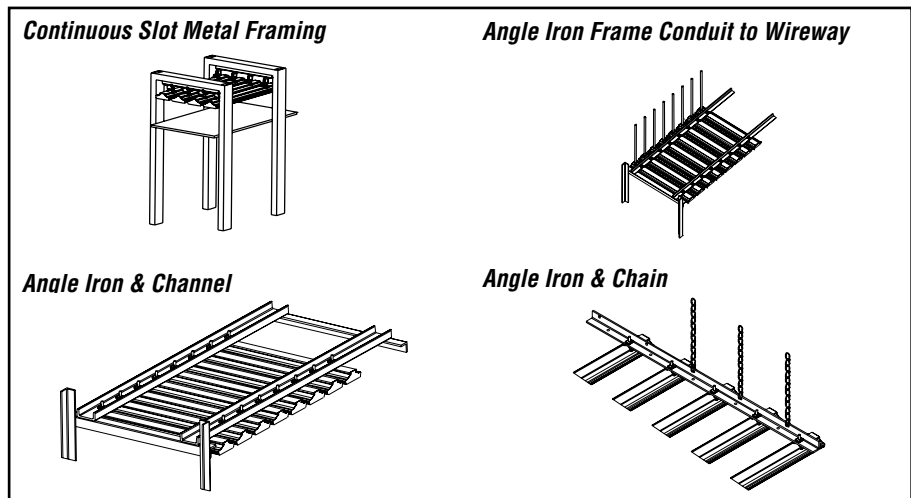
Chromalox radiant heaters are inherently easy to put to work. These heaters are designed as heater modules with features that provide the greatest flexibility in application. A broad choice of physical lengths and ratings is available. Modules can be locked together with hinge-like connectors to create various shaped tunnel structures. Rugged heater case permits use with common structural materials as framing for heater banks using provided heater mounting clamp.

Temperature controls, contactors, other control equipment and wiring accessories can be purchased with heaters to fill your electrical needs. Framing hardware and brackets must be obtained from your local supplier.

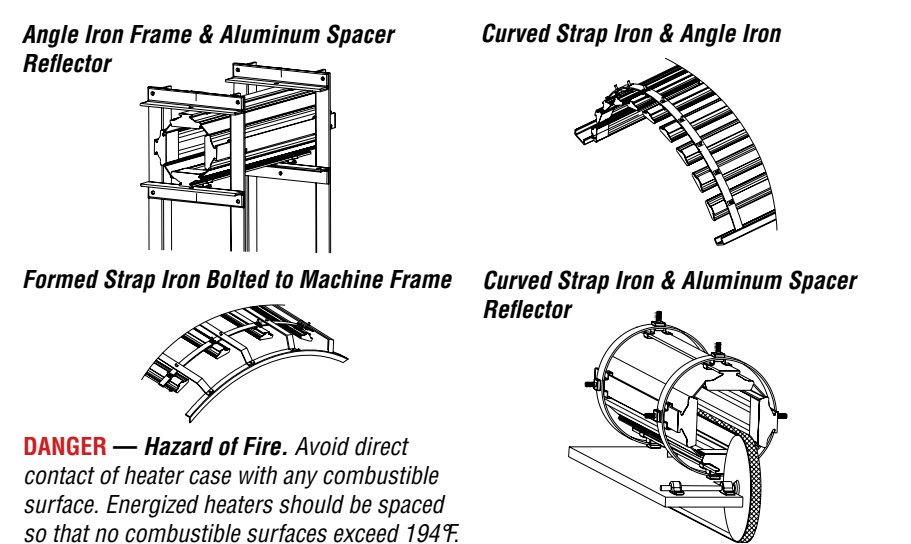
### Single Heater Mounting



### Flat Heater Banks

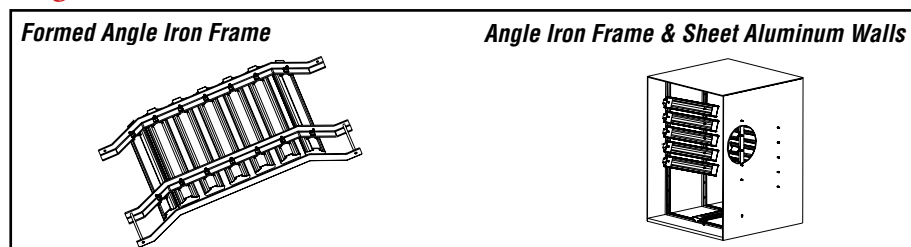


### Formed Ovens



**DANGER** — **Hazard of Fire.** Avoid direct contact of heater case with any combustible surface. Energized heaters should be spaced so that no combustible surfaces exceed 194°F.

### Large Oven Sections



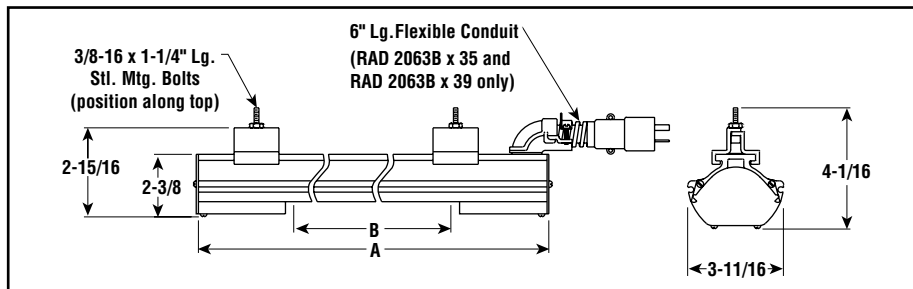
## RAD

### Single Element Radiant Heater

- 1.83 kW/Ft<sup>2</sup>
- 0.4 - 4.5 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (Type RTU)
- 1500°F Max. Sheath Temp.



#### Dimensions (Inches)



#### Applications

- Finish Curing
- Latex and Resin Curing
- Plastics Processing
- Ink Drying
- Textile and Non-Woven Fabric Manufacturing
- Paper and Paperboard Manufacturing
- Food Processing
- Ceramic Drying

#### Features

**Complete, Ready-to-Connect Assembly** available in various lengths to accommodate work of varying dimensions.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

**Additional Sizes and Ratings** — Contact your Local Chromalox Sales office for price and availability.

**Single Ended Wiring** — Heaters may be furnished single-end wired with 18" leads as standard. Add the suffix SE to model number.

#### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** helps protect heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

#### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

**Pipe Plug** — Used to close tapped wiring entry holes. See Radiant Accessories in this section.

**Note:** Model RAD heaters are not listed for use in fixed electric space heated applications under NEC 424. If they are to be used in such applications, installation must be approved by local code enforcement authorities.

## RAD

### Single Element Radiant Heater (*cont'd.*)

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
0.4	120	13-5/8	7-3/4	<b>RAD-2063BX35<sup>2</sup></b>	<b>S</b>	<b>110015</b>	(1) GR-800	RTU-2063AX35	4
0.65	120	20	14-1/8	<b>RAD-2063BX29<sup>2</sup></b>	<b>S</b>	<b>110023</b>	(1) GR-800	RTU-2063AX29	4
0.8	120	24-3/8	16-1/2	<b>RAD-2083B</b>	<b>S</b>	<b>110031</b>	(1) GR-2	RTU-2083A	4
0.8	208	24-3/8	16-1/2	RAD-2083BV	NS	110058	(1) GR-2	RTU-2083AV	4
0.8	240	24-3/8	16-1/2	<b>RAD-2083B</b>	<b>S</b>	<b>110040</b>	(1) GR-2	RTU-2083A	4
0.8	275	24-3/8	16-1/2	RAD-2083BV	NS	110066	(1) GR-2	RTU-2083AV	4
1.1	120	30-5/8	22-3/4	<b>RAD-3113B</b>	<b>S</b>	<b>110074</b>	(1) GR-3	RTU-3113A	5
1.1	208	30-5/8	22-3/4	RAD-3113BV	NS	110090	(1) GR-3	RTU-3113AV	5
1.1	240	30-5/8	22-3/4	<b>RAD-3113B</b>	<b>S</b>	<b>110082</b>	(1) GR-3	RTU-3113A	5
1.1	275	30-5/8	22-3/4	RAD-3113BV	NS	110103	(1) GR-3	RTU-3113AV	5
1.3	208	35-7/8	28-5/16	RAD-3133BV	NS	114841	(1) GR-3	RTU-3133AV	6
1.3	240	35-7/8	28-5/16	RAD-3133B	NS	114850	(1) GR-3	RTU-3133A	6
1.3	275	35-7/8	28-5/16	RAD-3133BV	NS	114868	(1) GR-3	RTU-3133AV	6
1.3	480	35-7/8	28-5/16	RAD-3133B	NS	114876	(1) GR-3	RTU-3133A	6
1.8	208	46-5/8	38-1/2	<b>RAD-4183BV</b>	<b>S</b>	<b>110138</b>	(1) GR-4	RTU-4183AV	8
1.8	240	46-5/8	38-1/2	<b>RAD-4183B</b>	<b>S</b>	<b>110111</b>	(1) GR-4	RTU-4183A	8
1.8	275	46-5/8	38-1/2	RAD-4183BV	NS	110146	(1) GR-4	RTU-4183AV	8
1.8	480	46-5/8	38-1/2	<b>RAD-4183B</b>	<b>S</b>	<b>110120</b>	(1) GR-4	RTU-4183A	8
2.15	208	53-7/8	45-7/16	RAD-5213BV	NS	114884	(1) GR-4	RTU-5213AV	9
2.15	240	53-7/8	45-7/16	RAD-5213B	NS	114892	(1) GR-4	RTU-5213A	9
2.15	275	53-7/8	45-7/16	RAD-5213BV	NS	114905	(1) GR-4	RTU-5213AV	9
2.15	480	53-7/8	45-7/16	RAD-5213B	NS	114913	(1) GR-4	RTU-5213A	9
2.5	208	61-3/8	53-3/8	RAD-5253BV	NS	110170	(1) GR-5	RTU-5253AV	10
2.5	240	61-3/8	53-3/8	<b>RAD-5253B</b>	<b>S</b>	<b>110154</b>	(1) GR-5	RTU-5253A	10
2.5	275	61-3/8	53-3/8	RAD-5253BV	NS	110189	(1) GR-5	RTU-5253AV	10
2.5	480	61-3/8	53-3/8	<b>RAD-5253B</b>	<b>S</b>	<b>110162</b>	(1) GR-5	RTU-5253A	10
2.7	208	65-7/8	58-1/4	RAD-6273BV	NS	114921	(1) GR-5	RTU-6273AV	11
2.7	240	65-7/8	58-1/4	RAD-6273B	NS	114930	(1) GR-5	RTU-6273A	11
2.7	275	65-7/8	58-1/4	RAD-6273BV	NS	114948	(1) GR-5	RTU-6273AV	11
2.7	480	65-7/8	58-1/4	RAD-6273B	NS	114956	(1) GR-5	RTU-6273A	11
3	208	73-3/4	65-3/4	RAD-6303BV	NS	110218	(1) GR-6	RTU-6303AV	12
3	240	73-3/4	65-3/4	<b>RAD-6303B</b>	<b>S</b>	<b>110197</b>	(1) GR-6	RTU-6303A	12
3	275	73-3/4	65-3/4	RAD-6303BV	NS	110226	(1) GR-6	RTU-6303AV	12
3	480	73-3/4	65-3/4	<b>RAD-6303B</b>	<b>S</b>	<b>110200</b>	(1) GR-6	RTU-6303A	12
3.35	208	79-7/8	72-1/4	RAD-7333BV	NS	114964	(1) GR-6	RTU-7333AV	13
3.35	240	79-7/8	72-1/4	RAD-7333B	NS	114972	(1) GR-6	RTU-7333A	13
3.35	275	79-7/8	72-1/4	RAD-7333BV	NS	114980	(1) GR-6	RTU-7333AV	13
3.35	480	79-7/8	72-1/4	RAD-7333B	NS	114999	(1) GR-6	RTU-7333A	13
3.6	208	85-3/4	78	RAD-7363BV	NS	110250	(2) GR-4	RTU-7363AV	14
3.6	240	85-3/4	78	<b>RAD-7363B</b>	<b>S</b>	<b>110234</b>	(2) GR-4	RTU-7363A	14
3.6	275	85-3/4	78	RAD-7363BV	NS	110269	(2) GR-4	RTU-7363AV	14
3.6	480	85-3/4	78	<b>RAD-7363B</b>	<b>S</b>	<b>110242</b>	(2) GR-4	RTU-7363A	14
4.5	208	106	97-1/2	RAD-8453BV	NS	115000	(2) GR-4, (1) GR-2	RTU-8453AV	17
4.5	240	106	97-1/2	RAD-8453B	NS	115019	(2) GR-4, (1) GR-2	RTU-8453A	17
4.5	275	106	97-1/2	RAD-8453BV	NS	115027	(2) GR-4, (1) GR-2	RTU-8453AV	17
4.5	480	106	97-1/2	RAD-8453B	NS	115035	(2) GR-4, (1) GR-2	RTU-8453A	17

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

1. Refer to Tubular Heaters section.
2. Includes 6" BX and two-prong plug.
3. See Accessories in this section for ordering information.

## RADD Double Element Radiant Heater (cont'd.)

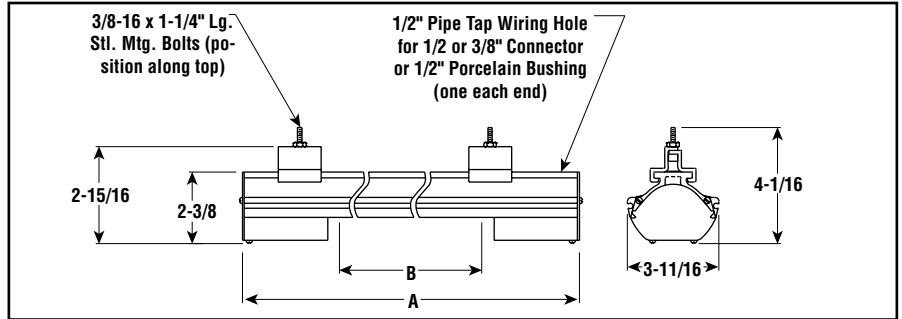


- 3.66 kW/Ft<sup>2</sup>
- 1.6 - 13 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (Type RTU)
- 1500°F Max. Sheath Temp.

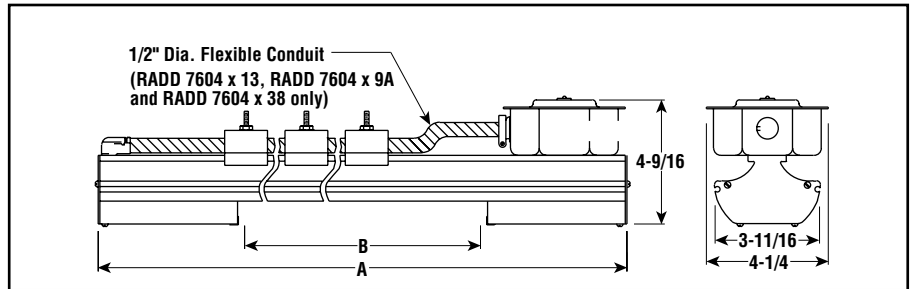
### Applications

- Shrink Fitting
- Preheat Glass for Polishing, Drying, Sterilizing
- Fast-Moving Webs

### Dimensions (Inches)



### Dimensions (Inches)



### Features

**Complete, Ready-to-Connect Assembly** available in various lengths to accommodate work of varying dimensions.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

**Additional Sizes and Ratings** — Contact your Local Chromalox Sales office for price and availability.

**Single Ended Wiring** — Heaters may be furnished single-end wired with 18" leads as standard. Add the suffix SE to model number.

### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

**Pipe Plug** — Used to close tapped wiring entry holes. See Radiant Accessories in this section.

**Note:** Model RADD heaters are not listed for use in fixed electric space heated applications under NEC 424. If they are to be used in such applications, installation must be approved by local code enforcement authorities.

