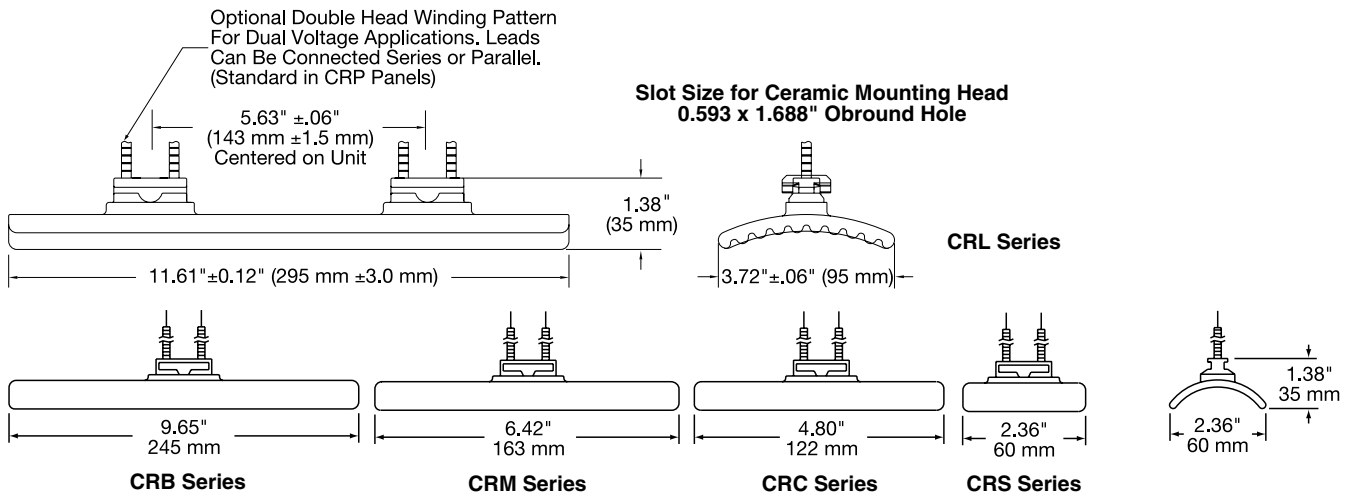


Curved Face Ceramic Radiant Heaters

Ceramic E-Mitters

- 5 Standard Solid Curved Face Sizes to Accommodate a Wide Range of New or Existing Applications
- Universal Mount Designed to be Dropped into Existing Systems Regardless of Manufacturer
- Standard Colors are Metamorphing Rose (Cold) to Grey (Hot), and Traditional White. Optional Colors are Metamorphing Yellow (Cold) to Orange (Hot), and Black
- Standard Stocked Voltage: 120 or 220/240V as Noted; Other Voltages are Available
- Available with Built-In Type K Thermocouple—Type J Thermocouple and Low Noise Options are Also Available
- Long Operating Life—Over 10,000-Plus Hours of Continuous Operation Under Normal Conditions
- Performance is Unaffected By Vibration or Adverse Atmospheric Conditions
- 2.5 to 6 μ m Infrared Radiation Wavelength



Custom Engineered/Manufactured Heaters

Understanding that an electric heater can be very application specific, for sizes and ratings not listed, OMEGA® can manufacture a Ceramic E-Mitter to meet your requirements.

Please Specify the Following:

- **Colors:** Standard are metamorphing rose and straight white, optional are metamorphing yellow and straight black
- **Wattage:** Up to 43 watts/in² (6.7 watts/cm²)
- **Voltage:** 120, 208, 240, 277, 480 Vac and others (dependent on design)
- **Thermocouple:** Standard Type K (Type J optional) or Low Noise Type K (Type J optional)

Accessories and Custom Configurations

- Designed for use with E-Mitters CRB and CRC
- Lightweight Extruded Aluminum Housing with 5/16-18 Mounting Bolts
- E-Mitters are Easily Replaced by Removing the Top Cover
- Internal Mounting Hole Pattern Simplifies Mixing and Matching E-Mitter Sizes and Ratings
- Space Between Reflector and Housing Wall Offers a Good Thermal Barrier to Protect the Wiring Area
- This CRA Structural Housing can be Used with any Manufacturer's Standard 60 x 245 mm (2.36 x 9.64") or 60 x 122 mm (2.36 x 4.8") Heaters
- Wiring Entrance 22 mm (7/8") Diameter at both ends, for 13 mm (1/2") Trade Size Electrical Fittings

