



**THERMAL
PRODUCTS** INC.
Engineered Solutions To
Industrial Applications

BBC
INDUSTRIES, INC.



THERMAZONE[®]

&

THERMAZONE[®]

— T H I N —

MADE IN THE
USA
SINCE 1967

Thermal Products, Inc. / Phone: (518) 877-0231 / Email: sales@thermalproducts.com / Website: www.thermalproducts.com



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Hot since 1967, BBC® Industries has produced the best infrared heating element on the market. We manufacture elements perfectly suited for the comfort heat industry. Our tight wire construction, longevity, and selection separate us from the competition.

RESEARCH SHOWS THERMAZONE HEATERS PRODUCE IDEAL COMFORT HEAT

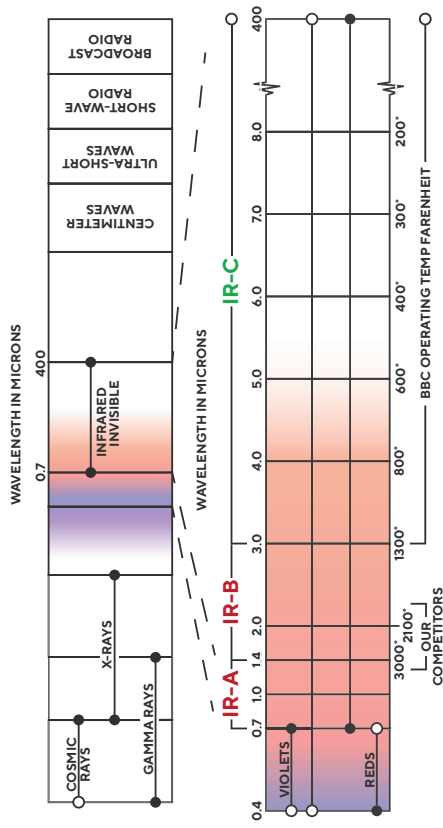
BUT DON'T TAKE OUR WORD FOR IT, READ IT FOR YOURSELF.



SCAN THIS CODE TO BE
TAKEN DIRECTLY TO THE STUDY

The infrared or IR waveband is often subdivided into three regions: IR-A (7 - 1.4 μm), IR-B (1.4 - 3 μm), and IR-C (3 - 1000 μm). IR causes a heating effect when it strikes a surface, in the case of comfort heating this is normally the skin. However, not all IR is converted to heat. IR can be absorbed or reflected.* In the comfort heating world, we want to fall into the absorption range as much as possible. Good absorption directly correlates to better comfort heat. Generally, the longer the IR wave, the more absorption will occur (IR-C) and the shorter the wave, the more IR is reflected off of the skin (IR-A & IR-B).

BBC is producing heating elements that fall right in the sweet spot of the IR waveband, IR-C. Nearly 100% of the waves that the Thermazone® emits will be absorbed rather than reflected. Our competitors heating methods often land in the short-medium (IR-A and IR-B), which are ineffective for comfort heating applications. We're translating every penny you spend on energy into comfort heat rather than reflecting it around the room.



IR-A: SHORT WAVE

IR-B: MEDIUM WAVE

THERMAZONE OPERATES HERE
IR-C: LONG WAVE

THE [B]BC DIFFERENCE.



MADE IN THE USA

Proudly manufactured and hand assembled in Pacific, Missouri.



95% ENERGY EFFICIENT

Virtually all of the energy provided to the heater is converted into useful heat.



100% ELECTRIC

No flames or noxious gasses means Thermazone heaters are odor free and do not require ventilation.



NO MOVING PARTS

Nothing to break or wear out means the Thermazone is maintenance free.



NO ORANGE GLOW

Never worry about the eyesore of a glowing heater again. Every Thermazone has a clean, black face which does not give off any light, meaning it neatly blends into the background.



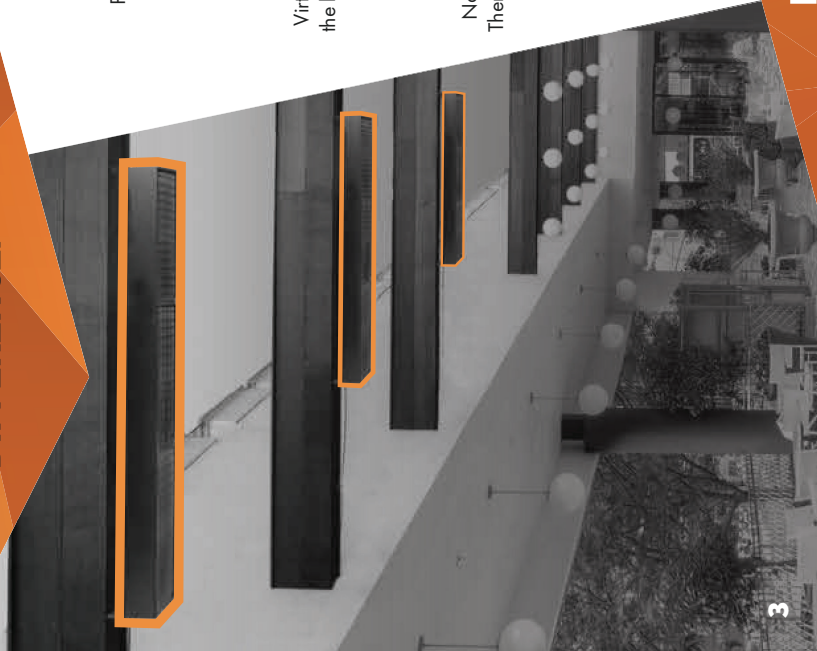
NO REFLECTORS TO CLEAN

No bulbs means no need for reflectors. Another reason Thermazone heaters require zero maintenance.



NO BULBS

Save yourself money and frustration by never having to replace a bulb.



SUITABLE LOCATIONS FOR USE

Warehouses

Factories

Manufacturing Plants

Storage Facilities

Workshops and Garages

Autobody and Repair Shops

Fitness Studios

Hot Yoga

Ventilated Zoo and Animal Pens *

Ventilated Stables and Barns *

Transportation Terminals

Greenhouses

Airplane Hangers

Restaurants

Outdoor Patios

Water and other Treatment Facilities

Parking Garages

Indoor Pools

Hotel Entrances and Valet Stands

Stadiums and Arenas

Car Rental Stations

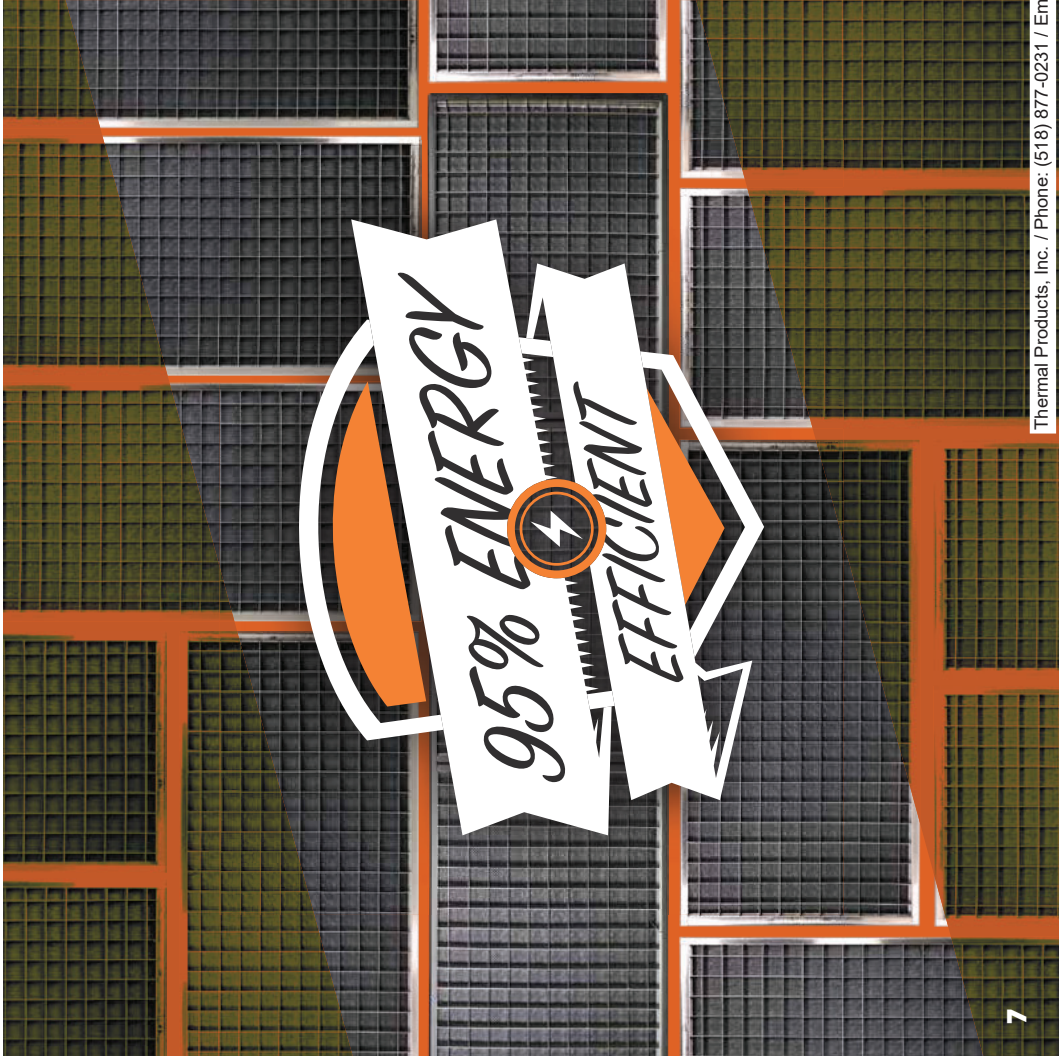
Retail Stores and Entry Foyers

Airports

Shipping and Receiving Docks (and many more...)

*Theramazon® and Therazonne Thin® are not rated for environments requiring explosion proof certification





95% ENERGY EFFICIENT



THERMAZONE®



OPTIONAL STAINLESS STEEL GRID SHOWN

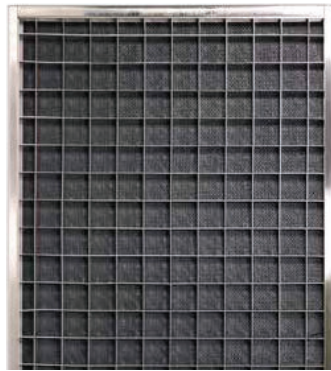
Whether you have a warehouse, dock, or workshop to keep heated, Thermazone® is the smart choice. Let the quartz era end and a revolution begin with a zero maintenance heater. You'll never worry about bulbs to replace or reflectors to clean.

With no moving parts to wear out, Thermazone® will last you for years to come, all the while giving you safe, clean, energy-efficient heat. There are no combustion products discharged, no flames, and no noxious gases emitted. Meaning there is no need to ventilate.

To top it all off, Thermazone® provides the most energy efficient heater in the comfort heat market, converting 95% of the used energy into useful heat.

Thermal Products, Inc. / Phone: (518) 877-0231 / Email: sales@thermalproducts.com / Website: www.thermalproducts.com / Please visit www.bbcind.com/catalog/comfortheat for additional product information.

