

SAVE THESE INSTRUCTIONS

INSTALLATION AND MAINTENANCE

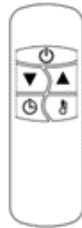


Models

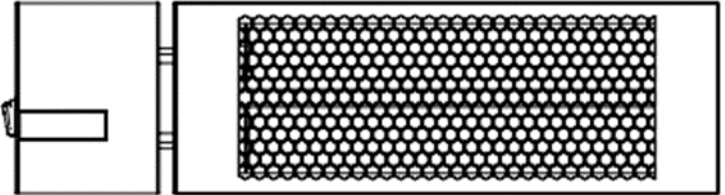
RK2045-RMT-BLK / RK2445-RMT-BLK

SmartWave

Carbon Fiber Heaters



Remote Not Available
With Certain Models



DO NOT RETURN TO STORE

If you experience any difficulties installing or operating this product,
Call us at: 206-762-0400 Option 2 or email
tech@king-electric.com / 7:00am to 3:30pm PST Mon-Fri

IMPORTANT SAFETY INSTRUCTIONS



WARNING



READ CAREFULLY - Use the heater only as described in this manual. Any other use is not recommended and could result in fire, electric shock, and personal injury. Following these instructions will prevent difficulties that might occur during the installation and use of the heater. Please study the instructions first, as they may save considerable time and trouble during use addition to providing important safety information. Make sure to save these instructions for future use.

- ⚠ WARNING** To prevent a possible electrical shock, disconnect all power coming to heater at main service panel before wiring or servicing.
- ⚠ WARNING** All wiring must be in accordance with the National Electrical Code (Canadian Electrical Code in Canada) and all applicable local codes. The heater must be grounded as a precaution against electrical shock. Supply wiring must be copper and suitable for at least 75° C.
- ⚠ WARNING** Verify power supply and control voltages coming to the heater match the ratings printed on the heater nameplate before energizing.
- ⚠ WARNING** Heater must be installed so the minimum clearances shown in Specifications table are maintained.
- ⚠ WARNING** This heater is NOT suitable for use in hazardous locations as described by the National Fire Protection Association (NFPA). this heater has hot and arcing or sparking parts inside. DO NOT use in areas where gasoline, paint or other flammable liquids are used or stored.
- ⚠ WARNING** The mounting structure and anchoring hardware MUST BE capable of reliably supporting the weight of the heater plus mounting bracket if used. Refer to specifications table for heater weight.
- ⚠ WARNING** To prevent a possible fire, DO NOT block air intakes or exhaust openings in any manner. DO NOT allow foreign objects to enter grill openings as this may cause electric shock, fire or damage to heater.



CAUTION—RISK OF ELECTRIC SHOCK

DO NOT OPEN HEATER SHELL -NO USER—SERVICEABLE PARTS INSIDE

FOR RESIDENTIAL & COMMERCIAL USE

RATED FOR INDOOR OR WELL PROTECTED OUTDOOR AREAS.



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IMPORTANT SAFETY INSTRUCTIONS

READ CAREFULLY—The infrared heater is designed for safe operation. Nevertheless, installation, maintenance and operation of the heater can be dangerous. Observing the following procedures will reduce the risk of fire, electric shock, injury to persons and keep installation time to a minimum. Save these instructions for future use.

1. Read all instruction before using this heater.
2. Remove the unit from its packaging and check to make sure it is in good condition before using.
3. Do not let children play with parts of package (such as plastic bags).
4. Check the household voltage to ensure it matches the heater's rated specification.
5. **WARNING: RISK OF FIRE**—Keep combustible materials, such as furniture, paper, clothes, and curtains at least 3 feet (0.9 m) from the front of the heater and away from the sides and rear.
6. Do not install closer than 19.7" (0.5 m) inches to a vertical or horizontal surface. **CAUTION:** Mount with bottom of heater at least 7.9 feet (2.4 m) above floor or grade.
7. Use Copper Wire Only.
8. Extreme caution is necessary when heater is used by or near children or invalids and whenever the heater is left operating and unattended.
9. Do not use near or in the immediate vicinity of a bath or swimming pool or any source of liquid.
10. To protect against electric shock, do not immerse in water or any other liquid.
11. Do not insert or allow foreign objects to enter any ventilation or exhaust opening, as this may cause an electric shock, fire or damage.
12. Do not put fingers or foreign objects into the grill while in operation.
13. Do not leave the appliance unattended when in use.
14. This heater is not intended for use in bathrooms, laundry and similar indoor locations. Never locate heater where it may fall into a bathtub or other water container.
15. No liability can be accepted for any damage caused by non compliance with instructions or any improper use or mishandling.
16. This appliance is not intended for use by persons (including children) with reduces physical, sensory or mental capabilities or lack of experience and knowledge. Supervision is to ensure they do not play with the appliance.
17. No liability can be accepted for any damage caused by non compliance with these instructions or any other improper use or mishandling.
18. This appliance is not intended for use by persons (including children) with reduces physical, sensory or mental capabilities or lack of experience and knowledge. Supervision is to ensure they do not play with the appliance.
19. 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.
20. To disconnect heater, turn controls to off, and turn off power to heater circuit at main disconnect Panel.
21. To prevent overheating of this appliance, keep the air inlets and outlets clean and free of anything that may cause blockage. Check all inlets and outlets from time to time to ensure it is clear of any dirt or dust accumulation. **DO NOT COVER.** To prevent a possible fire, do not block air intakes or exhaust in any manner.
22. A heater has hot and arcing or sparking parts inside. To reduce the risk of fire, do not use it in areas where gasoline, paint, or flammable liquids are used or stored.
23. Parts of the heater may exceed 392F. Contact with the heating tube, reflector, or metal parts near the heating tube, may cause severe BURNS. Do not touch heater when in use.
24. **NEVER** place hands under the heating elements. **ALWAYS** allow heating element to cool at least 10 minutes before touching the heating tube or adjacent parts.
25. This product contains recyclable materials. Do not dispose this product as unsorted municipal waste. Please contact your local municipality for the nearest collection point.

