

MUL-T-MOUNT ELECTRIC INFRARED HEATERS

Overhead Infrared Heaters for Snow & Ice Control, Outdoor Spot Heating and all Indoor Heating Applications

- UL / C-UL listed for suspended, totally exposed outdoor, and indoor comfort heating applications, including exterior snow/ice control applications.
- UL / C-UL listed for recessed applications.
- Clear Quartz Lamp heating elements, offered in both 2-Lamp & 3-Lamp heaters that operate on 208, 240, 277, 480, & 600 Volts, for direct wire connection.
- Gold anodized one-piece reflector offered in 30°, 60°, or 90° symmetrical, including 30° & 60° asymmetrical heat patterns for various distribution of infrared heat.
- Feature two different housing materials: 20-gauge Stainless Steel or Galvannealed Steel painted with a high temperature powder coated "brown" finish.
- Built-in surface mounting bracket allows for fixture adjustment up to a 45° horizontal tilt.
- 2-Lamp heaters operate on single-phase operation (consult factory for 3-phase wiring).
- All 3-Lamp heaters operate on either single or three-phase wiring.
- Infrared heating systems heats people and objects to a desired temperature level, creating a safe and clean atmosphere.
- High-intensity radiant infrared heating elements provide the maximum heat output in less than 60-seconds.
- Unit provides the ability of staging and zone control flexibility.
- Three element heaters provide 50% higher watt densities than two element units.
- Highly engineered and proven, our gold anodized aluminum reflectors and end caps provide maximum reflectivity and longevity for a variety of applications.



**3 LAMP SERIES
STAINLESS STEEL**



**2 LAMP SERIES
POWDER-COATED BROWN
OR
STAINLESS STEEL**

Outdoor Spot Heating

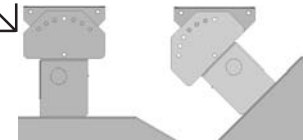


Snow & Ice Control Heating Systems



Built-In surface mounting brackets attached to the top wiring channel.

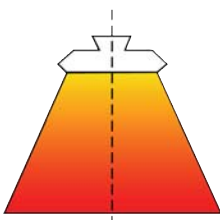
0 to 45° Tilt @ 15° increments



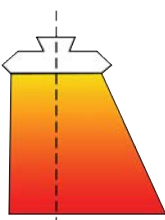
208-480 Volt Heating Applications

REFLECTOR PATTERNS

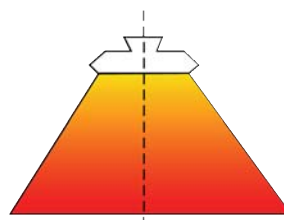
30° SYMMETRIC



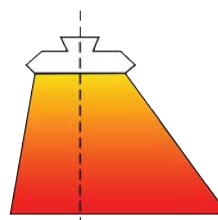
30° ASYMMETRIC



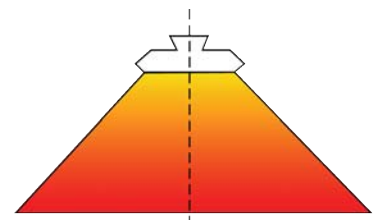
60° SYMMETRIC



60° ASYMMETRIC



90° SYMMETRIC



Note: The MTM-Series is designed with multiple symmetrical & asymmetrical reflector heat patterns. The sizing chart will assist you based on your mounting height.

