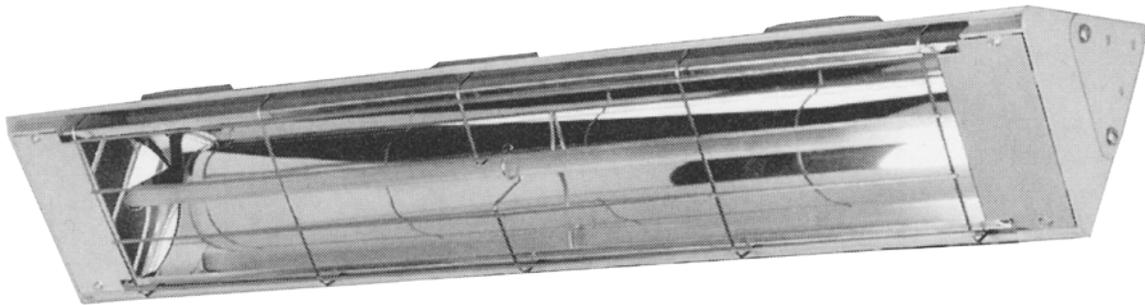


Quartzone™

Infrared Quartz Tube & Metal Sheathed Electric Heaters

Owner's Manual



**COMFORT HEATERS
for
INDOOR* and OUTDOOR** USE**

*Excluding Residences

** With Quartz Elements and when mounted Underneath an Overhang by means of brackets out of the reach of persons.

This manual covers installation, operation and maintenance instructions. Read carefully before attempting to install, operate or service.



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SAVE THESE INSTRUCTIONS



IMPORTANT INSTRUCTIONS



Read Carefully - Installation and maintenance personnel should familiarize themselves with this manual as it contains vital information for the proper installation, efficient operation and maintenance of the heater described. Failure to follow these **IMPORTANT INSTRUCTIONS** could result in fire, electric shock and injury to persons.

READ ALL INSTRUCTIONS BEFORE INSTALLING OR USING THIS HEATER



RISK OF FIRE / EXPLOSION

Electric Heaters are capable of developing high temperatures and may contain arcing or sparking electrical components. Extreme care should be taken:

1. Risk of Fire and Explosion: This heater must not be used in a hazardous location with any flammable or explosive properties. Do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater.
For details on the particular hazardous environments having the potential for explosion, refer to Articles 500 through 516 of the National Electrical Code, and/or Section 18 of the Canadian Electrical Code Part I.
2. Avoid direct contact between heaters and combustible materials. Keep combustible materials such as furniture, pillows, bedding, papers, clothes and curtains far enough away to be free of the effects of high temperature. Spacing should be at least
3. 36" (914mm) from the face of the heater or 12 inches (305mm) from any other part of the heater.
3. Installation minimum mounting clearances specified both on heater nameplate and in this owner's manual must be maintained.
4. Heater must not be recessed.
5. This heater has been evaluated by UL for outdoor use only if mounted underneath an overhang using a quartz heating element
6. Risk of Fire. For commercial and Industrial use only. Do not use as a residential or household heater.



RISK OF ELECTRIC SHOCK

Electric Heaters are appliances where potentially lethal voltages are present. Extreme care should be taken in the installation, operation and maintenance

1. This Heater must be installed by qualified personnel. Wiring procedures and connections shall be in accordance with the national and local codes having jurisdiction. It is the responsibility of the installer to verify the safety and suitability of the installation.
2. Hazard of Electric Shock. Heater must be grounded in accordance with the National Electric Code (N.E.C) and/or the Canadian Electric Code (C.E.C).
3. To disconnect heater, turn controls to off and turn off power to heater circuit at main disconnect panel.
4. Use this heater only as described in this manual. Any other use is not recommended by the manufacturer and may result in fire, electric shock or personal injury.
5. Keep wiring and end reflector covers tightly closed while in operation.
6. Do not operate this heater after a malfunction. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.



RISK OF RISK OF INJURY / BURN

Heater MUST be securely fastened to the building structure to prevent it from falling. It is the responsibility of the installer to verify the safety and suitability of the installation.

