

# Cartridge/Insertion Heaters

**EXTENDED  
CAPABILITY**

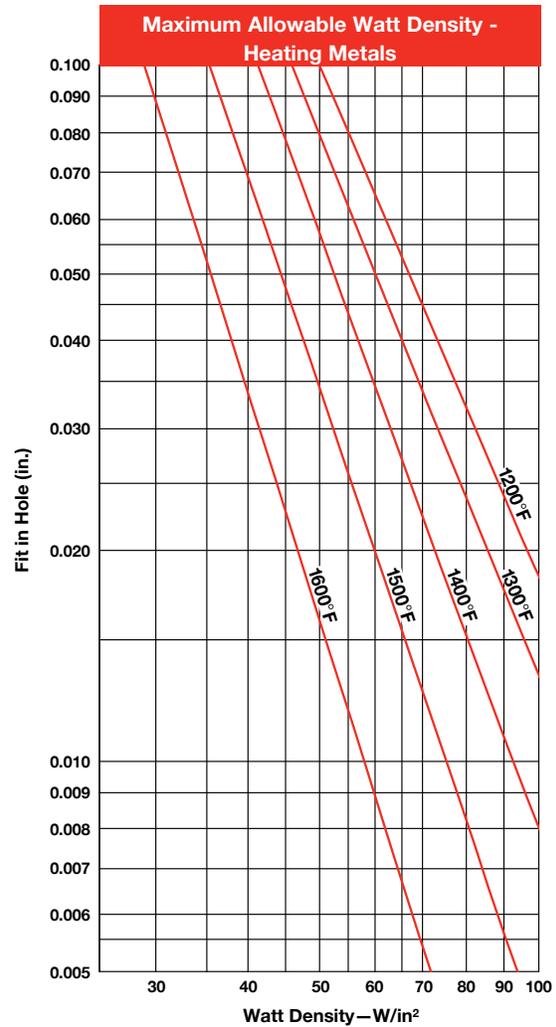


## Extended Capabilities for High-Temperature (HT) FIREROD® Heaters

### Options

- Thermocouples
- Independently controllable heat zones
- Distributed wattage
- Flanges
- Post terminals
- Bent FIREROD

To consider the HT FIREROD for your application, use the recommended *Maximum Watt Density graph* shown.



**Note:** Extended capabilities are subject to a business case review.



## FIREROD Cartridge Heaters

The following tables contain lists of standard base FIREROD constructions. The Watlow SELECT™ program offers millions of potential FIREROD configurations to meet your thermal needs, many of those configurations available in one or five days. Please contact your local Watlow distributor or sales office to configure your FIREROD.

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
1/8	1	(25.0)	24	20	104	(16)	0.02	(0.009)	<b>C1A-9600<sup>①</sup></b>
	1	(25.0)	24	25	130	(20)	0.02	(0.009)	<b>C1A-9601<sup>①</sup></b>
	1	(25.0)	24	30	157	(24)	0.02	(0.009)	<b>C1A-9602<sup>①</sup></b>
	1	(25.0)	48	20	104	(16)	0.02	(0.009)	<b>C1A-9603<sup>①</sup></b>
	1	(25.0)	48	40	208	(32)	0.02	(0.009)	<b>C1A-9604<sup>①</sup></b>
	1	(25.0)	50	50	260	(40)	0.02	(0.009)	<b>C1A-9605<sup>①</sup></b>
	1 1/4	(32.0)	120	25	87	(13)	0.02	(0.009)	<b>C1E14-L12</b>
	1 1/4	(32.0)	120	50	174	(18)	0.02	(0.009)	<b>C1E13-L12</b>
	1 1/4	(32.0)	240	35	113	(27)	0.02	(0.009)	<b>C1E42-L12</b>
	1 1/2	(38.0)	120	30	78	(12)	0.02	(0.009)	<b>C1J5-L12</b>
	1 1/2	(38.0)	120	60	156	(24)	0.02	(0.009)	<b>C1J6-L12</b>
	2	(51.0)	120	50	87	(13)	0.02	(0.009)	<b>C2A4-L12</b>
	2	(51.0)	120	100	174	(27)	0.02	(0.009)	<b>C2A5-L12</b>
	1/4	1	(25.0)	120	80	208	(32)	0.02	(0.009)
1		(25.0)	120	100	260	(40)	0.02	(0.009)	<b>E1A52-L12</b>
1		(25.0)	120	150	390	(60)	0.02	(0.009)	<b>E1A53-L12</b>
1		(25.0)	240	100	250	(39)	0.02	(0.009)	<b>E1A66-L12</b>
1 1/4		(32.0)	120	75	130	(20)	0.02	(0.009)	<b>E1E41-L12</b>
1 1/4		(32.0)	120	100	173	(27)	0.02	(0.009)	<b>E1E42-L12</b>
1 1/4		(32.0)	120	150	260	(40)	0.02	(0.009)	<b>E1E43-L12</b>
1 1/4		(32.0)	240	225	390	(60)	0.02	(0.009)	<b>E1E61-L12</b>
1 1/2		(38.0)	120	50	65	(10)	0.02	(0.009)	<b>E1J39-L12</b>
1 1/2		(38.0)	120	100	130	(20)	0.02	(0.009)	<b>E1J40-L12</b>
1 1/2		(38.0)	120	150	195	(30)	0.02	(0.009)	<b>E1J41-L12</b>
1 1/2		(38.0)	240	175	228	(35)	0.02	(0.009)	<b>E1J49-L12</b>
1 1/2		(38.0)	120	200	260	(40)	0.02	(0.009)	<b>E1J42-L12</b>
1 1/2		(38.0)	240	200	260	(40)	0.02	(0.009)	<b>E1J52-L12</b>
1 1/2		(38.0)	240	250	325	(50)	0.02	(0.009)	<b>E1J35-L12</b>
2		(51.0)	120	80	68	(11)	0.03	(0.014)	<b>E2A136-L12</b>
2		(51.0)	120	100	87	(13)	0.03	(0.014)	<b>E2A55-L12</b>
2		(51.0)	240	125	108	(17)	0.03	(0.014)	<b>E2A82-L12</b>
2		(51.0)	120	150	130	(20)	0.03	(0.014)	<b>E2A56-L12</b>
2		(51.0)	240	150	130	(20)	0.03	(0.014)	<b>E2A77-L12</b>
2		(51.0)	120	200	173	(27)	0.03	(0.014)	<b>E2A57-L12</b>
2		(51.0)	240	200	173	(27)	0.03	(0.014)	<b>E2A50-L12</b>
2		(51.0)	120	250	217	(33)	0.03	(0.014)	<b>E2A72-L12</b>
2		(51.0)	240	250	215	(33)	0.03	(0.014)	<b>E2A76-L12</b>
2		(51.0)	240	300	260	(40)	0.03	(0.014)	<b>E2A83-L12</b>
2 1/2		(64.0)	120	250	159	(25)	0.03	(0.014)	<b>E2J80-L12</b>
2 1/2		(64.0)	240	250	159	(25)	0.03	(0.014)	<b>E2J49-L12</b>
3		(76.0)	120	100	52	(8)	0.04	(0.018)	<b>E3A48-L12</b>
3		(76.0)	120	200	104	(16)	0.04	(0.018)	<b>E3A49-L12</b>
3		(76.0)	240	200	104	(16)	0.04	(0.018)	<b>E3A60-L12</b>
3		(76.0)	240	250	128	(20)	0.04	(0.018)	<b>E3A124-L12</b>
3		(76.0)	120	300	156	(24)	0.04	(0.018)	<b>E3A50-L12</b>
3		(76.0)	240	300	156	(24)	0.04	(0.018)	<b>E3A51-L12</b>
4		(102.0)	120	100	37	(6)	0.04	(0.018)	<b>E4A28-L12</b>
4	(102.0)	120	200	74	(11)	0.04	(0.018)	<b>E4A29-L12</b>	
4	(102.0)	240	200	74	(11)	0.04	(0.018)	<b>E4A32-L12</b>	
4	(102.0)	120	300	111	(17)	0.04	(0.018)	<b>E4A30-L12</b>	
4	(102.0)	240	300	111	(17)	0.04	(0.018)	<b>E4A6-L12</b>	