MUL-T-MOUNT INFRARED HEATERS

2-LAMP MTM SERIES

BROWN POWDER COATED or STAINLESS STEEL
(2) Clear Quartz Lamps Included



BROWN HOUSING		STAINLESS STEEL HOUSING		KW	BTU'S	VOLTS	REFLECTOR PATTERN	Replacement Element	WT. (Lbs.)	LIST						
UPC 686334	MODEL	UPC 686334	MODEL							Brown	Stainless Steel					
444163	222-30-TH-208V	444408	222-30-THSS-208V	3.2	10,922	208	30° Symmetrical	63016209	20	584	705					
444170	222-30-TH-240V	444415	222-30-THSS-240V			240		63016249								
444187	222-30-TH-277V	444422	222-30-THSS-277V			277		63016279								
481380	222-30-TH-480V	481434	222-30-THSS-480V			480		63016489								
444194	222-A30-TH-208V	444439	222-A30-THSS-208V			208	63016209									
444200	222-A30-TH-240V	444446	222-A30-THSS-240V			240	63016249									
444217	222-A30-TH-277V	444453	222-A30-THSS-277V			277	63016279									
481410	222-A30-TH-480V	481465	222-A30-THSS-480V			480	63016489									
444224	222-60-TH-208V	444460	222-60-THSS-208V			208	63016209									
444231	222-60-TH-240V	444477	222-60-THSS-240V			240	63016249									
444248	222-60-TH-277V	444484	222-60-THSS-277V			277	63016279									
481397	222-60-TH-480V	481441	222-60-THSS-480V			480	63016489									
444255	222-A60-TH-208V	444491	222-A60-THSS-208V			208	63016209									
444262	222-A60-TH-240V	444507	222-A60-THSS-240V			240	63016249									
444279	222-A60-TH-277V	444514	222-A60-THSS-277V			277	63016279									
481427	222-A60-TH-480V	481472	222-A60-THSS-480V			480	63016489									
443296	222-90-TH-208V	444521	222-90-THSS-208V			208	63016209									
444286	222-90-TH-240V	444538	222-90-THSS-240V			240	63016249									
444293	222-90-TH-277V	444545	222-90-THSS-277V			277	63016279									
481403	222-90-TH-480V	481458	222-90-THSS-480V			480	63016489									
481083	342-30-TH-208V	480932	342-30-THSS-208V	5.0	17,065	208	30° Symmetrical	63025209	25	770	987					
481090	342-30-TH-240V	480949	342-30-THSS-240V			240		63025249								
802611	342-30-TH-480V	802635	342-30-THSS-480V			480		63025489								
481175	342-A30-TH-208V	481021	342-A30-THSS-208V			208		63025209								
481182	342-A30-TH-240V	481038	342-A30-THSS-240V			240	63025249									
444316	342-A30-TH-480V	444569	342-A30-THSS-480V			480	63025489									
481113	342-60-TH-208V	480963	342-60-THSS-208V			208	63025209									
481120	342-60-TH-240V	480970	342-60-THSS-240V			240	63025249									
802918	342-60-TH-480V	802932	342-60-THSS-480V			480	63025489									
481205	342-A60-TH-208V	481052	342-A60-THSS-208V			208	63025209									
481212	342-A60-TH-240V	481069	342-A60-THSS-240V			240	63025249									
444330	342-A60-TH-480V	444583	342-A60-THSS-480V			480	63025489									
481144	342-90-TH-208V	480994	342-90-THSS-208V			208	63025209									
481151	342-90-TH-240V	481007	342-90-THSS-240V			240	63025249									
803212	342-90-TH-480V	803236	342-90-THSS-480V			480	63025489									
802710	462-30-TH-480V	802734	462-30-THSS-480V			7.3	24,915	480				30° Sym.	63036489	32	967	1186
444361	462-A30-TH-480V	444613	462-A30-THSS-480V									30° Asym.	63036489			
803014	462-60-TH-480V	803038	462-60-THSS-480V									60° Sym.	63036489			
444385	462-A60-TH-480V	444637	462-A60-THSS-480V									60° Asym.	63036489			
803311	462-90-TH-480V	803335	462-90-THSS-480V									90° Sym.	63036489			

Consult factory, the product's instructions manual or a licensed electrician for 3-phase wiring of all 2-element heaters.

342-Models @ 277V & 462-Models @ 600V are also available at the same price indicated above. Contact factory for more information.