1. Installation minimum mounting clearances specified both on heater nameplate and in this owner's manual must be maintained.
2. Do not operate this heater after a malfunction. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
3. Do not insert foreign objects into the heater as this may result in fire, electric shock, personal injury or heater damage.
4. The heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces.
5. **SAVE THESE INSTRUCTIONS.**

INSTALLATION



RISK OF FIRE / EXPLOSION

- This heater should not be used in potentially explosive atmospheres. Do not use in areas where gasoline, paint or flammable liquids are used or stored.
- Keep electrical cords, drapery, furnishings, insulation and other combustibles at least 3 feet (0.9m) from the front of the heater and away from the sides, rear and top.
- Installation minimum clearances specified both on the heater nameplate and in the owner's manual must be maintained.
- Do not use as a residential or household heater.

These infrared heaters are designed for comfort heating. They are to be permanently mounted to the wall or ceiling with the fixture directed to the area to be heated. The unit is designed to give years of safe, trouble-free operation when properly installed, operated and maintained.

A. Site Selection:

The supporting structure where the heater is attached must have adequate strength to safely support the heater. This heater has been evaluated by UL for outdoor use only if mounted underneath an overhang using a quartz tube heating element. The heaters should not be mounted close to insulation, drapery or similar materials which could come in contact with the cabinet or heater guard. The heaters are intended for elevated mounting locations so that they radiate down to the floor area. A mounting height should be selected so that the heater has adequate clearance to moving equipment and personnel, yet low enough to deliver heat to the selected area. For heater weights and minimum clearances, see tables 3 & 4:

TABLE 3:

Fixture	Length	Max Watts	Weight
1154	36" (914mm)	2000	10 lbs (4.5kg)
1154A	61" (1549 mm)	4000	13 lbs (5.9kg)

TABLE 4:

Location	Minimum Clearance
Top of heater to ceiling	12 in (305 mm)
Bottom of heater to floor	6 ft (1.83 m)
Side or end of heater to wall	12 in (305 mm)
Heater to Adjacent Heater	36 in (914 mm)
Face of Heater to any possible combustibles	36 in (914 mm)

Once an acceptable location has been determined, see the following instructions to complete the mechanical installation:

B. Element Installation / Handling:

1. The heater fixture is shipped as an assembly with very fragile quartz or metal sheathed heating elements factory installed.
2. Replacement elements must be ordered separately to be installed by a qualified person. See Section: *REPLACEMENT ELEMENT* contained in this manual.

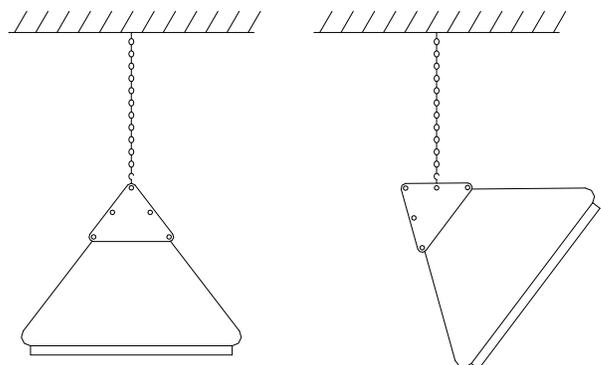
CAUTION: Do not handle the Quartz tube heating elements with bare hands or with gloves that may have grease or oil present.

