

# FLANGED IMMERSION HEATERS



## Typical Heating Applications:

- *Hot Water Tanks*
- *Boiler Heaters*
- *Asphalt, Paraffin, Wax Heaters*
- *Oil Product Heaters*
- *Corrosive & Non-Corrosive Solutions*
- *Air & Gas Heaters*
- *Heat Transfer Equipment*

Flanged immersion heaters are high capacity electrical heating units made for tanks or pressurized vessels. They consist of multiple tubular heaters that are formed into hairpin and are welded or brazed to flanges. The heating elements can be made of copper, steel, stainless steel or Incoloy sheath. Standard flanges are carbon steel rated for 150 lbs. Various types of electrical protection housing, built-in thermostats and thermocouples are available.

Size*	Max. # of elements	Standard cold end	150 Lbs. Flange detail rating					300 Lbs. Flange detail rating				
			O.D.	Flange thickness	# Holes	Holes Ø	B.C.	O.D.	Flange thickness	# Holes	Holes Ø	B.C.
2.5"	3	5 1/2"	7"	7/8"	4	3/4"	5 1/2"	7 1/2"	1"	8	7/8"	5 7/8"
3"	6	5 1/2"	7 1/2"	15/16"	4	3/4"	6"	8 1/4"	1 1/8"	8	7/8"	6 5/8"
4"	9	5 1/2"	9"	15/16"	8	3/4"	7 1/2"	10"	1 1/4"	8	7/8"	7 7/8"
5"	9	6 3/4"	10"	15/16"	8	7/8"	8 1/2"	11"	1 3/8"	8	7/8"	9 1/4"
6"	18	6 3/4"	11"	1"	8	7/8"	9 1/2"	12 1/2"	1 7/16"	12	7/8"	10 5/8"
8"	30	6 3/4"	13 1/2"	1 1/8"	8	7/8"	11 3/4"	15"	1 5/8"	12	1"	13"
10"	48	10"	16"	1 3/16"	12	1"	14 1/4"	17 1/2"	1 7/8"	16	1 1/8"	15 1/4"
12"	60	10"	19"	1 1/4"	12	1"	17"	20 1/2"	2"	16	1 1/4"	17 3/4"

Bundle diameter to suit sch. 80 pipe

\*For other sizes please consult the factory

# BUCAN FLANGED IMMERSION HEATERS

## Selection tips for flanged immersion heaters

Flanged immersion heaters can be used in different applications. In order to meet the heating requirements of a specific application and have a safe operation in the environment within which a heater operates, several factors should be taken into consideration in the design of flanged immersion heaters. The following are a number of criteria that should be considered:

- The pressure rating and the material of a flange.
- The sheath material of the tubular elements. Table 3 provides recommended tubular element sheath and flange materials for different mediums.
- Operating temperature and watt density of tubular elements that are adequate to the material heated. Tables 2 & 3 provide maximum operating temperatures and watt densities that are recommended for heating various materials.
- Design watt density, flow velocity and outlet temperature are factors that contribute to the temperature level that tubular elements will attain. The table below shows the maximum temperatures that different sheath materials could be subjected to:
- For high wattages, multiple circuits are recommended

Sheath material	Maximum temperature
Copper	360° F (180° C)
Stainless steel	1200° F (650° C)
Steel	750° F (400° C)
Incoloy	1500° F (815° C)

Table 2

- Taking the environment within which the heater will operate into account, safety issues should be taken into consideration.
- Utilization of adequate temperature controlling devices, temperature and pressure high limit switches, low liquid level and flow controllers and other control/safety devices that will control the heating process and protect the heater from excessive heat.
- The classification of the electrical terminal box required (NEMA 1, NEMA 4, NEMA 7, NEMA 12 etc...).
- The level of the contamination that a heater will be exposed to.
- Electrical safety codes should be considered.
- The possible requirement of baffles that force a gas or a liquid to circulate around heating elements when flanged immersion heaters are used inside circulation tanks.

For more information in selecting Flanged immersion heaters please contact our technical specialists.

Application	Sheath material	Screw plug material	Typical watt density w/in <sup>2</sup>
Clean water	Copper	Brass	55-80
Process water / Weak solution	Stainless steel	Stainless steel	25-55
Oil light	Steel	Steel	20-25
Oil medium	Steel	steel	12-15
Corrosive solutions (basic)	Incoloy	Stainless steel	20-25
Corrosive solutions (acidic)	Stainless steel	Stainless steel	20-25
Vegetable oil	Stainless steel	Stainless steel	30-40
Asphalt, tar, wax	Steel	Steel	4-10
Air	Incoloy	Steel	25-30

Table 3

# BUKAN FLANGED IMMERSION HEATERS

## Terminal boxes

Figure 1

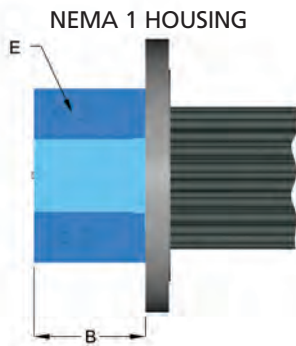


Figure 2

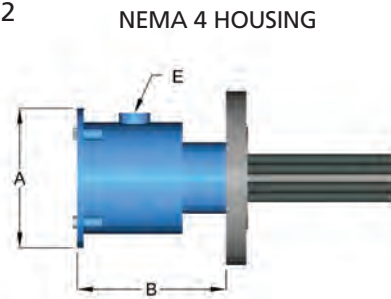


Figure 3

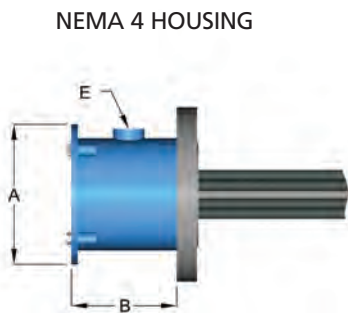
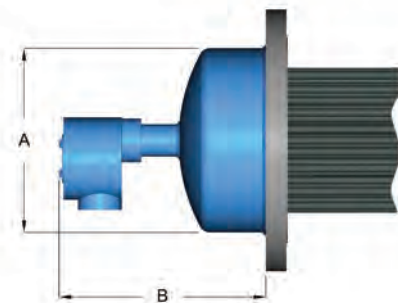