ORDER YOUR THERMAZONE IN ANY OF OUR HIGH TEMP RESISTANT COLOR OPTIONS



* OPTIONAL STAINLESS STEEL GRID SHOWN*



STAINLESS STEEL

BLACK

STAINLESS STEEL GRID

Model #	Description
03-105	12" x 12" SS Grid
03-106	12" x 16" SS Grid *For use with 43-XXX Only*
03-104	12" x 24" SS Grid

ORDERING GUIDE

Model #	Color
11-800U-120V-B	Black
21-2400U-240V-SS	Stainless Steel
43-4800U-480V-B	Black

Model #	Desired Voltage	Color
11-800U-120V-B	120V	Black
21-2400U-240V-SS	240V	Stainless Steel
43-4800U-480V-B	480V	Black

Example
11-800U-120V-B
21-2400U-240V-SS
43-4800U-480V-B



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10

MODEL 1x - 1x1

MODEL	BTUs	WATTS	SINGLE PHASE	
			120v	240v
11-800U	2972	871	7.3	---
11-1000U	3689	1081	9.0	---
11-1200U	3791	1111	9.3	---
11-1500U	5807/5572	1702/1633	14.2	6.8

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THERMAZONE[®] — T H I N —

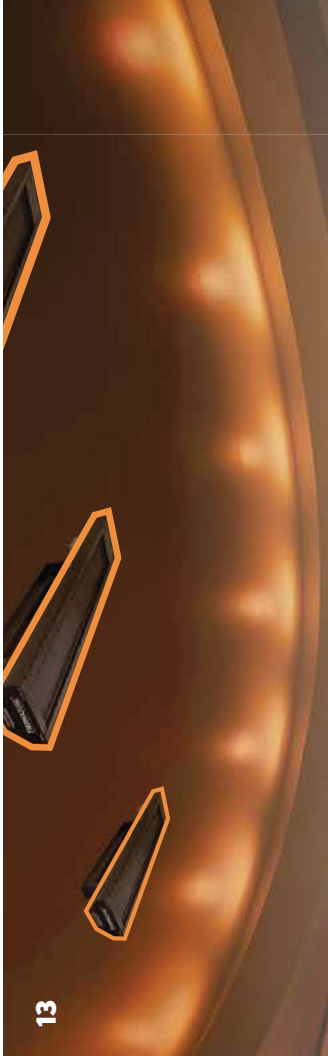


Thermazone Thin[®] includes all of the features and benefits of the Thermazone[®], in a new, slimmer, modern design. Packed with more heat per square inch, the Thermazone Thin[®] is still perfect for all of your heating needs. Ideal for restaurants, outdoor patios, and any other area that needs to keep people warm, the Thermazone Thin[®] does so effectively and discretely.

Like its sister heater, the Thermazone Thin[®] converts 95% of applied energy to useful heat, it contains no bulbs or moving parts to replace, and is maintenance free for the life of the heater. The slim cove design gives Thermazone Thin[®] an attractive commercial or residential appeal, and blend seamlessly into any space.

Please visit
www.bbcind.com/catalog/comforheat
for additional product information.

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THERMAZONE THIN IS AVAILABLE IN BBC'S HIGH TEMP BLACK OR STAINLESS STEEL



Thermazone Thin® is available with an 18" or 36" heating surface. The heating element is a flat panel IR emitter, which is able to be "cycled" for increased energy efficiency. All Thermazone Thin® heaters are UL rated for outdoor use under cover, and come supplied with a rear mounted junction box. The mounting bracket, included, is designed for ceiling or wall mounted locations, and is pre-designed for pivoting to safely hang at an angle.

18" MODEL



SINGLE PHASE

MODEL	BTUs	WATTS	120v
TZ18-2200U-120	7373	2161	18.1
TZ18-1800U-120	6053	1774	14.8
TZ18-1400U-120	4712	1381	11.5
TZ18-1000U-120	3723	1091	9.1

36" MODEL



SINGLE PHASE

MODEL	BTUs	WATTS	208v	240v
TZ36-4300U-240	14747	3247/4322	15.7	18.1
TZ36-3600U-240	12106	2665/3548	12.9	14.8
TZ36-3100U-240	10591	2332/3104	11.2	12.9
TZ36-2700U-240	9421	2074/2761	10.0	11.5
TZ36-2200U-240	7438	1638/2180	7.9	9.1

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CONTROLS

All Thermazone® and Thermazone Thin® heater models are capable of being regulated or “cycled” to control their heat output. Different methods of control offer different levels of efficiency so each application should be examined to determine which control method is most suitable. The following pages discuss the BBC Industries recommended methods of control in more detail, highlighting the benefits and function of each.

Thermazone® and Theramzone Thin® heaters do not come with built in controls. The heaters may be installed and operated without controls, in which case a heater is either 100% on, or it is 100% off. This may be acceptable in many applications; however, when controls are needed to regulate temperature or follow a heating schedule, BBC Industries offers a variety of manufacturer recommended control options which range from single unit control, all the way to full system commercial and industrial grade control panels. Please contact your Thermazone supplier or a qualified electrician to determine if controls are needed for your heating application.

What is “Cycling” – Cycling your heater is a method to control the temperature by repeatedly turning the heater on and off in a given period of time. BBC Industries flat panel IR emitters are capable of producing heat even when they are “off” for short periods of time, so in a comfort heat application, there is no noticeable loss of temperature. This does not harm the heater what-so-ever, and in fact, BBC Industries uses this as a method of highly efficient energy control in many applications.

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EASILY CONTROLLED WITH YOUR SMART PHONE



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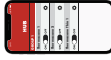
Set up your Z-Wave HUB in a centralized location.

Link your phone and all of the TZ Switches you plan to use.



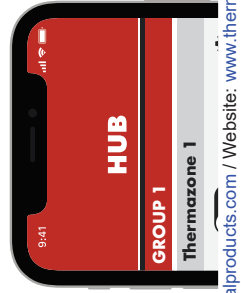
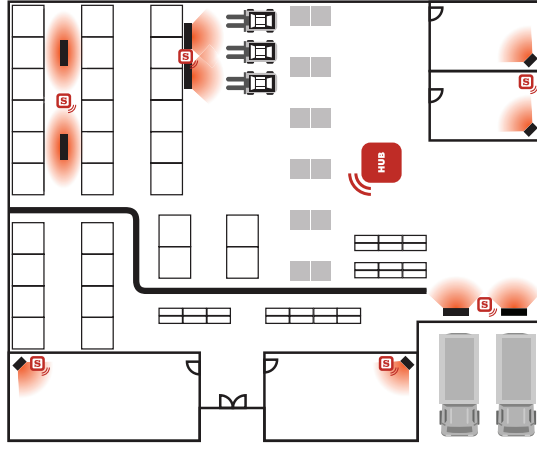
2.

Set up all of your TZ Switches. Each TZ Switch can control up to 40 Amps, so multiple Thermazone® or Thermazone Thin® heaters can be attached to one TZ Switch.



3.

With your Z-Wave HUB set up and your TZ Switches all connected, you can now control your Thermazone® and Thermazone Thin® heaters from your phone. Easily create a routine for your heaters to turn on or off automatically, or enjoy turning them on and off as needed from the convenience of your phone.



Z-WAVE CONTROLS

MODEL	ITEM DESCRIPTION	AMP	VOLT	RATING	PHASE
TZ-HUB	Thermazone Wireless Connection Hub	NA	120		1
TZ-SWITCH	Thermazone Wireless Controller, Z-WAVE Switch	40	120/240		1
TZ-JCT	Junction Box for Multitheater Connection	40	120/240		1

PERCENT TIMER



This 120V/240V 20 Amp Percent Timer offers simple control utilizing BBC's preferred method of "cycling" to regulate heater output. The simple operation of this Percentage Timer makes this unit ideal for regulating your Thermazone® and Thermazone Thin® heaters. Two dials give the user complete control of the heat output; one controls the cycle time of the heater, and the other controls the amount of time in which the heater is on during that given cycle. For example, if the cycle time is set to 1 minute, and the percent set to 75%, then the heater will be on for 45 seconds, off for 15 seconds, then repeat. This allows precise temperature control while offering optimal heater efficiency. This method of heat control is ideal for areas that need to regulate a consistent temperature.

TIMER



This 120V/240V 28 Amp In-Wall Timer gives the user precise control over the length of time a heater is on. Simply turn the dial to the desired time and it will be on for this period. At the end of this set time period, the heater will automatically shut off. This method of control is ideal for areas that are used frequently, but not for extended periods of time.

UNIT CONTROLS

MODEL	ITEM DESCRIPTION	RATING		PHASE
TZ-PCT	Thermazone Percent Timer	AMP	VOLT	
TZ-TIMER	Thermazone Heavy Duty Timer	20	120/240	1
		28	120/240	1

SSR CONTROL PANEL



BBC Industries offers a variety of cULus listed control panels as the most efficient and effective way to control your Thermazone® and Thermazone Thin® heaters. Suitable for 120V, 208/240V, and 480V heaters in both single and three phase design. Standard panels are equipped to handle up to 4 independently controlled heat zones and include a safety disconnect. Control options include a programmable color touch screen, potentiometer, as well as other low voltage control options. Custom panel designs are available.

Contact a BBC Sales Representative for Control Panel model numbers and pricing.

CONTACTOR PANEL



BBC's Contactor Panels are a simple and effective method of controlling your Thermazone® and Thermazone Thin® heater. Contactor Panels are suitable for all heater models, configurations, and voltages. Each Contactor Panel model is designed to allow for field designation of one or multiple zones, offering complete customization when controlling heaters individually or in groups. Each 30A or 60A contactor is able to carry one or several heaters. These contactor panels are often partnered with thermostats (simple and smart), but may also be controlled with on/off switches, timers, and other low voltage controllers. BBC's contactor panels are factory wired for quick and efficient installations and offer an affordable solution for every project.

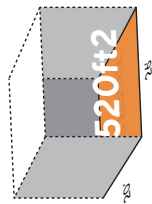


- Nema 4 enclosure, cULus listed and labeled contactor panel.
- 24V and 120V Control Voltage available.
- Suitable for smart or standard wall thermostats.
- Single phase panels available with 30A contactors in 2, 5, 10 or 20 unit designs. Supply voltage from 120-600V.
- Three phase panels available with 30A or 60A contactors in 2, 5, 10 or 20 unit designs. Supply voltage from 208-600V.
- All contactors rated up to 600V.
- Single and multi-zone control capability.
- Nothing to program, all the intelligence is in the thermostat.

CONTACTOR PANELS

MODEL	ITEM DESCRIPTION	CONTROL VOLTAGE	SUPPLY VOLTAGE	PHASE
THZ-S30-2C-0	Thermazone Contactor Panel - Variable Zone, 2 Contactors (30A/ea)	24VAC	120-600V	1
THZ-S30-2C-1	Thermazone Contactor Panel - Variable Zone, 2 Contactors (30A/ea)	120V	120-600V	1
THZ-T30-2C-0	Thermazone Contactor Panel - Variable Zone, 2 Contactors (30A/ea)	24VAC	120-600V	3
THZ-T30-2C-1	Thermazone Contactor Panel - Variable Zone, 2 Contactors (30A/ea)	120V	120-600V	3
THZ-S30-5C-0	Thermazone Contactor Panel - Variable Zone, 5 Contactors (30A/ea)	24VAC	120-600V	1
THZ-S30-5C-1	Thermazone Contactor Panel - Variable Zone, 5 Contactors (30A/ea)	120V	120-600V	1
THZ-T30-5C-0	Thermazone Contactor Panel - Variable Zone, 5 Contactors (30A/ea)	24VAC	208-600V	3
THZ-T30-5C-1	Thermazone Contactor Panel - Variable Zone, 5 Contactors (30A/ea)	120V	208-600V	3
THZ-T60-5C-1	Thermazone Contactor Panel - Variable Zone, 5 Contactors (60A/ea)	24VAC	208-600V	3
THZ-S30-10C-0	Thermazone Contactor Panel - Variable Zone, 10 Contactors (30A/ea)	24VAC	120-600V	1
THZ-S30-10C-1	Thermazone Contactor Panel - Variable Zone, 10 Contactors (30A/ea)	120V	120-600V	1
THZ-T30-10C-0	Thermazone Contactor Panel - Variable Zone, 10 Contactors (30A/ea)	24VAC	208-600V	3
THZ-T30-10C-1	Thermazone Contactor Panel - Variable Zone, 10 Contactors (30A/ea)	120V	208-600V	3
THZ-T60-10C-1	Thermazone Contactor Panel - Variable Zone, 10 Contactors (60A/ea)	24VAC	208-600V	3
THZ-T60-10C-0	Thermazone Contactor Panel - Variable Zone, 10 Contactors (60A/ea)	120V	208-600V	3
THZ-S30-20C-0	Thermazone Contactor Panel - Variable Zone, 20 Contactors (30A/ea)	24VAC	120-600V	1
THZ-S30-20C-1	Thermazone Contactor Panel - Variable Zone, 20 Contactors (30A/ea)	120V	120-600V	1
THZ-T30-20C-0	Thermazone Contactor Panel - Variable Zone, 20 Contactors (30A/ea)	24VAC	208-600V	3
THZ-T30-20C-1	Thermazone Contactor Panel - Variable Zone, 20 Contactors (30A/ea)	120V	208-600V	3
THZ-T60-20C-0	Thermazone Contactor Panel - Variable Zone, 20 Contactors (60A/ea)	24VAC	208-600V	3
THZ-T60-20C-1	Thermazone Contactor Panel - Variable Zone, 20 Contactors (60A/ea)	120V	208-600V	3

HOW TO DETERMINE THE NUMBER OF HEATERS YOU WILL NEED

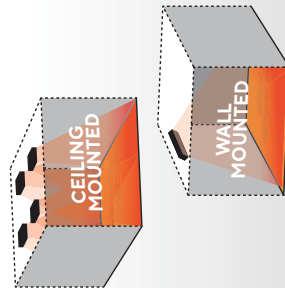
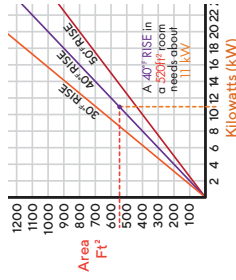


FIRST.

