

Circulation Heaters

Circulation Heaters	Sheath Materials	Max. Operating Temperatures		Typical Max. Watt Densities		Page
		°F	°C	W/in ²	W/cm ²	
STARFLOW™	316L stainless steel	1000	537	30	4.6	329
WATROD™ and FIREBAR®	Alloy 800/840	1600	870	120	18.6	331
	Stainless steel	1200	650	120	18.6	
	Steel	750	400	120	18.6	
	Alloy 800	350	175	120	18.6	
Booster Heaters	Alloy 800	350	175	60	9.3	377
	Steel	750	400	23	3.6	
Engine Preheaters	Alloy 800	1600	870	90	13.9	379





Circulation Heaters

STARFLOW™ Heaters

The STARFLOW™ circulation heater is engineered to heat a flowing gas stream to 1000°F (537°C). The 316L stainless steel chamber houses a small diameter sheathed element, which allows for quick response to both heat-up and cool down cycles.

Watlow's starwound, coiled cable heater provides extremely efficient and reliable heating by maximizing the contact area of the gas or fluid with the element. Because the element is sheathed, the unit can operate in gas streams requiring a clean environment as well as atmospheres containing contaminants and moisture. This provides superior performance compared to units with internally exposed or open element wires.

Performance Capabilities

- Temperatures up to 1000°F (537°C), 316L stainless steel sheath
- Maximum watt densities up to 30 W/in² (4.7 W/cm²)
- Maximum voltage up to 240V

Features and Benefits

Small diameter heater

- Allows for quick response time

Internal starwound element

- Provides fast, efficient heating

Sheathed element

- Provides the ability to heat in clean or impure streams

Flexibility in configurations

- Allows for adaptability to any process

316L stainless steel

- Provides a rugged and corrosion resistant construction

Electropolishing available on all wetted surface

- Reduces particulate contamination

Note: Contact your Watlow representative for ultra-high purity applications

Low pressure loss

- Minimizes flow restriction

Note: Not suitable for use as a pressure vessel

Type J or K thermocouples

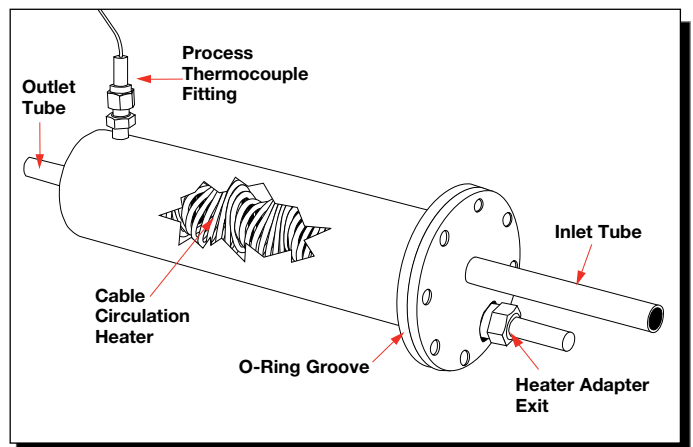
- Provide precise control and high-limit safety

Replaceable heater and thermocouple

- Reduces replacement cost

Shipment from stock

- Reduces downtime

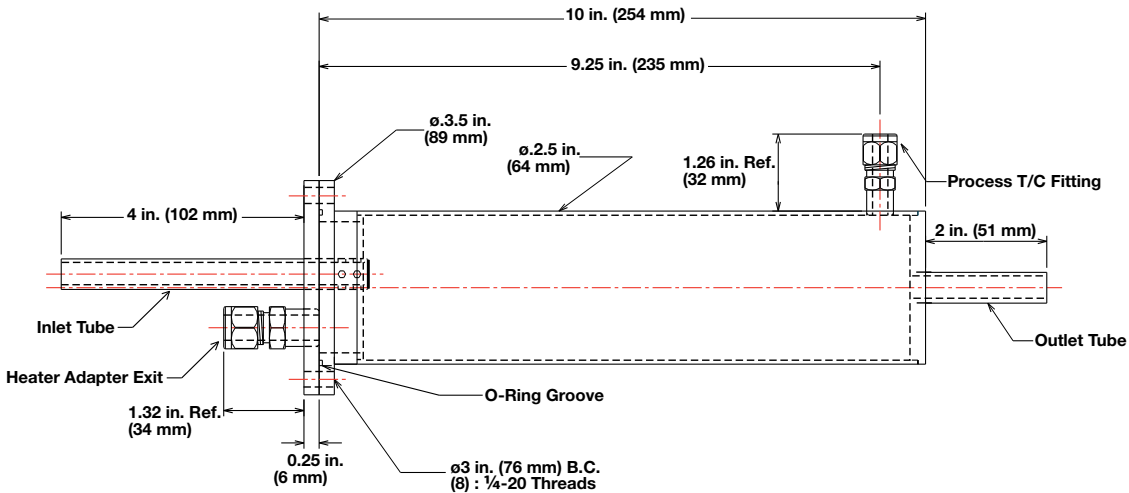


Typical Applications

- Semiconductor processing
- Curing and drying
- Electronics
- Heat shrinking
- Thermoforming/sealing

Circulation Heaters

STARFLOW Heaters



Ordering Information

Part Number

①	②	③ ④	⑤ ⑥	⑦ ⑧ ⑨ ⑩	⑪	⑫	⑬	⑭
		Type of Inlet	Type of Outlet	Heater Wattage	Internal T/C Calibration (Heater)	Surface Finish of Assembly and Heater	Process T/C Calibration (Assembly)	O-Ring Material
C	H							

③ ④ Type of Inlet	
ET =	1/4 in. (6 mm) O.D. tube
JT =	1/2 in. (13 mm) O.D. tube

⑤ ⑥ Type of Outlet	
ET =	1/4 in. (6 mm) O.D. tube
JT =	1/2 in. (13 mm) O.D. tube

⑦ ⑧ ⑨ ⑩ Heater Wattage	
0375 =	120V, 375 W
0500 =	120V, 500 W
0750 =	120V, 750 W
1500 =	240V, 1500 W
2000 =	240V, 2000 W
3000 =	240V, 3000 W

⑪ Internal Thermocouple Calibration (Heater)	
J =	Type J
K =	Type K

⑫ Surface Finish of Assembly and Heater	
X =	Unfinished
E =	Electropolished

⑬ Process Thermocouple Calibration (Assembly)	
J =	Type J
K =	Type K

⑭ O-Ring Material	
A =	FKM (FPM) 500°F (260°C)
M =	Alloy X750 1300°F (704°C)
T =	PTFE encapsulated FKM (FPM) 392°F (200°C)

RAPID SHIP

• Next day shipment

Circulation Heaters

WATROD™ and FIREBAR® Circulation Heaters

Circulation heaters provide a ready-made means to install electric heating with a minimal amount of time and labor. This is accomplished by combining heating elements, vessel, insulation, terminal enclosure, mounting brackets and inlet and outlet connections into a complete assembly.

Made from NPT screw plug or ANSI flange heater assemblies mated with a pressure vessel (tank), circulation heaters are designed to heat forced-circulation air, gases or liquids. Ideal for either in-line or side-arm operations, these assemblies direct fluids past FIREBAR® or WATROD™ heating elements, to deliver fast response and even heat distribution.

Watlow® meets virtually all your circulation heater assembly needs with made-to-order units. These units can be made from a wide range of heating element sheath materials, wattages, vessel sizes and materials, pressure ratings, terminal enclosures and controls.

Performance Capabilities

- Watt densities up to 120 W/in² (18.6 W/cm²)
- Wattages up to three megawatts
- UL® and CSA component recognition up to 690VAC
- Ratings up to ANSI Class 600 pressure class
- Alloy 800/840 sheath temperatures up to 1600°F (870°C)
- Passivated 316 stainless steel sheath temperatures up to 1200°F (650°C)
- Steel sheath temperatures up to 750°F (400°C)

Features and Benefits

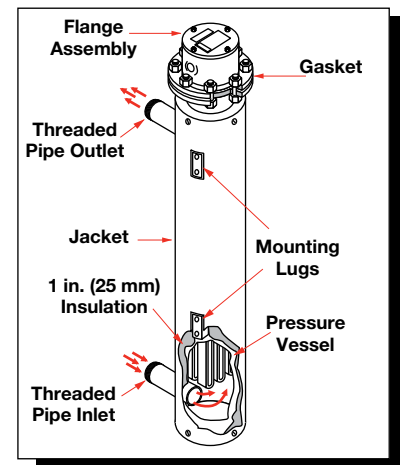
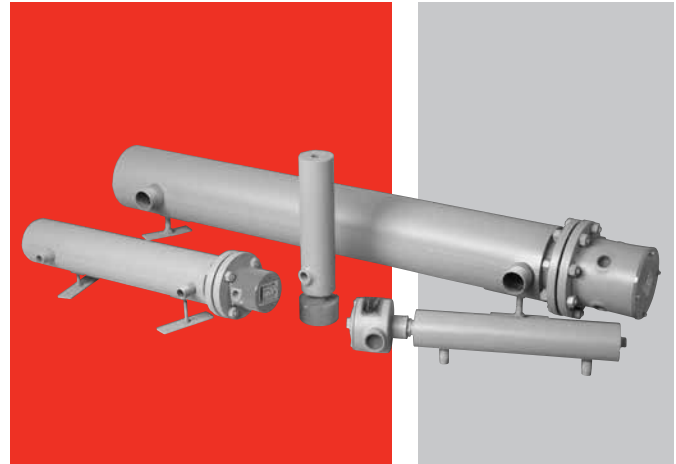
Catalog screw plug and flange part numbers

- Provides a wide selection of WATROD and FIREBAR elements to meet specific application requirements

Type	Sizes (in.)
NPT Screw Plugs	1 ¹ / ₄ , 2 ¹ / ₂
ANSI flanges	3, 4, 5, 6, 8, 10, 12, 14

ANSI B16.5 Class 150 on 4 or 6 inch FIREBAR element flanges and 3 to 14 inch WATROD element flanges

- Meets recognized agency standards



FIREBAR assemblies pack more wattage in a smaller heater bundle

- Replaces larger flanges with round tubular elements, with a smaller package

Compacted MgO insulation filled elements

- Maximizes dielectric strength, heat transfer and life

1 inch (25 mm) thermal insulation rated to 750°F (400°C)

- Reduces heat loss from the vessel

Heavy-gauge steel jacket (shroud)

- Protects thermal insulation and heating vessel and comes with protective primer coating

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

Features and Benefits *(Continued)*

All catalog units rated to ANSI pressure Class 150

- Provides pressure vessels (tanks) that are either carbon, 304 or 316 stainless steel

Standard offering includes units rated for up to and including ANSI pressure class 600 (application review required)

- Provides pressure vessels (tanks) available in carbon steel, 304 or 316 stainless steel materials
- Includes schedule 40, standard and 80 pipe used in the pressure vessel construction

Catalog units provided with NPT or ANSI Class 150 nozzle connection

- Makes installation easy. Inlet and outlet nozzle connections are threaded MNPT on 8 in. (203 mm) and smaller tanks. Class 150 flanged connections on 10 in. (254 mm) and larger tanks

Mounting lugs are welded onto the tank wall of all 2½ in. (64 mm) NPT and larger units

- Provides mounting support

General purpose, moisture resistant, enclosures available

- Offers easy access to terminal wiring

Options

Terminal Enclosures

General purpose terminal enclosures, without thermostats, are supplied on all Watlow circulation heaters. Moisture and explosion resistant ratings are available to meet specific application needs. For screw plug terminal enclosures, refer to page 171. For flange terminal enclosures, refer to page 243.

Stand-off Terminal Enclosures

Stand-off terminal enclosures help protect terminal enclosures against excessive temperatures. For details, refer to page 239.

ASME Pressure Vessel Code Welding

Flange or screw plug assemblies can be provided with an ASME Section VIII, Div. I pressure vessel stamp upon request.

Branch Circuits

Branch circuits are designed for 48 amperes per circuit maximum. Contact your Watlow representative for circuit requirements other than those listed in the stock charts.

Flange mounting holes

- Straddles centerline to comply with industry standards

UL® and CSA component recognition under file numbers E52951 and 31388 respectively

- Meets industry safety standards

Typical Applications

Water:

- Deionized
- Demineralized
- Clean
- Potable
- Process
- Industrial water rinse tanks
- Hydraulic oil, crude, asphalt
- Lubricating oils at API specified watt densities
- Heat transfer oil
- Paraffin
- Caustic cleaners
- Nitrogen, hydrogen and other air/gas systems
- Superheating steam

Certified Enclosures

CSA, ATEX or IECEx certified enclosures protect wiring in hazardous gas environments. These terminal enclosures, covered under CSA file number 61707, ATEX certificate # SIRA 10ATEX 1155X or IECEx certificate # IECEx CSA 09.0010 are available on WATROD flange heaters. For additional information, see page 567 and 568 or contact your Watlow representative.

For products that will be installed in hazardous locations, please provide the following information:

- Operating conditions
- Minimum and maximum ambient temperatures for the installation location
- Mounting orientation

Watlow must understand this information so that an appropriate design can be provided.

Thermostats

To provide process temperature control, Watlow offers optional single- and double-pole thermostats. Thermostats are typically mounted in the terminal enclosure. Optional side mounting on vessel also available.

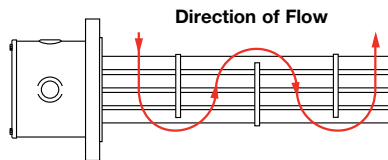
See *Screw Plug Immersion Heaters*, page 167 and *Flange Immersion Heaters*, on page 239 for details.

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

Options (Continued)

Baffles



Baffles mounted on the heating element bundle enhance and/or modify liquid or gas flow for better heat transfer.

For critical sheath temperature and low flow conditions, baffles may be required.

Contact your Watlow representative for details.

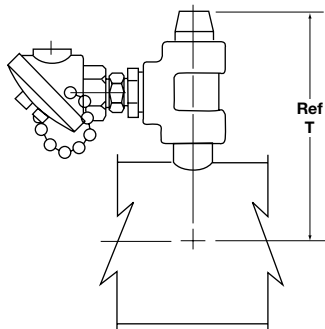
Thermocouples

To sense process or element sheath temperature, ASTM Type J or K thermocouples are available.

See *Screw Plug Immersion Heaters*, page 168 and *Flange Immersion Heaters*, on page 239 for details.

Process Thermocouple in Nozzle

(Must specify which nozzle)



Ref. Tank Size	Ref. Nozzle Size	Dimension "A"
1 ¹ / ₄	3/4 NPT	8 ³ / ₁₆
2 ¹ / ₂	1 NPT	8 ³ / ₁₆
3	1 NPT	8 ³ / ₁₆
4	1 ¹ / ₂ NPT	10 ³ / ₈
5	2 NPT	11 ¹ / ₁₆
6	2 ¹ / ₂ NPT	13 ³ / ₈
8	2 ¹ / ₂ NPT	14 ³ / ₈

For 10 in. (254 mm) and larger tanks contact your Watlow representative for dimension.

Sheath Materials

The following sheath materials are available on WATROD and FIREBAR heating elements:

Standard Sheath Materials

WATROD	Alloy 800/840 316 SS Steel
FIREBAR	Alloy 800, 304 SS

Made-to-Order Sheath Materials

WATROD	304 SS Alloy 600 Titanium Hastelloy C276
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Wattages and Voltages

Watlow routinely supplies circulation heaters with 120 to 690VAC as well as wattages from 500 watts to one megawatt. If required, Watlow will configure circulation heaters with voltages and wattages outside these parameters.

For more information on special voltage and wattage configurations, contact your Watlow representative.

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

Options (Continued)

Pressure Vessels

All catalog pressure vessel (tank) materials consist of standard schedule and 150# class forged fittings and are made from one of the following materials:

- Carbon steel
- 316 stainless steel

All catalog pressure vessels (tanks) are steel unless otherwise noted.

316 stainless steel pressure vessels (tanks) are passivated on all wetted surfaces. Available from Assembly Stock on 2¹/₂ inch NPT and 4 or 6 inch ANSI flange circulation heaters.

Passivated Finish

For critical applications, passivation will remove free iron from all wetted surfaces.

Contact your Watlow representative for details.

Gaskets

Rubber, asbestos-free and spiral wound gaskets are available for all heater flange, and inlet and outlet flange sizes.

Watlow recommends ordering spares in case replacement becomes necessary.

To order, specify **gasket type, flange size/rating** and **process operating temperature**.

For details on gasket materials and temperature ratings, see page 240.

Inlet and Outlet Nozzle Connections

All inlet and outlet materials are compatible with the pressure vessel material and pressure class rating.

Vessel sizes from 1¹/₄ to 8 inches are typically configured with MNPT (Male National Pipe Thread) nozzles. Optional NPT and flange sizes can be supplied to mate with existing piping.

10 inch and larger vessels are supplied with Class 150 inlet and outlet flanges. Optional Class 300 or Class 600 can be provided to mate with existing piping.

To order, specify **type, size** and **pressure class** rating for both inlet and outlet nozzle/flange connections.

Protective Steel Jacket (Shroud)

To protect circulation heaters from weather or wash-down conditions, partially welded (standard) outer protective steel jackets are available. Standard steel, or made-to-order 304 or 316 stainless steel or aluminum can be supplied. Jacket diameter is dependent upon thermal insulation thickness.

To order, specify **protective steel jacket, material type** and **weatherproof**, if desired.

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

Technical Data

Maximum Velocities

The rate at which a gas or liquid flows through inlet and outlet pipes is critical to maintaining the desired output temperature. Pressure drop through the circulation heater must be considered to properly size blowers or pumps. The *Maximum Velocity to Avoid Excessive Pressure Drop* chart gives recommended maximum velocities, in feet per second and meters per second of gas or liquid being heated and nominal pipe size.

Maximum Velocity to Avoid Excessive Pressure Drop

Fluid	Nominal Pipe Size in.	Maximum Velocity	
		ft/sec	(m/sec)
Gases	All	200	(61.0)
Liquid	4 and smaller	10	(3.0)
Liquid	6-8	15	(5.0)
Liquid	10-12	19	(6.0)
Liquid	14-16	21	(6.4)
Liquid	18-20	23	(7.0)
Liquid	24	24	(7.3)

Vessel Orientation Guidelines

Correctly orienting the heating vessel assures lower terminal enclosure temperatures and element immersion. Detailed instructions on vessel orientation are contained in the *Installation and Maintenance Instructions* that accompanies all circulation heaters.

The following are guidelines for vessel orientation in liquid and gas heating applications.

Liquids

Orient circulation heater:

- Horizontally with inlet and outlet pipes pointing up
- Vertically with the terminal enclosure up and the inlet pipe on the bottom

These orientations ensure the heating elements will be immersed at all times and help prevent premature failure.

Air or Gases

Orient circulation heater:

- Horizontally with the inlet nozzle closest to the terminal enclosure
- Vertically with terminal enclosure at the bottom of the tank. Use the nozzle nearest the bottom as the inlet connection

If installation constraints do not allow mounting in accordance with these guidelines, contact your Watlow representative.

Application Hints

- Select the recommended heating element sheath material and watt density for the substance being heated. Use the *Supplemental Applications Chart* on pages 555 to 558. If unable to determine the correct heating element type and material, contact your Watlow representative.
- Assure selecting proper vessel by considering the pressure or flow rate, process temperature and corrosiveness of the media being heated. If assistance with vessel selection is required, contact your Watlow representative.
- For maintenance/replacement procedures, retain an area twice the circulation heater's overall length to permit easy removal and inspection of screw plug or flange heater assemblies.
- Choose a FIREBAR assembly when you require:
 - A smaller package
 - More kilowatts or lower watt density in an equally sized WATROD circulation tank
- Minimize problems associated with low flow or low liquid level conditions with a low liquid level sensor and/or sheath high-limit control.
- Ensure wiring integrity by making sure terminal enclosure temperature does not exceed 400°F (205°C).
- Size power feeder wires in accordance with national electrical code guidelines and other applicable codes.
- Protect against electrical shock by properly grounding the unit per NEC requirements.
- One or more circulation heaters may be connected in series to achieve the desired total kilowatt or temperature output.

WATROD and FIREBAR Circulation Heaters

Performance Capabilities

- Up to 3000psi design pressure

Features and Benefits

Offering includes units rated above ANSI pressure class 600

- Pressure vessel tanks are available in “H” series stainless steel, Titanium, alloy 800, alloy 600, Chrome Moly, alloy 400, Duplex and 321 stainless steel

Options

Exotic Sheath Materials

Contact your Watlow representative for details and availability.

Pressure Vessels

Made-to-order units can be made in a variety of materials, flange sizes and pressure classes.

To order, specify **pressure vessel (tank) size, material and pressure class**.

Ratings to ANSI class 2500 pressure class are available for high-pressure applications.

High-Temperature Thermal Insulation

To further minimize heat loss, the pressure vessel's standard one inch thermal insulation wrap may be replaced with thicker or higher temperature insulation. For more information, contact your Watlow representative.

To order, specify **insulation thickness, standard or high temperature insulation and temperature rating**.

Vessels may be supplied with a primer coating without insulation.

To order, specify **no insulation**.

Support Saddles

To mate with an existing installation, customized support saddle(s) and/or mounting lugs are available.

To order, specify **mounting lugs or support saddles** and supply a dimensional drawing.