Figure 4



NEMA 1 Terminal box size

Flange size	Fig. #	Without thermostat	With thermostat
		Dim. B	Dim. B
2 1/2"	1	3"	4 1/2"
3"	1	3"	4 1/2"
4"	1	4 1/2"	4 1/2"
5"	1	4 1/2"	4 1/2"
6"	1	4 1/2"	4 1/2"
8"	1	4 1/2"	4 1/2"
10"	1	7 1/2"	7 1/2"
12"	1	7 1/2"	7 1/2"

NEMA 4 Terminal box size

Flange size	Fig. #	Dim. A	Without thermostat	With thermostat
			Dim. B	Dim. B
2 1/2"	2	5 5/8"	4 1/2"	7 1/4"
3"	3	5 5/8"	4 1/2"	7 1/4"
4"	3	6 11/16"	7 1/4"	7 1/4"
5"	3	7 3/4"	7 1/4"	7 1/4"
6"	3	8 3/4"	7 1/4"	7 1/4"
8"	3	10 3/4"	7 1/4"	7 1/4"
10"	3	11 7/8"	7 1/4"	7 1/4"
12"	3	15 1/4"	8"	8"

### Optional features

- Nema 4, 4X / Nema 7, 7X terminal box.
- 300 lbs flanges.  
(Other pressure ratings are available)
- Stainless steel flanges.
- Special terminal box (stilted, vented, etc...)
- Built-in thermocouples.
- Passivation.
- Baffles.
- High limit temperature devices.
- Thermostats (various temperature ranges)

NEMA 7 Explosion proof

Flange size	Fig. #	Dim. A	Without thermostat	With thermostat
			Dim. B	Dim. B
2 1/2"	4	4"	9 1/4"	11"
3"	4	4 1/2"	9 1/4"	11"
4"	4	5 9/16"	10 1/4"	11 1/2"
5"	4	6 5/8"	10 3/4"	12"
6"	4	7 5/8"	11"	12 1/4"
8"	4	9 5/8"	13"	13"
10"	4	10 3/4"	13 1/2"	13 1/2"
12"	4	12 3/4"	14 1/2"	14 1/2"

# BUCAN FLANGED IMMERSION HEATERS

## Thermostats and thermocouples

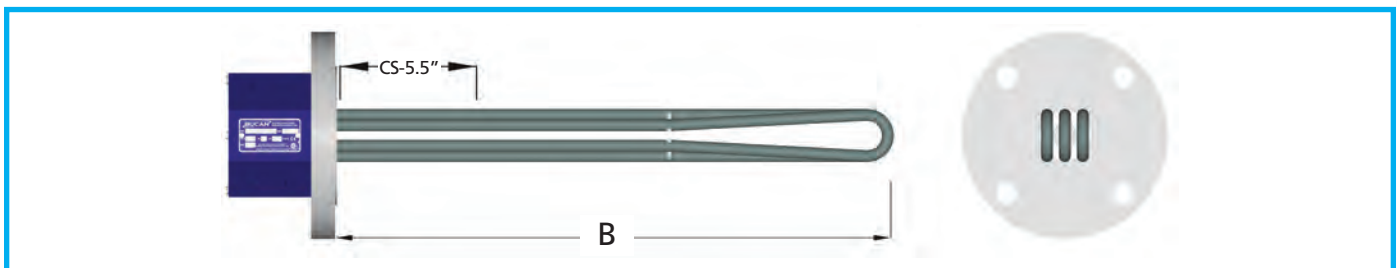
Thermostats that are utilized in flanged heaters are the bulb and capillary style. These thermostats operate by the principle of expansion and contraction of a heat sensitive liquid found inside the bulb and capillary assembly, which controls the activation of an electrical switch inside the thermostat. Thermostats in most cases open the electrical circuit when the desired temperature is attained (open on rise). The table below shows available ranges of thermostats. A pilot duty thermostat can always be used when the ampacity of a heater is higher than the available thermostat amperages shown below.

Thermostat	Contact operation	Temperature range	Volts / Amps
T0	SPST	10° to 120°C	125V - 30A / 250V - 30A / 277V - 25A
T1	SPST	-15,5° to 40°C	125V - 30A / 250V - 30A / 277V - 25A
T2	SPST	70° to 280°C	125V - 30A / 250V - 30A / 277V - 25A
T3	SPST	149° to 370°C	125V - 30A / 250V - 30A / 277V - 25A
T4	SPST	0° to 120°C	125V - 30A / 250V - 30A / 277V - 25A
T5	DPST	10° to 120°C	max. 277V - max. 25A
T6	DPST	-15,5° to 40°C	max. 277V - max. 25A
T7	DPST	-25,5° to 204,5°C	max. 277V - max. 25A
T8	DPST	10° to 120°C	max. 600V - max. 15A

It should be noted that thermostats are only temperature controllers and should not be used as fail-safe high limit switches.

Built-in thermocouples could be utilized inside flanged immersion heaters to give more accurate temperature indications. Thermocouples could also be attached to one of the heating elements and utilized as high-temperature limiting devices.

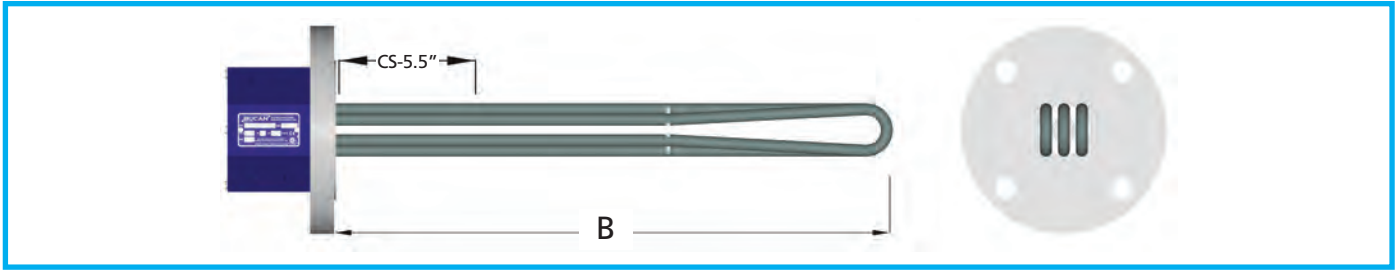
## Tables of standard flanged heaters



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

HIGH DENSITY / 2 1/2" 150 Lbs STEEL FLANGE / 3 COPPER ELEMENTS										
6	18	457	208 240 / 416 480 / 600	5.5"	59	9.2	FH25-306C457	FH25-306C457T	13.5	6.1
9	26	660			54	8.4	FH25-309C660	FH25-309C660T	14.5	6.6
12	33	838			54	8.3	FH25-312C838	FH25-312C838T	15.5	7.0
15	40	1016			54	8.3	FH25-315C1016	FH25-315C1016T	16.4	7.4
15	48	1219			52	8.1	FH25-318C1219	FH25-318C1219T	17.5	7.9

# BUKAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

## HIGH DENSITY / 2 1/2" 150 Lbs STEEL FLANGE / 3 INCOLOY ELEMENTS

6	18	457	208 240 / 416 480 / 600	5.5"	59	9.2	FH25-306I457	FH25-306I457T	13.9	6.3
9	26	660			54	8.4	FH25-309I660	FH25-309I660T	15.1	6.9
12	33	838			54	8.3	FH25-312I838	FH25-312I838T	16.2	7.4
15	40	1016			54	8.3	FH25-315I1016	FH25-315I1016T	17.3	7.8
15	48	1219			52	8.1	FH25-318I1219	FH25-318I1219T	18.5	8.4

## MEDIUM DENSITY / 2 1/2" 150 Lbs STEEL FLANGE / 3 INCOLOY ELEMENTS

3	18	457	208 240 / 416 480 / 600	5.5"	30	4.6	FH25-303I457	FH25-303I457T	13.9	6.3
4.5	26	660			27	4.2	FH25-304I660	FH25-304I660T	15.1	6.9
6	33	838			27	4.2	FH25-306I838	FH25-306I838T	16.2	7.4
7.5	40	1016			27	4.2	FH25-307I1016	FH25-307I1016T	17.3	7.8
9	48	1219			26	4.0	FH25-309I1219	FH25-309I1219T	18.5	8.4

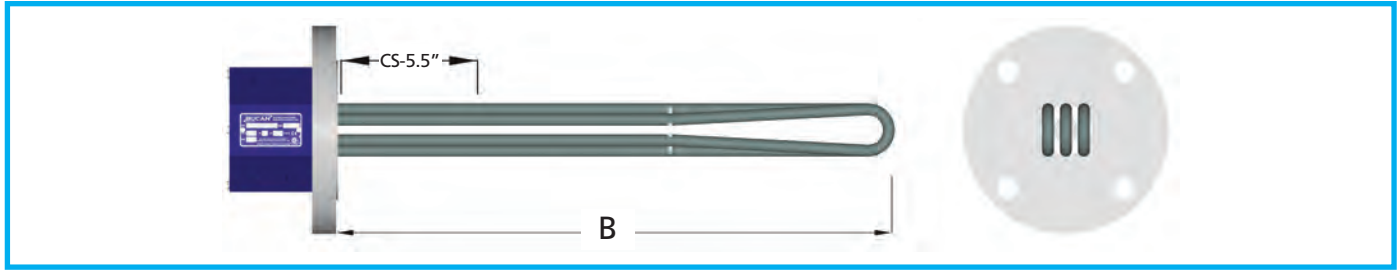
## LOW DENSITY / 2 1/2" 150 Lbs STEEL FLANGE / 3 INCOLOY ELEMENTS

3	33	838	208 240 / 416 480 / 600	5.5"	13	2.1	FH25-303I838	FH25-303I838T	16.2	7.4
4.5	40	1016			16	2.5	FH25-304I1016	FH25-304I1016T	17.3	7.8
6	48	1219			17	2.7	FH25-306I1219	FH25-306I1219T	18.5	8.4

## HIGH DENSITY / 3" 150 Lbs STEEL FLANGE / 3 & 6 COPPER ELEMENTS

6	18	457	208 240 / 416 480 / 600	5.5"	59	9.2	FH25-306C457	FH25-306C457T	16.4	7.5
9	26	660			54	8.4	FH25-309C660	FH25-309C660T	17.5	7.9
12	33	838			54	8.3	FH25-312C838	FH25-312C838T	18.4	8.4
15	40	1016			54	8.3	FH25-315C1016	FH25-315C1016T	19.3	8.8
18	48	1219			52	8.1	FH25-318C1219	FH25-318C1219T	20.4	9.3
18	26	660			54	8.4	FH25-618C660	FH25-618C660T	20.9	9.5
24	33	838			54	8.3	FH25-624C838	FH25-624C838T	22.8	10.3
30	40	1016			54	8.3	FH25-630C1016	FH25-630C1016T	24.6	11.2

# BUCAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

## HIGH DENSITY / 3" 150 Lbs STEEL FLANGE / 3 & 6 INCOLOY ELEMENTS

KILO WATTS	inch	mm	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY W/in <sup>2</sup>	WATT DENSITY W/cm <sup>2</sup>	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT LBS	NET WEIGHT KG
6	18	457	208 240 / 416 480 / 600	5.5"	59	9.2	FH3-306I457	FH3-306I457T	16.8	7.6
9	26	660			54	8.4	FH3-309I660	FH3-309I660T	18.1	8.2
12	33	838			54	8.3	FH3-312I838	FH3-312I838T	19.1	8.7
15	40	1016			54	8.3	FH3-315I1016	FH3-315I1016T	20.2	9.2
18	48	1219			52	8.1	FH3-318I1194	FH3-318I1194T	21.3	9.7
18	26	660			54	8.4	FH3-618I660	FH3-618I660T	22.1	10.0
24	33	838			54	8.3	FH3-624I838	FH3-624I838T	24.2	11.0
30	40	1016			54	8.3	FH3-630I1016	FH3-630I1016T	26.4	12.0
33	43	1092			54	8.4	FH3-633I1092	FH3-633I1092T	27.3	12.4
36	46	1168			55	8.5	FH3-636I1168	FH3-636I1168T	28.3	12.9