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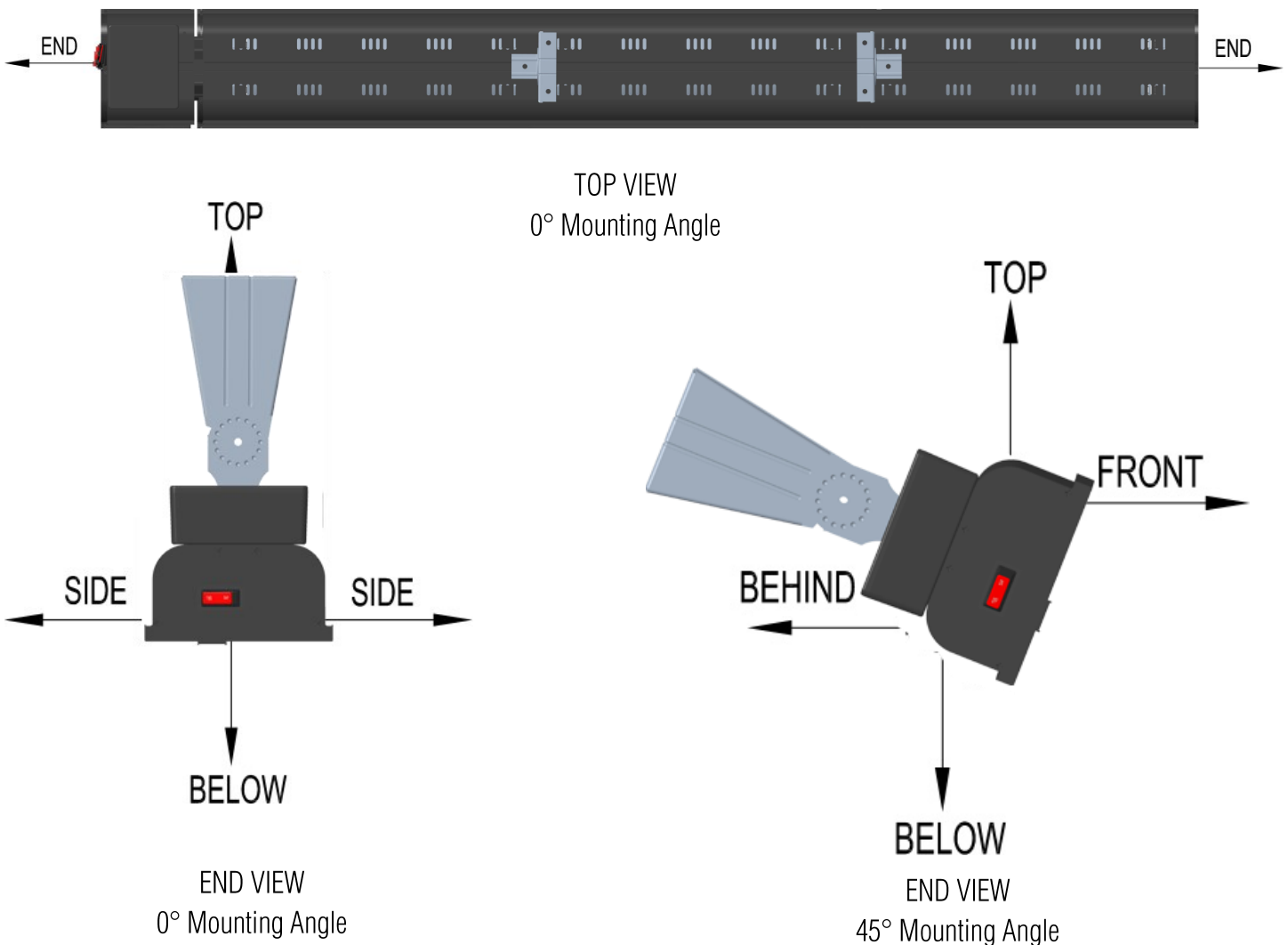
MINIMUM CLEARANCES TO COMBUSTIBLES

Minimum Clearances to Combustibles in Inches

Mounting Angle	[-----Side-----]		End	Top	Below	Min. Mtg. Height
	Front	Behind				
0°	1'7"	1'7"	1'7"	9.4"	7'9"	7'9"
45°	3'3"	6.5"	1'7"	1'7"	7'9"	7'9"

NOTE: Ensure that building materials with a low heat tolerance (i.e., awnings, fabrics, plastics, sprinklers, insulation, etc.) are protected against degradation. This may require the heater to be mounted at a distance in excess of the published clearances to combustibles. Contact the material manufacturer for specific details of safe temperatures.

Clearances to Combustibles Figure 1



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INSTALLATION

Heating Application Chart

Series	Heater Wattage	Lamp Quantity	Minimum Mounting Height (Ft)	Recommended Mounting Height [Dim. A]	Recommended Distance Between Heaters (Ft)* [Dim. B]
RK	4500W	3	10'5"	10'6" to 11'6"	9' to 18'

NOTE: Minimum Clearances to combustibles published in this manual and on safety labels must be maintained at all times. Factory recommended mounting heights are listed as a guideline. If infrared heaters are mounted too low or too high, they may result in discomfort or lack of heat.

Test surrounding materials to verify that nothing is getting hotter than expected.

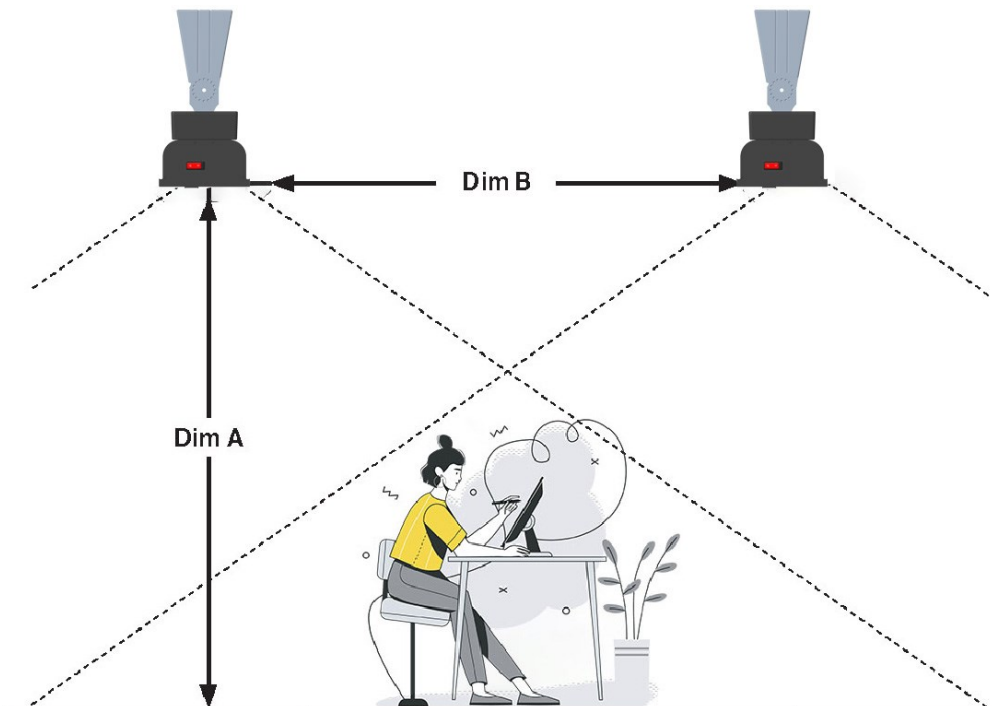
Coverage Area Chart

Series	Heater Wattage	Lamp Quantity	AVERAGE Coverage Of Heater Length X Width (Ft.)	*COLD/WINDY Coverage Of Heater Length X Width (Ft.)	**PROTECTED Coverage Of Heater Length X Width (Ft.)
RK	4500W	3	10' x 10'	8' x 8'	12' x 12'

NOTES: *Heaters can provide less than average coverage in extremely cold/windy conditions.

