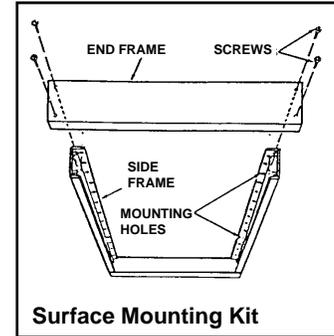
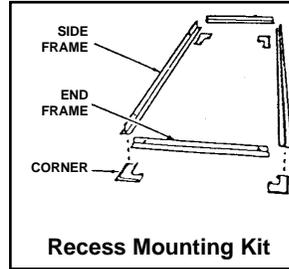
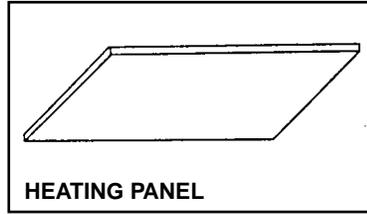




File # E21609



CEILING PANELS

TAG	QTY.	CATALOG NUMBER	SIZE	VOLTS	WATTS	CUSTOM FEATURES

**ACCESSORIES
 AND
 CONTROLS**

TAG	QTY.	CAT. NO.	DESCRIPTION

DATE: _____

PROJECT: _____

ARCHITECT: _____

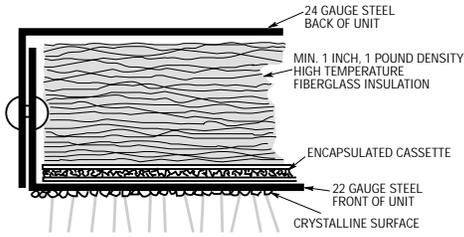
ENGINEER: _____

CONTRACTOR: _____

SUBMITTED BY: _____

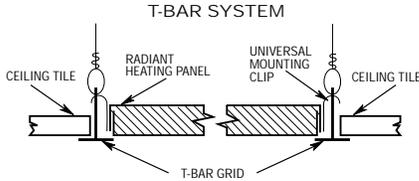
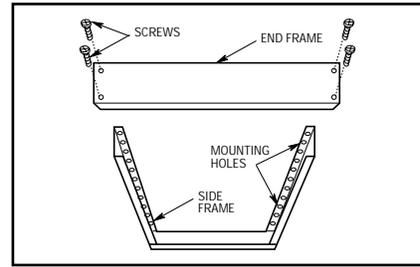
STANDARD FEATURES

CUTAWAY DRAWING OF A HEATING PANEL



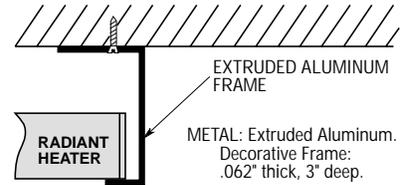
- METAL:**
 Back - 24 Gauge Galvanized or Aluminized Steel.
 Front - 22 Gauge Galvanized or Aluminized Steel.
 Sides - Overlapping Front and Back.
- WIRE:**
 Internal - 200°C, 14 Gauge, Teflon insulated.
 External - Pig Tails with 48" of 1/2" flexible conduit and connector for J-Box.
- ELEMENT:**
 The encapsulated cassette element delivers a uniform temperature distribution over entire panel surface.
- INSULATION:**
 Minimum 1 inch, 1 pound density, high temperature fiberglass.
- SURFACE:**
 All ceiling and wall mounted panels are coated with unique crystalline surface. Flurry white finish.

STANDARD FINISH - Standard mounting kits finished white to blend with standard panel flurry white finish.

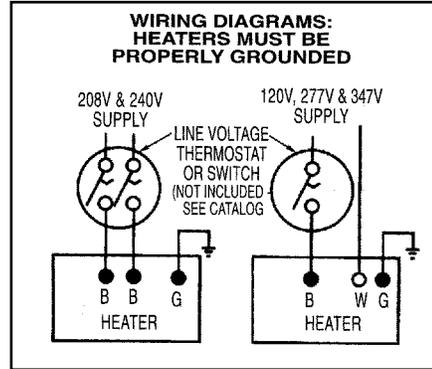


WIRING - For connection to the main power supply, the heater is completely prewired including green ground wire, with the lead wires housed in a 48-inch length of flexible metal conduit and connector for J-Box mounting.