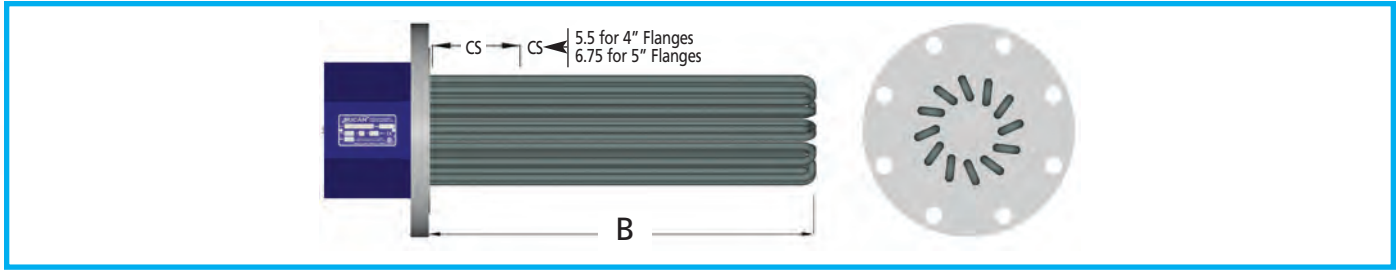
## MEDIUM DENSITY / 3" 150 Lbs STEEL FLANGE / 3 INCOLOY ELEMENTS

KILO WATTS	inch	mm	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY W/in <sup>2</sup>	WATT DENSITY W/cm <sup>2</sup>	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT LBS	NET WEIGHT KG
3	18	457	208 240 / 416 480 / 600	5.5"	30	4.6	FH3-303I457	FH3-303I457T	16.8	7.6
4.5	26	660			27	4.2	FH3-304I660	FH3-304I660T	18.1	8.2
6	33	838			27	4.2	FH3-306I838	FH3-306I838T	19.1	8.7
7.5	40	1016			27	4.2	FH3-307I1016	FH3-307I1016T	20.2	9.2
9	47	1194			26	4.1	FH3-309I1194	FH3-309I1194T	21.3	9.7

## LOW DENSITY / 3" 150 Lbs STEEL FLANGE / 3 INCOLOY ELEMENTS

KILO WATTS	inch	mm	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY W/in <sup>2</sup>	WATT DENSITY W/cm <sup>2</sup>	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT LBS	NET WEIGHT KG
3	33	838	208 240 / 416 480 / 600	5.5"	13	2.1	FH3-303I838	FH3-303I838T	19.1	8.7
4.5	40	1016			16	2.5	FH3-304I1016	FH3-304I1016T	20.2	9.2
6	48	1194			18	2.8	FH3-306I1194	FH3-306I1194T	21.3	9.7

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KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

## HIGH DENSITY / 4" 150 Lbs STEEL FLANGE / 6 & 9 COPPER ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
12	18	457	208 240 / 416 480 / 600	5.5"	59	9.2	FH4-612C457	FH4-612C457T	24.3	11.0
15	22	559			56	8.7	FH4-614C559	FH4-614C559T	25.3	11.5
18	25	660			54	8.4	FH4-618C660	FH4-618C660T	25.4	12.0
24	33	838			54	8.3	FH4-624C836	FH4-624C836T	28.2	12.8
30	40	1016			54	8.3	FH4-630C1016	FH4-630C1016T	30.1	13.7
18	18	457			59	9.2	FH4-918C457	FH4-918C457T	26.6	12.1
27	26	660			54	8.4	FH4-927C660	FH4-927C660T	29.8	13.5
36	33	838			54	8.3	FH4-936C838	FH4-936C838T	32.6	14.8
45	40	1016			54	8.3	FH4-945C1016	FH4-945C1016T	35.4	16.1

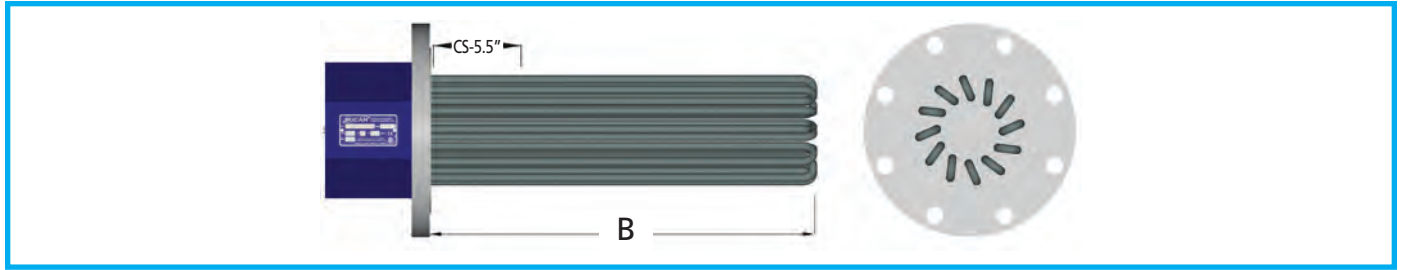
## HIGH DENSITY / 4" 150 Lbs STEEL FLANGE / 6 & 9 INCOLOY ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
12	18	457	208 240 / 416 480 / 600	5.5"	59	9.2	FH4-612I457	FH4-612I457T	25.0	11.4
15	22	559			56	8.7	FH4-614I559	FH4-614I559T	26.3	11.9
18	25	660			54	8.4	FH4-618I660	FH4-618I660T	27.6	12.5
24	33	838			54	8.3	FH4-624I836	FH4-624I836T	29.7	13.6
30	40	1016			54	8.3	FH4-630I1016	FH4-630I1016T	31.8	14.5
18	18	457			59	9.2	FH4-918I457	FH4-918I457T	27.8	12.6
27	26	660			54	8.4	FH4-927I660	FH4-927I660T	31.5	14.3
36	33	838			54	8.3	FH4-936I838	FH4-936I838T	34.8	15.8
45	40	1016			54	8.3	FH4-945I1016	FH4-945I1016T	38.0	17.3

## MEDIUM DENSITY / 4" 150 Lbs STEEL FLANGE / 6 & 9 INCOLOY ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
6	18	457	208 240 / 416 480 / 600	5.5"	30	4.6	FH4-606I457	FH4-606I457T	25.0	11.4
9	26	660			27	4.2	FH4-609I660	FH4-609I660T	27.6	12.5
12	33	838			27	4.2	FH4-612I838	FH4-612I838T	29.7	13.5
9	18	457			30	4.6	FH4-909I457	FH4-909I457T	27.8	12.6
13.5	26	660			27	4.2	FH4-913I660	FH4-913I660T	31.5	14.3
18	33	838			27	4.2	FH4-918I838	FH4-918I838	34.8	15.8

# BUCAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

## LOW DENSITY / 5" 150 Lbs STEEL FLANGE / 6 & 9 INCOLOY ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
6	33	838	208	5.5"	13	2.1	FH4-606I838	FH4-606I838T	29.7	13.5
9	33	838	340 / 416		13	2.1	FH4-909I838	FH4-909I838T	34.8	15.8