## RADD

### Two Element Radiant Heater (*cont'd.*)

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>3</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
1.6	120	24-3/8	16-1/2	RADD-2164	NS	110277	(1) GR-2	RTU-2083A	7
1.6	208	24-3/8	16-1/2	RADD-2164V	NS	110285	(1) GR-2	RTU-2083AV	7
1.6	240	24-3/8	16-1/2	<b>RADD-2164</b>	<b>S</b>	<b>110293</b>	(1) GR-2	RTU-2083A	7
1.6	275	24-3/8	16-1/2	RADD-2164V	NS	110306	(1) GR-2	RTU-2083AV	7
2.2	120	30-5/8	22-3/4	RADD-3224	NS	110314	(1) GR-3	RTU-3113A	9
2.2	208	30-5/8	22-3/4	RADD-3224V	NS	110322	(1) GR-3	RTU-3113AV	9
2.2	240	30-5/8	22-3/4	<b>RADD-3224</b>	<b>S</b>	<b>110330</b>	(1) GR-3	RTU-3113A	9
2.2	275	30-5/8	22-3/4	RADD-3224V	NS	110349	(1) GR-3	RTU-3113AV	9
2.6	208	35-7/8	28-5/16	RADD-3264V	NS	115140	(1) GR-3	RTU-3133AV	10
2.6	240	35-7/8	28-5/16	RADD-3264	NS	115131	(1) GR-3	RTU-3133A	10
2.6	275	35-7/8	28-5/16	RADD-3264V	NS	115158	(1) GR-3	RTU-3133AV	10
2.6	480	35-7/8	28-5/16	RADD-3264	NS	115166	(1) GR-3	RTU-3133A	10
3.6	208	46-5/8	38-1/2	RADD-4364V	NS	110365	(1) GR-4	RTU-4183AV	11
3.6	240	46-5/8	38-1/2	RADD-4364	NS	110357	(1) GR-4	RTU-4183A	11
3.6	275	46-5/8	38-1/2	RADD-4364V	NS	110381	(1) GR-4	RTU-4183AV	11
3.6	480	46-5/8	38-1/2	<b>RADD-4364</b>	<b>S</b>	<b>110373</b>	(1) GR-4	RTU-4183A	11
4.3	208	53-7/8	45-7/16	RADD-5434V	NS	115174	(1) GR-4	RTU-5213AV	13
4.3	240	53-7/8	45-7/16	RADD-5434	NS	115182	(1) GR-4	RTU-5213A	13
4.3	275	53-7/8	45-7/16	RADD-5434V	NS	115190	(1) GR-4	RTU-5213AV	13
4.3	480	53-7/8	45-7/16	RADD-5434	NS	115203	(1) GR-4	RTU-5213A	13
5	208	61-3/8	53-3/8	RADD-5504V	NS	110402	(1) GR-5	RTU-5253AV	14
5	240	61-3/8	53-3/8	RADD-5504	NS	110390	(1) GR-5	RTU-5253A	14
5	275	61-3/8	53-3/8	RADD-5504V	NS	110429	(1) GR-5	RTU-5253AV	14
5	480	61-3/8	53-3/8	<b>RADD-5504</b>	<b>S</b>	<b>110410</b>	(1) GR-5	RTU-5253A	14
5.4	208	65-7/8	58-1/4	RADD-6544V	NS	115211	(1) GR-5	RTU-6273AV	17
5.4	240	65-7/8	58-1/4	RADD-6544	NS	115220	(1) GR-5	RTU-6273A	17
5.4	275	65-7/8	58-1/4	RADD-6544V	NS	115238	(1) GR-5	RTU-6273AV	17
5.4	480	65-7/8	58-1/4	RADD-6544	NS	115246	(1) GR-5	RTU-6273A	17
6	208	73-3/4	65-3/4	RADD-6604V	NS	110445	(1) GR-6	RTU-6303AV	16
6	240	73-3/4	65-3/4	RADD-6604	NS	110437	(1) GR-6	RTU-6303A	16
6	275	73-3/4	65-3/4	RADD-6604V	NS	110461	(1) GR-6	RTU-6303AV	16
6	480	73-3/4	65-3/4	<b>RADD-6604</b>	<b>S</b>	<b>110453</b>	(1) GR-6	RTU-6303A	16
6.7	208	79-7/8	72-1/4	RADD-7674V	NS	115254	(1) GR-6	RTU-7333AV	21
6.7	240	79-7/8	72-1/4	RADD-7674	NS	115262	(1) GR-6	RTU-7333A	21
6.7	275	79-7/8	72-1/4	RADD-7674V	NS	115270	(1) GR-6	RTU-7333AV	21
6.7	480	79-7/8	72-1/4	RADD-7674	NS	115289	(1) GR-6	RTU-7333A	21
7.2	208	85-3/4	78	RADD-7724V	NS	110488	(2) GR-4	RTU-7363AV	18
7.2	240	85-3/4	78	RADD-7724	NS	110470	(2) GR-4	RTU-7363A	18
7.2	275	85-3/4	78	RADD-7724V	NS	110509	(2) GR-4	RTU-7363AV	18
7.2	480	85-3/4	78	<b>RADD-7724</b>	<b>S</b>	<b>110496</b>	(2) GR-4	RTU-7363A	18
9	208	106	97-1/2	RADD-8904V	NS	115297	(2) GR-4, (1) GR-2	RTU-8453AV	26
9	240	106	97-1/2	RADD-8904	NS	115300	(2) GR-4, (1) GR-2	RTU-8453A	26
9	275	106	97-1/2	RADD-8904V	NS	115318	(2) GR-4, (1) GR-2	RTU-8453AV	26
9	480	106	97-1/2	RADD-8904	NS	115326	(2) GR-4, (1) GR-2	RTU-8453A	26
8	240/480 <sup>2</sup>	114-1/8	106	RADD-7604X10	NS	110517	(2) GR-5	RTU-7303AX10	34
10	240/480 <sup>2</sup>	141	132	RADD-7604X13	NS	110550	(2) GR-6	RTU-7303AX13	40
11	240/480 <sup>2</sup>	160-5/8	150	RADD-7604X9A	NS	110592	(1) GR-4, (2) GR-5	RTU-7303AX9A	45
13	240/480 <sup>2</sup>	185-5/8	174	RADD-7724X38	NS	110630	(1) GR-4, (2) GR-6	RTU-7363AX38	52

**Stock Status:** S = stock NS = non-stock

**To Order**—Specify model, PCN, kW, volts, quantity and interlocking connectors (if required).

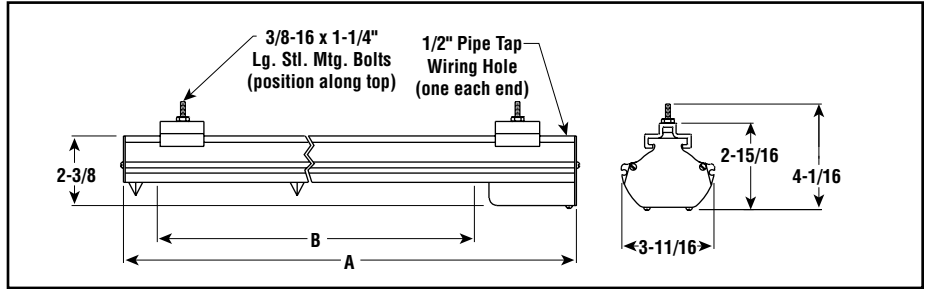
1. Refer to Tubular Heaters section.
2. Shipped as 480V. Convert to 240V by changing jumpers. (See instructions included with heater.)
3. See Accessories in this section for ordering information.

## S-RAD Single Element Radiant Heater



- 2.1 kW/Ft<sup>2</sup>
- 0.95 - 4.4 kW
- 120, 208, 240 and 275 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (type SRTU)
- 1500°F Max. Sheath Temp.
- Single End Termination

### Dimensions (Inches)



### Applications

- Resin Curing
- Thermoforming
- Equipment Packaging
- Mirror Manufacturing
- Rubber Curing

### Features

#### Complete, Ready-to-Connect Assembly

available in various lengths to accommodate work of varying dimensions.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

**Additional Sizes and Ratings** — Contact your Local Chromalox Sales office for price and availability.

### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

### Accessories

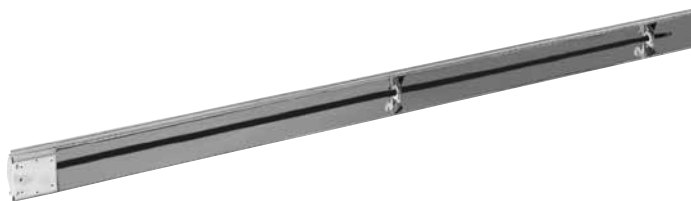
**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

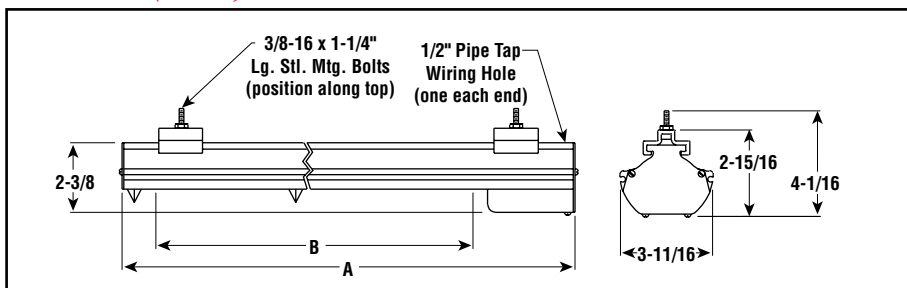
**Note:** Model S-RAD heaters are not listed for use in fixed electric space heated applications under NEC 424. If they are to be used in such applications, installation must be approved by local code enforcement authorities.

## S-RAD

### Single Element Radiant Heater (cont'd.)



#### Dimensions (Inches)



#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>1</sup>	Replacement Elements	Wt. (Lbs.)
		Overall A	Heated B						
0.95	120	24-3/8	16-1/2	S-RAD-2	NS	115334	(1) GR-2	SRTU-209	5
0.95	208	24-3/8	16-1/2	S-RAD-2V	NS	115342	(1) GR-2	SRTU-209V	5
0.95	240	24-3/8	16-1/2	S-RAD-2	NS	115350	(1) GR-2	SRTU-209	5
0.95	275	24-3/8	16-1/2	S-RAD-2V	NS	115369	(1) GR-2	SRTU-209V	5
1.3	120	30-5/8	22-3/4	S-RAD-3	NS	115377	(1) GR-3	SRTU-313	6
1.3	208	30-5/8	22-3/4	S-RAD-3V	NS	115385	(1) GR-3	SRTU-313V	6
1.3	240	30-5/8	22-3/4	S-RAD-3	NS	115393	(1) GR-3	SRTU-313	6
1.3	275	30-5/8	22-3/4	S-RAD-3V	NS	115406	(1) GR-3	SRTU-313V	6
2.2	208	46-5/8	38-5/8	S-RAD-4V	NS	115414	(1) GR-4	SRTU-422V	9
2.2	240	46-5/8	38-5/8	S-RAD-4	NS	115422	(1) GR-4	SRTU-422	9
2.2	275	46-5/8	38-5/8	S-RAD-4V	NS	115430	(1) GR-4	SRTU-422V	9
3	208	61-3/8	53-1/4	S-RAD-5V	NS	115457	(1) GR-5	SRTU-530V	11
3	240	61-3/8	53-1/4	S-RAD-5	NS	115465	(1) GR-5	SRTU-530	11
3	275	61-3/8	53-1/4	S-RAD-5V	NS	115473	(1) GR-5	SRTU-530V	11
3.75	208	73-3/4	65-1/2	S-RAD-6V	NS	115490	(1) GR-2, (1) GR-5	SRTU-638V	13
3.75	240	73-3/4	65-1/2	S-RAD-6	NS	115502	(1) GR-2, (1) GR-5	SRTU-638	13
3.75	275	73-3/4	65-1/2	S-RAD-6V	NS	115510	(1) GR-2, (1) GR-5	SRTU-638V	13
4.4	208	85-3/4	77-1/2	S-RAD-7V	NS	115537	(1) GR-2, (1) GR-6	SRTU-744V	15
4.4	240	85-3/4	77-1/2	S-RAD-7	NS	115545	(1) GR-2, (1) GR-6	SRTU-744	15
4.4	275	85-3/4	77-1/2	S-RAD-7V	NS	115553	(1) GR-2, (1) GR-6	SRTU-744V	15

**Stock Status:** S = stock NS = non-stock

**To Order**—Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

**Notes —**

1. See Accessories in this section for ordering information.

2. 480V ratings are available on some models. Contact your Local Chromalox Sales office for price and availability.



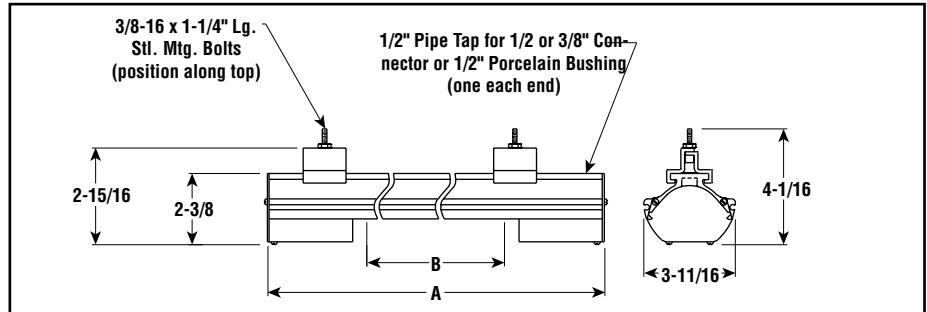
## RAD-H

### Hermetically Sealed Single Element Radiant Heater



- 1.83 kW/Ft<sup>2</sup>
- 0.7 - 3.6 kW
- 120 and 240 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (type RTUH)
- 1000°F Max. Sheath Temp.

#### Dimensions (Inches)



#### Applications

- Humid Area Environments
- Rubber and Synthetic Fabric Processing
- Meat and Food Processing

#### Features

**Complete, Ready-to-Connect Assembly** available in various lengths to accommodate work of varying dimensions.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

**Additional Sizes and Ratings** — Contact your Local Chromalox Sales office for price and availability.

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille	Replacement Elements	Wt. (Lbs.)
		Overall A	Heated B						
0.7	120	24-3/8	14-1/2	RAD-H-207	NS	115570	(1) GR-800	RTUH-207	5
	240	24-3/8	14-1/2	RAD-H-207	NS	115588	(1) GR-800	RTUH-207	5
1	120	30-5/8	20-3/4	RAD-H-310	NS	115596	(1) GR-2	RTUH-310	6
	240	30-5/8	20-3/4	RAD-H-310	NS	115609	(1) GR-2	RTUH-310	6
1.8	240	46-5/8	36-1/2	RAD-H-418	NS	115617	(2) GR-2	RTUH-418	9
	240	61-3/8	51-3/8	RAD-H-525	NS	115625	(3) GR-2	RTUH-525	11
3	240	73-3/4	63-3/4	RAD-H-630	NS	115633	(2) GR-3	RTUH-630	13
3.6	240	85-3/4	76	RAD-H-736	NS	115641	(2) GR-4	RTUH-736	15

**Stock Status:** S = stock NS = non-stock

**To Order**— Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

#### Construction

**Hermetically Sealed, Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

#### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency.

**Note:** Model RAD-H heaters are not listed for use in fixed electric space heated applications under NEC 424. If they are to be used in such applications, installation must be approved by local code enforcement authorities.

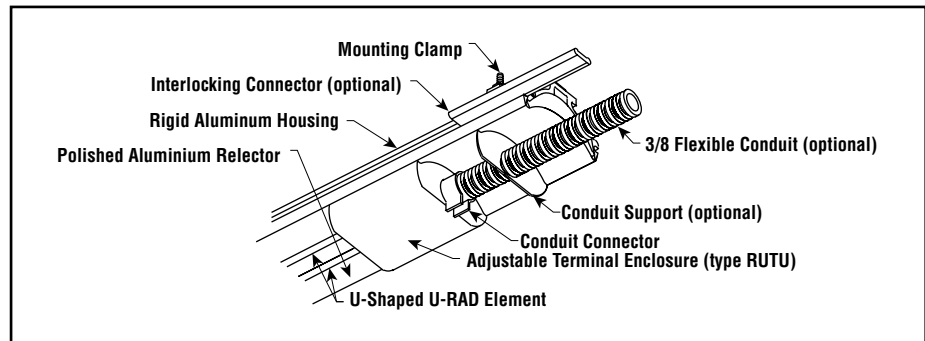
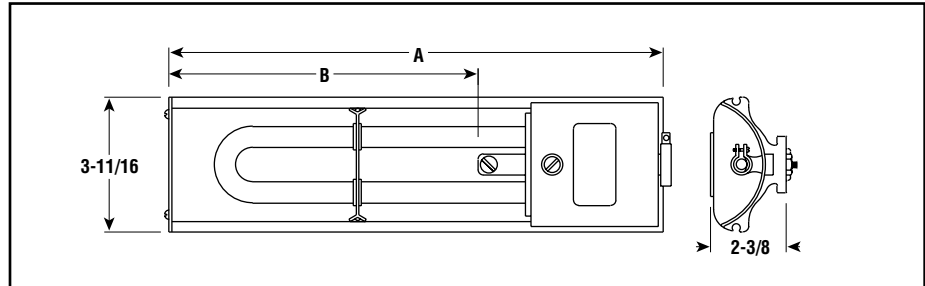
## U-RAD<sup>®</sup>

### Single Hairpin Element Radiant Heater

- 3.66 kW/Ft<sup>2</sup>
- 0.8 - 3.6 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY<sup>®</sup> Sheath Elements (type UTU)
- 1500°F Max. Sheath Temp.