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Heaters are manufactured to standard specifications. 12 inch crimped on GGS leads supplied. For other lead termination options, please contact your local Watlow representative.

<sup>①</sup>12 inch GGS swaged-in leads, no additional options available.

# Cartridge/Insertion Heaters



## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length in. (mm)	Volts	Watts	Watt Density W/in <sup>2</sup> (W/cm <sup>2</sup> )	Approx. Net Wt. lbs (kg)	Part Number
1/4	4 1/2 (114.0)	120	200	64 (10)	0.05 (0.023)	<b>E4J30-L12</b>
	5 (127.0)	240	350	101 (16)	0.05 (0.023)	<b>E5A45-L12</b>
	5 (127.0)	120	400	113 (18)	0.05 (0.023)	<b>E5A57-L12</b>
	5 (127.0)	240	400	113 (18)	0.05 (0.023)	<b>E5A34-L12</b>
	6 (152.0)	240	400	94 (14)	0.06 (0.027)	<b>E6A46-L12</b>
3/8	8 (203.0)	240	800	136 (21)	0.08 (0.036)	<b>E8A76-L12</b>
	1 (25.0)	120	55	95 (15)	0.03 (0.014)	<b>G1A71-L12</b>
	1 (25.0)	120	100	172 (26)	0.03 (0.014)	<b>G1A29-L12</b>
	1 (25.0)	120	150	259 (40)	0.03 (0.014)	<b>G1A38-L12</b>
	1 (25.0)	240	200	344 (53)	0.03 (0.014)	<b>G1A83-L12</b>
	1 1/4 (32.0)	120	100	115 (18)	0.03 (0.014)	<b>G1E91-L12</b>
	1 1/4 (32.0)	120	125	144 (22)	0.03 (0.014)	<b>G1E74-L12</b>
	1 1/4 (32.0)	120	150	172 (27)	0.03 (0.014)	<b>G1E92-L12</b>
	1 1/4 (32.0)	240	150	172 (27)	0.03 (0.014)	<b>G1E93-L12</b>
	1 1/4 (32.0)	120	200	230 (35)	0.03 (0.014)	<b>G1E94-L12</b>
	1 1/4 (32.0)	240	200	230 (35)	0.03 (0.014)	<b>G1E95-L12</b>
	1 1/4 (32.0)	120	400	426 (66)	0.03 (0.014)	<b>G1E99-L12</b>
	1 1/2 (38.0)	120	50	43 (7)	0.04 (0.018)	<b>G1J25-L12</b>
	1 1/2 (38.0)	120	75	65 (10)	0.04 (0.018)	<b>G1J70-L12</b>
	1 1/2 (38.0)	120	80	68 (11)	0.04 (0.018)	<b>G1J66-L12</b>
	1 1/2 (38.0)	120	100	86 (13)	0.04 (0.018)	<b>G1J59-L12</b>
	1 1/2 (38.0)	240	100	86 (13)	0.04 (0.018)	<b>G1J110-L12</b>
	1 1/2 (38.0)	240	125	106 (16)	0.04 (0.018)	<b>G1J182-L12</b>
	1 1/2 (38.0)	120	150	129 (20)	0.04 (0.018)	<b>G1J31-L12</b>
	1 1/2 (38.0)	240	150	129 (20)	0.04 (0.018)	<b>G1J39-L12</b>
	1 1/2 (38.0)	120	200	173 (27)	0.04 (0.018)	<b>G1J85-L12</b>
	1 1/2 (38.0)	240	200	173 (27)	0.04 (0.018)	<b>G1J73-L12</b>
	1 1/2 (38.0)	120	250	216 (33)	0.04 (0.018)	<b>G1J86-L12</b>
	1 1/2 (38.0)	240	250	216 (33)	0.04 (0.018)	<b>G1J54-L12</b>
	1 3/4 (45.0)	120	125	86 (13)	0.05 (0.023)	<b>G1N45-L12</b>
	1 3/4 (45.0)	120	175	122 (19)	0.05 (0.023)	<b>G1N46-L12</b>
	1 3/4 (45.0)	120	250	172 (27)	0.05 (0.023)	<b>G1N43-L12</b>
	1 3/4 (45.0)	240	250	172 (27)	0.05 (0.023)	<b>G1N32-L12</b>
	2 (51.0)	120	50	29 (5)	0.06 (0.027)	<b>G2A53-L12</b>
	2 (51.0)	120	75	42 (7)	0.06 (0.027)	<b>G2A192-L12</b>
	2 (51.0)	120	100	57 (9)	0.06 (0.027)	<b>G2A84-L12</b>
	2 (51.0)	240	100	57 (9)	0.06 (0.027)	<b>G2A76-L12</b>
	2 (51.0)	120	150	86 (13)	0.06 (0.027)	<b>G2A56-L12</b>
2 (51.0)	240	150	86 (13)	0.06 (0.027)	<b>G2A81-L12</b>	
2 (51.0)	120	200	115 (18)	0.06 (0.027)	<b>G2A127-L12</b>	
2 (51.0)	240	200	115 (18)	0.06 (0.027)	<b>G2A37-L12</b>	
2 (51.0)	120	250	144 (22)	0.06 (0.027)	<b>G2A47-L12</b>	
2 (51.0)	240	250	144 (22)	0.06 (0.027)	<b>G2A73-L12</b>	
2 (51.0)	120	300	172 (27)	0.06 (0.027)	<b>G2A139-L12</b>	
2 (51.0)	240	300	172 (27)	0.06 (0.027)	<b>G2A98-L12</b>	
2 (51.0)	120	400	230 (36)	0.06 (0.027)	<b>G2A153-L12</b>	
2 (51.0)	240	400	230 (36)	0.06 (0.027)	<b>G2A146-L12</b>	
2 (51.0)	120	500	282 (44)	0.06 (0.027)	<b>G2A95-L12</b>	
2 (51.0)	240	500	282 (44)	0.06 (0.027)	<b>G2A97-L12</b>	
2 1/4 (57.0)	120	75	37 (6)	0.07 (0.032)	<b>G2E88-L12</b>	
2 1/4 (57.0)	120	125	62 (10)	0.07 (0.032)	<b>G2E89-L12</b>	