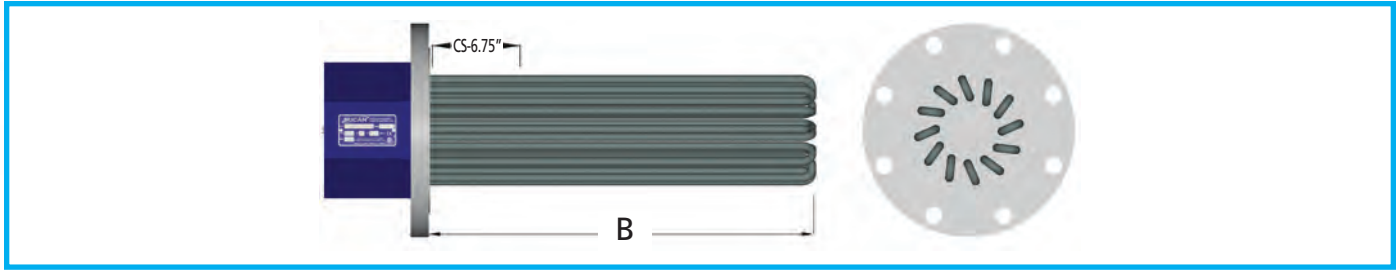
## HIGH DENSITY / 5" 150 Lbs STEEL FLANGE / 3 & 6 COPPER ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
12	18	457	208 240 / 416 480 / 600	6.75"	66	10.2	FH5-612I457	FH5-612I457T	28.4	12.9
15	22	559			61	9.4	FH5-615I559	FH5-615I559T	29.5	13.4
18	26	660			58	8.9	FH5-618I660	FH5-618I660T	30.5	13.9
24	33	838			56	8.7	FH5-624I838	FH5-624I838T	32.4	14.7
30	40	1016			56	8.6	FH5-630I1016	FH5-630I1016T	34.2	15.5
27	26	660			58	8.9	FH5-927I660	FH5-927I660T	34.0	15.4
36	33	838			56	8.7	FH5-936I838	FH5-936I838T	36.7	16.7
45	40	1016			56	8.6	FH5-945I1016	FH5-945I1016T	39.5	17.9

## HIGH DENSITY / 5" 150 Lbs STEEL FLANGE / 3 & 6 INCOLOY ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
12	18	457	208 240 / 416 480 / 600	6.75"	66	10.2	FH5-612I457	FH5-612I457T	29.2	13.3
15	22	559			61	9.4	FH5-615I559	FH5-615I559T	30.4	13.8
18	26	660			58	8.9	FH5-618I660	FH5-618I660T	31.7	14.4
24	33	838			56	8.7	FH5-624I838	FH5-624I838T	33.8	15.4
30	40	1016			56	8.6	FH5-630I1016	FH5-630I1016T	36.0	16.3
27	26	660			58	8.9	FH5-927I660	FH5-927I660T	35.7	16.2
36	33	838			56	8.7	FH5-936I838	FH5-936I838T	38.9	17.7
45	40	1016			56	8.6	FH5-945I1016	FH5-945I1016T	42.1	19.1

# BUCAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

## MEDIUM DENSITY / 5" 150 Lbs STEEL FLANGE / 6 & 9 INCOLOY ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
6	18	457	208 240 / 416 480 / 600	6.75"	33	5.1	FH5-606I457	FH5-606I457T	29.2	13.3
9	26	660			29	4.5	FH5-609I660	FH5-609I660T	31.7	14.4
12	33	838			28	4.4	FH5-612I838	FH5-612I838T	33.8	15.4
15	40	1016			28	4.3	FH5-615I1016	FH5-615I1016T	36.0	16.3
18	47	1194			28	4.3	FH5-618I1194	FH5-618I1194T	38.1	17.3
9	18	457			33	5.1	FH5-909I457	FH5-909I457T	32.0	14.5
13.5	26	660			29	4.5	FH5-913I660	FH5-913I660T	35.7	16.2
18	33	838			28	4.4	FH5-918I838	FH5-918I838T	38.9	17.7
27	47	1194			28	4.3	FH5-927I1194	FH5-927I1194	45.4	20.6

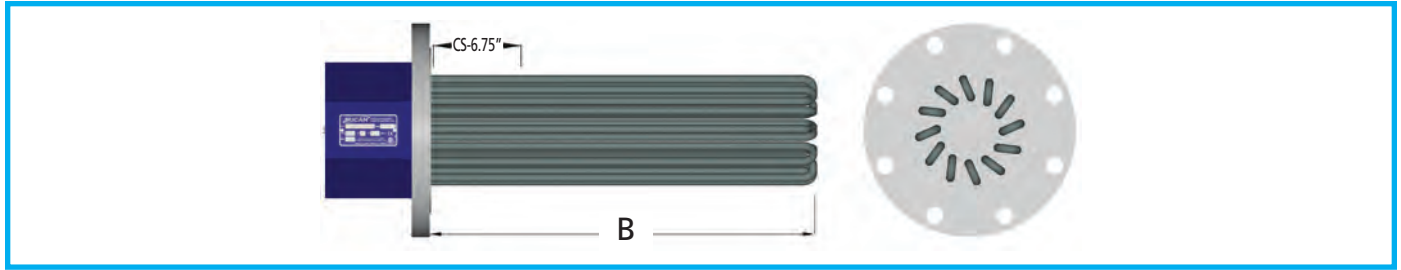
## LOW DENSITY / 5" 150 Lbs STEEL FLANGE / 6 & 9 INCOLOY ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
6	33	838	208 240 / 416 480 / 600	6.75"	14	2.2	FH5-606I838	FH5-606I838T	23.8	15.4
12	47	1194			18	2.9	FH5-612I1194	FH5-612I1194T	38.1	17.3
9	33	838			14	2.2	FH5-909I838	FH5-909I838T	38.9	17.7
18	47	1194			18	2.9	FH5-918I1194	FH5-918I1194T	45.4	20.6