You will need to find the approximate square footage of the area you wish to heat.

SECOND.

Now that you know how big your space is, use this watts per square foot chart and reference the desired temperature rise. This will help determine the kW that is required to heat your space.



THIRD.

After determining the total kW needed for your space. Visit the product portion of this catalog to select appropriately sized heaters for your space; keeping in mind voltage, phase, and wattage suitable for your needs. When determining the heater model and quantity that you need for your space, note that both Thermazone® and Thermazone Thin® can be ceiling or wall mounted. To achieve even heat distribution, we recommend smaller, more evenly spaced heaters throughout your space.

FOURTH.

If heat controls are required for your application, reference the controls section of this catalog to determine what the best method of heat control is for your area. Note that not all heating control options mentioned in this catalog are suitable for every heater.

For more information on heater requirements or controls, contact your local distributor or call BBC Industries directly to speak with a comfort heat professional.

Thermal Products, Inc. / Phone: (518) 877-0231 / Email: sales@thermalproducts.com



WE REACH EVERY CORNER OF THE GLOBE.

Now that you see what we're capable of, visit us online or contact BBC® Industries Inc. directly to speak with a member of our team.

1.800.654.4205

Please visit www.bbcind.com/catalog/comforheat for additional product information.
Website: www.thermalproducts.com

www.bbcind.com/dealer-locator



INDUSTRIES, INC.

1100 JEFFERSON ST
PACIFIC, MO 63069
1.800.654.4205



COMFORT HEATERS

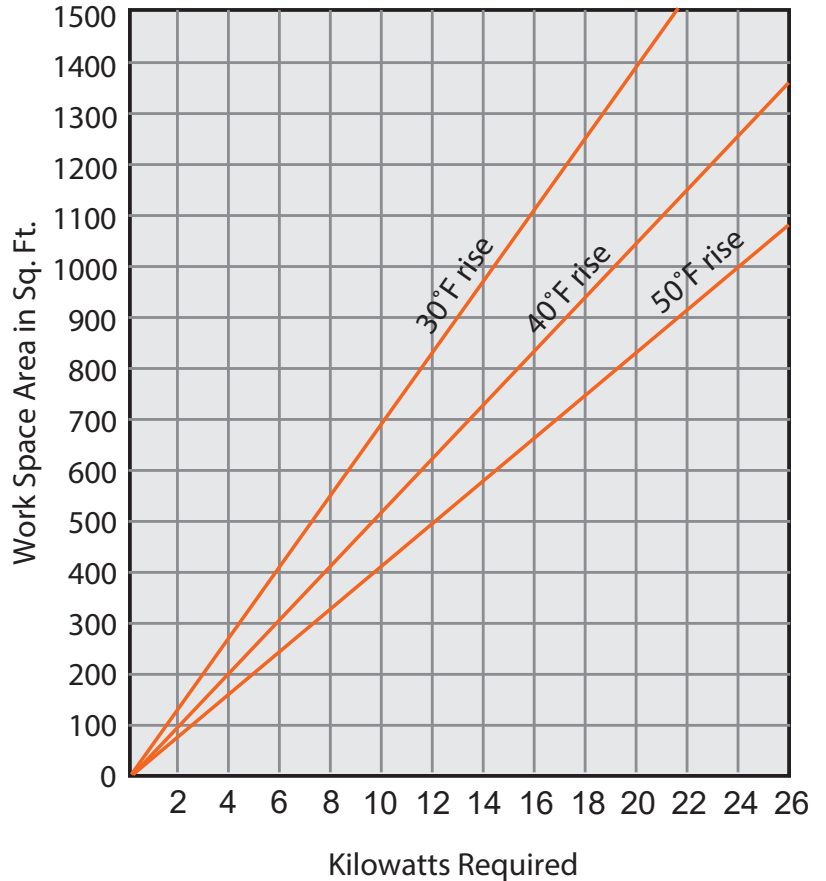
ThermaZone® Heaters

USE THE CHART AT RIGHT TO SEE HOW THERMAZONE® HEATERS CAN EFFICIENTLY HEAT YOUR SPACE AND SAVE YOU MONEY.

On the graph at right, find the area (sq. ft.) you want to heat. Then move straight across to intersect the 30°F, 40°F or 50°F rise-in-temperature diagonal. Next, follow that point of intersection to the bottom of the table to see how many kilowatts are required.

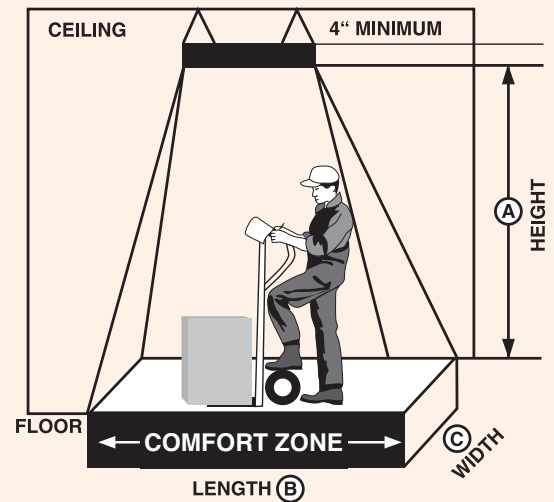
Please consult the model guide to determine which combinations of ThermaZone Heaters will best achieve your kilowatt demand. Keeping in mind that smaller, evenly spaced heaters, will create a more uniform comfort environment than larger higher capacity heaters which meet the same kW total.

EXAMPLE: If you want a 40°F temperature rise for a 20' x 20' room (400 sq. ft.), you could achieve this by two Model No. 4X-4000U, or four Model No. 2X-2000U heaters.



THE BLACK BODY® COMFORT ZONES

HEIGHT A	LENGTH B			WIDTH C
	Model #1 12" Length	Model #2 24" Length	Model #3 48" Length	
6 ft.	7' 10"	8' 10"	10' 10"	7' 10"
8 ft.	10' 2"	11' 2"	13' 2"	10' 2"
10 ft.	12' 6"	13' 6"	15' 6"	12' 6"
12 ft.	14' 10"	15' 10"	17' 10"	14' 10"
14 ft.	17' 2"	20' 2"	22' 2"	17' 2"

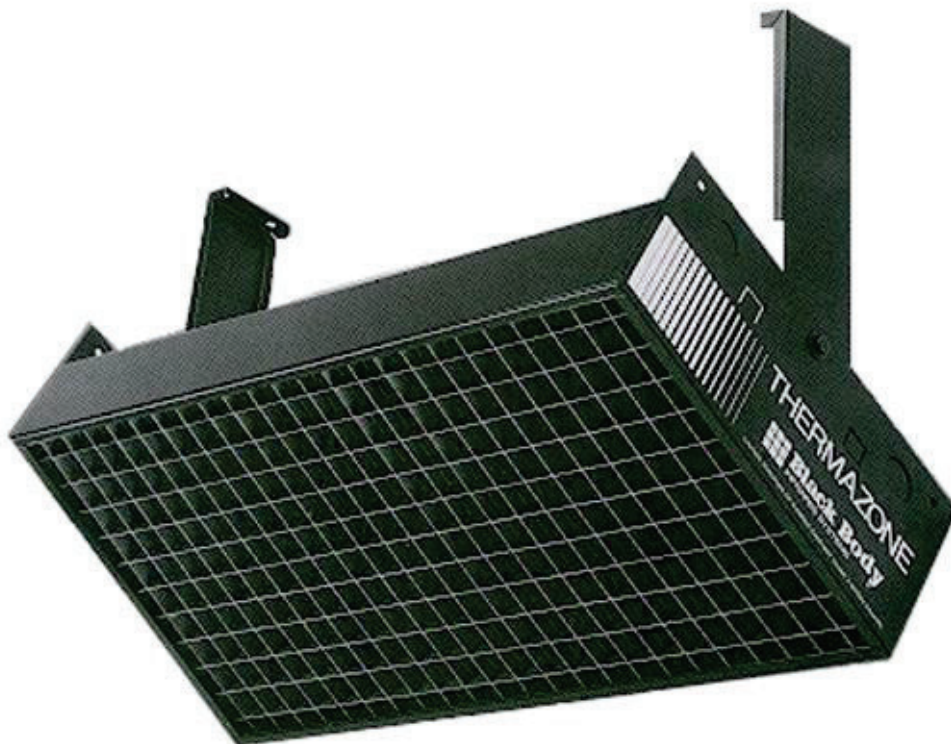




Black Body[®]

HEATER DIVISION

Document 16-416



ThermaZone[®]

COMFORT HEATERS

BBC Industries, Inc.

1100 Jefferson St – Pacific, MO 63069

(800) 654-4205 – www.bbcind.com

IMPORTANT INSTRUCTIONS:

Read all these instructions before installing or using this heater.

BBC Industries, Inc. is interested in the safe operation of its equipment. All wiring to this equipment must be connected to the electrical source in strict accordance with *National Electrical Code (N. E. C.)* and local codes having jurisdiction.

Before installing this equipment, the user must be aware of the safety requirements as specified by the *National Board of Fire Underwriters*.

Do not “Box” in or further insulate the back of the section which might cause a heat buildup in the wiring raceway. The back surface of the raceway should be at least 4 inches from combustible material.



CAUTION: Puncture of the element face may result in a shock hazard.

This heater is **hot** when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least 3 feet from the front of the heater and keep them away from the sides and rear.

Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.

Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.

To disconnect heater, turn off power to heater circuit at main disconnect panel.

Do not insert or allow foreign objects to enter any ventilation opening as this may cause an electric shock or fire, or damage to the heater.

A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.

Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

SAVE THESE INSTRUCTIONS

INSTALLATION:

All wiring to this equipment must be connected to the electrical source in strict accordance with *National Electrical Code (N. E. C.)* and local codes having jurisdiction.

Before installing this equipment, the user must be aware of the safety requirements as specified by the *National Board of Fire Underwriters*.



Do not install the section closer than:

- 4 inches to a horizontal surface
- 12 inches to a vertical surface
- 36 inches to another heater
- 6 feet from the floor

For wall mounting (above 6 feet from floor), outlet box and wiring raceway should always face adjacent vertical wall mounting surface.

For angle positioning, the heater should not be directed toward any vertical surface closer than 6 feet.

IMPORTANT: When using the mounting brackets, a minimum of **4 inches** should be left between the corners of the heating section and any horizontal or vertical surface. See drawing below.

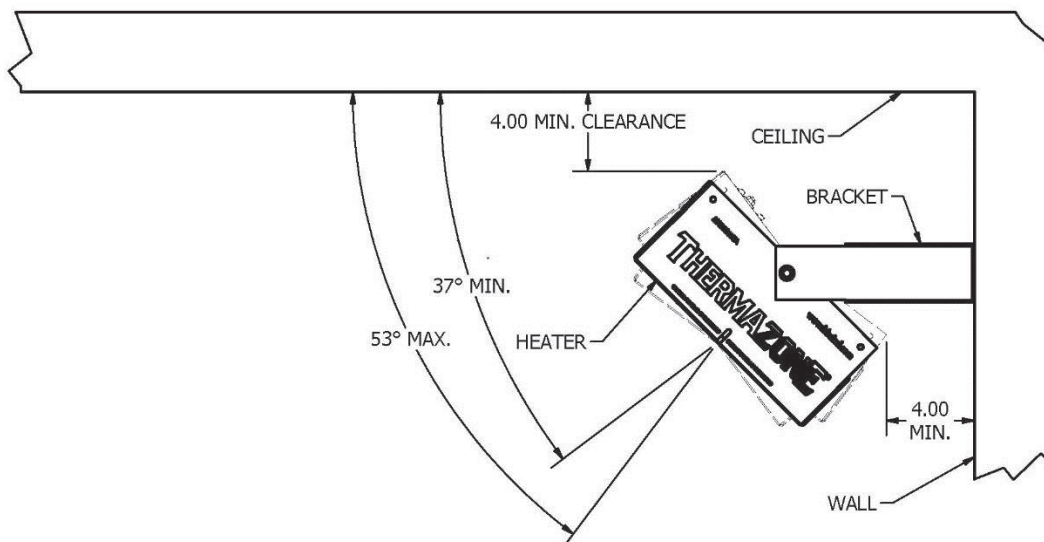


Fig. 1 – WALL MOUNTING

Once the heater is mounted to the wall, position the heater to the desired angle between 37° and 53° downward from the horizontal, limited by the slot length. Tighten the two bolts to secure the heater.