MUL-T-MOUNT INFRARED HEATERS

STAINLESS STEEL HOUSING (3-Lamp)													
UPC 686334	MODEL	KW	BTU'S	VOLTS	Reflector Pattern	Replacement Elements	WT. (Lbs.)	LIST					
443678	223-30-THSS-208V	4.8	16,382	208	30° Symmetrical	63016209	25	1076					
443685	223-30-THSS-240V			240		63016249							
443692	223-30-THSS-277V			277		63016279							
481588	223-30-THSS-480V			480		63016489							
443289	223-60-THSS-208V			60° Symmetrical	208	63016209							
443739	223-60-THSS-240V				240	63016249							
443746	223-60-THSS-277V				277	63016279							
481595	223-60-THSS-480V				480	63016489							
443784	223-90-THSS-208V			90° Symmetrical	208	63016209							
443791	223-90-THSS-240V				240	63016249							
443807	223-90-THSS-277V				277	63016279							
481601	223-90-THSS-480V				480	63016489							
481236	343-30-THSS-208V	7.5	25,298	208	30° Symmetrical	63025209	33	1372					
481243	343-30-THSS-240V			240		63025249							
811439	343-30-THSS-480V			480		63025489							
481237	343-60-THSS-208V			208		63025209							
481274	343-60-THSS-240V			60° Symmetrical	240	63025249							
811637	343-60-THSS-480V				480	63025489							
481298	343-90-THSS-208V				208	63025209							
481304	343-90-THSS-240V				90° Symmetrical	240			63025249				
811835	343-90-THSS-480V			480		63025489							
810531	463-30-THSS-480V			10.95		37,372			480	30° Sym.	63036489	41	1606
810739	463-60-THSS-480V								60° Sym.	63036489			
810937	463-90-THSS-480V				90° Sym.				63036489				

3-LAMP MTM

STAINLESS STEEL HOUSING
(3) Clear Quartz Lamps Included



NOTE:

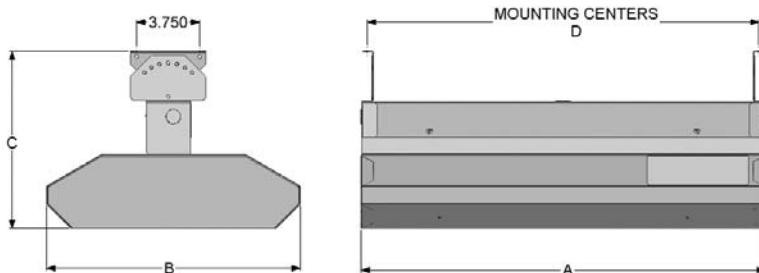
- 600-Volt Models also available, contact factory for more information.
- Asymmetrical pattern units are also available for 30 & 60° 3-Lamp Models at the same price as indicated - add "A" before 30 or 60 in model number.

Ordering Information:

If customer wishes to substitute the supplied "Clear" Quartz Lamps for "Red" Quartz Lamps (632-Series) for any of the Mul-T-Mount Models (2 or 3-Lamp units) an additional List Price of \$26.00 per Lamp is to be added to the price of the heater list shown.

DIMENSIONS:

Mul-T-Mount Series	Dimensions (in.)			
	A Length	B Width	C Height	D Mtg. Ctr.
222	24"	15"	10-7/8"	23-1/2"
342	33"	15"	10-7/8"	32-1/2"
462	46"	15"	10-7/8"	45-1/2"
223	24"	21-1/2"	10-7/8"	23-1/2"
343	33"	21-1/2"	10-7/8"	32-1/2"
463	46"	21-1/2"	10-7/8"	45-1/2"



Indoor Spot Heating



Total Area Heating



208-480 Volt Applications

MUL-T-MOUNT INFRARED HEATERS

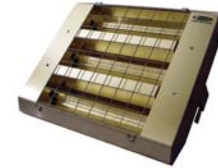
MUL-T-MOUNT ACCESSORIES

UPC 686334	MODEL	DESCRIPTION	FOR USE WITH	WT. (Lbs.)	LIST	
881128	VMB-41-SS	Wall Mounting Brackets (2)	All Mul-T-Mount Models	12	180	
851152	CHWG-222	Stainless Steel Wire Guards	222 Series	2	45	
851145	CHWG-342		342 Series		59	
851626	CHWG-462		462 Series		81	
854368	CHWG-223		223 Series		55	
854351	CHWG-343		343 Series		72	
854344	CHWG-463		463 Series		84	
			Recessed Mounting Frames (UL)			
		Ceiling Cutout (in.)	Frame Size (in.)			
441995	RMF-222-SS-A	27 x 17-7/8	29-1/8 x 20	222 Series Stainless	6	199
449441	RMF-222-A	27 x 17-7/8	29-1/8 x 20	222 Series Painted	6	145
442077	RMF-342-SS-A	36 x 17-7/8	38-1/8 x 20	342 Series Stainless	9	246
441872	RMF-342-A	36 x 17-7/8	38-1/8 x 20	342 Series Painted	9	156
442107	RMF-462-SS-A	49 x 17-7/8	51-1/8 x 20	462 Series Stainless	11	302
449458	RMF-462-A	49 x 17-7/8	51-1/8 x 20	462 Series Painted		199
881104	RMF-223-SS	32 x 29-3/8	34-1/8 x 31-1/2	223 Series Stainless	15	302
881135	RMF-343-SS	41 x 29-3/8	43-1/8 x 31-1/2	343 Series Stainless	18	355
881111	RMF-463-SS	54 x 29-3/8	56-1/8 x 31-1/2	463 Series Stainless	20	433
440783	31939009	Red Vycor Sleeves		All 1600W Qtz. Lamp	2	78
440738	31940009	Reduces Quartz Lamp		All 2500W Qtz. Lamp		103
440745	31941009	Brightness by 90%		All 3650W Qtz. Lamp		127
446150	632-1620	Red Quartz Lamps; 1.6kw , 208v		222,223 & RPH Series	2	133
446167	632-1624	Red Quartz Lamps; 1.6kw , 240v				133
446228	632-2548	Red Quartz Lamps; 2.5kw , 480v		342 & 343 Series		156