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

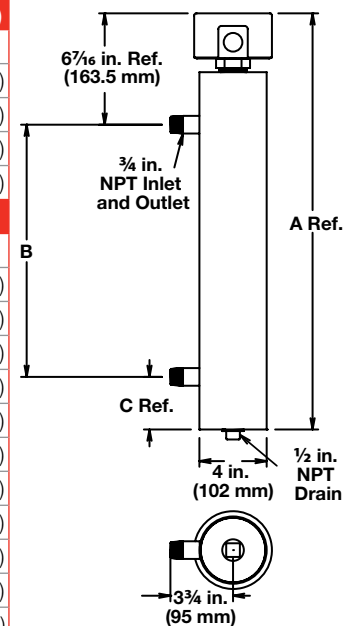


Application: Clean Water[®]

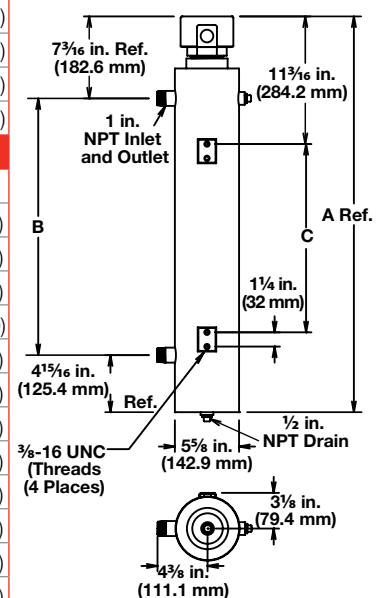
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
1 1/4 inch NPT Screw Plug (WATROD)										
60 W/in² Steel Tank 2-Alloy 800 Elements (9.3 W/cm²)	120/240	3.0	1	1	CBEN15A6S	RS	23 (11)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	4.0	1	1	CBEN19A10S	RS	29 (14)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	5.0	1	1	CBEN23J10S	RS	29 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	6.0	1	1	CBEN27J10S	RS	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
1 1/4 inch NPT Screw Plug (FIREBAR)										
90 W/in² Steel Tank 1-Alloy 800 Element (14 W/cm²)	240	1.5	1	1	CBDNF7R10S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	480	1.5	1	1	CBDNF7R11S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	3.0	1	1	CBDNF11G10S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	480	3.0	1	1	CBDNF11G11S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	5.0	3	1	CBDNF16G3S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	480	5.0	3	1	CBDNF16G5S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	6.5	3	1	CBDNF19G3S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	480	6.5	3	1	CBDNF19G5S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	8.5	3	1	CBDNF24L3S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	480	8.5	3	1	CBDNF24L5S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	10.5	3	1	CBDNF29R3S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	10.5	3	1	CBDNF29R5S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	12.7	3	1	CBDNF34R3S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	12.7	3	1	CBDNF34R5S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	17.0	3	1	CBDNF45G3S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	17.0	3	1	CBDNF45G5S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
480	21.5	3	1	CBDNF55R5S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)	
2 1/2 inch NPT Screw Plug (WATROD)										
60 W/in² Steel Tank 3-Alloy 800 Elements (9.3 W/cm²)	240	6.0	3	1	CBLN714L3S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	6.0	3	1	CBLN714L5S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	7.5	3	1	CBLN717L3S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	7.5	3	1	CBLN717L5S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	9.0	3	1	CBLN720L3S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	9.0	3	1	CBLN720L5S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	12.0	3	1	CBLN726C3S	RS	27 (13)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	12.0	3	1	CBLN726C5S	RS	27 (13)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	15.0	3	1	CBLN731L3S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	15.0	3	1	CBLN731L5S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	18.0	3	1	CBLN737C3S	RS	30 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	18.0	3	1	CBLN737C5S	RS	30 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)

1 1/4 inch NPT Screw Plug



2 1/2 inch NPT Screw Plug



RAPID SHIP

- RS - Next day shipment up to 5 pieces
- M - Manufacturing lead times

WATLOW[®]

- ④ Wired for higher voltage
- ⑤ When steel vessel materials are used in this application, some rust may be present in the process media

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Clean Water [®]

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

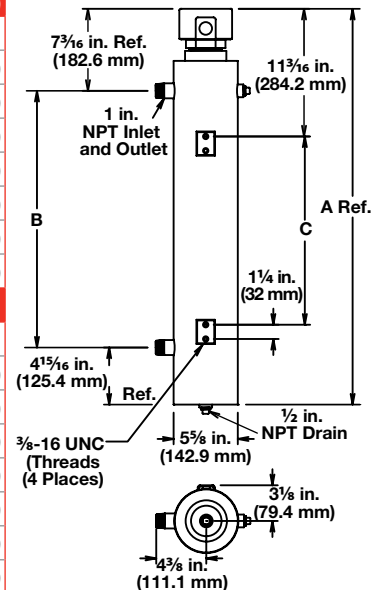
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
2 1/2 inch NPT Screw Plug (FIREBAR)										
90 W/in² [®] Steel Tank 3-Alloy 800 Elements (14 W/cm²)	240	15.0	3	1	CBLNF15C3S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	15.0	3	1	CBLNF15C5S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	20.0	3	1	CBLNF18C3S	M	23 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	20.0	3	1	CBLNF18C5S ^③	M	23 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	25.0	3	1	CBLNF23C5S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	32.0	3	1	CBLNF28L5S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
480	38.0	3	1	CBLNF33L5S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
3 inch - 150 lb ANSI Flange (WATROD)										
60 W/in² Steel Tank 3-Alloy 800 Elements (9.3 W/cm²)	120	6.0	1	1	CFMN715J10S	RS	66 (30)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	6.0	3	1	CFMN715J3S	RS	66 (30)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	6.0	1	1	CFMN715J11S	RS	66 (30)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	6.0	3	1	CFMN715J5S	RS	66 (30)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	120	9.0	1	1	CFMN721J10S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	9.0	3	1	CFMN721J3S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	9.0	1	1	CFMN721J11S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	9.0	3	1	CFMN721J5S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	12.0	3	1	CFMN727A3S	M	80 (37)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	12.0	1	1	CFMN727A11S	M	80 (37)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	12.0	3	1	CFMN727A5S	M	80 (37)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	15.0	3	1	CFMN732J3S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	15.0	1	1	CFMN732J11S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	15.0	3	1	CFMN732J5S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	18.0	3	1	CFMN738A3S	M	98 (45)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	18.0	1	1	CFMN738A11S	M	98 (45)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	18.0	3	1	CFMN738A5S	M	98 (45)	57 ³ / ₄ (1465)	45 (1143)	39 (991)

RAPID SHIP

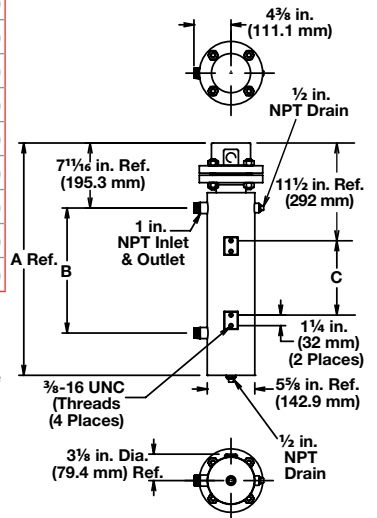
- **RS** - Next day shipment up to 5 pieces
- **M** - Manufacturing lead times

- ③ Wired for 3-phase operation only
 - ⑤ When steel vessel materials are used in this application, some rust may be present in the process media
 - ⑧ Can be wired for 1-phase operation
- Truck Shipment only

2 1/2 inch NPT Screw Plug



3 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

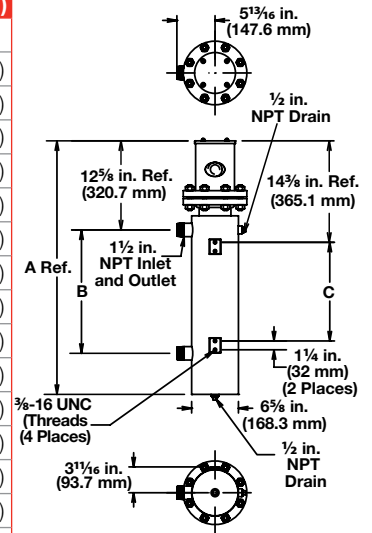


Application: Clean Water ⑤

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
4 inch - 150 lb ANSI Flange (WATROD)										
60 W/in² Steel Tank 6-Alloy 800 Elements (9.3 W/cm²)	240	12.0	1	2	CFON715J10S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	12.0	3	1	CFON715J3S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	12.0	1	1	CFON715J11S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	12.0	3	1	CFON715J5S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	1	2	CFON721J10S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	3	1	CFON721J3S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	1	1	CFON721J11S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	3	1	CFON721J5S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	1	2	CFON727A10S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	24.0	3	2	CFON727A3S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	1	1	CFON727A11S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	3	1	CFON727A5S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	30.0	3	2	CFON732J3S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	30.0	1	2	CFON732J11S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	30.0	3	1	CFON732J5S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	36.0	3	2	CFON738A3S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	1	2	CFON738A11S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	3	1	CFON738A5S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	50.0	3	2	CFON751A5S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	60.0	3	2	CFON760J5S	M	297 (135)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)

4 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

⑤ When steel vessel materials are used in this application, some rust may be present in the process media

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

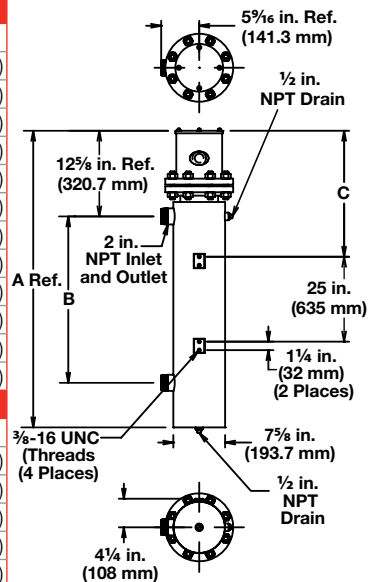


Application: Clean Water[®]

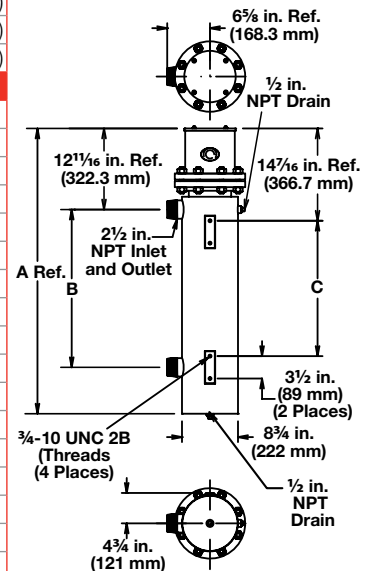
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
5 inch - 150 lb ANSI Flange (WATROD)										
60 W/in ² Steel Tank	240	24.0	1	3	CFNN727A10S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
6-Alloy 800 Elements (9.3 W/cm ²)	240	24.0	3	2	CFNN727A3S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	480	24.0	1	3	CFNN727A11S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	480	24.0	3	1	CFNN727A5S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	240	30.0	3	2	CFNN732J3S	M	142 (65)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	480	30.0	1	2	CFNN732J11S	M	142 (65)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	480	30.0	3	1	CFNN732J5S	M	142 (65)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	240	36.0	3	2	CFNN738A3S	M	160 (73)	56 ¹ / ₄ (1427.0)	37 (940)	18 ⁵ / ₈ (473.1)
	480	36.0	1	2	CFNN738A11S	M	160 (73)	56 ¹ / ₄ (1427.0)	37 (940)	18 ⁵ / ₈ (473.1)
	480	36.0	3	1	CFNN738A5S	M	160 (73)	56 ¹ / ₄ (1427.0)	37 (940)	18 ⁵ / ₈ (473.1)
	480	50.0	3	2	CFNN751A5S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232)	25 (633.0)
480	60.0	3	2	CFNN760J5S	M	190 (87)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1572)	30 ⁷ / ₈ (784.2)	
5 inch - 150 lb ANSI Flange (WATROD)										
60 W/in ² Steel Tank	240	36.0	3	3	CFNN727A3XS	M	145 (66)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
9-Alloy 800 Elements (9.3 W/cm ²)	480	36.0	1	3	CFNN727A11XS	M	145 (66)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	480	36.0	3	1	CFNN727A5XS	M	145 (66)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	240	45.0	3	3	CFNN732J3XS	M	147 (67)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	480	45.0	1	3	CFNN732J11XS	M	147 (67)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	480	45.0	3	3	CFNN732J5XS	M	147 (67)	49 ¹ / ₄ (1249.0)	30 (762)	14 ⁷ / ₈ (378.8)
	240	54.0	3	3	CFNN738A3XS	M	166 (76)	56 ¹ / ₄ (1427.0)	37 (940)	18 ⁵ / ₈ (473.1)
	480	54.0	1	3	CFNN738A11XS	M	166 (76)	56 ¹ / ₄ (1427.0)	37 (940)	18 ⁵ / ₈ (473.1)
	480	54.0	3	3	CFNN738A5XS	M	166 (76)	56 ¹ / ₄ (1427.0)	37 (940)	18 ⁵ / ₈ (473.1)
	480	75.0	3	3	CFNN751A5XS	M	188 (86)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232)	25 (633.0)
	480	90.0	3	3	CFNN760J5XS	M	200 (91)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1572)	30 ⁷ / ₈ (784.2)
6 inch - 150 lb ANSI Flange (WATROD)										
60 W/in ² Steel Tank	240	24.0	1	3	CFPN715G10S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
12-Alloy 800 Elements (9.3 W/cm ²)	240	24.0	3	2	CFPN715G3S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	24.0	1	2	CFPN715G11S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	24.0	3	1	CFPN715G5S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	36.0	1	4	CFPN721G10S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	36.0	3	2	CFPN721G3S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	36.0	1	2	CFPN721G11S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	36.0	3	1	CFPN721G5S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	48.0	3	4	CFPN726R3S	M	222 (101)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	48.0	1	3	CFPN726R11S	M	222 (101)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	48.0	3	2	CFPN726R5S	M	222 (101)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	60.0	3	4	CFPN732G3S	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	60.0	1	3	CFPN732G11S	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	60.0	3	2	CFPN732G5S	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	72.0	3	4	CFPN737R3S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	72.0	3	2	CFPN737R5S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	100.0	3	4	CFPN750R5S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	120.0	3	4	CFPN760G5S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)

5 inch - 150 lb ANSI Flange



6 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

⑤ When steel vessel materials are used in this application, some rust may be present in the process media

Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

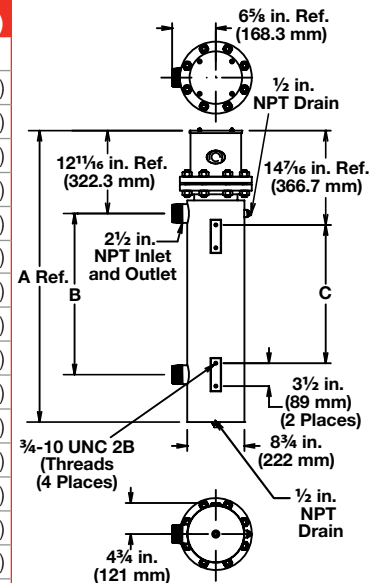


Application: Clean Water[®]

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

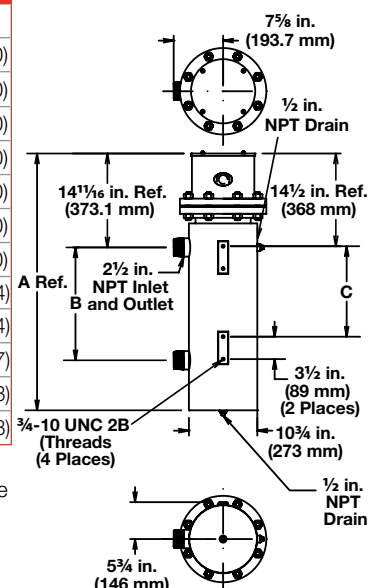
Description	Volts	kW	Ph	# Circ.	Part Number	Del	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
6 inch - 150 lb ANSI Flange (WATROD)										
60 W/in² Steel Tank 15-Alloy 800 Elements (9.3 W/cm²)	240	30.0	1	3	CFPN715G10XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	30.0	3	5	CFPN715G3XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	30.0	1	3	CFPN715G11XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	30.0	3	1	CFPN715G5XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	45.0	1	5	CFPN721G10XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	45.0	3	5	CFPN721G3XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	45.0	1	3	CFPN721G11XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	45.0	3	5	CFPN721G5XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	60.0	3	5	CFPN726R3XS	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	60.0	1	3	CFPN726R11XS	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	60.0	3	5	CFPN726R5XS	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	75.0	3	5	CFPN732G3XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	75.0	1	5	CFPN732G11XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	75.0	3	5	CFPN732G5XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	90.0	3	5	CFPN737R3XS	M	296 (134)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	90.0	3	5	CFPN737R5XS	M	296 (134)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
480	125.0	3	5	CFPN750R5XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
480	150.0	3	5	CFPN760G5XS	M	370 (168)	93 (2361)	73 (1854)	66 (1676)	

6 inch - 150 lb ANSI Flange



8 inch - 150 lb ANSI Flange (WATROD)										
60 W/in² Steel Tank 18-Alloy 800 Elements (7.5 W/cm²)	240	50.0	3	3	CFRN721N3S	M	340 (155)	47 ¹ / ₄ (1199.0)	24 ³ / ₄ (627.0)	21 ¹ / ₄ (538.0)
	480	50.0	1	3	CFRN721N11S	M	340 (155)	47 ¹ / ₄ (1199.0)	24 ³ / ₄ (627.0)	21 ¹ / ₄ (538.0)
	480	50.0	3	2	CFRN721N5S	M	340 (155)	47 ¹ / ₄ (1199.0)	24 ³ / ₄ (627.0)	21 ¹ / ₄ (538.0)
	240	75.0	3	6	CFRN729N3S	M	360 (164)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	75.0	3	2	CFRN729N5S	M	360 (164)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	100.0	3	6	CFRN737E3S	M	385 (175)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	100.0	3	3	CFRN737E5S	M	385 (175)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	125.0	3	6	CFRN745E3S	M	410 (186)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	125.0	3	6	CFRN745E5S	M	410 (186)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	150.0	3	6	CFRN752N5S	M	440 (200)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	175.0	3	6	CFRN760N5S	M	465 (211)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	480	200.0	3	6	CFRN768E5S	M	510 (232)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)

8 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

⑤ When steel vessel materials are used in this application, some rust may be present in the process media

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

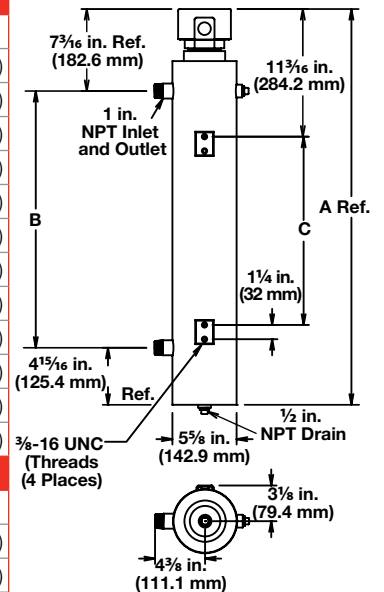


Application: Deionized or Demineralized Water

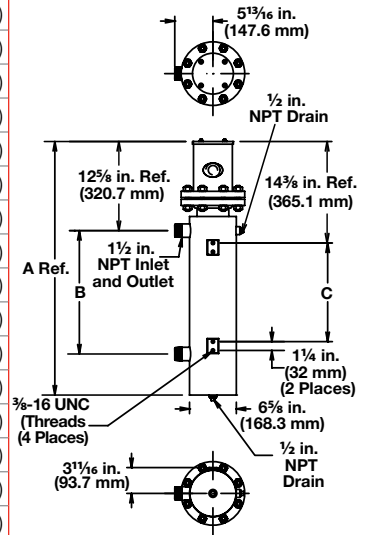
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
2 1/2 inch NPT Screw Plug (WATROD)										
60 W/in ² 316 SS Tank	240	6.0	3	1	CBLR714L3S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	6.0	3	1	CBLR714L5S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
3-316 SS Elements (9.3 W/cm ²) Passivated	240	7.5	3	1	CBLR717L3S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	7.5	3	1	CBLR717L5S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	9.0	3	1	CBLR720L3S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	9.0	3	1	CBLR720L5S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	12.0	3	1	CBLR726C3S	RS	27 (13)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	12.0	3	1	CBLR726C5S	RS	27 (13)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	15.0	3	1	CBLR731L3S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	15.0	3	1	CBLR731L5S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	18.0	3	1	CBLR737C3S	RS	30 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	18.0	3	1	CBLR737C5S	RS	30 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
4 inch - 150 lb ANSI Flange (WATROD)										
60 W/in ² 316 SS Tank	240	12.0	1	2	CFOR716A10S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	12.0	3	1	CFOR716A3S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
6-316 SS Elements (9.3 W/cm ²) Passivated	480	12.0	1	1	CFOR716A11S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	12.0	3	1	CFOR716A5S	M	124 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	1	2	CFOR722A10S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	3	1	CFOR722A3S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	1	1	CFOR722A11S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	3	1	CFOR722A5S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	1	2	CFOR727J10S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	24.0	3	2	CFOR727J3S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	1	1	CFOR727J11S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	3	1	CFOR727J5S	M	160 (73)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	30.0	3	2	CFOR733A3S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	30.0	1	2	CFOR733A11S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	30.0	3	1	CFOR733A5S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	36.0	3	2	CFOR738J3S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	1	2	CFOR738J11S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	3	1	CFOR738J5S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	50.0	3	2	CFOR751J5S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	60.0	3	2	CFOR761A5S	M	297 (135)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)

2 1/2 inch NPT Screw Plug



4 inch - 150 lb ANSI Flange



Truck Shipment only

RAPID SHIP

- RS - Next day shipment up to 5 pieces
- M - Manufacturing lead times

Circulation Heaters

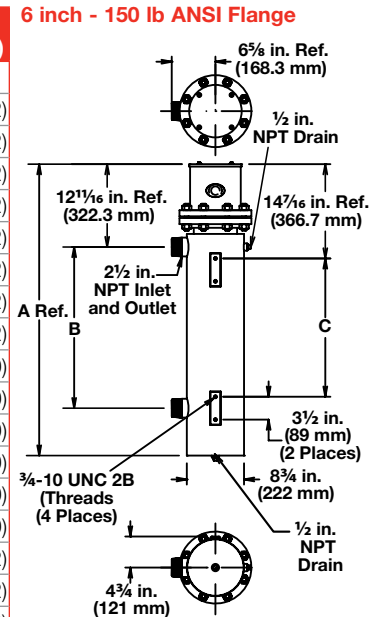
WATROD and FIREBAR Circulation Heaters



Application: Deionized or Demineralized Water

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)	
6 inch - 150 lb ANSI Flange (WATROD)											
60 W/in ²	240	24.0	1	3	CFPR715N10S	M	212 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
316 SS Tank	240	24.0	3	2	CFPR715N3S	M	212 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
12-316 SS Elements (9.3 W/cm ²)	480	24.0	1	2	CFPR715N11S	M	212 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
Passivated	480	24.0	3	1	CFPR715N5S	M	212 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	240	36.0	1	4	CFPR721N10S	M	217 (99)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	240	36.0	3	2	CFPR721N3S	M	217 (99)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	480	36.0	1	2	CFPR721N11S	M	217 (99)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	480	36.0	3	1	CFPR721N5S	M	217 (99)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	240	48.0	3	4	CFPR727E3S	M	222 (101)	51 (1294)	31 (787)	27 1/2 (699)	
	480	48.0	1	3	CFPR727E11S	M	222 (101)	51 (1294)	31 (787)	27 1/2 (699)	
	480	48.0	3	2	CFPR727E5S	M	222 (101)	51 (1294)	31 (787)	27 1/2 (699)	
	240	60.0	3	4	CFPR732N3S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)	
	480	60.0	1	3	CFPR732N11S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)	
	480	60.0	3	2	CFPR732N5S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)	
	240	72.0	3	4	CFPR738E3S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)	
	480	72.0	3	2	CFPR738E5S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)	
	480	100.0	3	4	CFPR751E5S	M	298 (136)	72 (1827)	52 (1321)	48 1/2 (1232)	
	480	120.0	3	4	CFPR760N5S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)	
6 inch - 150 lb ANSI Flange (WATROD)											
60 W/in ²	240	30.0	1	3	CFPR715N10XS	M	215 (98)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
316 SS Tank	240	30.0	3	5	CFPR715N3XS	M	215 (98)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
15-316 SS Elements (9.3 W/cm ²)	480	30.0	1	3	CFPR715N11XS	M	215 (98)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
Passivated	480	30.0	3	1	CFPR715N5XS	M	215 (98)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	240	45.0	1	5	CFPR721N10XS	M	223 (102)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	240	45.0	3	5	CFPR721N3XS	M	223 (102)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	480	45.0	1	3	CFPR721N11XS	M	223 (102)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	480	45.0	3	5	CFPR721N5XS	M	223 (102)	40 1/2 (1027)	20 1/2 (521)	17 (432)	
	240	60.0	3	5	CFPR727E3XS	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)	
	480	60.0	1	3	CFPR727E11XS	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)	
	480	60.0	3	5	CFPR727E5XS	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)	
	240	75.0	3	5	CFPR732N3XS	M	288 (131)	51 (1294)	31 (787)	27 1/2 (699)	
	480	75.0	1	5	CFPR732N11XS	M	288 (131)	51 (1294)	31 (787)	27 1/2 (699)	
	480	75.0	3	5	CFPR732N5XS	M	288 (131)	51 (1294)	31 (787)	27 1/2 (699)	
	240	90.0	3	5	CFPR738E3XS	M	296 (135)	72 (1827)	52 (1321)	48 1/2 (1232)	
	480	90.0	3	5	CFPR738E5XS	M	296 (135)	72 (1827)	52 (1321)	48 1/2 (1232)	
	480	125.0	3	5	CFPR751E5XS	M	306 (139)	72 (1827)	52 (1321)	48 1/2 (1232)	
	480	150.0	3	5	CFPR760N5XS	M	370 (168)	93 (2361)	73 (1854)	66 (1676)	