WARNING! Risk of fire. Do not position any heater at an angle not allowed by the slotted hole (37°-53°).

Do not install the section closer than:

FOR CEILING MOUNTING:

- 36 inches to a vertical surface for vertical mounting
- 4 inches to a vertical surface for angled ceiling mounting
- 4 inches to a horizontal surface for wall mounting
- 12 inches to an adjacent vertical surface
- 36 inches to another heater
- 6 feet from the floor

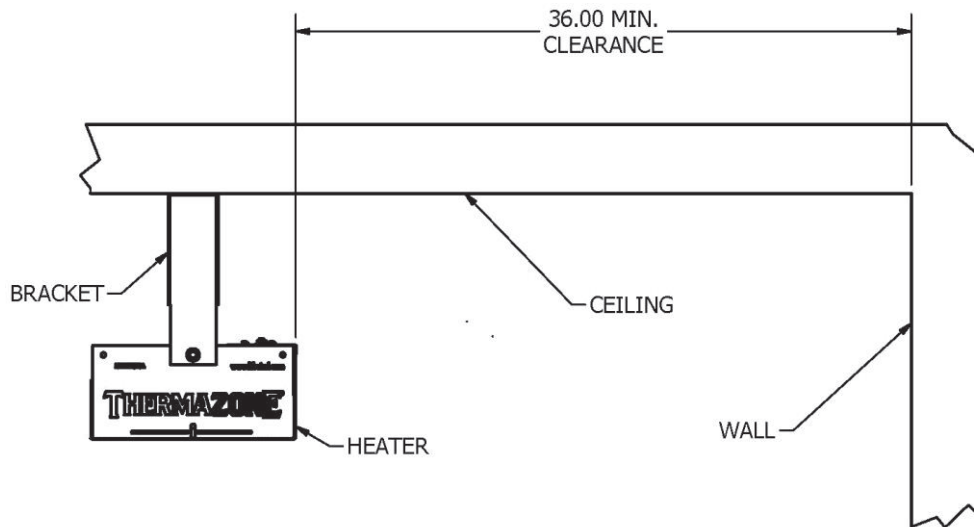


Fig. 2 – CEILING MOUNTING VERTICAL

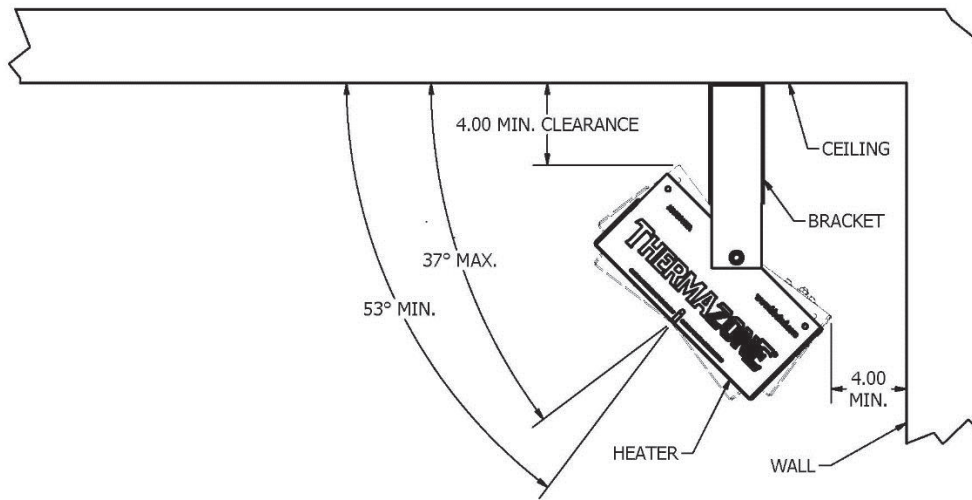


Fig. 3 – CEILING MOUNTING ANGLED AWAY FROM VERTICAL SURFACE

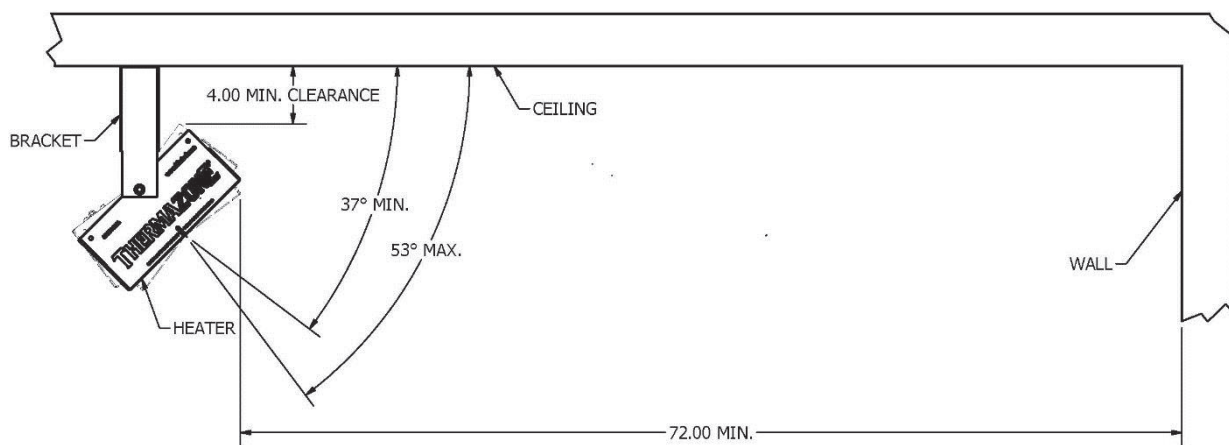


Fig. 4 – CEILING MOUNTING ANGLED TOWARDS VERTICAL SURFACE

PROTECTED AREA MOUNTING:

A *Protected Area* is defined as “Located in an area that is partially protected from the effects of weathering.” Typical *protected areas* would be the underside of a pavilion with a roof, garage port, and the like.

FOR PROTECTED AREA WALL MOUNTING:

Adhere to all requirement for mounting listed above. Additionally:



Do not install the section closer than 18 inches to edge of overhang of roof and no more than 7.25 inches (to top of bracket) below the edge.

The heater needs to be installed in a position such that it is protected from rain, snow, and similar outdoor wet areas.

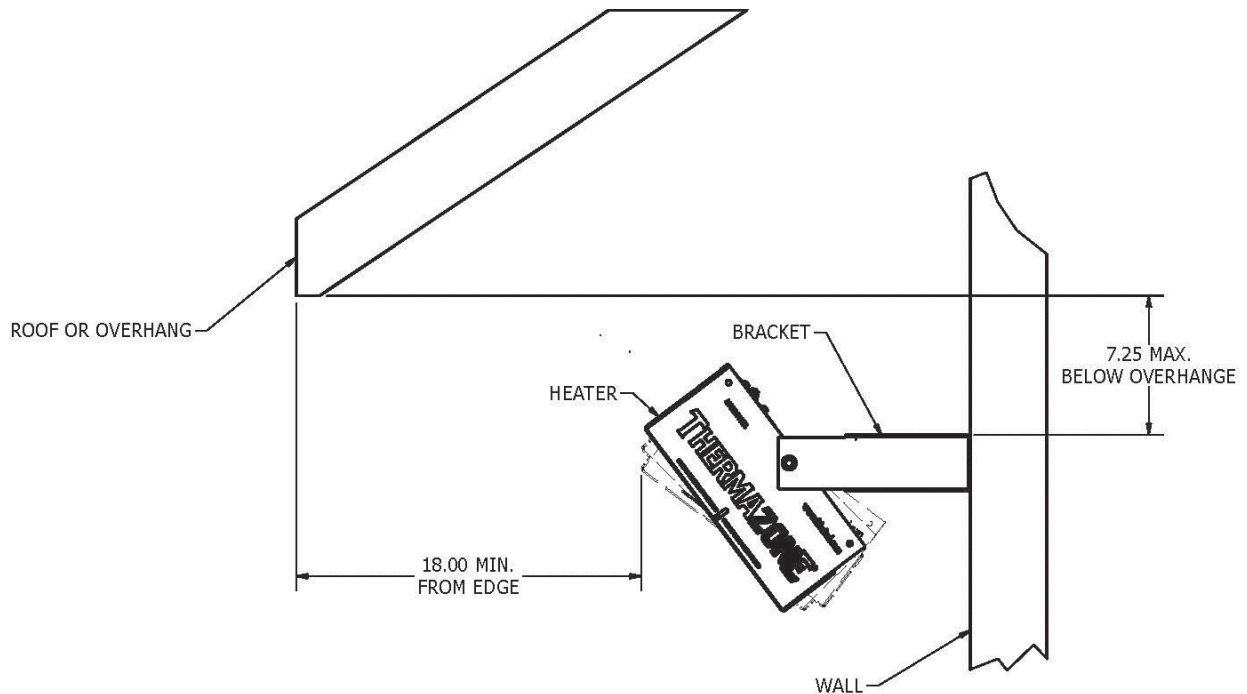


Fig. 5 – PROTECTED AREA MOUNTING

FOR PROTECTED AREA CEILING MOUNTING:

Adhere to all requirement for Ceiling Mounting listed above. Additionally:



Do not install the section closer than 18 inches to edge of overhang of roof.

The heater needs to be installed in a position such that it is protected from rain, snow, and similar outdoor wet areas.

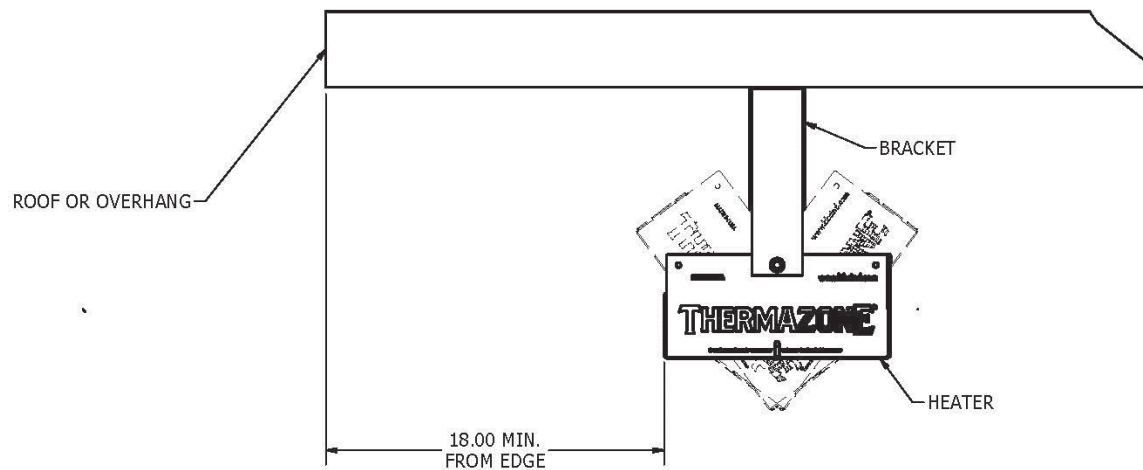


Fig. – PROTECTED AREA CEILING MOUNTING

For supply connections use the wire size (or larger) as directed by the chart below. All wires must be suitable for at least 75°C (167°F).

