

# RAMA CORPORATION

## Cartridge Heaters

RAMA®ROD



EDM®

Proheat

sales@proheat.net  
techhelp@proheat.net

117 East Adam St.  
P.O. Box 48  
La Grange, KY 40031

Free: 800.626.2142  
Tel: 502.222.1402  
Fax: 502.222.0714

# RAMA® ROD & EDM® Cartridge Heaters

**R**AMA's cartridge heaters are the highest quality available. The RAMA® ROD heaters are the result of many years experience perfecting high watt-density elements which are capable of long life at elevated temperatures. RAMA® ROD heaters are manufactured with an incoloy sheath and incoloy end disc in addition to a lava seal. They provide continuous sheath temperatures up to 1600°F, as well as uniform, accurate heating in the lower temperature range. Our EDM® cartridge heaters are manufactured with stainless steel sheath, stainless steel end disc material and mica seal. These heaters are designed specifically, to provide excellent heating in the moderate temperature ranges. The EDM® cartridge heater can provide sheath temperature up to 1200°F. Whatever your heating requirements, RAMA can provide the right heater for your application.

**MULTICIRCUITS:** 3/4" diameter RAMA® RODs can be provided with independent heat zones through multicircuit or 3-phase resistance wire windings; these permit uniform heat along the entire length of the heater where heat transfer rates must vary between specific heated areas. Consult RAMA for minimum length requirements.

**PROFILED HEAT:** Type H RAMA® ROD cartridge heaters with Type J thermocouples are stocked heaters with profiled heat in 3" lengths and over.

**THERMOSTATS:** Thermostats are available to regulate temperature and act as a safety monitor. Consult factory for quote.

**MOISTURE RESISTANT BARRIERS:**

In addition to the heaters with a teflon seal, which will withstand operating temperatures up to 392°F, various epoxy compounds can be supplied at the leadwire end for heater operation up to 450°F. Consult factory for detailed information.

**METRIC SIZE HEATERS:** RAMA stocks EDM® metric cartridge heaters.

**OTHER ACCESSORIES:** Cartridge heaters can be supplied with ground, twist-lock and UL-listed electrical plugs. Post terminals and terminal boxes for protection of electrical connectors are available. UL & C-UL approved flexible stranded wires with silicone-fiberglass oversleeve are available, which insulate the wires to temperatures of 480°F (250°C).

## Compliances

**RAMA produces heaters that meet stringent regulatory codes of several industries and agencies. Our production process is accepted by NASA, the aerospace industry, military and nuclear communities as well as local, state and federal codes. All of our heating elements are designed to meet the specifications of NEMA (National Electrical Manufacturers Association), unless otherwise specified by the customer.**



# TOLERANCES

Diameter		Inches					Millimeters					
Nominal:		1/4	3/8	1/2	5/8	3/4	(+.000)	6.5	8	10	12.5	16
Actual: ( $\pm 0.002$ )		.245"	.370"	.495"	.620"	.745"	-.003)	.255"	.315"	.394"	.492"	.630"

**Camber:** .020 inch/ft      **Wattage:** +5%, -10%

**Leadwire Length:**  $\pm 2\%$  or  $\pm 1/2$ " whichever is greater

**Heater Length:**  $\pm 2\%$  or  $\pm 3/32$ " whichever is greater

*Note:* Standard materials and tolerances are shown, consult RAMA for availability of other materials and tighter tolerances.

## MAXIMUM POWER RATING LIMITS

		HEATER DIAMETER (INCH)						
		1/4	3/8	1/2	5/8		3/4	
PARAMETERS		RR/EDM	RR/EDM	RR/EDM	RR	EDM	RR	EDM
1	Amperage	4	6	10	22	18	22	18
	Voltage	240	240	240	240	240	240	240
	Wattage: @120V	480	720	1200	2640	2160	2640	2160
	@240V	960	1440	2400	5280	4320	5280	4320
2	Amperage	3.5	4.1	8.2	11		11	
	Voltage	240	240	240	240		240	
	Wattage: @120V	420	490	985	1320		1320	
	@240V	840	980	1970	2640		2640	

**1** Standard Configuration Heaters  
Type 'A'

**2** Swaged-in leadwire configuration  
Type 'B'

		HEATER DIAMETER (METRIC)				
		6.5mm	8mm	10mm	12.5mm	16mm
CONFIGURATIONS	PARAMETERS	EDM	EDM	EDM	EDM	EDM
<b>Standard Configuration Heaters</b>	Amperage	4	5	6	10	18
	Voltage	240	240	240	240	240
	Wattage: @120V	480	600	720	1200	2160
	@240V	960	1200	1440	2400	4320
<b>Swaged-in Leadwire Configuration</b>	Amperage	3.5	3.8	4.1	8.2	11
	Voltage	240	240	240	240	240
	Wattage @120V	420	455	490	985	1320
	@240V	840	910	980	1970	2640

Heaters 3/8" (10mm) diameter or larger can be rated at 480V. Consult Rama for requirements and power rating limits of other configurations.

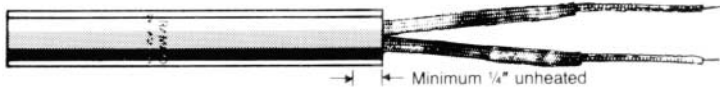
# Standard Configurations & Accessories



If you are a designer or manufacturer of equipment which must meet US and/or Canadian National Safety standards, RAMA's RAMA<sup>®</sup>ROD and EDM<sup>®</sup> cartridge heaters types A, B and C have been found to be acceptable under UL and C-UL (CSA equivalent) Component Recognition Program File No. E119533.



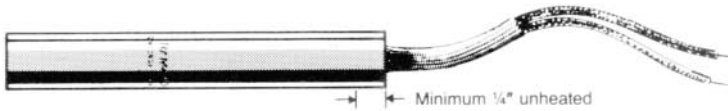
All RAMA<sup>®</sup>ROD and EDM<sup>®</sup> heaters have a minimum of 1/4" unheated section at the disc end. Teflon leadwires and seals are rated at 300°F; all other leadwires are rated at 840°F.



## TYPE A -

### STANDARD LEADWIRES

2" solid nickel terminal pins are butt-connected to insulated, stranded nickel leadwires. This heater is stocked in many sizes and power ratings. **UL/C-UL COMPONENT RECOGNITION**

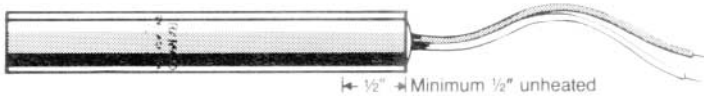


## TYPE B -

### ALL FLEXIBLE LEADWIRES

Stranded leadwires with insulation swaged into heater. Heater is stocked with 36" leads. This heater should not be used in applications where the temperature at the leadwire end exceeds 840°F.

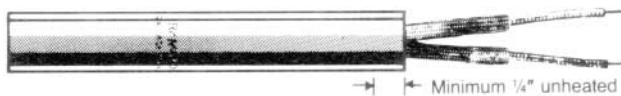
**UL/C-UL COMPONENT RECOGNITION**



## TYPE C -

### TEFLON SEAL

Teflon seal at leadwire end with Teflon-insulated, stranded silver-plated copper leadwires. Heater cannot be modified from stock. This heater should not be used where the temperature at the leadwire end will exceed 300°F. **UL/C-UL COMPONENT RECOGNITION**



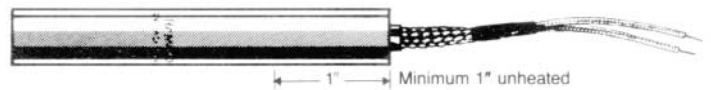
## TYPE D -

### TERMINAL PINS WITH SWAGED-IN INSULATION

Fiberglass insulation on 2" solid nickel terminal pins is swaged into seal. Insulated, stranded nickel leadwires are butt-connected to terminal pins. This heater cannot be modified from stock.

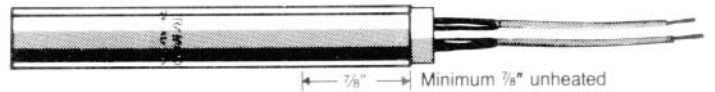


**TYPE E -  
BRAIDED STAINLESS  
STEEL SLEEVING**



Insulated, stranded nickel leadwires are covered by a stainless steel braid. Shrink tubing covers end of sleeving at leadwire end. The 1/4" diameter heater is supplied with an optional 3/4" long metal sleeve at the leadwire end. Consult factory for specifications.

**TYPE F -  
CERAMIC-TO-METAL SEAL**



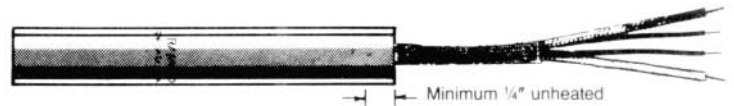
Seal is brazed to sheath on 3/8" diameter or larger heater. Teflon-insulated, stranded, silver-plated copper leadwires are connected to solid nickel terminal pins. A 7/8" minimum cold length is required at the leadwire end. This heater cannot be modified from stock.

**TYPE G -  
CERAMIC BEAD  
INSULATORS**



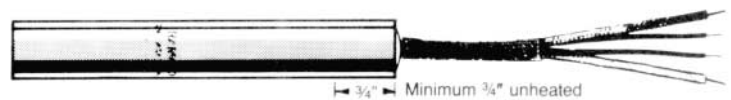
Ceramic bead insulators cover terminal pins. Where longer lengths of insulators are required, leadwires can be butt-connected to the terminal pins by the factory. When ordering, specify length of ceramic bead insulators, and leadwires if desired. If modifying Type A stock heaters, the length of ceramic beads will be approximately 2" total. These heaters can be modified from stock.

**TYPE H & I -  
INTERNAL  
THERMOCOUPLE**

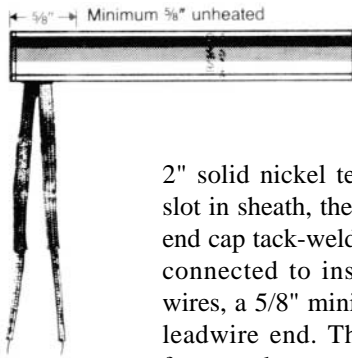


Insulated, stranded 24-gauge thermocouple wires are integral in heater with Type J T/C junction located at the end disk (H). T/C wires in 1/4" diameter heaters are solid wire. Type I heater has T/C junction located other than at end disc. Customer must specify location requirements. Type H heaters are stocked with 36" T/C and leadwires. These heaters cannot be modified from stock. Type K T/C available, consult factory.

**TYPE HR -  
MOLDING SYSTEM  
PROBE HEATER**

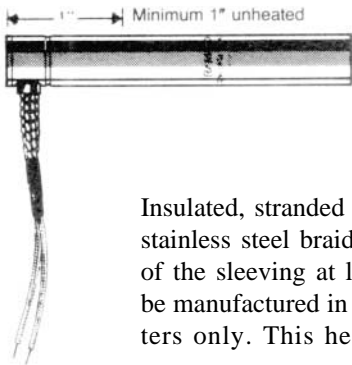


Type HR heaters are the same as Type H except with a flat end disc, teflon seal, profiled heat and longer cold section. These heaters are stocked in special sizes for use in Rama's Hot Runner System.



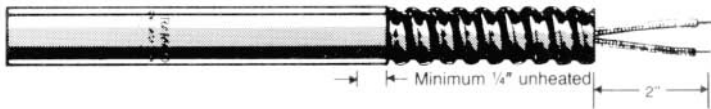
2" solid nickel terminal pins exit 90° from end slot in sheath, the end of heater is potted with an end cap tack-welded to sheath. Terminal pins are connected to insulated, stranded nickel leadwires, a 5/8" minimum cold length is required at leadwire end. This heater cannot be modified from stock.

## **TYPE J - RIGHT ANGLE LEADWIRES**



Insulated, stranded nickel leadwires are covered by stainless steel braid. Shrink tubing covers the end of the sleeving at leadwire end. These heaters can be manufactured in 3/8", 1/2", 5/8" and 3/4" diameters only. This heater cannot be modified from

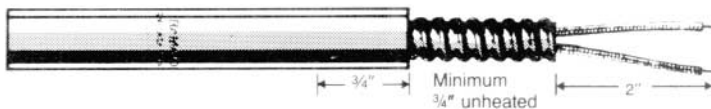
## **TYPE K - BRAIDED STAINLESS STEEL SLEEVING OVER RIGHT ANGLE LEADWIRES**



Stainless steel flexible conduit, tack-welded to heater sheath covers insulated, stranded nickel leadwires. This heater can be modified from stock.

## **TYPE L - WELDED FLEXIBLE CONDUIT**

Htr. Dia.	Metric Inches	3/8	12.5mm 1/2	16mm 5/8	3/4
Flexible Conduit Dia. (Nom)		27/64	1/2	5/8	25/32

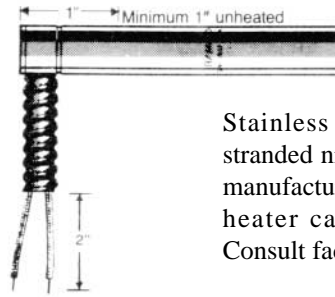


Stainless steel flexible conduit is locked into a sheath by swaging, covering insulated, all flexible, stranded nickel leadwires. This heater can be manufactured in 3/8", 1/2", 5/8" and 3/4" diameters. A 3/4" minimum cold section is required at the leadwire end. Consult factory for conduit sizes. This heater cannot be modified from stock.