Easiest Replacement of Heaters in the Industry

E-Mitters are easily replaced by removing the top cover. Wiring entrance side covers are not affected. The heater lead wires are insulated with ceramic beads and connected to ceramic terminal blocks. Heaters can be wired to function individually or grouped into heating zones.

DANGER: Hazard of Fire. These heaters are not for use in atmospheres where flammable vapors, gases or liquids are present as defined in the National Electrical Code. Where solvents, water, etc. are being evaporated from the process it is necessary to provide substantial quantities of ventilating air to carry away all resulting vapors.



Steps to Design a Custom CRA E-Mitter Linear Assembly from Standard Components

- 1) Select the Housing
- 2) Select the E-Mitters Series
- 3) Select the Reflectors
- 4) Select the Terminal Blocks

WARNING: Hazard of Electric Shock. Installation must be grounded to earth to avoid shock hazard. Disconnect power to installation before servicing or installing heater.

WARNING: Do not use Copper Wire to make connections inside this heater. High temperatures will oxidize copper. Use of nickel plated or nickel clad insulated copper wire is recommended. Wire insulation rating must be suitable for the ambient temperature of the wiring installation.

Standard CRK Linear Housings



Standard housings are available from as assembled stock in 0.3 m (10"), 0.51 m (20"), 0.8 m (30"), 1.02 m (40") and 1.3 m (50") lengths. Other housing lengths can be made to your requirements.

Standard Housing Lengths Table

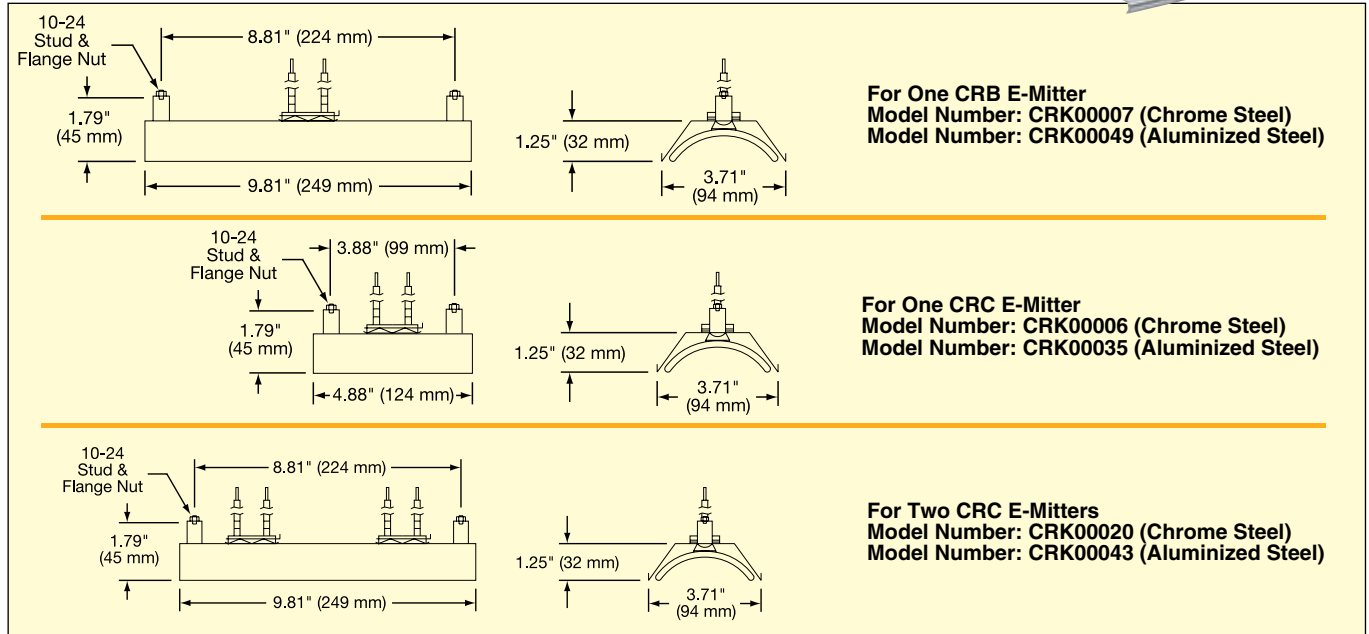
Housing Model Number	Nominal Housing Length		"A" Dim. inch	Examples of Possible E-Mitter Configurations	Maximum Power KW
	inch	mm			
CRK00024	5	127	5.19	1 CRC	0.5
CRK00001	10	254	10.13	1 CRB	1
CRK00023	15	381	15.06	3 CRCs (1 CRB and 1 CRC)	1.5
CRK00002	20	508	20.00	2 CRBs (1 CRB and 2 CRCs)	2
CRK00022	25	635	24.94	5 CRCs a combination of (CRBs and CRCs)	2.5
CRK00003	30	762	29.88	3 CRBs a combination of (CRBs and CRCs)	3
CRK00019	35	889	34.81	7 CRCs a combination of (CRBs and CRCs)	3.5
CRK00004	40	1016	39.75	4 CRBs a combination of (CRBs and CRCs)	4
CRK00021	50	1270	49.3	5 CRBs a combination of (CRBs and CRCs)	5
CRK00027	60	1524	59.50	6 CRBs a combination of (CRBs and CRCs)	6
CRK00029	70	1778	69.38	7 CRBs a combination of (CRBs and CRCs)	7