Vertical Mounting Brackets



Heater shown with optional Wire Guard



Heater shown with optional Recessed Frame



SIZING INFORMATION:

Recommended Mounting Heights

30° Sym. & A30° Asym. Reflector - Indoor:	14' - 30'
60° Sym. & A60° Asym. Reflector - Indoor:	12' - 18'
90° Sym. Reflector - Indoor:	8' - 12'
30° Sym. & A30° Asym. Reflector - Outdoor:	8' - 12'

Mounting Clearance Requirements

2 & 3-Lamp Models	3" from ceiling
2 & 3-Lamp Models	24" from vertical surface
2-Lamp Models	72" from face of heater to combustible surface
3-Lamp Models	96" from face of heater to combustible surface
2 & 3-Lamp Models	36" from side of another heater

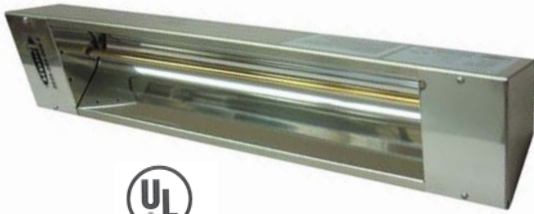
SIZING CHART - MUL-T-MOUNT SERIES

Reflective Pattern (°)	Heater Output (kW)	# of Qtz. Lamps	Mounting Heights (feet)						Watts Delivered per Square Foot							
			8	10	12	14	16	18	20	8	10	12	14	16	18	20
			Heat Pattern Coverage @ Floor Level													
			L x W	L x W	L x W	L x W	L x W	L x W	L x W	L x W						
30°	3.2	2 - Quartz Lamp Heaters	5.5 x 4	6.5 x 5.5	7.5 x 6.5	8.5 x 7.5	9.5 x 8.5	10.5 x 9.5	11.5 x 10.5	145.5	89.5	65.6	50.2	39.6	32.1	26.5
60°	3.2		10.5 x 9.5	13 x 12	15 x 14	17 x 16	N/R	N/R	N/R	32.1	20.5	15.2	11.8	-	-	-
90°	3.2		17 x 16	21 x 20	N/R	N/R	N/R	N/R	N/R	11.8	7.6	-	-	-	-	-
30°	5.0		6 x 4	7.5 x 5.5	8.5 x 6.5	9.5 x 7.5	10.5 x 8.5	11.5 x 9.5	12.5 x 10.5	208.3	121.2	90.5	70.2	56.0	45.8	38.1
60°	5.0		11.5 x 9.5	14 x 12	16 x 14	18 x 16	20.5 x 18.5	23 x 21	N/R	45.8	29.8	22.3	17.4	13.2	10.4	-
90°	5.0		18 x 16	22 x 20	26 x 24	N/R	N/R	N/R	N/R	17.4	11.4	8.0	-	-	-	-
30°	7.3		N/R	8.5 x 5.5	9.5 x 6.5	10.5 x 7.5	11.5 x 8.5	12.5 x 9.5	13.5 x 10.5	-	156.1	118.2	92.7	74.7	61.5	51.5
60°	7.3		12 x 10.5	15 x 12	17 x 14	19 x 16	21.5 x 18.5	24 x 21	N/R	57.9	40.6	30.7	24.0	18.4	14.5	-
90°	7.3		19 x 16	23 x 20	27 x 24	N/R	N/R	N/R	N/R	24.0	15.9	11.3	-	-	-	-
30°	4.8	3 - Quartz Lamp Heaters	5.5 x 5	6.5 x 6.5	7.5 x 7.5	8.5 x 8.5	9.5 x 9.5	10.5 x 10.5	11.5 x 11.5	174.5	113.6	85.3	66.4	53.2	43.5	36.3
60°	4.8		10.5 x 10.5	13 x 13	15 x 15	17 x 17	21 x 21	N/R	N/R	43.5	28.4	21.3	16.6	10.9	-	-
90°	4.8		17 x 17	21 x 21	N/R	N/R	N/R	N/R	N/R	16.6	10.9	-	-	-	-	-
30°	7.5		N/R	7.5 x 6.5	8.5 x 7.5	9.5 x 8.5	10.5 x 9.5	11.5 x 10.5	12.5 x 11.5	-	153.8	117.6	92.9	75.2	62.1	52.2
60°	7.5		11.5 x 10.5	14 x 13	16 x 15	18 x 17	20.5 x 19.5	23 x 22	N/R	62.1	41.2	31.3	24.5	18.8	14.8	-
90°	7.5		18 x 17	22 x 21	26 x 25	N/R	N/R	N/R	N/R	24.5	16.2	11.5	-	-	-	-