• M - Manufacturing lead times

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

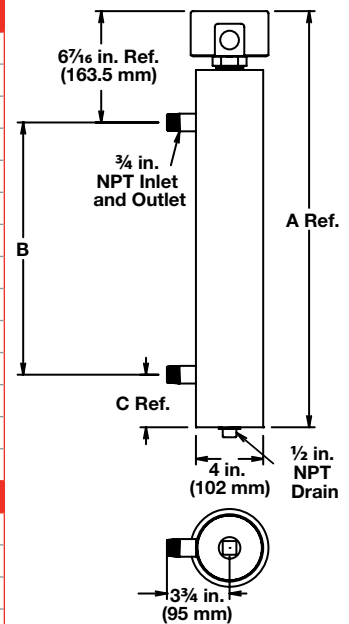


Application: Process Water®

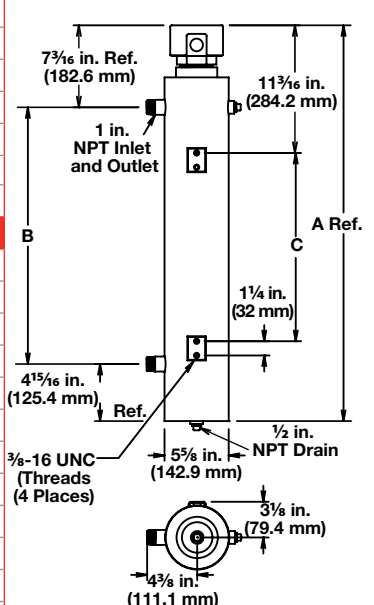
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	Circ.	#	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
1 1/4 inch NPT Screw Plug (FIREBAR)											
45 W/in²® Steel Tank 1-Alloy 800 Element (7 W/cm²)	240	2.0	3	1	1	CBDNF13A27S	M	25 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	2.5	3	1	1	CBDNF15J27S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	3.0	3	1	1	CBDNF18A27S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	4.0	3	1	1	CBDNF22J27S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	480	4.0	3	1	1	CBDNF22J28S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	5.0	3	1	1	CBDNF27J27S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	5.0	3	1	1	CBDNF27J28S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	6.0	3	1	1	CBDNF32J27S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	6.0	3	1	1	CBDNF32J28S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	8.0	3	1	1	CBDNF42A27S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	8.0	3	1	1	CBDNF42A28S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	240	10.0	3	1	1	CBDNF51J27S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
480	10.0	3	1	1	CBDNF51J28S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)	
2 1/2 inch NPT Screw Plug (WATROD)											
48 W/in²® Steel Tank 3-Alloy 800 Elements (7.5 W/cm²)	240	6.0	3	1	1	CBLN717G3S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	6.0	3	1	1	CBLN717G5S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	7.5	3	1	1	CBLN719R3S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	7.5	3	1	1	CBLN719R5S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	9.0	3	1	1	CBLN724R3S	RS	27 (13)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	9.0	3	1	1	CBLN724R5S	RS	27 (13)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	12.0	3	1	1	CBLN732G3S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	12.0	3	1	1	CBLN732G5S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	15.0	3	1	1	CBLN739R3S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	15.0	3	1	1	CBLN739R5S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	240	18.0	3	1	1	CBLN747G3S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	18.0	3	1	1	CBLN747G5S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
2 1/2 inch NPT Screw Plug (FIREBAR)											
45 W/in²® Steel Tank 3-Alloy 800 Elements (7 W/cm²)	240	6.0	3	1	1	CBLNF12A27S	M	21 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	7.5	3	1	1	CBLNF14J27S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	9.0	3	1	1	CBLNF17A27S	M	23 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	12.0	3	1	1	CBLNF21J27S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	12.0	3	1	1	CBLNF21J28S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	15.0	3	1	1	CBLNF26J27S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	15.0	3	1	1	CBLNF26J28S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	18.0	3	1	1	CBLNF31J27S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	18.0	3	1	1	CBLNF31J28S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	24.0	3	1	1	CBLNF41A28S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	30.0	3	1	1	CBLNF50J28S	M	52 (24)	63 ³ / ₄ (1618)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)

1 1/4 inch NPT Screw Plug



2 1/2 inch NPT Screw Plug



RAPID SHIP

- RS - Next day shipment
- M - Manufacturing lead times up to 5 pieces

⑤ When steel vessel materials are used in this application, some rust may be present in the process media

⑧ Can be wired for 1-phase operation

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

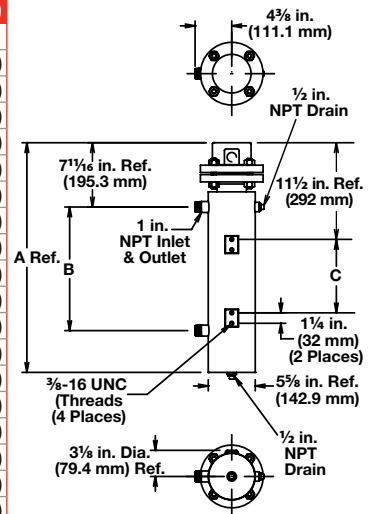


Application: Process Water®

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

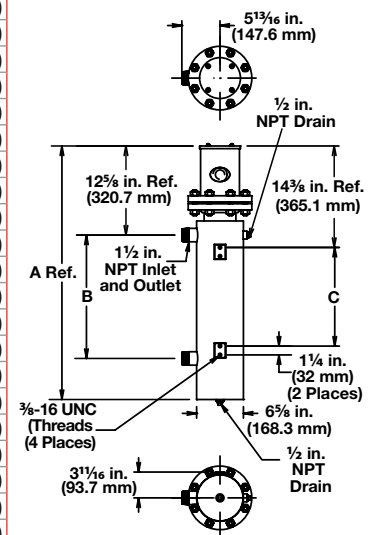
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
3 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank	240	6.0	1	1	CFMN718A10S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
3-Alloy 800 Elements (7.5 W/cm ²)	240	6.0	3	1	CFMN718A3S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	6.0	1	1	CFMN718A11S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	6.0	3	1	CFMN718A5S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	7.5	1	1	CFMN720J10S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	7.5	3	1	CFMN720J3S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	7.5	1	1	CFMN720J11S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	7.5	3	1	CFMN720J5S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	9.0	1	1	CFMN725J10S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	9.0	3	1	CFMN725J3S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	9.0	1	1	CFMN725J11S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	9.0	3	1	CFMN725J5S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	12.0	3	1	CFMN733A3S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	12.0	1	1	CFMN733A11S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	12.0	3	1	CFMN733A5S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	15.0	3	1	CFMN740J3S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	15.0	1	1	CFMN740J11S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	15.0	3	1	CFMN740J5S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	240	18.0	3	1	CFMN748A3S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	18.0	1	1	CFMN748A11S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	18.0	3	1	CFMN748A5S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)

3 inch - 150 lb ANSI Flange



Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
4 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank	240	9.0	1	1	CFON713J10S	M	122 (56)	39 (989)	20 ¹ / ₂ (521)	17 (432)
6-Alloy 800 Elements (7.5 W/cm ²)	240	9.0	3	1	CFON713J3S	M	122 (56)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	9.0	1	1	CFON713J11S	M	122 (56)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	9.0	3	1	CFON713J5S	M	122 (56)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	12.0	1	2	CFON718A10S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	12.0	3	1	CFON718A3S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	12.0	1	1	CFON718A11S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	12.0	3	1	CFON718A5S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	15.0	1	2	CFON720J10S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	15.0	3	1	CFON720J3S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	15.0	1	1	CFON720J11S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	15.0	3	1	CFON720J5S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	1	2	CFON725J10S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	3	1	CFON725J3S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	1	1	CFON725J11S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	3	1	CFON725J5S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	1	2	CFON733A10S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	24.0	3	2	CFON733A3S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	1	1	CFON733A11S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	3	1	CFON733A5S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	30.0	3	2	CFON740J3S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	30.0	1	2	CFON740J11S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	30.0	3	1	CFON740J5S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	36.0	3	2	CFON748A3S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	1	2	CFON748A11S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	3	1	CFON748A5S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)

4 inch - 150 lb ANSI Flange



RAPID SHIP

- RS - Next day shipment
- M - Manufacturing lead times up to 2 pieces

WATLOW®

⑤ When steel vessel materials are used in this application, some rust may be present in the process media

Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

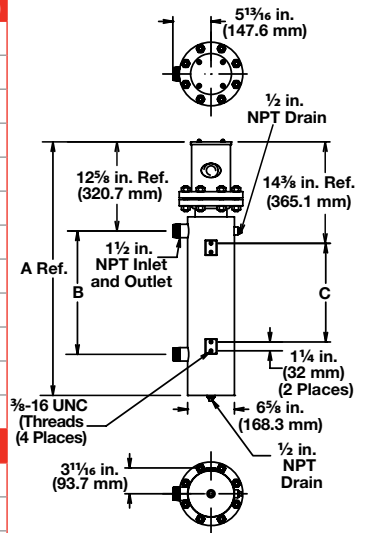


Application: Process Water®

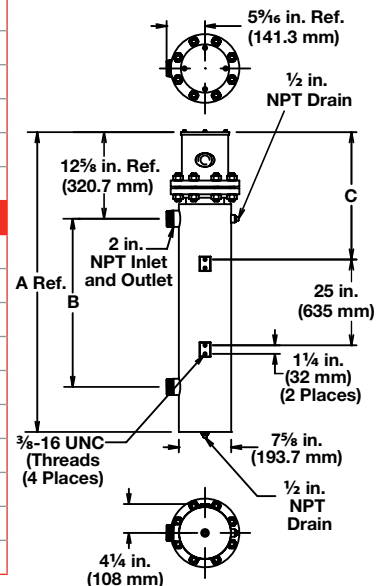
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
4 inch - 150 lb ANSI Flange (FIREBAR)										
45 W/in ² Steel Tank 6-Alloy 800 Elements (7 W/cm ²)	240	12.0	3	1	CFONF13G27S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	15.0	3	1	CFONF16A27S	M	128 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	3	1	CFONF18G27S	M	130 (59)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	3	2	CFONF22R27S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	24.0	3	1	CFONF22R28S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	30.0	3	2	CFONF27R27S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	30.0	3	1	CFONF27R28S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	36.0	3	2	CFONF32R27S	M	170 (78)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	36.0	3	1	CFONF32R28S	M	170 (78)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	48.0	3	2	CFONF42G28S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
480	60.0	3	2	CFONF51R28S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)	
5 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank 6-Alloy 800 Elements (7.5 W/cm ²)	240	24.0	1	3	CFNN733A10S	M	145 (66)	49 ¹ / ₄ (1249)	30 (762)	14 ⁷ / ₈ (377.8)
	240	24.0	3	2	CFNN733A3S	M	145 (66)	49 ¹ / ₄ (1249)	30 (762)	14 ⁷ / ₈ (377.8)
	480	24.0	1	2	CFNN733A11S	M	145 (66)	49 ¹ / ₄ (1249)	30 (762)	14 ⁷ / ₈ (377.8)
	480	24.0	3	1	CFNN733A5S	M	145 (66)	49 ¹ / ₄ (1249)	30 (762)	14 ⁷ / ₈ (377.8)
	240	30.0	3	2	CFNN740J3S	M	167 (76)	56 ¹ / ₄ (1427)	37 (940)	18 ⁵ / ₈ (473.1)
	480	30.0	1	2	CFNN740J11S	M	167 (76)	56 ¹ / ₄ (1427)	37 (940)	18 ⁵ / ₈ (473.1)
	480	30.0	3	1	CFNN740J5S	M	167 (76)	56 ¹ / ₄ (1427)	37 (940)	18 ⁵ / ₈ (473.1)
	240	36.0	3	2	CFNN748A3S	M	180 (82)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)
	480	36.0	1	2	CFNN748A11S	M	180 (82)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)
	480	36.0	3	1	CFNN748A5S	M	180 (82)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)
5 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank 9-Alloy 800 Elements (7.5 W/cm ²)	240	36.0	3	3	CFNN733A3XS	M	150 (68)	49 ¹ / ₄ (1249)	30 (762)	14 ⁷ / ₈ (377.8)
	480	36.0	1	3	CFNN733A11XS	M	150 (68)	49 ¹ / ₄ (1249)	30 (762)	14 ⁷ / ₈ (377.8)
	480	36.0	3	1	CFNN733A5XS	M	150 (68)	49 ¹ / ₄ (1249)	30 (762)	14 ⁷ / ₈ (377.8)
	240	45.0	3	3	CFNN740J3XS	M	173 (79)	56 ¹ / ₄ (1427)	37 (940)	18 ⁵ / ₈ (473.1)
	480	45.0	1	3	CFNN740J11XS	M	173 (79)	56 ¹ / ₄ (1427)	37 (940)	18 ⁵ / ₈ (473.1)
	480	45.0	3	3	CFNN740J5XS	M	173 (79)	56 ¹ / ₄ (1427)	37 (940)	18 ⁵ / ₈ (473.1)
	240	54.0	3	3	CFNN748A3XS	M	188 (86)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)
	480	54.0	1	3	CFNN748A11XS	M	188 (86)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)
	480	54.0	3	3	CFNN748A5XS	M	188 (86)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)

4 inch - 150 lb ANSI Flange



5 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

⑤ When steel vessel materials are used in this application, some rust may be present in the process media

Truck Shipment only

Circulation Heaters

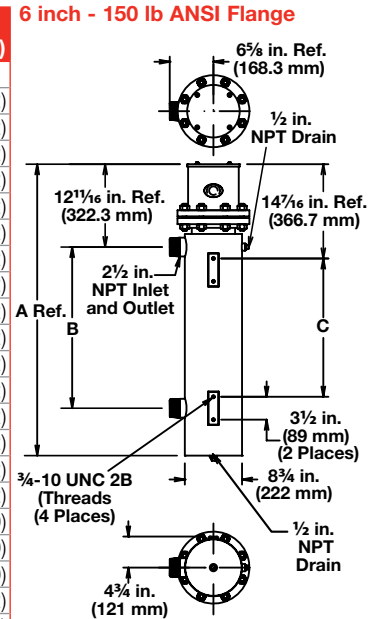
WATROD and FIREBAR Circulation Heaters



Application: Process Water[®]

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
6 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank	240	18.0	1	2	CFPN713G10S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
12-Alloy 800 Elements (7.5 W/cm ²)	240	18.0	3	1	CFPN713G3S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	1	1	CFPN713G11S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	3	1	CFPN713G5S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	1	3	CFPN717R10S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	3	2	CFPN717R3S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	24.0	1	2	CFPN717R11S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	24.0	3	1	CFPN717R5S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	30.0	1	3	CFPN720G10S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	30.0	3	2	CFPN720G3S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	30.0	1	2	CFPN720G11S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	30.0	3	1	CFPN720G5S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	36.0	1	4	CFPN725G10S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	36.0	3	2	CFPN725G3S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	36.0	1	2	CFPN725G11S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	36.0	3	1	CFPN725G5S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	48.0	3	4	CFPN732R3S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	48.0	1	3	CFPN732R11S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	48.0	3	2	CFPN732R5S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	60.0	3	4	CFPN740G3S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	60.0	1	3	CFPN740G11S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	60.0	3	2	CFPN740G5S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	72.0	3	4	CFPN747R3S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	72.0	3	2	CFPN747R5S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
6 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank	240	23.0	1	3	CFPN713G10XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
15-Alloy 800 Elements (7.5 W/cm ²)	240	23.0	3	5	CFPN713G3XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	23.0	1	1	CFPN713G11XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	23.0	3	1	CFPN713G5XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	30.0	1	3	CFPN717R10XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	30.0	3	5	CFPN717R3XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	30.0	1	3	CFPN717R11XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	30.0	3	1	CFPN717R5XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	38.0	1	5	CFPN720G10XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	38.0	3	5	CFPN720G3XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	38.0	1	3	CFPN720G11XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	38.0	3	1	CFPN720G5XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	45.0	1	5	CFPN725G10XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	45.0	3	5	CFPN725G3XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	45.0	1	3	CFPN725G11XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	45.0	3	5	CFPN725G5XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	60.0	3	5	CFPN732R3XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	60.0	1	3	CFPN732R11XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	60.0	3	5	CFPN732R5XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	75.0	3	5	CFPN740G3XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	75.0	1	5	CFPN740G11XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	75.0	3	5	CFPN740G5XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	90.0	3	5	CFPN747R3XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	90.0	3	5	CFPN747R5XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)



• M - Manufacturing lead times

■ Truck Shipment only

® When steel vessel materials are used in this application, some rust may be present in the process media

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

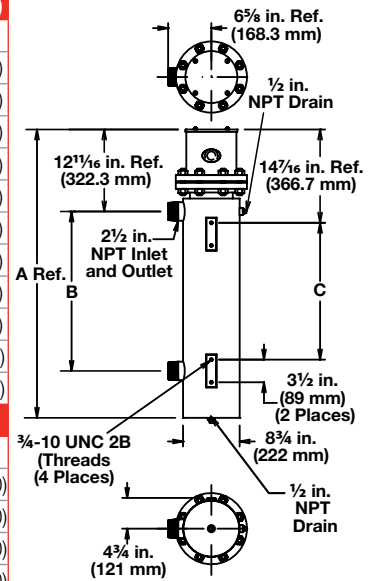


Application: Process Water®

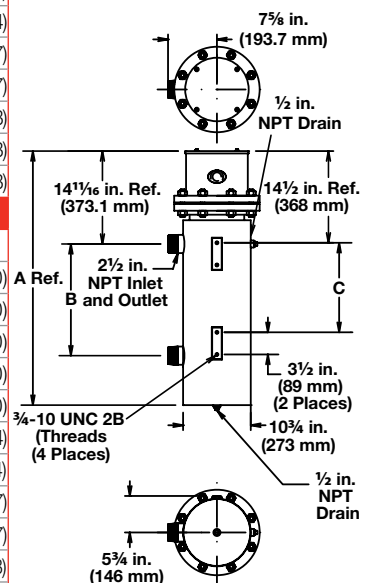
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
6 inch - 150 lb ANSI Flange (FIREBAR)										
45 W/in ² Steel Tank 15-Alloy 800 Elements (7 W/cm ²)	240	30.0	3	5	CFPNF13G27S	M	217 (99)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	37.5	3	5	CFPNF16A27S	M	220 (100)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	45.0	3	5	CFPNF18G27S	M	223 (102)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	60.0	3	5	CFPNF22R27S	M	226 (103)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	480	60.0	3	5	CFPNF22R28S	M	226 (103)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	75.0	3	5	CFPNF27R27S	M	232 (106)	51 (1294)	31 (787)	27 1/2 (699)
	480	75.0	3	5	CFPNF27R28S	M	232 (106)	51 (1294)	31 (787)	27 1/2 (699)
	240	90.0	3	5	CFPNF32R27S	M	236 (107)	51 (1294)	31 (787)	27 1/2 (699)
	480	90.0	3	5	CFPNF32R28S	M	236 (107)	51 (1294)	31 (787)	27 1/2 (699)
	480	120.0	3	5	CFPNF42G28S	M	304 (138)	72 (1827)	52 (1321)	48 1/2 (1232)
480	150.0	3	5	CFPNF51R28S	M	314 (143)	72 (1827)	52 (1321)	48 1/2 (1232)	
8 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank 18-Alloy 800 Elements (7.5 W/cm ²)	240	50.0	3	3	CFRN725N3S	M	350 (159)	55 1/4 (1402.0)	32 3/4 (830.0)	29 1/4 (741.0)
	480	50.0	1	3	CFRN725N11S	M	350 (159)	55 1/4 (1402.0)	32 3/4 (830.0)	29 1/4 (741.0)
	480	50.0	3	2	CFRN725N5S	M	350 (159)	55 1/4 (1402.0)	32 3/4 (830.0)	29 1/4 (741.0)
	240	75.0	3	6	CFRN735N3S	M	380 (173)	62 1/4 (1580.0)	39 3/4 (1008.0)	36 1/4 (919.0)
	480	75.0	3	2	CFRN735N5S	M	380 (173)	62 1/4 (1580.0)	39 3/4 (1008.0)	36 1/4 (919.0)
	240	100.0	3	6	CFRN744E3S	M	410 (186)	69 7/8 (1774.8)	47 3/8 (1203.3)	43 7/8 (1114.4)
	480	100.0	3	3	CFRN744E5S	M	410 (186)	69 7/8 (1774.8)	47 3/8 (1203.3)	43 7/8 (1114.4)
	240	125.0	3	6	CFRN754M3S	M	445 (202)	79 3/8 (2016.1)	56 7/8 (1444.6)	53 3/8 (1355.7)
	480	125.0	3	6	CFRN754M5S	M	445 (202)	79 3/8 (2016.1)	56 7/8 (1444.6)	53 3/8 (1355.7)
	480	150.0	3	6	CFRN763M5S	M	490 (223)	88 3/8 (2244.7)	65 7/8 (1673.2)	62 3/8 (1584.3)
480	175.0	3	6	CFRN773D5S	M	530 (241)	98 3/8 (2498.7)	75 7/8 (1927.2)	72 3/8 (1838.3)	
480	200.0	3	6	CFRN782M5S	M	560 (254)	98 3/8 (2498.7)	75 7/8 (1927.2)	72 3/8 (1838.3)	
8 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank 24-Alloy 800 Elements (7.5 W/cm ²)	240	67.0	3	4	CFRN726D3XS	M	358 (163)	55 1/4 (1402.0)	32 3/4 (830.0)	29 1/4 (741.0)
	480	67.0	1	3	CFRN726D11XS	M	358 (163)	55 1/4 (1402.0)	32 3/4 (830.0)	29 1/4 (741.0)
	480	67.0	3	2	CFRN726D5XS	M	358 (163)	55 1/4 (1402.0)	32 3/4 (830.0)	29 1/4 (741.0)
	240	100.0	3	8	CFRN736D3XS	M	392 (178)	62 1/4 (1580.0)	39 3/4 (1008.0)	36 1/4 (919.0)
	480	100.0	3	4	CFRN736D5XS	M	392 (178)	62 1/4 (1580.0)	39 3/4 (1008.0)	36 1/4 (919.0)
	240	133.0	3	8	CFRN744M3XS	M	425 (193)	69 7/8 (1774.8)	47 3/8 (1203.3)	43 7/8 (1114.4)
	480	133.0	3	4	CFRN744M5XS	M	425 (193)	69 7/8 (1774.8)	47 3/8 (1203.3)	43 7/8 (1114.4)
	240	167.0	3	8	CFRN754M3XS	M	463 (210)	79 3/8 (2016.1)	56 7/8 (1444.6)	53 3/8 (1355.7)
	480	167.0	3	8	CFRN754M5XS	M	463 (210)	79 3/8 (2016.1)	56 7/8 (1444.6)	53 3/8 (1355.7)
	480	200.0	3	8	CFRN763M5XS	M	511 (232)	88 3/8 (2244.7)	65 7/8 (1673.2)	62 3/8 (1584.3)
	480	233.0	3	8	CFRN773D5XS	M	554 (252)	98 3/8 (2498.7)	75 7/8 (1927.2)	72 3/8 (1838.3)
	480	267.0	3	8	CFRN782M5XS	M	587 (267)	98 3/8 (2498.7)	75 7/8 (1927.2)	72 3/8 (1838.3)

6 inch - 150 lb ANSI Flange



8 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

⑤ When steel vessel materials are used in this application, some rust may be present in the process media

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Process Water[®]

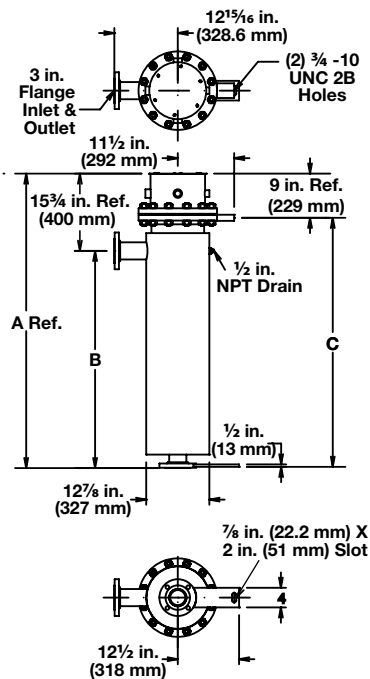
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
10 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank 27-Alloy 800 Elements (7.5 W/cm ²)	480	262.0	3	9	CFSN773E5S	M	600 (273)	106 ⁵ / ₈ (2708.3)	90 ⁷ / ₈ (2308.2)	97 ⁵ / ₁₆ (2471.7)
12 inch, 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank 36-Alloy 800 Elements (7.5 W/cm ²)	480	350.0	3	12	CFTN773C5S	M	650 (295)	106 ¹ / ₂ (2705)	90 ³ / ₈ (2295.5)	97 ¹ / ₈ (2467.0)
14 inch - 150 lb ANSI Flange (WATROD)										
48 W/in ² Steel Tank 45-Alloy 800 Elements (7.5 W/cm ²)	480	315.0	3	15	CFWN754J5S	M	600 (273)	83 ¹ / ₄ (2115)	67 (1700)	73 ¹¹ / ₁₆ (1871.7)
48 W/in ² Steel Tank 45-Alloy 800 Elements (7.5 W/cm ²)	480	375.0	3	15	CFWN763J5S	M	650 (295)	90 ³ / ₄ (2305)	74 ¹ / ₂ (1891)	81 ³ / ₁₆ (2062.2)

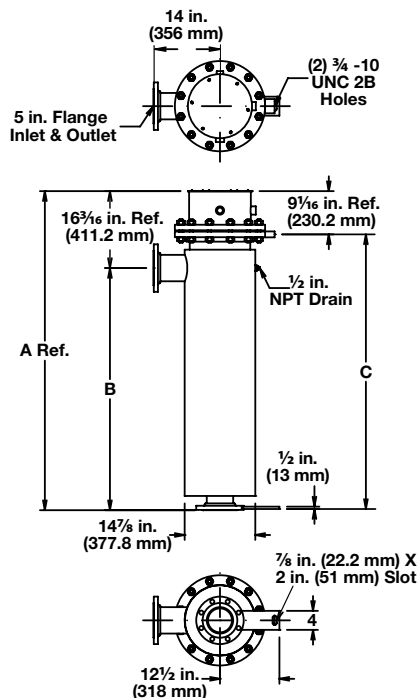
- M - Manufacturing lead times
 Truck Shipment only

- ⑤ When steel vessel materials are used in this application, some rust may be present in the process media
- ⑥ Can be wired for 1-phase operation