CRK housings come complete with housing body, end plates, 5/16-18 mounting bolts, cover and ground lug.

Note: These housings do not include the reflectors needed for mounting the heaters or the terminal block (Model number EHD-108-101) required for wiring each heater.

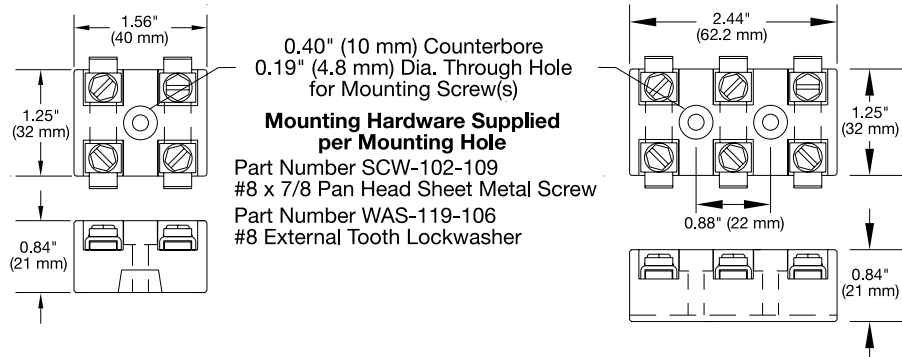
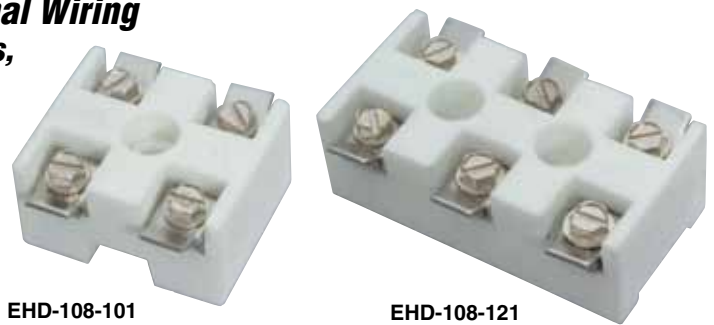
Reflectors for Ceramic E-Mitters For CRB and CRC E-Mitters

- Designed to Withstand Bending and Heat Distortion
- Made from Highly Polished Chrome Steel or Optional Aluminized Steel for Extreme Temperatures and Harsh Environments
- Will Withstand High Operating Temperatures
- Available in Three Standard Sizes; Includes Standoffs and Hardware
- Easy Installation into CRA Linear Structural Housing Assemblies (Except CRK00032)



