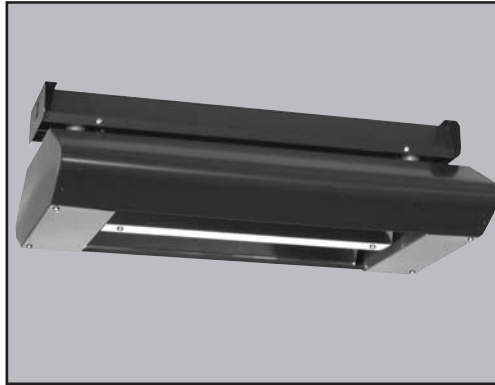


TYPE FRP / FRS

2 Element & 3 Element INFRARED HEATERS

- Total or supplement (spot) heating in commercial and industrial areas, assembly lines, aircraft hangers, outside smoking areas, work stations and shipping areas.
- Snow melting for waiting areas and entryways, stairs, parking lots, driveways and loading docks, smoking areas.
- Available with Stainless Steel or Painted Steel enclosure.
- Double element and Three element heaters provide concentrated heating capacity in a single infrared radiant heater.



Type FRP – 20 gauge galvanized steel enclosure and heater support / wiring compartment painted in a Statuary Bronze high temperature powder coat finish.

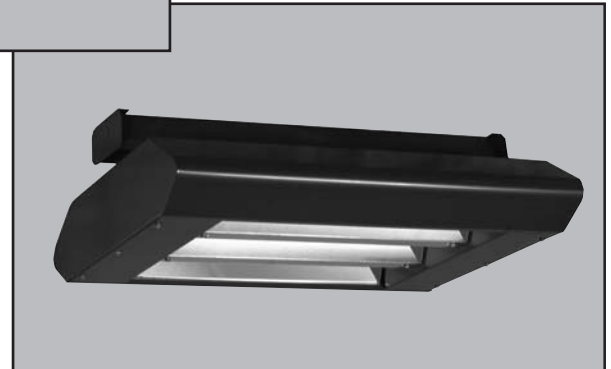
Type FRS – Type 304, brush finished, 20 gauge, stainless steel enclosure and heater support / wiring compartment for applications requiring additional corrosion resistance.

STANDARD FEATURES

- Two or Three element design.
- Painted or Stainless Steel enclosure.
- Heavy gauge bright anodized aluminum reflectors (Optional - gold anodized), offer a wide selection of beam patterns.
- Easy one person installation - attach upper mounting support to ceiling or optional wall bracket, rough in wiring, hang heater by tabs to complete wiring, swing heater into place to complete installation.



File #E21609



SELECTION CHART – 2 ELEMENT ENCLOSURE

CATALOG NUMBER		REFLECTOR ANGLE	DIMENSIONS			MAXIMUM WATTAGE			WT. lbs. (kg)				
STAINLESS STEEL ENCLOSURE	PAINTED STEEL ENCLOSURE		HEIGHT in. (mm)	WIDTH in. (mm)	LENGTH in. (mm)	METAL SHEATH	QUARTZ TUBE	QUARTZ LAMP					
FRS223S	FRP223S	30 Sym	7.125(181)	15(381)	24(610)	1700	2000	3200	19(8.6)				
FRS226S	FRP226S	60 Sym											
FRS226AS	FRP226AS	60 Asym											
FRS229S	FRP229S	90 Sym			33(838)	3000	3000	3000		5000	24(10.9)		
FRS233S	FRP233S	30 Sym											
FRS236S	FRP236S	60 Sym											
FRS236AS	FRP236AS	60 Asym			46(1168)	4000	4000	4000		7300		31(14.1)	
FRS239S	FRP239S	90 Sym											
FRS243S	FRP243S	30 Sym											
FRS246S	FRP246S	60 Sym											
FRS246AS	FRP246AS	60 Asym											
FRS249S	FRP249S	90 Sym											

(Enclosure only - Select appropriate element from element selection chart)

ELEMENTS

- **Metal Sheath, Quartz Tube or Quartz Lamp elements** – used interchangeably provides the flexibility necessary for multiple application projects.
- **Metal sheathed elements** – used indoors, or outdoors protected from the wind, in areas where physical abuse is a problem. **Quartz Tube and Quartz Lamp** – used indoors and outdoors in areas where abuse is not a problem for snow melting and spot heating.
- **Pigtail element leads** for a more positive connection on applications where physical abuse is a problem.