## HIGH DENSITY / 6" 150 Lbs STEEL FLANGE / 12, 15 & 18 COPPER ELEMENTS

KILO WATTS	'B' DIMENSION (inch)	'B' DIMENSION (mm)	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY (W/in <sup>2</sup> )	WATT DENSITY (W/cm <sup>2</sup> )	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT (LBS)	NET WEIGHT (KG)
36	26	660	208 240 / 416 480 / 600	6.75"	58	8.9	FH6-1236C660	FH6-1236C660T	46.5	21.1
48	33	838			56	8.7	FH6-1248C838	FH6-1248C838T	50.8	23.1
60	40	1016			56	8.6	FH6-1260C1016	FH6-1260C1016T	55.1	25.0
72	47	1194			55	8.6	FH6-1272C1194	FH6-1272C1194T	59.5	27.0
45	26	650			58	8.9	FH6-1545C660	FH6-1545C660T	50.5	22.9
60	33	838			56	8.7	FH6-1560C838	FH6-1560C838T	55.9	25.4
75	40	1016			56	8.6	FH6-1575C1016	FH6-1575C1016T	61.3	27.8
90	47	1194			55	8.6	FH6-1590C1194	FH6-1590C1194T	66.7	30.3
90	40	1016			56	8.6	FH6-1890C1016	FH6-1890C1016T	67.5	30.6

# BUCAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

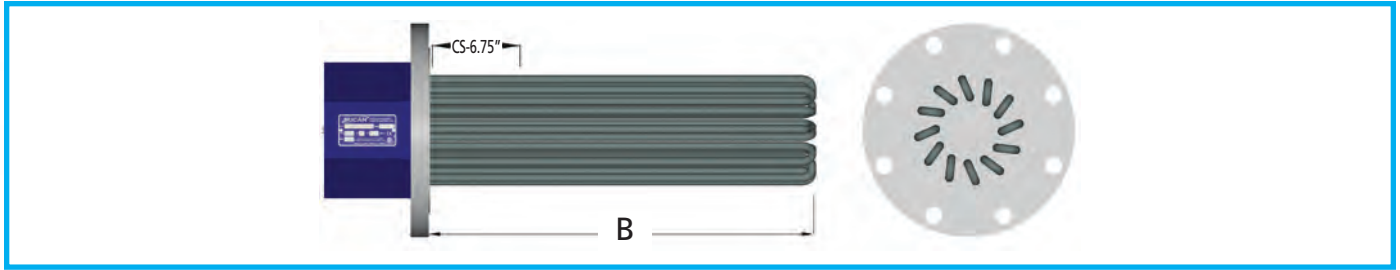
## HIGH DENSITY / 6" 150 Lbs STEEL FLANGE / 12, 15 & 18 INCOLOY ELEMENTS

KILO WATTS	inch	mm	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT		
									W/in <sup>2</sup>	W/cm <sup>2</sup>
36	26	660	208 240 / 416 480 / 600	6.75"	58	8.9	FH6-1236I660	FH6-1236I660T	46.5	21.1
48	33	838			56	8.7	FH6-1248I838	FH6-1248I838T	50.8	23.1
60	40	1016			56	8.6	FH6-1260I1016	FH6-1260I1016T	55.1	25.0
72	47	1194			55	8.6	FH6-1272I1194	FH6-1272I1194T	59.5	27.0
45	26	650			58	8.9	FH6-1545I660	FH6-1545I660T	50.5	22.9
60	33	838			56	8.7	FH6-1560I838	FH6-1560I838T	55.9	25.4
75	40	1016			56	8.6	FH6-1575I1016	FH6-1575I1016T	61.3	27.8
90	47	1194			55	8.6	FH6-1590I1194	FH6-1590I1194T	66.7	30.3
120	47	1194			74	11.4	FH6-1512I1194	FH6-1890I1016T	66.7	30.6
90	40	1016			56	8.6	FH6-1890I1016	FH6-1890I1016T	67.5	30.6
144	47	1184			74	11.4	FH6-1814I1194	FH6-1814I1194T	74.0	33.6

## MEDIUM DENSITY / 6" 150 Lbs STEEL FLANGE / 12 & 15 INCOLOY ELEMENTS

KILO WATTS	inch	mm	STANDARD VOLTAGES	COLD SECTION	WATT DENSITY	WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT	NET WEIGHT		
									W/in <sup>2</sup>	W/cm <sup>2</sup>
18	26	660	208 240 / 416 480 / 600	6.75"	29	4.5	FH6-1218I660	FH6-1218I660T	46.5	21.1
24	33	838			28	4.4	FH6-1234I838	FH6-1234I838T	50.8	23.1
30	40	1016			28	4.3	FH6-1230I1016	FH6-1230I1016T	55.1	25.0
36	47	1194			28	4.3	FH6-1236I1194	FH6-1236I1194T	59.5	27.0
48	26	1549			27	4.2	FH6-1248I1549	FH6-1248I1549T	68.1	30.9
22.5	33	660			29	4.5	FH6-1522I660	FH6-1522I660T	50.5	22.9
30	40	838			28	4.4	FH6-1530I838	FH6-1530I838T	55.9	25.4
37.5	47	1016			28	4.3	FH6-1537I1016	FH6-1537I1016T	61.3	27.8
45	40	1194			28	4.3	FH6-1545I1194	FH6-1545I1194T	66.7	30.3
60	61	1549			27	4.2	FH6-1560I1549	FH6-1560I1549T	77.5	35.2

# BUCAN FLANGED IMMERSION HEATERS

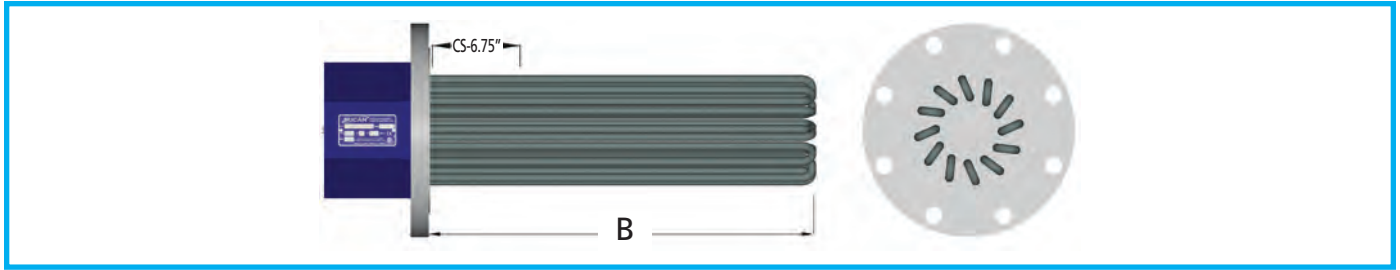


KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

LOW DENSITY / 6" 150 Lbs STEEL FLANGE / 12 & 15 INCOLOY ELEMENTS										
12	33	838	208 240 / 416 480 / 600	6.75"	14	2.2	FH6-1212I836	FH6-1212I836T	50.2	23.1
18	40	1016			17	2.6	FH6-1218I1016	FH6-1218I1016T	55.1	25.0
24	47	1194			18	2.9	FH6-1224I1194	FH6-1224I1194T	59.5	27.0
15	33	838			14	2.2	FH6-1515I838	FH6-1515I838T	55.9	25.4
22.5	40	1016			17	2.6	FH6-1522I1016	FH6-1522I1016T	61.3	27.8
30	47	1194			18	2.9	FH6-1530I1194	FH6-1530I1194T	66.7	30.3