Standard Ceramic Terminal Block for Internal Wiring For Internal Connections Within Heater Assemblies, CRA Linear Structural Housings and ARA Arrays

- Maximum Voltage: 600 Vac
- Maximum Current: 20 Amps
- Maximum Temperature: 450°C (842°F)
- AWG: 20 to 12 ga. wire
- Hardware: Stainless Steel
- Body Material: Steatite





Curved Face Ceramic E-Mitters 60 x 245 mm (2.36 x 9.65")

CRB Series

Optional Features

- Additional Power or Thermocouple Lead Lengths
- Two-Piece Wave Mounting Clip
- Reflectors and Other Accessories
- Arrays and Power/Temperature Control Panels



CRB Series in rose (cold) to grey (hot) shown smaller than actual size.

Watts/Square Inch vs. Temperature Data

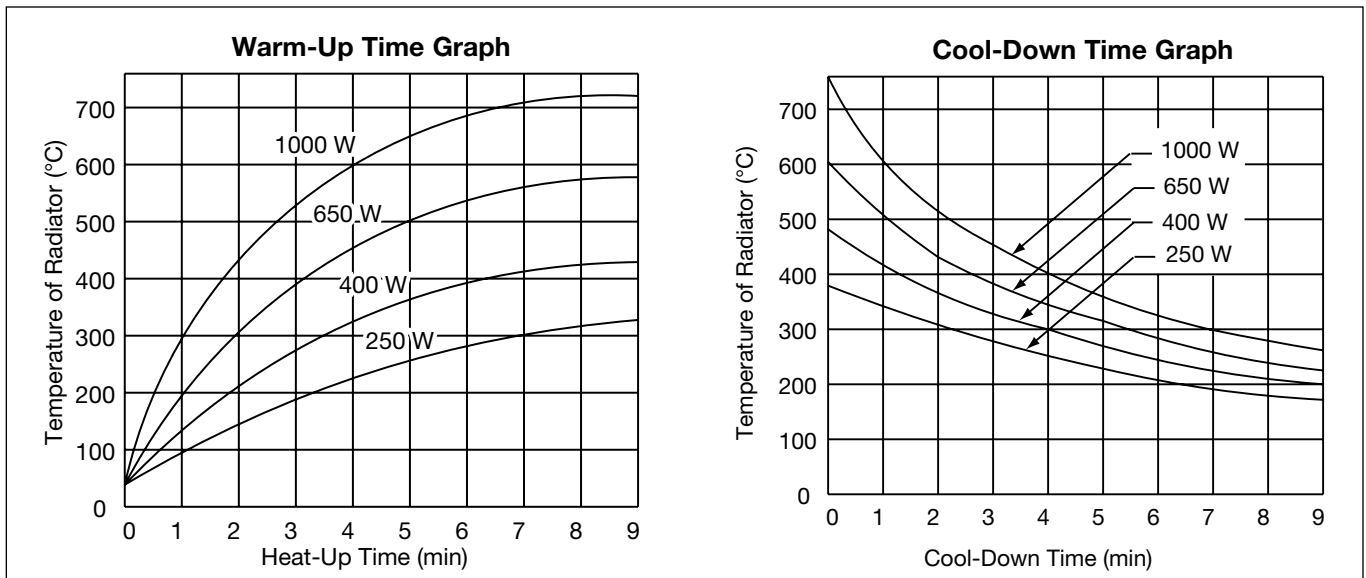
Watts	Surface Watts/in ² *	Heater Body °F Rise	Heater Body Temp @ 72°F**	Primary Emitted Wavelength*** (μm)
100	4.32	357	429	5.87
125	5.40	426	498	5.45
150	6.48	488	560	5.11
163	7.04	518	590	4.97
200	8.64	596	668	4.63
250	10.80	684	756	4.29
300	12.95	756	828	4.05
325	14.03	788	860	3.95
350	15.11	817	889	3.87
400	17.27	870	942	3.72
500	21.59	960	1032	3.50
600	25.91	1043	1115	3.31
650	28.07	1084	1156	3.23
700	30.23	1126	1198	3.15
750	32.39	1169	1241	3.07
800	34.55	1211	1283	2.99
875	37.78	1271	1343	2.89
900	38.86	1290	1362	2.86
1000	43.18	1348	1420	2.78

* Watt density calculated using heater face surface area.