#### Dimensions (Inches)



#### Applications

- Roll Heating
- Shrink Fitting
- Preheat Glass for Polishing, Drying, Sterilizing
- Fast-Moving Webs and other applications where High Temperatures will not damage materials

#### Features

**Complete, Ready-to-Connect Assembly** with adjustable terminal housing, which permits easy interchange of elements to accommodate work of varying dimensions.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

**Additional Sizes and Ratings** — Contact your Local Chromalox Sales office for price and availability.

#### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

#### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

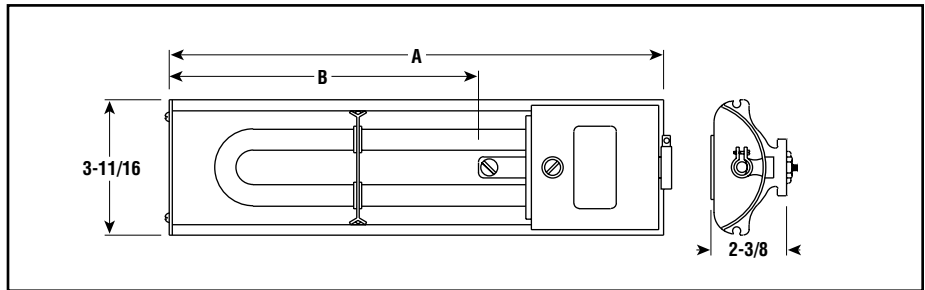
**Note:** Model U-RAD<sup>®</sup> heaters are not listed for use in fixed electric space heated applications under NEC 424. If they are to be used in such applications, installation must be approved by local code enforcement authorities.

## U-RAD®

### Single Hairpin Element Radiant Heater (cont'd.)



#### Dimensions (Inches)



#### Specifications and Ordering Information

kW	Volt	Length (In.)		Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
0.8	120	12-3/4	8-5/16	U-RAD-2	NS	110672	(1) GR-800	UTU-2	4
0.8	208	12-3/4	8-5/16	U-RAD-2V	NS	110680	(1) GR-800	UTU-2V	4
0.8	240	12-3/4	8-5/16	U-RAD-2	NS	110699	(1) GR-800	UTU-2	4
0.8	275	12-3/4	8-5/16	U-RAD-2V	NS	110701	(1) GR-800	UTU-2V	4
1.1	120	15-7/8	11-7/16	U-RAD-3	NS	110710	(1) GR-800	UTU-3	5
1.1	208	15-7/8	11-7/16	U-RAD-3V	NS	110728	(1) GR-800	UTU-3V	5
1.1	240	15-7/8	11-7/16	<b>U-RAD-3</b>	<b>S</b>	<b>110736</b>	(1) GR-800	UTU-3	5
1.1	275	15-7/8	11-7/16	U-RAD-3V	NS	110744	(1) GR-800	UTU-3V	5
1.8	208	23-13/16	19-3/8	U-RAD-4V	NS	110760	(1) GR-2	UTU-4V	7
1.8	240	23-13/16	19-3/8	U-RAD-4	NS	110752	(1) GR-2	UTU-4	7
1.8	275	23-13/16	19-3/8	U-RAD-4V	NS	110779	(1) GR-2	UTU-4V	7
1.8	480	23-13/16	19-3/8	<b>U-RAD-4</b>	<b>S</b>	<b>114497</b>	(1) GR-2	UTU-4	7
2.5	208	31-1/4	26-13/16	<b>U-RAD-5V</b>	<b>S</b>	<b>110795</b>	(1) GR-3	UTU-5V	8
2.5	240	31-1/4	26-13/16	U-RAD-5	NS	110787	(1) GR-3	UTU-5	8
2.5	275	31-1/4	26-13/16	U-RAD-5V	NS	113793	(1) GR-3	UTU-5V	8
2.5	480	31-1/4	26-13/16	<b>U-RAD-5</b>	<b>S</b>	<b>110808</b>	(1) GR-3	UTU-5	8
3	208	37-1/4	32-13/16	U-RAD-6V	NS	110824	(2) GR-2	UTU-6V	10
3	240	37-1/4	32-13/16	U-RAD-6	NS	110816	(2) GR-2	UTU-6	10
3	275	37-1/4	32-13/16	U-RAD-6V	NS	110840	(2) GR-2	UTU-6V	10
3	480	37-1/4	32-13/16	<b>U-RAD-6</b>	<b>S</b>	<b>110832</b>	(2) GR-2	UTU-6	10
3.6	208	43-3/8	38-15/16	U-RAD-7V	NS	110867	(1) GR-4	UTU-7V	12
3.6	240	43-3/8	38-15/16	<b>U-RAD-7</b>	<b>S</b>	<b>110859</b>	(1) GR-4	UTU-7	12
3.6	275	43-3/8	38-15/16	U-RAD-7V	NS	110883	(1) GR-4	UTU-7V	12
3.6	480	43-3/8	38-15/16	<b>U-RAD-7</b>	<b>S</b>	<b>110875</b>	(1) GR-4	UTU-7	12

**Stock Status:** S = stock NS = non-stock

**To Order** — Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

1. Refer to Tubular Heaters section.
2. See Accessories in this section for ordering information.

METAL SHEATH  
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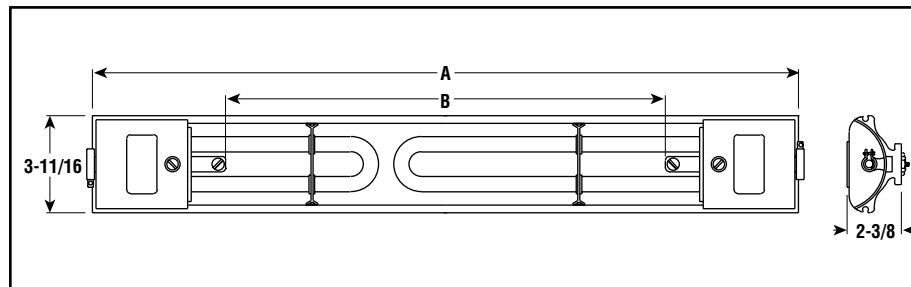
## U-RAD<sup>®</sup>

### Double Hairpin Element Radiant Heater



- 3.66 kW/Ft<sup>2</sup>
- 1.6 - 7.2 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY<sup>®</sup> Sheath Elements (type UTU)
- 1500°F Max. Sheath Temp.

#### Dimensions (Inches)



#### Applications

- Roll Heating
- Shrink Fitting
- Preheat Glass for Polishing, Drying, Sterilizing
- Fast-Moving Webs and other applications where high temperatures will not damage materials

#### Features

**Complete, Ready-to-Connect Assembly** with adjustable terminal housing, which permits easy interchange of elements to accommodate work of varying dimensions.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

**Additional Sizes and Ratings** — Contact your Local Chromalox Sales office for price and availability.

#### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

#### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
1.6	120	25-1/2	16-5/8	U-RAD-22	NS	110891	(1) GR-2	(2) UTU-2	8
1.6	208	25-1/2	16-5/8	U-RAD-22V	NS	110904	(1) GR-2	(2) UTU-2V	8
1.6	240	25-1/2	16-5/8	U-RAD-22	NS	110912	(1) GR-2	(2) UTU-2	8
1.6	275	25-1/2	16-5/8	U-RAD-22V	NS	110920	(1) GR-2	(2) UTU-2V	8
1.9	120	28-5/8	19-3/4	U-RAD-32	NS	110939	(1) GR-2	(1) UTU-2, (1) UTU-3	9
1.9	208	28-5/8	19-3/4	U-RAD-32V	NS	110947	(1) GR-2	(1) UTU-2V, (1) UTU-3V	9
1.9	240	28-5/8	19-3/4	U-RAD-32	NS	110955	(1) GR-2	(1) UTU-2, (1) UTU-3	9
1.9	275	28-5/8	19-3/4	U-RAD-32V	NS	110963	(1) GR-2	(1) UTU-2V, (1) UTU-3V	9

## U-RAD®

### Double Hairpin Element Radiant Heater (cont'd.)

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
2.2	120	31-3/4	22-7/8	U-RAD-33	NS	110971	(1) GR-3	(2) UTU-3	10
2.2	208	31-3/4	22-7/8	U-RAD-33V	NS	110980	(1) GR-3	(2) UTU-3V	10
2.2	240	31-3/4	22-7/8	U-RAD-33	NS	110998	(1) GR-3	(2) UTU-3	10
2.2	275	31-3/4	22-7/8	U-RAD-33V	NS	111000	(1) GR-3	(2) UTU-3V	10
2.6	208	36-9/16	27-11/16	U-RAD-42V	NS	111026	(1) GR-3	(1) UTU-2V, (1) UTU-4V	11
2.6	240	36-9/16	27-11/16	U-RAD-42	NS	111018	(1) GR-3	(1) UTU-2, (1) UTU-4	11
2.6	275	36-9/16	27-11/16	U-RAD-42V	NS	111034	(1) GR-3	(1) UTU-2V, (1) UTU-4V	11
2.9	208	39-11/16	30-13/16	U-RAD-43V	NS	111050	(2) GR-2	(1) UTU-3V, (1) UTU-4V	12
2.9	240	39-11/16	30-13/16	U-RAD-43	NS	111042	(2) GR-2	(1) UTU-3, (1) UTU-4	12
2.9	275	39-11/16	30-13/16	U-RAD-43V	NS	111069	(2) GR-2	(1) UTU-3V, (1) UTU-4V	12
3.6	208	47-9/16	38-11/16	U-RAD-44V	NS	111085	(1) GR-4	(2) UTU-4V	13
3.6	240	47-9/16	38-11/16	U-RAD-44	NS	111077	(1) GR-4	(2) UTU-4	13
3.6	275	47-9/16	38-11/16	U-RAD-44V	NS	111093	(1) GR-4	(2) UTU-4V	13
3.3	208	44	35-1/8	U-RAD-52V	NS	111114	(2) GR-2	(1) UTU-2V, (1) UTU-5V	11
3.3	240	44	35-1/8	U-RAD-52	NS	111106	(2) GR-2	(1) UTU-2, (1) UTU-5	11
3.3	275	44	35-1/8	U-RAD-52V	NS	111122	(2) GR-2	(1) UTU-2V, (1) UTU-5V	11
3.6	208	47-1/8	38-1/4	U-RAD-53V	NS	111149	(1) GR-4	(1) UTU-3V, (1) UTU-5V	12
3.6	240	47-1/8	38-1/4	U-RAD-53	NS	111130	(1) GR-4	(1) UTU-3, (1) UTU-5	12
3.6	275	47-1/8	38-1/4	U-RAD-53V	NS	111157	(1) GR-4	(1) UTU-3V, (1) UTU-5V	12
4.3	208	55-1/16	46-3/16	U-RAD-54V	NS	111173	(3) GR-2	(1) UTU-4V, (1) UTU-5V	14
4.3	240	55-1/16	46-3/16	U-RAD-54	NS	111165	(3) GR-2	(1) UTU-4, (1) UTU-5	14
4.3	275	55-1/16	46-3/16	U-RAD-54V	NS	111181	(3) GR-2	(1) UTU-4V, (1) UTU-5V	14
5	208	62-7/16	53-9/16	U-RAD-55V	NS	111202	(1) GR-5	(2) UTU-5V	15
5	240	62-7/16	53-9/16	U-RAD-55	NS	111190	(1) GR-5	(2) UTU-5	15
5	275	62-7/16	53-9/16	U-RAD-55V	NS	111229	(1) GR-5	(2) UTU-5V	15
5	480	62-7/16	53-9/16	U-RAD-55	NS	111210	(1) GR-5	(2) UTU-5	15
3.8	208	50	41-1/8	U-RAD-62V	NS	111245	(1) GR-2, (1) GR-3	(1) UTU-2V, (1) UTU-6V	13
3.8	240	50	41-1/8	U-RAD-62	NS	111237	(1) GR-2, (1) GR-3	(1) UTU-2, (1) UTU-6	13
3.8	275	50	41-1/8	U-RAD-62V	NS	111253	(1) GR-2, (1) GR-3	(1) UTU-2V, (1) UTU-6V	13
4.1	208	53-1/8	44-1/4	U-RAD-63V	NS	111270	(2) GR-3	(1) UTU-3V, (1) UTU-6V	14
4.1	240	53-1/8	44-1/4	U-RAD-63	NS	111261	(2) GR-3	(1) UTU-3, (1) UTU-6	14
4.1	275	53-1/8	44-1/4	U-RAD-63V	NS	111288	(2) GR-3	(1) UTU-3V, (1) UTU-6V	14
4.8	208	61-1/16	52-3/16	U-RAD-64V	NS	111309	(1) GR-5	(1) UTU-4V, (1) UTU-6V	16
4.8	240	61-1/16	52-3/16	U-RAD-64	NS	111296	(1) GR-5	(1) UTU-4, (1) UTU-6	16
4.8	275	61-1/16	52-3/16	U-RAD-64V	NS	111317	(1) GR-5	(1) UTU-4V, (1) UTU-6V	16
5.5	208	68-1/2	59-5/8	U-RAD-65V	NS	111333	(1) GR-3, (1) GR-4	(1) UTU-5V, (1) UTU-6V	17
5.5	240	68-1/2	59-5/8	U-RAD-65	NS	111325	(1) GR-3, (1) GR-4	(1) UTU-5, (1) UTU-6	17
5.5	275	68-1/2	59-5/8	U-RAD-65V	NS	111350	(1) GR-3, (1) GR-4	(1) UTU-5V, (1) UTU-6V	17
5.5	480	68-1/2	59-5/8	U-RAD-65	NS	111341	(1) GR-3, (1) GR-4	(1) UTU-5, (1) UTU-6	17
6	208	74-1/2	65-5/8	U-RAD-66V	NS	111376	(1) GR-6	(2) UTU-6V	20
6	240	74-1/2	65-5/8	U-RAD-66	NS	111368	(1) GR-6	(2) UTU-6	20
6	275	74-1/2	65-5/8	U-RAD-66V	NS	111392	(1) GR-6	(2) UTU-6V	20
6	480	74-1/2	65-5/8	U-RAD-66	NS	111384	(1) GR-6	(2) UTU-6	20
4.4	208	56-1/8	47-1/4	U-RAD-72V	NS	111413	(1) GR-2, (1) GR-4	(1) UTU-2V, (1) UTU-7V	15
4.4	240	56-1/8	47-1/4	U-RAD-72	NS	111405	(1) GR-2, (1) GR-4	(1) UTU-2, (1) UTU-7	15
4.4	275	56-1/8	47-1/4	U-RAD-72V	NS	111421	(1) GR-2, (1) GR-4	(1) UTU-2V, (1) UTU-7V	15
4.7	208	59-1/4	50-3/8	U-RAD-73V	NS	111448	(3) GR-2	(1) UTU-3V, (1) UTU-7V	16
4.7	240	59-1/4	50-3/8	U-RAD-73	NS	111430	(3) GR-2	(1) UTU-3, (1) UTU-7	16
4.7	275	59-1/4	50-3/8	U-RAD-73V	NS	111456	(3) GR-2	(1) UTU-3V, (1) UTU-7V	16
5.4	208	67-1/8	58-1/4	U-RAD-74V	NS	111472	(1) GR-2, (1) GR-4	(1) UTU-4V, (1) UTU-7V	18
5.4	240	67-1/8	58-1/4	U-RAD-74	NS	111464	(1) GR-2, (1) GR-4	(1) UTU-4, (1) UTU-7	18
5.4	275	67-1/8	58-1/4	U-RAD-74V	NS	111480	(1) GR-2, (1) GR-4	(1) UTU-4V, (1) UTU-7V	18
6.1	208	74-1/2	65-5/8	U-RAD-75V	NS	111501	(1) GR-6	(1) UTU-5V, (1) UTU-7V	19
6.1	240	74-1/2	65-5/8	U-RAD-75	NS	111499	(1) GR-6	(1) UTU-5, (1) UTU-7	19
6.1	275	74-1/2	65-5/8	U-RAD-75V	NS	111528	(1) GR-6	(1) UTU-5V, (1) UTU-7V	19
6.1	480	74-1/2	65-5/8	U-RAD-75	NS	111510	(1) GR-6	(1) UTU-5, (1) UTU-7	19
6.6	208	80-5/8	71-3/4	U-RAD-76V	NS	111544	(1) GR-2, (1) GR-5	(1) UTU-6V, (1) UTU-7V	21
6.6	240	80-5/8	71-3/4	U-RAD-76	NS	111536	(1) GR-2, (1) GR-5	(1) UTU-6, (1) UTU-7	21
6.6	275	80-5/8	71-3/4	U-RAD-76V	NS	111560	(1) GR-2, (1) GR-5	(1) UTU-6V, (1) UTU-7V	21
6.6	480	80-5/8	71-3/4	U-RAD-76	NS	111552	(1) GR-2, (1) GR-5	(1) UTU-6, (1) UTU-7	21
7.2	208	86-3/4	77-7/8	U-RAD-77V	NS	111587	(2) GR-4	(2) UTU-7V	24
7.2	240	86-3/4	77-7/8	U-RAD-77	NS	111579	(2) GR-4	(2) UTU-7	24
7.2	275	86-3/4	77-7/8	U-RAD-77V	NS	111608	(2) GR-4	(2) UTU-7V	24
7.2	480	86-3/4	77-7/8	U-RAD-77	NS	111595	(2) GR-4	(2) UTU-7	24

Stock Status: S = stock NS = non-stock

To Order—Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

1. Refer to Tubular Heaters section.

2. See Accessories in this section for ordering information.

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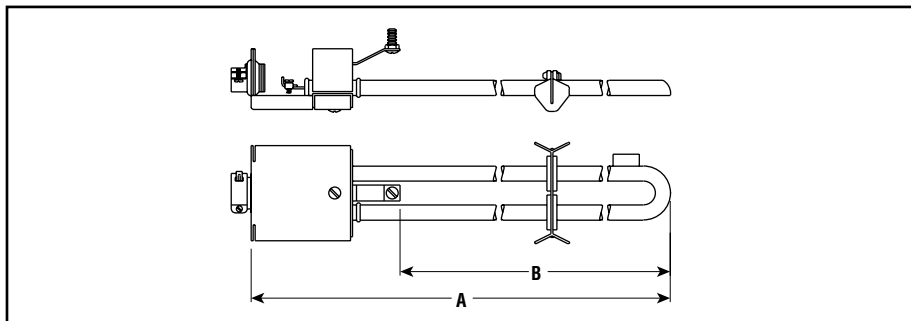
## RUTU

### Single Hairpin Element Radiant Heater Assembly



- 3.66 kW/Ft<sup>2</sup>
- 0.8 - 3.6 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (type UTU)
- 1500°F Max. Sheath Temp.