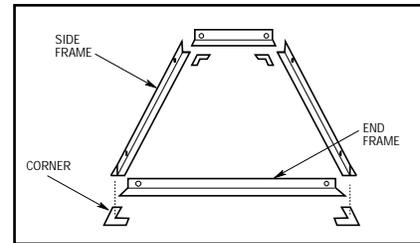
FRAME CONSTRUCTION FOR SURFACE MOUNT PANELS



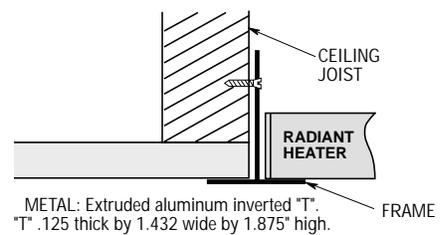
WOOD:
 Heaters can be framed in wood
 Consult your factory representative for specifics.



UNIVERSAL HANGING CLIPS - All radiant ceiling panels are supplied with COMBINATION EARTHQUAKE/T-BAR GRIP CLIPS as a standard feature. These clips have holes for support chains or can be folded over the T-BAR to reduce lateral movement.



FRAME CONSTRUCTION FOR RECESSED PANELS



CERTIFICATION AND SAFETY

FIRE RATING - Heating panels do not have a fire rating, but construction is of fire retardant materials. Panels normally are treated like light fixtures. If necessary, acoustical tile can be placed on top of the panels.

HAZARDOUS AREAS - Heating panels do not have a hazardous rating.

* Measuring for Custom Ceiling Panels:

- Panels are built to fit inside the dimensions given.
- Measurements must be from "T" Bar 0Center Line to "T" Bar Center Line
- Do Not Measure Opening

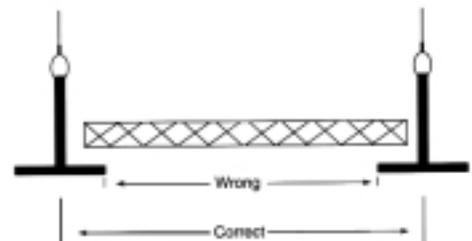
CRYSTALLINE SURFACE - The panel's unique crystalline surface greatly enhances the radiant characteristics of the heating panel.

Radiant output is in the 8-10 micron wavelength. This is ideal for comfort. Human skin will absorb 99% of the radiant energy in these wavelengths. Humans themselves radiate heat predominately in that micron range. Without the panel's crystalline surface a panel will be less radiant, operate at higher temperature and produce energy at shorter wavelengths.

ELEMENT - Encapsulated cassette heating element assures uniform temperatures and long life.

ACCESSORIES

PRODUCT	DESCRIPTION
QSF2424	Surface Mounting Frame for 24" x 24" Panels
QSF2448	Surface Mounting Frame for 24" x 48" Panels
QRF2424	Recess Mounting Frame for 24" x 24" Panels
QRF2448	Recess Mounting Frame for 24" x 48" Panels



CUSTOM FEATURES

1. CUSTOM SIZE PANELS

While a wide variety of panel sizes are listed as standard, the factory produces thousands of panels each year of varying widths and lengths to order.

SELECTION CHART

CATALOG NUMBER	PANEL WIDTH	WATT DENSITY	WATTS PER PANEL						
			NOMINAL PANEL LENGTH						
			24"-35"	36"-47"	48"-59"	60"-71"	72"-83"	84"-95"	96"
BT+**@@#	10-13	High	155	235	315	390 [^]	N/A	N/A	N/A
		Med.	130	195	260	325 [^]	N/A	N/A	N/A
		Low	105	155	210	260 [^]	N/A	N/A	N/A
	14-17	High	235	350	470	585 [^]	N/A	N/A	N/A
		Med.	195	295	390	490 [^]	N/A	N/A	N/A
		Low	155	235	315	390 [^]	N/A	N/A	N/A
	18-21	High	315	470	625	780	940 [^]	N/A	N/A
		Med.	260	390	520	650	780 [^]	N/A	N/A
		Low	210	315	415	520	625 [^]	N/A	N/A
	22-28	High	375	565	750	940	1125	1315	1500
		Med.	310	470	625	785	940	1095	1250
		Low	250	375	500	625	750	875	1000