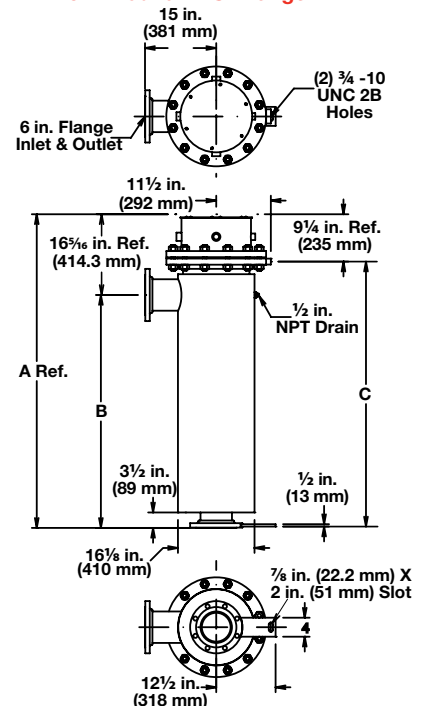
10 inch - 150 lb ANSI Flange



12 inch - 150 lb ANSI Flange



14 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

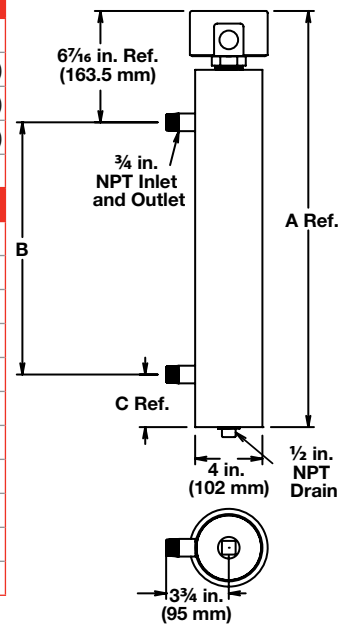


Application: Forced Air and Caustic Solutions

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
1 1/4 inch NPT Screw Plug (WATROD)										
23 W/in ² ④	120/240	1.0	1	1	CBEN13G6S	RS	21 (10)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
Steel Tank	120/240	1.5	1	1	CBEN19A6S	RS	29 (14)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
2-Alloy 800	120/240	2.0	1	1	CBEN24G6S	RS	29 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
Elements (3.6 W/cm ²)										
2 1/2 inch NPT Screw Plug (WATROD)										
23 W/in ² Steel Tank 3-Alloy 800 Elements (3.6 W/cm ²)	240	3.0	3	1	CBLNA17G3S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	3.0	3	1	CBLNA17G5S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	4.5	3	1	CBLNA24R3S	RS	27 (13)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	4.5	3	1	CBLNA24R5S	RS	27 (13)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	6.0	3	1	CBLNA32G3S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	6.0	3	1	CBLNA32G5S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	7.5	3	1	CBLNA39R3S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	7.5	3	1	CBLNA39R5S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	240	9.0	3	1	CBLNA47G3S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	9.0	3	1	CBLNA47G5S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)

1 1/4 inch NPT Screw Plug

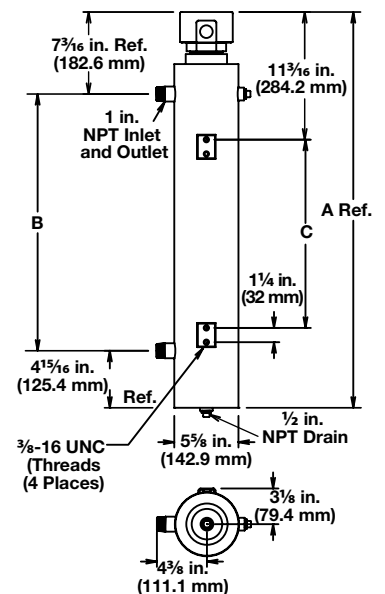


④ Wired for higher voltage

RAPID SHIP

- RS - Next day shipment up to 5 pieces

2 1/2 inch NPT Screw Plug



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

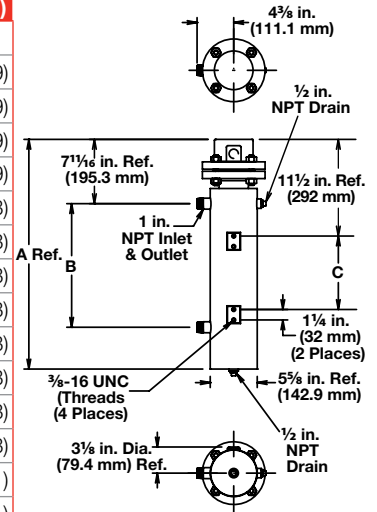


Application: Forced Air and Caustic Solutions

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
3 inch - 150 lb ANSI Flange (WATROD)										
23 W/in² Steel Tank 3-Alloy 800 Elements (3.6 W/cm²)	240	3.0	1	1	CFMNA18A10S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	3.0	3	1	CFMNA18A3S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	3.0	1	1	CFMNA18A11S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	3.0	3	1	CFMNA18A5S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	4.5	1	1	CFMNA25J10S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	4.5	3	1	CFMNA25J3S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	4.5	1	1	CFMNA25J11S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	4.5	3	1	CFMNA25J5S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	6.0	1	1	CFMNA33A10S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	6.0	3	1	CFMNA33A3S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	6.0	1	1	CFMNA33A11S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	6.0	3	1	CFMNA33A5S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	7.5	1	1	CFMNA40J10S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	240	7.5	3	1	CFMNA40J3S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	7.5	1	1	CFMNA40J11S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	7.5	3	1	CFMNA40J5S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	240	9.0	1	1	CFMNA48A10S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	240	9.0	3	1	CFMNA48A3S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
480	9.0	1	1	CFMNA48A11S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)	
480	9.0	3	1	CFMNA48A5S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)	

3 inch - 150 lb ANSI Flange



RAPID SHIP

- RS - Next day shipment up to 5 pieces
- M - Manufacturing lead times

Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

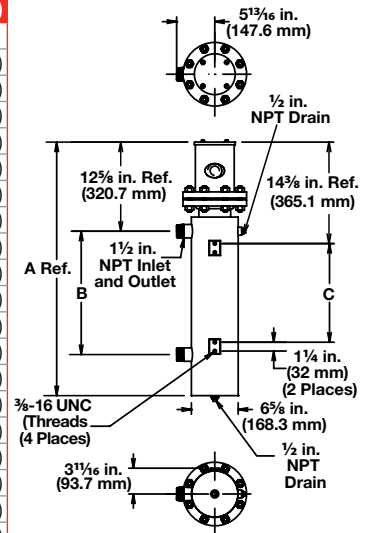


Application: Forced Air and Caustic Solutions

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

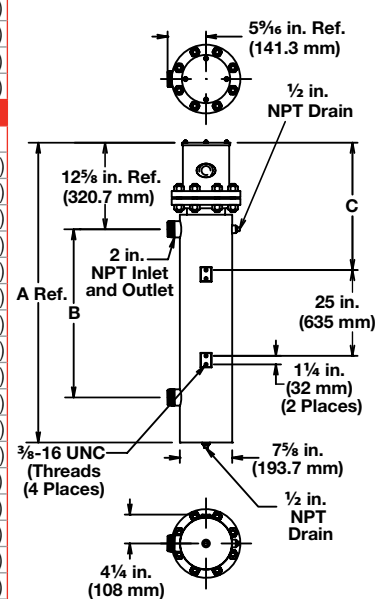
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
4 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² ⑥	240	6.0	1	1	CFONA18A10S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
Steel Tank	240	6.0	3	1	CFONA18A3S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
6-Alloy 800 Elements (3.6 W/cm ²)	480	6.0	1	1	CFONA18A11S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	6.0	3	1	CFONA18A5S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	9.0	1	1	CFONA25J10S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	9.0	3	1	CFONA25J3S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	9.0	1	1	CFONA25J11S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	9.0	3	1	CFONA25J5S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	12.0	1	2	CFONA33A10S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	12.0	3	1	CFONA33A3S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	12.0	1	1	CFONA33A11S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	12.0	3	1	CFONA33A5S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	15.0	1	2	CFONA40J10S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	15.0	3	1	CFONA40J3S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	15.0	1	1	CFONA40J11S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	15.0	3	1	CFONA40J5S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	18.0	1	2	CFONA48A10S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	18.0	3	1	CFONA48A3S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	18.0	1	1	CFONA48A11S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	18.0	3	1	CFONA48A5S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
240	25.0	3	2	CFONA64J3S	M	298 (136)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)	
480	25.0	1	2	CFONA64J11S	M	298 (136)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)	
480	25.0	3	1	CFONA64J5S	M	298 (136)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)	
240	30.0	3	2	CFONA77A3S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)	
480	30.0	1	2	CFONA77A11S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)	
480	30.0	3	1	CFONA77A5S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)	

4 inch - 150 lb ANSI Flange



Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
5 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² ⑥	240	9.0	1	1	CFNNA25J10S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762.0)	14 ⁷ / ₈ (377.8)
Steel Tank	240	9.0	3	1	CFNNA25J3S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762.0)	14 ⁷ / ₈ (377.8)
6-Alloy 800 Elements (3.6 W/cm ²)	480	9.0	1	1	CFNNA25J11S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762.0)	14 ⁷ / ₈ (377.8)
	480	9.0	3	1	CFNNA25J5S	M	140 (64)	49 ¹ / ₄ (1249.0)	30 (762.0)	14 ⁷ / ₈ (377.8)
	240	12.0	1	2	CFNNA33A10S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	12.0	3	1	CFNNA33A3S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	12.0	1	1	CFNNA33A11S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	12.0	3	1	CFNNA33A5S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	15.0	1	2	CFNNA40J10S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	15.0	3	1	CFNNA40J3S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	15.0	1	1	CFNNA40J11S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	15.0	3	1	CFNNA40J5S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	18.0	1	2	CFNNA48A10S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	240	18.0	3	1	CFNNA48A3S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	480	18.0	1	1	CFNNA48A11S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	480	18.0	3	1	CFNNA48A5S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	240	25.0	3	2	CFNNA64J3S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	25.0	1	2	CFNNA64J11S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	25.0	3	1	CFNNA64J5S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	240	30.0	3	2	CFNNA77A3S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)
480	30.0	1	2	CFNNA77A11S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)	
480	30.0	3	1	CFNNA77A5S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)	

5 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

⑥ Can be wired 3-phase wye to produce 1/3 of the rated kW and watt density

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

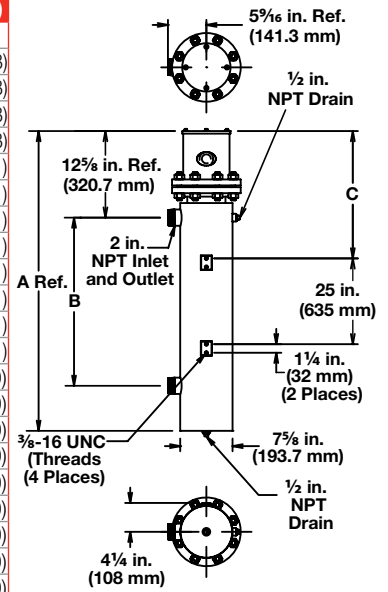


Application: Forced Air and Caustic Solutions

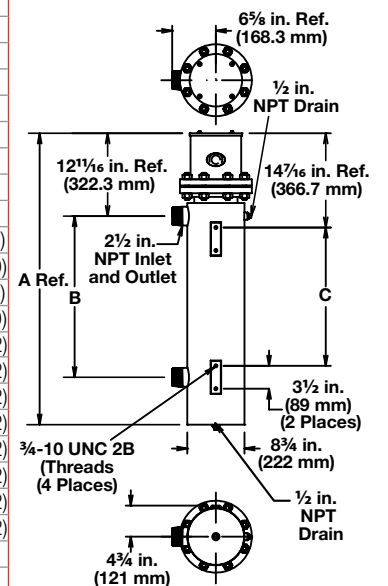
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
5 inch - 150 lb ANSI Flange (WATROD)										
23 W/in² ® Steel Tank	240	14.0	1	3	CFNNA25J10XS	M	145 (66)	49 1/4 (1249.0)	30 (762.0)	14 7/8 (377.8)
	240	14.0	3	1	CFNNA25J3XS	M	145 (66)	49 1/4 (1249.0)	30 (762.0)	14 7/8 (377.8)
9-Alloy 800 Elements (3.6 W/cm²)	480	14.0	1	1	CFNNA25J11XS	M	145 (66)	49 1/4 (1249.0)	30 (762.0)	14 7/8 (377.8)
	480	14.0	3	1	CFNNA25J5XS	M	145 (66)	49 1/4 (1249.0)	30 (762.0)	14 7/8 (377.8)
	240	18.0	1	3	CFNNA33A10XS	M	150 (68)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	240	18.0	3	1	CFNNA33A3XS	M	150 (68)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	480	18.0	1	1	CFNNA33A11XS	M	150 (68)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	480	18.0	3	1	CFNNA33A5XS	M	150 (68)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	240	23.0	1	3	CFNNA40J10XS	M	174 (79)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	240	23.0	3	3	CFNNA40J3XS	M	174 (79)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	480	23.0	1	1	CFNNA40J11XS	M	174 (79)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	480	23.0	3	1	CFNNA40J5XS	M	174 (79)	56 1/4 (1427.0)	37 (940.0)	18 5/8 (473.1)
	240	27.0	1	3	CFNNA48A10XS	M	189 (86)	67 3/4 (1719.0)	48 1/2 (1232.0)	25 (633.0)
	240	27.0	3	3	CFNNA48A3XS	M	189 (86)	67 3/4 (1719.0)	48 1/2 (1232.0)	25 (633.0)
	480	27.0	1	3	CFNNA48A11XS	M	189 (86)	67 3/4 (1719.0)	48 1/2 (1232.0)	25 (633.0)
	480	27.0	3	1	CFNNA48A5XS	M	189 (86)	67 3/4 (1719.0)	48 1/2 (1232.0)	25 (633.0)
	240	38.0	3	3	CFNNA64J3XS	M	207 (94)	81 1/8 (2060.6)	61 7/8 (1571.6)	25 (633.0)
	480	38.0	1	3	CFNNA64J11XS	M	207 (94)	81 1/8 (2060.6)	61 7/8 (1571.6)	25 (633.0)
	480	38.0	3	1	CFNNA64J5XS	M	207 (94)	81 1/8 (2060.6)	61 7/8 (1571.6)	25 (633.0)
	240	45.0	3	3	CFNNA77A3XS	M	233 (106)	94 1/8 (2389.0)	75 (1902.0)	25 (633.0)
	480	45.0	1	3	CFNNA77A11XS	M	233 (106)	94 1/8 (2389.0)	75 (1902.0)	25 (633.0)
	480	45.0	3	3	CFNNA77A5XS	M	233 (106)	94 1/8 (2389.0)	75 (1902.0)	25 (633.0)
6 inch - 150 lb ANSI Flange (WATROD)										
23 W/in² ® Steel Tank	240	12.0	1	2	CFPNA17R10S	M	214 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	12.0	3	1	CFPNA17R3S	M	214 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)
12-Alloy 800 Elements (3.6 W/cm²)	480	12.0	1	1	CFPNA17R11S	M	214 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	480	12.0	3	1	CFPNA17R5S	M	214 (97)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	18.0	1	2	CFPNA25G10S	M	222 (101)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	18.0	3	1	CFPNA25G3S	M	222 (101)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	480	18.0	1	1	CFPNA25G11S	M	222 (101)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	480	18.0	3	1	CFPNA25G5S	M	222 (101)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	24.0	1	3	CFPNA32R10S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)
	240	24.0	3	2	CFPNA32R3S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)
	480	24.0	1	2	CFPNA32R11S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)
	480	24.0	3	1	CFPNA32R5S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)
	240	30.0	1	3	CFPNA40G10S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	30.0	3	2	CFPNA40G3S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	30.0	1	2	CFPNA40G11S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	30.0	3	1	CFPNA40G5S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	36.0	1	4	CFPNA47R10S	M	298 (136)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	36.0	3	2	CFPNA47R3S	M	298 (136)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	36.0	1	2	CFPNA47R11S	M	298 (136)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	36.0	3	1	CFPNA47R5S	M	298 (136)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	50.0	3	4	CFPNA64G3S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)
	480	50.0	1	3	CFPNA64G11S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)
	480	50.0	3	2	CFPNA64G5S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)
	240	60.0	3	4	CFPNA76R3S	M	368 (167)	93 (2361)	73 (1854)	66 (1676)
	480	60.0	1	3	CFPNA76R11S	M	368 (167)	93 (2361)	73 (1854)	66 (1676)
	480	60.0	3	2	CFPNA76R5S	M	368 (167)	93 (2361)	73 (1854)	66 (1676)

5 inch - 150 lb ANSI Flange



6 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

® Can be wired 3-phase wye to produce 1/3 of the rated kW and watt density

Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

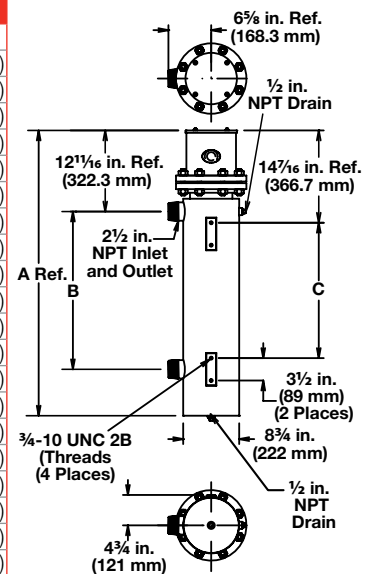


Application: Forced Air and Caustic Solutions

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

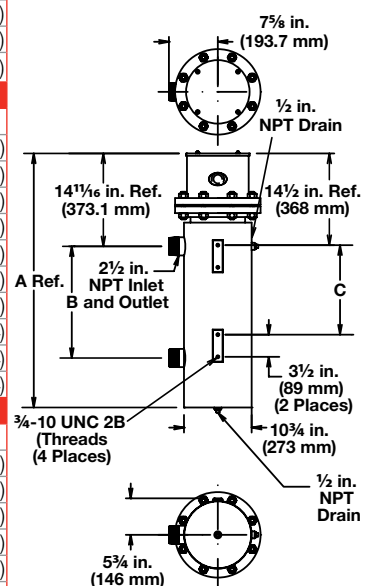
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
6 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	240	15.0	1	3	CFPNA17R10XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
15-Alloy 800 Elements (3.6 W/cm ²)	480	15.0	1	1	CFPNA17R3XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	15.0	3	1	CFPNA17R11XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	15.0	3	1	CFPNA17R5XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	23.0	1	3	CFPNA25G10XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	23.0	3	5	CFPNA25G3XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	23.0	1	1	CFPNA25G11XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	23.0	3	1	CFPNA25G5XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	30.0	1	3	CFPNA32R10XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	30.0	3	5	CFPNA32R3XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	30.0	1	3	CFPNA32R11XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	30.0	3	1	CFPNA32R5XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	38.0	1	5	CFPNA40G10XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	38.0	3	5	CFPNA40G3XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	38.0	1	3	CFPNA40G11XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	38.0	3	1	CFPNA40G5XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	45.0	1	5	CFPNA47R10XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	45.0	3	5	CFPNA47R3XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	45.0	1	3	CFPNA47R11XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	45.0	3	5	CFPNA47R5XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	63.0	3	5	CFPNA64G3XS	M	370 (168)	93 (2361)	73 (1854)	66 (1676)
	480	63.0	1	3	CFPNA64G11XS	M	370 (168)	93 (2361)	73 (1854)	66 (1676)
	480	63.0	3	5	CFPNA64G5XS	M	370 (168)	93 (2361)	73 (1854)	66 (1676)
	240	75.0	3	5	CFPNA76R3XS	M	381 (173)	93 (2361)	73 (1854)	66 (1676)
	480	75.0	1	5	CFPNA76R11XS	M	381 (173)	93 (2361)	73 (1854)	66 (1676)
	480	75.0	3	5	CFPNA76R5XS	M	381 (173)	93 (2361)	73 (1854)	66 (1676)

6 inch - 150 lb ANSI Flange



8 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	240	30.0	1	3	CFRNA32N10S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
18-Alloy 800 Elements (3.6 W/cm ²)	480	30.0	1	2	CFRNA32N3S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	30.0	1	2	CFRNA32N11S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	30.0	3	1	CFRNA32N5S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	40.0	3	3	CFRNA43E3S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	40.0	1	2	CFRNA43E11S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	40.0	3	3	CFRNA43E5S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	50.0	3	3	CFRNA51M3S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	50.0	1	3	CFRNA51M11S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	50.0	3	2	CFRNA51M5S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)

8 inch - 150 lb ANSI Flange



8 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	240	40.0	1	4	CFRNA33D10XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
24-Alloy 800 Elements (3.6 W/cm ²)	480	40.0	1	2	CFRNA33D3XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	40.0	1	2	CFRNA33D11XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	40.0	3	2	CFRNA33D5XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	53.0	3	4	CFRNA43M3XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	53.0	1	3	CFRNA43M11XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	53.0	3	2	CFRNA43M5XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	67.0	3	4	CFRNA51M3XS	M	457 (207)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	67.0	1	3	CFRNA51M11XS	M	457 (207)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	67.0	3	2	CFRNA51M5XS	M	457 (207)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)

• M - Manufacturing lead times

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Forced Air and Caustic Solutions

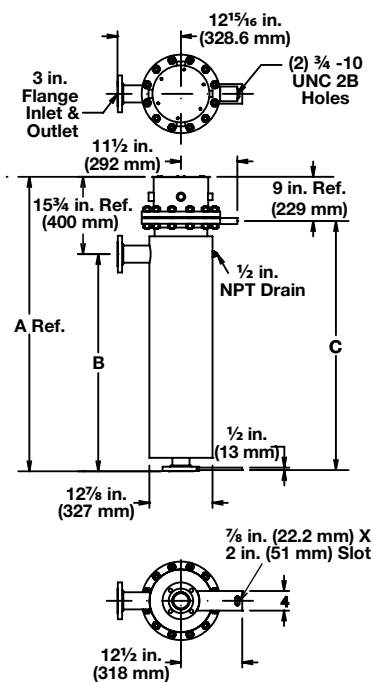
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
10 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank 27-Alloy 800 Elements (3.6 W/cm ²)	240	60.0	3	3	CFSNA43N3S	M	515 (234)	76 ⁵ / ₈ (1946.3)	60 ⁷ / ₈ (1546.2)	67 ⁵ / ₁₆ (1709.7)
	480	60.0	3	3	CFSNA43N5S	M	515 (234)	76 ⁵ / ₈ (1946.3)	60 ⁷ / ₈ (1546.2)	67 ⁵ / ₁₆ (1709.7)
	240	75.0	3	9	CFSNA51N3S	M	530 (241)	84 ¹ / ₈ (2136.8)	68 ³ / ₈ (1736.2)	74 ¹³ / ₁₆ (1900.2)
	480	75.0	3	3	CFSNA51N5S	M	530 (241)	84 ¹ / ₈ (2136.8)	68 ³ / ₈ (1736.2)	74 ¹³ / ₁₆ (1900.2)
12 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank 36-Alloy 800 Elements (3.6 W/cm ²)	480	80.0	3	3	CFTNA43L5S	M	565 (257)	76 ⁷ / ₈ (1952.6)	60 ³ / ₄ (1541)	67 ¹ / ₂ (1714.0)
	480	100.0	3	3	CFTNA51L5S	M	585 (266)	84 ³ / ₈ (2143.1)	68 ¹ / ₄ (1732)	75 (1905.0)
14 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank 45-Alloy 800 Elements (3.6 W/cm ²)	480	100.0	3	3	CFWNA43J5S	M	570 (259)	75 ³ / ₄ (1924)	59 ¹ / ₂ (1510)	66 ³ / ₁₆ (1681.2)
	480	125.0	3	5	CFWNA51J5S	M	590 (268)	83 ¹ / ₄ (2115)	67 (1700)	73 ¹¹ / ₁₆ (1871.7)