SELECTION CHART – 3 ELEMENT ENCLOSURE

CATALOG NUMBER		REFLECTOR ANGLE	DIMENSIONS			MAXIMUM WATTAGE			WT. lbs. (kg)				
STAINLESS STEEL ENCLOSURE	PAINTED STEEL ENCLOSURE		HEIGHT in. (mm)	WIDTH in. (mm)	LENGTH in. (mm)	METAL SHEATH	QUARTZ TUBE	QUARTZ LAMP					
FRS323S	FRP323S	30 Sym	7.125(181)	21.5(546)	24(610)	2550	3000	4800	19(8.6)				
FRS326S	FRP326S	60 Sym											
FRS326AS	FRP326AS	60 Asym											
FRS329S	FRP329S	90 Sym			33(838)	4500	4500	4500		7500	24(10.9)		
FRS333S	FRP333S	30 Sym											
FRS336S	FRP336S	60 Sym											
FRS336AS	FRP336AS	60 Asym			46(1168)	6000	6000	6000		10950		31(14.1)	
FRS339S	FRP339S	90 Sym											
FRS343S	FRP343S	30 Sym											
FRS346S	FRP346S	60 Sym											
FRS346AS	FRP346AS	60 Asym											
FRS349S	FRP349S	90 Sym											

(Enclosure only - Select appropriate element from element selection chart)

ELEMENT SELECTION CHART

1 Element per carton

CATALOG NO.	AVAILABLE VOLTS	ELEMENT		USED WITH FIXTURE	WT. lbs. (gr)
		WATTS	TYPE		
F2MS08***	208, 240, 277, 347, 480, 600	850	Metal Sheath	24" Fixture FRP22** FRP32**	1 (454)
F2QT10***	208, 240, 277	1000	Quartz Tube	or	1 (454)
F2QL16***	208, 240, 277, 347, 480, 600	1600	Quartz Lamp	FRS22** FRS32**	1 (454)
F3MS15***	208, 240, 277, 347, 480, 600	1500	Metal Sheath	33" Fixture FRP23** FRP33**	1 (454)
F3QT15***	208, 240, 277, 347, 480, 600	1500	Quartz Tube	or	1 (454)
F3QL25***	208, 240, 277, 347, 480, 600	2500	Quartz Lamp	FRS23** FRS33**	1 (454)
F4MS20***	208, 240, 277, 347, 480, 600	2000	Metal Sheath	46" Fixture FRP24** FRP34**	1 (454)
F4QT20***	208, 240, 277, 347, 480, 600	2000	Quartz Tube	or	1 (454)
F4QL36***	347, 480, 600	3650	Quartz Lamp	FRS24** FRS34**	1 (454)

(1) 1 element per carton order, 2 for 2 element enclosure or 3 for 3 element enclosures.

** Denotes remaining catalog number (See Enclosure Chart).

***Denotes voltage.

APPLICATION LIMITATIONS and PRECAUTIONS:

- Hazardous Atmosphere – These heaters are not suitable for use in hazardous locations.
- Mounting Clearances – Maintain minimum clearances of:
 - 24" (610 mm) to vertical side walls
 - 36" (914 mm) between heaters mounted side by side. Heaters may be mounted end to end.
 - 6" (152 mm) to ceiling
 - 84" (2134 mm) to floor.
- Maintain at least 5 ft. (1.5 m), in radiant path, between bottom of heater and combustible material.
- Corrosive Atmospheres – The high quality finish and aluminized steel of the FRP series will give excellent service under normal to severe operating conditions, including coastal salt air and most industrial atmospheres. However for severe conditions such as swimming pool, green houses, etc., the FRS stainless steel enclosure should be used.

OPTIONAL MECHANICAL ACCESSORIES

CATALOG NUMBER	DESCRIPTION	CARTON QTY	USED WITH FIXTURE	WT. lbs. (gr)
FWG22 FWG23 FWG24	Wire Guard Protective safety screen helps prevent objects coming in contact with hot element.	1	FRS22 / FRP22	1 (454)
			FRS23 / FRP23	1.5 (680)
			FRS24 / FRP24	2 (907)
			FRS32 / FRP32	1.5 (680)
FWG32 FWG33 FWG34			FRS33 / FRP33	2 (907)
			FRS34 / FRP34	2.5 (1134)
FRPATMB FRSATMB	Adjustable Tilt Mounting Bracket Replaces upper support bracket, allows fixture to be tilted for precise pattern location in spot heating and perimeter applications.	1 Set	FRP Series	1 (454)
			FRS Series	
FRVS2 FRVS3 FRVS4	Red Vycor Sleeve Reduces the light intensity of Quartz Lamps.	1	24" Encl.	1 (454)
			33" Encl.	
			42" Encl.	