LEGEND: + Watt Density: H = High, M = Medium, L = Low
 **Width of Panel
 @Length of Panel
 ^ Maximum Panel Length = 60 inches
 ^^ Maximum Panel Length = 72 Inches.
 # Voltage Designation: 1 = 120, 8 = 208, 2 = 240, 7 = 277, 3 = 347

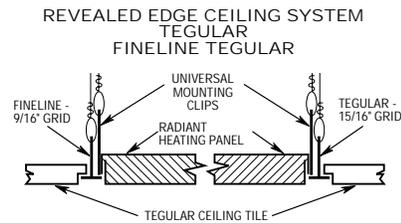
2. CUSTOM SIZE FRAMES

ACCESSORIES

CATALOG NO.	DESCRIPTION
QSF**@@	Surface Mounting Frame
QRF**@@	Recess Mounting Frame
** Width of Heater (10" to 28")	
@Length of Heater (10" to 96")	

3. TEGULAR (revealed edge)

Tegular systems may utilize a standard grid with a 15/16" cross-T or a "fine line" grid with a 9/16" cross-T. The acoustical tile is notched to hang below the grid creating the revealed edge. Tegular panels are built with a support angle on all four sides to allow the panel front to drop flush with the finished ceiling.



Tegular and Fine line Tegular panels are supplied **standard** with universal mounting clips installed for support chain.

4. CONCEALED SPLINE SYSTEMS

These systems utilize ceiling tiles notched to hide the T-bar grid. Heating panels will be treated in a manner similar to the lights in such a system. We will build a custom recessed frame and panel to fit inside the grid opening. The recessed frame will be suspended independently from the T-bar grid. The result is a flush-mounted panel with an exposed trim finishing off the adjacent tiles and supporting the panel.

5. SILKSCREEN

Radiant heating panels can be silk screened to provide an architectural blend with leading acoustical tiles. For T-bar, concealed spline and tegular ceiling systems.

6. CUSTOM COLORS

Radiant heating panels can be painted any color desired with high temperature acrylic paints without affecting panel performance.

Radiant energy is emitted from heating panels in the 8-10 micron wavelength range. One of the principal characteristics of this wavelength is that it is not color selective as are shorter wavelengths. Consequently, the surface color of the panel is unimportant to heating efficiency and can be considered solely in the light of aesthetics.

7. PANEL FRONTS FOR A CONTINUOUS CEILING LINE

To provide a continuous ceiling line around the perimeter of a building, the factory can provide panel fronts to be interspersed between the functioning heating panels. Field-trimmable filler panels also are available.

8. SEAL TIGHT FLEXIBLE CONDUIT AND CONNECTORS

Radiant ceiling panels come with 1/2" Greenfield flexible conduit and straight connectors as standard equipment. Seal tight connectors and conduit can be substituted at the factory if panels are to be used in high moisture areas or if required by local electrical codes.

9. FACTORY SILICONE SEALED

PANELS FOR USE IN HIGH MOISTURE AREAS - Exterior moisture and condensation do not affect heating panel performance, but water inside the unit can cause the panel to fail. Panels being used in locker rooms and swimming pool areas should be totally sealed with silicone at the factory before shipment. If there is a chance of moisture above the ceiling, then seal tight conduit and seal tight connectors also should be used.

10. LONGER FLEXIBLE CONDUIT

Panels will replace the standard 48" Greenfield with up to 11' of 1/2" flexible conduit.

11. CONTROLS

P/E Switches - factory prewired to heaters. 20 amps - 120V, 240V, 208V and 277V.

Power Relay - factory prewired to heaters. 30 amps single pole, 120 volt holding coil.

12. HEAVIER DUTY PANELS

For special installations the factory can use heavier gauge steel in the construction of the panels.