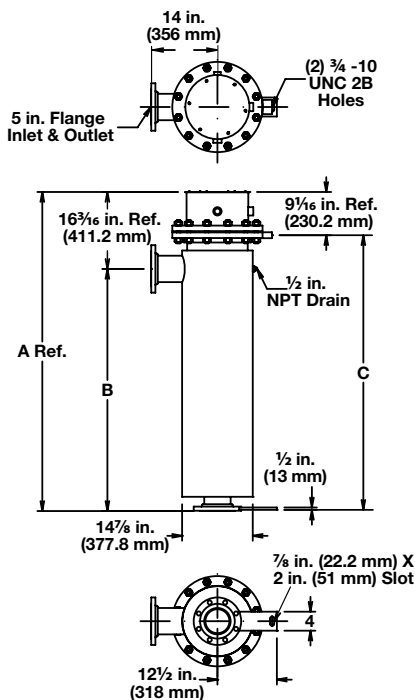
• M - Manufacturing lead times

Truck Shipment only

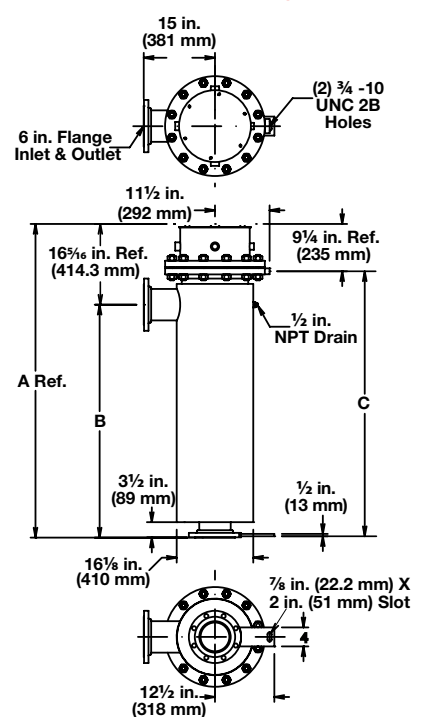
10 inch - 150 lb ANSI Flange



12 inch - 150 lb ANSI Flange



14 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

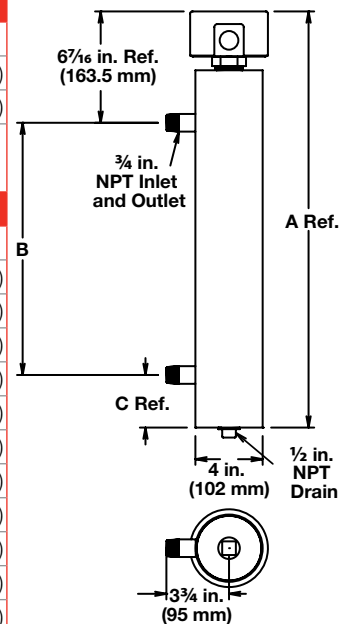


Application: Lightweight Oils and Heat Transfer Oils

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
1 1/4 inch NPT Screw Plug (WATROD)										
23 W/in² Steel Tank 2-Steel Element (3.6 W/cm²)	120/240	1.5	1	1	CBES19G6S	RS	29 (14)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	120/240	2.0	1	1	CBES25G6S	RS	29 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 (76.0)
1 1/4 inch NPT Screw Plug (FIREBAR)										
30 W/in² Steel Tank 1-Alloy 800 Element (4.7 W/cm²)	240	1.7	3	1	CBDNF16G12S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	480	1.7	3	1	CBDNF16G13S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	2.2	3	1	CBDNF19G12S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	480	2.2	3	1	CBDNF19G13S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	2.8	3	1	CBDNF24L12S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	480	2.8	3	1	CBDNF24L13S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	3.5	3	1	CBDNF29R12S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	3.5	3	1	CBDNF29R13S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	4.3	3	1	CBDNF34R12S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	4.3	3	1	CBDNF34R13S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	5.7	3	1	CBDNF45G12S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	5.7	3	1	CBDNF45G13S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	240	7.2	3	1	CBDNF55R12S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	7.2	3	1	CBDNF55R13S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
1 1/4 inch NPT Screw Plug (FIREBAR)										
23 W/in² Steel Tank 1-Alloy 800 Element (3.6 W/cm²)	240	1.25	3	1	CBDNF16G20S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	1.65	3	1	CBDNF19G20S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	2.15	3	1	CBDNF24L20S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	480	2.15	3	1	CBDNF24L19S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	2.65	3	1	CBDNF29R20S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	2.65	3	1	CBDNF29R19S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	3.20	3	1	CBDNF34R20S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	3.20	3	1	CBDNF34R19S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	4.25	3	1	CBDNF45G20S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	4.25	3	1	CBDNF45G19S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	240	5.40	3	1	CBDNF55R20S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	5.40	3	1	CBDNF55R19S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)

1 1/4 inch NPT Screw Plug



RAPID SHIP

- **RS** - Next day shipment up to 5 pieces
- **M** - Manufacturing lead times

④ Wired for higher voltage

Circulation Heaters

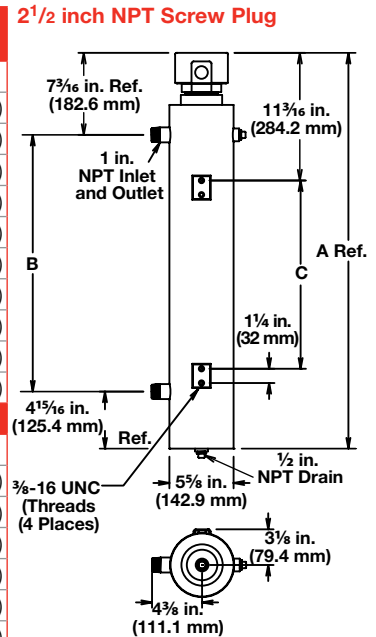
WATROD and FIREBAR Circulation Heaters



Application: Lightweight Oils and Heat Transfer Oils

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)	
2 1/2 inch NPT Screw Plug (WATROD)											
23 W/in² Steel Tank 3-Steel (3.6 W/cm²)	240	3.0	3	1	CBLS717E3S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	480	3.0	3	1	CBLS717E5S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	240	4.5	3	1	CBLS724N3S	RS	27 (13)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	480	4.5	3	1	CBLS724N5S	RS	27 (13)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	240	6.0	3	1	CBLS732E3S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	480	6.0	3	1	CBLS732E5S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	240	7.5	3	1	CBLS739N3S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
	480	7.5	3	1	CBLS739N5S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
	240	9.0	3	1	CBLS747E3S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
480	9.0	3	1	CBLS747E5S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)		
2 1/2 inch NPT Screw Plug (FIREBAR)											
30 W/in² ③ Steel Tank 3-Alloy 800 Elements (4.7 W/cm²)	240	5.0	3	1	CBLNF15C12S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	480	5.0	3	1	CBLNF15C13S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	240	6.5	3	1	CBLNF18C12S	M	23 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	480	6.5	3	1	CBLNF18C13S	M	23 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	240	8.5	3	1	CBLNF23C12S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	480	8.5	3	1	CBLNF23C13S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	240	10.5	3	1	CBLNF28L12S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	480	10.5	3	1	CBLNF28L13S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	240	12.8	3	1	CBLNF33L12S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	480	12.8	3	1	CBLNF33L13S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	240	17.0	3	1	CBLNF44C12S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
	480	17.0	3	1	CBLNF44C13S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
	480	21.5	3	1	CBLNF54L13S	M	52 (24)	63 ³ / ₄ (1618)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)	
	2 1/2 inch NPT Screw Plug (FIREBAR)										
	23 W/in² ⑧ Steel Tank 3-Alloy 800 Elements (3.6 W/cm²)	240	3.80	3	1	CBLNF15C20S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
240		4.90	3	1	CBLNF18C20S	M	23 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
240		6.40	3	1	CBLNF23C20S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
480		6.40	3	1	CBLNF23C19S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
240		7.90	3	1	CBLNF28L20S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
480		7.90	3	1	CBLNF28L19S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
240		9.60	3	1	CBLNF33L20S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
480		9.60	3	1	CBLNF33L19S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
240		12.80	3	1	CBLNF44C20S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
480		12.80	3	1	CBLNF44C19S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
240		16.10	3	1	CBLNF54L20S	M	52 (24)	63 ³ / ₄ (1618)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)	
480		16.10	3	1	CBLNF54L19S	M	52 (24)	63 ³ / ₄ (1618)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)	



RAPID SHIP

- **RS** - Next day shipment up to 5 pieces
- **M** - Manufacturing lead times

- ③ Wired for 3-phase operation only
- ⑧ Can be wired for 1-phase operation

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

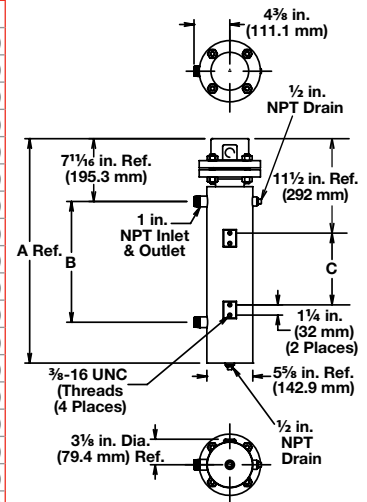


Application: Lightweight Oils and Heat Transfer Oils

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

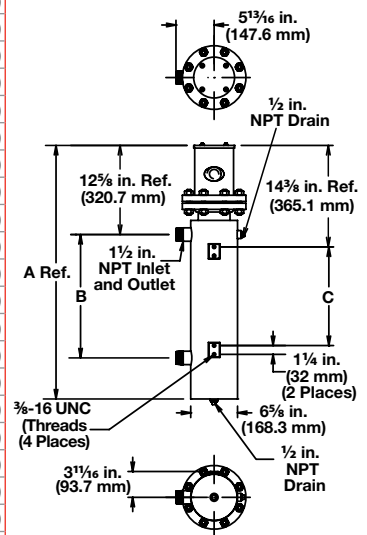
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
3 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	240	3.0	1	1	CFMS718A10S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
3-Steel Elements (3.6 W/cm ²)	240	3.0	3	1	CFMS718A3S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	3.0	1	1	CFMS718A11S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	3.0	3	1	CFMS718A5S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	4.5	1	1	CFMS725J10S	M	78 (36)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	4.5	3	1	CFMS725J3S	M	78 (36)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	4.5	1	1	CFMS725J11S	M	78 (36)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	4.5	3	1	CFMS725J5S	M	78 (36)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	6.0	1	2	CFMS733A10S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	6.0	3	1	CFMS733A3S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	6.0	1	1	CFMS733A11S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	6.0	3	1	CFMS733A5S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	7.5	1	2	CFMS740J10S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	240	7.5	3	1	CFMS740J3S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	7.5	1	1	CFMS740J11S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	7.5	3	1	CFMS740J5S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	240	9.0	1	2	CFMS748A10S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	240	9.0	3	1	CFMS748A3S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	9.0	1	1	CFMS748A11S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	9.0	3	1	CFMS748A5S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)

3 inch - 150 lb ANSI Flange



4 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	240	6.0	1	1	CFOS718A10S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
6-Steel Elements (3.6 W/cm ²)	240	6.0	3	1	CFOS718A3S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	6.0	1	1	CFOS718A11S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	6.0	3	1	CFOS718A5S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	9.0	1	1	CFOS725J10S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	9.0	3	1	CFOS725J3S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	9.0	1	1	CFOS725J11S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	9.0	3	1	CFOS725J5S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	12.0	1	2	CFOS733A10S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	12.0	3	1	CFOS733A3S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	12.0	1	1	CFOS733A11S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	12.0	3	1	CFOS733A5S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	15.0	1	2	CFOS740J10S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	15.0	3	1	CFOS740J3S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	15.0	1	1	CFOS740J11S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	15.0	3	1	CFOS740J5S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	18.0	1	2	CFOS748A10S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	18.0	3	1	CFOS748A3S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	18.0	1	1	CFOS748A11S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	18.0	3	1	CFOS748A5S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	25.0	3	2	CFOS764J3S	M	298 (136)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
	480	25.0	1	2	CFOS764J11S	M	298 (136)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
	480	25.0	3	1	CFOS764J5S	M	298 (136)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
	240	30.0	3	2	CFOS777A3S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
	480	30.0	1	2	CFOS777A11S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
	480	30.0	3	1	CFOS777A5S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)

4 inch - 150 lb ANSI Flange



- RS - Next day shipment up to 5 pieces
- M - Manufacturing lead times

Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

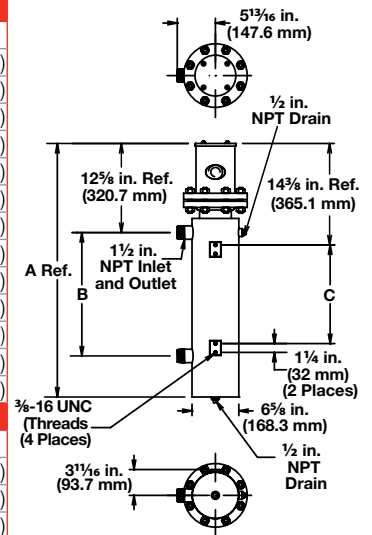


Application: Lightweight Oils and Heat Transfer Oils

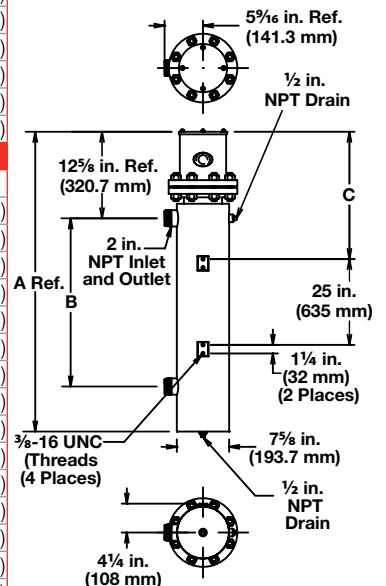
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
4 inch - 150 lb ANSI Flange (FIREBAR)										
30 W/in² Steel Tank 6-Alloy 800 Elements (4.7 W/cm²)	240	10.0	3	1	CFONF16J12S	M	128 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	10.0	3	1	CFONF16J13S	M	128 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	13.0	3	1	CFONF19J12S	M	130 (59)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	13.0	3	1	CFONF19J13S	M	130 (59)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	17.0	3	1	CFONF24J12S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	17.0	3	1	CFONF24J13S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	21.0	3	2	CFONF30A12S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	21.0	3	1	CFONF30A13S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	25.5	3	2	CFONF35A12S	M	170 (78)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	25.5	3	1	CFONF35A13S	M	170 (78)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	34.0	3	2	CFONF45J12S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	34.0	3	1	CFONF45J13S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	43.0	3	2	CFONF56A13S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
4 inch - 150 lb ANSI Flange (FIREBAR)										
23 W/in² Steel Tank 6-Alloy 800 Elements (3.6 W/cm²)	240	7.5	3	1	CFONF16J20S	M	128 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	10.0	3	1	CFONF19J20S	M	130 (59)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	12.8	3	1	CFONF24J20S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	12.8	3	1	CFONF24J19S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	15.8	3	1	CFONF30A20S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	15.8	3	1	CFONF30A19S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	19.0	3	1	CFONF35A20S	M	170 (78)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	19.0	3	1	CFONF35A19S	M	170 (78)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	25.0	3	2	CFONF45J20S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	25.0	3	1	CFONF45J19S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	32.3	3	2	CFONF56A20S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	32.3	3	1	CFONF56A19S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
5 inch - 150 lb ANSI Flange (WATROD)										
23 W/in² Steel Tank 6-Steel Elements (3.6 W/cm²)	240	12.00	1	2	CFNS733A10S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	12.00	3	1	CFNS733A3S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	12.00	1	1	CFNS733A11S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	12.00	3	1	CFNS733A5S	M	145 (66)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	15.00	1	2	CFNS740J10S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	15.00	3	1	CFNS740J3S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	15.00	1	1	CFNS740J11S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	480	15.00	3	1	CFNS740J5S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (473.1)
	240	18.00	1	2	CFNS748A10S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	18 ⁵ / ₈ (473.1)
	240	18.00	3	1	CFNS748A3S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	18 ⁵ / ₈ (473.1)
	480	18.00	1	1	CFNS748A11S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	18 ⁵ / ₈ (473.1)
	480	18.00	3	1	CFNS748A5S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	18 ⁵ / ₈ (473.1)
	240	25.00	3	2	CFNS764J3S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	25.00	1	2	CFNS764J11S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	25.00	3	1	CFNS764J5S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	240	30.00	3	2	CFNS777A3S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)
	480	30.00	1	2	CFNS777A11S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)
	480	30.00	3	1	CFNS777A5S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)

4 inch - 150 lb ANSI Flange



5 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

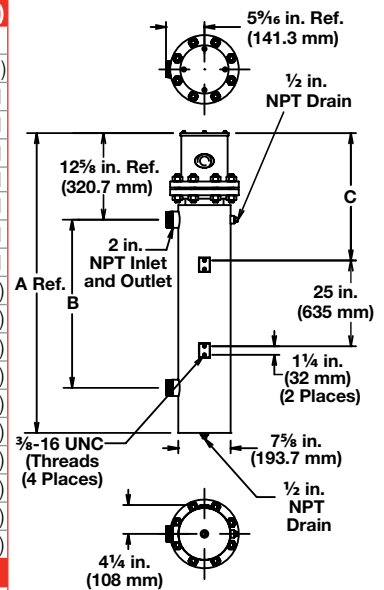


Application: Lightweight Oils and Heat Transfer Oils

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

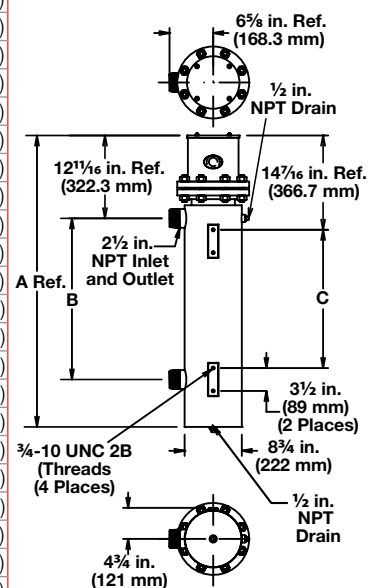
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
5 inch - 150 lb ANSI Flange (WATROD)										
23 W/in² Steel Tank 9-Steel Elements (3.6 W/cm²)	240	18.0	1	3	CFNS733A10XS	M	150 (68)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	240	18.0	3	1	CFNS733A3XS	M	150 (68)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	480	18.0	1	1	CFNS733A11XS	M	150 (68)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	480	18.0	3	1	CFNS733A5XS	M	150 (68)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	240	23.0	1	3	CFNS740J10XS	M	173 (79)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	240	23.0	3	3	CFNS740J3XS	M	173 (79)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	480	23.0	1	1	CFNS740J11XS	M	173 (79)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	480	23.0	3	1	CFNS740J5XS	M	173 (79)	56 ¹ / ₄ (1427.0)	37 (940.0)	18 ⁵ / ₈ (471.1)
	240	27.0	1	3	CFNS748A10XS	M	188 (86)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	240	27.0	3	3	CFNS748A3XS	M	188 (86)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	480	27.0	1	3	CFNS748A11XS	M	188 (86)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	480	27.0	3	1	CFNS748A5XS	M	188 (86)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	240	38.0	3	3	CFNS764J3XS	M	206 (94)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	38.0	1	3	CFNS764J11XS	M	206 (94)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	38.0	3	1	CFNS764J5XS	M	206 (94)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
240	45.0	3	3	CFNS777A3XS	M	233 (106)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)	
480	45.0	1	3	CFNS777A11XS	M	233 (106)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)	
480	45.0	3	3	CFNS777A5XS	M	233 (106)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)	

5 inch - 150 lb ANSI Flange



6 inch - 150 lb ANSI Flange (WATROD)										
23 W/in² Steel Tank 12-Steel Elements (3.6 W/cm²)	240	12.0	1	2	CFPS717R10S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	12.0	3	1	CFPS717R3S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	12.0	1	1	CFPS717R11S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	12.0	3	1	CFPS717R5S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	1	2	CFPS725G10S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	18.0	3	1	CFPS725G3S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	1	1	CFPS725G11S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	18.0	3	1	CFPS725G5S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	1	3	CFPS732R10S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	24.0	3	2	CFPS732R3S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	1	2	CFPS732R11S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	24.0	3	1	CFPS732R5S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	30.0	1	3	CFPS740G10S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	30.0	3	2	CFPS740G3S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	30.0	1	2	CFPS740G11S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	30.0	3	1	CFPS740G5S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	36.0	1	4	CFPS747R10S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	36.0	3	2	CFPS747R3S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	1	2	CFPS747R11S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	36.0	3	1	CFPS747R5S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	50.0	3	4	CFPS764G3S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)
480	50.0	1	3	CFPS764G11S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)	
480	50.0	3	2	CFPS764G5S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)	
240	60.0	3	4	CFPS776R3S	M	368 (167)	93 (2361)	73 (1854)	66 (1676)	
480	60.0	1	3	CFPS776R11S	M	368 (167)	93 (2361)	73 (1854)	66 (1676)	
480	60.0	3	2	CFPS776R5S	M	368 (167)	93 (2361)	73 (1854)	66 (1676)	

6 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

■ Truck Shipment only

Circulation Heaters

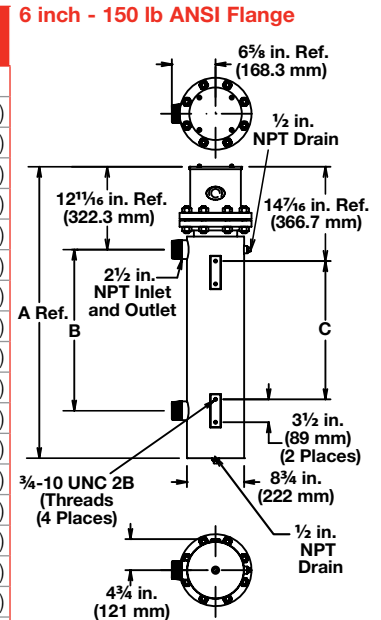
WATROD and FIREBAR Circulation Heaters



Application: Lightweight Oils and Heat Transfer Oils

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)		
6 inch - 150 lb ANSI Flange (WATROD)												
23 W/in² Steel Tank 15-Steel Elements (3.6 W/cm²)	240	15.0	1	3	CFPS717R10XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	240	15.0	3	1	CFPS717R3XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	480	15.0	1	1	CFPS717R11XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	480	15.0	3	1	CFPS717R5XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	240	23.0	1	3	CFPS725G10XS	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	240	23.0	3	5	CFPS725G3XS	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	480	23.0	1	1	CFPS725G11XS	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	480	23.0	3	1	CFPS725G5XS	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
	240	30.0	1	3	CFPS732R10XS	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
	240	30.0	3	5	CFPS732R3XS	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
	480	30.0	1	3	CFPS732R11XS	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
	480	30.0	3	1	CFPS732R5XS	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
	240	38.0	1	5	CFPS740G10XS	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	240	38.0	3	5	CFPS740G3XS	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	480	38.0	1	3	CFPS740G11XS	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	480	38.0	3	1	CFPS740G5XS	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	240	45.0	1	5	CFPS747R10XS	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	240	45.0	3	5	CFPS747R3XS	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	480	45.0	1	3	CFPS747R11XS	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	480	45.0	3	5	CFPS747R5XS	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
	240	63.0	3	5	CFPS764G3XS	M	360 (164)	93 (2361)	73 (1854)	66 (1676)		
	480	63.0	1	3	CFPS764G11XS	M	360 (164)	93 (2361)	73 (1854)	66 (1676)		
	480	63.0	3	5	CFPS764G5XS	M	360 (164)	93 (2361)	73 (1854)	66 (1676)		
	240	75.0	3	5	CFPS776R3XS	M	368 (167)	93 (2361)	73 (1854)	66 (1676)		
	480	75.0	1	5	CFPS776R11XS	M	368 (167)	93 (2361)	73 (1854)	66 (1676)		
	480	75.0	3	5	CFPS776R5XS	M	368 (167)	93 (2361)	73 (1854)	66 (1676)		
	6 inch - 150 lb ANSI Flange (FIREBAR)											
	30 W/in² Steel Tank 15-Alloy 800 Elements (4.7 W/cm²)	240	25.0	3	5	CFPNF16J12S	M	220 (100)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
480		25.0	3	5	CFPNF16J13S	M	220 (100)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
240		32.0	3	5	CFPNF19J12S	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
480		32.0	3	5	CFPNF19J13S	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
240		42.0	3	5	CFPNF24J12S	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
480		42.0	3	5	CFPNF24J13S	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)		
240		52.0	3	5	CFPNF30A12S	M	232 (106)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
480		52.0	3	5	CFPNF30A13S	M	232 (106)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
240		64.0	3	5	CFPNF35A12S	M	236 (107)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
480		64.0	3	5	CFPNF35A13S	M	236 (107)	51 (1294)	31 (787)	27 ¹ / ₂ (699)		
240		85.0	3	5	CFPNF45J12S	M	304 (138)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
480		85.0	3	5	CFPNF45J13S	M	304 (138)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		
480		110.0	3	5	CFPNF56A13S	M	314 (143)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)		



• M - Manufacturing lead times

③ Wired for 3-phase operation only

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Lightweight Oils and Heat Transfer Oils