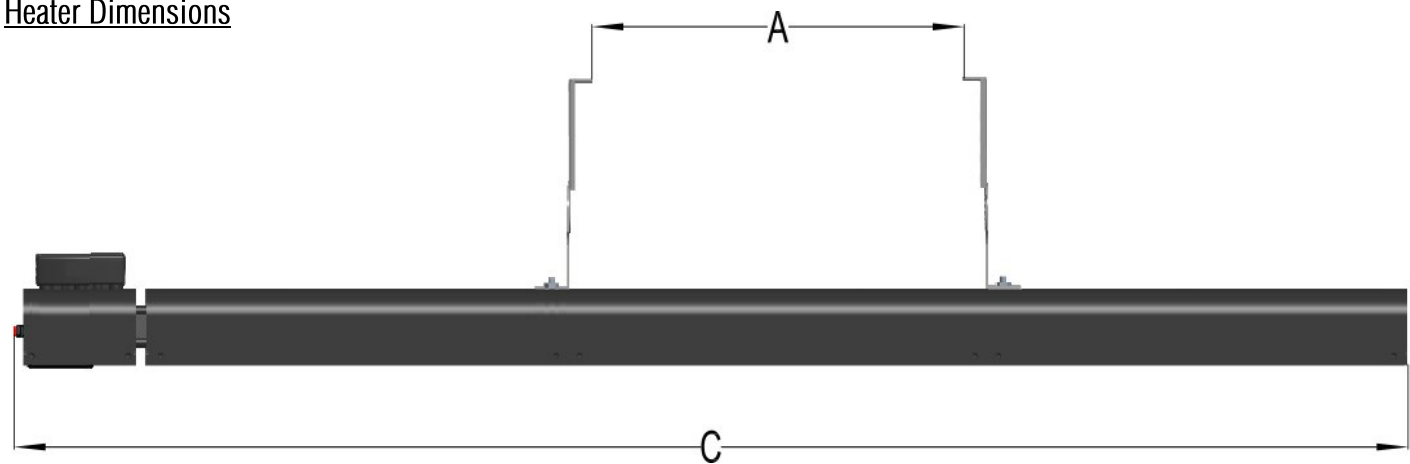
**Indoor or well-protected environments will generally exceed average coverage areas.

Heating Application Diagram



INSTALLATION

Heater Dimensions

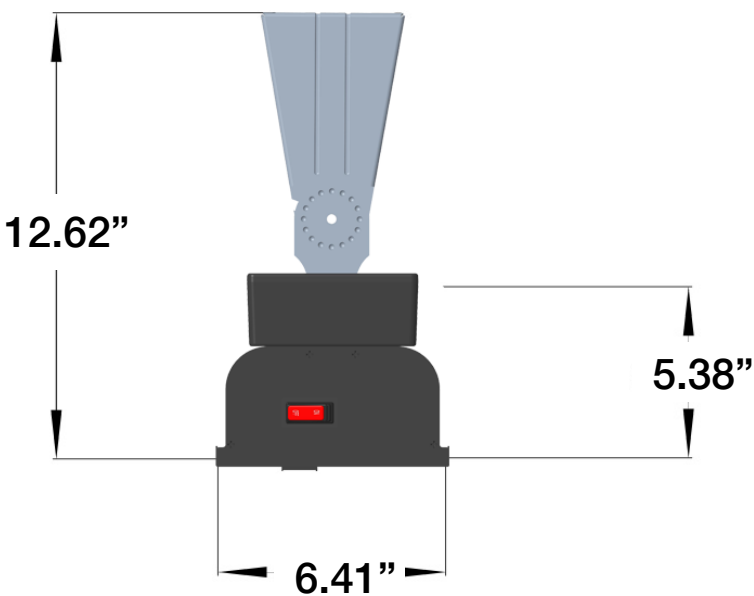


Mount Heater Level
-End to End-

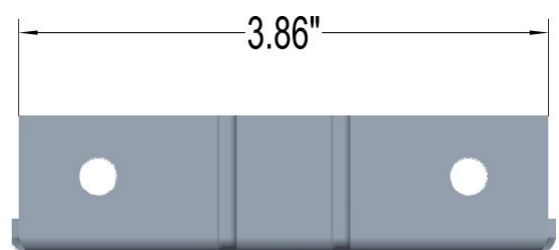


Series	A	C
RK - 1 Lamp	7.5" - 8.25"	24"
RK - 2 Lamps	13.4" - 14.2"	42.3"
RK - 3 Lamps	19.7" - 20.5"	60.7"

Heater Dimensions



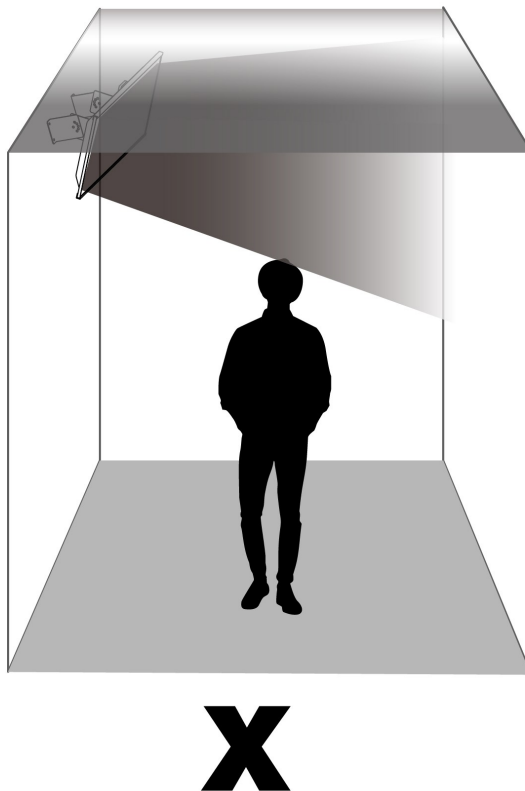
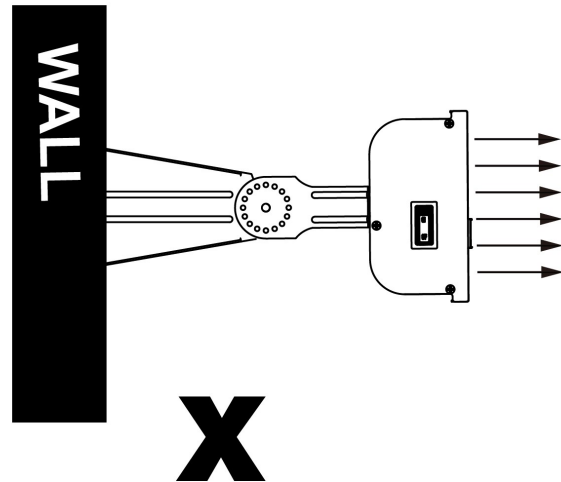
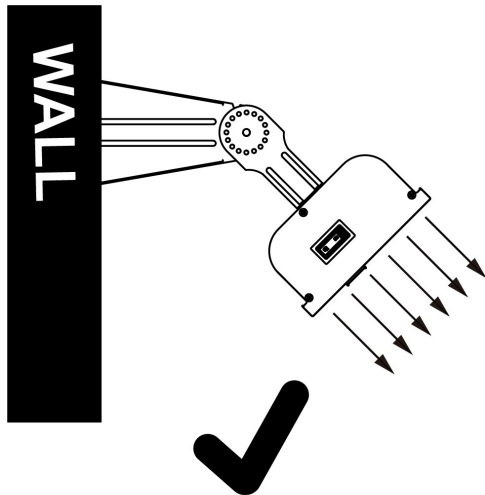
Mounting Bracket Dimensions