13. STAINLESS STEEL CONSTRUCTION

PANELS FOR CHLORINE STORAGE AREAS - Special stainless steel panels are available for chlorine storage areas. Panels will be equipped with seal tight connectors and silicone sealed.

14. MODULAR WIRING SYSTEMS

For specific jobs, the factory can substitute modular connectors for the straight connectors and pig tails that are standard equipment.

ARCHITECT'S & ENGINEER'S SPECIFICATIONS *

The electric ceiling heating panel shall be as manufactured by Berko, A Division of Marley Engineered Products, Bennettsville, SC. The construction and design shall permit it to be: recessed ceiling mounted with the use of Recessed Mounting Kit, fit into standard or custom designed modules of a T-bar suspended ceiling, or surface mounted with the use of a Surface Mounting Kit. Panels shall include the custom features listed below.

HEATING ASSEMBLY: The heating assembly shall be UL Listed and CSA Certified and shall consist of powdered graphite encapsulated in a plastic laminate with heavy duty copper buss bars running the entire length, backed by 1 inch, 1 pound density high temperature fiberglass insulation to insulate against heat loss to the ceiling and separated from the inside of the panel by a dielectric insulation to assure uniform heat transfer throughout the entire radiating surface of the heater. The rated input shall be: (62.5 watts/sq. ft. with an average temperature of not more than 165 degree F.) or (95 watts/sq. ft. with an average surface temperature of 200 degree F.), to assure long trouble free life.

The panel voltage shall be _____, (120, 208, 240, 277)

WIRING: For connection to the main power supply, the heater shall be

completely prewired, with the lead wires housed in a 48 inch length of flexible metal conduit and connector for J-Box mounting. Appropriate wiring diagrams shall appear on the back of the panel.

PANEL ASSEMBLY: The metal heating panel, containing the completely prewired heating assembly, shall be of 22 gauge formed galvanized steel front and 24 gauge formed galvanized steel back. Sides are overlapping front and back panels riveted together.

FINISH: The front of the heating panel shall be Berko's unique multi-faceted crystalline type surface finished with high temperature silicone paint.

CUSTOM FEATURES: Radiant heating panels shall be provided with the following custom features:

- ___ **CUSTOM SIZE**
_____in. Length, _____ in Width.
- ___ **SILK SCREENING** to blend with acoustical tile.
- ___ **TEGULAR** (Revealed edge)
- ___ **CUSTOM COLOR** to match architectural samples.
- ___ **PAINTED FRAME** to match heater (Surface or Recess only)
- ___ **FACTORY SILICONE SEALED**
- ___ **SEAL TIGHT FLEXIBLE CONDUIT and CONNECTORS**
- ___ **LONGER FLEXIBLE CONDUIT**

Total length ___ in. by 1/2"
(Max Length 132")

___ **HEAVY DUTY CONSTRUCTION**
___ Gauge front
___ Gauge back

___ **STAINLESS STEEL CONSTRUCTION**
___ Panel
___ Frame

___ **EARTHQUAKE CLIPS**

SURFACE MOUNTING

Surface Mounting Kit shall come in a separate carton which contains: two side frames, two end frames and eight assembly screws.

Frame shall be field assembled before installing on ceiling.

RECESS MOUNTING

Recess Mounting Kit shall come in a separate carton which contains: four frame sections and four corner pieces.

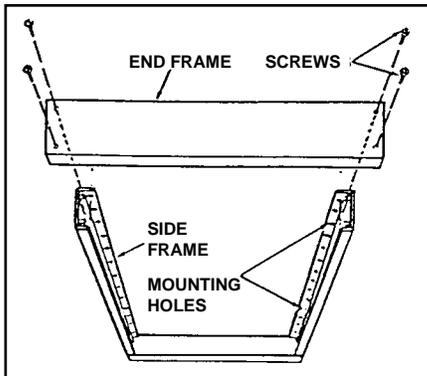
Recess mounting shall require a: (Panel Length + 3/8") X (Panel Width + 3/8") cutout in the ceiling and a secure method of support.

*Berko reserves the right to change specifications without prior notice.

SURFACE MOUNTING

Surface Mounting Kit shall come in a separate carton which contains: two side frames, two end frames and eight assembly screws.

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