** E-Mitter heater body temperature as measured with internal thermocouple when mounted facedown in stock CRK reflector and operating in 22°C (72°F) room ambient.

*** Peak infrared radiation wavelength as calculated from Wien's Law, for operating temperature shown. Expressed in microns (μm).

Typical Heating and Cooling Behavior of CRB Ceramic E-Mitters





CRB Series in rose (cold) to grey (hot) shown smaller than actual size.

Semi-Finished Stock CRB E-Mitters (Five Business Day Manufacturing)

Semi-Finished Series CRB E-Mitters listed to the right are stocked ready for color glazing. Colors available are metamorphing rose (cold) to grey (hot), traditional white, metamorphing yellow (cold) to orange (hot), and black.

They can be terminated with beaded leads up to 152 mm (6") long with spliced-on lead wire for lengths beyond 152 mm (6") and straight, ring, or spade terminals. Some are available with a thermocouple (any length).

A part number will be assigned at time of order.

Wattage	Voltage	Watt Density*		Heater Body** Temperature (Typical)		Optional Thermocouple (Any Length)
		Watts/in ²	Watts/cm ²	°F	°C	
400	230	17.27	2.68	942	506	N/A
650	230	28.07	4.35	1156	624	Type K
650	480	28.07	4.35	1156	624	N/A
1000	230	43.18	6.69	1420	771	Type K
1000	480	43.18	6.69	1420	771	Type J or K

Standard (Non-Stock) CRB E-Mitters

E-Mitters listed have 89 mm (3.5") ceramic bead insulated leads, #8-10 spade terminals, and a one-piece spring clip for mounting.

To Order Visit omega.com/crb_series for Pricing and Details

Model Number		Wattage	Voltage Vac	Color	Watt Density*		Heater Body Temperature** (Typical Operating)	
Without Thermocouple	Standard Type K Thermocouple				Watts/in ²	Watts/cm ²	°F	°C
CRB10216	CRB10217	150	220/240	Rose to Grey	6.48	1.00	560	293
CRB00216	CRB00217	150	220/240	White	6.48	1.00	560	293
CRB10006	CRB10008	250	220/240	Rose to Grey	10.80	1.67	756	402
CRB00006	CRB00008	250	220/240	White	10.80	1.67	756	402
CRB10014	CRB10016	400	220/240	Rose to Grey	17.27	2.68	942	506
CRB00014	CRB00016	400	220/240	White	17.27	2.68	942	506
CRB10020	CRB10022	650	120	Rose to Grey	28.07	4.35	1156	624
CRB00020	CRB00022	650	120	White	28.07	4.35	1156	624
CRB10023	CRB10025	650	220/240	Rose to Grey	28.07	4.35	1156	624
CRB00023	CRB00025	650	220/240	White	28.07	4.35	1156	624
CRB10088	CRB10165	650	480	Rose to Grey	28.07	4.35	1156	624
CRB00088	CRB00165	650	480	White	28.07	4.35	1156	624
CRB10028	CRB10030	1000	120	Rose to Grey	43.18	6.69	1420	771
CRB00028	CRB00030	1000	120	White	43.18	6.69	1420	771
CRB10031	CRB10033	1000	220/240	Rose to Grey	43.18	6.69	1420	771
CRB00031	CRB00033	1000	220/240	White	43.18	6.69	1420	771
CRB10089	CRB10045	1000	480	Rose to Grey	43.18	6.69	1420	771
CRB00089	CRB00045	1000	480	White	43.18	6.69	1420	771

* Watt density calculated using heater face surface area.

** E-Mitter heater body temperature as measured with internal thermocouple when mounted face down in stock CRK reflector and operating in 22°C (72°F) room ambient.

Ordering Example: CRB10216, curved faced radiant heater, 150 W 220/240 Vac, rose to grey.