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IMPORTANT SAFETY INSTRUCTIONS

Correct Installation Position - 01

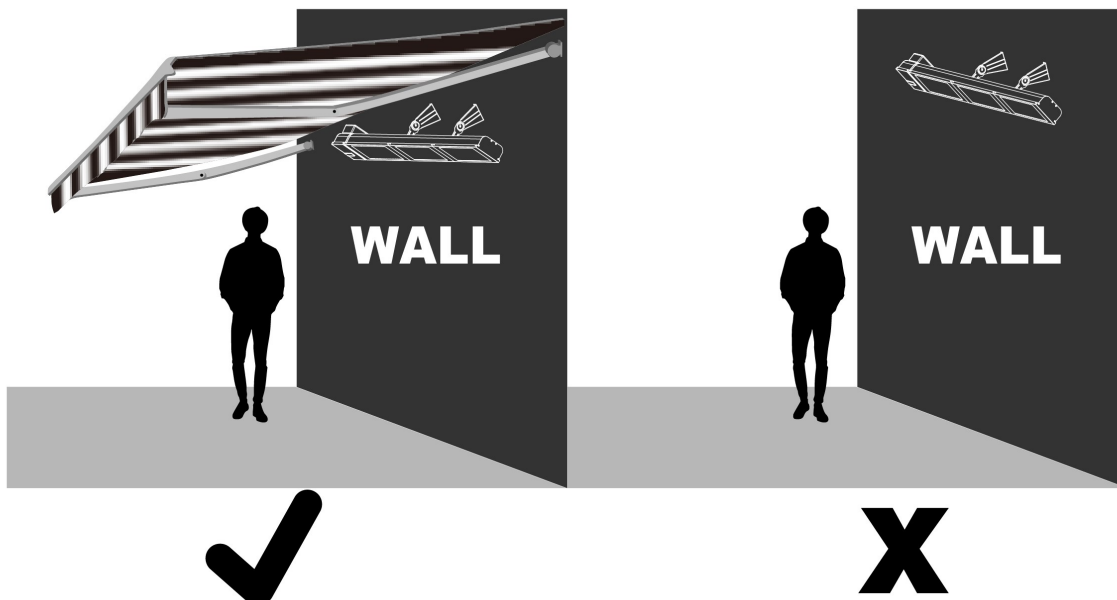


Note: Mounted angle with 30° - 45 °.

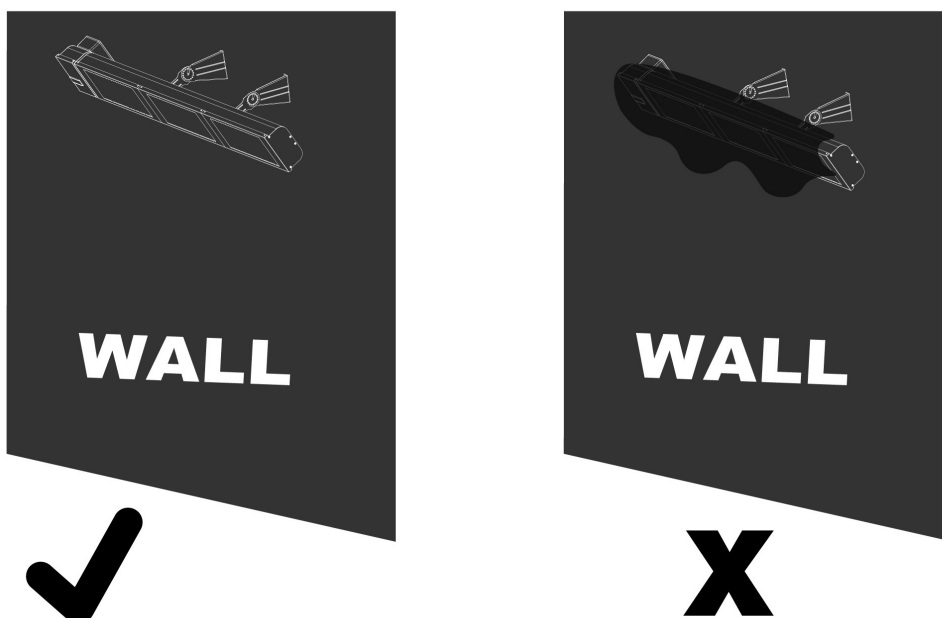
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IMPORTANT SAFETY INSTRUCTIONS

Correct Installation Position - 02



Note: Heater should be wall or ceiling mounted under well protected environments, at least keep 3feet (0.9m) away from any combustible objects.



Note: Do not cover.

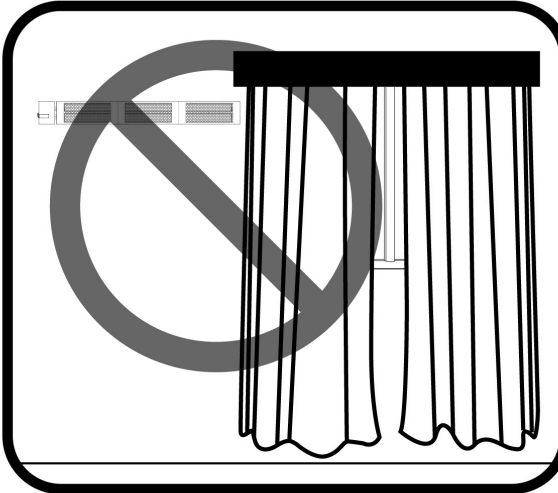
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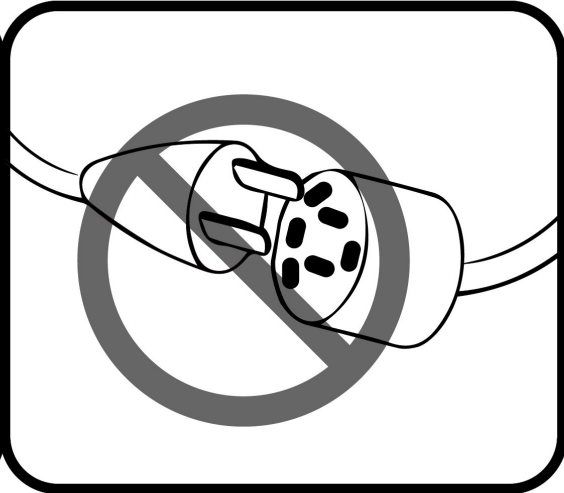
WARNING



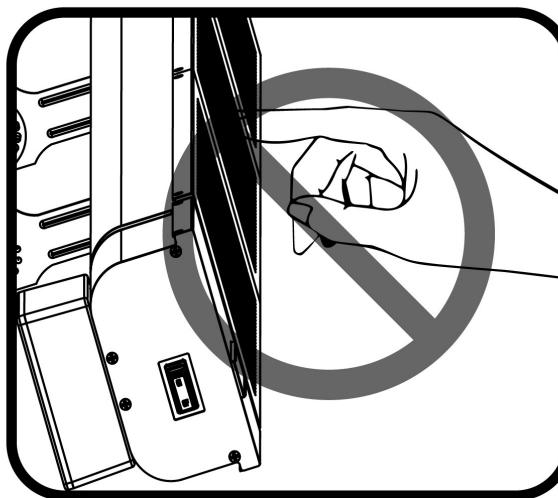
Warning - to reduce the risk of fire



Caution: Keep combustible materials, such as furniture, pillows, curtains at least 3feet (0.9m) from the front of the heater and keep them away from the sides and rear.