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# Cartridge/Insertion Heaters



## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
3/8	2 1/4	(57.0)	240	125	62	(10)	0.07	(0.032)	G2E138-L12
	2 1/4	(57.0)	240	150	73	(11)	0.07	(0.032)	G2E68-L12
	2 1/4	(57.0)	120	175	86	(13)	0.07	(0.032)	G2E90-L12
	2 1/4	(57.0)	120	250	123	(19)	0.07	(0.032)	G2E2-L12
	2 1/4	(57.0)	240	250	123	(19)	0.07	(0.032)	G2E78-L12
	2 1/4	(57.0)	120	300	148	(23)	0.07	(0.032)	G2E108-L12
	2 1/4	(57.0)	240	300	148	(23)	0.07	(0.032)	G2E12-L12
	2 1/4	(57.0)	120	350	173	(27)	0.07	(0.032)	G2E91-L12
	2 1/4	(57.0)	240	350	173	(27)	0.07	(0.032)	G2E75-L12
	2 1/2	(64.0)	120	200	87	(13)	0.07	(0.032)	G2J110-L12
	2 1/2	(64.0)	240	200	87	(13)	0.07	(0.032)	G2J81-L12
	2 1/2	(64.0)	120	250	108	(17)	0.07	(0.032)	G2J46-L12
	2 1/2	(64.0)	240	250	108	(17)	0.07	(0.032)	G2J80-L12
	2 1/2	(64.0)	120	300	130	(20)	0.07	(0.032)	G2J118-L12
	2 1/2	(64.0)	240	300	130	(20)	0.07	(0.032)	G2J119-L12
	2 1/2	(64.0)	120	400	174	(27)	0.07	(0.032)	G2J26-L12
	2 1/2	(64.0)	240	400	174	(27)	0.07	(0.032)	G2J146-L12
	2 1/2	(64.0)	120	500	216	(33)	0.07	(0.032)	G2J109-L12
	2 1/2	(64.0)	240	500	216	(33)	0.07	(0.032)	G2J52-L12
	3	(76.0)	120	100	34	(5)	0.08	(0.036)	G3A55-L12
	3	(76.0)	240	100	34	(5)	0.08	(0.036)	G3A137-L12
	3	(76.0)	120	150	52	(8)	0.08	(0.036)	G3A121-L12
	3	(76.0)	120	200	69	(11)	0.08	(0.036)	G3A61-L12
	3	(76.0)	240	200	69	(11)	0.08	(0.036)	G3A39-L12
	3	(76.0)	120	250	86	(13)	0.08	(0.036)	G3A52-L12
	3	(76.0)	240	250	86	(13)	0.08	(0.036)	G3A54-L12
	3	(76.0)	120	300	104	(16)	0.08	(0.036)	G3A73-L12
	3	(76.0)	240	300	104	(16)	0.08	(0.036)	G3A92-L12
	3	(76.0)	120	400	138	(21)	0.08	(0.036)	G3A44-L12
	3	(76.0)	240	400	138	(21)	0.08	(0.036)	G3A65-L12
	3	(76.0)	120	500	173	(27)	0.08	(0.036)	G3A119-L12
	3	(76.0)	240	500	173	(27)	0.08	(0.036)	G3A120-L12
	3	(76.0)	240	600	208	(32)	0.08	(0.036)	G3A133-L12
3 1/2	(89.0)	120	250	72	(11)	0.09	(0.041)	G3J77-L12	
3 1/2	(89.0)	240	250	72	(11)	0.09	(0.041)	G3J65-L12	
3 1/2	(89.0)	120	300	87	(13)	0.09	(0.041)	G3J87-L12	
3 1/2	(89.0)	240	300	87	(13)	0.09	(0.041)	G3J68-L12	
3 1/2	(89.0)	120	500	144	(22)	0.09	(0.041)	G3J22-L12	
3 1/2	(89.0)	240	500	144	(22)	0.09	(0.041)	G3J63-L12	
4	(102.0)	120	125	31	(5)	0.09	(0.041)	G4A54-L12	
4	(102.0)	240	125	31	(5)	0.09	(0.041)	G4A163-L12	
4	(102.0)	120	150	37	(6)	0.09	(0.041)	G4A78-L12	
4	(102.0)	120	175	43	(7)	0.09	(0.041)	G4A191-L12	
4	(102.0)	120	250	62	(10)	0.09	(0.041)	G4A40-L12	
4	(102.0)	240	250	62	(10)	0.09	(0.041)	G4A87-L12	
4	(102.0)	120	300	74	(11)	0.09	(0.041)	G4A94-L12	
4	(102.0)	240	300	74	(11)	0.09	(0.041)	G4A95-L12	
4	(102.0)	120	400	99	(15)	0.09	(0.041)	G4A48-L12	
4	(102.0)	240	400	99	(15)	0.09	(0.041)	G4A44-L12	
4	(102.0)	240	450	109	(17)	0.09	(0.041)	G4A64-L12	
4	(102.0)	120	500	123	(19)	0.09	(0.041)	G4A96-L12	
4	(102.0)	240	500	123	(19)	0.09	(0.041)	G4A92-L12	

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# Cartridge/Insertion Heaters



## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
3/8	4	(102.0)	120	550	134	(21)	0.09	(0.041)	G4A200-L12
	4 1/4	(108.0)	240	300	67	(10)	0.09	(0.041)	G4E25-L12
	4 1/4	(108.0)	240	750	167	(26)	0.09	(0.041)	G4E15-L12
	4 1/2	(114.0)	120	300	65	(10)	0.10	(0.045)	G4J54-L12
	4 1/2	(114.0)	240	300	65	(10)	0.10	(0.045)	G4J33-L12
	4 1/2	(114.0)	120	500	108	(17)	0.10	(0.045)	G4J55-L12
	4 1/2	(114.0)	240	500	108	(17)	0.10	(0.045)	G4J37-L12
	5	(127.0)	120	150	29	(4)	0.11	(0.050)	G5A68-L12
	5	(127.0)	240	150	29	(4)	0.11	(0.050)	G5A56-L12
	5	(127.0)	120	300	58	(9)	0.11	(0.050)	G5A69-L12
	5	(127.0)	240	300	58	(9)	0.11	(0.050)	G5A70-L12
	5	(127.0)	120	500	96	(15)	0.11	(0.050)	G5A38-L12
	5	(127.0)	240	500	96	(15)	0.11	(0.050)	G5A71-L12
	5	(127.0)	240	750	144	(22)	0.11	(0.050)	G5A67-L12
	5	(127.0)	240	1000	192	(30)	0.11	(0.050)	G5A115-L12
	5 1/4	(133.0)	240	200	45	(7)	0.12	(0.054)	G5E16-L12
	5 1/2	(140.0)	240	600	104	(16)	0.12	(0.054)	G5J36-L12
	5 1/2	(140.0)	240	1000	173	(27)	0.12	(0.054)	G5J45-L12
	6	(152.0)	120	200	31	(5)	0.13	(0.059)	G6A80-L12
	6	(152.0)	120	250	39	(6)	0.13	(0.059)	G6A40-L12
	6	(152.0)	240	250	39	(6)	0.13	(0.059)	G6A92-L12
	6	(152.0)	120	400	63	(10)	0.13	(0.059)	G6A81-L12
	6	(152.0)	240	400	63	(10)	0.13	(0.059)	G6A82-L12
	6	(152.0)	120	500	79	(12)	0.13	(0.059)	G6A125-L12
	6	(152.0)	240	500	79	(12)	0.13	(0.059)	G6A59-L12
	6	(152.0)	120	600	94	(15)	0.13	(0.059)	G6A56-L12
	6	(152.0)	240	600	94	(15)	0.13	(0.059)	G6A51-L12
	6	(152.0)	240	750	117	(18)	0.13	(0.059)	G6A46-L12
	6	(152.0)	240	1000	157	(24)	0.13	(0.059)	G6A83-L12
	6 1/2	(165.0)	240	600	86	(13)	0.14	(0.064)	G6J23-L12
	6 1/2	(165.0)	240	1000	144	(22)	0.14	(0.064)	G6J33-L12
	7	(178.0)	120	250	33	(5)	0.14	(0.064)	G7A40-L12
	7	(178.0)	240	250	33	(5)	0.14	(0.064)	G7A32-L12
	7	(178.0)	240	500	65	(10)	0.14	(0.064)	G7A30-L12
	7	(178.0)	120	600	80	(12)	0.14	(0.064)	G7A41-L12
	7	(178.0)	240	600	80	(12)	0.14	(0.064)	G7A42-L12
7	(178.0)	240	1000	133	(21)	0.14	(0.064)	G7A43-L12	
7 1/2	(191.0)	240	600	74	(11)	0.15	(0.068)	G7J27-L12	
7 1/2	(191.0)	240	1000	124	(19)	0.15	(0.068)	G7J28-L12	
8	(203.0)	120	300	34	(5)	0.16	(0.073)	G8A54-L12	
8	(203.0)	240	300	34	(5)	0.16	(0.073)	G8A47-L12	
8	(203.0)	120	400	45	(7)	0.16	(0.073)	G8A109-L12	
8	(203.0)	120	500	58	(9)	0.16	(0.073)	G8A81-L12	
8	(203.0)	240	500	58	(9)	0.16	(0.073)	G8A32-L12	
8	(203.0)	120	600	69	(11)	0.16	(0.073)	G8A53-L12	
8	(203.0)	240	600	69	(11)	0.16	(0.073)	G8A37-L12	
8	(203.0)	240	700	79	(12)	0.16	(0.073)	G8A98-L12	
8	(203.0)	240	1000	115	(18)	0.16	(0.073)	G8A45-L12	
9	(229.0)	240	1000	100	(16)	0.18	(0.082)	G9A37-L12	
9 1/2	(241.0)	240	600	57	(9)	0.19	(0.086)	G9J20-L12	
9 1/2	(241.0)	240	1000	96	(15)	0.19	(0.086)	G9J12-L12	
10	(254.0)	120	400	36	(6)	0.19	(0.086)	G10A48-L12	

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# Cartridge/Insertion Heaters



## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
3/8	10	(254.0)	120	600	54	(8)	0.19	(0.086)	<b>G10A35-L12</b>
	10	(254.0)	240	600	54	(8)	0.19	(0.086)	<b>G10A31-L12</b>
	10	(254.0)	240	1000	91	(14)	0.19	(0.086)	<b>G10A32-L12</b>
	12	(305.0)	120	400	30	(5)	0.22	(0.100)	<b>G12A45-L12</b>
	12	(305.0)	120	600	45	(7)	0.22	(0.100)	<b>G12A29-L12</b>
	12	(305.0)	240	600	45	(7)	0.22	(0.100)	<b>G12A46-L12</b>
1/2	12	(305.0)	240	1000	75	(12)	0.22	(0.100)	<b>G12A47-L12</b>
	1	(25.0)	120	50	65	(10)	0.06	(0.027)	<b>J1A30-L12</b>
	1	(25.0)	120	150	193	(30)	0.06	(0.027)	<b>J1A31-L12</b>
	1 1/4	(32.0)	120	50	43	(7)	0.07	(0.032)	<b>J1E50-L12</b>
	1 1/4	(32.0)	120	125	107	(17)	0.07	(0.032)	<b>J1E51-L12</b>
	1 1/4	(32.0)	240	125	107	(17)	0.07	(0.032)	<b>J1E58-L12</b>
	1 1/4	(32.0)	240	200	172	(27)	0.07	(0.032)	<b>J1E52-L12</b>
	1 1/4	(32.0)	240	250	212	(33)	0.07	(0.032)	<b>J1E88-L12</b>
	1 1/2	(38.0)	120	50	32	(3)	0.08	(0.036)	<b>J1J47-L12</b>
	1 1/2	(38.0)	120	150	97	(15)	0.08	(0.036)	<b>J1J48-L12</b>
	1 1/2	(38.0)	240	150	97	(15)	0.08	(0.036)	<b>J1J96-L12</b>
	1 1/2	(38.0)	120	200	128	(20)	0.08	(0.036)	<b>J1J59-L12</b>
	1 1/2	(38.0)	240	200	128	(20)	0.08	(0.036)	<b>J1J38-L12</b>
	2	(51.0)	120	75	32	(5)	0.09	(0.041)	<b>J2A80-L12</b>
	2	(51.0)	120	200	86	(13)	0.09	(0.041)	<b>J2A49-L12</b>
	2	(51.0)	240	200	86	(13)	0.09	(0.041)	<b>J2A75-L12</b>
	2	(51.0)	120	250	108	(17)	0.09	(0.041)	<b>J2A85-L12</b>
	2	(51.0)	240	250	108	(17)	0.09	(0.041)	<b>J2A71-L12</b>
	2	(51.0)	120	300	128	(20)	0.09	(0.041)	<b>J2A95-L12</b>
	2	(51.0)	240	300	128	(20)	0.09	(0.041)	<b>J2A96-L12</b>
	2	(51.0)	120	400	171	(27)	0.09	(0.041)	<b>J2A81-L12</b>
	2	(51.0)	240	400	171	(27)	0.09	(0.041)	<b>J2A82-L12</b>
	2 1/4	(57.0)	120	75	28	(4)	0.10	(0.045)	<b>J2E86-L12</b>
	2 1/4	(57.0)	120	125	46	(7)	0.10	(0.045)	<b>J2E87-L12</b>
	2 1/4	(57.0)	120	250	92	(14)	0.10	(0.045)	<b>J2E56-L12</b>
	2 1/4	(57.0)	240	250	92	(14)	0.10	(0.045)	<b>J2E69-L12</b>
	2 1/4	(57.0)	120	400	147	(22)	0.10	(0.045)	<b>J2E114-L12</b>
	2 1/4	(57.0)	240	400	147	(22)	0.10	(0.045)	<b>J2E115-L12</b>
	2 1/4	(57.0)	120	500	184	(29)	0.10	(0.045)	<b>J2E64-L12</b>
	2 1/4	(57.0)	240	500	184	(29)	0.10	(0.045)	<b>J2E88-L12</b>
	2 1/2	(64.0)	120	100	32	(5)	0.11	(0.050)	<b>J2J67-L12</b>
	2 1/2	(64.0)	240	100	32	(5)	0.11	(0.050)	<b>J2J57-L12</b>
	2 1/2	(64.0)	120	250	81	(13)	0.11	(0.050)	<b>J2J68-L12</b>
	2 1/2	(64.0)	240	250	81	(13)	0.11	(0.050)	<b>J2J69-L12</b>
	2 1/2	(64.0)	120	300	96	(15)	0.11	(0.050)	<b>J2J109-L12</b>
	2 1/2	(64.0)	240	300	96	(15)	0.11	(0.050)	<b>J2J110-L12</b>
	2 1/2	(64.0)	120	400	128	(20)	0.11	(0.050)	<b>J2J81-L12</b>
	2 1/2	(64.0)	240	400	128	(20)	0.11	(0.050)	<b>J2J82-L12</b>
	2 1/2	(64.0)	120	500	161	(24)	0.11	(0.050)	<b>J2J66-L12</b>
	2 1/2	(64.0)	240	500	161	(24)	0.11	(0.050)	<b>J2J70-L12</b>
	2 3/4	(70.0)	240	400	115	(18)	0.11	(0.050)	<b>J2N43-L12</b>
	2 3/4	(70.0)	120	400	115	(18)	0.11	(0.050)	<b>J2N45-L12</b>
3	(76.0)	120	125	32	(5)	0.12	(0.054)	<b>J3A108-L12</b>	
3	(76.0)	240	125	32	(5)	0.12	(0.054)	<b>J3A109-L12</b>	
3	(76.0)	120	250	64	(10)	0.12	(0.054)	<b>J3A107-L12</b>	
3	(76.0)	240	250	64	(10)	0.12	(0.054)	<b>J3A89-L12</b>	
3	(76.0)	120	300	78	(12)	0.12	(0.054)	<b>J3A65-L12</b>	

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## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
1/2	3	(76.0)	120	350	89	(14)	0.12	(0.054)	J3A173-L12
	3	(76.0)	240	300	78	(12)	0.12	(0.054)	J3A73-L12
	3	(76.0)	120	400	104	(16)	0.12	(0.054)	J3A132-L12
	3	(76.0)	240	400	104	(16)	0.12	(0.054)	J3A29-L12
	3	(76.0)	120	500	129	(20)	0.12	(0.054)	J3A110-L12
	3	(76.0)	240	500	129	(20)	0.12	(0.054)	J3A111-L12
	3	(76.0)	120	600	154	(24)	0.12	(0.054)	J3A51-L12
	3	(76.0)	240	600	154	(24)	0.12	(0.054)	J3A127-L12
	3	(76.0)	120	750	193	(30)	0.12	(0.054)	J3A137-L12
	3	(76.0)	240	750	193	(30)	0.12	(0.054)	J3A112-L12
	3	(76.0)	120	1000	254	(39)	0.12	(0.054)	J3A79-L12
	3 1/2	(89.0)	120	250	54	(8)	0.14	(0.064)	J3J44-L12
	3 1/2	(89.0)	240	250	54	(8)	0.14	(0.064)	J3J64-L12
	3 1/2	(89.0)	240	350	75	(12)	0.14	(0.064)	J3J65-L12
	3 1/2	(89.0)	120	500	107	(17)	0.14	(0.064)	J3J45-L12
	3 1/2	(89.0)	240	500	107	(17)	0.14	(0.064)	J3J46-L12
	3 1/2	(89.0)	240	750	162	(25)	0.14	(0.064)	J3J63-L12
	4	(102.0)	120	150	28	(4)	0.15	(0.068)	J4A117-L12
	4	(102.0)	240	150	28	(4)	0.15	(0.068)	J4A122-L12
	4	(102.0)	120	250	46	(7)	0.15	(0.068)	J4A118-L12
4	(102.0)	240	250	46	(7)	0.15	(0.068)	J4A90-L12	
4	(102.0)	120	300	56	(9)	0.15	(0.068)	J4A63-L12	
4	(102.0)	240	300	56	(9)	0.15	(0.068)	J4A26-L12	
4	(102.0)	120	350	65	(10)	0.15	(0.068)	J4A1-L12	
4	(102.0)	240	350	65	(10)	0.15	(0.068)	J4A103-L12	
4	(102.0)	120	400	74	(11)	0.15	(0.068)	J4A139-L12	
4	(102.0)	240	400	74	(11)	0.15	(0.068)	J4A68-L12	
4	(102.0)	120	500	92	(14)	0.15	(0.068)	J4A16-L12	
4	(102.0)	120	550	100	(16)	0.15	(0.068)	J4A242-L12	
4	(102.0)	240	500	92	(14)	0.15	(0.068)	J4A92-L12	
4	(102.0)	120	750	138	(21)	0.15	(0.068)	J4A198-L12	
4	(102.0)	240	750	138	(21)	0.15	(0.068)	J4A119-L12	
4	(102.0)	240	1000	184	(28)	0.15	(0.068)	J4A73-L12	
4 1/2	(114.0)	120	500	80	(12)	0.17	(0.077)	J4J69-L12	
4 1/2	(114.0)	240	500	80	(12)	0.17	(0.077)	J4J57-L12	
4 1/2	(114.0)	120	750	120	(19)	0.17	(0.077)	J4J70-L12	
4 1/2	(114.0)	240	750	120	(19)	0.17	(0.077)	J4J32-L12	
5	(127.0)	120	200	29	(4)	0.19	(0.086)	J5A85-L12	
5	(127.0)	240	200	29	(4)	0.19	(0.086)	J5A74-L12	
5	(127.0)	120	350	50	(8)	0.19	(0.086)	J5A86-L12	
5	(127.0)	240	350	50	(8)	0.19	(0.086)	J5A63-L12	
5	(127.0)	120	400	58	(9)	0.19	(0.086)	J5A98-L12	
5	(127.0)	240	400	58	(9)	0.19	(0.086)	J5A46-L12	
5	(127.0)	120	500	72	(11)	0.19	(0.086)	J5A52-L12	
5	(127.0)	240	500	72	(11)	0.19	(0.086)	J5A45-L12	
5	(127.0)	120	750	108	(17)	0.19	(0.086)	J5A121-L12	
5	(127.0)	240	750	108	(17)	0.19	(0.086)	J5A72-L12	
5	(127.0)	240	1000	143	(22)	0.19	(0.086)	J5A87-L12	
5 1/2	(140.0)	240	200	25	(4)	0.20	(0.091)	J5J38-L12	
5 1/2	(140.0)	120	500	64	(10)	0.20	(0.091)	J5J43-L12	
5 1/2	(140.0)	240	500	64	(10)	0.20	(0.091)	J5J33-L12	
5 1/2	(140.0)	240	650	83	(13)	0.20	(0.091)	J5J69-L12	