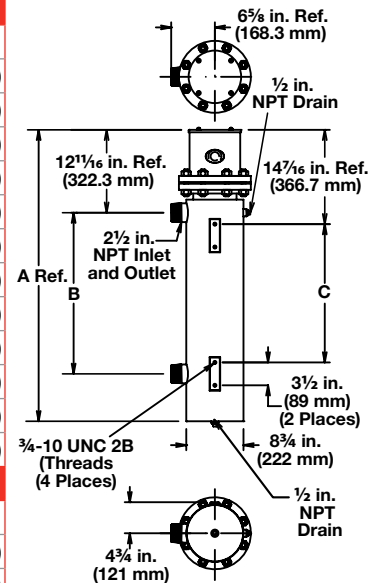
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
6 inch - 150 lb ANSI Flange (FIREBAR)										
23 W/in² Steel Tank 15-Alloy 800 Elements (3.6 W/cm²)	240	19.0	3	5	CFPNF16J20S	M	220 (100)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	24.0	3	5	CFPNF19J20S	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	32.0	3	5	CFPNF24J20S	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	32.0	3	5	CFPNF24J19S	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	40.0	3	5	CFPNF30A20S	M	232 (106)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	40.0	3	5	CFPNF30A19S	M	232 (106)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	48.0	3	5	CFPNF35A20S	M	236 (107)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	48.0	3	5	CFPNF35A19S	M	236 (107)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	64.0	3	5	CFPNF45J20S	M	304 (138)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	64.0	3	5	CFPNF45J19S	M	304 (138)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
240	80.0	3	5	CFPNF56A20S	M	314 (143)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
480	80.0	3	5	CFPNF56A19S	M	314 (143)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
8 inch - 150 lb ANSI Flange (WATROD)										
23 W/in² Steel Tank 18-Steel Elements (3.6 W/cm²)	240	30.0	1	3	CFRS732N10S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	30.0	3	2	CFRS732N3S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	30.0	1	2	CFRS732N11S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	30.0	3	1	CFRS732N5S	M	370 (168)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	40.0	3	3	CFRS743E3S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	40.0	1	2	CFRS743E11S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	40.0	3	2	CFRS743E5S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	50.0	3	3	CFRS751M3S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	50.0	1	3	CFRS751M11S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	50.0	3	2	CFRS751M5S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	240	60.0	3	6	CFRS762D3S	M	480 (218)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	60.0	1	3	CFRS762D11S	M	480 (218)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	60.0	3	2	CFRS762D5S	M	480 (218)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	240	70.0	3	6	CFRS770M3S	M	530 (241)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	480	70.0	1	6	CFRS770M11S	M	530 (241)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	480	70.0	3	2	CFRS770M5S	M	530 (241)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	240	80.0	3	6	CFRS779M3S	M	610 (277)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
	480	80.0	3	3	CFRS779M5S	M	610 (277)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)

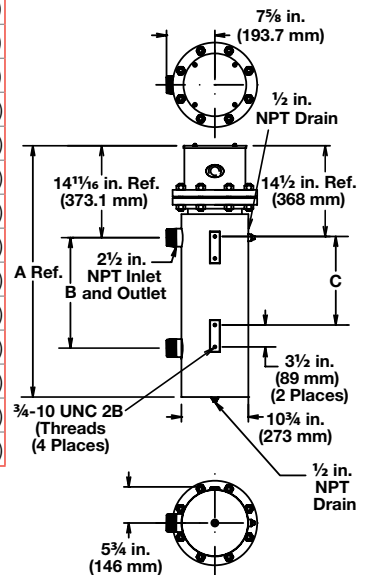
• M - Manufacturing lead times

■ Truck Shipment only

6 inch - 150 lb ANSI Flange



8 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

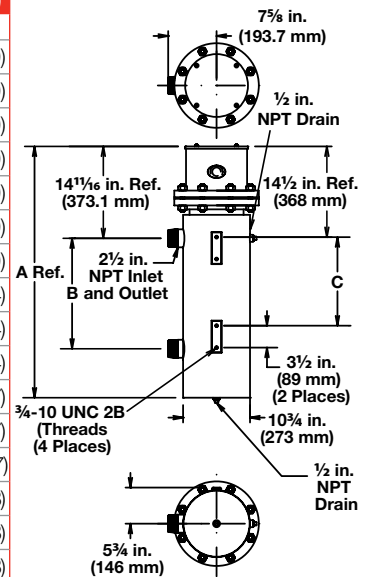


Application: Lightweight Oils and Heat Transfer Oils

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)	
8 inch - 150 lb ANSI Flange (WATROD)											
23 W/in² Steel Tank	240	40.0	1	4	CFRS733D10XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)	
	240	40.0	3	4	CFRS733D3XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)	
	24-Steel (3.6 W/cm²)	480	40.0	1	2	CFRS733D11XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
		480	40.0	3	2	CFRS733D5XS	M	382 (174)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	53.0	3	4	CFRS743M3XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)	
	480	53.0	1	3	CFRS743M11XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)	
	480	53.0	3	2	CFRS743M5XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)	
	240	67.0	3	4	CFRS751M3XS	M	457 (208)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)	
	480	67.0	1	3	CFRS751M11XS	M	457 (208)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)	
	480	67.0	3	2	CFRS751M5XS	M	457 (208)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)	
	240	80.0	3	8	CFRS762D3XS	M	461 (209)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)	
	480	80.0	1	4	CFRS762D11XS	M	461 (209)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)	
	480	80.0	3	4	CFRS762D5XS	M	461 (209)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)	
	240	93.0	3	8	CFRS770M3XS	M	554 (252)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)	
	480	93.0	1	6	CFRS770M11XS	M	554 (252)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)	
	480	93.0	3	4	CFRS770M5XS	M	554 (252)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)	
240	107.0	3	8	CFRS779M3XS	M	636 (289)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)		
480	107.0	3	4	CFRS779M5XS	M	636 (289)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)		

8 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Lightweight Oils and Heat Transfer Oils

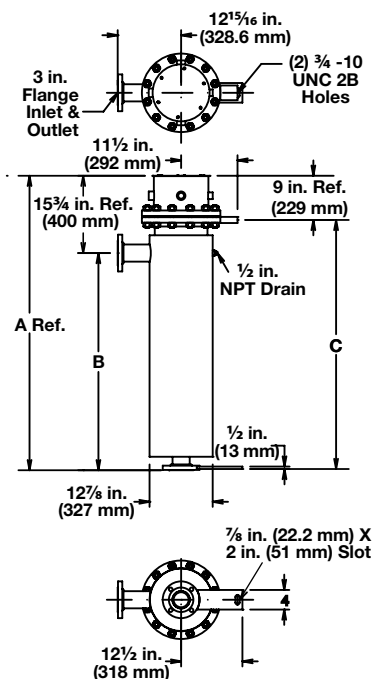
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
10 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	480	90.0	3	3	CFSS762E5S	M	540 (245)	91 ¹ / ₄ (2316.0)	75 ¹ / ₂ (1916.0)	81 ¹⁵ / ₁₆ (2081.2)
27-Steel Elements (3.6 W/cm ²)	480	105.0	3	3	CFSS770N5S	M	600 (645)	99 ¹ / ₈ (2517.8)	83 ³ / ₈ (2117.7)	89 ¹³ / ₁₆ (2281.2)
	480	120.0	3	3	CFSS778N5S	M	645 (293)	106 ⁵ / ₈ (2708.3)	90 ⁷ / ₈ (2308.2)	97 ⁵ / ₁₆ (2471.7)
12 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	480	140.0	3	4	CFTS770L5S	M	650 (295)	99 (2515)	82 ⁷ / ₈ (2105.0)	89 ⁵ / ₈ (2276.5)
36-Steel Elements (3.6 W/cm ²)	480	160.0	3	4	CFTS778L5S	M	700 (318)	106 ¹ / ₂ (2705)	90 ³ / ₈ (2295.5)	97 ¹ / ₈ (2467.0)
14 inch - 150 lb ANSI Flange (WATROD)										
23 W/in ² Steel Tank	480	150.0	3	5	CFWS762A5S	M	650 (295)	90 ³ / ₄ (2305)	74 ¹ / ₂ (1891)	81 ³ / ₁₆ (2062.2)
45-Steel Elements (3.6 W/cm ²)	480	175.0	3	5	CFWS770J5S	M	700 (318)	98 ¹ / ₄ (2496)	82 (2081)	88 ¹¹ / ₁₆ (2252.7)
	480	200.0	3	5	CFWS778J5S	M	780 (354)	105 ³ / ₄ (2686)	89 ¹ / ₂ (2272)	96 ³ / ₁₆ (2443.2)

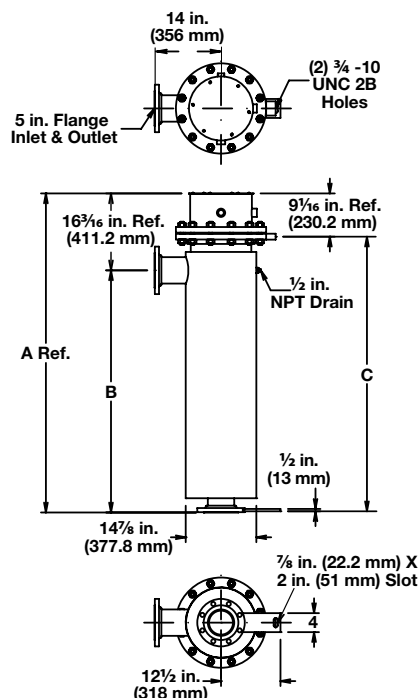
• M - Manufacturing lead times

■ Truck Shipment only

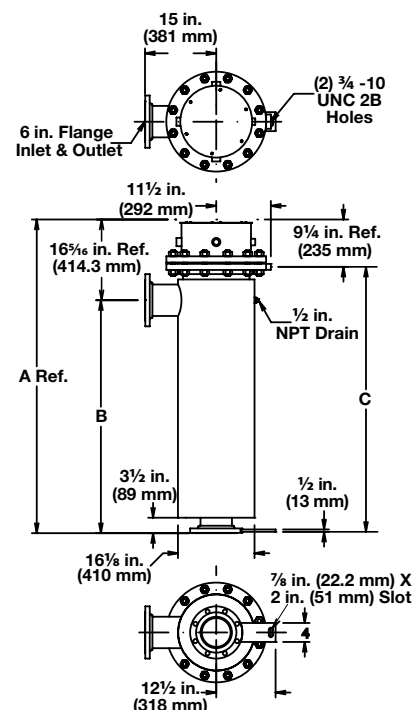
10 inch - 150 lb ANSI Flange



12 inch - 150 lb ANSI Flange



14 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

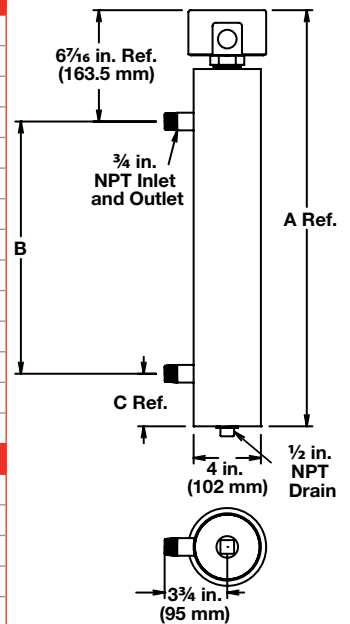


Application: Medium Weight Oils and Heat Transfer Oils

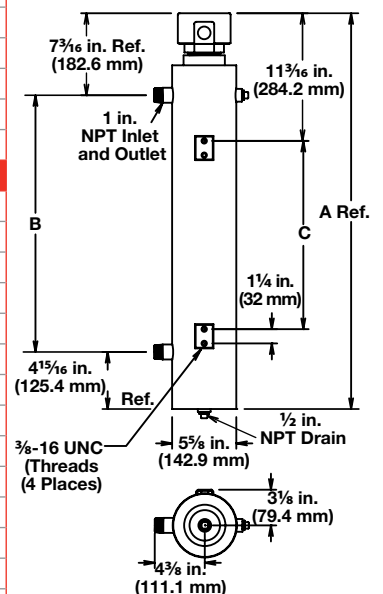
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
1 1/4 inch NPT Screw Plug (FIREBAR)										
15 W/in ² ③	240	0.67	3	1	CBDNF13A29S	M	25 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
Steel Tank	240	0.83	3	1	CBDNF15J29S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
1-Alloy 800	240	1.00	3	1	CBDNF18A29S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
Elements	240	1.33	3	1	CBDNF22J29S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
(2.3 W/cm ²)	480	1.33	3	1	CBDNF22J30S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	1.67	3	1	CBDNF27J29S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	1.67	3	1	CBDNF27J30S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	2.00	3	1	CBDNF32J29S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	2.00	3	1	CBDNF32J30S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	2.67	3	1	CBDNF42A29S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	2.67	3	1	CBDNF42A30S	M	69 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	240	3.33	3	1	CBDNF51J29S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	3.33	3	1	CBDNF51J30S	M	71 (33)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
2 1/2 inch NPT Screw Plug (WATROD)										
16 W/in ² ③	240	2.0	3	1	CBLN717G12S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
Steel Tank	480	2.0	3	1	CBLN717G13S	RS	24 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
3-Alloy 800	240	2.5	3	1	CBLN719R12S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
Elements	480	2.5	3	1	CBLN719R13S	RS	26 (12)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
(2.5 W/cm ²)	240	3.0	3	1	CBLN724R12S	RS	27 (13)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	480	3.0	3	1	CBLN724R13S	RS	27 (13)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	4.0	3	1	CBLN732G12S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	4.0	3	1	CBLN732G13S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	5.0	3	1	CBLN739R12S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	5.0	3	1	CBLN739R13S	RS	31 (14)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	240	6.0	3	1	CBLN747G12S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	6.0	3	1	CBLN747G13S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
2 1/2 inch NPT Screw Plug (FIREBAR)										
15 W/in ² ③	240	2.00	3	1	CBLNF12A29S	M	21 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
Steel Tank	240	2.50	3	1	CBLNF14J29S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
3-Alloy 800	240	3.00	3	1	CBLNF17A29S	M	23 (11)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
Elements	240	4.00	3	1	CBLNF21J29S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
(2.3 W/cm ²)	480	4.00	3	1	CBLNF21J30S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)
	240	5.00	3	1	CBLNF26J29S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	5.00	3	1	CBLNF26J30S	M	34 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	6.00	3	1	CBLNF31J29S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	6.00	3	1	CBLNF31J30S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	8.00	3	1	CBLNF41A29S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	8.00	3	1	CBLNF41A30S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	240	10.00	3	1	CBLNF50J29S	M	52 (24)	63 ³ / ₄ (1618)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)
	480	10.00	3	1	CBLNF50J30S	M	52 (24)	63 ³ / ₄ (1618)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)

1 1/4 inch NPT Screw Plug



2 1/2 inch NPT Screw Plug



③ Wired for 3-phase operation only

RAPID SHIP

- RS - Next day shipment up to 5 pieces
- M - Manufacturing lead times

WATLOW®

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

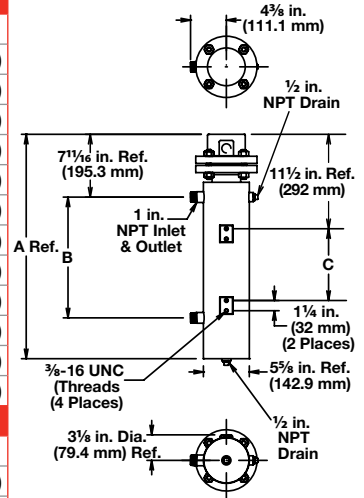


Application: Medium Weight Oils and Heat Transfer Oils

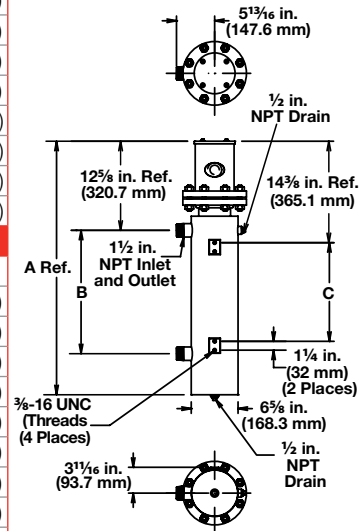
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
3 inch - 150 lb ANSI Flange (WATROD)										
16 W/in² ③ Steel Tank 3-Alloy 800 Elements (2.6 W/cm²)	240	2.00	3	1	CFMN718A12S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	2.00	3	1	CFMN718A13S	RS	68 (31)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	2.50	3	1	CFMN720J12S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	480	2.50	3	1	CFMN720J13S	RS	70 (32)	35 ¹ / ₄ (894)	22 ¹ / ₂ (573)	16 ¹ / ₂ (419)
	240	3.00	3	1	CFMN725J12S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	3.00	3	1	CFMN725J13S	M	78 (36)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	4.00	3	1	CFMN733A12S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	480	4.00	3	1	CFMN733A13S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)
	240	5.00	3	1	CFMN740J12S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
	480	5.00	3	1	CFMN740J13S	M	100 (46)	57 ³ / ₄ (1465)	45 (1143)	39 (991)
240	6.00	3	1	CFMN748A12S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)	
480	6.00	3	1	CFMN748A13S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)	
4 inch - 150 lb ANSI Flange (WATROD)										
16 W/in² ③ Steel Tank 6-Alloy 800 Elements (2.5 W/cm²)	240	3.0	3	1	CFON713J12S	M	122 (56)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	3.0	3	1	CFON713J13S	M	122 (56)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	4.0	3	1	CFON718A12S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	4.0	3	1	CFON718A13S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	5.0	3	1	CFON720J12S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	5.0	3	1	CFON720J13S	M	127 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	6.0	3	1	CFON725J12S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	6.0	3	1	CFON725J13S	M	160 (73)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	8.0	3	1	CFON733A12S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	8.0	3	1	CFON733A13S	M	163 (74)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	10.0	3	1	CFON740J12S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	10.0	3	1	CFON740J13S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	12.0	3	1	CFON748A12S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	12.0	3	1	CFON748A13S	M	234 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
4 inch - 150 lb ANSI Flange (FIREBAR)										
15 W/in² ③ Steel Tank 6-Alloy 800 Elements (2.3 W/cm²)	240	4.00	3	1	CFONF13G29S	M	125 (57)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	5.00	3	1	CFONF16A29S	M	128 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	6.00	3	1	CFONF18G29S	M	130 (59)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	8.00	3	1	CFONF22R29S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	8.00	3	1	CFONF22R30S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	10.00	3	1	CFONF27R29S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	10.00	3	1	CFONF27R30S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	12.00	3	1	CFONF32R29S	M	170 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	12.00	3	1	CFONF32R30S	M	170 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	16.00	3	1	CFONF42G29S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	16.00	3	1	CFONF42G30S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	20.00	3	1	CFONF51R29S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	20.00	3	1	CFONF51R30S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)

3 inch - 150 lb ANSI Flange



4 inch - 150 lb ANSI Flange



RAPID SHIP

③ Wired for 3-phase operation only

■ Truck Shipment only

• RS - Next day shipment up to 5 pieces • M - Manufacturing lead times

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

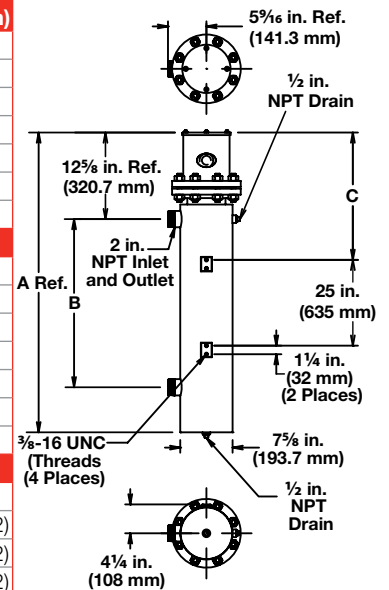


Application: Medium Weight Oils and Heat Transfer Oils

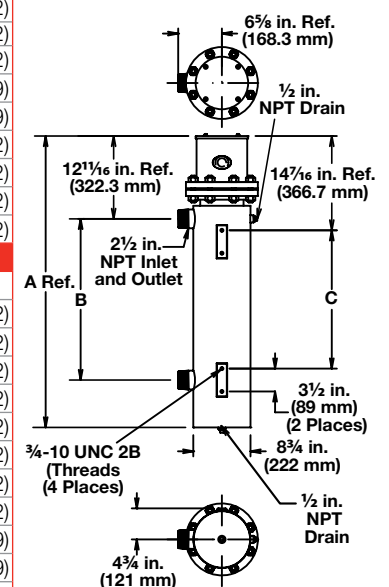
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)	
5 inch - 150 lb ANSI Flange (WATROD)											
16 W/in ² ③	240	8.0	3	1	CFNN733A12S	M	145 (66)	49 ¹ / ₄ (1249)	30 (762)	25 (633.0)	
Steel Tank	480	8.0	3	1	CFNN733A13S	M	145 (66)	49 ¹ / ₄ (1249)	30 (762)	25 (633.0)	
6-Alloy 800 Elements (2.6 W/cm ²)	240	10.0	3	1	CFNN740J12S	M	167 (76)	56 ¹ / ₄ (1427)	37 (940)	25 (633.0)	
	480	10.0	3	1	CFNN740J13S	M	167 (76)	56 ¹ / ₄ (1427)	37 (940)	25 (633.0)	
	240	12.0	3	1	CFNN748A12S	M	180 (82)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)	
	480	12.0	3	1	CFNN748A13S	M	180 (82)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)	
5 inch - 150 lb ANSI Flange (WATROD)											
16 W/in ² ③	240	12.0	3	1	CFNN733A12XS	M	150 (68)	49 ¹ / ₄ (1249)	30 (762)	25 (633.0)	
Steel Tank	480	12.0	3	1	CFNN733A13XS	M	150 (68)	49 ¹ / ₄ (1249)	30 (762)	25 (633.0)	
9-Alloy 800 Elements (2.6 W/cm ²)	240	15.0	3	1	CFNN740J12XS	M	173 (79)	56 ¹ / ₄ (1427)	37 (940)	25 (633.0)	
	480	15.0	3	1	CFNN740J13XS	M	173 (79)	56 ¹ / ₄ (1427)	37 (940)	25 (633.0)	
	240	18.0	3	1	CFNN748A12XS	M	188 (86)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)	
	480	18.0	3	1	CFNN748A13XS	M	188 (86)	67 ³ / ₄ (1719)	48 ¹ / ₂ (1232)	25 (633.0)	
6 inch - 150 lb ANSI Flange (WATROD)											
16 W/in ² ③	240	6.0	3	1	CFPN713G12S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
Steel Tank	480	6.0	3	1	CFPN713G13S	M	212 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
12-Alloy 800 Elements (2.6 W/cm ²)	240	8.0	3	1	CFPN717R12S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
	480	8.0	3	1	CFPN717R13S	M	214 (97)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
	240	10.0	3	1	CFPN720G12S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
	480	10.0	3	1	CFPN720G13S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
	240	12.0	3	1	CFPN725G12S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
	480	12.0	3	1	CFPN725G13S	M	222 (101)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
	240	16.0	3	1	CFPN732R12S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)	
	480	16.0	3	1	CFPN732R13S	M	226 (103)	51 (1294)	31 (787)	27 ¹ / ₂ (699)	
	240	20.0	3	2	CFPN740G12S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
	480	20.0	3	1	CFPN740G13S	M	290 (132)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
	240	24.0	3	2	CFPN747R12S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
	480	24.0	3	1	CFPN747R13S	M	298 (136)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
	6 inch - 150 lb ANSI Flange (WATROD)										
	16 W/in ² ③	240	7.50	3	1	CFPN713G12XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	Steel Tank	480	7.50	3	1	CFPN713G13XS	M	215 (98)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	15-Alloy 800 Elements (2.6 W/cm ²)	240	10.0	3	1	CFPN717R12XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
480		10.0	3	1	CFPN717R13XS	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
240		12.5	3	1	CFPN720G12XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
480		12.5	3	1	CFPN720G13XS	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
240		15.0	3	1	CFPN725G12XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
480		15.0	3	1	CFPN725G13XS	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)	
240		20.0	3	5	CFPN732R12XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)	
480		20.0	3	1	CFPN732R13XS	M	288 (131)	51 (1294)	31 (787)	27 ¹ / ₂ (699)	
240		25.0	3	5	CFPN740G12XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
480		25.0	3	1	CFPN740G13XS	M	296 (135)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
240		30.0	3	5	CFPN747R12XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
480		30.0	3	1	CFPN747R13XS	M	306 (139)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	