SINGLE PHASE SECTIONS				
MODEL NUMBER	120 VOLT AWG. WIRE SIZE	208 / 240 VOLT AWG. WIRE SIZE	277 VOLT AWG. WIRE SIZE	480 VOLT AWG. WIRE SIZE
11-450U 11-600U 11-800U 11-1000U	14	-	-	-
11-1200U 11-1500U	12	-	-	-
11-1500U-240	-	14		
21-900U 21-1200U	14	-	-	-
21-1500U 21-1600U	12	-	-	-
21-2000U 21-2400U	10	-	-	-
21-3000U	8	-	-	-
21-900U-208/240V 21-1200U-208/240V 21-1600U-208/240V 21-2000U-208/240V 21-2400U-208/240V	-	14	-	-
21-3000U-208/240V	-	12	-	-
41-1800U 41-2000U 41-2400U	-	14	-	-
41-3200U	-	12	-	-
41-4000U 41-4800U	-	10	-	-
41-6000U	-	8	-	-
41-1800U-DV 41-2000U-DV 41-2400U-DV	-	14	-	14
41-3200U-DV	-	12	-	14
41-4000U-DV 41-4800U-DV	-	10	-	14
41-6000U-DV	-	8	-	12
41-4000U-277V	-	-	12	-
41-4800U-277V 41-6000U-277V	-	-	10	-

3-PHASE SECTIONS				
MODEL NUMBER	120 VOLT AWG. WIRE SIZE	208 / 240 VOLT AWG. WIRE SIZE	277 VOLT AWG. WIRE SIZE	480 VOLT AWG. WIRE SIZE
23-2000U-240V 23-2400U-240V 23-3000U-240V	-	14	-	-
43-4000U-240V	-	14	-	-
43-4800U-240V 43-6000U-240V	-	12	-	-
43-4000U-480V 43-4800U-480V 43-6000U-480V	-	-	-	14

To reduce the risk of fire, do not store or use gasoline other flammable vapors and liquids in the vicinity of the heater.



CAUTION – High temperature, risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 6 feet (0.9 m) from the front of the heater and away from the side and rear.

WIRING DIAGRAMS

FIG. 4 - 24" x 12" SECTIONS (SINGLE ELEMENT)
120 / 208 / 240 VOLT - SINGLE PHASE

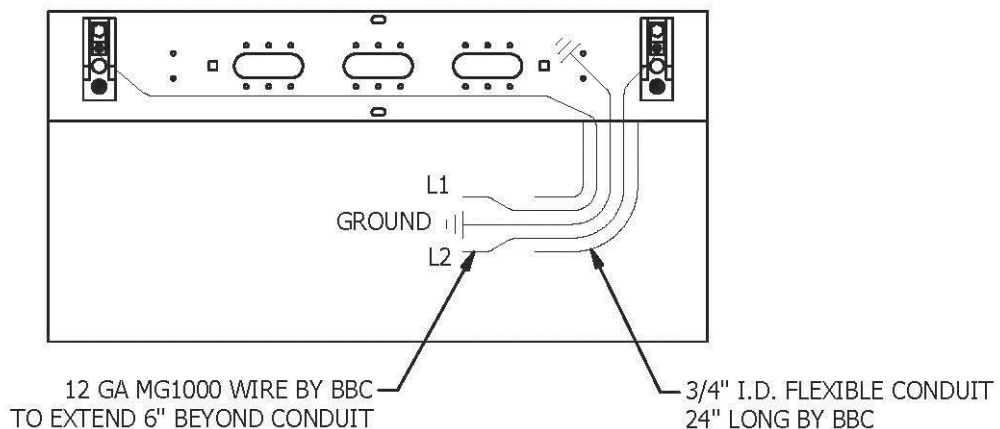
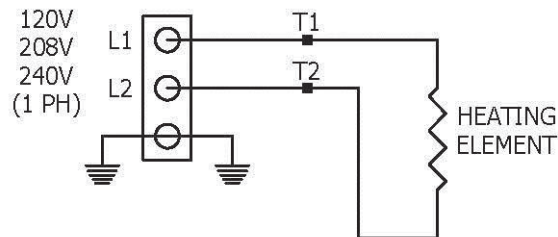
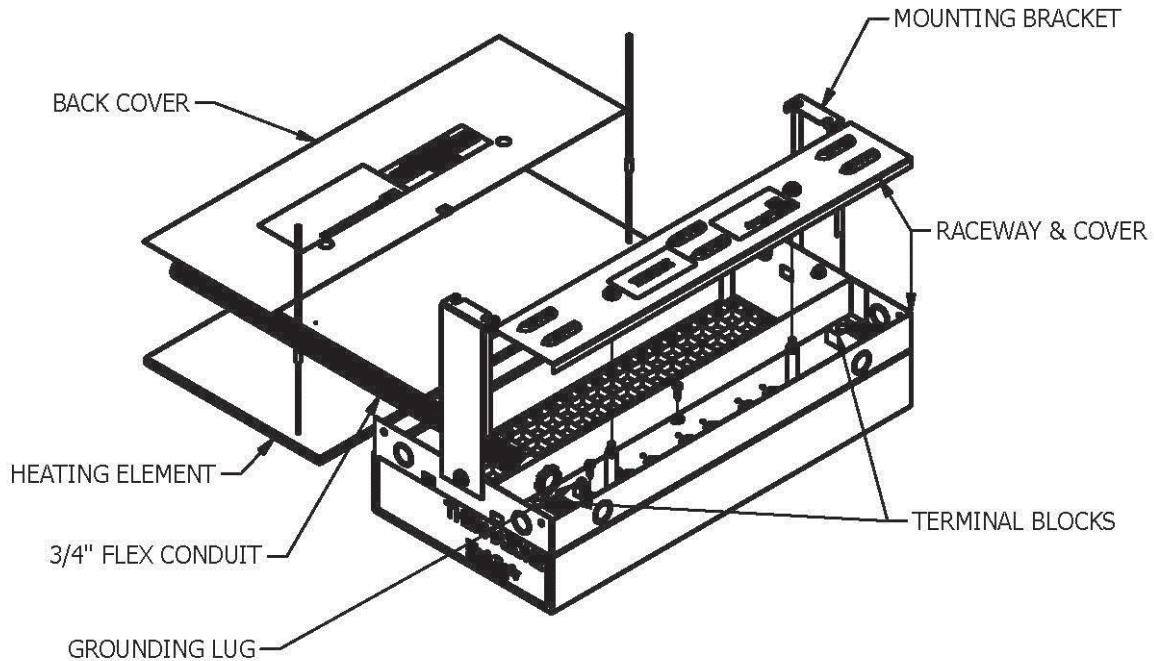
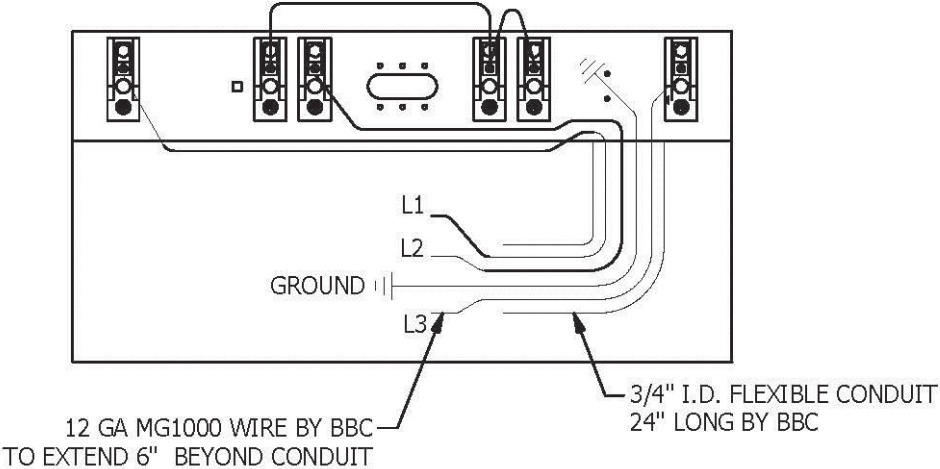
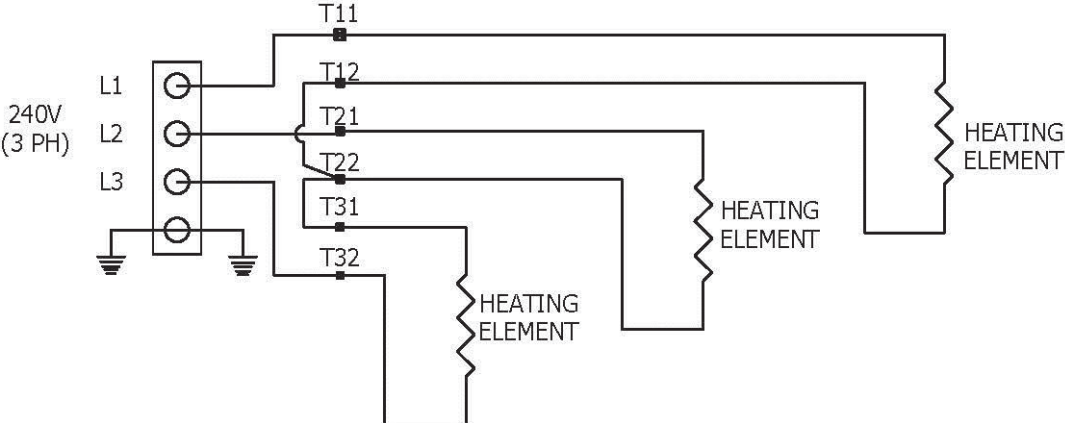
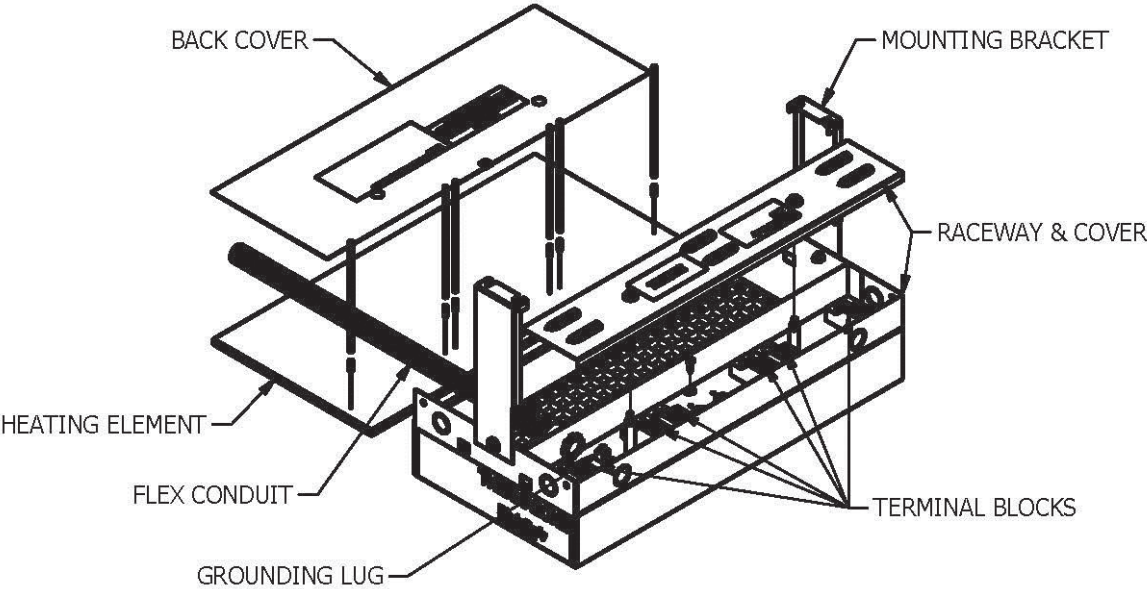


FIG. 7 - 24" x 12" SECTIONS
240 VOLTS - THREE PHASE



OPERATION:



**IMPORTANT
NOTICE**

Heaters must be properly installed before use.

Do not operate heaters without all covers in place.

No user maintenance is needed for heaters. Any other servicing should be performed by authorized service personnel.

During production, the heating element of this unit may have absorbed moisture. The first time your heater is turned ON, it may smoke/steam while the moisture is released. This smoke/steam is NORMAL and not harmful. It will stop after 10-15 minutes of operation and not occur after first use.

ATTENTION

**IMPORTANT
NOTICE**

During production of this heater, the heating element may have absorbed moisture. The first time your heater is turned ON it may smoke/steam while the moisture is released. This is NORMAL and not harmful. There may be a slight odor the first time the heater is turned on as well. This is also NORMAL. The steam and odor will both go away after 10-15 minutes of operation and will not occur after the first use.