Caution: Do NOT use with an extension cord or relocatable power tap (outlet/power strip).



Caution: Hot surface, do NOT touch.



Caution: Do NOT cover with any objects such as blanket on the heater.

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MODEL CHART

King Model	Volts	Phase	Wattage	Lamps	Amps	Accessory	Circuit Size	Product Size	Wt. (LBs)
RK2045-RMT-BLK	208	1	4500	3	21.6	Remote Control	Use only on 30 Ampere Branch Circuit	60.75" x 6.5" x 5.25"	14
RK2445-RMT-BLK	240	1	4500	3	18.8	Remote Control	Use only on 25 Ampere Branch Circuit		

INSTALLATION INSTRUCTIONS

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

To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater. Wiring procedures and connections shall be in accordance with the national and local codes having jurisdiction.

TOOLS NEEDED-

Pencil, Hammer, Level, Screw-Driver, Power Drill & Drill Bits

A wall mounting bracket is provide with the heater which has been specifically designed to allow this product to be secured to a wall or a ceiling. Before drilling any holes, check that the wall or ceiling is solid and that there are no hidden water pipes or electric wires. The heater must be installed no less than 1'7" from side walls and no less than 7'9" off the floor.

Caution: Select appropriate mounting bolts and anchors for your application.

ATTENTION! The appliance must be installed on the solid surfaces like concrete, wood or metal etc.

Important: Ensure that the supply cable is well secured and that it does not come into contact with reflector of the heater or that it does not lay inside the heated area. The supply cable can be fixed to the metal mounting bracket behind heater with plastic zip ties.

1. This heater should be installed by a competent person, i.e. a qualified electrician.
2. Always disconnected the heater from the electricity supply and allow it to cool before installation.
3. For ceiling mounting, the lowest part of the heater must be located at or above a minimum height of 7'9" from ground level, so that the heater can not be touched when in operation.
4. For ceiling mounting, there must be a 7'9" distance from your appliance to the ground.
5. When mounted to the ceiling, there must be a distance of 1'7" between side walls and the appliance.

6. Always maintain a minimum distance of 3'3" from the appliance to people.

7. The distance from the front side of the heater to materials such as wood, carton, cloth etc., must be a minimum of 3'3".

8. When mounting to a ceiling, do not position the heater at an angle more than 90° or less than 45°.

9. The supply cable must be at the lower end of the heater if the heater is installed at an angle.

10. Keep the supply cord away from the body of the heater which will get hot during use.

11. Do not install the heater on an flammable surface.

12. Observe the minimum safe distance between the heater body and flammable surfaces when mounted.

13. The heater should always have a minimum clearance of 1'7" from a ceiling and adjacent walls.

14. If the heater is to be used outside, a weatherproof outlet is recommended.

15. Before drilling ensure that there are no wires or water pipes in the area where the heater is to be installed.

16. The heater must be installed on the mounting brackets provided.

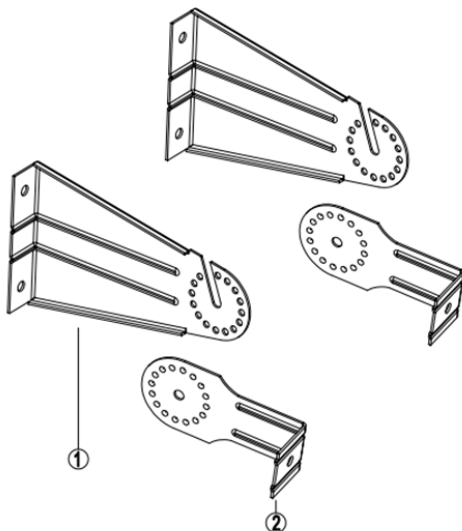
17. Fasten the brackets securely to the mounting surface and the backside of the heater using the nuts and screws supplied.

18. Fasten the heater securely on the brackets using the nuts and

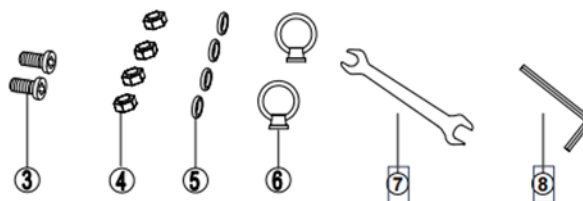
RATED FOR INDOOR OR WELL PROTECTED OUTDOOR AREAS.

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INSTALLATION ACCESSORIES LIST



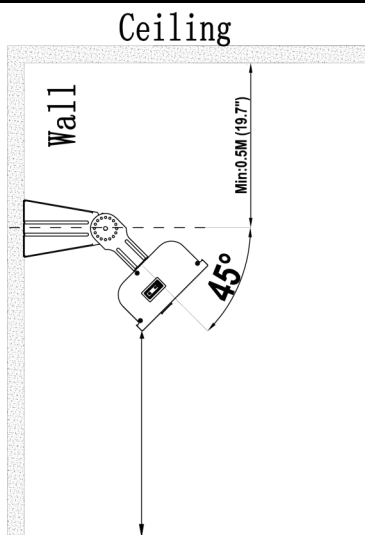
1	Bracket - Large	L shape	2 PCS
2	Bracket - Small	L shape	2 PCS
3	Bolt	M6mm*12mm	2 PCS
4	Nut	M6	4 PCS
5	Washer		4 PCS
6	Eye Nut	M6	2 PCS
7	Crescent Wrench		1 PC
8	Allen- Hex Key		1 PC



ATTENTION!

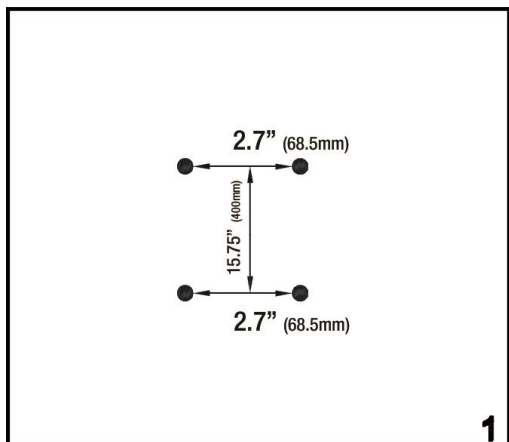
1. Always disconnect the heater from the electricity supply and allow it to cool before attempting to work on it.
2. If the heater has collected dust or dirt inside the unit or around the heating element, have to unit cleaned by a qualified service agent.
3. The only maintenance required is cleaning of the external surfaces of the heater.
4. Do not touch the heating element with bare fingers, as residue from your hand could affect the life of the lamp.
If it is accidentally touched, remove the finger marks with a soft cloth moistened with mentholated spirit or alcohol.
5. Do not attempt to repair or adjust any electrical or mechanical functions on this heater.
6. The heater contains no user serviceable parts. Should the product suffer damage or breakdown, contact manufacturer.
7. Damaged supply cords to be replaced by the manufacturer, service agent or similarly qualified person in order to avoid hazard.
8. The heater must be properly installed before it is used.