*Dimensions (Inches)*



### Applications

- High Intensity Applications
- Fast-Moving Webs and other applications where high temperatures will not damage materials
- Roll Heating
- Shrink Fitting
- Preheat Glass for Polishing, Drying, Sterilizing

### Features

**Broad Range of Sizes** — Used alone or in combination RTU element assemblies offer same range of dimensions as type U-RAD.

**Easy Assembly** — Units are supplied with element support clips and support bolt and nut (requires drilled hole through reflector and housing) for changing U-RAD heating lengths and for replacing U-RAD elements. RUTU is also used by itself as a radiant heating device by many Chromalox customers.

### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B					
0.8	120	12-1/4	7-1/2	RUTU-2	S	111616	UTU-2	2
0.8	208	12-1/4	7-1/2	RUTU-2V	NS	111624	UTU-2V	2
0.8	240	12-1/4	7-1/2	RUTU-2	S	111632	UTU-2	2
0.8	275	12-1/4	7-1/2	RUTU-2V	NS	111640	UTU-2V	2
1.1	120	15-5/16	10-5/16	RUTU-3	NS	111659	UTU-3	3
1.1	208	15-5/16	10-5/16	RUTU-3V	NS	111667	UTU-3V	3
1.1	240	15-5/16	10-5/16	RUTU-3	S	111675	UTU-3	3
1.1	275	15-5/16	10-5/16	RUTU-3V	NS	111683	UTU-3V	3
1.8	208	23-1/8	18-3/8	RUTU-4V	NS	111704	UTU-4V	4
1.8	240	23-1/8	18-3/8	RUTU-4	NS	111691	UTU-4	4
1.8	275	23-1/8	18-3/8	RUTU-4V	NS	111712	UTU-4V	4
1.8	480	23-1/8	18-3/8	RUTU-4	S	114569	UTU-4	4
2.5	208	30-7/16	25-11/16	RUTU-5V	NS	111739	UTU-5V	5
2.5	240	30-7/16	25-11/16	RUTU-5	NS	111720	UTU-5	5
2.5	275	30-7/16	25-11/16	RUTU-5V	NS	111755	UTU-5V	5
2.5	480	30-7/16	25-11/16	RUTU-5	S	111747	UTU-5	5
3	208	36-3/8	31-5/8	RUTU-6V	NS	111771	UTU-6V	6
3	240	36-3/8	31-5/8	RUTU-6	NS	111763	UTU-6	6
3	275	36-3/8	31-5/8	RUTU-6V	NS	111798	UTU-6V	6
3	480	36-3/8	31-5/8	RUTU-6	S	111780	UTU-6	6
3.6	208	42-3/8	37-5/8	RUTU-7V	NS	111819	UTU-7V	7
3.6	240	42-3/8	37-5/8	RUTU-7	NS	111800	UTU-7	7
3.6	275	42-3/8	37-5/8	RUTU-7V	NS	111835	UTU-7V	7
3.6	480	42-3/8	37-5/8	RUTU-7	NS	111827	UTU-7	7

**Stock Status:** S = stock NS = non-stock

**To Order**—Specify model, PCN, kW, volts, quantity and replacement elements (if needed).

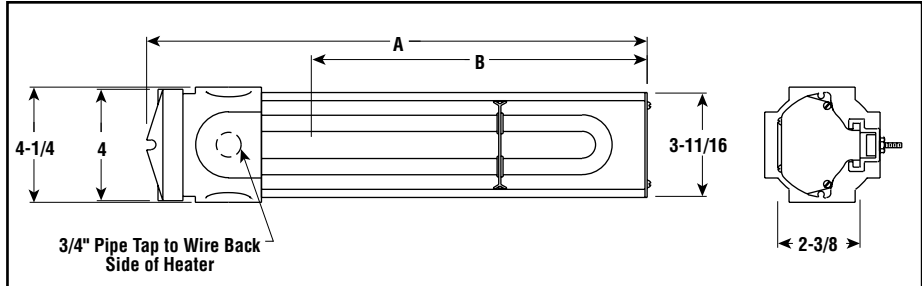
1. Refer to Tubular Heaters section.

## U-RAD-LT

### Liquid-Tight, Single-Hairpin Element Radiant Heater



Dimensions (Inches)



- 3.66 kW/Ft<sup>2</sup>
- 0.8 - 3.6 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (type UTU-LT)
- 1500°F Max. Sheath Temp.

#### Applications

- Food Processing
- Water Intake Screens (See Installation Manual for Limitations)
- Conveyor Belt Heating
- Outdoor Comfort Heating
- Facilities Washdown Operations (See Installation Manual for Limitations)
- Winter Applications where element needs to be shielded from strong drafts and wind

#### Features

**Complete, Ready-to-Connect Assembly** available in various lengths to accommodate work of varying dimensions.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Special Protective Terminal Cover** provides liquid-tight protection to terminals.

**Power Connections** are made at one end, using high-temperature wire.

**Note:** Model U-RAD-LT heaters are not listed for use in fixed electric space heated applications under NEC 424. If they are to be used in such applications, installation must be approved by local code enforcement authorities.

#### Construction

**Liquid-Tight Terminal Enclosure** for outdoor or hose-down locations.

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types. Element includes bulkhead threaded fittings to ensure a water-tight seal.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

#### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
0.8	120	13-5/16	8-5/16	U-RAD-2LT	NS	106833	(1) GR-800	UTU-2LT	7
0.8	208	13-5/16	8-5/16	U-RAD-2VLT	NS	119140	(1) GR-800	UTU-2VLT	7
0.8	240	13-5/16	8-5/16	U-RAD-2LT	NS	106841	(1) GR-800	UTU-2LT	7
0.8	275	13-5/16	8-5/16	U-RAD-2VLT	NS	119159	(1) GR-800	UTU-2VLT	7
1.1	120	16-7/16	11-7/16	U-RAD-3LT	NS	106930	(1) GR-800	UTU-3LT	8
1.1	208	16-7/16	11-7/16	U-RAD-3VLT	NS	119167	(1) GR-800	UTU-3VLT	8
1.1	240	16-7/16	11-7/16	U-RAD-3LT	NS	106850	(1) GR-800	UTU-3LT	8
1.1	275	16-7/16	11-7/16	U-RAD-3VLT	NS	119175	(1) GR-800	UTU-3VLT	8
1.8	208	24-3/8	19-3/8	U-RAD-4VLT	NS	119183	(1) GR-2	UTU-4VLT	10
1.8	240	24-3/8	19-3/8	U-RAD-4LT	NS	106868	(1) GR-2	UTU-4LT	10
1.8	275	24-3/8	19-3/8	U-RAD-4VLT	NS	119191	(1) GR-2	UTU-4VLT	10
1.8	480	24-3/8	19-3/8	U-RAD-4LT	NS	106948	(1) GR-2	UTU-4LT	10
2.5	208	31-13/16	26-13/16	U-RAD-5VLT	NS	119204	(1) GR-3	UTU-5VLT	11
2.5	240	31-13/16	26-13/16	U-RAD-5LT	NS	106876	(1) GR-3	UTU-5LT	11
2.5	275	31-13/16	26-13/16	U-RAD-5VLT	NS	119212	(1) GR-3	UTU-5VLT	11
2.5	480	31-13/16	26-13/16	U-RAD-5LT	NS	106884	(1) GR-3	UTU-5LT	11
3	208	37-13/16	32-13/16	U-RAD-6VLT	NS	119220	(2) GR-2	UTU-6VLT	13
3	240	37-13/16	32-13/16	U-RAD-6LT	NS	106892	(2) GR-2	UTU-6LT	13
3	275	37-13/16	32-13/16	U-RAD-6VLT	NS	119239	(2) GR-2	UTU-6VLT	13
3	480	37-13/16	32-13/16	U-RAD-6LT	NS	106905	(2) GR-2	UTU-6LT	13
3.6	208	43-15/16	38-15/16	U-RAD-7VLT	NS	119247	(1) GR-4	UTU-7VLT	15
3.6	240	43-15/16	38-15/16	U-RAD-7LT	NS	106913	(1) GR-4	UTU-7LT	15
3.6	275	43-15/16	38-15/16	U-RAD-7VLT	NS	119255	(1) GR-4	UTU-7VLT	15
3.6	480	43-15/16	38-15/16	U-RAD-7LT	NS	106921	(1) GR-4	UTU-7LT	15

**Stock Status:** S = stock NS = non-stock  
**To Order**— Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

1. Refer to Tubular Heaters section.
2. Refer to Accessories in this section for ordering information.

METAL SHEATH RADIANT

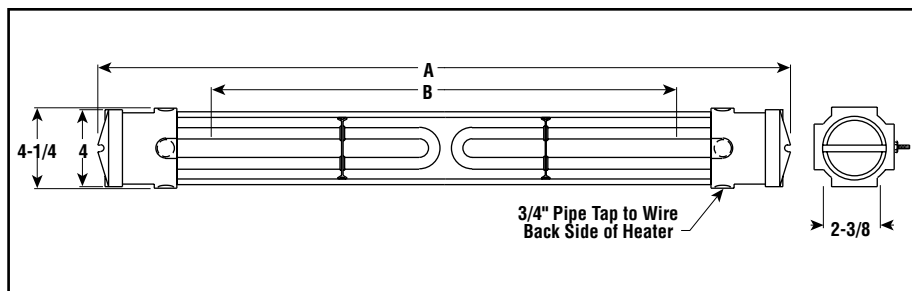
## U-RAD-LT

### Liquid-Tight, Double-Hairpin Element Radiant Heater



- 3.66 kW/Ft<sup>2</sup>
- 1.6 - 7.2 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (type UTU-LT)
- 1500°F Max. Sheath Temp.

*Dimensions (Inches)*



#### Applications

- Food Processing
- Water Intake Screens (See Installation Manual for Limitations)
- Conveyor Belt Heating
- Outdoor Comfort Heating
- Facilities Washdown Operations (See Installation Manual for Limitations)
- Winter Applications where element needs to be shielded from strong drafts and wind

#### Features

**Complete, Ready-to-Install** and connect assembly.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
1.6	120	26-1/8	16-5/8	U-RAD-22LT	NS	119263	(1) GR-2	(2) UTU-2LT	14
1.6	208	26-1/8	16-5/8	U-RAD-22VLT	NS	119280	(1) GR-2	(2) UTU-2VLT	14
1.6	240	26-1/8	16-5/8	U-RAD-22LT	NS	119271	(1) GR-2	(2) UTU-2LT	14
1.6	275	26-1/8	16-5/8	U-RAD-22VLT	NS	119298	(1) GR-2	(2) UTU-2VLT	14
1.9	120	29-1/4	19-3/4	U-RAD-32LT	NS	119300	(1) GR-2	(1) UTU-3LT, (1) UTU-2LT	15
1.9	208	29-1/4	19-3/4	U-RAD-32VLT	NS	119327	(1) GR-2	(1) UTU-3VLT, (1) UTU-2VLT	15
1.9	240	29-1/4	19-3/4	U-RAD-32LT	NS	119319	(1) GR-2	(1) UTU-3LT, (1) UTU-2LT	15
1.9	275	29-1/4	19-3/4	U-RAD-32VLT	NS	119335	(1) GR-2	(1) UTU-3VLT, (1) UTU-2VLT	15
2.2	120	32-3/8	22-7/8	U-RAD-33LT	NS	119343	(1) GR-3	(2) UTU-3LT	16
2.2	208	32-3/8	22-7/8	U-RAD-33VLT	NS	119360	(1) GR-3	(2) UTU-3VLT	16
2.2	240	32-3/8	22-7/8	U-RAD-33LT	NS	119351	(1) GR-3	(2) UTU-3LT	16
2.2	275	32-3/8	22-7/8	U-RAD-33VLT	NS	119378	(1) GR-3	(2) UTU-3VLT	16
2.6	208	37-1/8	27-11/16	U-RAD-42VLT	NS	119394	(1) GR-3	(1) UTU-2VLT, (1) UTU-4VLT	17
2.6	240	37-1/8	27-11/16	U-RAD-42LT	NS	119386	(1) GR-3	(1) UTU-2LT, (1) UTU-4LT	17
2.6	275	37-1/8	27-11/16	U-RAD-42VLT	NS	119407	(1) GR-3	(1) UTU-2VLT, (1) UTU-4VLT	17
2.9	208	40-1/4	30-13/16	U-RAD-43VLT	NS	119423	(2) GR-2	(1) UTU-3VLT, (1) UTU-4VLT	18
2.9	240	40-1/4	30-13/16	U-RAD-43LT	NS	119415	(2) GR-2	(1) UTU-3LT, (1) UTU-4LT	18
2.9	275	40-1/4	30-13/16	U-RAD-43VLT	NS	119431	(2) GR-2	(1) UTU-3VLT, (1) UTU-4VLT	18
3.6	208	48-1/8	38-11/16	U-RAD-44VLT	NS	119466	(1) GR-4	(2) UTU-4VLT	20
3.6	240	48-1/8	38-11/16	U-RAD-44LT	NS	119440	(1) GR-4	(2) UTU-4LT	20
3.6	275	48-1/8	38-11/16	U-RAD-44VLT	NS	119474	(1) GR-4	(2) UTU-4VLT	20
3.6	480	48-1/8	38-11/16	U-RAD-44LT	NS	119458	(1) GR-4	(2) UTU-4LT	20

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

**Power Connections** are made at both ends, using high-temperature wire.

#### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Special Protective Terminal Cover** provides liquid-tight protection to terminals.

#### Construction

**Liquid-Tight Terminal Enclosure** for outdoor or hose-down locations.

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types. Elements include bulkhead threaded fittings to ensure a water-tight seal.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.