ATTENTION

WARRANTY

BBC Industries, Inc. warrants their products to be free from defects in workmanship at the time of shipment.

The obligation under the above warranty shall be limited to the repair or replacement of any part or parts manufactured by BBC Industries, Inc. without charge F.O.B. factory that may prove defective within 12 months from the date of shipment, which are returned to BBC Industries, Inc.

The above warranties are the only warranties made with respect to the equipment. There is no implied warranty of merchantability or of fitness.

EXCLUSIONS:

There is no warranty on parts not manufactured by BBC Industries, Inc., other than the respective manufacturer's warranty, if any.

The warranty against defects shall not extend to damage caused from any of the following:

- Transport by carrier
- Corrosion
- Operation or use in a manner inconsistent with specifications and/or operating instructions
- Ordinary wear, accident, improper installation, or maintenance
- Alterations made to equipment in any way

BBC Industries, Inc. shall not be liable for any losses or damages, including but not limited to incidental or consequential damages, suffered or incurred because the equipment proves to be defective either upon installation or during its operation or use.

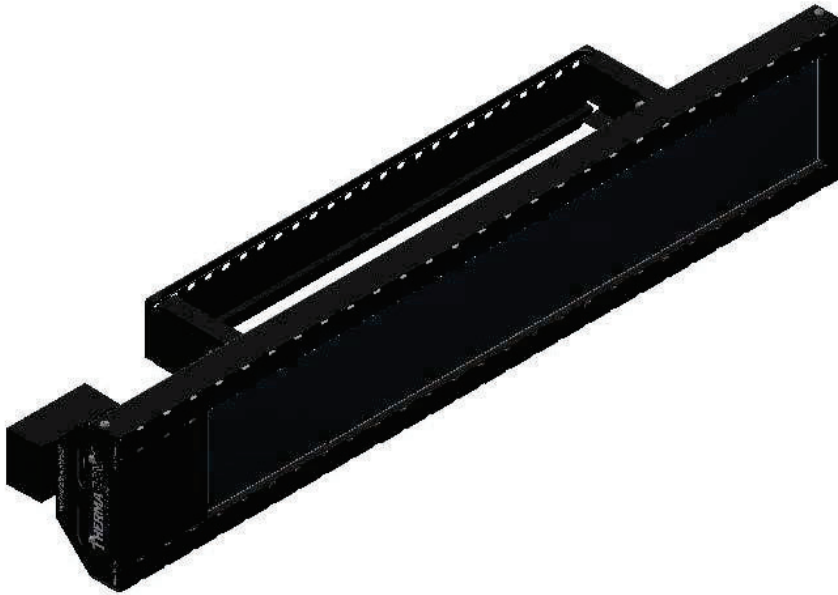
Shipment of defective parts to BBC Industries, Inc. and the return shipment of any repaired or replacement parts from BBC Industries, Inc. shall be the purchaser's/user's expense.

BBC Industries, Inc. - (800) 654-4205 - www.bbcind.com



Black Body®
HEATER DIVISION

Document 16-495



ThermaZone Thin®

COMFORT HEATERS

BBC Industries, Inc.

5 Capper Drive – Pacific, MO 63069 – (800) 654-4205

Fax: (636) 343-3952 – www.bbcind.com

IMPORTANT INSTRUCTIONS:

Read all these instructions before installing or using this heater.

BBC Industries, Inc. is interested in the safe operation of its equipment. All wiring to this equipment must be connected to the electrical source in strict accordance with *National Electrical Code (N. E. C.)* and local codes having jurisdiction.

Before installing this equipment, the user must be aware of the safety requirements as specified by the *National Board of Fire Underwriters*.

Do not “Box” in or further insulate the back of the section which might cause a heat buildup in the wiring junction box.



CAUTION: Puncture of the element face may result in a shock hazard.

This heater is **hot** when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least 3 feet from the front of the heater and keep them away from the sides and rear.

Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.

Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.

To disconnect heater, turn off power to heater circuit at main disconnect panel.

Do not insert or allow foreign objects to enter any ventilation opening as this may cause an electric shock or fire, or damage to the heater.

A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.

Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

SAVE THESE INSTRUCTIONS

INSTALLATION:

All wiring to this equipment must be connected to the electrical source in strict accordance with *National Electrical Code (N. E. C.)* and local codes having jurisdiction.

Before installing this equipment, the user must be aware of the safety requirements as specified by the *National Board of Fire Underwriters*.



Do not install the section closer than:

FOR WALL MOUNTING:

- 6-7/8 inches below a horizontal surface
- 12 inches to an adjacent vertical surface
- 36 inches to another heater
- 6 feet from the floor

For angle positioning, the heater should not be directed toward any vertical surface closer than 6 feet.

The heater is to be mounted horizontally.

IMPORTANT: For Wall-Mounted heaters, insert the positioning bolts through the slots on the both sides of the mounting bracket. **DO NOT USE** the ceiling mounting hole when mounting a heater on a wall.

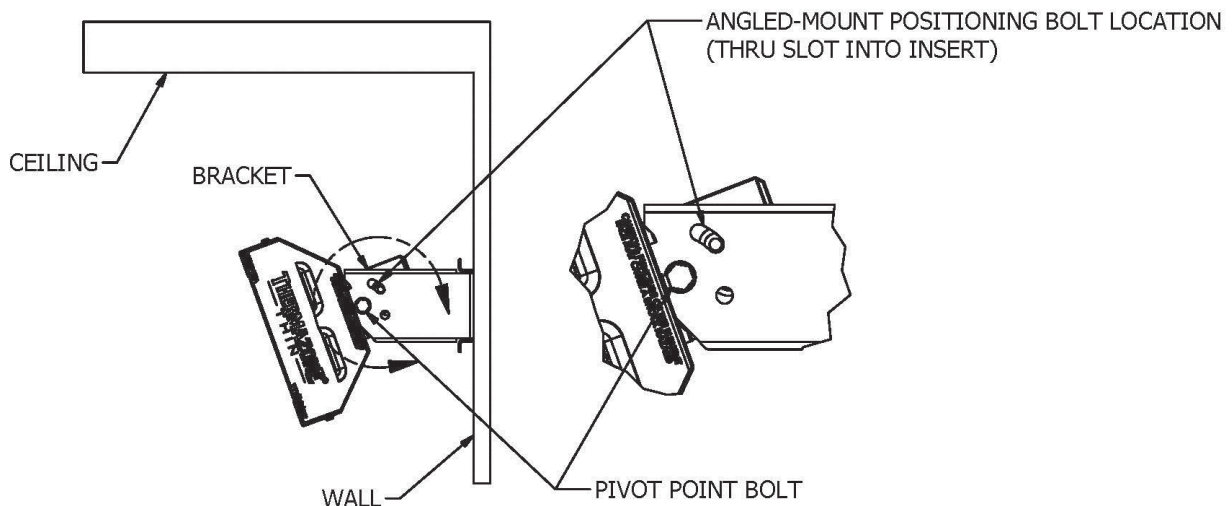


Fig. 1 – ANGLED POSITIONING FOR WALL MOUNTING

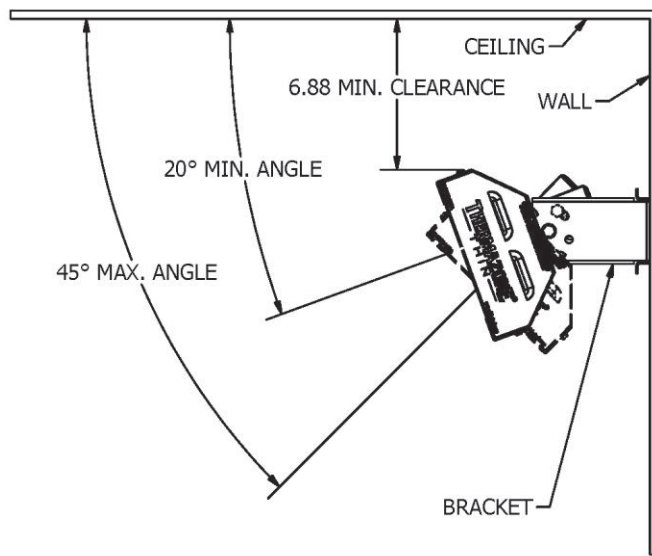


Fig. 2 – WALL MOUNTING

Once the heater is mounted to the wall, position the heater to the desired angle between 20° and 45° downward from the horizontal, limited by the slot length. Tighten the two positioning bolts to secure the heater.



WARNING! Risk of fire. Do not position any heater at an angle not allowed by the slotted hole (20°-45°).

Do not install the section closer than:

FOR CEILING MOUNTING:

- 36 inches to a vertical surface for vertical mounting
- 6-7/8 inches to a vertical surface for angled ceiling mounting
- 6-7/8 inches to a horizontal surface for wall mounting
- 12 inches to an adjacent vertical surface
- 36 inches to another heater
- 6 feet from the floor

Ceiling mounted heaters can be mounted either through the Angled-Mount Positioning Bolt Location *or* the Ceiling-Mount Only Positioning Bolt Location.