WALL MOUNT GUIDE

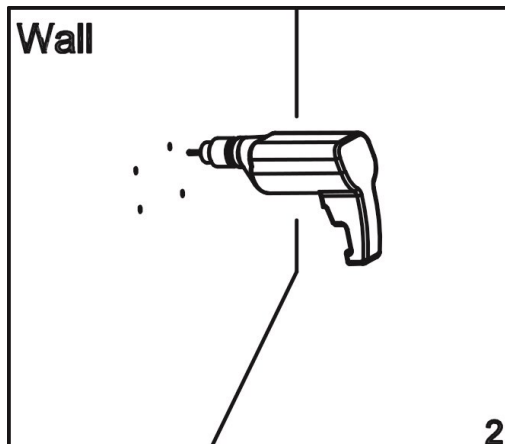


CAUTION: Select the suitable screw according to the heater weight/different model. Angle of reflector no more than 45°. The heater must be installed at least 7'9" above the floor.

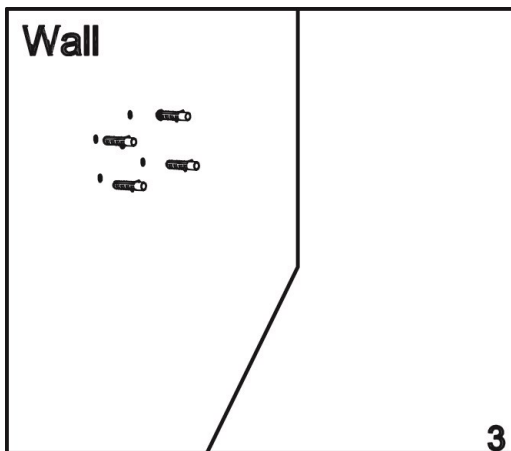
WALL MOUNT INSTALLATION STEPS



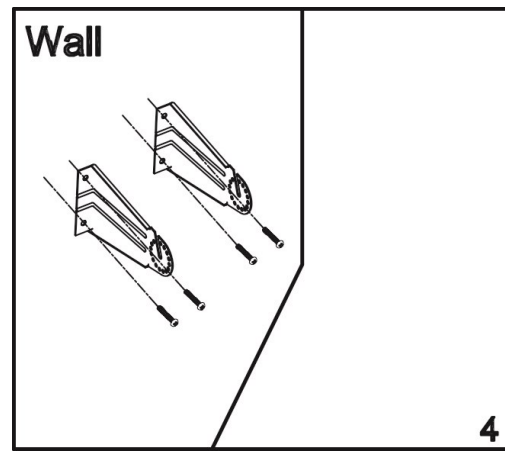
Step 1: Mark hole locations on the mounting surface with spacing as shown.



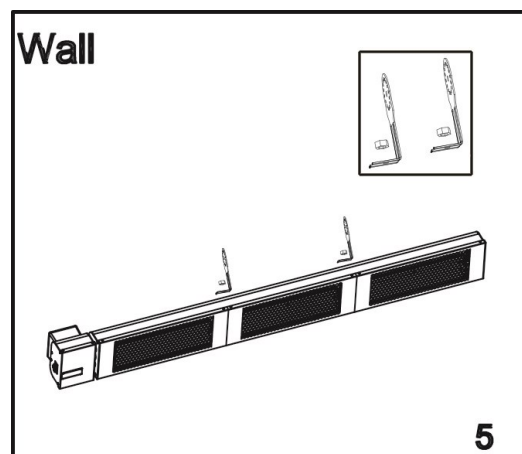
Step 2: Select fasteners and anchors of appropriate type sufficient for your specific wall type (Not provided). Drill holes on your indicator marks.



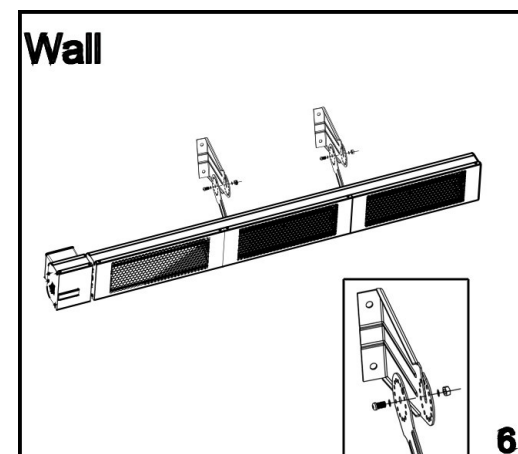
Step 3: Insert wall anchors into holes.



Step 4: Secure wall brackets to wall using 2 screws each. Make sure fasteners are suitable for your application.



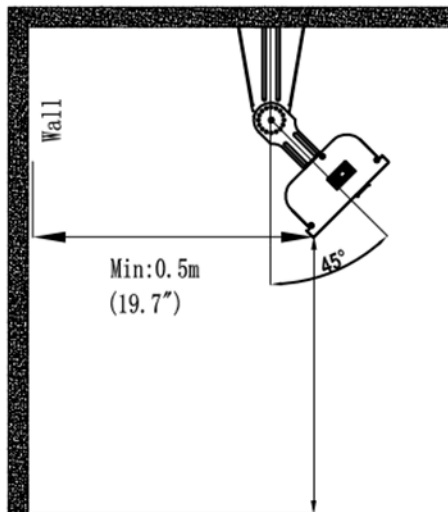
Step 5: Secure small brackets to heater using the supplied Eye Nuts. Then insert a bolt through hole in each small bracket and begin threading a nut onto end with a few threads of engagement.



Step 6: Hang heater onto wall mounted brackets by inserting the bolts through the vertical slot in the bracket and then tighten nuts completely to secure in place at the desired angle.

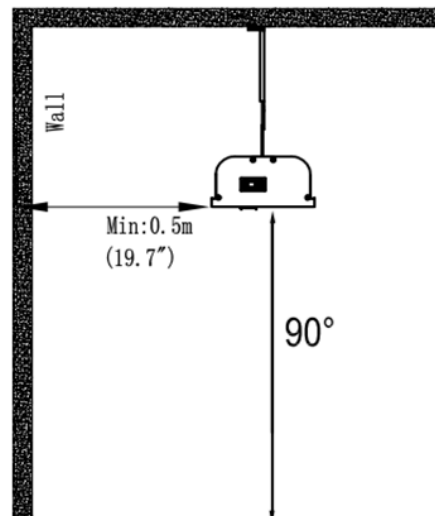
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CEILING MOUNT GUIDE



CAUTION: Select the suitable screw according to the heater weight/different model.