## U-RAD-LT

### Liquid-Tight, Double-Hairpin Element Radiant Heater (cont'd.)

#### Specifications and Ordering Information

kW	Volts	Length (In.)		Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>	Wt. (Lbs.)
		Overall A	Heated B						
3.3	208	44-5/8	35-1/8	U-RAD-52VLT	NS	119490	(2) GR-2	(1) UTU-2VLT, (1) UTU-5VLT	18
3.3	240	44-5/8	35-1/8	U-RAD-52LT	NS	119482	(2) GR-2	(1) UTU-2LT, (1) UTU-5LT	18
3.3	275	44-5/8	35-1/8	U-RAD-52VLT	NS	119503	(2) GR-2	(1) UTU-2VLT, (1) UTU-5VLT	18
3.6	208	47-3/4	38-1/4	U-RAD-53VLT	NS	119520	(1) GR-4	(1) UTU-3VLT, (1) UTU-5VLT	19
3.6	240	47-3/4	38-1/4	U-RAD-53LT	NS	119511	(1) GR-4	(1) UTU-3LT, (1) UTU-5LT	19
3.6	275	47-3/4	38-1/4	U-RAD-53VLT	NS	119538	(1) GR-4	(1) UTU-3VLT, (1) UTU-5VLT	19
4.3	208	55-5/8	46-3/16	U-RAD-54VLT	NS	119562	(3) GR-2	(1) UTU-4VLT, (1) UTU-5VLT	21
4.3	240	55-5/8	46-3/16	U-RAD-54LT	NS	119546	(3) GR-2	(1) UTU-4LT, (1) UTU-5LT	21
4.3	275	55-5/8	46-3/16	U-RAD-54VLT	NS	119570	(3) GR-2	(1) UTU-4VLT, (1) UTU-5VLT	21
4.3	480	55-5/8	46-3/16	U-RAD-54LT	NS	119554	(3) GR-2	(1) UTU-4LT, (1) UTU-5LT	21
5	208	63-1/8	53-9/16	U-RAD-55VLT	NS	119600	(1) GR-5	(2) UTU-5VLT	22
5	240	63-1/8	53-9/16	U-RAD-55LT	NS	119589	(1) GR-5	(2) UTU-5LT	22
5	275	63-1/8	53-9/16	U-RAD-55VLT	NS	119597	(1) GR-5	(2) UTU-5VLT	22
5	480	63-1/8	53-9/16	U-RAD-55LT	NS	119618	(1) GR-5	(2) UTU-5LT	22
3.8	208	50-9/16	41-1/8	U-RAD-62VLT	NS	119634	(1) GR-2, (1) GR-3	(1) UTU-2VLT, (1) UTU-6VLT	20
3.8	240	50-9/16	41-1/8	U-RAD-62LT	NS	119626	(1) GR-2, (1) GR-3	(1) UTU-2LT, (1) UTU-6LT	20
3.8	275	50-9/16	41-1/8	U-RAD-62VLT	NS	119642	(1) GR-2, (1) GR-3	(1) UTU-2VLT, (1) UTU-6VLT	20
4.1	208	53-11/16	44-1/4	U-RAD-63VLT	NS	119669	(2) GR-3	(1) UTU-3VLT, (1) UTU-6VLT	21
4.1	240	53-11/16	44-1/4	U-RAD-63LT	NS	119650	(2) GR-3	(1) UTU-3LT, (1) UTU-6LT	21
4.1	275	53-11/16	44-1/4	U-RAD-63VLT	NS	119677	(2) GR-3	(1) UTU-3VLT, (1) UTU-6VLT	21
4.8	208	61-9/16	52-3/16	U-RAD-64VLT	NS	119706	(1) GR-5	(1) UTU-4VLT, (1) UTU-6VLT	23
4.8	240	61-9/16	52-3/16	U-RAD-64LT	NS	119685	(1) GR-5	(1) UTU-4LT, (1) UTU-6LT	23
4.8	275	61-9/16	52-3/16	U-RAD-64VLT	NS	119714	(1) GR-5	(1) UTU-4VLT, (1) UTU-6VLT	23
4.8	480	61-9/16	52-3/16	U-RAD-64LT	NS	119693	(1) GR-5	(1) UTU-4LT, (1) UTU-6LT	23
5.5	208	69-1/16	59-5/8	U-RAD-65VLT	NS	119749	(1) GR-3, (1) GR-4	(1) UTU-5VLT, (1) UTU-6VLT	24
5.5	240	69-1/16	59-5/8	U-RAD-65LT	NS	119722	(1) GR-3, (1) GR-4	(1) UTU-5LT, (1) UTU-6LT	24
5.5	275	69-1/16	59-5/8	U-RAD-65VLT	NS	119757	(1) GR-3, (1) GR-4	(1) UTU-5VLT, (1) UTU-6VLT	24
5.5	480	69-1/16	59-5/8	U-RAD-65LT	NS	119730	(1) GR-3, (1) GR-4	(1) UTU-5-LT, (1) UTU-6LT	24
6	208	75	65-5/8	U-RAD-66VLT	NS	119781	(1) GR-6	(2) UTU-6VLT	26
6	240	75	65-5/8	U-RAD-66LT	NS	119765	(1) GR-6	(2) UTU-6LT	26
6	275	75	65-5/8	U-RAD-66VLT	NS	119790	(1) GR-6	(2) UTU-6VLT	26
6	480	75	65-5/8	U-RAD-66LT	NS	119773	(1) GR-6	(2) UTU-6LT	26
4.4	208	56-11/16	47-1/4	U-RAD-72VLT	NS	119810	(1) GR-2, (1) GR-4	(1) UTU-2VLT, (1) UTU-7VLT	22
4.4	240	56-11/16	47-1/4	U-RAD-72LT	NS	119802	(1) GR-2, (1) GR-4	(1) UTU-2LT, (1) UTU-7LT	22
4.4	275	56-11/16	47-1/4	U-RAD-72VLT	NS	119829	(1) GR-2, (1) GR-4	(1) UTU-2VLT, (1) UTU-7VLT	22
4.7	208	59-13/16	50-3/8	U-RAD-73VLT	NS	119845	(3) GR-2	(1) UTU-3VLT, (1) UTU-7VLT	23
4.7	240	59-13/16	50-3/8	U-RAD-73LT	NS	119837	(3) GR-2	(1) UTU-3LT, (1) UTU-7LT	23
4.7	275	59-13/16	50-3/8	U-RAD-73VLT	NS	119853	(3) GR-2	(1) UTU-3VLT, (1) UTU-7VLT	23
5.4	208	67-11/16	58-1/4	U-RAD-74VLT	NS	119888	(1) GR-2, (1) GR-4	(1) UTU-4VLT, (1) UTU-7VLT	25
5.4	240	67-11/16	58-1/4	U-RAD-74LT	NS	119861	(1) GR-2, (1) GR-4	(1) UTU-4LT, (1) UTU-7LT	25
5.4	275	67-11/16	58-1/4	U-RAD-74VLT	NS	119896	(1) GR-2, (1) GR-4	(1) UTU-4VLT, (1) UTU-7VLT	25
5.4	480	67-11/16	58-1/4	U-RAD-74LT	NS	119870	(1) GR-2, (1) GR-4	(1) UTU-4LT, (1) UTU-7LT	25
6.1	208	75-3/16	65-5/8	U-RAD-75VLT	NS	119925	(1) GR-6	(1) UTU-5VLT, (1) UTU-7VLT	26
6.1	240	75-3/16	65-5/8	U-RAD-75LT	NS	119909	(1) GR-6	(1) UTU-5LT, (1) UTU-7LT	26
6.1	275	75-3/16	65-5/8	U-RAD-75VLT	NS	119933	(1) GR-6	(1) UTU-5VLT, (1) UTU-7VLT	26
6.1	480	75-3/16	65-5/8	U-RAD-75LT	NS	119917	(1) GR-6	(1) UTU-5LT, (1) UTU-7LT	26
6.6	208	81-1/8	71-3/4	U-RAD-76VLT	NS	119968	(1) GR-2, (1) GR-5	(1) UTU-6VLT, (1) UTU-7VLT	28
6.6	240	81-1/8	71-3/4	U-RAD-76LT	NS	119941	(1) GR-2, (1) GR-5	(1) UTU-6LT, (1) UTU-7LT	28
6.6	275	81-1/8	71-3/4	U-RAD-76VLT	NS	119976	(1) GR-2, (1) GR-5	(1) UTU-6VLT, (1) UTU-7VLT	28
6.6	480	81-1/8	71-3/4	U-RAD-76LT	NS	119950	(1) GR-2, (1) GR-5	(1) UTU-6LT, (1) UTU-7LT	28
7.2	208	87-1/4	77-7/8	U-RAD-77VLT	NS	120002	(2) GR-4	(2) UTU-7VLT	30
7.2	240	87-1/4	77-7/8	U-RAD-77LT	NS	119984	(2) GR-4	(2) UTU-7LT	30
7.2	275	87-1/4	77-7/8	U-RAD-77VLT	NS	120010	(2) GR-4	(2) UTU-7VLT	30
7.2	480	87-1/4	77-7/8	U-RAD-77LT	NS	119992	(2) GR-4	(2) UTU-7LT	30

METAL SHEATH  
RADIANT

**Stock Status:** S = stock NS = non-stock

**To Order**—Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

1. Refer to Tubular Heaters section.

2. See Accessories in this section for ordering information.

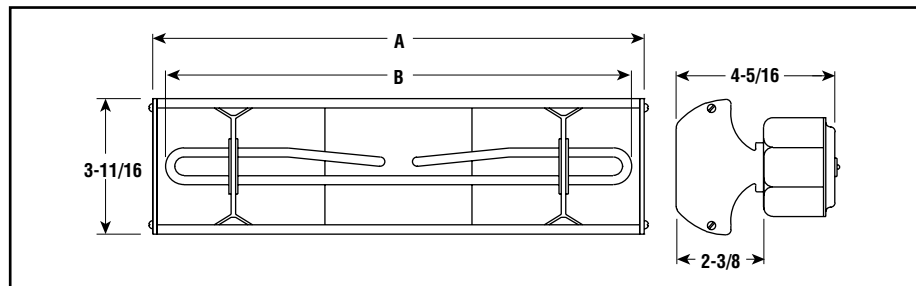
## DU-RAD

### Single Element, Double-Hairpin Radiant Heater



- 3.66 kW/Ft<sup>2</sup>
- 1.6 - 7.83 kW
- 120, 208, 240, 275 and 480 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (type UTU)
- 1500°F Max. Sheath Temp.

*Dimensions (Inches)*



#### Applications

- Textile and Paper Drying
- Coatings Curing
- Vinyl Fusing
- Preheat Roll Fed Plastics for Laminating or Embossing

#### Features

**More Heated Length** for limited space.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

#### Specifications and Ordering Information

kW	Length (In.)		Model	120V		240V		480V		Model	208V		275V		Optional Grille	Wt. (Lbs.)
	Overall A	Heated B		Stock	PCN	Stock	PCN	Stock	PCN		Stock	PCN	Stock	PCN		
1.6	20-3/8	18-15/16	DU-RAD-040	NS	117575	NS	117591	—	—	DU-RAD-040V	NS	117585	NS	117604	(1) GR-2	6
1.97	23-25/32	22-25/32	DU-RAD-048	NS	117612	NS	117639	—	—	DU-RAD-048V	NS	117620	NS	117647	(1) GR-3	7
2.44	28-7/8	27-25/32	DU-RAD-058	NS	117655	NS	117671	NS	117698	DU-RAD-058V	NS	117663	NS	117680	(1) GR-3	8
2.82	33-1/4	31-25/32	DU-RAD-066	NS	117700	NS	117727	NS	117743	DU-RAD-066V	NS	117719	NS	117735	(2) GR-2	9
3.19	37-1/4	35-25/32	DU-RAD-074	NS	117751	NS	117778	NS	117794	DU-RAD-074V	NS	117760	NS	117786	(2) GR-2	10
3.57	41-1/8	39-7/8	DU-RAD-082	NS	—	NS	117815	NS	117831	DU-RAD-082V	NS	117815	NS	117831	(1) GR-4	11
3.95	45-3/16	43-7/8	DU-RAD-090	NS	—	NS	117858	NS	117874	DU-RAD-090V	NS	117840	NS	117866	(2) GR-3	12
4.52	51-7/8	49-7/8	DU-RAD-0102	NS	—	NS	117890	NS	117911	DU-RAD-0102V	NS	117882	NS	117903	(3) GR-2	13
4.99	56-3/16	54-7/8	DU-RAD-0112	NS	—	NS	117938	NS	117954	DU-RAD-0112V	NS	117920	NS	117946	(1) GR-5	14
5.56	62-1/2	60-15/16	DU-RAD-0124	NS	—	NS	117970	NS	117997	DU-RAD-0124V	NS	117962	NS	117989	(1) GR-3	15
6.13	68-9/16	66-15/16	DU-RAD-0136	NS	—	NS	118017	NS	118033	DU-RAD-0136V	NS	118009	NS	118025	(1) GR-4	15
6.7	75-1/2	72-15/16	DU-RAD-0148	NS	—	NS	118050	NS	118076	DU-RAD-0148V	NS	118041	NS	118068	(1) GR-6 (1) GR-3	16
7.1	78-13/16	77	DU-RAD-0156	NS	—	NS	118092	NS	118113	DU-RAD-0156V	NS	118084	NS	118105	(1) GR-5 (2) GR-4	17
7.45	82-11/16	81	DU-RAD-0164	NS	—	NS	118130	NS	118156	DU-RAD-0164V	NS	118121	NS	118148	(1) GR-2 (1) GR-6	17
7.83	87	85-1/16	DU-RAD-0172	NS	—	NS	118172	NS	118199	DU-RAD-0172V	NS	118164	NS	118180	(1) GR-2 (1) GR-6	18

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, PCN, kW, volts, quantity and optional grille (if needed).

**For New or Existing Installations** — Utilization of a double-hairpin element, with terminal connections in the center of the housing, gives a heated length covering almost the entire length of the housing.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Center Mounted Terminals** are enclosed in terminal box on rear of heater housing.

#### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

#### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

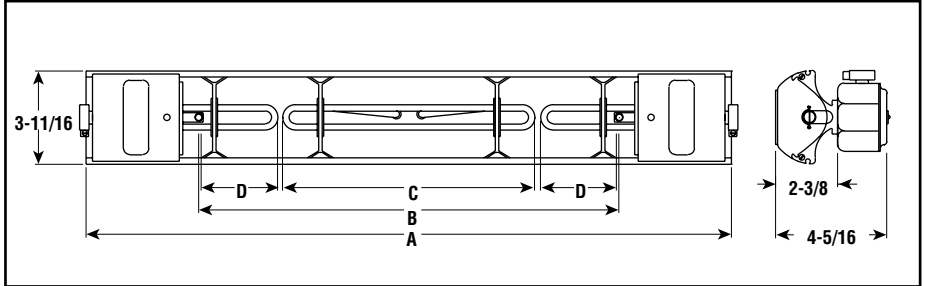
**Note:** Model DU-RAD heaters are not listed for use in fixed electric space heated applications under NEC 424. If they are to be used in such applications, installation must be approved by local code enforcement authorities.

## DU-RAD Three Element Radiant Heater



- 3.66 kW/Ft<sup>2</sup>
- 3.2 - 15.03 kW
- 120, 240 and 480 Volt
- 3/8" Dia. INCOLOY® Sheath Elements (type UTU)
- 1500°F Max. Sheath Temp.

### Dimensions (Inches)



### Applications

- Textile and Paper Drying
- Coatings Curing
- Vinyl Fusing
- Preheat Roll Fed Plastics for Laminating or Embossing
- Web Heating where sizes vary in width
- Web Heating and Applications where compensation is needed for end losses

### Features

**Basic Unit** is an extruded aluminum housing that contains one double hairpin-bent radiant heater in center, flanked by two U-shaped elements.

**Movable Mounting Clamps and Bolts** are supplied to accommodate many mounting configurations such as banks, tunnels and oven sections.

**Terminals** of end units are in end caps; center mounted terminals are enclosed in terminal box on rear of heater housing.

**Process Temperature Control** — Radiant heater output may be controlled with Chromalox SCR Power Controllers, Percentage Timing Input Controls and Non-Contact Temperature Sensors. See the Controls section of this catalog.

### Construction

**Enclosed Chromalox Alloy-Sheath Tubular Heating Element** is completely isolated and supported on secondary insulation for improved electrical safety. Designed for long life, the element is more resistant to hard blows than quartz lamp or tube and open coil types.

**Rigid Extruded Aluminum Housing** protects heating element from harsh industrial environments.

**Highly Polished Aluminum Reflectors** give good reflectivity and heat transfer, and are easily cleaned to maintain energy efficiency.

### Accessories

**Protective Grille** — Optional snap-in sections help protect personnel and work from contact with hot elements.

**Companion Reflector** — Optional radiant companion reflectors improve oven efficiency. See Radiant Accessories in this section.