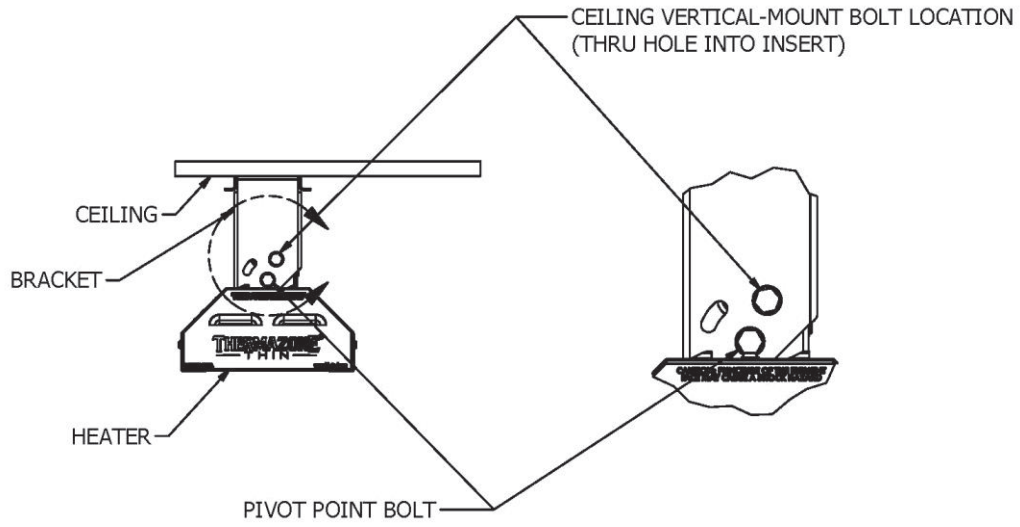


Fig. 3 – CEILING ONLY VERTICAL MOUNTING POSITIONING

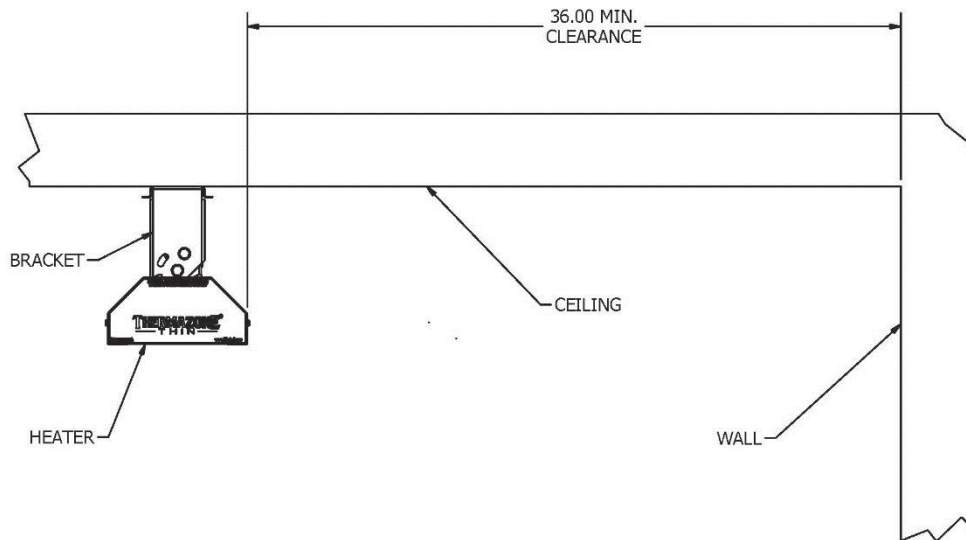


Fig. 4 – CEILING MOUNTING VERTICAL

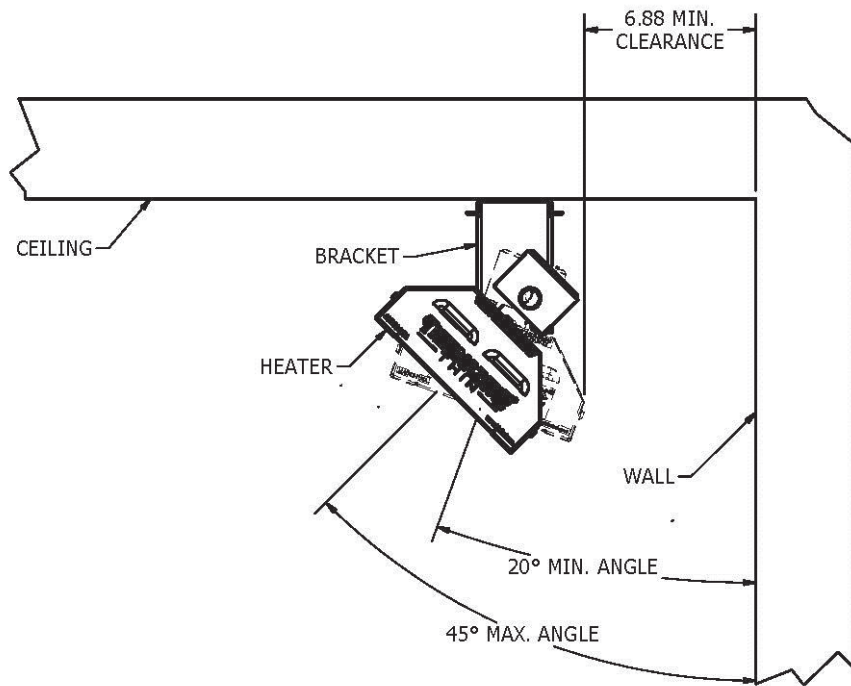


Fig. 5 – CEILING MOUNTING ANGLED AWAY FROM VERTICAL SURFACE

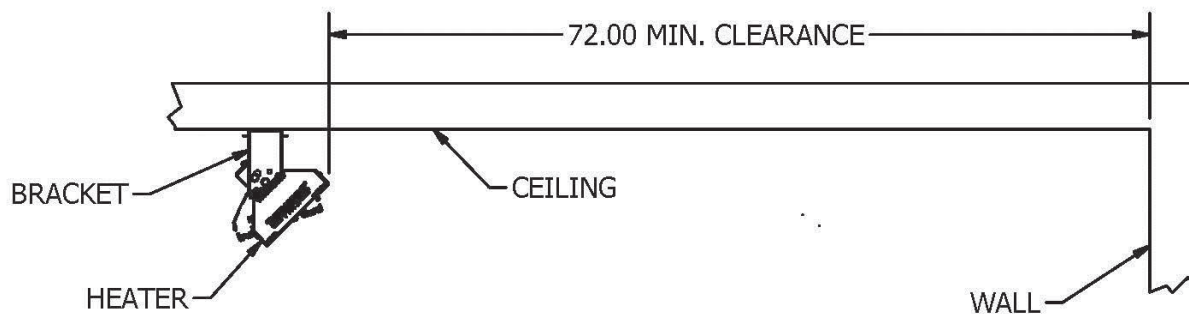


Fig. 6 – CEILING MOUNTING ANGLED TOWARDS VERTICAL SURFACE

FOR PROTECTED AREA MOUNTING:

A *Protected Area* is defined as “Located in an area that is partially protected from the effects of weathering.” Typical *protected areas* would be the underside of a pavilion with a roof, garage port, and the like.

FOR PROTECTED AREA WALL MOUNTING:

Adhere to all requirement for Wall Mounting listed above. Additionally:



Do not install the section closer than 12 inches to edge of overhang of roof and no more than 8.25 inches (to top of bracket) below the edge.

The heater needs to be installed in a position such that it is protected from rain, snow, and similar outdoor wet areas.

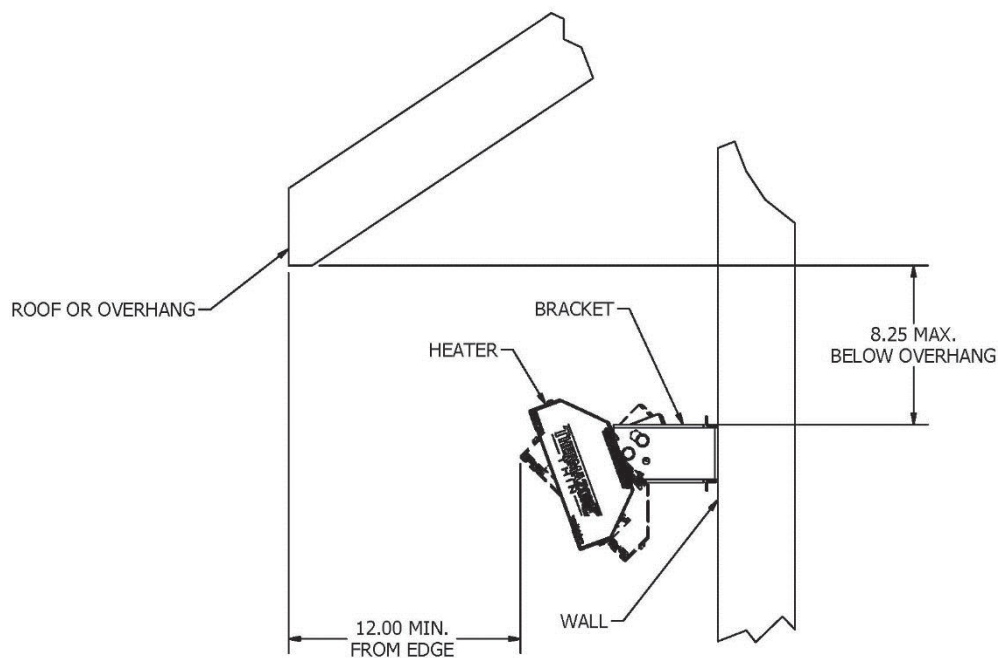


Fig. 5 – PROTECTED AREA WALL MOUNTING

FOR PROTECTED AREA CEILING MOUNTING:

Adhere to all requirement for Ceiling Mounting listed above. Additionally:



Do not install the section closer than 12 inches to edge of overhang of roof.

The heater needs to be installed in a position such that it is protected from rain, snow, and similar outdoor wet areas.

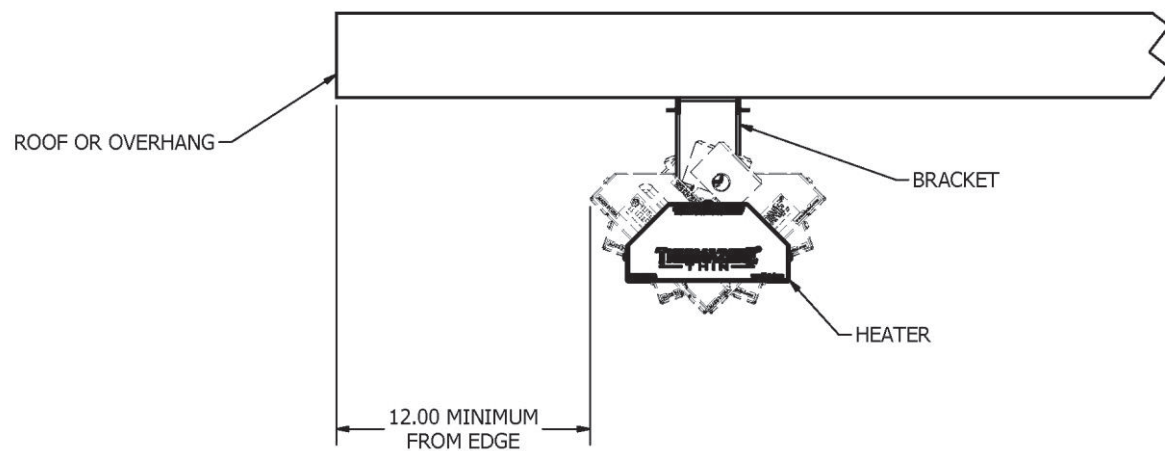


Fig. 6 – PROTECTED AREA CEILING MOUNTING

For supply connections use the wire size (or larger) as directed by the chart below. All wires must be suitable for at least 90°C (194°F).

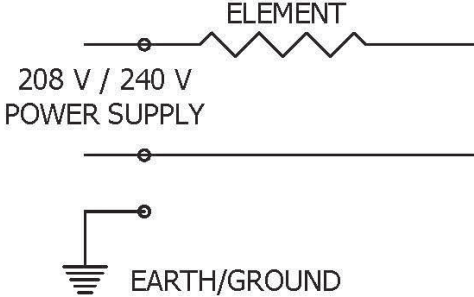
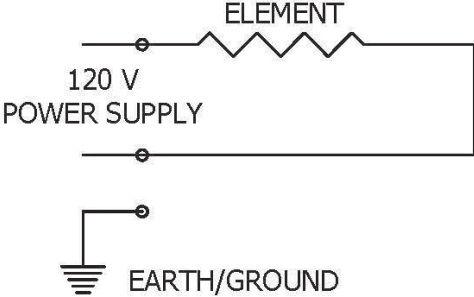
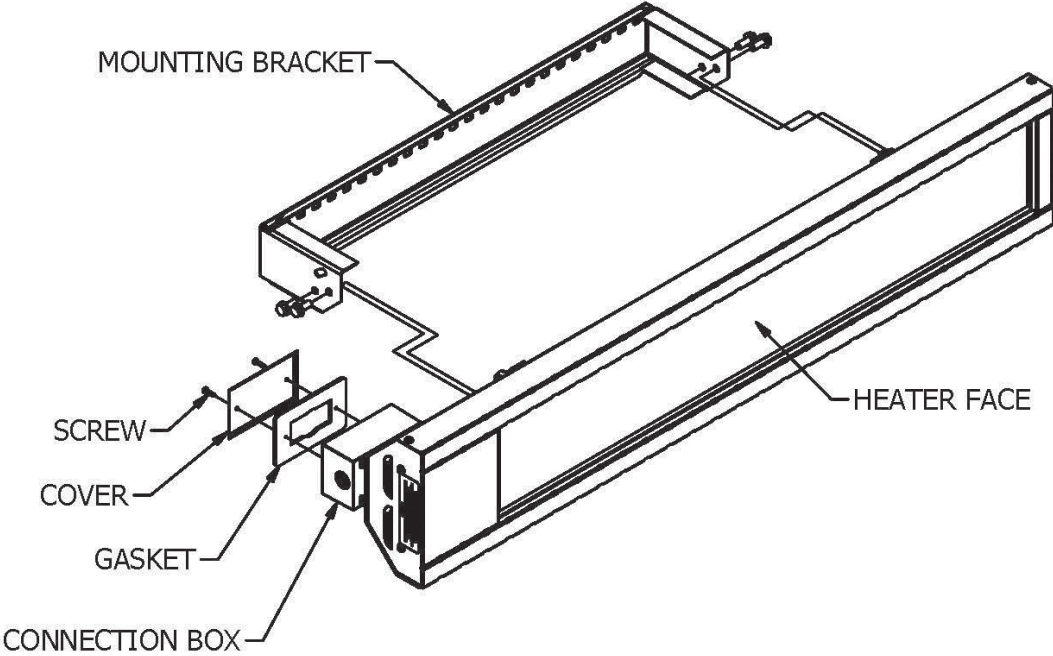
SUPPLY CONNECTIONS		
MODEL NUMBER	120 VOLT AWG. WIRE SIZE	208 / 240 VOLT AWG. WIRE SIZE
TZ18-1000U-120 TZ18-1400U-120	14	-
TZ18-1800U-120	12	-
TZ18-2200U-120	10	-
TZ36-2200U-240 TZ36-2700U-240	-	14
TZ36-3100U-240 TZ36-3600U-240	-	12
TZ36-4300U-240	-	10

To reduce the risk of fire, do not store or use gasoline other flammable vapors and liquids in the vicinity of the heater.