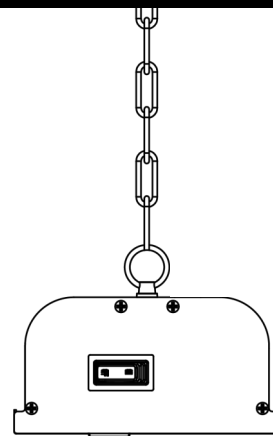
The heater must be installed at least 7'9" above the floor grade



CHAIN MOUNT INSTALLATION

1. Use only noncombustible materials for suspending hangers and brackets.
2. A minimum No. 2 chain with a working load limit of 115 lbs. is required.
3. Secure chain to heater using the provided eye nuts as attachment points.
4. Heaters must not be supported by electric supply lines and must be suspended from a permanent structure with adequate load capacity.

CAUTION: Select the suitable screw according to the heater weight/different model. The heater must be installed at least 7'9" above the floor grade



INSTALLATION INSTRUCTIONS

This heater must be permanently installed and hard wired by a licensed electrician in accordance with local electrical codes. Assembly procedure must be performed with no electrical power to unit.

Step 1: Check UL/CUL label on heater for proper voltage.

Step 2: Follow supplied wiring instructions. (See wiring instructions below)

Step 3: Heater must be mounted with reflector angled down.

Step 4: All electrical connections must be in compliance with the National Electric Code (NEC) and local codes for outdoor wiring.

Step 5: Use only wiring components UL/CUL listed for outdoor use with IPX4 minimum rating.

WIRING INSTRUCTIONS

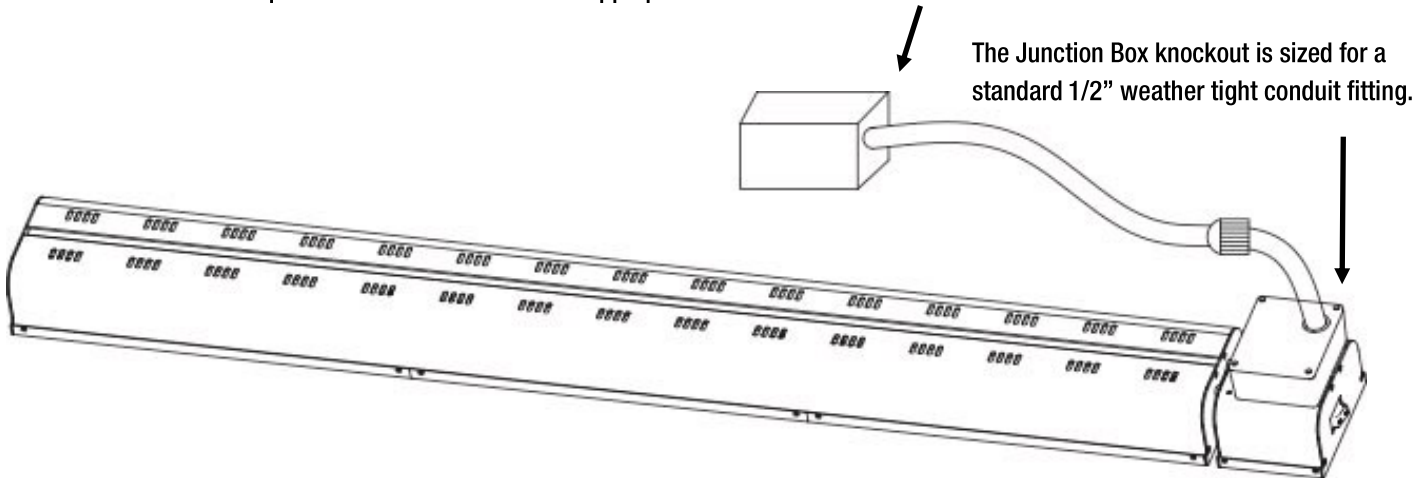
The heater has provisions for standard 1/2" conduit fittings. The installing electrician will need to provide the appropriate rigid metallic, flexible or liquid tight conduit for the installation location.

- Observe local electrical code regulations.
- Remove cover plate from junction box.
- An Additional junction box may be required if more space is needed.
- Attach conduit.
- Use only copper wire suitable for 90°C.
- Replace cover plate.

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INSTALLATION INSTRUCTIONS

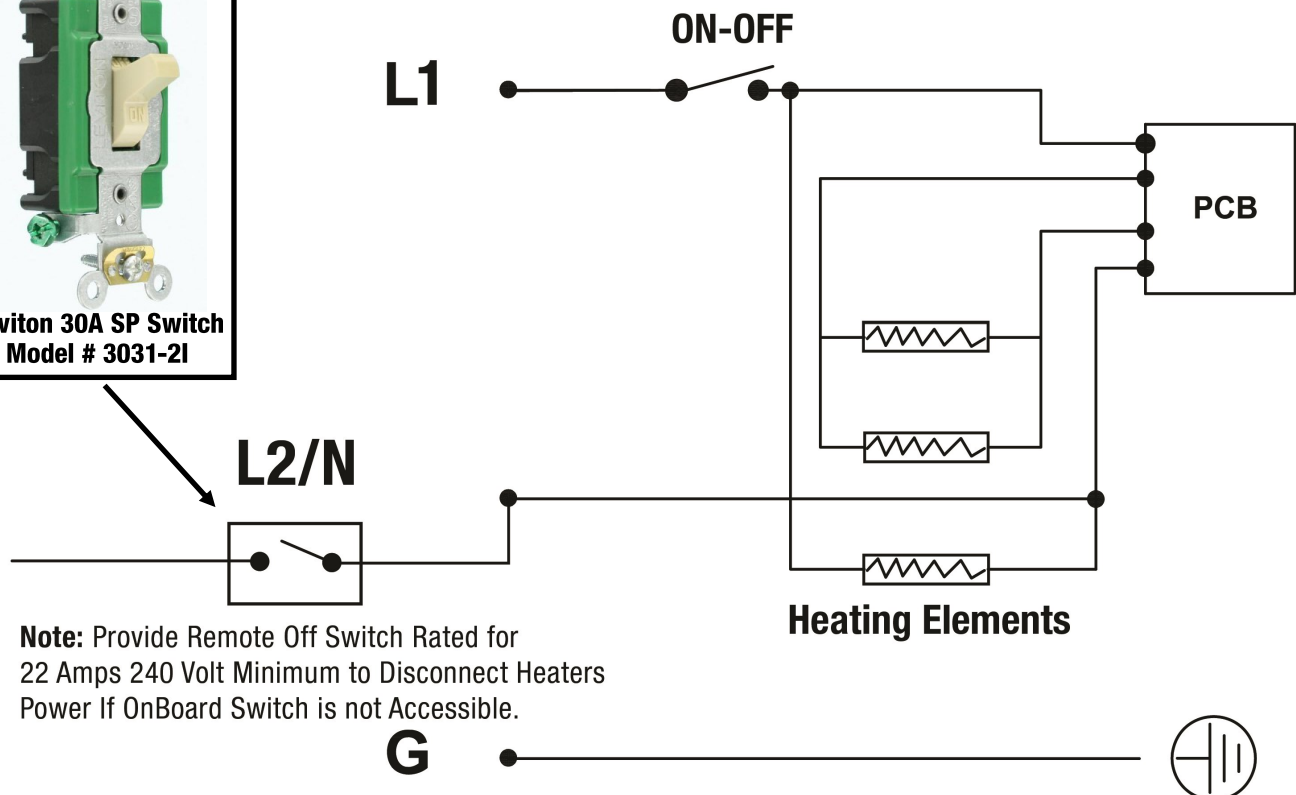
Connect power with flexible conduit or appropriate cord to allow heater to be swiveled.