C. Heater Mechanical Installation

Chain Mounting:

1. Fasten the two triangular mounting plates to the fixture with the screws provided. The dimple hole should be kept towards the top.
2. Cut suspension chain to the desired length.
3. Attach the chain to the heater triangular brackets using "S" hooks. S-hooks must be closed to assure the heater is permanently mounted. Ensure heating element is horizontal.
4. If desired, tilt heater by adjusting chains as shown in figure 1:

FIGURE 1:

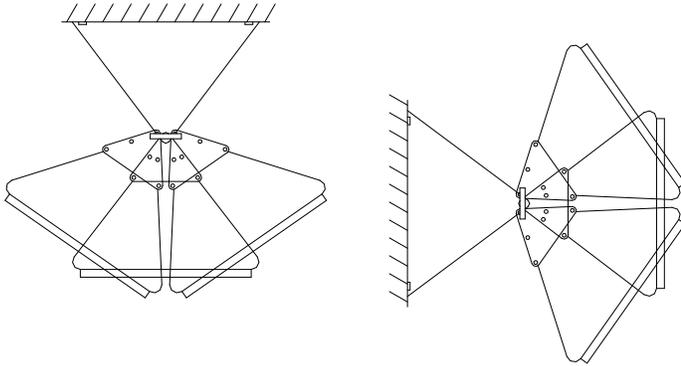


INSTALLATION (continued)

Bracket Mounting (Item HX-1025662):

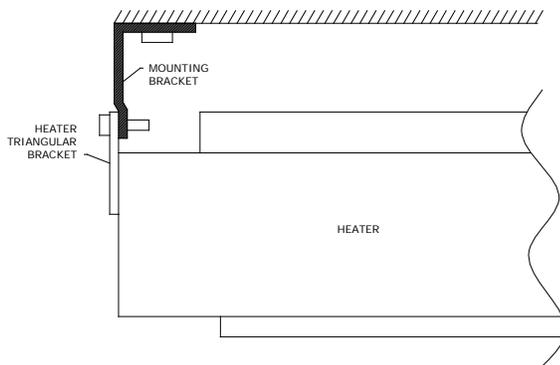
The heaters may also be mounted by means of an optional ceiling or wall mounting bracket as shown in figures 2, 3 & 4.

FIGURE 2:



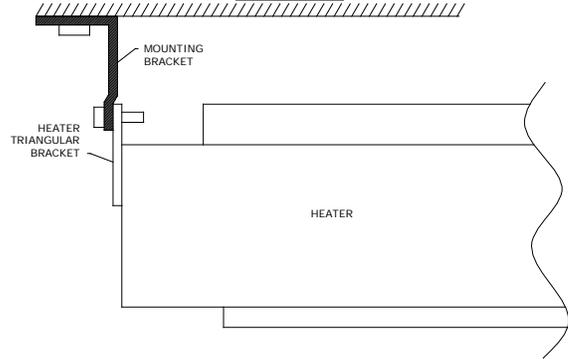
The brackets will register on studs or joists at 16" (406mm) centers. For the 36" (914mm) heater, the brackets should be mounted with the flanges facing inward and the heater triangular brackets located on the outer side as shown in figure 3:

FIGURE 3:



For the 61" (1549 mm) heater, the mounting brackets should be mounted with the flanges facing outward and the heater triangular brackets located on the inward side as shown in figure 4:

FIGURE 4:



The fixture can be directed into the area being heated by adjusting the mounting brackets.

CAUTION: When directing the heater, care must be exercised to prevent adjacent surfaces from overheating. Do not direct one heater towards another. In no case, should any part of the heater be less than 12" (305mm) to any wall or ceiling surface. Adjacent heaters should be no less than 36" (914mm) apart.

CAUTION: The heater must always be mounted with the quartz tube in a horizontal position. This will prevent the coiled resistance wire from sagging and potentially failing.

CAUTION: The heater must not be recessed.

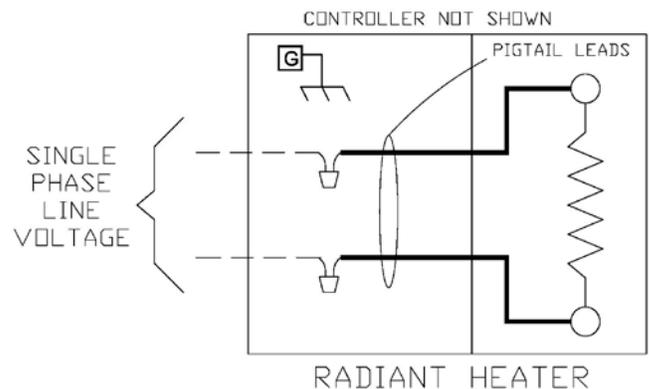
INSTALLATION (continued)