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# Cartridge/Insertion Heaters



## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
1/2	5 1/2	(140.0)	120	750	97	(15)	0.20	(0.091)	J5J44-L12
	5 1/2	(140.0)	240	750	97	(15)	0.20	(0.091)	J5J45-L12
	5 3/4	(146.0)	120	700	86	(13)	0.20	(0.091)	J5N6-L12
	5 3/4	(146.0)	240	700	86	(13)	0.20	(0.091)	J5N8-L12
	6	(152.0)	120	250	29	(4)	0.21	(0.095)	J6A114-L12
	6	(152.0)	240	250	29	(4)	0.21	(0.095)	J6A171-L12
	6	(152.0)	240	300	35	(6)	0.21	(0.095)	J6A66-L12
	6	(152.0)	240	350	41	(7)	0.21	(0.095)	J6A119-L12
	6	(152.0)	120	500	59	(9)	0.21	(0.095)	J6A115-L12
	6	(152.0)	240	500	59	(9)	0.21	(0.095)	J6A94-L12
	6	(152.0)	120	750	88	(14)	0.21	(0.095)	J6A99-L12
	6	(152.0)	240	750	88	(14)	0.21	(0.095)	J6A90-L12
	6	(152.0)	120	1000	117	(18)	0.21	(0.095)	J6A53-L12
	6	(152.0)	240	1000	117	(18)	0.21	(0.095)	J6A36-L12
	6 1/2	(165.0)	240	500	54	(8)	0.23	(0.104)	J6J45-L12
	6 1/2	(165.0)	240	1000	108	(17)	0.23	(0.104)	J6J27-L12
	7	(178.0)	120	250	25	(4)	0.24	(0.109)	J7A79-L12
	7	(178.0)	120	500	50	(8)	0.24	(0.109)	J7A80-L12
	7	(178.0)	240	500	50	(8)	0.24	(0.109)	J7A57-L12
	7	(178.0)	120	600	60	(9)	0.24	(0.109)	J7A50-L12
	7	(178.0)	240	600	60	(9)	0.24	(0.109)	J7A95-L12
	7	(178.0)	240	1000	99	(15)	0.24	(0.109)	J7A81-L12
	7 1/2	(191.0)	240	500	46	(7)	0.26	(0.118)	J7J25-L12
	7 1/2	(191.0)	240	1000	92	(14)	0.26	(0.118)	J7J26-L12
	8	(203.0)	120	300	26	(4)	0.28	(0.127)	J8A71-L12
	8	(203.0)	240	300	26	(4)	0.28	(0.127)	J8A111-L12
	8	(203.0)	120	500	43	(7)	0.28	(0.127)	J8A64-L12
	8	(203.0)	240	500	43	(7)	0.28	(0.127)	J8A66-L12
	8	(203.0)	120	1000	86	(13)	0.28	(0.127)	J8A84-L12
	8	(203.0)	240	1000	86	(13)	0.28	(0.127)	J8A60-L12
	8	(203.0)	240	1500	129	(20)	0.28	(0.127)	J8A100-L12
	8	(203.0)	240	2000	172	(27)	0.28	(0.127)	J8A101-L12
	8 1/2	(216.0)	240	300	24	(4)	0.29	(0.132)	J8J39-L12
	8 1/2	(216.0)	240	500	40	(6)	0.29	(0.132)	J8J30-L12
	8 1/2	(216.0)	240	1000	80	(12)	0.29	(0.132)	J8J28-L12
	9	(229.0)	240	500	38	(6)	0.30	(0.136)	J9A35-L12
	9	(229.0)	240	1000	76	(12)	0.30	(0.136)	J9A58-L12
	9 1/2	(241.0)	240	500	36	(6)	0.32	(0.145)	J9J14-L12
	9 1/2	(241.0)	240	1000	72	(11)	0.32	(0.145)	J9J12-L12
	10	(254.0)	120	500	34	(5)	0.33	(0.150)	J10A61-L12
	10	(254.0)	240	500	34	(5)	0.33	(0.150)	J10A62-L12
	10	(254.0)	120	1000	68	(11)	0.33	(0.150)	J10A63-L12
	10	(254.0)	240	1000	68	(11)	0.33	(0.150)	J10A42-L12
	10	(254.0)	240	1500	102	(16)	0.33	(0.150)	J10A33-L12
	10	(254.0)	240	2000	136	(21)	0.33	(0.150)	J10A64-L12
	11	(279.0)	240	1000	61	(9)	0.36	(0.163)	J11A60-L12
	12	(305.0)	120	500	28	(4)	0.40	(0.181)	J12A63-L12
	12	(305.0)	240	500	28	(4)	0.40	(0.181)	J12A76-L12
	12	(305.0)	120	1000	56	(9)	0.40	(0.181)	J12A40-L12
	12	(305.0)	240	1000	56	(9)	0.40	(0.181)	J12A49-L12
12	(305.0)	240	1500	84	(13)	0.40	(0.181)	J12A37-L12	
12	(305.0)	240	2000	112	(17)	0.40	(0.181)	J12A89-L12	
14	(356.0)	240	1000	48	(7)	0.48	(0.218)	J14A41-L12	

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# Cartridge/Insertion Heaters



## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
1/2	14	(356.0)	240	2300	110	(17)	0.48	(0.218)	<b>J14A39-L12</b>
	15	(381.0)	240	1500	66	(10)	0.50	(0.227)	<b>J15A19-L12</b>
	16	(406.0)	240	1000	41	(7)	0.52	(0.236)	<b>J16A12-L12</b>
	18	(457.0)	240	1500	55	(9)	0.57	(0.259)	<b>J18A19-L12</b>
	18	(457.0)	240	1700	62	(9)	0.57	(0.259)	<b>J18A23-L12</b>
5/8	1 1/4	(32.0)	120	50	34	(5)	0.10	(0.045)	<b>L1E26-L12</b>
	1 1/4	(32.0)	120	200	137	(21)	0.10	(0.045)	<b>L1E24-L12</b>
	1 1/4	(32.0)	120	250	171	(27)	0.10	(0.045)	<b>L1E27-L12</b>
	1 1/2	(38.0)	120	250	128	(20)	0.11	(0.050)	<b>L1J23-L12</b>
	1 1/2	(38.0)	240	250	128	(20)	0.11	(0.050)	<b>L1J24-L12</b>
	2	(51.0)	120	100	34	(5)	0.13	(0.059)	<b>L2A48-L12</b>
	2	(51.0)	120	200	68	(11)	0.13	(0.059)	<b>L2A49-L12</b>
	2	(51.0)	240	500	170	(26)	0.13	(0.059)	<b>L2A54-L12</b>
	2 1/4	(57.0)	120	100	29	(4)	0.14	(0.064)	<b>L2E49-L12</b>
	2 1/4	(57.0)	120	250	73	(11)	0.14	(0.064)	<b>L2E50-L12</b>
	2 1/4	(57.0)	240	250	73	(11)	0.14	(0.064)	<b>L2E12-L12</b>
	2 1/4	(57.0)	120	350	103	(16)	0.14	(0.064)	<b>L2E40-L12</b>
	2 1/4	(57.0)	240	350	103	(16)	0.14	(0.064)	<b>L2E51-L12</b>
	3	(76.0)	120	150	31	(5)	0.20	(0.091)	<b>L3A81-L12</b>
	3	(76.0)	120	250	51	(8)	0.20	(0.091)	<b>L3A82-L12</b>
	3	(76.0)	240	250	51	(8)	0.20	(0.091)	<b>L3A9-L12</b>
	3	(76.0)	120	400	81	(13)	0.20	(0.091)	<b>L3A94-L12</b>
	3	(76.0)	120	500	102	(16)	0.20	(0.091)	<b>L3A113-L12</b>
	3	(76.0)	240	500	103	(16)	0.20	(0.091)	<b>L3A33-L12</b>
	3	(76.0)	240	750	154	(24)	0.20	(0.091)	<b>L3A71-L12</b>
	3 3/4	(95.0)	120	525	82	(13)	0.24	(0.109)	<b>L3N12-L12</b>
	3 3/4	(95.0)	240	525	82	(13)	0.24	(0.109)	<b>L3N1-L12</b>
	4	(102.0)	120	250	37	(6)	0.26	(0.118)	<b>L4A99-L12</b>
	4	(102.0)	240	250	37	(6)	0.26	(0.118)	<b>L4A104-L12</b>
	4	(102.0)	240	400	58	(9)	0.26	(0.118)	<b>L4A47-L12</b>
	4	(102.0)	240	500	73	(11)	0.26	(0.118)	<b>L4A53-L12</b>
	4	(102.0)	240	600	88	(14)	0.26	(0.118)	<b>L4A44-L12</b>
	4	(102.0)	240	750	110	(17)	0.26	(0.118)	<b>L4A100-L12</b>
	4	(102.0)	240	1000	146	(23)	0.26	(0.118)	<b>L4A71-L12</b>
	5	(127.0)	120	250	28	(4)	0.29	(0.132)	<b>L5A76-L12</b>
	5	(127.0)	240	250	28	(4)	0.29	(0.132)	<b>L5A107-L12</b>
	5	(127.0)	240	500	57	(9)	0.29	(0.132)	<b>L5A24-L12</b>
	5	(127.0)	240	750	86	(13)	0.29	(0.132)	<b>L5A31-L12</b>
	5	(127.0)	240	1000	114	(18)	0.29	(0.132)	<b>L5A77-L12</b>
	6	(152.0)	120	300	28	(4)	0.34	(0.154)	<b>L6A28-L12</b>
	6	(152.0)	240	300	28	(4)	0.34	(0.154)	<b>L6A64-L12</b>
	6	(152.0)	240	500	47	(7)	0.34	(0.154)	<b>L6A73-L12</b>
	6	(152.0)	240	750	70	(11)	0.34	(0.154)	<b>L6A70-L12</b>
	6	(152.0)	240	1000	93	(14)	0.34	(0.154)	<b>L6A71-L12</b>
	6	(152.0)	120	1500	139	(22)	0.34	(0.154)	<b>L6A163-L12</b>
6	(152.0)	240	1500	140	(22)	0.34	(0.154)	<b>L6A94-L12</b>	
6 1/2	(165.0)	120	500	43	(7)	0.38	(0.172)	<b>L6J43-L12</b>	
6 1/2	(165.0)	240	500	43	(7)	0.38	(0.172)	<b>L6J55-L12</b>	
7	(178.0)	120	500	39	(6)	0.40	(0.181)	<b>L7A42-L12</b>	
7	(178.0)	240	500	39	(6)	0.40	(0.181)	<b>L7A15-L12</b>	
7	(178.0)	240	1000	79	(12)	0.40	(0.181)	<b>L7A37-L12</b>	
7	(178.0)	240	1500	118	(18)	0.40	(0.181)	<b>L7A12-L12</b>	

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# Cartridge/Insertion Heaters



## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
5/8	8	(203.0)	120	500	34	(5)	0.47	(0.213)	L8A96-L12
	8	(203.0)	240	500	34	(5)	0.47	(0.213)	L8A46-L12
	8	(203.0)	240	850	58	(9)	0.47	(0.213)	L8A115-L12
	8	(203.0)	240	1000	68	(10)	0.47	(0.213)	L8A10-L12
	8	(203.0)	240	1500	102	(16)	0.47	(0.213)	L8A37-L12
	8	(203.0)	240	2000	137	(21)	0.47	(0.213)	L8A80-L12
	10	(254.0)	120	500	27	(4)	0.53	(0.240)	L10A51-L12
	10	(254.0)	240	500	27	(4)	0.53	(0.240)	L10A40-L12
	10	(254.0)	240	750	40	(6)	0.53	(0.240)	L10A69-L12
	10	(254.0)	240	1000	54	(8)	0.53	(0.240)	L10A52-L12
	10	(254.0)	480	1000	54	(8)	0.53	(0.240)	L10A193-L12
	10	(254.0)	240	1500	81	(13)	0.53	(0.240)	L10A8-L12
	10	(254.0)	240	2000	108	(17)	0.53	(0.240)	L10A50-L12
	12	(305.0)	120	500	22	(3)	0.66	(0.300)	L12A81-L12
	12	(305.0)	240	500	22	(3)	0.66	(0.300)	L12A80-L12
	12	(305.0)	240	900	40	(6)	0.66	(0.300)	L12A102-L12
	12	(305.0)	120	1000	45	(7)	0.66	(0.300)	L12A82-L12
	12	(305.0)	240	1000	45	(7)	0.66	(0.300)	L12A34-L12
	12	(305.0)	120	1500	66	(10)	0.66	(0.300)	L12A147-L12
	12	(305.0)	240	1500	67	(10)	0.66	(0.300)	L12A39-L12
	12	(305.0)	240	2000	89	(14)	0.66	(0.300)	L12A63-L12
	14	(356.0)	240	3700	140	(22)	0.79	(0.358)	L14A21-L12
	15	(381.0)	240	750	27	(4)	0.84	(0.381)	L15A35-L12
	15	(381.0)	240	2400	84	(13)	0.84	(0.381)	L15A20-L12
	15	(381.0)	480	2500	88	(14)	0.84	(0.381)	L15A88-L12
	15	(381.0)	240	4000	141	(22)	0.84	(0.381)	L15A41-L12
	16	(406.0)	240	2500	82	(13)	0.91	(0.412)	L16A33-L12
	16	(406.0)	240	4500	148	(23)	0.91	(0.412)	L16A40-L12
	18	(457.0)	240	1500	44	(7)	1.03	(0.467)	L18A32-L12
	18	(457.0)	240	3000	87	(13)	1.03	(0.467)	L18A34-L12
	18	(457.0)	240	4700	137	(21)	1.03	(0.467)	L18A36-L12
	20	(508.0)	240	1500	40	(6)	1.25	(0.567)	L20A19-L12
20	(508.0)	240	3500	92	(14)	1.25	(0.567)	L20A13-L12	
20	(508.0)	480	3500	92	(14)	1.25	(0.567)	L20A96-L12	
20	(508.0)	240	4700	123	(19)	1.25	(0.567)	L20A14-L12	
24	(610.0)	240	2000	44	(7)	1.47	(0.667)	L24A19-L12	
24	(610.0)	240	4700	102	(15)	1.47	(0.667)	L24A14-L12	
36	(914.0)	240	3000	43	(7)	2.30	(1.04)	L36A8-L12	
3/4	2 1/4	(57.0)	120	200	49	(8)	0.19	(0.086)	N2E8-L12
	3	(76.0)	120	250	43	(7)	0.24	(0.109)	N3A11-L12
	3	(76.0)	240	500	85	(13)	0.24	(0.109)	N3A12-L12
	4	(102.0)	120	250	31	(5)	0.31	(0.141)	N4A16-L12
	4	(102.0)	240	500	61	(9)	0.31	(0.141)	N4A17-L12
	4	(102.0)	240	1000	122	(19)	0.31	(0.141)	N4A15-L12
	5	(127.0)	120	300	28	(4)	0.38	(0.172)	N5A19-L12
	5	(127.0)	240	500	47	(7)	0.38	(0.172)	N5A12-L12
	5	(127.0)	240	1000	95	(15)	0.38	(0.172)	N5A20-L12
	6	(152.0)	120	500	39	(6)	0.44	(0.200)	N6A19-L12
	6	(152.0)	240	500	39	(6)	0.44	(0.200)	N6A20-L12
	6	(152.0)	240	1000	78	(12)	0.44	(0.200)	N6A21-L12
	6	(152.0)	480	1000	78	(12)	0.44	(0.200)	N6A225-L12

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## FIREROD Cartridge Heaters

### Heater Part Numbers

Diameter in.	Sheath Length		Volts	Watts	Watt Density		Approx. Net Wt.		Part Number
	in.	(mm)			W/in <sup>2</sup>	(W/cm <sup>2</sup> )	lbs	(kg)	
3/4	6	(152.0)	240	1500	116	(18)	0.44	(0.200)	<b>N6A82-L12</b>
	6	(152.0)	240	2000	155	(24)	0.44	(0.200)	<b>N6A22-L12</b>
	7	(178.0)	120	500	33	(5)	0.51	(0.231)	<b>N7A15-L12</b>
	7	(178.0)	240	500	33	(5)	0.51	(0.231)	<b>N7A1-L12</b>
	7	(178.0)	240	1000	66	(10)	0.51	(0.231)	<b>N7A16-L12</b>
	8	(203.0)	120	500	28	(4)	0.58	(0.263)	<b>N8A19-L12</b>
	8	(203.0)	240	500	28	(4)	0.58	(0.263)	<b>N8A20-L12</b>
	8	(203.0)	240	1000	57	(9)	0.58	(0.263)	<b>N8A21-L12</b>
	8	(203.0)	240	2000	114	(17)	0.58	(0.263)	<b>N8A22-L12</b>
	10	(254.0)	240	1000	45	(7)	0.72	(0.327)	<b>N10A15-L12</b>
	10	(254.0)	240	2000	90	(14)	0.72	(0.327)	<b>N10A14-L12</b>
	12	(305.0)	240	1000	37	(6)	0.84	(0.381)	<b>N12A15-L12</b>
	12	(305.0)	240	2000	74	(11)	0.84	(0.381)	<b>N12A24-L12</b>
	12	(305.0)	480	2000	74	(11)	0.84	(0.381)	<b>N12A198-L12</b>
	12	(305.0)	240	4000	148	(23)	0.84	(0.381)	<b>N12A25-L12</b>
	13	(330.0)	240	1000	34	(5)	0.93	(0.422)	<b>N13A26-L12</b>
	14	(356.0)	240	1250	40	(6)	1.03	(0.467)	<b>N14A22-L12</b>
	14	(356.0)	240	2500	79	(12)	1.03	(0.467)	<b>N14A20-L12</b>
	14	(356.0)	240	4500	142	(22)	1.03	(0.467)	<b>N14A21-L12</b>
	15	(381.0)	240	1500	44	(7)	1.09	(0.494)	<b>N15A26-L12</b>
	16	(406.0)	240	1800	49	(8)	1.14	(0.517)	<b>N16A26-L12</b>
	16	(406.0)	240	4700	129	(20)	1.14	(0.517)	<b>N16A18-L12</b>
	18	(457.0)	240	2000	49	(8)	1.25	(0.567)	<b>N18A13-L12</b>
	18	(457.0)	240	5000	122	(19)	1.25	(0.567)	<b>N18A15-L12</b>
	20	(508.0)	240	1150	25	(4)	1.40	(0.635)	<b>N20A21-L12</b>
	20	(508.0)	240	2250	49	(8)	1.40	(0.635)	<b>N20A22-L12</b>
	20	(508.0)	240	5250	115	(18)	1.40	(0.635)	<b>N20A10-L12</b>
	24	(610.0)	240	1375	25	(4)	1.80	(0.816)	<b>N24A24-L12</b>
	24	(610.0)	240	2750	50	(8)	1.80	(0.816)	<b>N24A23-L12</b>
	24	(610.0)	480	2750	50	(8)	1.80	(0.816)	<b>N24A78-L12</b>
24	(610.0)	240	5500	100	(16)	1.80	(0.816)	<b>N24A13-L12</b>	
36	(914.0)	240	2500	30	(6)	2.50	(1.13)	<b>N36A4-L12</b>	

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