NOTE: You maybe required to add an additional junction box to the wiring box if additional wires are installed.

WIRING DIAGRAMS

NOTE: If heater will be mounted high out of reach, it is recommended to install a Single-Pole Remote Wall Switch (Rated 22A minimum) to cut power to the heater as needed. 30A switches are most common.



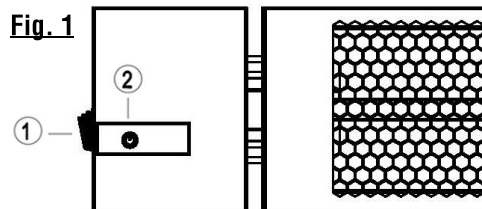
OPERATING INSTRUCTIONS

Note: This heater offers Low, Medium and High heat levels. The Low Heat setting is controlled by the On/Off switch on the side of the heater housing. To turn unit completely off, this switch will need to be set to OFF position. If heater is mounted high out of reach, it is recommended to install a Single-Pole Remote Wall Switch (Rated minimum 22A) to cut power to the heater as needed.

Heater Onboard Control Functions: (Fig. 1)

1. **POWER SWITCH:** Turns On/Off Center Lamp = LOW/1500W; display shows (- -);
2. **FUNCTION BUTTON:** Press to select Heat Levels (MEDIUM/L1 = 3000W - HIGH/L2=4500W)

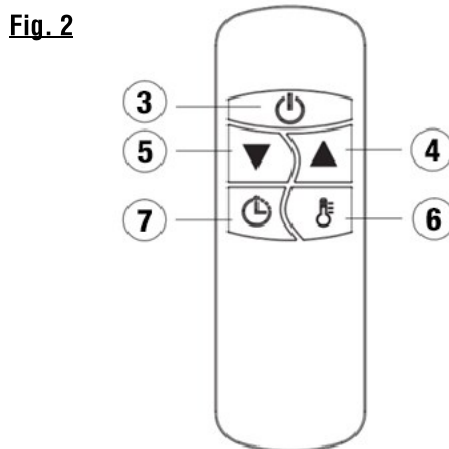
NOTE: If heater is mounted out of reach, install a Single Pole Remote Wall Switch (Rated 22A minimum) to cut power to the heater as needed. See Wiring Diagram on page 13.



Remote Control Functions (Fig. 2)

3. **POWER BUTTON:** Turns ON Electronic Controller
4. **UP BUTTON:** Increases Heat level. MEDIUM/L1 = 3000W - HIGH/L2=4500W
5. **DOWN BUTTON:** Decreases Heat level. MEDIUM/L1 = 3000W - HIGH/L2=4500W
6. **HEAT LEVEL BUTTON:** Switches unit to Heat Mode (when in Timer Mode)
7. **TIMER BUTTON:** Press button to set the timer from 0H - 24H to select the number of hours it will run. (0H) will show on display. Then adjust to the number of hours you would like to set, using the Up and Down buttons. **Note: When timer expires, only the 2 outside lamps will turn off. 1500W will remain on until Power Switch (1) is turned OFF.**

Noted: The heaters and remote controls have the same frequency, so it is possible to control several heaters with just one remote.



General Operating Instructions

Step #1: Turn POWER SWITCH (1) on Heater ON to turn on Center Lamp = **LOW/1500W**

NOTE: If Remote Wall Switch is Installed make sure it is set to ON.

Step #2: Press POWER BUTTON (3) on Remote to turn ON electronic controller.

Step #3: Press UP BUTTON (4) to switch **MEDIUM/L1 = 3000W Total**

Step #4: Press UP BUTTON (4) to switch **HIGH/L2 = 4500W Total**

SELECTION	LEVEL	DISPLAY SHOWS	WATTS
Power Switch (1) On Heater	Low	- -	1500W
Up Button On Remote (L1)	Medium	L1	3000W
Up Button On Remote (L2)	High	L2	4500W

INSERTING BATTERIES IN REMOTE

Insert 2 AAA/ Alkaline type batteries into your remote control

1. Flip to the backside of your remote control and pull off the battery cover. Insert the batteries in accordance with the instructions and polarity of the batteries.
2. Change the batteries in the same way depicted above.

NOTICE: Replace old batteries with the same battery type. Otherwise, your heater may not function well. Remove batteries when heater is not used for long periods of time to prevent leakage which may damage the remote. Do not allow water or liquids to get into the remote control.

CAUTION:

When the appliance is not operated for a long period of time, when cleaning or maintenance is conducted or when the location of the heater is changed, the heater should be turned to OFF and unplugged from the electrical connection.

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TROUBLE SHOOTING

1. Check and verify the power at the main circuit breaker functioning correctly.
 2. Error code shows on display
- E1 Error on display: Control unit overheated. Cool down the heater for 1 hour and then restart heater.
- L1,2 shows in display, but no heat: Bulb is damaged. Arrange for replacement bulb with local Dealer.

MAINTENANCE

ATTENTION! Careful and regular maintenance of your heater is important to achieve long, efficient operation of your appliance.

Except below, all other servicing should be performed by a qualified service professional.

1. Before maintenance is performed, make sure the power has been turned off at the circuit breaker panel and the heating elements are cool.
2. Check the Reflector and IR-Filament at least once a month. If cleaning is necessary, follow the below cleaning and maintenance instructions.
3. Check more frequently if the unit is installed in a dusty environment.
4. Visually inspect the Reflector, Wire and Frame for any damage while cleaning the appliance.
5. Check the Power Cord and Plug visually while cleaning the appliance. In case of deformation, consult to your technical service.

CLEANING

Regular and careful cleaning helps your infrared heater operate efficiently for many years of trouble-free operation. To clean your heater follow steps below:

1. Before cleaning, make sure the power has been turned off at the circuit breaker panel and the heating elements of the heater are cool.
2. Make sure the heater is cool before continuing.
3. To keep the heater clean, the outer shell maybe cleaned with a soft, damp cloth. You may use a mild detergent if necessary. After cleaning, dry the unit with a soft cloth. (CAUTION: DO NOT let liquids enter the heater).
4. DO NOT use alcohol, gasoline, abrasive powders, furniture polish or rough brushes to clean the heater. This may cause damage or deterioration to the surface of the heater.
5. DO NOT immerse the heater in water
6. Wait until the heater is completely dry before use.

Storage: Store the heater in a cool, dry location when not in use to prevent dust and dirt build up. Use packaging carton to store.

RECYCLING

At the end of the electrical products useful life it should not be disposed of with household waste.
Please recycle at an appropriate recycling center.