D. Heater Electrical Installation:

Follow these instructions to complete the electrical installation:

1. External branch circuit protection is required. See heating element ratings and follow Code recommendations.
2. Follow the NEC and any local electrical and building codes related to the installation and intended use of the heater.
3. When doing any work on this heater, including the initial electrical connection, disconnect the electrical supply at the main branch circuit switch, and lock the switch in the off (open) position. Tag the circuit "Out for Maintenance" to prevent potential lethal shock hazards.
4. Heaters are rated for single phase, 50/60 Hz power.
5. Confirm that the electrical power supply matches the marked voltage and amperage for the heating element.
 - The heating element installed in the unit is indicated either on the nameplate or on a separate label adjacent to the nameplate.
6. For general guidance in replacing elements or changing to an alternate wattage element see the section titled "REPLACEMENT ELEMENT".
7. Proper installation of the heater requires that an adequate grounding conductor be connected to the ground terminal. This terminal marked by a green colored screw head and is located on the inside of the wiring compartment.
8. Each heater is equipped with two high-temperature silicone lead wires for connection to the power circuit. Connect supply conductors to these two wires and confirm all connections are securely tightened. Remove any foreign objects from the control box and attach the cover.

9. See typical wiring schematic below. In cases where property damage may result from malfunction of the heater a back-up system or temperature alarm should be used.
10. Use 75°C minimum copper conductors for wiring.
11. See section titled "OPERATION" before energizing the heater.



Typical wiring schematic

OPERATION

1. Check to make sure the mechanical and electrical installation is proper and complete and that it is safe to operate the heater.
2. Set the field supplied temperature controller to a setting above the current room temperature.
3. Energize the heater electrical supply circuit.
4. The heater should come on and have a visible radiant glow within a few minutes.
5. Check out and report any unusual or questionable operating characteristics, such as noise, smoke, etc.
6. Set the temperature controller and any secondary safety devices to the desired room temperature setting and place the heater in service.
7. Do not insert fingers or foreign objects into heater while in service.
Do not tamper or attempt any maintenance with heater while in operation

MAINTENANCE

Maintenance and repair described in this section must be performed by qualified personnel only. Any other Maintenance should be discussed or performed by an authorized service representative. At a minimum, all maintenance tasks should be performed annually before each heating season.

1. When doing any work on this heater disconnect the electrical supply at the main branch circuit switch, and lock the disconnect switch in the off (open) position. Tag the circuit "Out for Maintenance" to prevent potential lethal shock hazards.
2. This heater is hot when in use, make sure the heater has completely cooled off before attempting any Maintenance.
3. Inspect all connections and conductor insulation for damage, looseness, fraying, etc., as applicable. Tighten any loose connections and replace or repair wire with damaged or deteriorated insulation.
4. Check and Maintain the Clearance to Combustibles as described in this manual.
5. Annually check the tightness of all visible screws, bolts and nuts, in particular the support structure including chains or bolts and nuts. Make sure the heater is secure on all supporting points.
6. Check the wiring compartment for cleanliness. If necessary, clean by using a vacuum or compressed air.
7. The heater will operate at maximum efficiency when the reflector and heating element are kept clean. The reflector can be removed by snapping out one edge and rotating. Most dust and dirt can be removed by washing the reflector and heating elements with a 50-50 mixture of rubbing alcohol and water. Dry thoroughly before energizing.