## **TYPE N - SWAGED FLEXIBLE CONDUIT**

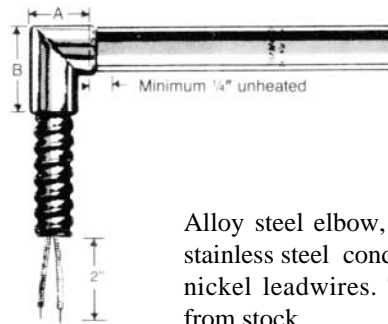


**TYPE Q -  
FLEXIBLE CONDUIT OVER  
RIGHT ANGLE LEADWIRES**



Stainless steel conduit covers insulated, stranded nickel leadwires. This heater can be manufactured in 3/8" diameter or larger. This heater cannot be modified from stock. Consult factory for conduit size.

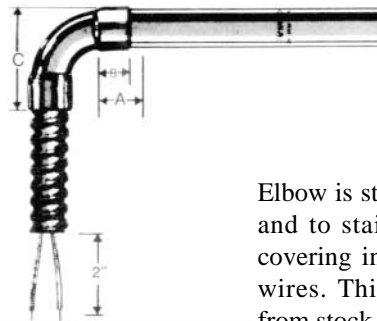
**TYPE S -  
FLEXIBLE CONDUIT WITH  
90 DEGREE ELBOW**



Alloy steel elbow, tack-welded to heater and to stainless steel conduit, covers insulated, stranded nickel leadwires. This heater can be modified from stock.

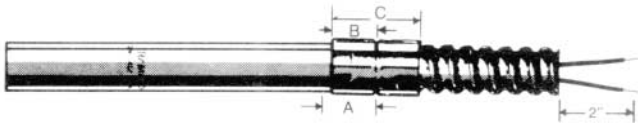
Htr Dia. (in.)	Nom OD (in.)		Dimensions (in.)	
	Conduit	Elbow	A	B
3/8	27/64	7/16	3/4	1
1/2	1/2	9/16	3/4	1
5/8	5/8	3/4	7/8	1-1/8
3/4	25/32	7/8	1	1-1/8

**TYPE U -  
RIGHT ANGLE COPPER  
ELBOW**



Elbow is staked to leadwire end of heater and to stainless steel flexible conduit, covering insulated, stranded nickel leadwires. This heater cannot be modified from stock.

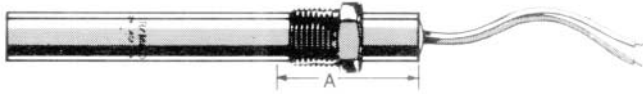
Htr Dia. (in.)	Conduit Nom OD (in.)	Dimensions (in.)		
		A	B	C
3/8	1/2	5/8	3/8	1-1/4
1/2 / 12.5mm	1/2	5/8	3/8	1-5/16
5/8 / 16mm	5/8	3/4	1/2	1-11/16
3/4	25/32	3/4	1/2	2



Coupling covers insulated, stranded nickel leadwires and is staked to leadwire end of heater and to stainless steel flexible conduit. This heater cannot be modified from stock.

See graph of Types U & V for dimensions

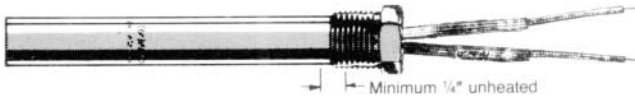
## TYPE W - FLEXIBLE CONDUIT WITH COPPER COUPLING



If a stainless steel bushing is used a 1" minimum cold section (A) is required at leadwire end. If a brass bushing is used a 2" maximum cold section is required. Stainless steel or brass bushings are welded or brazed to sheath at cold junction. This heater uses teflon-insulated, stranded, silver-plated copper leadwires, it cannot be modified from stock.

## TYPE CE - TEFLON SEAL WITH NPT BUSHING

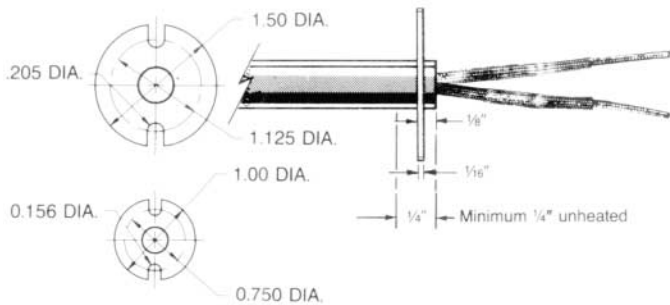
Htr Dia:	1/4	3/8	1/2	5/8	3/4
NPT size:	1/8	1/4	3/8	1/2	3/4



Hex head stainless steel or brass bushings are welded or brazed to terminal end of sheath at cold junction. Leadwires using fiberglass, teflon or silicone rubber insulation are connected to terminal pins. Bushings can be potted with epoxy, silicone rubber or castable ceramics to fill bushing cavity. This heater can be modified from stock.

## MODIFICATION E - NPT BUSHING

Htr Dia:	1/4	3/8	1/2	5/8	3/4
NPT size:	1/8	1/4	3/8	1/2	3/4



## MODIFICATION G - STAINLESS STEEL FLANGE

1/16" thick stainless steel flange is tack welded to heater at leadwire end. This heater can be modified from stock.

Htr. Dia.	Flange Size
1/4 3/8 1/2	1"
1/4 3/8 1/2 5/8 3/4	1-1/2"

# Ramarod Cartridge Heaters

**Includes 10" Type "A" Leads  
Incoloy 800 Sheath Material**

DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #	DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #
1/4"	1"	50	120	130	0.02	2A1A/DVE	1/4"	4-1/2"	200	120	65	0.05	2A4E/DWJ
1/4"	1"	80	120	208	0.02	2A1A/DVK	1/4"	4-1/2"	250	120	81	0.05	2A4E/DWT
1/4"	1"	100	120	260	0.02	2A1A/DVO	1/4"	4-1/2"	500	240	162	0.05	2A4E/PEP
1/4"	1"	150	120	390	0.02	2A1A/DVZ							
1/4"	1-1/4"	75	120	130	0.02	2A1C/DVJ	1/4"	5"	250	240	72	0.05	2A5A/PCP
1/4"	1-1/4"	100	120	173	0.02	2A1C/DVO	1/4"	5"	350	240	102	0.05	2A5A/PDK
1/4"	1-1/4"	125	120	217	0.02	2A1C/DVT	1/4"	5"	400	120	116	0.05	2A5A/DYZ
1/4"	1-1/4"	150	120	260	0.02	2A1C/DVZ	1/4"	5"	400	240	116	0.05	2A5A/PDU
1/4"	1-1/4"	150	240	260	0.02	2A1C/PBU	1/4"	6"	200	240	47	0.06	2A6A/PCF
1/4"	1-1/4"	200	240	346	0.02	2A1C/PCF	1/4"	6"	300	120	71	0.06	2A6A/DYE
1/4"	1-1/2"	50	120	65	0.02	2A1E/DVE	1/4"	6"	300	240	71	0.06	2A6A/PDA
1/4"	1-1/2"	100	120	130	0.02	2A1E/DVO	1/4"	6"	400	120	95	0.06	2A6A/DYZ
1/4"	1-1/2"	100	240	130	0.02	2A1E/PBK	1/4"	6"	400	240	95	0.06	2A6A/PDU
1/4"	1-1/2"	150	120	195	0.02	2A1E/DVZ	1/4"	6"	600	120	142	0.06	2A6A/EAO*
1/4"	1-1/2"	150	240	195	0.02	2A1E/PBU	1/4"	6"	600	240	142	0.06	2A6A/PFK
1/4"	1-1/2"	175	240	228	0.02	2A1E/PCA	3/8"	1"	50	120	85	0.03	3A1A/DVE
1/4"	1-1/2"	200	120	260	0.02	2A1E/DWJ	3/8"	1"	75	120	129	0.03	3A1A/DVJ
1/4"	1-1/2"	200	240	260	0.02	2A1E/PCF	3/8"	1"	100	120	172	0.03	3A1A/DVO
1/4"	1-1/2"	250	240	325	0.02	2A1E/PCP	3/8"	1"	150	120	259	0.03	3A1A/DVZ
							3/8"	1"	200	240	345	0.03	3A1A/PCF
1/4"	2"	50	120	48	0.03	2A2A/DVE							
1/4"	2"	80	120	69	0.03	2A2A/DVK	3/8"	1-3/16"	150	240	188	0.03	3A1X/PBU
1/4"	2"	100	120	87	0.03	2A2A/DVO	3/8"	1-3/16"	200	120	250	0.03	3A1X/DWJ
1/4"	2"	100	240	87	0.03	2A2A/PBK	3/8"	1-3/16"	250	240	250	0.03	3A1X/PCP
1/4"	2"	125	240	109	0.03	2A2A/PBP							
1/4"	2"	150	120	130	0.03	2A2A/DVZ	3/8"	1-1/4"	75	120	85	0.03	3A1C/DVJ
1/4"	2"	150	240	130	0.03	2A2A/PBU	3/8"	1-1/4"	100	120	113	0.03	3A1C/DVO
1/4"	2"	200	120	173	0.03	2A2A/DWJ	3/8"	1-1/4"	125	120	142	0.03	3A1C/DVT
1/4"	2"	200	240	173	0.03	2A2A/PCF	3/8"	1-1/4"	150	120	170	0.03	3A1C/DVZ
1/4"	2"	250	120	217	0.03	2A2A/DWT	3/8"	1-1/4"	150	240	170	0.03	3A1C/PBU
1/4"	2"	250	240	217	0.03	2A2A/PCP	3/8"	1-1/4"	200	120	230	0.03	3A1C/DWJ
1/4"	2"	300	240	260	0.03	2A2A/PDA	3/8"	1-1/4"	200	240	230	0.03	3A1C/PCF
1/4"	2-1/2"	150	240	98	0.03	2A2E/PBU	3/8"	1-3/8"	100	240	99	0.03	3A1D/PBK
1/4"	2-1/2"	200	240	130	0.03	2A2E/PCF	3/8"	1-3/8"	150	120	148	0.03	3A1D/DVZ
1/4"	2-1/2"	250	120	163	0.03	2A2E/DWT	3/8"	1-3/8"	150	240	148	0.03	3A1D/PBU
1/4"	2-1/2"	250	240	163	0.03	2A2E/PCP							
1/4"	2-1/2"	350	240	228	0.03	2A2E/PDK	3/8"	1-7/16"	100	120	92	0.03	3A1X/DVO
1/4"	2-3/4"	350	240	203	0.04	2A2G/PDK	3/8"	1-1/2"	75	120	65	0.04	3A1E/DVJ
1/4"	3"	100	120	52	0.04	2A3A/DVO	3/8"	1-1/2"	100	120	85	0.04	3A1E/DVO
1/4"	3"	150	120	78	0.04	2A3A/DVZ	3/8"	1-1/2"	100	240	127	0.04	3A1E/PBK
1/4"	3"	150	240	78	0.04	2A3A/PBU	3/8"	1-1/2"	150	120	127	0.04	3A1E/DVZ
1/4"	3"	200	120	104	0.04	2A3A/DWJ	3/8"	1-1/2"	150	240	127	0.04	3A1E/PBU
1/4"	3"	200	240	104	0.04	2A3A/PCF	3/8"	1-1/2"	200	120	170	0.04	3A1E/DWJ
1/4"	3"	250	120	130	0.04	2A3A/DWT	3/8"	1-1/2"	200	240	170	0.04	3A1E/PCF
1/4"	3"	250	240	130	0.04	2A3A/PCP	3/8"	1-1/2"	250	120	216	0.04	3A1E/DWT
1/4"	3"	300	120	156	0.04	2A3A/DYE	3/8"	1-1/2"	250	240	216	0.04	3A1E/PCP
1/4"	3"	300	240	156	0.04	2A3A/PDA	3/8"	1-3/4"	125	120	86	0.05	3A1G/DVT
1/4"	3"	350	240	182	0.04	2A3A/PDK	3/8"	1-3/4"	150	120	102	0.05	3A1G/DVZ
							3/8"	1-3/4"	150	240	102	0.05	3A1G/PBU
1/4"	3-1/2"	200	240	87	0.04	2A3E/PCF	3/8"	1-3/4"	175	120	122	0.05	3A1G/DWE
1/4"	3-1/2"	300	240	130	0.04	2A3E/PDA	3/8"	1-3/4"	200	240	137	0.05	3A1G/PCF
							3/8"	1-3/4"	250	120	172	0.05	3A1G/DWT
1/4"	4"	100	120	37	0.04	2A4A/DVO	3/8"	1-3/4"	250	240	172	0.05	3A1G/PCP
1/4"	4"	150	120	56	0.04	2A4A/DVZ							
1/4"	4"	200	120	74	0.04	2A4ADWJ	3/8"	1-7/8"	250	120	156	0.06	3A1H/DWT
1/4"	4"	200	240	74	0.04	2A4A/PCF							
1/4"	4"	250	120	93	0.04	2A4A/DWT	3/8"	2"	50	120	28	0.06	3A2A/DVE
1/4"	4"	250	240	93	0.04	2A4A/PCP	3/8"	2"	100	120	56	0.06	3A2A/DVO
1/4"	4"	300	120	111	0.04	2A4A/DYE	3/8"	2"	150	120	85	0.06	3A2A/DVZ
1/4"	4"	300	240	111	0.04	2A4A/PDA	3/8"	2"	150	240	85	0.06	3A2A/PBU
1/4"	4"	400	240	149	0.04	2A4A/PDU	3/8"	2"	200	120	115	0.06	3A2A/DWJ
							3/8"	2"	200	240	115	0.06	3A2A/PCF
							3/8"	2"	200	115	115	0.06	3A2A/CHK



DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #	DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #
3/8"	2"	250	120	142	0.06	3A2A/DWT	3/8"	4"	250	120	61	0.09	3A4A/DWT
3/8"	2"	250	240	142	0.06	3A2A/PCP	3/8"	4"	250	240	61	0.09	3A4A/PCP
3/8"	2"	300	120	173	0.06	3A2A/DYE	3/8"	4"	300	120	73	0.09	3A4A/DYE
3/8"	2"	300	240	173	0.06	3A2A/PDA	3/8"	4"	300	240	73	0.09	3A4A/PDA
3/8"	2"	350	240	198	0.06	3A2A/PDK	3/8"	4"	350	240	86	0.09	3A4A/PDK
3/8"	2"	400	120	230	0.06	3A2A/DYZ	3/8"	4"	400	120	97	0.09	3A4A/DYZ
3/8"	2"	400	240	230	0.06	3A2A/PDU	3/8"	4"	400	240	97	0.09	3A4A/PDU
3/8"	2"	500	120	287	0.06	3A2A/DZT	3/8"	4"	450	240	110	0.09	3A4A/PEF
3/8"	2"	500	240	287	0.06	3A2A/PEP	3/8"	4"	500	120	122	0.09	3A4A/DZT
							3/8"	4"	500	240	122	0.09	3A4A/PEP
3/8"	2-1/4"	75	120	37	0.07	3A2C/DVJ	3/8"	4"	550	120	135	0.09	3A4A/EAE
3/8"	2-1/4"	100	120	49	0.07	3A2C/DVO	3/8"	4"	750	240	184	0.09	3A4A/PGP
3/8"	2-1/4"	150	240	73	0.07	3A2C/PBU							
3/8"	2-1/4"	175	120	85	0.07	3A2C/DWE	3/8"	4-1/4"	300	240	64	0.10	3A4C/PDA
3/8"	2-1/4"	200	240	97	0.07	3A2C/PCF	3/8"	4-1/4"	750	240	161	0.10	3A4C/PGP
3/8"	2-1/4"	250	120	122	0.07	3A2C/DWT							
3/8"	2-1/4"	250	240	122	0.07	3A2C/PCP	3/8"	4-1/2"	250	240	54	0.10	3A4E/PCP
3/8"	2-1/4"	350	120	172	0.07	3A2C/DYO	3/8"	4-1/2"	300	120	65	0.10	3A4E/DYE
3/8"	2-1/4"	350	240	172	0.07	3A2C/PDK	3/8"	4-1/2"	300	240	65	0.10	3A4E/PDA
							3/8"	4-1/2"	350	120	75	0.10	3A4E/DYO
3/8"	2-1/2"	150	240	65	0.07	3A2E/PBU	3/8"	4-1/2"	350	240	75	0.10	3A4E/PDK
3/8"	2-1/2"	200	120	87	0.07	3A2E/DWJ	3/8"	4-1/2"	425	240	91	0.10	3A4E/PEA
3/8"	2-1/2"	200	240	87	0.07	3A2E/PCF	3/8"	4-1/2"	500	120	108	0.10	3A4E/DZT
3/8"	2-1/2"	250	120	108	0.07	3A2E/DWT	3/8"	4-1/2"	500	240	108	0.10	3A4E/PEP
3/8"	2-1/2"	250	240	108	0.07	3A2E/PCP							
3/8"	2-1/2"	300	120	130	0.07	3A2E/DYE	3/8"	4-13/16"	300	240		0.11	3A4X/PDA
3/8"	2-1/2"	300	240	130	0.07	3A2E/PDA	3/8"	4-13/16"	500	240		0.11	3A4X/PEP
3/8"	2-1/2"	350	240	151	0.07	3A2E/PDK							
3/8"	2-1/2"	400	120	172	0.07	3A2E/DYZ	3/8"	5"	150	120	29	0.11	3A5A/DVZ
3/8"	2-1/2"	400	240	172	0.07	3A2E/PDU	3/8"	5"	150	240	29	0.11	3A5A/PBU
3/8"	2-1/2"	450	240	194	0.07	3A2E/PEF	3/8"	5"	200	120	38	0.11	3A5A/DWJ
3/8"	2-1/2"	500	120	216	0.07	3A2E/DZT	3/8"	5"	200	240	38	0.11	3A5A/PCF
3/8"	2-1/2"	500	240	243	0.07	3A2E/PEP	3/8"	5"	300	120	57	0.11	3A5A/DYE
							3/8"	5"	300	240	57	0.11	3A5A/PDA
3/8"	2-3/4"	50	120	19	0.08	3A2G/DVE	3/8"	5"	350	240	67	0.11	3A5A/PDK
3/8"	2-3/4"	250	240	95	0.08	3A2G/PCP	3/8"	5"	450	240	86	0.11	3A5A/PEF
							3/8"	5"	500	120	95	0.11	3A5A/DZT
3/8"	3"	100	120	34	0.08	3A3A/DVO	3/8"	5"	500	240	95	0.11	3A5A/PEP
3/8"	3"	150	120	51	0.08	3A3A/DVZ	3/8"	5"	700	240	134	0.11	3A5A/PGF
3/8"	3"	200	120	68	0.08	3A3A/DWJ	3/8"	5"	750	240	142	0.11	3A5A/PGP
3/8"	3"	200	240	68	0.08	3A3A/PCF	3/8"	5"	1000	240	191	0.11	3A5A/PIP
3/8"	3"	250	120	85	0.08	3A3A/DWT							
3/8"	3"	250	240	85	0.08	3A3A/PCP	3/8"	5-1/4"	200	240	36	0.12	3A5C/PCF
3/8"	3"	300	120	102	0.08	3A3A/DYE							
3/8"	3"	300	240	102	0.08	3A3A/PDA	3/8"	5-1/2"	200	240	34	0.12	3A5E/PCF
3/8"	3"	350	240	120	0.08	3A3A/PDK	3/8"	5-1/2"	250	240	43	0.12	3A5E/PCP
3/8"	3"	400	120	138	0.08	3A3A/DYZ	3/8"	5-1/2"	350	240	60	0.12	3A5E/PDK
3/8"	3"	400	240	138	0.08	3A3A/PDU	3/8"	5-1/2"	400	240	69	0.12	3A5E/PDU
3/8"	3"	500	120	170	0.08	3A3A/DZT	3/8"	5-1/2"	600	240	103	0.12	3A5E/PEP
3/8"	3"	500	240	170	0.08	3A3A/PEP	3/8"	5-1/2"	1000	240	172	0.12	3A5E/PIP
3/8"	3"	600	240	208	0.08	3A3A/PFK							
3/8"	3"	750	240	258	0.08	3A3A/PGP	3/8"	6"	200	120	31	0.13	3A6A/DWJ
							3/8"	6"	250	120	39	0.13	3A6A/DWT
3/8"	3-1/2"	200	240	57	0.09	3A3E/PCF	3/8"	6"	250	240	39	0.13	3A6A/PCP
3/8"	3-1/2"	225	240	64	0.09	3A3E/PCK	3/8"	6"	300	120	47	0.13	3A6A/DYE
3/8"	3-1/2"	250	120	72	0.09	3A3E/DWT	3/8"	6"	300	240	47	0.13	3A6A/PDA
3/8"	3-1/2"	250	240	72	0.09	3A3E/PCP	3/8"	6"	400	120	63	0.13	3A6A/DYZ
3/8"	3-1/2"	300	120	86	0.09	3A3E/DYE	3/8"	6"	400	240	63	0.13	3A6A/PDU
3/8"	3-1/2"	300	240	86	0.09	3A3E/PDA	3/8"	6"	500	120	79	0.13	3A6A/DZT
3/8"	3-1/2"	400	240	115	0.09	3A3E/PDU	3/8"	6"	500	240	79	0.13	3A6A/PEP
3/8"	3-1/2"	500	120	144	0.09	3A3E/DZT	3/8"	6"	600	120	94	0.13	3A6A/EAO*
3/8"	3-1/2"	500	240	144	0.09	3A3E/PEP	3/8"	6"	600	240	94	0.13	3A6A/PFK
							3/8"	6"	750	120	117	0.13	3A6A/EBT*
3/8"	3-13/16"	150	120	39	0.09	3A3X/DVZ	3/8"	6"	750	240	117	0.13	3A6A/PGP
3/8"	3-13/16"	500	240	130	0.09	3A3X/PEP	3/8"	6"	900	240	139	0.13	3A6A/PHU
							3/8"	6"	1000	240	155	0.13	3A6A/PIP
3/8"	4"	125	120	31	0.09	3A4A/DVT							
3/8"	4"	125	240	31	0.09	3A4APBP	3/8"	6-1/2"	600	240	86	0.14	3A6E/PFK
3/8"	4"	150	120	37	0.09	3A4A/DVZ	3/8"	6-1/2"	1000	240	144	0.14	3A6E/PIP
3/8"	4"	175	120	43	0.09	3A4A/DWE							
3/8"	4"	200	120	49	0.09	3A4A/DWJ	3/8"	7"	250	120	33	0.14	3A7A/DWT
3/8"	4"	200	240	49	0.09	3A4A/PCF	3/8"	7"	250	240	33	0.14	3A7A/PCP
							3/8"	7"	500	240	66	0.14	3A7A/PEP
							3/8"	7"	600	120	80	0.14	3A7A/EAO*



DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #	DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #
3/8"	7"	600	240	80	0.14	3A7A/PFK	1/2"	2-1/4"	250	120	92	0.10	4A2C/DWT
3/8"	7"	750	240	99	0.14	3A7A/PGP	1/2"	2-1/4"	250	240	92	0.10	4A2C/PCP
3/8"	7"	1000	240	132	0.14	3A7A/PIP	1/2"	2-1/4"	400	120	147	0.10	4A2C/DYZ
							1/2"	2-1/4"	400	240	147	0.10	4A2C/PDU
3/8"	7-1/2"	1000	240	123	0.15	3A7E/PIP	1/2"	2-1/4"	500	120	184	0.10	4A2C/DZT
							1/2"	2-1/4"	500	240	184	0.10	4A2C/PEP
3/8"	7-13/16"	750	240	88	0.15	3A7X/PGP	1/2"	2-3/8"	100	120	34	0.11	4A2D/DVO
3/8"	8"	300	120	34	0.16	3A8A/DYE	1/2"	2-3/8"	100	240	34	0.11	4A2D/PBK
3/8"	8"	300	240	34	0.16	3A8A/PDA	1/2"	2-3/8"	250	120	85	0.11	4A2D/DWT
3/8"	8"	400	120	46	0.16	3A8A/DYZ	1/2"	2-3/8"	250	240	85	0.11	4A2D/PCP
3/8"	8"	450	120	51	0.16	3A8A/DZJ	1/2"	2-3/8"	500	120	171	0.11	4A2D/DZT
3/8"	8"	500	120	58	0.16	3A8A/DZT	1/2"	2-3/8"	500	240	171	0.11	4A2D/PEP
3/8"	8"	500	240	58	0.16	3A8A/PEP							
3/8"	8"	600	120	68	0.16	3A8A/EAO*	1/2"	2-1/2"	100	120	32	0.11	4A2E/DVO
3/8"	8"	700	240	80	0.16	3A8A/PGF	1/2"	2-1/2"	100	240	32	0.11	4A2E/PBK
3/8"	8"	750	240	85	0.16	3A8A/PGP	1/2"	2-1/2"	250	120	81	0.11	4A2E/DWT
3/8"	8"	1000	240	114	0.16	3A8A/PIP	1/2"	2-1/2"	250	240	81	0.11	4A2E/PCP
							1/2"	2-1/2"	300	120	96	0.11	4A2E/DYE
3/8"	8-5/8"	500	240	52	0.19	3A8F/PEP	1/2"	2-1/2"	300	240	96	0.11	4A2E/PDA
							1/2"	2-1/2"	350	240	112	0.11	4A2E/PDK
3/8"	9"	1000	240	101	0.19	3A9A/PIP	1/2"	2-1/2"	400	120	129	0.11	4A2E/DYZ
							1/2"	2-1/2"	400	240	129	0.11	4A2E/PDU
3/8"	9-1/2"	600	240	57	0.19	3A9E/PFK	1/2"	2-1/2"	500	120	161	0.11	4A2E/DZT
3/8"	9-1/2"	1000	240	96	0.19	3A9E/PIP	1/2"	2-1/2"	500	240	161	0.11	4A2E/PEP
3/8"	9-3/4"	600	240	56	0.19	3A9G/PFK	1/2"	2-9/16"	300	240	94	0.11	4A2X/PDA
							1/2"	2-9/16"	350	120	109	0.11	4A2X/DYO
3/8"	10"	400	120	36	0.19	3A10A/DYZ							
3/8"	10"	500	120	45	0.19	3A10A/DZT	1/2"	2-3/4"	400	120	114	0.12	4A2G/DYZ
3/8"	10"	500	240	45	0.19	3A10A/PEP	1/2"	2-3/4"	400	240	114	0.12	4A2G/PDU
3/8"	10"	600	120	54	0.19	3A10A/EAO							
3/8"	10"	600	240	54	0.19	3A10A/PFK	1/2"	3"	125	120	32	0.12	4A3A/DVT
3/8"	10"	750	240	68	0.19	3A10A/PGP	1/2"	3"	125	240	32	0.12	4A3A/PBP
3/8"	10"	800	240	72	0.19	3A10A/PHA	1/2"	3"	200	240	51	0.12	4A3A/PCF
3/8"	10"	1000	240	90	0.19	3A10A/PIP	1/2"	3"	250	120	64	0.12	4A3A/DWT
3/8"	10"	1500	240	136	0.19	3A10A/PMP*	1/2"	3"	250	240	64	0.12	4A3A/PCP
							1/2"	3"	300	120	77	0.12	4A3A/DYE
3/8"	12"	400	120	30	0.22	3A12A/DYZ	1/2"	3"	300	240	77	0.12	4A3A/PDA
3/8"	12"	600	120	45	0.22	3A12A/EAO*	1/2"	3"	350	120	90	0.12	4A3A/DYO
3/8"	12"	600	240	45	0.22	3A12A/PFK	1/2"	3"	400	120	104	0.12	4A3A/DYZ
3/8"	12"	1000	240	74	0.22	3A12A/PIP	1/2"	3"	400	240	104	0.12	4A3A/PDU
							1/2"	3"	500	120	129	0.12	4A3A/DZT
1/2"	1"	50	120	64	0.06	4A1A/DVE	1/2"	3"	500	240	129	0.12	4A3A/PEP
1/2"	1"	150	120	193	0.06	4A1A/DVZ	1/2"	3"	600	120	154	0.12	4A3A/EAO
							1/2"	3"	600	240	154	0.12	4A3A/PFK
1/2"	1-1/4"	50	120	43	0.07	4A1C/DVE	1/2"	3"	750	120	193	0.12	4A3A/EBT
1/2"	1-1/4"	125	120	107	0.07	4A1C/DVT	1/2"	3"	750	240	193	0.12	4A3A/PGP
1/2"	1-1/4"	125	240	107	0.07	4A1C/PBP	1/2"	3"	1000	240	257	0.12	4A3A/PIP
1/2"	1-1/4"	200	240	171	0.07	4A1C/PCF							
1/2"	1-1/4"	250	240	214	0.07	4A1C/PCP	1/2"	3-1/2"	250	120	54	0.14	4A3E/DWT
							1/2"	3-1/2"	250	240	54	0.14	4A3E/PCP
1/2"	1-1/2"	50	120	32	0.08	4A1E/DVE	1/2"	3-1/2"	300	240	64	0.14	4A3E/PDA
1/2"	1-1/2"	150	120	97	0.08	4A1E/DVZ	1/2"	3-1/2"	350	240	73	0.14	4A3E/PDK
1/2"	1-1/2"	150	240	97	0.08	4A1E/PBU	1/2"	3-1/2"	500	120	107	0.14	4A3E/DZT
1/2"	1-1/2"	200	120	129	0.08	4A1E/DWJ	1/2"	3-1/2"	500	240	107	0.14	4A3E/PEP
1/2"	1-1/2"	200	240	129	0.08	4A1E/PCF	1/2"	3-1/2"	750	240	160	0.14	4A3E/PGP
1/2"	2"	75	120	32	0.09	4A2A/DVJ	1/2"	3-13/16"	250	240	49	0.15	4A3X/PCP
1/2"	2"	150	120	54	0.09	4A2A/DVZ	1/2"	3-13/16"	500	120	97	0.15	4A3X/DZT
1/2"	2"	200	120	86	0.09	4A2A/DWJ							
1/2"	2"	200	240	86	0.09	4A2A/PCF	1/2"	4"	150	120	28	0.15	4A4A/DVZ
1/2"	2"	250	120	108	0.09	4A2A/DWT	1/2"	4"	150	240	28	0.15	4A4A/PBU
1/2"	2"	250	240	108	0.09	4A2A/PCP	1/2"	4"	250	120	46	0.15	4A4A/DWT
1/2"	2"	300	120	129	0.09	4A2A/DYE	1/2"	4"	250	240	46	0.15	4A4A/PCP
1/2"	2"	300	240	129	0.09	4A2A/PDA	1/2"	4"	300	120	56	0.15	4A4A/DYE
1/2"	2"	400	120	171	0.09	4A2A/DYZ	1/2"	4"	300	240	56	0.15	4A4A/PDA
1/2"	2"	400	240	171	0.09	4A2A/PDU	1/2"	4"	350	120	64	0.15	4A4A/DYO
1/2"	2"	700	240	300	0.09	4A2A/PGF	1/2"	4"	350	240	64	0.15	4A4A/PDK
							1/2"	4"	400	120	74	0.15	4A4A/DYZ
1/2"	2-1/4"	75	120	28	0.10	4A2C/DVJ	1/2"	4"	400	240	74	0.15	4A4A/PDU
1/2"	2-1/4"	125	120	46	0.10	4A2C/DVT	1/2"	4"	500	120	92	0.15	4A4A/DZT
							1/2"	4"	500	240	92	0.15	4A4A/PEP
							1/2"	4"	550	120	101	0.15	4A4A/EAE
							1/2"	4"	750	120	138	0.15	4A4A/EBT



DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #	DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #
1/2"	4"	750	240	138	0.15	4A4A/PGP	1/2"	8"	300	120	26	0.28	4A8A/DYE
1/2"	4"	1000	240	184	0.15	4A4A/PIP	1/2"	8"	300	240	26	0.28	4A8A/PDA
1/2"	4"	1300	240	238	0.15	4A4A/PLA	1/2"	8"	500	120	43	0.28	4A8A/DZT
							1/2"	8"	500	240	43	0.28	4A8A/PEP
1/2"	4-5/16"	550	120	93	0.16	4A4X/EAE	1/2"	8"	600	240	52	0.28	4A8A/PFK
							1/2"	8"	750	240	64	0.28	4A8A/PGP
1/2"	4-1/2"	350	240	56	0.17	4A4E/PDK	1/2"	8"	800	120	69	0.28	4A8A/ECE
1/2"	4-1/2"	500	120	80	0.17	4A4E/DZT	1/2"	8"	900	240	77	0.28	4A8A/PHU
1/2"	4-1/2"	500	240	80	0.17	4A4E/PEP	1/2"	8"	1000	120	86	0.28	4A8A/EDT
1/2"	4-1/2"	750	120	120	0.17	4A4E/EBT	1/2"	8"	1000	240	86	0.28	4A8A/PIP
1/2"	4-1/2"	750	240	120	0.17	4A4E/PGP	1/2"	8"	1500	240	129	0.28	4A8A/PMP
1/2"	4-1/2"	1000	240	160	0.17	4A4E/PIP	1/2"	8"	2000	240	172	0.28	4A8A/PQP*
1/2"	4-13/16"	300	240	45	0.18	4A4X/PDA	1/2"	8-1/2"	300	240	24	0.30	4A8E/PDA
1/2"	4-13/16"	1000	240	149	0.18	4A4X/PIP	1/2"	8-1/2"	500	240	40	0.30	4A8E/PEP
							1/2"	8-1/2"	1000	240	80	0.30	4A8E/PIP
1/2"	5"	200	120	29	0.19	4A5A/DWJ							
1/2"	5"	200	240	29	0.19	4A5A/PCF	1/2"	9"	500	240	38	0.30	4A9A/PEP
1/2"	5"	350	120	50	0.19	4A5A/DYO	1/2"	9"	750	240	57	0.30	4A9A/PGP
1/2"	5"	350	240	50	0.19	4A5A/PDK	1/2"	9"	1000	240	76	0.30	4A9A/PIP
1/2"	5"	400	120	58	0.19	4A5A/DYZ	1/2"	9"	1500	240	113	0.30	4A9A/PMP
1/2"	5"	400	240	58	0.19	4A5A/PDU							
1/2"	5"	500	120	72	0.19	4A5A/DZT	1/2"	9-1/2"	500	240	36	0.32	4A9E/PEP
1/2"	5"	500	240	72	0.19	4A5A/PEP	1/2"	9-1/2"	1000	240	71	0.32	4A9E/PIP
1/2"	5"	750	120	107	0.19	4A5A/EBT							
1/2"	5"	750	240	107	0.19	4A5A/PGP	1/2"	10"	500	120	34	0.33	4A10A/DZT
1/2"	5"	1000	240	143	0.19	4A5A/PIP	1/2"	10"	500	240	34	0.33	4A10A/PEP
							1/2"	10"	800	240	54	0.33	4A10A/PHA
1/2"	5-1/2"	200	240	26	0.20	4A5E/PCF	1/2"	10"	1000	120	68	0.33	4A10A/EDT
1/2"	5-1/2"	500	120	64	0.20	4A5E/DZT	1/2"	10"	1000	240	68	0.33	4A10A/PIP
1/2"	5-1/2"	500	240	64	0.20	4A5E/PEP	1/2"	10"	1250	240	85	0.33	4A10A/PKP
1/2"	5-1/2"	650	240	84	0.20	4A5E/PFU	1/2"	10"	1500	240	102	0.33	4A10A/PMP
1/2"	5-1/2"	750	120	96	0.20	4A5E/EBT	1/2"	10"	2000	240	135	0.33	4A10A/PQP*
1/2"	5-1/2"	750	240	96	0.20	4A5E/PGP							
							1/2"	11"	1000	240	61	0.36	4A11A/PIP
1/2"	5-3/4"	700	120	86	0.21	4A5G/EBJ	1/2"	11"	1500	240	92	0.36	4A11A/PMP
1/2"	5-3/4"	700	240	86	0.21	4A5G/PGF	1/2"	11"	2000	240	122	0.36	4A11A/PQP*
1/2"	5-13/16"	300	240	35	0.21	4A5X/PDA	1/2"	12"	500	120	28	0.40	4A12A/DZT
							1/2"	12"	500	240	28	0.40	4A12A/PEP
1/2"	6"	250	120	29	0.21	4A6A/DWT	1/2"	12"	600	120	34	0.40	4A12A/EAO
1/2"	6"	250	240	29	0.21	4A6A/PCP	1/2"	12"	600	240	34	0.40	4A12A/PFK
1/2"	6"	300	240	35	0.21	4A6A/PDA	1/2"	12"	1000	120	56	0.40	4A12A/EDT
1/2"	6"	350	120	41	0.21	4A6A/DYO	1/2"	12"	1000	240	56	0.40	4A12A/PIP
1/2"	6"	350	240	41	0.21	4A6A/PDK	1/2"	12"	1500	240	84	0.40	4A12A/PMP
1/2"	6"	500	120	58	0.21	4A6A/DZT	1/2"	12"	2000	240	112	0.40	4A12A/PQP*
1/2"	6"	500	240	58	0.21	4A6A/PEP							
1/2"	6"	600	240	70	0.21	4A6A/PFK	1/2"	14"	1000	240	48	0.48	4A14A/PIP
1/2"	6"	750	120	88	0.21	4A6A/EBT	1/2"	14"	2300	240	110	0.48	4A14A/PTA*
1/2"	6"	750	240	88	0.21	4A6A/PGP							
1/2"	6"	800	120	93	0.21	4A6A/ECE	1/2"	15"	1500	240	67	0.50	4A15A/PMP
1/2"	6"	1000	120	117	0.21	4A6A/EDT							
1/2"	6"	1000	240	117	0.21	4A6A/PIP	1/2"	16"	1000	240	42	0.52	4A16A/PIP
1/2"	6-1/2"	500	240	53	0.22	4A6E/PEP	1/2"	18"	1500	240	55	0.57	4A18A/PMP
1/2"	6-1/2"	1000	240	107	0.22	4A6E/PIP	1/2"	18"	1700	240	63	0.57	4A18A/POF
1/2"	7"	250	120	25	0.24	4A7A/DWT	5/8"	1-1/4"	50	120	26	0.10	5A1C/DVE
1/2"	7"	400	240	39	0.24	4A7A/PDU	5/8"	1-1/4"	200	120	103	0.10	5A1C/DWJ
1/2"	7"	500	120	50	0.24	4A7A/DZT	5/8"	1-1/4"	250	120	128	0.10	5A1C/DWT
1/2"	7"	500	240	50	0.24	4A7A/PEP	5/8"	1-1/4"	400	120	205	0.10	5A1C/DYZ
1/2"	7"	600	120	59	0.24	4A7A/EAO							
1/2"	7"	600	240	59	0.24	4A7A/PFK	5/8"	1-1/2"	250	120	103	0.12	5A1E/DWT
1/2"	7"	700	240	70	0.24	4A7A/PGF	5/8"	1-1/2"	250	240	103	0.12	5A1E/PCP
1/2"	7"	750	120	74	0.24	4A7A/EBT							
1/2"	7"	750	240	74	0.24	4A7A/PGP	5/8"	2"	100	120	34	0.13	5A2A/DVO
1/2"	7"	1000	240	99	0.24	4A7A/PIP	5/8"	2"	200	120	69	0.13	5A2A/DWJ
1/2"	7"	1500	240	148	0.24	4A7A/PMP	5/8"	2"	200	240	69	0.13	5A2A/PCF
							5/8"	2"	250	120	86	0.13	5A2A/DWT
1/2"	7-1/2"	500	240	46	0.27	4A7E/PEP	5/8"	2"	300	240	103	0.13	5A2A/PDA
1/2"	7-1/2"	1000	240	92	0.27	4A7E/PIP	5/8"	2"	400	240	137	0.13	5A2A/PDU
							5/8"	2"	500	240	171	0.13	5A2A/PEP
							5/8"	2"	750	240	257	0.13	5A2A/PGP
							5/8"	2-1/4"	100	120	29	0.14	5A2C/DVO



DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #	DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #
5/8"	2-1/4"	250	120	74	0.14	5A2C/DWT	5/8"	8"	750	240	51	0.47	5A8A/PGP
5/8"	2-1/4"	250	240	74	0.14	5A2C/PCP	5/8"	8"	800	240	55	0.47	5A8A/PHA
5/8"	2-1/4"	350	120	103	0.14	5A2C/DYO	5/8"	8"	850	240	58	0.47	5A8A/PHK
5/8"	2-1/4"	350	240	103	0.14	5A2C/PDK	5/8"	8"	1000	240	68	0.47	5A8A/PIP
5/8"	2-1/4"	500	240	147	0.14	5A2C/PEP	5/8"	8"	1200	240	82	0.47	5A8A/PKF
							5/8"	8"	1500	240	102	0.47	5A8A/PMP
5/8"	2-3/8"	280	120	77	0.18	5A2D/DYA	5/8"	8"	2000	240	136	0.47	5A8A/PQP
5/8"	2-3/8"	280	240	77	0.18	5A2D/PCV							
							5/8"	9"	500	240	30	0.5	5A9A/PEP
5/8"	3"	150	120	31	0.20	5A3A/DVZ	5/8"	9"	750	240	45	0.5	5A9A/PGP
5/8"	3"	250	120	52	0.20	5A3A/DWT	5/8"	9"	1000	240	60	0.5	5A9A/PIP
5/8"	3"	250	240	52	0.20	5A3A/PCP	5/8"	9"	1500	240	91	0.5	5A9A/PMP
5/8"	3"	350	240	72	0.20	5A3A/PDK							
5/8"	3"	400	120	82	0.20	5A3A/DYZ	5/8"	10"	500	120	27	0.53	5A10A/DZT
5/8"	3"	500	120	103	0.20	5A3A/DZT	5/8"	10"	500	240	27	0.53	5A10A/PEP
5/8"	3"	500	240	103	0.20	5A3A/PEP	5/8"	10"	600	120	32	0.53	5A10A/EAO
5/8"	3"	750	240	154	0.20	5A3A/PGP	5/8"	10"	750	240	41	0.53	5A10A/PGP
							5/8"	10"	1000	240	54	0.53	5A10A/PIP
5/8"	3-3/4"	525	120	158	0.24	5A3G/DZZ	5/8"	10"	1500	120	81	0.53	5A10A/EHT*
5/8"	3-3/4"	525	240	158	0.24	5A3G/PEU	5/8"	10"	1500	240	81	0.53	5A10A/PMP
							5/8"	10"	1600	240	86	0.53	5A10A/PNK
5/8"	4"	250	120	37	0.26	5A4A/DWT	5/8"	10"	2000	240	108	0.53	5A10A/PQP
5/8"	4"	250	240	37	0.26	5A4A/PCP							
5/8"	4"	300	240	44	0.26	5A4A/PDA	5/8"	11"	2000	240	98	0.61	5A11A/PQP
5/8"	4"	400	240	59	0.26	5A4A/PDU							
5/8"	4"	500	120	73	0.26	5A4A/DZT	5/8"	12"	500	120	22	0.66	5A12A/DZT
5/8"	4"	500	240	73	0.26	5A4A/PEP	5/8"	12"	500	240	22	0.66	5A12A/PEP
5/8"	4"	550	240	81	0.26	5A4A/PFA	5/8"	12"	600	120	27	0.66	5A12A/EAO
5/8"	4"	600	240	88	0.26	5A4A/PFK	5/8"	12"	900	240	40	0.66	5A12A/PHU
5/8"	4"	750	240	110	0.26	5A4A/PGP	5/8"	12"	1000	120	45	0.66	5A12A/EDT
5/8"	4"	1000	240	146	0.26	5A4A/PIP	5/8"	12"	1000	240	45	0.66	5A12A/PIP
							5/8"	12"	1500	120	67	0.66	5A12A/EHT*
5/8"	4-1/2"	250	240	32	0.28	5A4E/PCP	5/8"	12"	1500	240	67	0.66	5A12A/PMP
5/8"	4-1/2"	300	240	39	0.28	5A4E/PDA	5/8"	12"	2000	240	90	0.66	5A12A/PQP
5/8"	4-1/2"	500	240	64	0.28	5A4E/PEP							
5/8"	4-1/2"	750	240	96	0.28	5A4E/PGP	5/8"	14"	3700	240	141	0.79	5A14A/QFF*
5/8"	4-1/2"	1000	240	128	0.28	5A4E/PIP							
							5/8"	15"	750	240	27	0.84	5A15A/PGP
5/8"	5"	250	120	28	0.29	5A5A/DWT	5/8"	15"	2400	240	85	0.84	5A15A/PTU
5/8"	5"	250	240	28	0.29	5A5A/PCP	5/8"	15"	4000	240	142	0.84	5A15A/QHP*
5/8"	5"	500	240	57	0.29	5A5A/PEP							
5/8"	5"	750	240	86	0.29	5A5A/PGP	5/8"	16"	2500	240	83	0.91	5A16A/PUP*
5/8"	5"	1000	240	114	0.29	5A5A/PIP	5/8"	16"	4500	240	149	0.91	5A16A/QLP*
5/8"	5-3/8"	800	120	84	0.30	5A5D/ECE	5/8"	18"	1500	240	44	1.03	5A18A/PMP
5/8"	5-3/8"	800	240	84	0.30	5A5D/PHA	5/8"	18"	3000	240	88	1.03	5A18A/PZP*
							5/8"	18"	4700	240	138	1.03	5A18A/QNF*
5/8"	5-1/2"	350	240	32	0.30	5A5E/PDK							
							5/8"	20"	1500	240	40	1.25	5A20A/PMP*
5/8"	6"	150	240	13	0.34	5A6A/PBU	5/8"	20"	3500	240	92	1.25	5A20A/QDP*
5/8"	6"	300	120	28	0.34	5A6A/DYE	5/8"	20"	4700	240	124	1.25	5A20A/QNF*
5/8"	6"	300	240	28	0.34	5A6A/PDA							
5/8"	6"	500	120	46	0.34	5A6A/DZT	5/8"	24"	2000	240	44	1.47	5A24A/PQP*
5/8"	6"	500	240	46	0.34	5A6A/PEP	5/8"	24"	4700	240	103	1.47	5A24A/QNF*
5/8"	6"	750	240	70	0.34	5A6A/PGP							
5/8"	6"	1000	240	93	0.34	5A6A/PIP	5/8"	36"	3000	240	44	2.30	5A36A/PZP*
5/8"	6"	1500	120	140	0.34	5A6A/EHT*							
5/8"	6"	1500	240	140	0.34	5A6A/PMP							
							3/4"	2-1/4"	200	120	49	0.19	6A2C/DWJ
5/8"	6-1/2"	500	120	43	0.38	5A6E/DZT	3/4"	3"	250	120	43	0.24	6A3A/DWT
5/8"	6-1/2"	500	240	43	0.38	5A6E/PEP	3/4"	3"	500	240	86	0.24	6A3A/PEP
5/8"	7"	500	120	39	0.4	5A7A/DZT	3/4"	4"	250	120	31	0.31	6A4A/DWT
5/8"	7"	500	240	39	0.4	5A7A/PEP	3/4"	4"	500	240	61	0.31	6A4A/PEP
5/8"	7"	750	240	59	0.4	5A7A/PGP	3/4"	4"	1000	240	122	0.31	6A4A/PIP
5/8"	7"	1000	240	79	0.4	5A7A/PIP							
5/8"	7"	1500	240	118	0.4	5A7A/PMP	3/4"	5"	300	120	28	0.38	6A5A/DYE
							3/4"	5"	500	240	48	0.38	6A5A/PEP
5/8"	7-1/2"	325	120	24	0.44	5A7E/DYJ	3/4"	5"	1000	240	95	0.38	6A5A/PIP
5/8"	8"	500	120	34	0.47	5A8A/DZT	3/4"	6"	500	120	39	0.44	6A6A/DZT
5/8"	8"	500	240	34	0.47	5A8A/PEP	3/4"	6"	500	240	39	0.44	6A6A/PEP



DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #	DIA (INCH.)	LENGTH (INCH)	WATTS	VOLTS	WATT DENSITY	APPOX. Wgt/Lbs	RAMA PART #
3/4"	6"	1000	240	78	0.44	6A6A/PIP	3/4"	14"	4500	240	142	1.03	6A14A/QLP*
3/4"	6"	1500	240	116	0.44	6A6A/PMP							
3/4"	6"	2000	240	156	0.44	6A6A/PQP	3/4"	15"	1500	240	44	1.09	6A15A/PMP
3/4"	7"	500	120	33	0.51	6A7A/DZT	3/4"	16"	1800	240	49	1.14	6A16A/PPA
3/4"	7"	500	240	33	0.51	6A7A/PEP	3/4"	16"	4700	240	129	1.14	6A16A/QNF*
3/4"	7"	1000	240	66	0.51	6A7A/PIP							
3/4"	8"	500	120	29	0.58	6A8A/DZT	3/4"	18"	2000	240	49	1.25	6A18A/PQP
3/4"	8"	500	240	29	0.58	6A8A/PEP	3/4"	18"	5000	240	122	1.25	6A18A/QPP*
3/4"	8"	1000	240	57	0.58	6A8A/PIP	3/4"	20"	1150	240	25	1.40	6A20A/PJU
3/4"	8"	2000	240	114	0.58	6A8A/PQP	3/4"	20"	1200	240	26	1.40	6A20A/PKF
							3/4"	20"	2250	240	49	1.40	6A20A/PSP
3/4"	10"	1000	240	45	0.72	6A10A/PIP	3/4"	20"	2300	240	50	1.40	6A20A/PTA
3/4"	10"	2000	240	90	0.72	6A10A/PQP	3/4"	20"	5300	240	116	1.40	6A20A/QSA*
3/4"	12"	1000	240	37	0.84	6A12A/PIP	3/4"	24"	1375	240	25	1.80	6A24A/PLP
3/4"	12"	2000	240	74	0.84	6A12A/PQP	3/4"	24"	1400	240	25	1.80	6A24A/PLU
3/4"	12"	4000	240	148	0.84	6A12A/QHP*	3/4"	24"	2750	240	50	1.80	6A24A/PWP
							3/4"	24"	2800	240	51	1.80	6A24A/PYA
3/4"	13"	1000	240	34	0.93	6A13A/PIP	3/4"	24"	5500	240	100	1.80	6A24A/QTP*
3/4"	14"	1250	240	40	1.03	6A14A/PKP	3/4"	36"	2500	240	30	2.50	6A36A/PUP
3/4"	14"	2500	240	79	1.03	6A14A/PUP							