CAUTION – High temperature, risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 3 feet (0.9 m) from the front of the heater and away from the side and rear.

WIRING DIAGRAM



OPERATION:

IMPORTANT NOTICE

Heaters must be properly installed before use.

Do not operate heaters without all covers in place.

No user maintenance is needed for heaters. Any other servicing should be performed by authorized service personnel.

During production, the heating element of this unit may have absorbed moisture. The first time your heater is turned ON, it may smoke/steam while the moisture is released. This smoke/steam is NORMAL and not harmful. It will stop after 10-15 minutes of operation and not occur after first use.

WARRANTY

BBC Industries, Inc. warrants their products to be free from defects in workmanship at the time of shipment.

The obligation under the above warranty shall be limited to the repair or replacement of any part or parts manufactured by BBC Industries, Inc. without charge F.O.B. factory that may prove defective within 12 months from the date of shipment, which are returned to BBC Industries, Inc.

The above warranties are the only warranties made with respect to the equipment. There is no implied warranty of merchantability or of fitness.

EXCLUSIONS:

There is no warranty on parts not manufactured by BBC Industries, Inc., other than the respective manufacturer's warranty, if any.

The warranty against defects shall not extend to damage caused from any of the following:

- Transport by carrier
- Corrosion
- Operation or use in a manner inconsistent with specifications and/or operating instructions
- Ordinary wear, accident, improper installation, or maintenance
- Alterations made to equipment in any way

BBC Industries, Inc. shall not be liable for any losses or damages, including but not limited to incidental or consequential damages, suffered or incurred because the equipment proves to be defective either upon installation or during its operation or use.

Shipment of defective parts to BBC Industries, Inc. and the return shipment of any repaired or replacement parts from BBC Industries, Inc. shall be the purchaser's/user's expense.

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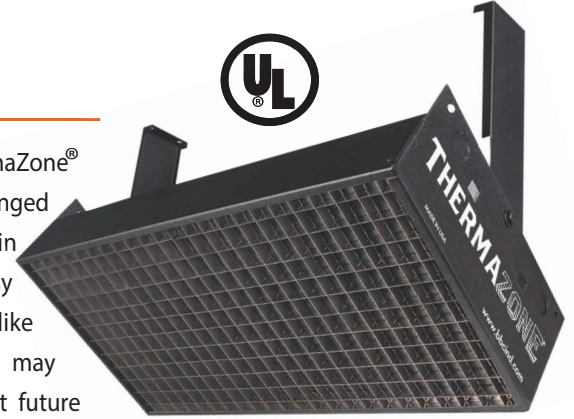
COMFORT HEATERS



Compare the ThermaZone®

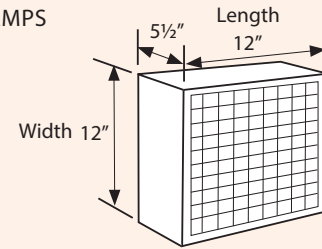
Low initial cost and simple, inexpensive installation make ThermaZone® Infrared Heaters the easy, economical solution to heating. ThermaZone® Heaters are always on the job. No moving parts to break down or bulbs or reflectors to clean or replace. Since no combustion products are discharged and no flames or noxious gases are produced, the UL-approved ThermaZone® Heaters provide safe, clean heat. And, ThermaZone® heat is efficient. One Hundred percent of all energy is converted to useful heat.

In addition, ThermaZone® Heaters can be arranged and controlled in zones. They are easy to install (much like light fixtures) and may be moved to meet future requirements.

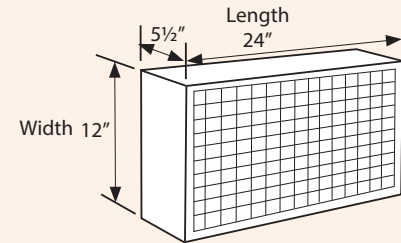


HEATER SPECIFICATIONS

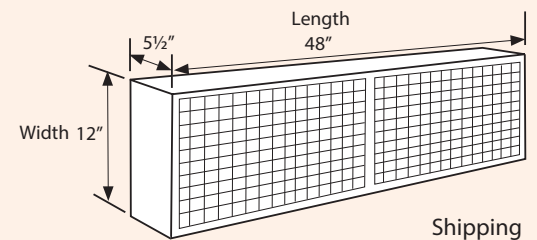
MODEL	BTU'S	WATTS	SINGLE PHASE AMPS				THREE PHASE AMPS	
			120V	240V	277V	480V	240V	480V
11-800U	2972	871	7.3					
11-1000U	3689	1081	9.0					
11-1200U	3791	1111	9.3					
11-1500U	5807/5572	1702/1633	14.2	6.8				
21-1600U	5661/5804	1659/1701	13.8	7.1				
21-2000U	7479/6828	2192/2001	18.3	8.3				
23-2000U	6811	1996					4.8	
21-2400U	7582/8285	2222/2428	18.5	10.1				
23-2400U	8350	2447					5.9	
21-3000U	11615/11052	3404/3239	28.4	13.5				
23-3000U	10400	3048					7.3	
41-3200U	11608	3402		14.2		7.1		
41-4000U	13655/13526	4002/3964/4002		16.7	14.3	8.3		
43-4000U	13580/13802	3980/4045					9.6	4.9
41-4800U	16569/16296	4856/4776/4856		20.2	17.3	10.1		
43-4800U	16395/16545	4805/4849					11.6	5.8
41-6000U	22104/20517	6478/6013/6478		27.0	21.7	13.5		
43-6000U	20933/20725	6135/6074					14.8	7.3



Shipping Weight
10 lbs.



Shipping Weight
20 lbs.



Shipping Weight
38 lbs.

Ordering Guide

Model # + Desired Voltage

Example
11-800U-120V
21-2400U-240V
43-4800U-480V



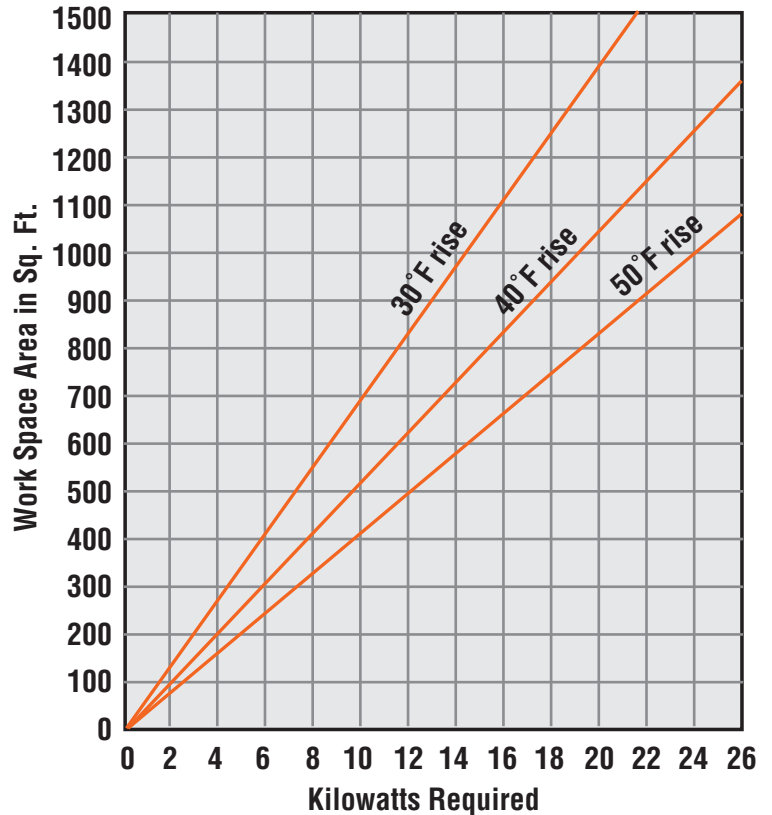
ThermaZone® Heaters

USE THE CHART AT RIGHT TO SEE HOW EFFICIENTLY THERMAZONE® HEATERS CAN HEAT YOUR WORK PLACE AND SAVE YOU MONEY.

On the graph at right, find the number of square feet of the area you want to heat. Then move straight across to the right to intersect the 30°F, 40°F or 50°F rise-in-temperature diagonal – however many degrees you want to raise the temperature of your work place. Then, by dropping down to the bottom of the chart directly below the intersection, you can see how many kilowatts are required.

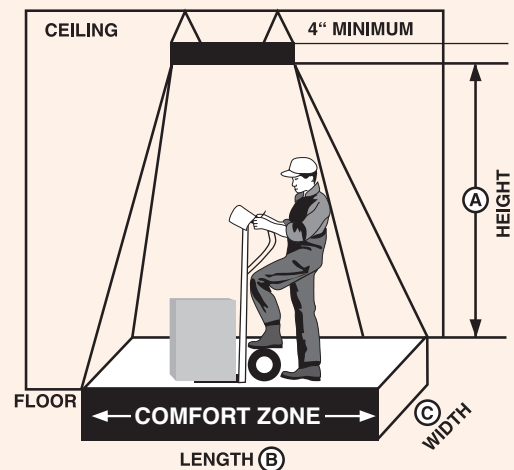
Now consult the table below to see what combinations of ThermaZone® Heaters can give you that kilowatt total.

EXAMPLE: If you want 40°F rise in temperature in a 10' x 10' room (100 sq. ft.), use one Model No. 2-2000U, or two Model No. 1-1000U heaters.



THE BLACK BODY® COMFORT ZONES

HEIGHT A	LENGTH B			WIDTH C
	Model #1 12" Length	Model #2 24" Length	Model #3 48" Length	
6 ft.	7' 10"	8' 10"	10' 10"	7' 10"
8 ft.	10' 2"	11' 2"	13' 2"	10' 2"
10 ft.	12' 6"	13' 6"	15' 6"	12' 6"
12 ft.	14' 10"	15' 10"	17' 10"	14' 10"
14 ft.	17' 2"	20' 2"	22' 2"	17' 2"



THZ021716

BBC Industries Thermazone® Infrared Heaters

The BBC Thermazone Infrared Heater is low-cost power and a simple, inexpensive installation the easiest and most economical solution to heating. Thermazone® Infrared Heaters are always on the job. With no moving parts to break down or bulbs or reflectors to clean and replace, the BBC Thermazone Infrared Heater is an exceptional directional heat source. And because there are no combustion products discharged, no flames, or noxious gases produced, the UL approved Thermazone® Infrared Heaters provide safe, clean heat.

See below for additional Thermazone® features and specifications.

Features of Thermazone® Infrared Heaters

- 95% Efficient
- No Reflectors to Clean
- Heavy Duty Construction
- Easy to Install
- Certified Long Life
- Many Sizes and Strengths
- UL Approved

Applications for Thermazone® Infrared Heaters

- Luxury Boxes at Baseball Stadium
- Retail Foyers
- Horse Barns
- Commercial Shipping Hubs
- Ostrich and Elephant Cages
- Aircraft Hangar Heating
- Open Air Coffee Bar
- Football Stadium Concession Stands
- Golf Range

[Contact Us](#) today to speak to one of our experienced BBC infrared heater professionals to discuss your specific needs!

Heater Specifications					
			SINGLE PHASE AMPS		
BBC MODEL	BTU'S	WATTS	115V	230V	460V
11-450U	1,535	450	3.91		
11-600U	2,047	600	5.22		
11-800U	2,729	800	6.96		
11-1000U	3,412	1000	8.7		
11-1200U	4,094	1200	10.44		
11-1500U	5,118	1500	13.1		
21-900U	3,070	900	7.83	3.91	
21-1200U	4,094	1200	10.5	5.22	
21-1600U	5,459	1600	13.92	6.96	
21-2000U	6,824	2000	14.4	8.7	
21-2400U	8,188	2400	20.87	10.44	
21-3000U	10,236	3000	26.09	13.1	
41-1800U	6,141	1800		7.83	3.91
41-2400U	8,188	2400		10.5	5.22
41-3200U	10,918	3200		13.92	6.96
41-4000U	13,648	4000		14.4	8.7
41-4800U	16,377	4800		20.87	10.44
41-6000U	20,472	6000		26.09	13.05