30°	10.95		N/R	8.5 x 6.5	9.5 x 7.5	10.5 x 8.5	11.5 x 9.5	12.5 x 10.5	13.5 x 11.5	-	198.2	153.7	122.7	100.2	83.4	70.5
60°	10.95		12 x 11	15 x 13	17 x 15	19 x 17	21.5 x 19.5	24 x 22	N/R	83.0	56.2	42.9	33.9	26.1	20.7	-
90°	10.95		19 x 17	23 x 21	27 x 25	N/R	N/R	N/R	N/R	33.9	22.7	16.2	-	-	-	-

N/R = Not Recommended

Refer to the sizing guide at the end of the infrared heat section for the watts/square foot required for your job.

OUTDOOR RATED STAINLESS STEEL INFRARED HEATERS



Mounting Plate (provided) on top center allows heater to be mounted parallel or angled using a standard pipe nipple and electrical box (supplied by installer)



- UL / C-UL listed for indoor & outdoor spot heating, includes totally exposed outdoor applications.
- Stainless steel housing.
- Ruby "Red" infrared heating element for glare protection.
- Single 1600-watt, 208 or 240 volt, direct wire, single phase operation heating element.
- Unit dimensions (24" x 5-3/8" x 4-1/2")
- 60° symmetrical heat pattern for even distribution of heat.

Applications:

- Outdoor spot heating for patios areas, bus shelters, airport terminals, etc.
- Ideal for indoor spot heating over workstations, lobby entrances, etc.
- To achieve optimum infrared heating results, mount each heater 6' apart at 8' to 9' high and tilt heaters 15° inward towards target.

SIZING CHART - RPH SERIES				
Mounting Height	Length	Wide	Sq. Foot Coverage	Watts / Sq. Ft.
8'	10.5	10	105	15.2
10'	13	12	156	10.3
12'	15	14	210	7.6

Recommended Mounting Height

RPH-208-A 8'-12'
RPH-240-A 8'-12'

Mounting Clearances

- 6" from ceiling
- 24" from vertical surface
- 72" from face of heater to combustibles

Outdoor Spot Heating



60° Reflector Pattern



UPC 686334	MODEL	WATTS	BTU'S	VOLTS	AMPS	Replacement Quartz Lamp	WT. (Lbs.)	LIST	Optional Wireguard		
									UPC 686334	MODEL	LIST
884501	RPH-208-A	1600	5,461	208	7.7	632-1620	5	318	880992	RPHWG	31
884518	RPH-240-A			240	6.7	632-1624	5				

MITEY MIDGET INFRARED HEATERS



- UL / C-UL Listed with quartz lamps for indoor industrial and commercial comfort heat applications
- Instant high-intensity radiant heat, with 60° symmetric heat pattern
- MM heaters excel as "people-heaters" in areas requiring a linear, compact & concentrated heat source
- Heavy duty aluminum extrusion with a bright aluminum insert for maximum reflectivity
- Anodized aluminum housing (0.62" thick)
- Quartz Lamp Heat Element (sold separately - see page 63)
- Dimensions: 3.750" Wide x 3.380" High