Troubleshooting Chart

SYMPTOM	POSSIBLE CAUSE(S)	SUGGESTION
Heater does not energize	1. Power not Supplied.	1a. Check Branch Circuit fuse or Circuit Breakers. 1b. Check the status of any controls.
	2. Connection Inadequate	2. Check wiring connectors are secure.
	3. Damaged Element	3. Replace Heating Element
Not enough heat	1. Heater mounted too high or too far.	1. Carefully relocate heater
	2. Heater too small for application	2a. Add additional Heaters
		2b. Replace with higher KW Heater
Too much heat	1. Heater too large for application.	1. Replace with lower KW Heater
	2. Heater mounted too low or too close.	2. Carefully relocate heater

REPLACEMENT ELEMENT

WARRANTY WILL BE VOID IF INSTRUCTIONS ARE NOT FOLLOWED

Quartz Tube / Metal Sheath Element Installation:

Replacement elements which must be ordered separately are to be installed by a qualified person. Wiring procedures and connections shall be in accordance with the national and local codes having jurisdiction.

CAUTION: Before removing or replacing a heating element, turn controls to off and turn off power to heater circuit at main disconnect panel. Lock the disconnect switch in the off (open) position. Tag the circuit "Out for Maintenance" to prevent potential lethal shock hazards. '

CAUTION: Quartz Elements can fracture and produce very sharp edges and fragments. Use extreme care when handling broken tubes or when handling new replacement elements.

1. Remove the wire guard from the heater cabinet by springing out to one side.
2. Remove the two end reflectors held in place by 2 screws each.
3. Remove existing heating element. First, note the caution statement below.

CAUTION: An old quartz heater should be treated as a hazard. The material may chip and crack as with glass to produce very sharp edges and fragments. Use appropriate measures to protect skin and eyes to reduce the risk of personal injury. When disposing of heating elements use caution and comply with local and state regulations.

4. Remove the quartz or metal tube heating element from its packaging. Do not pull the quartz element by the white ceramic terminal insulator.

CAUTION: Do not handle the Quartz tube heating elements with bare hands or with gloves that may have grease or oil present.

5. Verify the correct heating element is being installed for replacement.

Refer to the instructions below:

- a. The wattage, voltage and part number of the replacement heating element should be compared with the markings on the heater and/or the wattage, voltage and part number from the old element.
 - b. If electrical ratings or part number differ contact an authorized factory service representative.
6. For quartz tube heating elements: A paper wrapper is used to keep debris away from the quartz tube during shipping and installation. Leave the paper wrapping in place until

the element is completely installed to prevent finger marks and/or grease and oil from transferring to the quartz tube.

7. Carefully push the element into the two clips in the end castings.
8. Attach the lead wires to the heater terminals.
CAUTION: When tightening the nuts on the terminals, ensure the terminals do not twist by holding the inner nuts when tightening the outer nuts.
9. For quartz heating elements: Remove wrapping paper.
CAUTION: Risk of Fire: Failure to remove paper wrapping from quartz heating element will result in Fire.
10. Replace end reflectors and wire guard.
11. Refer to the operation section of owner's manual.

Replacement Element Specifications

TABLE 1 – Fixture 1154 Heating Elements:

Watts	Volts	Amps	Heater Length	Quartz	Metal Sheathed
1000	120	8.3	36" (914mm)	QT-10L	QM-10L
	208	4.8		QT-10V	QM-10V
	240	4.2		QT-10N	QM-10N
	277	3.6		QT-10Y	QM-10Y
1500	120	12.6		QT-15L	QM-15L
	208	7.2		QT-15V	QM-15V
	240	6.3		QT-15N	QM-15N
	277	5.4		QT-15Y	QM-15Y
2000	208	9.6		QT-20V	QM-20V
	240	8.3		QT-20N	QM-20N
	277	7.2		QT-20Y	QM-20Y
	480	4.2		QT-20Z	QM-20Z

TABLE 2 – Fixture 1154A Heating Elements:

Watts	Volts	Amps	Heater Length	Quartz	Metal Sheathed
3000	208	14.4	61" (1549 mm)	QT-30N	QM-30V
	240	12.6		QT-30V	QM-30N
	277	10.8		QT-30Y	QM-30Y
	480	6.3		QT-30Z	QM-30Z
4000	208	19.2		QT-40N	QM-40V
	240	16.6		QT-40V	QM-40N
	277	14.4		QT-40Y	QM-40Y
	480	8.3		QT-40Z	QM-40Z

SAVE THESE INSTRUCTIONS