**Pipe Plug** — Used to close tapped wiring entry holes. See Radiant Accessories in this section.

## DU-RAD

### Three Element Radiant Heater (cont'd.)

#### Specifications and Ordering Information

kW			Volts	Dimensions (In.)				Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>		Wt. (Lbs.)
Total	Ea. End	Center		A	B	C	D					Center	End	
3.2	0.8	1.6	120	44-3/4	35-7/8	19-1/4	8-5/16	DU-RAD-240	NS	112205	(2) GR-2	UTU-40	UTU-2	10
3.2	0.8	1.6	240	44-3/4	35-7/8	19-1/4	8-5/16	DU-RAD-240	NS	112213	(2) GR-2	UTU-40	UTU-2	10
3.57	0.8	1.97	120	48-3/4	39-7/8	23-1/4	8-5/16	DU-RAD-248	NS	112221	(1) GR-4	UTU-48	UTU-2	11
3.57	0.8	1.97	240	48-3/4	39-7/8	23-1/4	8-5/16	DU-RAD-248	NS	112230	(1) GR-4	UTU-48	UTU-2	11
4.04	0.8	2.44	120	53-7/8	45	28-3/8	8-5/16	DU-RAD-258	NS	112248	(2) GR-3	UTU-58	UTU-2	11
4.04	0.8	2.44	240	53-7/8	45	28-3/8	8-5/16	DU-RAD-258	NS	112256	(2) GR-3	UTU-58	UTU-2	11
4.42	0.8	2.82	120	57-7/8	49	32-3/8	8-5/16	DU-RAD-266	NS	112264	(3) GR-2	UTU-66	UTU-2	12
4.42	0.8	2.82	240	57-7/8	49	32-3/8	8-5/16	DU-RAD-266	NS	112272	(3) GR-2	UTU-66	UTU-2	12
4.79	0.8	3.19	240	62	53-1/8	36-1/2	8-5/16	DU-RAD-274	NS	112299	(1) GR-5	UTU-74	UTU-2	13
5.17	0.8	3.57	240	66-1/16	57-3/16	40-9/16	8-5/16	DU-RAD-282	NS	112301	(1) GR-5	UTU-82	UTU-2	14
5.55	0.8	3.95	240	70-3/16	61-5/16	44-11/16	8-5/16	DU-RAD-290	NS	112310	(1) GR-3, (1) GR-4	UTU-90	UTU-2	15
6.12	0.8	4.52	240	76-9/16	67-5/16	50-11/16	8-5/16	DU-RAD-2102	NS	112328	(1) GR-6	UTU-102	UTU-2	16
6.59	0.8	4.99	240	81-5/16	72-7/16	55-13/16	8-5/16	DU-RAD-2112	NS	112336	(1) GR-6	UTU-112	UTU-2	16
7.16	0.8	5.56	240	87-1/2	78-5/8	62	8-5/16	DU-RAD-2124	NS	112344	(2) GR-4	UTU-124	UTU-2	32
7.73	0.8	6.13	240	93-1/2	84-5/8	68	8-5/16	DU-RAD-2136	NS	112352	(1) GR-2, (1) GR-6	UTU-136	UTU-2	36
8.3	0.8	6.7	240	99-5/8	90-3/4	74-1/8	8-5/16	DU-RAD-2148	NS	112360	(1) GR-3, (1) GR-6	UTU-148	UTU-2	37
8.7	0.8	7.1	240	103-11/16	94-13/16	78-3/16	8-5/16	DU-RAD-2156	NS	112379	(1) GR-4, (1) GR-5	UTU-156	UTU-2	40
9.05	0.8	7.45	240	107-13/16	98-15/16	82-5/16	8-5/16	DU-RAD-2164	NS	112387	(1) GR-3, (2) GR-4	UTU-164	UTU-2	41
9.43	0.8	7.83	240	112	103-1/8	86-1/2	8-5/16	DU-RAD-2172	NS	112395	(1) GR-3, (2) GR-4	UTU-127	UTU-2	43
3.8	1.1	1.6	120	51	42-1/8	19-1/4	11-7/16	DU-RAD-340	NS	112408	(1) GR-4	UTU-40	UTU-3	12
3.8	1.1	1.6	240	51	42-1/8	19-1/4	11-7/16	DU-RAD-340	NS	112416	(1) GR-4	UTU-40	UTU-3	12
4.17	1.1	1.97	120	55	46-1/8	23-1/4	11-7/16	DU-RAD-348	NS	112424	(2) GR-3	UTU-48	UTU-3	13
4.17	1.1	1.97	240	55	46-1/8	23-1/4	11-7/16	DU-RAD-348	NS	112432	(2) GR-3	UTU-48	UTU-3	13
4.64	1.1	2.44	120	60-1/8	51-1/8	28-3/8	11-7/16	DU-RAD-358	NS	112440	(3) GR-2	UTU-58	UTU-3	13
4.64	1.1	2.44	240	60-1/8	51-1/8	28-3/8	11-7/16	DU-RAD-358	NS	112459	(3) GR-2	UTU-58	UTU-3	13
5.02	1.1	2.82	120	64-1/8	55-1/4	32-3/8	11-7/16	DU-RAD-366	NS	112467	(1) GR-5	UTU-66	UTU-3	14
5.02	1.1	2.82	240	64-1/8	55-1/4	32-3/8	11-7/16	DU-RAD-366	NS	112475	(1) GR-5	UTU-66	UTU-3	14
5.39	1.1	3.19	120	68-1/4	59-3/8	36-1/2	11-7/16	DU-RAD-374	NS	112483	(1) GR-2, (1) GR-4	UTU-74	UTU-3	15
5.39	1.1	3.19	240	68-1/4	59-3/8	36-1/2	11-7/16	DU-RAD-374	NS	112491	(1) GR-2, (1) GR-4	UTU-74	UTU-3	15
5.77	1.1	3.57	240	72-5/16	63-7/16	40-9/16	11-7/16	DU-RAD-382	NS	112504	(1) GR-3, (1) GR-4	UTU-82	UTU-3	16
6.15	1.1	3.95	240	76-7/16	67-9/16	44-11/16	11-7/16	DU-RAD-390	NS	112512	(1) GR-6	UTU-90	UTU-3	17
6.72	1.1	4.52	240	82-7/16	73-9/16	50-11/16	11-7/16	DU-RAD-3102	NS	112520	(1) GR-2, (1) GR-5	UTU-102	UTU-3	19
7.19	1.1	4.99	240	87-9/16	78-11/16	55-13/16	11-7/16	DU-RAD-3112	NS	112539	(2) GR-4	UTU-112	UTU-3	32
7.76	1.1	5.56	240	93-3/4	84-7/8	62	11-7/16	DU-RAD-3124	NS	112547	(1) GR-2, (1) GR-6	UTU-124	UTU-3	36
8.33	1.1	6.13	240	99-3/4	90-7/8	68	11-7/16	DU-RAD-3136	NS	112555	(1) GR-3, (1) GR-6	UTU-136	UTU-3	37
8.9	1.1	6.7	240	105-7/8	97	74-1/8	11-7/16	DU-RAD-3148	NS	112563	(2) GR-2, (2) GR-4	UTU-148	UTU-3	40
9.3	1.1	7.1	240	109-15/16	101-3/16	78-3/16	11-7/16	DU-RAD-3156	NS	112571	(1) GR-3, (2) GR-4	UTU-156	UTU-3	42
9.65	1.1	7.45	240	114-1/16	105-3/16	82-5/16	11-7/16	DU-RAD-3164	NS	112580	(1) GR-4, (1) GR-6	UTU-164	UTU-3	43
10.03	1.1	7.83	240	118-1/4	109-3/8	86-1/2	11-7/16	DU-RAD-3172	NS	112598	(2) GR-5	UTU-172	UTU-3	47
5.2	1.8	1.6	240	66-3/4	57-7/8	19-1/4	19-3/8	DU-RAD-440	NS	112600	(1) GR-2, (1) GR-4	UTU-40	UTU-4	14
5.57	1.8	1.97	240	70-3/4	61-7/8	23-1/4	19-3/8	DU-RAD-448	NS	112619	(1) GR-3, (1) GR-4	UTU-48	UTU-4	15
6.04	1.8	2.44	240	75-7/8	67	28-3/8	19-3/8	DU-RAD-458	NS	112627	(1) GR-6	UTU-58	UTU-4	17
6.04	1.8	2.44	480	75-7/8	67	28-3/8	19-3/8	DU-RAD-458	NS	116310	(1) GR-6	UTU-58	UTU-4	17
6.42	1.8	2.82	240	79-7/8	71	32-3/8	19-3/8	DU-RAD-466	NS	112635	(3) GR-3	UTU-66	UTU-4	18
6.42	1.8	2.82	480	79-7/8	71	32-3/8	19-3/8	DU-RAD-466	NS	116345	(3) GR-3	UTU-66	UTU-4	18
6.79	1.8	3.19	240	84	75-1/3	36-1/2	19-3/8	DU-RAD-474	NS	112643	(1) GR-3, (1) GR-5	UTU-74	UTU-4	19
6.79	1.8	3.19	480	84	75-1/3	36-1/2	19-3/8	DU-RAD-474	NS	116370	(1) GR-3, (1) GR-5	UTU-74	UTU-4	19
7.17	1.8	3.57	240	88-1/16	79-3/16	40-9/16	19-3/8	DU-RAD-482	NS	112651	(2) GR-4	UTU-482	UTU-4	33
7.17	1.8	3.57	480	88-1/16	79-3/16	40-9/16	19-3/8	DU-RAD-482	NS	116409	(2) GR-4	UTU-482	UTU-4	33
7.55	1.8	3.95	240	92-3/16	83-5/16	44-11/16	19-3/8	DU-RAD-490	NS	112660	(1) GR-2, (1) GR-6	UTU-490	UTU-4	36
7.55	1.8	3.95	480	92-3/16	83-5/16	44-11/16	19-3/8	DU-RAD-490	NS	116433	(1) GR-2, (1) GR-6	UTU-490	UTU-4	36

## DU-RAD

### Three Element Radiant Heater (cont'd.)

#### Specifications and Ordering Information

kW			Volts	Dimensions (In.)				Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>		Wt. (Lbs.)
Total	Ea. End	Center		A	B	C	D					Center	End	
8.12	1.8	4.52	240	98-3/16	89-5/16	50-11/16	19-3/8	DU-RAD-4102	NS	112678	(1) GR-3, (1) GR-6	UTU-102	UTU-4	37
8.12	1.8	4.52	480	98-3/16	89-5/16	50-11/16	19-3/8	DU-RAD-4102	NS	116468	(1) GR-3, (1) GR-6	UTU-102	UTU-4	37
8.59	1.8	4.99	240	103-5/16	94-7/16	55-13/16	19-3/8	DU-RAD-4112	NS	112686	(1) GR-4, (1) GR-5	UTU-112	UTU-4	40
8.59	1.8	4.99	480	103-5/16	94-7/16	55-13/16	19-3/8	DU-RAD-4112	NS	116492	(1) GR-4, (1) GR-5	UTU-112	UTU-4	40
9.16	1.8	5.56	240	109-1/2	100-5/8	62	19-3/8	DU-RAD-4124	NS	112694	(1) GR-3, (2) GR-4	UTU-124	UTU-4	42
9.16	1.8	5.56	480	109-1/2	100-5/8	62	19-3/8	DU-RAD-4124	NS	116521	(1) GR-3, (2) GR-4	UTU-124	UTU-4	42
9.73	1.8	6.13	240	115-1/2	106-5/8	68	19-3/8	DU-RAD-4136	NS	112707	(2) GR-5	UTU-136	UTU-4	45
9.73	1.8	6.13	480	115-1/2	106-5/8	68	19-3/8	DU-RAD-4136	NS	116556	(2) GR-5	UTU-136	UTU-4	45
10.3	1.8	6.7	240	121-5/8	112-3/4	74-1/8	19-3/8	DU-RAD-4148	NS	112715	(2) GR-5	UTU-148	UTU-4	47
10.3	1.8	6.7	480	121-5/8	112-3/4	74-1/8	19-3/8	DU-RAD-4148	NS	116580	(2) GR-5	UTU-148	UTU-4	47
10.7	1.8	7.1	240	125-11/16	116-13/16	78-3/16	19-3/8	DU-RAD-4156	NS	112723	(3) GR-4	UTU-156	UTU-4	49
10.7	1.8	7.1	480	125-11/16	116-13/16	78-3/16	19-3/8	DU-RAD-4156	NS	116610	(3) GR-4	UTU-156	UTU-4	49
11.05	1.8	7.45	240	129-13/16	120-15/16	82-5/16	19-3/8	DU-RAD-4164	NS	112731	(1) GR-5, (1) GR-6	UTU-164	UTU-4	50
11.05	1.8	7.45	480	129-13/16	120-15/16	82-5/16	19-3/8	DU-RAD-4164	NS	116644	(1) GR-5, (1) GR-6	UTU-164	UTU-4	50
11.43	1.8	7.83	240	134	125-1/8	86-1/2	19-3/8	DU-RAD-4172	NS	112740	(1) GR-2, (2) GR-5	UTU-172	UTU-4	52
11.43	1.8	7.83	480	134	125-1/8	86-1/2	19-3/8	DU-RAD-4172	NS	116679	(1) GR-2, (2) GR-5	UTU-172	UTU-4	52
6.6	2.5	1.6	240	81-5/8	72-3/4	19-1/4	26-13/16	DU-RAD-540	NS	112758	(1) GR-2, (1) GR-5	UTU-40	UTU-5	18
6.97	2.5	1.97	240	85-5/8	76-3/4	23-1/4	26-13/16	DU-RAD-548	NS	112766	(2) GR-4	UTU-48	UTU-5	19
7.44	2.5	2.44	240	90-3/4	81-7/8	28-3/8	26-13/16	DU-RAD-558	NS	112774	(1) GR-2, (1) GR-6	UTU-58	UTU-5	33
7.44	2.5	2.44	480	90-3/4	81-7/8	28-3/8	26-13/16	DU-RAD-558	NS	112782	(1) GR-2, (1) GR-6	UTU-58	UTU-5	33
7.82	2.5	2.82	240	94-3/4	85-7/8	32-3/8	26-13/16	DU-RAD-566	NS	112790	(1) GR-2, (1) GR-6	UTU-66	UTU-5	36
7.82	2.5	2.82	480	94-3/4	85-7/8	32-3/8	26-13/16	DU-RAD-566	NS	112803	(1) GR-2, (1) GR-6	UTU-66	UTU-5	36
8.19	2.5	3.19	240	98-7/8	90	36-1/2	26-13/16	DU-RAD-574	NS	112811	(1) GR-3, (1) GR-6	UTU-74	UTU-5	37
8.19	2.5	3.19	480	98-7/8	90	36-1/2	26-13/16	DU-RAD-574	NS	112820	(1) GR-3, (1) GR-6	UTU-74	UTU-5	37
8.57	2.5	3.57	240	102-15/16	94-1/16	40-9/16	26-13/16	DU-RAD-582	NS	112838	(1) GR-2, (2) GR-4	UTU-82	UTU-5	40
8.57	2.5	3.57	480	102-15/16	94-1/16	40-9/16	26-13/16	DU-RAD-582	NS	112846	(1) GR-2, (2) GR-4	UTU-82	UTU-5	40
8.95	2.5	3.95	240	107-1/16	98-3/16	44-11/16	26-13/16	DU-RAD-590	NS	112854	(1) GR-3, (1) GR-4	UTU-90	UTU-5	42
8.95	2.5	3.95	480	107-1/16	98-3/16	44-11/16	26-13/16	DU-RAD-590	NS	112862	(1) GR-3, (2) GR-4	UTU-90	UTU-5	42
9.52	2.5	4.52	240	113-1/16	104-3/16	50-11/16	26-13/16	DU-RAD-5102	NS	112870	(1) GR-4, (1) GR-6	UTU-102	UTU-5	45
9.52	2.5	4.52	480	113-1/16	104-3/16	50-11/16	26-13/16	DU-RAD-5102	NS	112889	(1) GR-4, (1) GR-6	UTU-102	UTU-5	45
9.99	2.5	4.99	240	118-3/16	109-5/16	55-13/16	26-13/16	DU-RAD-5112	NS	112897	(2) GR-5	UTU-112	UTU-5	47
9.99	2.5	4.99	480	118-3/16	109-5/16	55-13/16	26-13/16	DU-RAD-5112	NS	112900	(2) GR-5	UTU-112	UTU-5	47
10.56	2.5	5.56	240	124-3/8	115-1/2	62	26-13/16	DU-RAD-5124	NS	112918	(3) GR-4	UTU-124	UTU-5	49
10.56	2.5	5.56	480	124-3/8	115-1/2	62	26-13/16	DU-RAD-5124	NS	112926	(3) GR-4	UTU-124	UTU-5	49
11.13	2.5	6.13	240	130-3/8	121-1/2	68	26-13/16	DU-RAD-5136	NS	112934	(1) GR-5, (1) GR-6	UTU-136	UTU-5	50
11.13	2.5	6.13	480	130-3/8	121-1/2	68	26-13/16	DU-RAD-5136	NS	112942	(1) GR-5, (1) GR-6	UTU-136	UTU-5	50
11.7	2.5	6.7	240	136-1/2	127-5/8	74-1/8	26-13/16	DU-RAD-5148	NS	112950	(1) GR-2, (1) GR-5	UTU-148	UTU-5	52
11.7	2.5	6.7	480	136-1/2	127-5/8	74-1/8	26-13/16	DU-RAD-5148	NS	112969	(1) GR-2, (1) GR-5	UTU-148	UTU-5	52
12.1	2.5	7.1	240	140-9/16	131-11/16	78-3/16	26-13/16	DU-RAD-5156	NS	112977	(2) GR-6	UTU-156	UTU-5	53
12.1	2.5	7.1	480	140-9/16	131-11/16	78-3/16	26-13/16	DU-RAD-5156	NS	112985	(2) GR-6	UTU-156	UTU-5	53
12.45	2.5	7.45	240	144-11/16	135-13/16	82-5/16	26-13/16	DU-RAD-5164	NS	112993	(2) GR-6	UTU-164	UTU-5	54
12.45	2.5	7.45	480	144-11/16	135-13/16	82-5/16	26-13/16	DU-RAD-5164	NS	113005	(2) GR-6	UTU-164	UTU-5	54
12.83	2.5	7.83	240	148-7/8	140	86-1/2	26-13/16	DU-RAD-5172	NS	113013	(2) GR-6	UTU-172	UTU-5	55
12.83	2.5	7.83	480	148-7/8	140	86-1/2	26-13/16	DU-RAD-5172	NS	113021	(2) GR-6	UTU-172	UTU-5	55
7.6	3	1.6	240	93-3/4	84-7/8	19-1/4	32-13/16	DU-RAD-640	NS	113030	(1) GR-2, (1) GR-6	UTU-40	UTU-6	36
7.97	3	1.97	240	97-3/4	88-7/8	23-1/4	32-13/16	DU-RAD-648	NS	113048	(1) GR-3, (1) GR-6	UTU-48	UTU-6	37
8.44	3	2.44	240	102-7/8	94	28-3/8	32-13/16	DU-RAD-658	NS	113056	(1) GR-2, (1) GR-4	UTU-58	UTU-6	40
8.44	3	2.44	480	102-7/8	94	28-3/8	32-13/16	DU-RAD-658	NS	113064	(1) GR-2, (1) GR-4	UTU-58	UTU-6	40
8.82	3	2.82	240	106-7/8	98	32-3/8	32-13/16	DU-RAD-666	NS	113072	(1) GR-2, (1) GR-4	UTU-66	UTU-6	41
8.82	3	2.82	480	106-7/8	98	32-3/8	32-13/16	DU-RAD-666	NS	113080	(1) GR-2, (1) GR-4	UTU-66	UTU-6	41
9.19	3	3.19	240	111	102-1/8	36-1/2	32-13/16	DU-RAD-674	NS	113099	(1) GR-3, (1) GR-4	UTU-74	UTU-6	43
9.19	3	3.19	480	111	102-1/8	36-1/2	32-13/16	DU-RAD-674	NS	113101	(1) GR-3, (1) GR-4	UTU-74	UTU-6	43