UPC 686334	MODEL	MAX WATTS	MAX BTU'S	VOLTS	PH	UNIT LENGTH	WT. (Lbs.)	LIST	Optional Wireguards		
									UPC 686334	MODEL	LIST
444019	MM-13A	500	1707	120	1	13"	3	216	443906	MMWG-13	22
442763	MM-18A	750 / 1000	3413	208-240	1	18"	4	225	443913	MMWG-18	33
449540	MM-24A	900 / 1600	5461	208-277	1	24"	5	235	441896	MMWG-24	42
442725	MM-33A	2500	8533	480	1	33"	6	252	443920	MMWG-33	46
442039	MM-46A	3000 / 3800	12457	480-600	1	46"	7	276	442046	MMWG-46	55

Mounting Clearance Requirements

- 24" from ceiling, any vertical surface, and from face of heater to combustible surface
- 36" from side of another heater
- 94" from the the floor

ELECTRIC INFRARED SIZING INFORMATION

TYPES OF ELECTRIC INFRARED APPLICATIONS

1. Total Area / Building Heating

Average: 8-20 Watts per Square Foot

Calculation: Sq. Ft. of Area x .5 x Desired Temp Rise* = Total Watts Required.

* - Desired Temperature Rise = Desired Comfort Level - Outside Design Temp

Note: Above calculation is an **AVERAGE ONLY**. Always Reference Fostoria's Heating Manual to determine ALL heat loss calculations.

Principles of Total Area / Building Heating:

- ~Always complete a "Heat Loss Calculation" ~Avoid mounting below 8' ft.
- ~Concentrate heat on perimeter areas ~Avoid mounting unit directly over an individual's head

2. Indoor Spot Heating

Average: 25-60 Watts per Square Foot

Calculation: Sq. Ft. of Area x 1 x Desired Temp Rise = Total Watts Required.

Principles of Indoor Spot Heating:

- ~Always cross beam patterns ~Avoid mounting below 8' ft.
- ~Always try to heat from both sides of object ~Avoid mounting unit directly over an individual's head

3. Outdoor Spot Heating

Average: 2 Watts per Square Foot per Desired Temp. Rise

Calculation: Sq. Ft. of Area x 2 x Desired Temp Rise = Total Watts Required.

Principles of Outdoor Spot Heating:

- ~Use Quartz Lamps or Quartz Tubes ~Never use 90-Degree Patterns
- ~Always use the MTM, OCH & RPH Heaters ~Strive for Blanket Coverage of Area

4. Snow and Ice Control Heating System

Average: 85-110 Watts per Square Foot

Calculation: Sq. Ft. of Area x Required Watts / Sq.Ft.* = Total Watts Required.

* - Required Watts = Table B Result (Table A: Factor I + Factor II)

Principles of IR Snow & Ice Control Systems:

- ~Always use Quartz Lamps ~Never use 90-Degree Patterns
- ~Always use the Mul-T-Mount Heater ~Never Mount Above 16' ft.
- ~Strive for Blanket Coverage of Area

Table A			
Factor I		Factor II	
Outside Design Temp. Deg.F	Value	Annual Snowfall (In.)	Value
-20 to -60 Deg.F	4	80" to 115"	4
-10 to -19 Deg.F	3	50" to 79"	3
0 to -9 Deg.F	2	20" to 49"	2
+19 to 1 Deg.F	1	10" to 19"	1
+40 to 18 Deg.F	0	0" to 9"	0

Note: Must Reference Table 4 of Fostoria's Heating Manual to determine the outside design temp. and the annual snowfall for the designated area.

Table B			
Total Value (From TABLE A)	Watt Densities per Square Foot (*)		
	Exposed	Semi-Protected	Protected
8	200	185	160
7	175	160	145
6	125	110	100
5	110	100	90
4	100	90	85
3	95	80	75
2	90	70	65

(*) - Exposed = Totally Open Area; Semi-Protected = One side closed plus roof or overhang; Protected = Three sides plus roof or overhang.

NOTE: Always refer to the Fostoria Electric Infrared Heating Manual to verify all calculations. The above formulas are for average heating requirements in average locations.