HIGH DENSITY / 8" 150 Lbs STEEL FLANGE / 15, 18, 21, 24, 27 & 30 INCOLOY ELEMENTS										
120	47	1194	208 240 / 416 480 / 600	6.75"	74	11.4	FH8-15120I1194	FH8-15120I1194T	88.8	40.3
54	26	660			58	8.9	FH8-1854I660	FH8-1854I660T	76.6	34.8
72	33	838			56	8.7	FH8-1872I838	FH8-1872I838T	83.1	37.7
90	39	991			57	8.9	FH8-18902I991	FH8-18902I991T	88.6	40.2
108	47	1194			55	8.6	FH8-18108I1194	FH8-18108I1194T	96.0	43.6
144	47	1194			74	11.4	FH8-18144I1194	FH8-18144I1194T	96.0	43.6
168	47	1194			74	11.4	FH8-21168I1194	FH8-21168I1194T	103.3	46.9
192	47	1194			74	11.4	FH8-24192I1194	FH8-24192I1194T	110.5	50.2
81	26	660			58	8.9	FH8-2781I660	FH8-2781I660T	88.6	40.2
108	32.5	826			57	8.9	FH8-27108I826	FH8-27108I826T	97.7	44.3
135	39	991			57	8.9	FH8-27135I991	FH8-27135I991T	106.7	48.4
162	47	1194			55	8.6	FH8-27621I1194	FH8-27621I1194T	117.8	53.5
216	47	1194			74	11.4	FH8-27216I1194	FH8-27216I1194T	117.8	53.5
240	47	1194			74	11.4	FH8-30240I1194	FH8-30240I1194T	125.0	56.8

# BUCAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

## MEDIUM DENSITY / 8" 150 LBS STEEL FLANGE / 18, 21, 24, 27 & 30 INCOLOY ELEMENTS

36	33	838	208 240 / 416 480 / 600	6.75"	28	4.3	FH8-1836I836	FH8-1836I836T	83.1	37.7
54	47	1194			28	4.3	FH8-1854I1194	FH8-1854I1194T	96.0	43.6
63	47	1194			28	4.3	FH8-2163I1194	FH8-2163I1194T	103.3	46.9
72	47	1194			28	4.3	FH8-2472I1194	FH8-2472I1194T	110.5	50.2
81	47	1194			28	4.3	FH8-2781I1194	FH8-2781I1194T	117.8	53.5
90	47	1194			28	4.3	FH8-3090I1194	FH8-3090I1194T	125.0	56.8

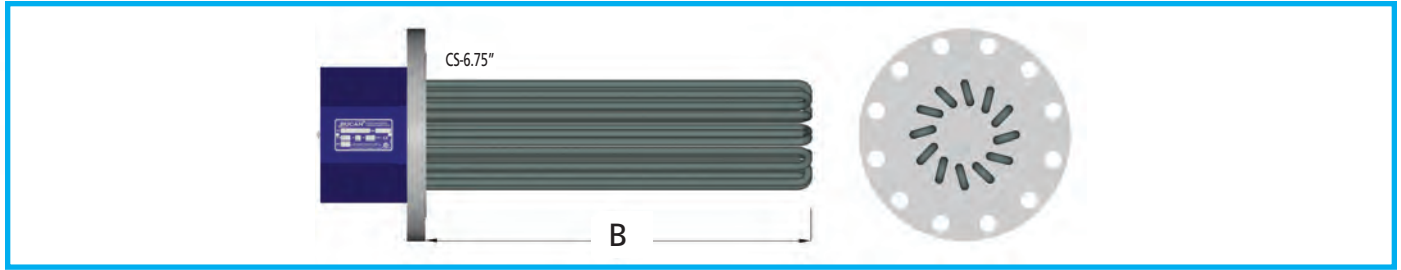
## LOW DENSITY / 8" 150 LBS STEEL FLANGE / 18, 21, 24, 27 & 30 INCOLOY ELEMENTS

27	39	991	208 240 / 416 480 / 600	6.75"	17	2.7	FH8-1827I991	FH8-1827I991T	88.6	37.7
36	47	1194			18	2.9	FH8-1836I1194	FH8-1836I1194T	96.0	43.6
31.5	39	991			17	2.7	FH8-2131I991	FH8-2131I991T	94.7	46.9
36	39	991			17	2.7	FH8-2436I991	FH8-2436I991T	100.7	50.2
40.5	39	991			17	2.7	FH8-2740I991	FH8-2740I991T	106.7	53.5
54	47	1194			18	2.9	FH8-2754I1194	FH8-2754I1194T	117.8	56.8
45	39	991			17	2.7	FH8-3045I991	FH8-3045I991T	112.7	51.2

## HIGH DENSITY / 8" 150 LBS STEEL FLANGE / 18 & 27 COPPER ELEMENTS

54	26	660	208 240 / 416 480 / 600	6.75"	58	8.9	FH8-1854C660	FH8-1854C660T	73.2	23.2
72	33	838			56	8.7	FH8-1872C838	FH8-1872C838T	78.7	35.7
90	39	991			57	8.9	FH8-1890C991	FH8-1890C991T	83.5	37.9
108	48	1219			54	8.3	FH8-18108C1219	FH8-18108C1219	90.6	41.1
81	26	660			58	8.9	FH8-2781C660	FH8-2781C660T	83.5	37.9
108	33	838			56	8.7	FH8-27108C838	FH8-27108C838T	91.8	41.7
135	39	991			57	8.9	FH8-27135C991	FH8-27135C991T	99.0	44.9
162	47	1194			55	8.6	FH8-27162I1194	FH8-27162I1194T	108.5	49.2

# BUCAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

## HIGH DENSITY / 10" 150 Lbs STEEL FLANGE / 36 & 42 COPPER ELEMENTS

180	39	991	208	6.75"	57	8.8	FH10-36180C991	FH10-336180C991T	136.9	62.2
216	47	1194	240 / 416		55	8.6	FH10-36216C1194	FH10-36216C1194T	149.6	67.9
252	47	1194	480 / 600		55	8.6	FH10-42252C1194	FH10-42252C1194T	162.0	73.6

## HIGH DENSITY / 10" 150 Lbs STEEL FLANGE / 36, 42 & 48 INCOLOY ELEMENTS

180	39	991	208 240 / 416 480 / 600	6.75"	57	8.9	FH10-36180I991	FH10-36180I991T	147.2	66.8
216	47	1194			55	8.6	FH10-36216I1194	FH10-36216I1194T	162.0	73.6
288	47	1194			74	11.4	FH10-36288I1194	FH10-36288I1194T	162.0	73.6
252	47	1194			55	8.6	FH10-42252I1194	FH10-42252I1194T	176.5	80.1
336	47	1194			74	11.4	FH10-42336I1194	FH10-42336I1194	176.5	80.1
384	47	1194			74	11.4	FH10-48384I1194	FH10-48384I1194	191.0	86.7

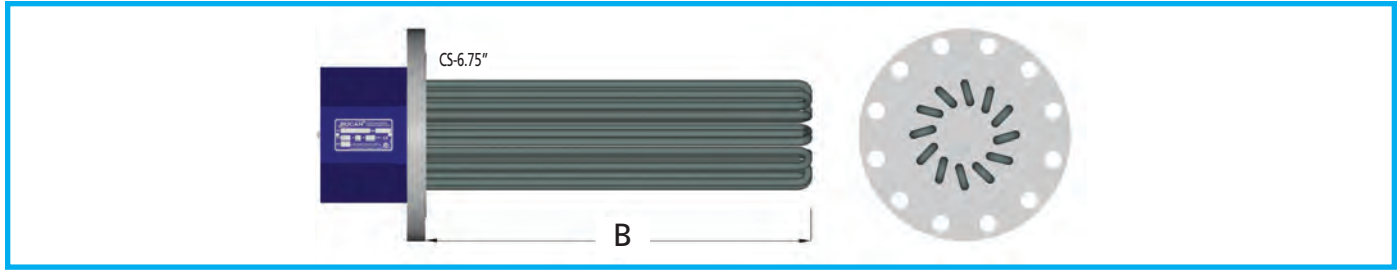
## MEDIUM DENSITY / 10" 150 Lbs STEEL FLANGE / 36, 42 & 48 INCOLOY ELEMENTS

108	47	1194	208	6.75"	28	4.3	FH10-36108C1194	FH10-36108C1194T	136.0	73.6
126	47	1194	240 / 416		28	4.3	FH10-42126C1194	FH10-42126C1194T	176.5	80.1
144	47	1194	480 / 600		28	4.3	FH10-48144C1194	FH10-48144C1194T	191.0	86.7

## LOW DENSITY / 10" 150 Lbs STEEL FLANGE / 36, 42 & 48 INCOLOY ELEMENTS

72	47	1194	208	6.75"	18	2.9	FH10-3672C1194	FH10-3672C1194T	162.0	73.6
84	47	1194	240 / 416		18	2.9	FH10-4284C1194	FH10-4284C1194T	176.5	80.1
96	47	1194	480 / 600		18	2.9	FH10-4896C1194	FH10-4896C1194T	191.0	86.7

# BUCAN FLANGED IMMERSION HEATERS



KILO WATTS	'B' DIMENSION		STANDARD VOLTAGES	COLD SECTION	WATT DENSITY		WITHOUT THERMOSTAT CATALOG NO.	WITH THERMOSTAT 10-120°C / 50-250°F	NET WEIGHT	
	inch	mm			W/in <sup>2</sup>	W/cm <sup>2</sup>			LBS	KG

HIGH DENSITY / 12" 150 Lbs STEEL FLANGE / 48, 54 & 60 COPPER ELEMENTS										
240	39	991	208 240 / 416 480 / 600	6.75"	57	8.9	FH12-48240C991	FH12-48240C991T	192.2	87.3
288	47	1194			55	8.6	FH12-48288C1194	FH12-48288C1194T	209.1	94.9
324	47	1194			55	8.6	FH12-52324C1194	FH12-52324C1194T	221.5	100.6
360	47	1194			55	8.6	FH12-60360C1194	FH12-60360C1194T	234.0	106.2

HIGH DENSITY / 12" 150 Lbs STEEL FLANGE / 48, 54 & 60 INCOLOY ELEMENTS										
240	39	991	208 240 / 416 480 / 600	6.75"	57	8.9	FH12-48240C991	FH12-48240C991T	205.9	93.5
288	47	1194			55	8.6	FH12-48288C1194	FH12-48288C1194T	225.7	102.5
324	47	1194			55	8.6	FH12-54324C1194	FH12-54324C1194T	240.2	109.0
432	47	1194			74	11.4	FH12-54432C1194	FH12-54432C1194T	240.2	109.0
360	47	1194			55	8.6	FH12-60360C1194	FH12-60360C1194T	254.7	115.6
480	47	1194			74	11.4	FH12-60480C1194	FH12-60480C1194	254.7	115.6

MEDIUM DENSITY / 12" 150 Lbs STEEL FLANGE / 48, 54 & 60 INCOLOY ELEMENTS										
144	47	1194	208 240 / 416 480 / 600	6.75"	28	4.3	FH12-48144C1194	FH12-48144C1194T	225.7	102.5
162	47	1194			28	4.3	FH12-54162C1194	FH12-54162C1194T	240.2	109.0
180	47	1194			28	4.3	FH12-60180C1194	FH12-60180C1194T	254.7	115.6

LOW DENSITY / 12" 150 Lbs STEEL FLANGE / 48, 54 & 60 INCOLOY ELEMENTS										
96	47	1194	208 240 / 416 480 / 600	6.75"	18	2.9	FH12-4896C1194	FH12-4896C1194T	225.7	102.5
108	47	1194			18	2.9	FH12-54108C1194	FH12-54108C1194T	240.2	109.0
120	47	1194			18	2.9	FH12-60120C1194	FH12-60120C1194T	254.7	115.6