5 inch - 150 lb ANSI Flange



6 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

③ Wired for 3-phase operation only

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

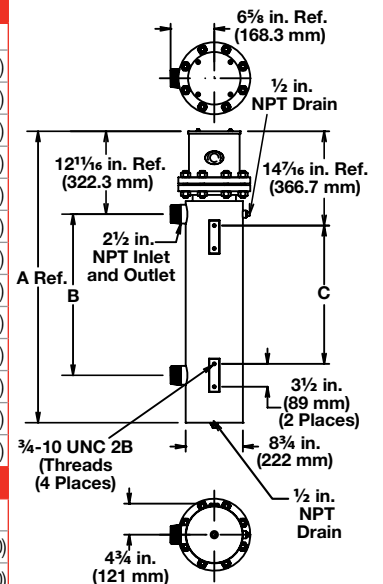


Application: Medium Weight Oils and Heat Transfer Oils

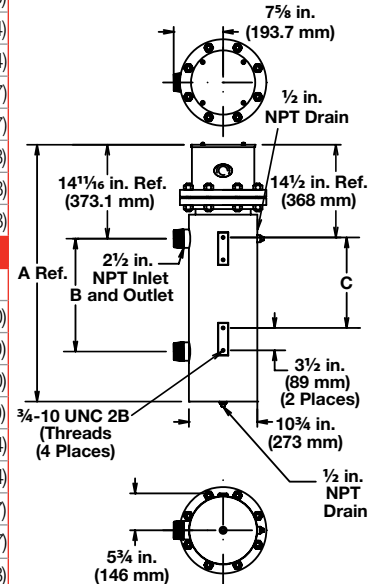
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
6 inch - 150 lb ANSI Flange (FIREBAR)										
15 W/in² ③ Steel Tank 15-Alloy 800 Elements (2.3 W/cm²)	240	10.00	3	5	CFPNF13G29S	M	217 (99)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	12.50	3	5	CFPNF16A29S	M	220 (100)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	15.00	3	5	CFPNF18G29S	M	223 (102)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	20.00	3	5	CFPNF22R29S	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	480	20.00	3	5	CFPNF22R30S	M	226 (103)	40 ¹ / ₂ (1027)	20 ¹ / ₂ (521)	17 (432)
	240	25.00	3	5	CFPNF27R29S	M	232 (106)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	25.00	3	5	CFPNF27R30S	M	232 (106)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	30.00	3	5	CFPNF32R29S	M	236 (107)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	480	30.00	3	5	CFPNF32R30S	M	236 (107)	51 (1294)	31 (787)	27 ¹ / ₂ (699)
	240	40.00	3	5	CFPNF42G29S	M	304 (138)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	480	40.00	3	5	CFPNF42G30S	M	304 (138)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
	240	50.00	3	5	CFPNF51R29S	M	314 (143)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)
480	50.00	3	5	CFPNF51R30S	M	314 (143)	72 (1827)	52 (1321)	48 ¹ / ₂ (1232)	
8 inch - 150 lb ANSI Flange (WATROD)										
16 W/in² ③ Steel Tank 18-Alloy 800 Elements (2.6 W/cm²)	240	17.00	3	1	CFRN725N12S	M	350 (159)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	17.00	3	1	CFRN725N13S	M	350 (159)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	25.00	3	2	CFRN735N12S	M	380 (173)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	25.00	3	1	CFRN735N13S	M	380 (173)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	33.00	3	2	CFRN744E12S	M	410 (186)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	33.00	3	1	CFRN744E13S	M	410 (186)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	240	42.00	3	3	CFRN754M12S	M	445 (202)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	42.00	3	2	CFRN754M13S	M	445 (202)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	50.00	3	2	CFRN763M13S	M	490 (223)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	480	58.00	3	2	CFRN773D13S	M	530 (241)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
	480	67.00	3	2	CFRN782M13S	M	560 (254)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
	8 inch - 150 lb ANSI Flange (WATROD)									
16 W/in² ③ Steel Tank 24-Alloy 800 Elements (2.6 W/cm²)	240	23.0	3	2	CFRN726D12XS	M	358 (163)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	480	23.0	3	1	CFRN726D13XS	M	358 (163)	55 ¹ / ₄ (1402.0)	32 ³ / ₄ (830.0)	29 ¹ / ₄ (741.0)
	240	33.0	3	2	CFRN736D12XS	M	392 (178)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	33.0	3	1	CFRN736D13XS	M	392 (178)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	44.0	3	4	CFRN744M12XS	M	425 (193)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	44.0	3	2	CFRN744M13XS	M	425 (193)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	240	56.0	3	4	CFRN754M12XS	M	463 (210)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	56.0	3	2	CFRN754M13XS	M	463 (210)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	67.0	3	2	CFRN763M13XS	M	511 (232)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	480	77.0	3	2	CFRN773D13XS	M	554 (252)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
	480	89.0	3	4	CFRN782M13XS	M	587 (267)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)

6 inch - 150 lb ANSI Flange



8 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

③ Wired for 3-phase operation only

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



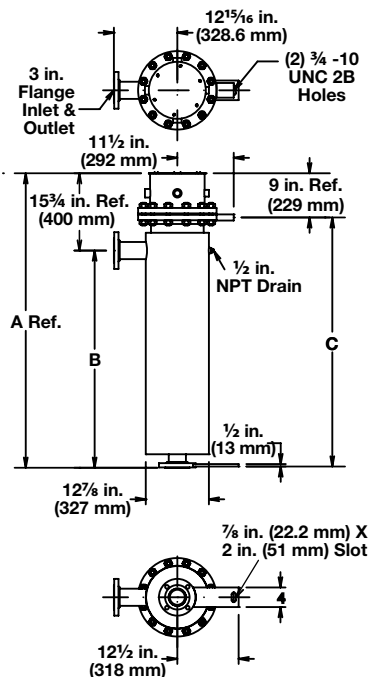
Application: Medium Weight Oils and Heat Transfer Oils

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

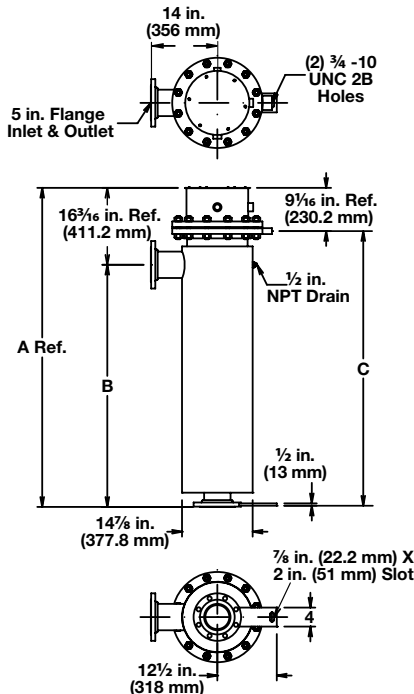
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
10 inch - 150 lb ANSI Flange (WATROD)										
16 W/in ² [ⓐ] Steel Tank 27-Alloy 800 Elements (2.6 W/cm ²)	480	75.0	3	3	CFSN763N13S	M	540 (245)	91 ³ / ₁₆ (2316)	75 ⁷ / ₁₆ (1916)	81 ¹⁵ / ₁₆ (2081)
	480	87.0	3	3	CFSN773E13S	M	600 (273)	106 ⁹ / ₁₆ (2707)	90 ¹³ / ₁₆ (1037)	97 ⁵ / ₁₆ (2471)
12 inch - 150 lb ANSI Flange (WATROD)										
16 W/in ² [ⓐ] Steel Tank 36-Alloy 800 Elements (2.6 W/cm ²)	480	117.0	3	3	CFTN773C13S	M	650 (295)	106 ¹ / ₂ (2705)	90 ³ / ₈ (2295.5)	97 ³ / ₁₆ (2468.6)
14 inch - 150 lb ANSI Flange (WATROD)										
16 W/in ² [ⓐ] Steel Tank 45-Alloy 800 Elements (2.6 W/cm ²)	480	105.0	3	3	CFWN754J13S	M	600 (273)	83 ¹ / ₄ (2115)	67 (1700)	73 ¹¹ / ₁₆ (1872)
	480	125.0	3	5	CFWN763J13S	M	650 (295)	90 ³ / ₄ (2305)	74 ¹ / ₂ (1891)	81 ³ / ₁₆ (2062)

• M - Manufacturing lead times ⓐ Wired for 3-phase operation only Truck Shipment only

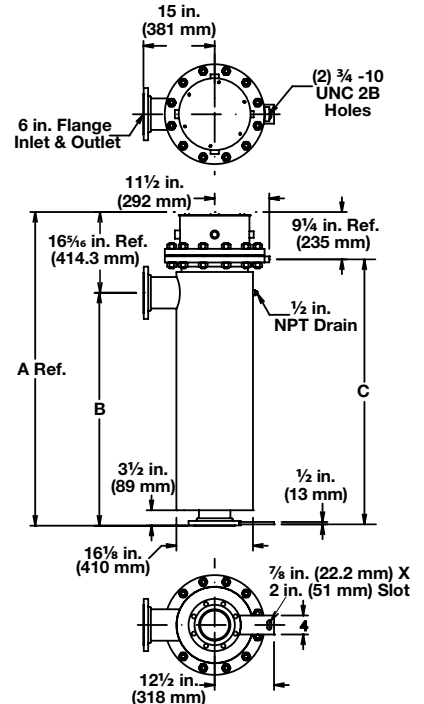
10 inch - 150 lb ANSI Flange



12 inch - 150 lb ANSI Flange



14 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

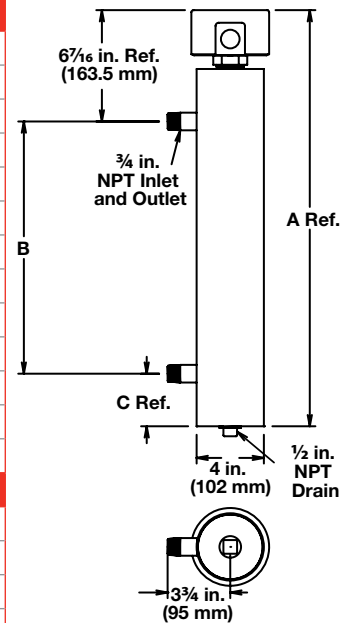


Application: Bunker C, Asphalt and #6 Fuel Oil

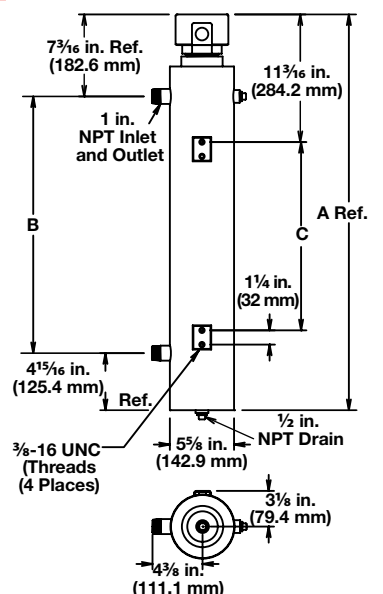
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
1 1/4 inch NPT Screw Plug (FIREBAR)										
8 W/in² [ⓐ] Steel Tank 1-Alloy 800 Element (1.3 W/cm²)	240	0.43	3	1	CBDNF16G22S	M	26 (12)	24 ⁵ / ₈ (625.5)	15 (381)	3 ¹ / ₈ (79.4)
	240	0.55	3	1	CBDNF19G22S	M	30 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	0.70	3	1	CBDNF24L22S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	480	0.70	3	1	CBDNF24L21S	M	31 (14)	32 ⁵ / ₈ (828.7)	23 (584)	3 ¹ / ₈ (79.4)
	240	0.88	3	1	CBDNF29R22S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	0.88	3	1	CBDNF29R21S	M	43 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	1.08	3	1	CBDNF34R22S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	480	1.08	3	1	CBDNF34R21S	M	44 (20)	42 ⁵ / ₈ (1082.7)	32 (813)	4 ³ / ₈ (111.1)
	240	1.40	3	1	CBDNF45G22S	M	69 (31)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	1.40	3	1	CBDNF45G21S	M	69 (31)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	240	1.80	3	1	CBDNF55R22S	M	71 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
	480	1.80	3	1	CBDNF55R21S	M	71 (32)	63 ⁵ / ₈ (1616.1)	53 (1346)	4 ³ / ₈ (111.1)
2 1/2 inch NPT Screw Plug (WATROD)										
8 W/in² [ⓐ] Steel Tank 3-Steel Elements (1.3 W/cm²)	240	2.0	3	1	CBLS732E12S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	480	2.0	3	1	CBLS732E13S	RS	29 (14)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)
	240	3.0	3	1	CBLS747E12S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)
	480	3.0	3	1	CBLS747E13S	RS	32 (15)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)

1 1/4 inch NPT Screw Plug



2 1/2 inch NPT Screw Plug



[ⓐ] Wired for 3-phase operation only

RAPID SHIP

- **RS** - Next day shipment up to 5 pieces
- **M** - Manufacturing lead times

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Bunker C, Asphalt and #6 Fuel Oil

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

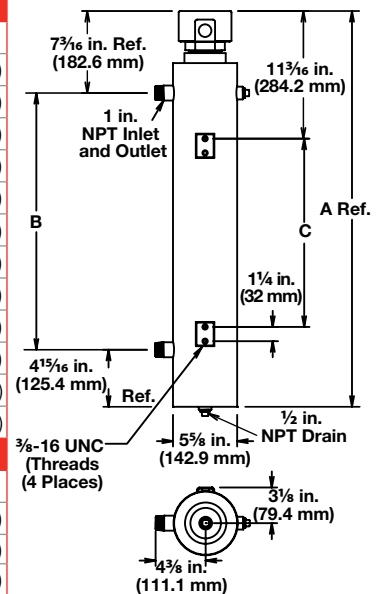
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)	
2 1/2 inch NPT Screw Plug (FIREBAR)											
8 W/in ² ③ Steel Tank	240	1.25	3	1	CBLNF15C22S	M	22 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
3-Alloy 800 Elements (1.3 W/cm ²)	240	1.63	3	1	CBLNF18C22S	M	23 (10)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	240	2.13	3	1	CBLNF23C22S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	480	2.13	3	1	CBLNF23C21S	M	31 (14)	34 ³ / ₄ (881)	22 ¹ / ₂ (572)	16 ¹ / ₂ (419)	
	240	2.63	3	1	CBLNF28L22S	M	34 (15)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	480	2.63	3	1	CBLNF28L21S	M	34 (15)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	240	3.19	3	1	CBLNF33L22S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	480	3.19	3	1	CBLNF33L21S	M	35 (16)	44 ³ / ₄ (1135)	32 ¹ / ₂ (1129)	26 ¹ / ₂ (673)	
	240	4.25	3	1	CBLNF44C22S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
	480	4.25	3	1	CBLNF44C21S	M	44 (20)	57 ¹ / ₄ (1453)	45 (1143)	39 (991)	
	240	5.38	3	1	CBLNF54L22S	M	52 (24)	63 ³ / ₄ (1453)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)	
	480	5.38	3	1	CBLNF54L21S	M	52 (24)	63 ³ / ₄ (1453)	51 ¹ / ₂ (1308)	46 ¹ / ₂ (1181)	
3 inch - 150 lb ANSI Flange (WATROD)											
8 W/in ² ③ Steel Tank	240	2.0	3	1	CFMS733A12S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)	
3-Steel Elements (1.3 W/cm ²)	480	2.0	3	1	CFMS733A13S	M	96 (44)	45 ¹ / ₄ (1148)	32 ¹ / ₂ (826)	26 ¹ / ₂ (673)	
	240	3.0	3	1	CFMS748A12S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)	
	480	3.0	3	1	CFMS748A13S	M	107 (49)	57 ³ / ₄ (1465)	45 (1143)	39 (991)	

• M - Manufacturing lead times

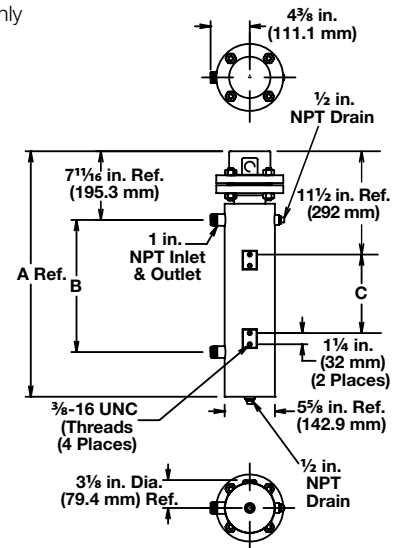
③ Wired for 3-phase operation only

■ Truck Shipment only

2 1/2 inch NPT Screw Plug



3 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

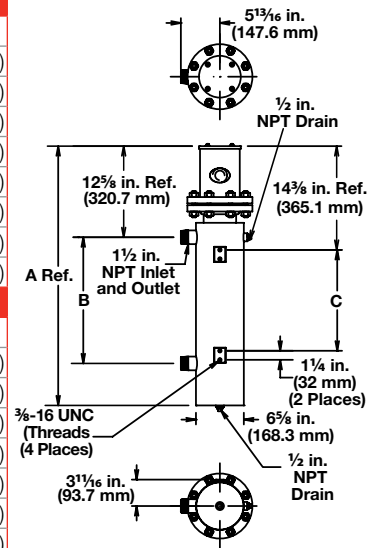


Application: Bunker C, Asphalt and #6 Fuel Oil

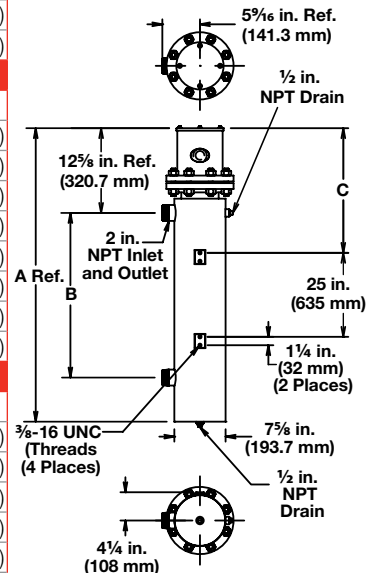
- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
4 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 6-Steel Elements (1.3 W/cm²)	240	5.00	3	1	CFOS740J12S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	5.00	3	1	CFOS740J13S	M	229 (104)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	6.00	3	1	CFOS748A12S	M	234 (106)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	6.00	3	1	CFOS748A13S	M	234 (106)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	8.00	3	1	CFOS764J12S	M	298 (135)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
	480	8.00	3	1	CFOS764J13S	M	298 (135)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
	240	10.00	3	1	CFOS777A12S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)
480	10.00	3	1	CFOS777A13S	M	306 (139)	91 ¹ / ₂ (2326)	73 (1854)	66 (1676)	
4 inch - 150 lb ANSI Flange (FIREBAR)										
8 W/in² ③ Steel Tank 6-Alloy 800 Elements (1.3 W/cm²)	240	2.50	3	1	CFONF16J22S	M	128 (58)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	3.25	3	1	CFONF19J22S	M	130 (59)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	4.25	3	1	CFONF24J22S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	480	4.25	3	1	CFONF24J21S	M	133 (61)	39 (989)	20 ¹ / ₂ (521)	17 (432)
	240	5.25	3	1	CFONF30A22S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	5.25	3	1	CFONF30A21S	M	168 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	6.38	3	1	CFONF35A22S	M	170 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	480	6.38	3	1	CFONF35A21S	M	170 (77)	49 ¹ / ₂ (1256)	31 (787)	27 ¹ / ₂ (699)
	240	8.50	3	1	CFONF45J22S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	8.50	3	1	CFONF45J21S	M	236 (107)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	240	10.75	3	1	CFONF56A22S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
	480	10.75	3	1	CFONF56A21S	M	240 (109)	70 ¹ / ₂ (1789)	52 (1321)	48 ¹ / ₂ (1232)
5 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 6-Steel Elements (1.3 W/cm²)	240	5.00	3	1	CFNS740J12S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	25 (633.0)
	480	5.00	3	1	CFNS740J13S	M	167 (76)	56 ¹ / ₄ (1427.0)	37 (940.0)	25 (633.0)
	240	6.00	3	1	CFNS748A12S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	480	6.00	3	1	CFNS748A13S	M	180 (82)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	240	8.00	3	1	CFNS764J12S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	8.00	3	1	CFNS764J13S	M	195 (89)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	240	10.00	3	1	CFNS777A12S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)
	480	10.00	3	1	CFNS777A13S	M	220 (100)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)
5 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 9-Steel Elements (1.3 W/cm²)	240	7.5	3	1	CFNS740J12XS	M	173 (79)	56 ¹ / ₄ (1427.0)	37 (940.0)	25 (633.0)
	480	7.5	3	1	CFNS740J13XS	M	173 (79)	56 ¹ / ₄ (1427.0)	37 (940.0)	25 (633.0)
	240	9.0	3	1	CFNS748A12XS	M	188 (86)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	480	9.0	3	1	CFNS748A13XS	M	188 (86)	67 ³ / ₄ (1719.0)	48 ¹ / ₂ (1232.0)	25 (633.0)
	240	12.0	3	1	CFNS764J12XS	M	206 (94)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	480	12.0	3	1	CFNS764J13XS	M	206 (94)	81 ¹ / ₈ (2060.6)	61 ⁷ / ₈ (1571.6)	25 (633.0)
	240	15.0	3	1	CFNS777A12XS	M	233 (106)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)
	480	15.0	3	1	CFNS777A13XS	M	233 (106)	94 ¹ / ₈ (2390.8)	75 (1902.0)	25 (633.0)

4 inch - 150 lb ANSI Flange



5 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

③ Wired for 3-phase operation only

Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters

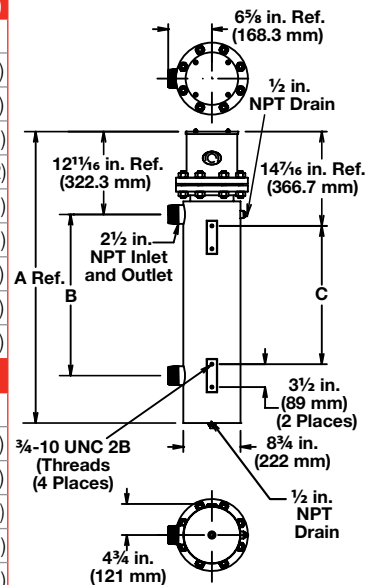


Application: Bunker C, Asphalt and #6 Fuel Oil

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
6 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 12-Steel Elements (1.3 W/cm²)	240	8.00	3	1	CFPS732R12S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)
	480	8.00	3	1	CFPS732R13S	M	226 (103)	51 (1294)	31 (787)	27 1/2 (699)
	240	10.00	3	1	CFPS740G12S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	10.00	3	1	CFPS740G13S	M	290 (132)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	12.00	3	1	CFPS747R12S	M	298 (136)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	12.00	3	1	CFPS747R13S	M	298 (136)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	16.50	3	1	CFPS764G12S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)
	480	16.50	3	1	CFPS764G13S	M	360 (164)	93 (2361)	73 (1854)	66 (1676)
	480	20.00	3	1	CFPS776R13S	M	368 (167)	93 (2361)	73 (1854)	66 (1676)
6 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 15-Steel Elements (1.3 W/cm²)	240	10.00	3	1	CFPS732R12XS	M	288 (131)	51 (1294)	31 (787)	27 1/2 (699)
	480	10.00	3	1	CFPS732R13XS	M	288 (131)	51 (1294)	31 (787)	27 1/2 (699)
	240	12.50	3	1	CFPS740G12XS	M	296 (135)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	12.50	3	1	CFPS740G13XS	M	296 (135)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	15.00	3	1	CFPS747R12XS	M	306 (139)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	15.00	3	1	CFPS747R13XS	M	306 (139)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	21.00	3	5	CFPS764G12XS	M	370 (168)	93 (2361)	73 (1854)	66 (1676)
	480	21.00	3	1	CFPS764G13XS	M	370 (168)	93 (2361)	73 (1854)	66 (1676)
	240	25.00	3	5	CFPS776R12XS	M	381 (173)	93 (2361)	73 (1854)	66 (1676)
	480	25.00	3	1	CFPS776R13XS	M	381 (173)	93 (2361)	73 (1854)	66 (1676)
6 inch - 150 lb ANSI Flange (FIREBAR)										
8 W/in² ③ Steel Tank 15-Alloy 800 Elements (1.3 W/cm²)	240	6.3	3	5	CFPNF16J22S	M	220 (100)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	8.1	3	5	CFPNF19J22S	M	223 (102)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	10.6	3	5	CFPNF24J22S	M	226 (103)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	480	10.6	3	5	CFPNF24J21S	M	226 (103)	40 1/2 (1027)	20 1/2 (521)	17 (432)
	240	13.1	3	5	CFPNF30A22S	M	232 (106)	51 (1294)	31 (787)	27 1/2 (699)
	480	13.1	3	5	CFPNF30A21S	M	232 (106)	51 (1294)	31 (787)	27 1/2 (699)
	240	16.0	3	5	CFPNF35A22S	M	236 (107)	51 (1294)	31 (787)	27 1/2 (699)
	480	16.0	3	5	CFPNF35A21S	M	236 (107)	51 (1294)	31 (787)	27 1/2 (699)
	240	21.3	3	5	CFPNF45J22S	M	304 (138)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	21.3	3	5	CFPNF45J21S	M	304 (138)	72 (1827)	52 (1321)	48 1/2 (1232)
	240	26.0	3	5	CFPNF56A22S	M	314 (143)	72 (1827)	52 (1321)	48 1/2 (1232)
	480	26.0	3	5	CFPNF56A21S	M	314 (143)	72 (1827)	52 (1321)	48 1/2 (1232)