CATALOG NUMBER	DESCRIPTION	CARTON QTY	USED WITH FIXTURE	WT. lbs. (gr)
FRPWMB	Wall Mounting Bracket - Allows heater mounting along wall at optimum application height.	1 Set	FRP Series	2 (907)
FRSWMB			FRS Series	

OPTIONAL ELECTRICAL ACCESSORIES

CATALOG NUMBER	DESCRIPTION	INDUCTIVE LOAD	SUPPLY VOLTAGE	CONTROL VOLTAGE*	CONTROL PANEL DIMENSIONS	SHIP. WEIGHT
CP404801PT	Percentage Timer Panel, One 3 pole contactor	40A	208 - 480V	120V	12"H X 12"W X 7.5"D	45 lbs
CP404801CT	Time Delay Controller, One 3 pole contactor	40A	208 - 480V	120V	12"H X 12"W X 7.5"D	45 lbs
CP504801	Single 3 pole Contactor Panel	40A	208 - 480V	120V	12"H X 12"W X 7.5"D	45 lbs
CP1004801	Two 3 pole Contactor Panel	100A	208 - 480V	120V	14"H X 15"W X 7.75"D	55 lb
CP2004801	Four 3 pole Contactor Panel	200A	208 - 480V	120V	31.5"H X 18.2"W X 10"D	65 lb
CP3004801	Six 3 pole Contactor Panel	300A	208 - 480V	120V	36"H X 30"W X 7"D	70 lbs

Notes: Line fusing supplied by installer.

Percentage Timer Panel for Metal Sheath Heaters only.

Contact factory for 24volt control, 600volt supply, and Nema 4 enclosures.

NEC requires MAX 50amp fusing for control panel and infrared heating equipment.

Architect's and Engineer's Specifications *

Furnish and install where indicated on the plans, Type FRP or Type FRS Two or Three Element Infrared Heaters as manufactured by QMark, A Marley Engineered Products Brand, Bennettsville, SC, USA.

Heaters shall be UL / cUL Listed and designed for indoor (surface) or outdoor mounting. All capacities, voltages, physical sizes and options shall be as specified in the heater schedule. All 2 element heaters shall be single phase, all 3 element heaters shall be three phase.

Enclosure (including heater support/wiring compartment) shall be: a) 20-gauge galvaneal steel, painted in a Statuary Bronze high temperature powder coat finish (Type FRP), or b) 20-gauge type 304 stainless steel with a brush finish (Type FRS), with length as specified in the heater schedule. Fittings shall be rigid aluminum.

Construction shall be a two piece design that allows one person installation of the upper mounting support separately, to allow rough-in wiring. The heater section shall be constructed with tabs specifically designed for connection to the upper mounting support, by one person, for finish wiring. The heater section shall swing into the closed position and be secured to the upper mounting support by two screws, three screws on 46" (1168 mm) units, to complete the installation.

Reflectors shall be one piece, snap-out, minimum .030 bright polished anodized aluminum with a beam angle of 30, 60 or 90 degree symmetrical, or 60 degree asymmetrical as specified in the heater schedule.

Elements shall be metal sheath, quartz tube or quartz lamp, as specified in the heater schedule, radiant heating type that transmit infrared rays generated by the heavy duty coiled element inside. The quartz tube shall have high thermal shock characteristics that make it exceptionally well suited for outdoor use with exposure to the elements. Elements shall be equipped with pigtail leads for more positive connections in severe conditions.

The following Field Installed Optional Equipment shall be supplied –

- Steel Wire Guard
- Tilt Adjust Mounting Bracket
- Wall Mounting Bracket
- Red Vycor Sleeves for Quartz Lamp Elements
- Gold Anodized Aluminum Reflectors
- Wall Mounted Thermostat
- Electric Control Panel
- Percentage (Input) Controller

* Subject to change without notice.