METAL SHEATH  
RADIANT

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### Three Element Radiant Heater (cont'd.)

#### Specifications and Ordering Information

kW			Volts	Dimensions (In.)				Model	Stock	PCN	Optional Grille <sup>2</sup>	Replacement Elements <sup>1</sup>		Wt. (Lbs.)
Total	Ea. End	Center		A	B	C	D					Center	End	
9.57	3	3.57	240	115-1/16	106-3/16	40-9/16	32-13/16	DU-RAD-682	NS	113110	(2) GR-5	UTU-82	UTU-6	45
9.57	3	3.57	480	115-1/16	106-3/16	40-9/16	32-13/16	DU-RAD-682	NS	113128	(2) GR-5	UTU-82	UTU-6	45
9.95	3	3.95	240	119-3/16	110-5/16	44-11/16	32-13/16	DU-RAD-690	NS	113136	(2) GR-5	UTU-90	UTU-6	46
9.95	3	3.95	480	119-3/16	110-5/16	44-11/16	32-13/16	DU-RAD-690	NS	113144	(2) GR-5	UTU-90	UTU-6	46
10.52	3	4.52	240	125-3/16	116-5/16	50-11/16	32-13/16	DU-RAD-6102	NS	113152	(3) GR-4	UTU-102	UTU-6	49
10.52	3	4.52	480	125-3/16	116-5/16	50-11/16	32-13/16	DU-RAD-6102	NS	113160	(3) GR-4	UTU-102	UTU-6	49
10.99	3	4.99	240	130-5/16	121-7/16	55-13/16	32-13/16	DU-RAD-6112	NS	113179	(1) GR-5, (1) GR-6	UTU-112	UTU-6	50
10.99	3	4.99	480	130-5/16	121-7/16	55-13/16	32-13/16	DU-RAD-6112	NS	113187	(1) GR-5, (1) GR-6	UTU-112	UTU-6	50
11.56	3	5.56	240	136-1/2	127-5/8	62	32-13/16	DU-RAD-6124	NS	113195	(1) GR-2, (1) GR-5	UTU-124	UTU-6	52
11.56	3	5.56	480	136-1/2	127-5/8	62	32-13/16	DU-RAD-6124	NS	113208	(1) GR-2, (1) GR-5	UTU-124	UTU-6	52
12.13	3	6.13	240	142-1/2	133-5/8	68	32-13/16	DU-RAD-6136	NS	113216	(2) GR-6	UTU-136	UTU-6	54
12.13	3	6.13	480	142-1/2	133-5/8	68	32-13/16	DU-RAD-6136	NS	113224	(2) GR-6	UTU-136	UTU-6	54
12.7	3	6.7	240	148-5/8	139-3/4	74-1/8	32-13/16	DU-RAD-6148	NS	113232	(2) GR-6	UTU-148	UTU-6	56
12.7	3	6.7	480	148-5/8	139-3/4	74-1/8	32-13/16	DU-RAD-6148	NS	113240	(2) GR-6	UTU-148	UTU-6	56
13.1	3	7.1	240	152-11/16	143-13/16	78-3/16	32-13/16	DU-RAD-6156	NS	113259	(2) GR-6	UTU-156	UTU-6	58
13.1	3	7.1	480	152-11/16	143-13/16	78-3/16	32-13/16	DU-RAD-6156	NS	113267	(2) GR-6	UTU-156	UTU-6	58
13.45	3	7.45	240	156-13/16	147-15/16	82-5/16	32-13/16	DU-RAD-6164	NS	113275	(1) GR-2, (2) GR-6	UTU-164	UTU-6	60
13.45	3	7.45	480	156-13/16	147-15/16	82-5/16	32-13/16	DU-RAD-6164	NS	113283	(1) GR-2, (2) GR-6	UTU-164	UTU-6	60
13.83	3	7.83	240	161	152-1/8	86-1/2	32-13/16	DU-RAD-6172	NS	113291	(1) GR-2, (2) GR-6	UTU-172	UTU-6	62
13.83	3	7.83	480	161	152-1/8	86-1/2	32-13/16	DU-RAD-6172	NS	113304	(1) GR-2, (2) GR-6	UTU-172	UTU-6	62
8.8	3.6	1.6	240	106	97-1/8	19-1/4	38-15/16	DU-RAD-740	NS	113312	(1) GR-2, (2) GR-4	UTU-40	UTU-7	42
9.17	3.6	1.97	240	110	101-1/8	23-1/4	38-15/16	DU-RAD-748	NS	113320	(1) GR-3, (2) GR-4	UTU-48	UTU-7	43
9.64	3.6	2.44	240	115-1/8	106-1/4	28-3/8	38-15/16	DU-RAD-758	NS	113339	(2) GR-5	UTU-58	UTU-7	45
9.64	3.6	2.44	480	115-1/8	106-1/4	28-3/8	38-15/16	DU-RAD-758	NS	113347	(2) GR-5	UTU-58	UTU-7	45
10.02	3.6	2.82	240	119-1/8	110-1/4	32-3/8	38-15/16	DU-RAD-766	NS	113355	(2) GR-5	UTU-66	UTU-7	47
10.02	3.6	2.82	480	119-1/8	110-1/4	32-3/8	38-15/16	DU-RAD-766	NS	113363	(2) GR-5	UTU-66	UTU-7	47
10.39	3.6	3.19	240	123-1/4	114-3/8	36-1/2	38-15/16	DU-RAD-774	NS	113371	(3) GR-4	UTU-74	UTU-7	49
10.39	3.6	3.19	480	123-1/4	114-3/8	36-1/2	38-15/16	DU-RAD-774	NS	113380	(3) GR-4	UTU-74	UTU-7	49
10.77	3.6	3.57	240	127-5/16	118-7/16	40-9/16	38-15/16	DU-RAD-782	NS	113398	(1) GR-5, (1) GR-6	UTU-82	UTU-7	50
10.77	3.6	3.57	480	127-5/16	118-7/16	40-9/16	38-15/16	DU-RAD-782	NS	113400	(1) GR-5, (1) GR-6	UTU-82	UTU-7	50
11.15	3.6	3.95	240	131-7/16	122-9/16	44-11/16	38-15/16	DU-RAD-790	NS	113419	(1) GR-2, (2) GR-5	UTU-90	UTU-7	51
11.15	3.6	3.95	480	131-7/16	122-9/16	44-11/16	38-15/16	DU-RAD-790	NS	113427	(1) GR-2, (2) GR-5	UTU-90	UTU-7	51
11.72	3.6	4.52	240	137-7/16	128-9/16	50-11/16	38-15/16	DU-RAD-7102	NS	113435	(1) GR-3, (2) GR-5	UTU-102	UTU-7	53
11.72	3.6	4.52	480	137-7/16	128-9/16	50-11/16	38-15/16	DU-RAD-7102	NS	113343	(1) GR-3, (2) GR-5	UTU-102	UTU-7	53
12.19	3.6	4.99	240	142-9/16	133-11/16	55-13/16	38-15/16	DU-RAD-7112	NS	113451	(2) GR-6	UTU-112	UTU-7	54
12.19	3.6	4.99	480	142-9/16	133-11/16	55-13/16	38-15/16	DU-RAD-7112	NS	113460	(2) GR-6	UTU-112	UTU-7	54
12.76	3.6	5.56	240	148-3/4	139-7/8	62	38-15/16	DU-RAD-7124	NS	113478	(2) GR-6	UTU-124	UTU-7	55
12.76	3.6	5.56	480	148-3/4	139-7/8	62	38-15/16	DU-RAD-7124	NS	113486	(2) GR-6	UTU-124	UTU-7	55
13.33	3.6	6.13	240	154-3/4	145-7/8	68	38-15/16	DU-RAD-7136	NS	113494	(1) GR-4, (2) GR-5	UTU-136	UTU-7	56
13.33	3.6	6.13	480	154-3/4	145-7/8	68	38-15/16	DU-RAD-7136	NS	113507	(1) GR-4, (2) GR-5	UTU-136	UTU-7	56
13.9	3.6	6.7	240	160-7/8	152	74-1/8	38-15/16	DU-RAD-7148	NS	113515	(1) GR-2, (2) GR-6	UTU-148	UTU-7	57
13.9	3.6	6.7	480	160-7/8	152	74-1/8	38-15/16	DU-RAD-7148	NS	113523	(1) GR-2, (2) GR-6	UTU-148	UTU-7	57
14.3	3.6	7.1	240	164-15/16	156-1/16	78-3/16	38-15/16	DU-RAD-7156	NS	113531	(1) GR-3, (1) GR-6	UTU-156	UTU-7	59
14.3	3.6	7.1	480	164-15/16	156-1/16	78-3/16	38-15/16	DU-RAD-7156	NS	113540	(1) GR-3, (1) GR-6	UTU-156	UTU-7	59
14.65	3.6	7.45	240	169-1/16	160-3/16	82-5/16	38-15/16	DU-RAD-7164	NS	113558	(3) GR-5	UTU-164	UTU-7	60
14.65	3.6	7.45	480	169-1/16	160-3/16	82-5/16	38-15/16	DU-RAD-7164	NS	113566	(3) GR-5	UTU-164	UTU-7	60
15.03	3.6	7.83	240	173-1/4	164-3/8	86-1/2	38-15/16	DU-RAD-7172	NS	113574	(3) GR-5	UTU-172	UTU-7	62
15.03	3.6	7.83	480	173-1/4	164-3/8	86-1/2	38-15/16	DU-RAD-7172	NS	113582	(3) GR-5	UTU-172	UTU-7	62

**Stock Status:** S = stock NS = non-stock

**To Order**—Specify model, PCN, kW, volts, quantity, optional grille and replacement elements (if needed).

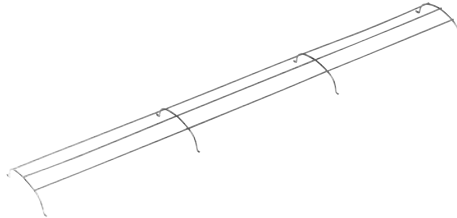
1. Refer to Tubular Heaters section.
2. Refer to Accessories in this section for ordering information.

## Process Radiant Heaters Accessories

- Protective Grille
- Companion Reflector
- Terminal Box
- Pipe Plug
- Jumper Strap

### Protective Grille

**Protective Grille** — Type GR snap-in sections help protect personnel or work from direct contact with hot elements.

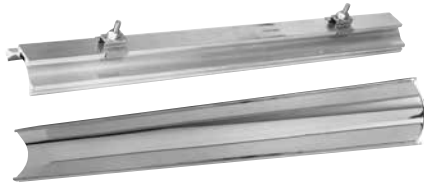


### Ordering Information

Length (In.)	Model	Stock	PCN	Wt. (Lbs.)
8	GR-800	S	111860	0.5
16-1/16	GR-2	S	111878	0.5
22-5/16	GR-3	S	111886	0.5
38-5/16	GR-4	S	111894	0.75
53-1/16	GR-5	S	111907	1
65-7/16	GR-6	S	111915	1

### Companion Reflector

**Companion Reflector** — Type CR-RAD consists of aluminum extruded housing with reflector sheet and mounting clamp parts bag. Housing is not drilled or tapped.



### Ordering Information

Length (In.)	Model	Stock	PCN	Wt. (Lbs.)
24	CR-RAD-2083	NS	148072	4
30-1/4	CR-RAD-3113	NS	148080	5
46-1/4	CR-RAD-4183	NS	148099	7
61	CR-RAD-5253	NS	148101	9
73-3/8	CR-RAD-6303	NS	148110	11
85-3/8	CR-RAD-7363	NS	148128	13
105-5/8	CR-RAD-8453	NS	148136	18

### Terminal Box

Use terminal box with radiant heater elements when complete heaters are not required. Provide enclosure for making wiring connections and support for end of elements. These are the end sections of complete heater.



### Ordering Information

For Use With	Part No.
Single RTU Element	3-112426
Two RTU Elements	1-112426
One UTU Element	1-112426
Single S-RTU Element	2-118462

### Wiring Accessories

**Pipe Plug** — Use to close 1/2" tapped wiring entry hole in RAD and RADD type heaters. Specify Part No. 1-113863 (PCN 113970).



**Jumper Strap** — Use to series connect elements in RADD type heaters. Part No. 30-75230 (PCN 867963 or 113996).



## CP Series Wide Area Radiant Heaters

- 5 - 25 W/In<sup>2</sup>
- 0.55 - 18 kW
- 120, 230, 240 and 480 Volt
- 1 & 3 Phase
- 1650°F Max. Emitter Temp.
- 6 - 60" Long x 12 - 30" Wide

### Applications

- Ink Drying and Spot Curing for Printing and Silk Screening
- Food Warming
- Moisture Removal in Food Processing
- Plastics Annealing
- Preheat and Postheat Plastics prior to Thermoforming and Punching
- Thermoforming and Vacuum Forming
- Heat Treating Plastic Parts
- Baking or Curing of Lacquers, Semi-Enamels, Enamels, Primers, Phenolics and Epoxies
- Finishing Process of Textiles
- Preheat Printed Circuit Boards

### Features

**Easy Mounting** — Heater can be mounted to radiate in any direction.

**Reliable Operation** — No reduction in radiant output over life of heater.

**Uniform Radiation Pattern Assured** with a wide flat infrared surface versus the line pattern given in normal radiant heaters. This eliminates uneven heating of the work and allows uniform heating of a stationary surface such as in an indexing process.

**External Reflectors Not Required** — The refractory board and bulk insulation behind the heating element help prevent back heat loss. This eliminates the need for external reflectors.

**One-Piece Bonded Construction** resists damage from vibration and shock.

**Overtemperature Control** — These units should be controlled such that overheating and premature failure do not occur.

**Additional Sizes and Ratings** — Contact your Local Chromalox Sales office for price and availability.

**Lower Operating Cost** with up to 80% of the input energy transmitted to and absorbed by the work material. The maximum amount of radiant energy is transferred to the work with very low heater convection losses. Typical installation distance of two to four inches from the work surface significantly reduces the energy input.

**Costly Downtime Minimized** — There is no deterioration of the output radiation level with heater life and no reflectors to clean which could cause downtime and increased maintenance costs. The unit is resistant to vibration because of the compact homogeneous construction.