# Ramarod Cartridge Heaters

With Flexible Leadwires

\*\*\* Indicates Stocked Inventory

\*\*\*\* Indicates Overrun Inventory Subject to Qty. Tolerances

HEATER DIA (INCHES)	HEATER LENGTH (INCHES)	LEADWIRE LENGTH (INCHES)	WATTS	VOLTS	*STOCK **OR	RAMA PART #	HEATER DIA (INCHES)	HEATER LENGTH (INCHES)	LEADWIRE LENGTH (INCHES)	WATTS	VOLTS	*STOCK **OR	RAMA PART #
1/4"	1"	36"	50	120	**	2B1A/DVE36	3/8"	3-1/2"	36"	320	240	*	3BA3E/PDE36
							3/8"	3-1/2"	36"	320	240	**	3B3E/PDE36
1/4"	1-1/4"	10"	150	230	*	2B1C/LVV10							
1/4"	1-1/4"	36"	150	240	**	2B1C/PBU36	3/8"	4"	36"	370	240	*	3BA4A/PDO36
1/4"	1-1/4"	40"	200	220	**	2B1C/IRH40							
1/4"	1-1/4"	36"	200	240	*	2B1C/PCF36	3/8"	4-1/2"	36"	420	240	*	3BA4E/PDZ36
1/4"	1-1/2"	36"	150	120	**	2B1E/DVZ36	3/8"	5"	36"	470	240	*	3BA5A/PEJ36
1/4"	1-1/2"	36"	150	240	*	2B1E/PBU36	3/8"	5"	36"	750	240	*	3B5A/PGP36
1/4"	1-1/2"	10"	175	230	*	2B1E/LWB10							
1/4"	1-1/2"	40"	200	220	**	2B1E/IRH40	3/8"	5-1/2"	36"	525	240	*	3BA5E/PEU36
1/4"	1-1/2"	36"	200	240	*	2B1E/PCF36							
							3/8"	6"	36"	575	240	*	3BA6A/PFF36
1/4"	1-3/4"	40"	170	220	*	2B1G/IRB40							
1/4"	1-3/4"	36"	200	208	**	2B1G/FMI36	3/8"	6-1/2"	36"	625	240	*	3BA6E/PFP36
1/4"	1-3/4"	40"	200	220	**	2B1G/IRH40							
1/4"	1-3/4"	36"	200	240	*	2B1G/PCF36	3/8"	7"	36"	675	240	*	3BA7A/PGA36
1/4"	2"	36"	125	240	*	2B2A/PBP36	3/8"	7-1/2"	36"	725	240	*	3BA7E/PGK36
1/4"	2"	36"	200	240	*	2B2A/PCF36							
1/4"	2"	10"	250	230	*	2B2A/LWQ10	3/8"	8"	36"	775	240	*	3BA8A/PGU36
1/4"	2-1/4"	40"	250	220	**	2B2C/IRR40	3/8"	8-1/2"	36"	835	240	*	3BA8E/PHH36
1/4"	2-1/4"	36"	285	240	**	2B2C/PCW36							
1/4"	2-1/4"	40"	300	220	*	2B2C/ISC40	3/8"	9"	36"	885	240	*	3BA9A/PHR36
1/4"	2-1/4"	36"	300	240	*	2B2C/PDA36							
							3/8"	9-1/2"	36"	940	240	**	3BA9E/PID36
1/4"	2-1/2"	36"	200	240	**	2B2E/PCF36							
1/4"	2-3/4"	40"	350	220	**	2B2G/ISM40	3/8"	10"	36"	990	240	*	3BA10A/PIN36
1/4"	3"	10"	250	230	*	2B3A/LWQ10							
1/4"	3-1/4"	40"	400	220	**	2B3C/ISW40	1/2"	11-1/2"	36"	1150	240	**	3BA11E/PJU36
1/4"	3-1/4"	36"	400	240	*	2B3C/PDU36	1/2"	1-1/2"	72"	150	240	**	4B1E/PBU72
1/4"	3-1/2"	36"	300	240	**	2B3E/PDA36	1/2"	1-3/4"	40"	250	220	**	4B1G/IRR40
1/4"	4-1/2"	40"	575	220	**	2B4E/IUH40	1/2"	2-1/2"	36"	400	240	*	4B2E/PDU36
1/4"	4-1/2"	36"	575	240	**	2B4E/PFF36	1/2"	3"	36"	400	240	*	4B3A/PDU36
1/4"	5-1/8"	40"	650	220	**	2B5B/IUW40	1/2"	3-1/2"	36"	420	240	*	4B4A/PDU36
3/8"	1"	36"	200	120	**	3B1A/DWJ36	1/2"	4"	36"	400	240	*	4BA4A/PDU36
							1/2"	4"	36"	490	240	*	4BA4A/PEN36
3/8"	1-1/4"	36"	200	120	**	3B1C/DWJ36	1/2"	4-1/2"	36"	550	240	*	4BA4E/PFA36
3/8"	1-1/4"	40"	200	220	*	3B1C/IRH40							
3/8"	1-1/4"	36"	200	240	*	3B1C/PCF36	1/2"	5"	36"	625	240	*	4BA5A/PFP36
3/8"	1-1/4"	36"	250	240	**	3B1C/PCP36	1/2"	5-1/2"	36"	700	240	*	4BA5E/PGF36
3/8"	1-1/2"	36"	150	240	*	3B1E/PBU36	1/2"	6"	36"	775	240	*	4BA6A/PGU36
3/8"	1-3/4"	40"	200	220	*	3B1G/IRH40	1/2"	6-1/2"	36"	850	240	*	4BA6E/PHK36
3/8"	1-3/4"	36"	200	240	*	3B1G/PCF36							
3/8"	2"	40"	200	220	**	3B2A/IRH40	1/2"	7"	36"	900	240	*	4BA7A/PHU36
3/8"	2"	36"	200	240	*	3B2A/PCF36	1/2"	7-1/2"	36"	975	240	*	4BA7E/PIK36
3/8"	2"	36"	250	240	*	3B2A/PCP36							
3/8"	2-1/4"	36"	350	240	*	3B2C/PDK36	1/2"	8"	72"	1000	240	**	4B8A/PIP72
3/8"	2-1/2"	36"	250	240	*	3B2E/PCP36	1/2"	8"	36"	1050	240	*	4BA8A/PJA36
3/8"	3"	36"	260	240	*	3B3A/PCR36	1/2"	8-1/2"	36"	1100	240	**	4BA8E/PJK36
3/8"	3"	36"	500	240	*	3B3A/PEP36	1/2"	9"	36"	1200	240	*	4BA9A/PKF36
							1/2"	9-1/2"	36"	1250	240	*	4BA9E/PKP36



\*\* Indicates Stocked Inventory

\*\*\*\* Indicates Overrun Inventory Subject to Qty. Tolerances

HEATER DIA (INCHES)	HEATER LENGTH (INCHES)	LEADWIRE LENGTH (INCHES)	WATTS	VOLTS	*STOCK **OR	RAMA PART #	HEATER DIA (INCHES)	HEATER LENGTH (INCHES)	LEADWIRE LENGTH (INCHES)	WATTS	VOLTS	*STOCK **OR	RAMA PART #
1/2"	10"	36"	1325	240	*	4BA10A/PLF36	1/2"	14-1/2"	36"	1950	240	**	4BA14E/PQF36
1/2"	10-1/2"	36"	1400	240	*	4BA10E/PLU36	1/2"	15-1/2"	36"	2100	240	**	4BA15E/PRK36
1/2"	11"	36"	1470	240	*	4BA11A/PMJ36	1/2"	16-1/2"	36"	2200	240	**	4BA16E/PSF36
1/2"	11-1/2"	36"	1525	240	*	4BA11E/PMU36	1/2"	17-1/2"	36"	2330	240	**	4BA17E/PTG36
1/2"	12-1/2"	36"	1675	240	*	4BA12E/POA36	1/2"	18-1/2"	36"	2500	240	**	4BA18E/PUP36
1/2"	13-1/2"	36"	1800	240	*	4BA13E/PPA36	1/2"	19-1/2"	36"	2875	240	**	4BA19E/PYP36



\*\* Indicates Stocked Inventory  
 \*\*\*\* Indicates Overrun Inventory Subject to Qty. Tolerances

**Ramarod Cartridge w/ Flex Leads**

## Ramarod Cartridge Heaters

**With Internal Type "J" Thermocouple  
Grounded to End Disc**

\*\*\* Indicates Stocked Inventory

\*\*\* Indicates Overrun Inventory Subject to Qty. Tolerances

DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	*STOCK ** OR	RAMA PART #	DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	*STOCK ** OR	RAMA PART #
1/4"	1-1/4"	200	240	*	2H1C/PCF36	3/8"	7"	675	240	*	3HA7A/PGA36
1/4"	1-1/2"	200	240	*	2H1E/PCF36	3/8"	7-1/2"	725	240	*	3HA7E/PGK36
1/4"	1-1/2"	250	240	**	2H1E/PCP36	3/8"	8"	775	240	*	3HA8A/PGU36
1/4"	1-3/4"	100	120	**	2H1G/DVO36	3/8"	8-1/2"	835	240	**	3HA8E/PHH36
1/4"	1-3/4"	200	240	*	2H1G/PCF36	3/8"	9"	885	240	*	3HA9A/PHR36
1/4"	2"	200	240	*	2H2A/PCF36	3/8"	9-1/2"	940	240	*	3HA9E/PID36
1/4"	2"	250	240	*	2H2A/PCP36	3/8"	10"	990	240	**	3HA10A/PIN36
1/4"	2-1/2"	200	240	*	2H2E/PCF36	1/2"	1-3/4"	230	240	*	4H1G/PCL36
1/4"	3"	200	240	*	2HA3A/PCF36	1/2"	2-1/2"	280	240	*	4H2E/PCV36
1/4"	3-1/2"	250	240	*	2HA3E/PCP36	1/2"	3"	500	240	*	4H3A/PEP36
1/4"	4"	250	240	*	2HA4A/PCP36	1/2"	3-1/2"	420	240	*	4HA3E/PDZ36
1/4"	5"	250	240	*	2HA5A/PCP36	1/2"	4"	490	240	*	4HA4A/PEN36
3/8"	1"	150	220	**	3H1A/IQW36	1/2"	4-1/2"	550	240	*	4HA4E/PFA36
3/8"	1-1/2"	200	240	*	3H1E/PCF36	1/2"	5"	625	240	*	4HA5A/PFP36
3/8"	1-3/4"	200	240	*	3H1G/PCF36	1/2"	5-1/2"	700	240	*	4HA5E/PGF36
3/8"	1-3/4"	250	240	*	3H1G/PCP36	1/2"	6"	775	240	*	4HA6A/PGU36
3/8"	2"	200	240	*	3H2A/PCF36	1/2"	6-1/2"	850	240	*	4HA6E/PHK36
3/8"	2"	250	240	*	3H2A/PCP36	1/2"	7"	900	240	**	4HA7A/PHU36
3/8"	2-1/2"	250	240	*	3H2E/PCP36	1/2"	7-1/2"	975	240	**	4HA7E/PIK36
3/8"	3"	260	240	*	3H3A/PCR36	1/2"	8"	1050	240	*	4HA8A/PJA36
3/8"	3"	300	240	*	3H3A/PDA36	1/2"	8-1/2"	1100	240	**	4HA8E/PJK36
3/8"	3-1/2"	320	240	*	3HA3E/PDE36	1/2"	9"	1200	240	*	4HA9A/PKF36
3/8"	3-1/2"	350	240	*	3HA3E/PDK36	1/2"	9-1/2"	1250	240	*	4HA9E/PKP36
3/8"	3-1/2"	350	240	**	3H3E/PDK36	1/2"	10"	1325	240	*	4HA10A/PLF36
3/8"	4"	370	240	*	3HA4A/PDO36	1/2"	10-1/2"	1400	240	*	4HA10E/PLU36
3/8"	4-1/2"	420	240	*	3HA4E/PDZ36	1/2"	11-1/2"	1525	240	**	4HA11E/PMU36
3/8"	5"	300	240	*	3HA5A/PDA36	1/2"	12-1/2"	1675	240	**	4HA12E/POA36
3/8"	5"	300	240	**	3H5A/PDA36	1/2"	13-1/2"	1800	240	**	4HA13E/PPA36
3/8"	5"	470	240	*	3HA5A/PEJ36	1/2"	14-1/2"	1950	240	**	4HA14E/PQF36
3/8"	5-1/2"	525	240	*	3HA5E/PEU36	1/2"	15-1/2"	2100	240	**	4HA15E/PRK36
3/8"	6"	575	240	*	3HA6A/PFF36	1/2"	16-1/2"	2100	240	**	4HA16E/PRK36
3/8"	6-1/2"	625	240	*	3HA6E/PFP36	1/2"	17-1/2"	2100	240	**	4HA17E/PRK36
						1/2"	18-1/2"	2100	240	**	4HA18E/PRK36
						1/2"	19-1/2"	2100	240	**	4HA19E/PRK36