6 inch - 150 lb ANSI Flange



• M - Manufacturing lead times

③ Wired for 3-phase operation only

■ Truck Shipment only

Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Bunker C, Asphalt and #6 Fuel Oil

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

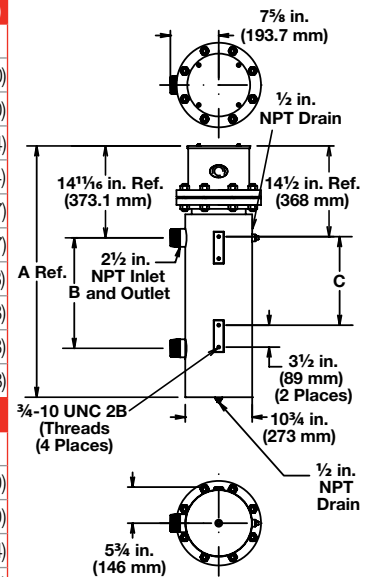
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
8 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 18-Steel Elements (1.3 W/cm²)	240	12.5	3	1	CFRS743E12S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	12.5	3	1	CFRS743E13S	M	410 (186)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	16.5	3	1	CFRS751M12S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	16.5	3	1	CFRS751M13S	M	440 (200)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	240	20.0	3	2	CFRS762D12S	M	480 (218)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	20.0	3	1	CFRS762D13S	M	480 (218)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	240	24.0	3	2	CFRS770M12S	M	530 (241)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	480	24.0	3	1	CFRS770M13S	M	530 (241)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	240	27.0	3	2	CFRS779M12S	M	610 (277)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
	480	27.0	3	1	CFRS779M13S	M	610 (277)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
8 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 24-Steel Elements (1.3 W/cm²)	240	17.0	3	1	CFRS743M12XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	480	17.0	3	1	CFRS743M13XS	M	425 (193)	62 ¹ / ₄ (1580.0)	39 ³ / ₄ (1008.0)	36 ¹ / ₄ (919.0)
	240	22.0	3	2	CFRS751M12XS	M	457 (208)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	480	22.0	3	1	CFRS751M13XS	M	457 (208)	69 ⁷ / ₈ (1774.8)	47 ³ / ₈ (1203.3)	43 ⁷ / ₈ (1114.4)
	240	27.0	3	2	CFRS762D12XS	M	461 (209)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	480	27.0	3	1	CFRS762D13XS	M	461 (209)	79 ³ / ₈ (2016.1)	56 ⁷ / ₈ (1444.6)	53 ³ / ₈ (1355.7)
	240	32.0	3	2	CFRS770M12XS	M	554 (252)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	480	32.0	3	1	CFRS770M13XS	M	554 (252)	88 ³ / ₈ (2244.7)	65 ⁷ / ₈ (1673.2)	62 ³ / ₈ (1584.3)
	240	36.0	3	2	CFRS779M12XS	M	636 (289)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
	480	36.0	3	1	CFRS779M13XS	M	636 (289)	98 ³ / ₈ (2498.7)	75 ⁷ / ₈ (1927.2)	72 ³ / ₈ (1838.3)
10 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 27-Steel Elements (1.3 W/cm²)	240	30.0	3	3	CFSS762E12S	M	540 (245)	91 ¹ / ₄ (2316.0)	75 ¹ / ₂ (1916.0)	82 ¹ / ₄ (2088.0)
	480	30.0	3	1	CFSS762E13S	M	540 (245)	91 ¹ / ₄ (2316.0)	75 ¹ / ₂ (1916.0)	82 ¹ / ₄ (2088.0)
	240	35.0	3	3	CFSS770N12S	M	600 (273)	99 ¹ / ₈ (2517.8)	83 ³ / ₈ (2117.7)	89 ¹³ / ₁₆ (2281.2)
	480	35.0	3	1	CFSS770N13S	M	600 (273)	99 ¹ / ₈ (2517.8)	83 ³ / ₈ (2117.7)	89 ¹³ / ₁₆ (2281.2)
	240	40.0	3	3	CFSS778N12S	M	645 (293)	106 ⁵ / ₈ (2708.3)	90 ⁷ / ₈ (2308.2)	97 ⁵ / ₁₆ (2471.7)
	480	40.0	3	1	CFSS778N13S	M	645 (293)	106 ⁵ / ₈ (2708.3)	90 ⁷ / ₈ (2308.2)	97 ⁵ / ₁₆ (2471.7)

• M - Manufacturing lead times

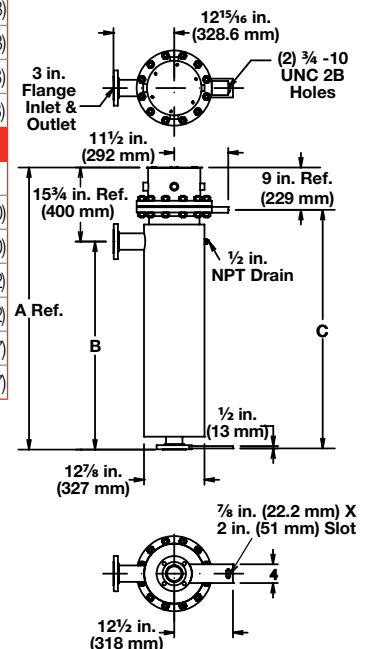
③ Wired for 3-phase operation only

■ Truck Shipment only

8 inch - 150 lb ANSI Flange



10 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters



Application: Bunker C, Asphalt and #6 Fuel Oil

- WATROD or FIREBAR elements
- Without thermostat
- General purpose enclosure

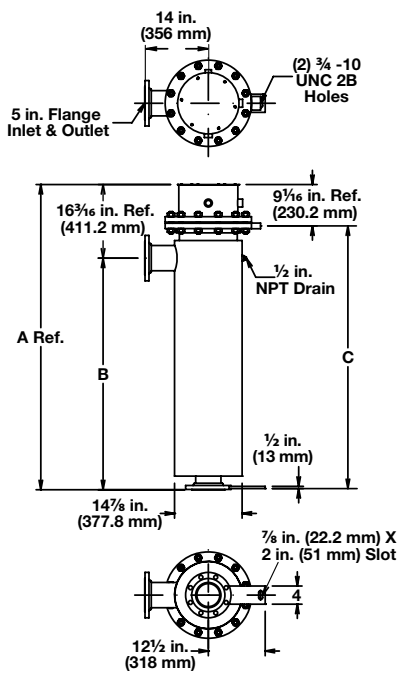
Description	Volts	kW	Ph	# Circ.	Part Number	Del.	Ship Wt. lbs (kg)	"A" Dim. in. (mm)	"B" Dim. in. (mm)	"C" Dim. in. (mm)
12 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 36-Steel Elements (1.3 W/cm²)	240	47.0	3	3	CFTS770L12S	M	700 (318)	99 (2515)	82 ⁷ / ₈ (2105.0)	89 ⁵ / ₈ (2277)
	480	47.0	3	2	CFTS770L13S	M	700 (318)	99 (2515)	82 ⁷ / ₈ (2105.0)	89 ⁵ / ₈ (2277)
	240	54.0	3	3	CFTS778L12S	M	750 (341)	106 ¹ / ₂ (2705)	90 ³ / ₈ (2295.5)	97 ¹ / ₈ (2467)
	480	54.0	3	2	CFTS778L13S	M	750 (341)	106 ¹ / ₂ (2705)	90 ³ / ₈ (2295.5)	97 ¹ / ₈ (2467)
14 inch - 150 lb ANSI Flange (WATROD)										
8 W/in² ③ Steel Tank 45-Steel Elements (1.3 W/cm²)	240	60.0	3	3	CFWS770J12S	M	700 (318)	98 ¹ / ₄ (2496)	82 (2081)	88 ¹¹ / ₁₆ (2253)
	480	60.0	3	3	CFWS770J13S	M	700 (318)	98 ¹ / ₄ (2496)	82 (2081)	88 ¹¹ / ₁₆ (2253)
	240	67.0	3	5	CFWS778J12S	M	780 (354)	105 ³ / ₄ (2686)	89 ¹ / ₂ (2272)	96 ³ / ₁₆ (2443)
	480	67.0	3	3	CFWS778J13S	M	780 (354)	105 ³ / ₄ (2686)	89 ¹ / ₂ (2272)	96 ³ / ₁₆ (2443)

• M - Manufacturing lead times

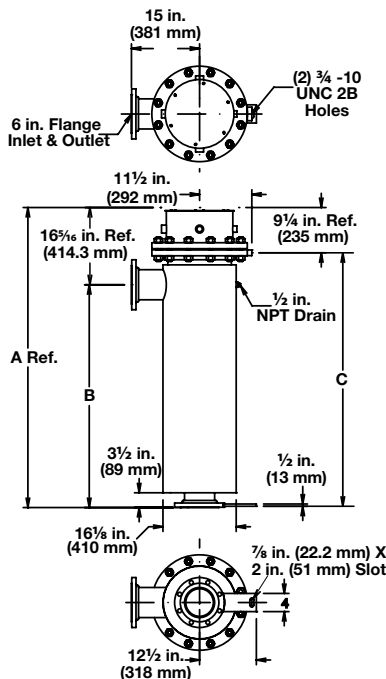
③ Wired for 3-phase operation only

■ Truck Shipment only

12 inch - 150 lb ANSI Flange



14 inch - 150 lb ANSI Flange



Circulation Heaters

WATROD and FIREBAR Circulation Heaters

Part Number

Stock Plug or ANSI Flange Part Number	Optional Terminal Enclosures	Optional Process Sensors	Sheath Limit Sensors

Stock Plug or ANSI Flange Part Number

Note: Catalog part numbers include optional enclosures and process sensors. To order optional enclosures or sensors, substitute the appropriate suffix.

Optional Terminal Enclosures

S =	General purpose enclosure
W =	Moisture resistant enclosure
E =	Explosion resistant enclosure
C =	Moisture/explosion resistant enclosure

Note: Catalog listings include either a general purpose enclosure or moisture/explosion resistant enclosure. Substitute enclosure options are noted.

Optional Process Sensors

2 =	30 to 250°F, (-1 to 121°C) SPST
3 =	175 to 550°F, (79 to 288°C) SPST
4 =	40 to 110°F, (-1 to 43°C) DPST
5A =	60 to 250°F, (16 to 121°C) DPST (FIREBAR)
7A =	100 to 550°F, (38 to 288°C) DPST (FIREBAR)
J =	Type J process thermocouple in thermowell
K =	Type K process thermocouple in thermowell

Note: Thermostat part numbers are shown in the *Thermostat Chart* on page 537.

Sheath Limit Sensors

HJ =	Type J high-limit thermocouple, horizontal mount
TJ =	Type J high-limit thermocouple, vertical/housing at top
BJ =	Type J high-limit thermocouple, vertical/housing at bottom
HK =	Type K high-limit thermocouple, horizontal mount
TK =	Type K high-limit thermocouple, vertical/housing at top
BK =	Type K high-limit thermocouple, vertical/housing at bottom

Note: Heater orientation is critical to accurate sensing of limit conditions. Use the appropriate code to indicate heater mounting orientation.

Example Part Number: CFONA18A10 S 5 HJ

Circulation Heaters

WATROD and FIREBAR Heaters

Booster Heaters

Booster heaters are ideal for circulating applications requiring less kilowatts, including engine preheating.

Booster heaters are made from a steel or brass 1 1/4 in. (32 mm) NPT screw plug heater and insulated pressure vessel with 1 in. (25 mm) FNPT inlet and outlet. This assembly also contains an integral thermostat.

Performance Capabilities

- Watt densities up to 60 W/in² (9.3 W/cm²)
- Wattages up to 3 kilowatts
- Voltages up to 480VAC
- Steel sheath temperatures up to 750°F (400°C)
- Alloy 800 sheath temperatures up to 350°F (175°C)

Features and Benefits

Dual voltages

- Simplifies stocking and wiring

Carbon steel, standard pipe wall vessel

- Assures compatibility with many applications

One inch thick (25 mm) fiberglass thermal insulation rated to 750°F (400°C)

- Reduces heat loss

Steel jacket (shroud)

- Provides a fully welded and painted shroud to protect thermal insulation

Inlet and outlet nozzle connections

- Includes threaded FNPT connections to meet OEM standards

General purpose terminal enclosures

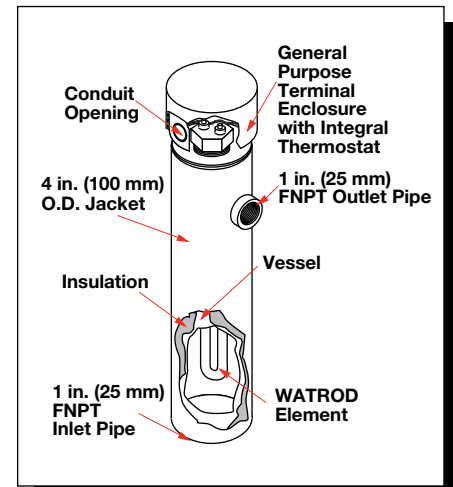
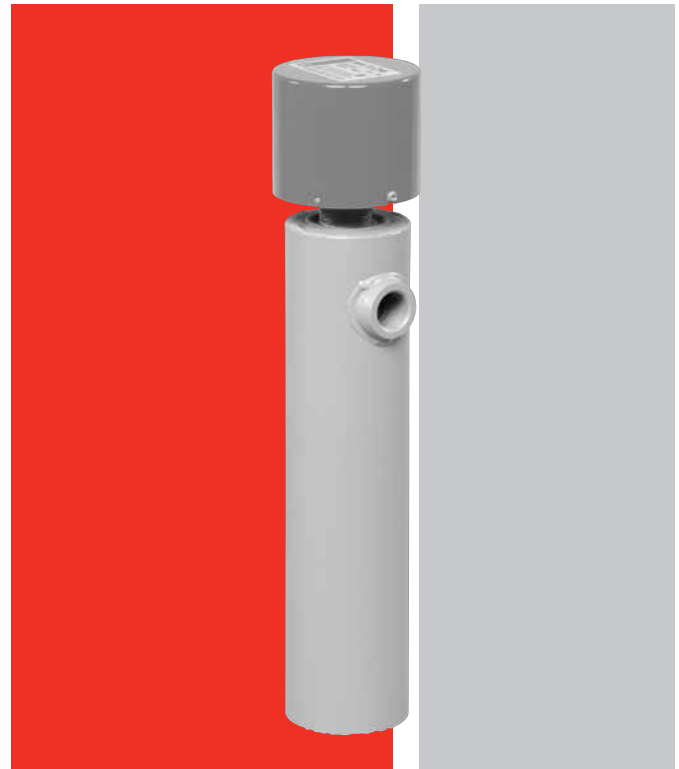
- Protects terminals and thermostat

Integral thermostat controls process temperatures from: 60 to 160°F (15 to 70°C) on alloy 800 sheath elements and 175 to 550°F (80 to 290°C) on steel sheath elements

- Minimizes the amount of time that the heater operates while the engine is running

Typical Applications

- Stand by generators
- Peak power trimming generators
- Mobile generator sets
- Earth moving equipment
- Water heaters
- Lightweight oils



Circulation Heaters

WATROD and FIREBAR Heaters

Booster Heaters

Options

Terminal Enclosure

General purpose terminal enclosures with integral thermostats are supplied on all Watlow booster heaters. Optional moisture resistant terminal enclosures protect wiring and thermostat from liquid contaminants. To order, request the **moisture resistant enclosure option**.

For explosion resistant and explosion/moisture resistant terminal enclosures, request the **explosion/moisture resistant option**.

Description	kW	Phase	Part Number 120/240VAC	Est. Ship. Wt. lbs (kg)
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Application: Aqueous Solutions

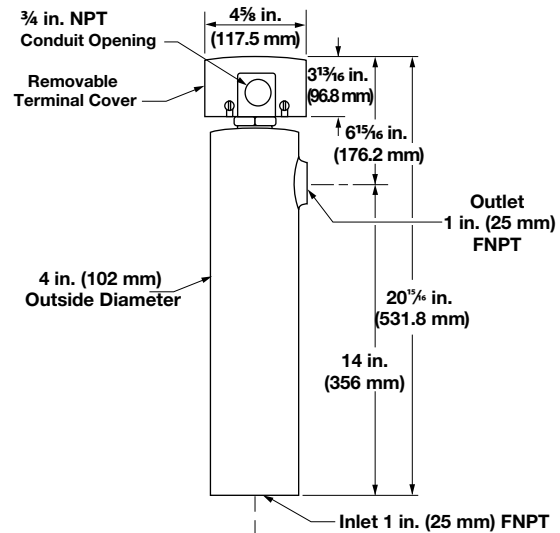
60 W/in ² Brass Plug	1.50	1	CBEN8G6	18 (8.2)
2-Alloy 800 (9.3 W/cm ²)	2.00	1	CBEN10F6	18 (8.2)
	2.50	1	CBEN12F6	18 (8.2)
	3.00	1	CBEN15A6X	18 (8.2)

Application: Lightweight Oils

23 W/in ² Steel Plug	0.50	1	CBES7G6	18 (8.2)
2-Steel (3.6 W/cm ²)	0.75	1	CBES10B6	18 (8.2)
	1.00	1	CBES12P6	18 (8.2)

- M - Manufacturing lead times

For optional housing adders, use circulation heater adders.



Circulation Heaters

WATROD and FIREBAR Heaters

Engine Preheaters

Watlow engine preheaters help maintain a desired minimum engine temperature to make starting fast and easy. They also reduce engine wear caused by cold engine starting.

Engine preheaters mount conveniently on an engine or rail. The internal thermostat constantly adjusts to ambient temperature changes to keep engine coolant warm at all times.

An internal tank temperature sensor protects Watlow engine preheaters from dry-fire conditions caused by low coolant levels or blocked flow.

Installation is easy with just two mounting bolts and inlet and outlet hose connections.

Performance Capabilities

- Watt densities from 45 to 90 W/in² (7 to 14 W/cm²)
- Wattages up to 6 kilowatts
- UL[®] and CSA component recognition up to 480VAC and 600VAC respectively
- Thermostatically controlled from 60 to 160°F (15 to 70°C)
- Alloy 800 sheath temperatures up to 1600°F (870°C)

Features and Benefits

Alloy 800 sheath

- Minimizes the risk of premature failure in the event of a dry-fire condition

Integral, prewired adjustable thermostat mounted in a general purpose terminal enclosure

- Provides a ready to install unit

Easy installation with standard 1 in. (25 mm) diameter beaded inlet and outlet nozzles

- Provides rubber hose connections eliminating the need for threaded fittings and adapters

120/240VAC or 240/480VAC dual voltages

- Makes field wiring flexible
- Minimizes stocking multiple voltages

Mounting bracket

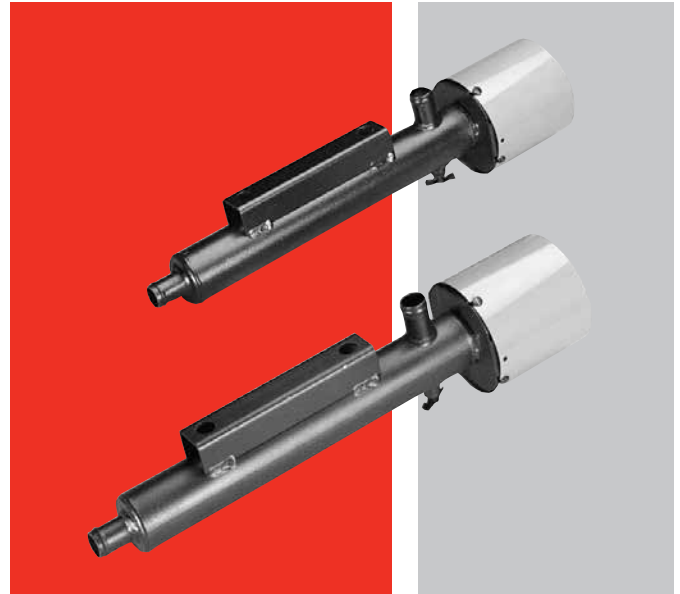
- Isolates harmful engine vibration

Heavy-duty welded carbon steel tank

- Resists corrosion and extends life

Optional oil pressure interconnect switch

- Disrupts power during engine operation



Integral check valve

- Assures proper coolant flow and correct thermostat operation. Check valve will not interfere with adequate thermo-siphoning
- **UL[®] and CSA component**
Recognition under file numbers E52951 and 31388 respectively

Typical Applications

- Stand by generators
- Primary power generators
- Fire pump engines

Options

Terminal Enclosure

The following terminal enclosures are available:

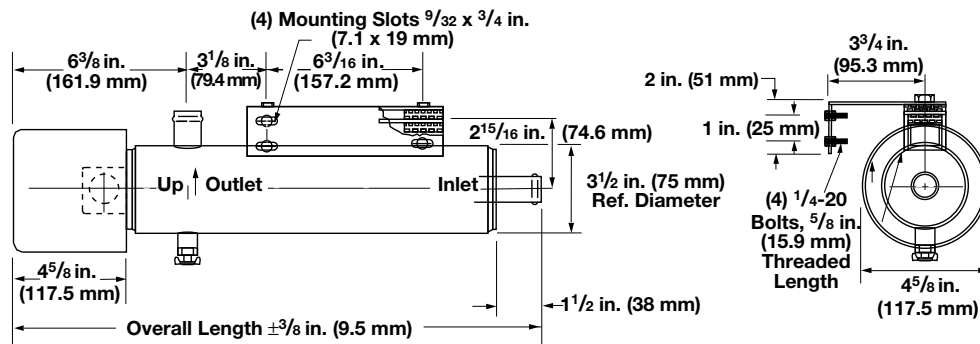
- Standard, general purpose
- Moisture resistant
- Explosion resistant Class 1, Division 1 and 2, Groups B, C and D.

Circulation Heaters

WATROD and FIREBAR Heaters

Engine Preheaters

Figure 2



kW	Overall Length in. (mm)	Part Number		Est. Ship. Wt. lbs (kg)
		277VAC 1-Phase	480VAC 3-Phase	

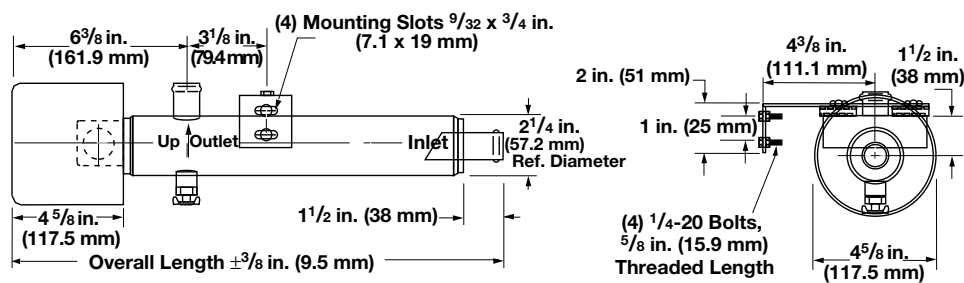
Application: Ethylene Glycol/Engine Coolant

1.50	20 ⁷ / ₈ (530.2)	CPCPB4S12 ^①	CPCPB13S12 ^①	12 (6)
2.00	20 ⁷ / ₈ (530.2)	CPCPC4S12 ^①	CPCPC13S12 ^①	12 (6)
2.50	20 ⁷ / ₈ (530.2)	CPCPE4S12 ^①	CPCPE13S12 ^①	12 (6)
3.75	20 ⁷ / ₈ (530.2)	CPCPG4S12 ^①	CPCPG13S12 ^①	12 (6)
4.00	20 ⁷ / ₈ (530.2)	CPCPH4S12 ^①	CPCPH13S12	12 (6)
5.00	20 ⁷ / ₈ (530.2)	CPCPJ4S12 ^①	CPCPJ13S12	12 (6)

RAPID SHIP

- Next day shipment up to 2 pieces
- ① - Manufacturing lead times

Figure 3



kW	Overall Length in. (mm)	Part Number		Est. Ship. Wt. lbs (kg)
		120/240VAC 1-Phase	208VAC 1-Phase	

Application: Ethylene Glycol/Engine Coolant

0.75	15 ⁵ / ₈ (396.9)		CPBPK2S12	9 (4)
1.00	15 ⁵ / ₈ (396.9)	CPBPA6S12		9 (4)

- M - Manufacturing lead times