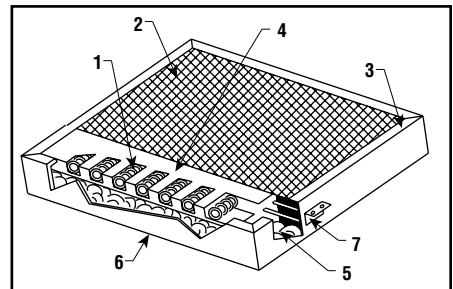
**Easy Installation** — The light weight building block approach allows for a modular installation which is easily expandable. These rugged panels can be mounted in any direction.

**Repeatable Process Performance Assured** — Used with closed loop control, the system automatically compensates for ambient temperature ranges and line voltage fluctuations. Maximum energy transfer requires matching the peak wavelength output to the specific material absorption characteristics. Because the peak wavelengths of the flat surface heater are repeatable and adjustable, the quality output of the process is assured.

### Construction

1. **Heating Element** — Precision iron base resistance wire, designed to give extended life and uniform emission over entire radiating surface.
2. **Emission Surface** — Woven refractory cloth with black ceramic coating for high radiant energy transfer for CPLI, CPL and CPH type heaters. Aluminum emission surfaces are available for applications such as in the food industry.
3. **Frame** — Heavy gauge, heat resistant, aluminized steel for CPLI, CPL and CPH type heaters.
4. **Heating Element Support** — Fibrous ceramic material, specially developed for high insulation qualities, durability, shock resistance, asbestos free.
5. **Insulation** — High temperature insulation to minimize heat loss from back of heater.
6. **Terminals** — For CPLI, lead-wires are provided on a 2 x 4" junction box. A 2 x 4" junction box with stainless steel terminals is provided for CPL and CPH type heaters.
7. **Thermowell** — Quality tubular quartz thermowell, with strain relief, to accept a Chromalox C-700JU or C-700KU thermocouple on units with suffix T in model number. Standard placement of the thermowell is on side of heater. Specials are available with thermowell exiting back of heater.

### Construction





## CP Series

### Wide Area Radiant Heaters (cont'd.)

The CPH, CPL and CPLI are medium wave heaters. Micron levels between 2.5 and 6 of infrared energy are generated. At these micron levels the majority of the infrared energy generated falls into the medium wave section of the infrared spectrum.

Outer edges of the element can have gradual increasing wattage density to compensate for production edge losses.

Single elements or multiple elements can be zoned and wired to achieve specific profiles. Different width materials can be processed by turning off elements.

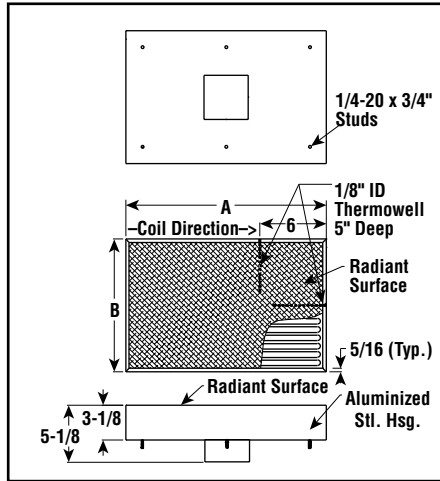
**Easy to Control** — The use of time proportioning control with closed loop feedback, such as Chromalox 2104 temperature controllers, magnetic contactors or SCR power controllers assure easy and dependable system control. Thermowells may be offered in two locations in the heater interior. Suitable to accept Chromalox standard thermocouples, they sense emitter temperature ensuring accurate wavelength emission. Fast response time of the unit reduces thermal lag.

**Overtemperature Control** — It is strongly recommended that these units be controlled such that overheating and premature failure do not occur. This is of particular importance in oven usage, where high ambient temperatures exist.

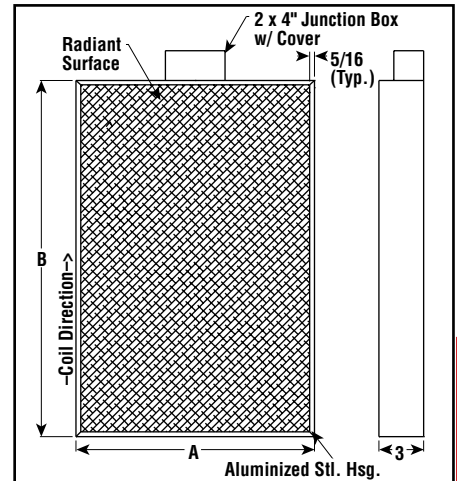
**CAUTION — Hazard of Fire.** These radiant heaters must not be operated in the presence of flammable vapors, gases or combustible materials without proper ventilation and/or other safety precautions in compliance with either the National Fire Protection Bulletin 86A entitled "Ovens and Furnaces" or the authority having jurisdiction.



**CPH & CPL — Dimensions (Inches)**



**CPLI — Dimensions (Inches)**



### Specifications and Ordering Information

kW	Volts	Phase	W/In <sup>2</sup>	DIM (In.)		Thermo-well	Mtg. Studs	Model	Stock	PCN	Wt. (Lbs.)
				A	B						
1.1	120/240	1	15	6	12	Yes	2	CPL-0612T	NS	223790	3
1.8	240/480	1	25	6	12	Yes	2	<b>CPH-0624T</b>	<b>S</b>	<b>223802</b>	3
1.3	230	1	10	12	12	No	4	CPLI-1212-13	NS	224506	6
2.2	240/480	1	15	12	12	Yes	4	<b>CPL-1224T</b>	<b>S</b>	<b>223810</b>	6
3.6	240/480	1	25	12	12	No	4	CPH-1224	NS	223829	6
3.6	240/480	1	25	12	12	Yes	4	CPH-1224T	NS	223837	6
1.8	230	1	5	16	16	No	4	CPLI-1616-18	NS	224514	11
0.55	230	1	5	6	18	No	4	CPLI-0618-05	NS	224469	5
1	230	1	10	6	18	No	4	CPLI-0618-10	NS	224477	5
1.3	230	1	10	6	24	No	4	CPLI-0624-13	NS	224485	6
3.5	230	1	10	16	24	No	4	CPLI-1624-35	NS	224522	16
3.75	230	1	5	24	24	No	4	CPLI-2424-37	NS	224530	24
4.3	240/480	1	15	24	12	Yes	4	CPL-2424T	NS	223845	12
7.2	240	3	25	24	12	No	4	CPH-2423	NS	223853	12
7.2	240	3	25	24	12	Yes	4	CPH-2423T	NS	223861	12
7.2	480	3	25	24	12	No	4	<b>CPH-2443</b>	<b>S</b>	<b>223870</b>	12
7.2	480	3	25	24	12	Yes	4	<b>CPH-2443T</b>	<b>S</b>	<b>223888</b>	12
1.55	230	1	10	6	30	No	4	CPLI-0630-15	NS	224493	8
8.6	240	3	15	48	12	Yes	6	CPL-4823T	NS	223896	24
8.6	480	3	15	48	12	No	6	CPL-4843	NS	223909	24
8.6	480	3	15	48	12	Yes	6	CPL-4843T	NS	223917	24
14.4	240	3	25	48	12	Yes	6	CPH-4823T	NS	223925	24
14.4	480	3	25	48	12	Yes	6	<b>CPH-4843T</b>	<b>S</b>	<b>223933</b>	24
10.8	480	3	15	60	12	Yes	6	<b>CPL-6043T</b>	<b>S</b>	<b>223941</b>	30
18	240	3	25	60	12	Yes	6	CPH-6023T	NS	223950	30
18	480	3	25	60	12	Yes	6	<b>CPH-6043T</b>	<b>S</b>	<b>223968</b>	30

**Stock Status:** S = stock NS = non-stock  
**To Order—** Specify model, PCN, kW, volts, phase and quantity.

WIDE AREA

## CPHI

### High Intensity Quartz Faced Radiant Heater

- 40 W/In<sup>2</sup>
- 1.6 - 4.8 kW
- 240 and 480 Volt
- 1 & 3 Phase
- 1750°F Max. Emitter Temp.
- 10" Long x 4 - 12" Wide

#### Applications

- Moisture Removal from Bottles, Cans and Components
- Drying Automobile Underseal, Adhesives, Lacquer, Printing Ink, Plastic Granules, Pharmaceuticals and Pottery to "biscuit" state
- Nylon and Dye Heat Setting
- Firing Vitreous Enamels
- Soften Plastics prior to Thermoforming
- Soldering and Brazing (i.e., reflow soldering on printed circuit boards)
- Heating for Shrink Fitting
- Sealing Glass to Metal
- Shrink and Blister Packaging
- Curing and Baking of PTFE coatings, mirror backings, PVC foil prior to lamination, resin coatings on paper, metal textiles and wood, paint finishes including powder coatings and enamel, shoe adhesives and fillings, latex backing for carpet
- Brown Food prior to Freezing
- Wherever Close Maximum Heat is Required, such as Process Boosting

#### Features

##### Highest Watt Density Available of any Medium Wave Infrared Radiant Panel Heater

— Due to thermal and electrical properties of the grooved quartz face plate, CPHI has the highest watt density (5.76 kW/Ft<sup>2</sup>) of any medium wave infrared radiant panel.

**Uniform Radiation Pattern Assured** with a wide flat infrared surface versus the line pattern given in normal radiant heaters. This eliminates uneven heating of the work and allows uniform heating of a stationary surface such as in an indexing process.

**Lower Operating Cost** with up to 80% of the input energy transmitted to and absorbed by the work material. The maximum amount of radiant energy is transferred to the work with very low heater convection losses. Typical installation distance of two to four inches from the work surface significantly reduces the energy input.

**External Reflectors Not Required** — The refractory board and bulk insulation behind the heating element help prevent back heat loss. This eliminates the need for external reflectors.

**Costly Downtime Minimized** — There is no deterioration of the output radiation level with heater life and no reflectors to clean which could cause downtime and increased maintenance costs. The unit is resistant to vibration because of the compact homogeneous construction.

**Easy Installation** — The light weight building block approach allows for a modular installation which is easily expandable.

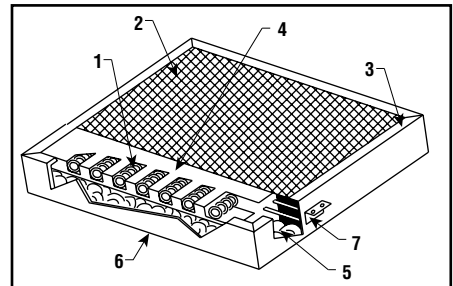
**Note** — CPHI heaters mount only so that the coil direction is in the horizontal plane.

**Repeatable Process Performance Assured** — Used with closed loop control, the system automatically compensates for ambient temperature ranges and line voltage fluctuations. Maximum energy transfer requires matching the peak wavelength output to the specific material absorption characteristics. Because the peak wavelengths of the flat surface heater are repeatable and adjustable, the quality output of the process is assured.

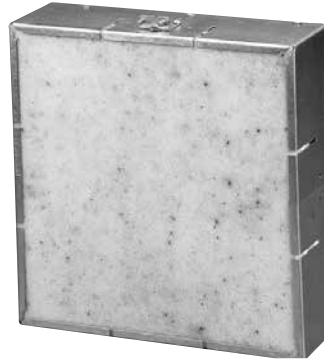
#### Construction

1. **Heating Element** — Precision iron base resistance wire, designed to give extended life and uniform emission over entire radiating surface.
2. **Emission Surface** — Grooved fused quartz face plate for CPHI type heaters. Special ratings with aluminum emission surfaces are available for applications such as in the food industry.
3. **Frame** — Heavy gauge, heat-resistant aluminized steel.
4. **Heating Element Support** — Fibrous ceramic material specially developed for high insulation qualities, durability, shock resistance, asbestos free.
5. **Insulation** — High temperature insulation to minimize heat loss from back of heater.
6. **Terminals** — Stainless Steel terminals in a 4 x 4" junction box are provided with CPHI type heaters.
7. **Thermowell** — Quality tubular quartz thermowell, with strain relief, to accept a Chromalox C-700JU or C-700KU thermocouple on units with suffix T in model number. Standard placement of thermowell is on side of heater. Specials are available with thermowell exiting back of heater.

#### Construction



## CPHI High Intensity Quartz Faced Radiant Heater *(cont'd.)*



CPHI heaters produce micron levels between 2.5 and 6.0. At these micron levels the majority of the CPHI heaters fall into the middle of the IR spectrum, categorizing them as medium wave heaters.

Single heating elements or multiple elements can be zoned and wired to achieve specific heating profiles.

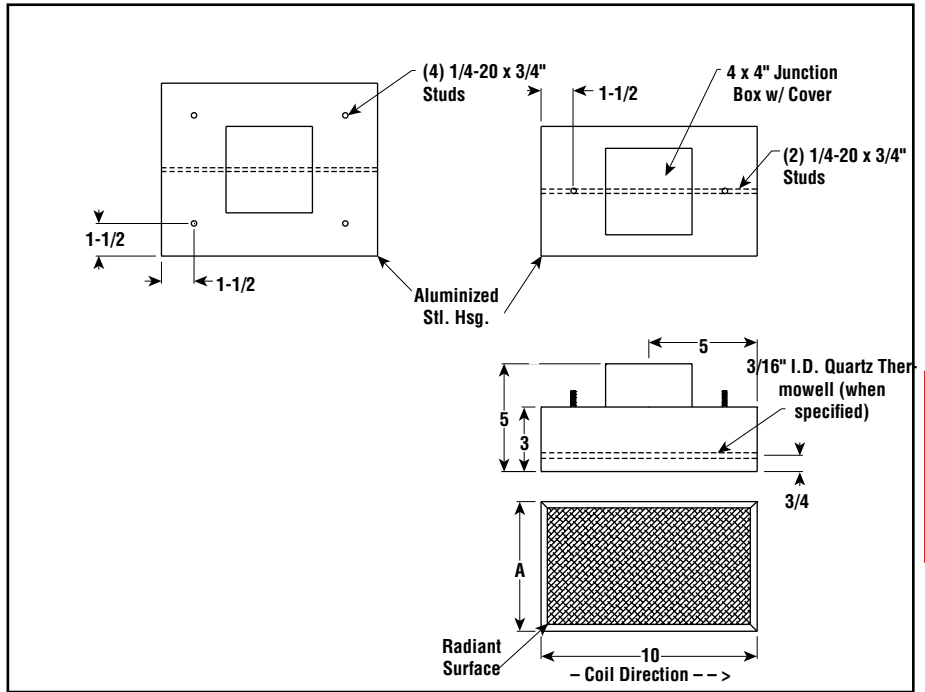
Outer edges of the element can have gradual increasing watt density to compensate for production edge losses.

**Easy to Control** — The use of time proportioning control with closed loop feedback, such as Chromalox 2104 temperature controllers, magnetic contactors or SCR power controllers assure easy and dependable system control. Thermowells may be offered in two locations in the heater interior. Suitable to accept Chromalox standard thermocouples, they sense emitter temperature ensuring accurate wavelength emission. Fast response time of the unit reduces thermal lag.

**Overtemperature Control** — It is strongly recommended that these units be controlled such that overheating and premature failure do not occur. This is of particular importance in oven usage, where high ambient temperatures exist.

**CAUTION — Hazard of Fire.** These radiant heaters must not be operated in the presence of flammable vapors, gases or combustible materials without proper ventilation and/or other safety precautions in compliance with either the National Fire Protection Bulletin 86A entitled "Ovens and Furnaces" or the authority having jurisdiction.

### Dimensions (Inches)



WIDE AREA

### Specifications and Ordering Information

kW	Volts	W/In <sup>2</sup>	DIM (In.)		Thermowell	No. Mtg. Studs	Model	Stock	PCN	Wt. (Lbs.)
			A	B						
1.6	240	40	4	10	No*	2 <sup>1</sup>	CPHI-0424	NS	224549	3
2.4	240/480	40	6	10	No*	2 <sup>1</sup>	CPHI-0624	NS	224557	5
3.2	240/480	40	8	10	No*	4	CPHI-0824	NS	224565	6.5
4	240/480	40	10	10	Yes	4	CPHI-1024T	NS	224573	8
4.8	240/480	40	12	10	No*	4	CPHI-1224	NS	224581	9.5

**Stock Status:** S = stock NS = non-stock

**To Order** — Specify model, PCN, kW, volts, phase, and quantity.

- For units with two mounting studs, locate each stud on the centerline of A dimension 1-1/2" in from the edge of the heater.

**\*Optional Features:**

Thermocouple well comes standard on CPHI-1024T PCN 224573

Thermocouple well - 3/16" I.D.

Thermowells are available on all models. To order, add suffix "T" to model number.