\*\*\* Indicates Stock Inventory

\*\*\* Indicates Overrun Inventory Subject to Qty. Tolerances

# EDM Cartridge Heaters

**Includes 10" Type "A" Leads  
304 Stainless Steel Sheath Material**

DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	WATT DENSITY	APPROX Wgt/Lbs.	RAMA PART #	DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	WATT DENSITY	APPROX Wgt/Lbs.	RAMA PART #
1/4"	1-1/2"	50	120	65	0.02	AA1E/DVE	3/8"	2-1/2"	250	240	108	0.07	BA2E/PCP
1/4"	1-3/4"	100	240	104	0.03	AA1G/PBK	3/8"	2-3/4"	50	120	19	0.08	BA2G/DVE
1/4"	2"	50	120	43	0.03	AA2A/DVE	3/8"	3"	100	120	34	0.08	BA3A/DVO
1/4"	2"	100	120	86	0.03	AA2A/DVO	3/8"	3"	100	240	34	0.08	BA3A/PBK
1/4"	2"	100	230	86	0.03	AA2A/LVL	3/8"	3"	150	120	51	0.08	BA3A/DVZ
1/4"	2"	250	240	217	0.03	AA2A/PCP	3/8"	3"	200	120	68	0.08	BA3A/DWJ
							3/8"	3"	200	240	68	0.08	BA3A/PCF
1/4"	3"	100	120	52	0.04	AA3A/DVO	3/8"	3"	250	120	85	0.08	BA3A/DWT
1/4"	3"	150	120	78	0.04	AA3A/DVZ	3/8"	3"	250	240	85	0.08	BA3A/PCP
1/4"	3"	200	120	103	0.04	AA3A/DWJ	3/8"	3"	300	120	120	0.08	BA3A/DYE
1/4"	3"	200	240	103	0.04	AA3A/PCF	3/8"	3"	300	230	230	0.08	BA3A/LYB
							3/8"	3"	300	240	240	0.08	BA3A/PDA
1/4"	4"	100	120	37	0.04	AA4A/DVO							
1/4"	4"	150	120	56	0.04	AA4A/DVZ	3/8"	3-1/2"	180	220	52	0.09	BA3E/IRD
1/4"	4"	200	120	74	0.04	AA4A/DWJ	3/8"	3-1/2"	200	240	57	0.09	BA3E/PCF
1/4"	4"	200	240	74	0.04	AA4A/PCF	3/8"	3-1/2"	250	120	72	0.09	BA3A/DWT
1/4"	4"	250	120	93	0.04	AA4A/DWT	3/8"	3-1/2"	300	120	87	0.09	BA3E/DYE
1/4"	4"	250	240	93	0.04	AA4A/PCP	3/8"	3-1/2"	300	240	87	0.09	BA3E/PDA
1/4"	4-1/2"	400	220	130	0.05	AA4E/ISW	3/8"	4"	150	120	37	0.09	BA4A/DVZ
1/4"	4-1/2"	400	240	130	0.05	AA4E/PDU	3/8"	4"	200	120	49	0.09	BA4A/DWJ
							3/8"	4"	200	240	49	0.09	BA4A/PCF
1/4"	5"	300	230		0.06	AA5A/LYB	3/8"	4"	250	120	61	0.09	BA4A/DWT
							3/8"	4"	250	240	61	0.09	BA4A/PCP
1/4"	6"	200	240	47	0.06	AA6A/PCF	3/8"	4"	300	120	73	0.09	BA4A/DYE
1/4"	6"	300	120	71	0.06	AA6A/DYE	3/8"	4"	300	240	73	0.09	BA4A/PDA
1/4"	6"	300	240	71	0.06	AA6A/PDA	3/8"	4"	400	120	97	0.09	BA4A/DYZ
1/4"	6"	400	120	95	0.06	AA6A/DYZ	3/8"	4"	400	240	97	0.09	BA4A/PDU
1/4"	6"	400	240	95	0.06	AA6A/PDU							
							3/8"	4-1/2"	250	240	54	0.11	BA4E/PCP
1/4"	6-1/2"	825	220	179	0.07	AA6E/IWH							
1/4"	8"	400	240	69	0.09	AA8A/PDU	3/8"	5"	150	120	29	0.11	BA5A/DVZ
							3/8"	5"	150	240	29	0.11	BA5A/PBU
							3/8"	5"	200	120	38	0.11	BA5A/DWJ
							3/8"	5"	200	240	38	0.11	BA5A/PCF
3/8"	1"	50	120	86	0.03	BA1A/DVE	3/8"	5"	250	240	48	0.11	BA5A/PCP
							3/8"	5"	300	120	57	0.11	BA5A/DYE
3/8"	1-1/4"	75	120	85	0.03	BA1C/DVJ	3/8"	5"	300	240	57	0.11	BA5A/PDA
3/8"	1-1/4"	100	120	113	0.03	BA1C/DVO	3/8"	5"	500	120	96	0.11	BA5A/DZT
3/8"	1-1/4"	250	240	287	0.03	BA1C/PCP	3/8"	5"	500	240	96	0.11	BA5A/PEP
3/8"	1-1/2"	75	120	65	0.04	BA1E/DVJ	3/8"	5-1/2"	200	240	34	0.13	BA5E/PCF
3/8"	1-1/2"	100	120	85	0.04	BA1E/DVO	3/8"	5-1/2"	250	240	43	0.13	BA5E/PCP
3/8"	1-1/2"	200	230	172	0.04	BA1E/LWG	3/8"	5-1/2"	350	240	60	0.13	BA5E/PDK
3/8"	1-3/4"	125	120	86	0.05	BA1G/DVT							
3/8"	1-3/4"	150	120	102	0.05	BA1G/DVZ	3/8"	6"	200	120	31	0.13	BA6A/DWJ
3/8"	1-3/4"	150	230	102	0.05	BA1G/L V V	3/8"	6"	250	120	39	0.13	BA6A/DWT
							3/8"	6"	250	240	39	0.13	BA6A/PCP
3/8"	2"	50	120	28	0.06	BA2A/DVE	3/8"	6"	300	120	47	0.13	BA6A/DYE
3/8"	2"	100	120	56	0.06	BA2A/DVO	3/8"	6"	300	240	47	0.13	BA6A/PDA
3/8"	2"	100	240	56	0.06	BA2A/PBK	3/8"	6"	400	120	63	0.13	BA6A/DYZ
3/8"	2"	150	120	85	0.06	BA2A/DVZ	3/8"	6"	400	240	63	0.13	BA6A/PDU
3/8"	2"	150	240	85	0.06	BA2A/PBU	3/8"	6"	500	120	79	0.13	BA6A/DZT
3/8"	2"	200	120	113	0.06	BA2A/DWJ	3/8"	6"	500	240	79	0.13	BA6A/PEP
3/8"	2"	200	240	113	0.06	BA2A/PCF	3/8"	6"	600	120	94	0.13	BA6A/EAO*
3/8"	2"	250	240	143	0.06	BA2A/PCP	3/8"	6"	600	240	94	0.13	BA6A/PFK
3/8"	2-1/4"	75	120	37	0.07	BA2C/DVJ	3/8"	6-1/2"	600	220	86	0.14	BA6E/IUM
3/8"	2-1/4"	100	120	49	0.07	BA2C/DVO							
3/8"	2-1/4"	150	240	73	0.07	BA2C/PBU	3/8"	7"	250	120	33	0.14	BA7A/DWT
3/8"	2-1/4"	175	120	85	0.07	BA2C/DWE	3/8"	7"	250	240	33	0.14	BA7A/PCP
3/8"	2-1/4"	200	240	97	0.07	BA2C/PCF	3/8"	7"	600	120	80	0.14	BA7A/EAO*
3/8"	2-1/4"	250	240	123	0.07	BA2C/PCP							
							3/8"	7"	600	240	80	0.14	BA7A/PFK
3/8"	2-1/2"	200	120	87	0.07	BA2E/DWJ							
3/8"	2-1/2"	250	120	108	0.07	BA2E/DWT	3/8"	8"	300	120	34	0.16	BA8A/DYE



DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	WATT DENSITY	APPROX Wgt/Lbs.	RAMA PART #	DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	WATT DENSITY	APPROX Wgt/Lbs.	RAMA PART #
3/8"	8"	300	240	34	0.16	BA8A/PDA	1/2"	4"	400	120	74	0.15	CA4A/DYZ
3/8"	8"	450	120	51	0.16	BA8A/DZJ	1/2"	4"	400	230	74	0.15	CA4A/LYV
3/8"	8"	500	120	58	0.16	BA8A/DZT	1/2"	4"	400	240	74	0.15	CA4A/PDU
3/8"	8"	500	240	58	0.16	BA8A/PEP	1/2"	4"	500	120	92	0.15	CA4A/DZT
3/8"	8"	600	120	68	0.16	BA8A/EAO*	1/2"	4"	500	240	92	0.15	CA4A/PEP
3/8"	8"	750	240	85	0.16	BA8A/PGP	1/2"	4"	750	240	138	0.15	CA4A/PGP
3/8"	8"	1000	240	113	0.16	BA8A/PIP							
3/8"	9-3/16"	500	120	50	0.19	BA9C/DZT	1/2"	4-1/2"	350	240	56	0.19	CA4E/PDK
3/8"	9-3/4"	600	240	56	0.19	BA9G/PFK	1/2"	5"	200	120	29	0.19	CA5A/DWJ
3/8"	10"	400	120	36	0.19	BA10A/DYZ	1/2"	5"	200	240	29	0.19	CA5A/PCF
3/8"	10"	500	120	45	0.19	BA10A/DZT	1/2"	5"	350	120	50	0.19	CA5A/DYO
3/8"	10"	500	240	45	0.19	BA10A/PEP	1/2"	5"	350	240	50	0.19	CA5A/PDK
3/8"	10"	600	120	54	0.19	BA10A/EAO*	1/2"	5"	400	120	58	0.19	CA5A/DYZ
3/8"	10"	600	240	54	0.19	BA10A/PFK	1/2"	5"	400	240	58	0.19	CA5A/PDU
3/8"	10"	800	240	72	0.19	BA10A/PHA	1/2"	5"	500	120	72	0.19	CA5A/DZT
3/8"	10"	1000	240	90	0.19	BA10A/PIP	1/2"	5"	500	240	72	0.19	CA5A/PEP
							1/2"	6"	750	240	107	0.19	CA5A/PGP
3/8"	12"	400	120	30	0.22	BA12A/DYZ	1/2"	6"	250	120	29	0.21	CA6A/DWT
3/8"	12"	600	120	45	0.22	BA12A/EAO*	1/2"	6"	250	240	29	0.21	CA6A/PCP
3/8"	12"	600	240	45	0.22	BA12A/PFK	1/2"	6"	350	120	41	0.21	CA6A/DYO
3/8"	12"	1000	240	74	0.22	BA12A/PIP	1/2"	6"	350	230	41	0.21	CA6A/LYL
							1/2"	6"	350	240	41	0.21	CA6A/PDK
							1/2"	6"	500	120	58	0.21	CA6A/DZT
							1/2"	6"	500	240	58	0.21	CA6A/PEP
1/2"	1"	125	120	161	0.06	CA1A/DVT	1/2"	6"	750	240	88	0.21	CA6A/PGP
							1/2"	6"	800	120	93	0.21	CA6A/ECE*
1/2"	1-1/4"	50	120	43	0.07	CA1C/DVE	1/2"	6"	1000	120	117	0.21	CA6A/EDT*
1/2"	1-1/4"	125	120	107	0.07	CA1C/DVT	1/2"	6"	1000	230	117	0.21	CA6A/MDQ
1/2"	1-1/4"	180	240	154	0.07	CA1C/PCB	1/2"	6"	1000	240	117	0.21	CA6A/PIP
1/2"	1-1/2"	150	120	97	0.08	CA1E/DVZ	1/2"	7"	250	120	25	0.24	CA7A/DWT
							1/2"	7"	400	240	40	0.24	CA7A/PDU
1/2"	2"	75	120	32	0.09	CA2A/DVJ	1/2"	7"	500	120	50	0.24	CA7A/DZT
1/2"	2"	150	120	54	0.09	CA2A/DVZ	1/2"	7"	500	240	50	0.24	CA7A/PEP
1/2"	2"	200	120	86	0.09	CA2A/DWJ	1/2"	7"	600	120	60	0.24	CA7A/EAO
1/2"	2"	200	240	86	0.09	CA2A/PCF	1/2"	7"	600	240	60	0.24	CA7A/PFK
1/2"	2"	250	120	108	0.09	CA2A/DWT	1/2"	7"	1000	240	99	0.24	CA7A/PIP
1/2"	2"	250	240	108	0.09	CA2A/PCP							
1/2"	2"	300	240	129	0.09	CA2A/PDA	1/2"	8"	300	120	26	0.28	CA8A/DYE
							1/2"	8"	300	240	26	0.28	CA8A/PDA
1/2"	2-1/4"	75	120	28	0.10	CA2C/DVJ	1/2"	8"	500	120	43	0.28	CA8A/DZT
1/2"	2-1/4"	125	120	46	0.10	CA2C/DVT	1/2"	8"	500	240	43	0.28	CA8A/PEP
1/2"	2-1/4"	250	120	92	0.10	CA2C/DWT	1/2"	8"	600	240	52	0.28	CA8A/PFK
1/2"	2-1/4"	250	240	92	0.10	CA2C/PCP	1/2"	8"	800	120	69	0.28	CA8A/ECE*
							1/2"	8"	1000	120	86	0.28	CA8A/EDT*
1/2"	2-3/8"	250	240	86	0.11	CA2D/PCP	1/2"	8"	1000	240	86	0.28	CA8A/PIP
1/2"	2-1/2"	100	120	32	0.11	CA2E/DVO	1/2"	9"	500	240	38	0.30	CA9A/PEP
1/2"	2-1/2"	250	120	81	0.11	CA2E/DWT	1/2"	9"	750	240	57	0.30	CA9A/PGP
1/2"	2-1/2"	250	240	81	0.11	CA2E/PCP	1/2"	9"	1000	240	76	0.30	CA9A/PIP
1/2"	2-1/2"	300	120	96	0.11	CA2E/DYE							
1/2"	2-1/2"	300	240	96	0.11	CA2E/PDA	1/2"	10"	500	120	34	0.33	CA10A/DZT
1/2"	2-1/2"	350	230	113	0.11	CA2E/LYL	1/2"	10"	500	240	34	0.33	CA10A/PEP
							1/2"	10"	800	240	54	0.33	CA10A/PHA
1/2"	3"	125	120	32	0.12	CA3A/DVT	1/2"	10"	1000	120	68	0.33	CA10A/EDT
1/2"	3"	125	240	32	0.12	CA3A/PBP	1/2"	10"	1000	240	68	0.33	CA10A/PIP
1/2"	3"	200	240	51	0.12	CA3A/PCF	1/2"	10"	1500	240	102	0.33	CA10A/PMP
1/2"	3"	250	120	64	0.12	CA3A/DWT							
1/2"	3"	250	240	64	0.12	CA3A/PCP	1/2"	11"	1000	240	61	0.38	CA11A/PIP
1/2"	3"	300	120	77	0.12	CA3A/DYE							
1/2"	3"	300	240	77	0.12	CA3A/PDA	1/2"	12"	600	120	34	0.40	CA12A/EAO
1/2"	3"	400	120	103	0.12	CA3A/DYZ	1/2"	12"	600	240	34	0.40	CA12A/PFK
1/2"	3"	500	240	129	0.12	CA3A/PEP	1/2"	12"	1000	240	56	0.40	CA12A/PIP
							1/2"	12"	1500	240	84	0.40	CA12A/PMP
1/2"	3-1/2"	250	120	54	0.14	CA3E/DWT	1/2"	12"	2000	240	112	0.40	CA12A/PQP*
1/2"	3-1/2"	250	240	54	0.14	CA3E/PCP							
1/2"	3-1/2"	500	240	107	0.14	CA3E/PEP							
							5/8"	2"	100	120	34	0.13	DA2A/DVO
1/2"	4"	150	120	28	0.15	CA4A/DVZ	5/8"	2"	200	120	68	0.13	DA2A/DWJ
1/2"	4"	150	240	28	0.15	CA4A/PBU							
1/2"	4"	250	120	46	0.15	CA4A/DWT	5/8"	2-1/4"	250	120	73	0.14	DA2C/DWT
1/2"	4"	250	240	46	0.15	CA4A/PCP	5/8"	2-1/4"	250	240	73	0.14	DA2C/PCP
1/2"	4"	300	120	56	0.15	CA4A/DYE	5/8"	2-1/4"	350	120	103	0.14	DA2C/DYO
1/2"	4"	300	240	56	0.15	CA4A/PDA							



DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	WATT DENSITY	APPROX Wgt/Lbs.	RAMA PART #	DIA (INCH.)	LENGTH (INCH.)	WATTS	VOLTS	WATT DENSITY	APPROX Wgt/Lbs.	RAMA PART #
5/8"	3"	150	120	31	0.20	DA3A/DVZ	3/4"	3"	250	120	43	0.24	EA3A/DWT
5/8"	3"	250	120	51	0.20	DA3A/DWT	3/4"	3"	500	240	86	0.24	EA3A/PEP
5/8"	3"	250	240	51	0.20	DA3A/PCP							
5/8"	3"	500	120	103	0.20	DA3A/DZT	3/4"	4"	500	240	61	0.31	EA4A/PEP
5/8"	3"	500	230	103	0.20	DA3A/LZQ	3/4"	4"	1000	240	122	0.31	EA4A/PIP
5/8"	3"	500	240	103	0.20	DA3A/PEP							
							3/4"	6"	450	240	35	0.44	EA6A/PEF
5/8"	4"	250	120	37	0.26	DA4A/DWT	3/4"	6"	500	120	39	0.44	EA6A/DZT
5/8"	4"	250	240	37	0.26	DA4A/PCP	3/4"	6"	500	240	39	0.44	EA6A/PEP
5/8"	4"	300	240	44	0.26	DA4A/PDA	3/4"	6"	1000	240	78	0.44	EA6A/PIP
5/8"	4"	400	240	59	0.26	DA4A/PDU	3/4"	6"	2000	240	155	0.44	EA6A/PQF
5/8"	4"	500	120	73	0.26	DA4A/DZT							
5/8"	4"	500	230	73	0.26	DA4A/LZQ	3/4"	8"	500	120	29	0.58	EA8A/DZT
5/8"	4"	500	240	73	0.26	DA4A/PEP	3/4"	8"	500	240	29	0.58	EA8A/PEP
5/8"	4"	750	240	110	0.26	DA4A/PGP	3/4"	8"	1000	240	57	0.58	EA8A/PIP
							3/4"	8"	2000	240	114	0.58	EA8A/PQP
5/8"	4-1/2"	250	240	32	0.28	DA4E/PCP							
5/8"	4-1/2"	300	240	38	0.28	DA4E/PDA	3/4"	10"	800	240	36	0.72	EA10A/PHA
							3/4"	10"	1000	240	45	0.72	EA10A/PIP
5/8"	5"	250	120	28	0.29	DA5A/DWT	3/4"	10"	2000	240	90	0.72	EA10A/PQP
5/8"	5"	250	240	28	0.29	DA5A/PCP							
5/8"	5"	500	240	57	0.29	DA5A/PEP	3/4"	12"	950	240	35	0.84	EA12A/PIF
5/8"	5"	750	240	86	0.29	DA5A/PGP	3/4"	12"	1000	240	37	0.84	EA12A/PIP
							3/4"	12"	2000	240	74	0.84	EA12A/PQP
5/8"	5-1/2"	350	240	36	0.32	DA5E/PDK							
5/8"	6"	300	120	28	0.34	DA6A/DYE							
5/8"	6"	300	240	28	0.34	DA6A/PDA							
5/8"	6"	500	120	46	0.34	DA6A/DZT							
5/8"	6"	500	240	46	0.34	DA6A/PEP							
5/8"	6"	750	230	79	0.34	DA6A/MBQ							
5/8"	6"	750	240	79	0.34	DA6A/PGP							
5/8"	6"	1000	240	93	0.34	DA6A/PIP							
5/8"	7"	500	120	39	0.40	DA7A/DZT							
5/8"	7"	500	240	39	0.40	DA7A/PEP							
5/8"	7"	600	240	47	0.40	DA7A/PHK							
5/8"	7"	750	240	59	0.40	DA7A/PGP							
5/8"	7"	1000	240	79	0.40	DA7A/PIP							
5/8"	7-1/2"	325	120	24	0.45	DA7E/DYJ							
5/8"	8"	500	120	34	0.47	DA8A/DZT							
5/8"	8"	500	240	34	0.47	DA8A/PEP							
5/8"	8"	750	240	51	0.47	DA8A/PGP							
5/8"	8"	800	240	55	0.47	DA8A/PHA							
5/8"	8"	850	230	58	0.47	DA8A/MCL							
5/8"	8"	850	240	58	0.47	DA8A/PHK							
5/8"	8"	1000	240	68	0.47	DA8A/PIP							
5/8"	8"	1200	240	82	0.47	DA8A/PHK							
5/8"	8"	1500	240	103	0.47	DA8A/PMP							
5/8"	9"	500	240	30	0.51	DA9A/PEP							
5/8"	9"	750	240	45	0.51	DA9A/PGP							
5/8"	9"	1000	230	60	0.51	DA9A/MDQ							
5/8"	9"	1000	240	60	0.51	DA9A/PIP							
5/8"	10"	500	120	27	0.53	DA10A/DZT							
5/8"	10"	500	240	27	0.53	DA10A/PEP							
5/8"	10"	600	120	32	0.53	DA10A/EAO							
5/8"	10"	750	240	41	0.53	DA10A/PGP							
5/8"	10"	1000	230	54	0.53	DA10A/MDQ							
5/8"	10"	1000	240	54	0.53	DA10A/PIP							
5/8"	10"	1500	240	81	0.53	DA10A/PMP							
5/8"	10"	2000	240	108	0.53	DA10A/PQP							
5/8"	12"	500	120	22	0.66	DA12A/DZT							
5/8"	12"	500	240	22	0.66	DA12A/PEP							
5/8"	12"	600	120	27	0.66	DA12A/EAO							
5/8"	12"	1000	120	45	0.66	DA12A/EDT							
5/8"	12"	1000	240	45	0.66	DA12A/PIP							
5/8"	12"	1500	240	67	0.66	DA12A/PMP							
5/8"	12"	2000	240	89	0.66	DA12A/PQP							



# EDM Metric Cartridge Heaters

All Designs Are 220 Volts  
Includes 10" Type "A" Leads

DIA (MM)	LENGTH (MM)	WATTS	WATT DENSITY	APPROX. Wgt/Lbs.	RAMA PART #	DIA (MM)	LENGTH (MM)	WATTS	WATT DENSITY	APPROX. Wgt/Lbs.	RAMA PART #
6.5	40	100	116	0.02	QA40M/IQM	10.0	130	300	53	0.12	SA130M/ISC
6.5	40	150	174	0.02	QA40M/IQW	10.0	130	500	88	0.12	SA130M/ITR
						10.0	130	750	131	0.12	SA130M/IVR
6.5	60	200	134	0.03	QA60M/IRH	10.0	130	1000	175	0.12	SA130M/IYR
6.5	60	250	168	0.03	QA60M/IRR						
						10.0	160	500	70	0.14	SA160M/ITR
6.5	80	200	94	0.04	QA80M/IRH	10.0	160	750	105	0.14	SA160M/IVR
6.5	80	250	118	0.04	QA80M/IRR	10.0	160	1000	139	0.14	SA160M/IYR
6.5	80	300	142	0.04	QA80M/ISC	10.0	160	1200	167	0.14	SA160M/JAH
6.5	80	350	165	0.04	QA80M/ISM						
						10.0	200	400	44	0.16	SA200M/ISW
6.5	100	200	73	0.04	QA100M/IRH	10.0	200	500	55	0.16	SA200M/ITR
6.5	100	250	91	0.04	QA100M/IRR	10.0	200	750	82	0.16	SA200M/IVR
6.5	100	350	127	0.04	QA100M/ISM	10.0	200	1000	110	0.16	SA200M/IYR
6.5	130	400	108	0.06	QA130M/ISW	10.0	250	400	35	0.20	SA250M/ISW
6.5	130	600	162	0.06	QA130M/IUM	10.0	250	750	65	0.20	SA250M/IVR
						10.0	250	1500	130	0.20	SA250M/JCR*
8.0	40	200	189	0.04	RA40M/IRH	10.0	300	500	36	0.22	SA300M/ITR
8.0	60	100	54	0.07	RA60M/IQM						
8.0	60	200	109	0.07	RA60M/IRH	12.5	50	100	44	0.09	UA50M/IQM
8.0	60	300	163	0.07	RA60M/ISC	12.5	50	300	132	0.09	UA50M/ISC
						12.5	50	400	176	0.09	UA50M/ISW
8.0	80	200	76	0.09	RA80M/IRH						
8.0	80	300	115	0.09	RA80M/ISC	12.5	60	200	69	0.11	UA60M/IRH
8.0	80	400	153	0.09	RA80M/ISW	12.5	60	300	104	0.11	UA60M/ISC
8.0	80	500	191	0.09	RA80M/ITR	12.5	60	400	139	0.11	UA60M/ISW
						12.5	60	500	174	0.11	UA60M/ITR
8.0	100	300	88	0.09	RA100M/ISC						
8.0	100	400	118	0.09	RA100M/ISW	12.5	80	300	73	0.14	UA80M/ISC
8.0	100	500	147	0.09	RA100M/ITR	12.5	80	500	122	0.14	UA80M/ITR
8.0	100	750	221	0.09	RA100M/IVR	12.5	80	750	183	0.14	UA80M/IVR
8.0	130	300	66	0.12	RA130M/ISC	12.5	100	200	38	0.15	UA100M/IRH
8.0	130	500	110	0.12	RA130M/ITR	12.5	100	400	75	0.15	UA100M/ISW
8.0	130	750	165	0.12	RA130M/IVR	12.5	100	500	94	0.15	UA100M/ITR
						12.5	100	750	141	0.15	UA100M/IVR
						12.5	100	1000	188	0.15	UA100M/IYR
8.0	160	500	87	0.14	RA160M/ITR	12.5	100	1000	188	0.15	UA100M/IYR
8.0	160	750	131	0.14	RA160M/IVR						
						12.5	130	500	70	0.21	UA130M/ITR
8.0	200	750	103	0.16	RA200M/IVR	12.5	130	800	112	0.21	UA130M/IWC
8.0	200	1000	137	0.16	RA200M/IYR	12.5	130	1000	140	0.21	UA130M/IYR
10.0	40	150	113	0.05	SA40M/IQW	12.5	160	500	56	0.22	UA160M/ITR
10.0	40	250	188	0.05	SA40M/IRR	12.5	160	800	89	0.22	UA160M/IWC
						12.5	160	1000	112	0.22	UA160M/IYR
						12.5	160	1500	167	0.22	UA160M/JCR
10.0	60	300	130	0.07	SA60M/ISC	12.5	160	1500	167	0.22	UA160M/JCR
10.0	60	400	174	0.07	SA60M/ISW						
						12.5	200	600	53	0.28	UA200M/IUM
10.0	80	300	91	0.09	SA80M/ISC	12.5	200	800	70	0.28	UA200M/IWC
10.0	80	400	122	0.09	SA80M/ISW	12.5	200	1000	88	0.28	UA200M/IYR
10.0	80	500	152	0.09	SA80M/ITR	12.5	200	1500	132	0.28	UA200M/JCR
10.0	100	200	47	0.09	SA100M/IRH	12.5	250	750	52	0.33	UA250M/IVR
10.0	100	400	94	0.09	SA100M/ISW	12.5	250	1000	69	0.33	UA250M/IYR
10.0	100	500	118	0.09	SA100M/ITR	12.5	250	1500	104	0.33	UA250M/JCR



DIA (MM)	LENGTH (MM)	WATTS	WATT DENSITY	APPROX. Wgt/Lbs.	RAMA PART #	DIA (MM)	LENGTH (MM)	WATTS	WATT DENSITY	APPROX. Wgt/Lbs.	RAMA PART #
12.5	300	750	43	0.40	UA300M/IVR	16.0	130	500	55	0.29	VA130M/ITR
12.5	300	1000	57	0.40	UA300M/IYR	16.0	130	750	82	0.29	VA130M/IVR
12.5	300	1500	86	0.40	UA300M/JCR	16.0	130	1000	109	0.29	VA130M/IYR
						16.0	160	750	65	0.37	VA160M/IVR
16.0	40	300	141	0.12	VA40M/ISC	16.0	160	1000	87	0.37	VA160M/IYR
						16.0	160	1500	131	0.37	VA160M/JCR
16.0	60	300	81	0.14	VA60M/ISC						
						16.0	200	300	21	0.47	VA200M/ISC
16.0	80	250	48	0.23	VA80M/IRR	16.0	200	500	34	0.47	VA200M/ITR
16.0	80	400	76	0.23	VA80M/ISW	16.0	200	1000	69	0.47	VA200M/IYR
16.0	80	500	95	0.23	VA80M/ITR	16.0	200	1500	103	0.47	VA200M/JCR
16.0	80	750	143	0.23	VA80M/IVR						
						16.0	250	300	16	0.53	VA250M/ISC
16.0	100	300	44	0.26	VA100M/ISC	16.0	250	700	38	0.53	VA250M/IVH
16.0	100	400	59	0.26	VA100M/ISW	16.0	250	1000	54	0.53	VA250M/IYR
16.0	100	500	74	0.26	VA100M/ITR	16.0	250	1500	81	0.53	VA250M/JCR
16.0	100	750	110	0.26	VA100M/IVR						
16.0	100	1000	147	0.26	VA100M/IYR	16.0	300	1000	45	0.66	VA300M/IYR
						16.0	300	1500	67	0.66	VA300M/JCR

