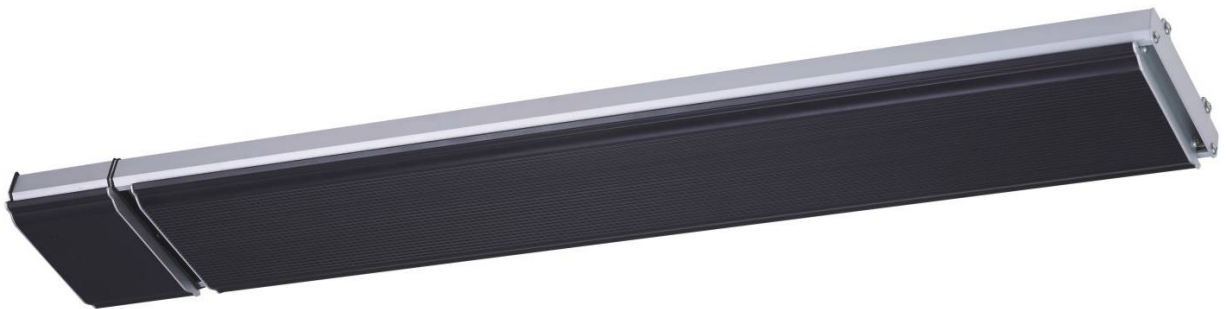




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**INSTRUCTION MANUAL
FOR ELECTRIC RADIANT
INFRARED HEATERS**



MODELS: CLHR-150A / CLHR-180A / CLHR-240A / CLHR-320A

Read carefully this manual before using the appliance
and keep them for future reference

IMPORTANT INFORMATION

Carefully read the operation manual before using the infrared heater.

This operation manual contains important information on your safety, as well as some recommendations on proper use of the appliance and its maintenance.

Keep the operation manual along with the warranty certificate, sales receipt, and, if possible, cardboard package and packing material.

The purchased infrared heater may somewhat differ from one described in the manual, but this does not affect the methods of use and operation.

Important precautions and instructions given in this manual do not include all possible modes and situations, which can be encountered. It is necessary to understand that common sense, cautiousness, and carefulness are the factors, which cannot be "integrated" to any product.

WHAT'S IN THE BOX

The package should contain:

Heater fitted with flexible cord and plug.

The operating and installation instructions.

One small box containing one pair of mounting brackets.

SAFETY INSTRUCTIONS

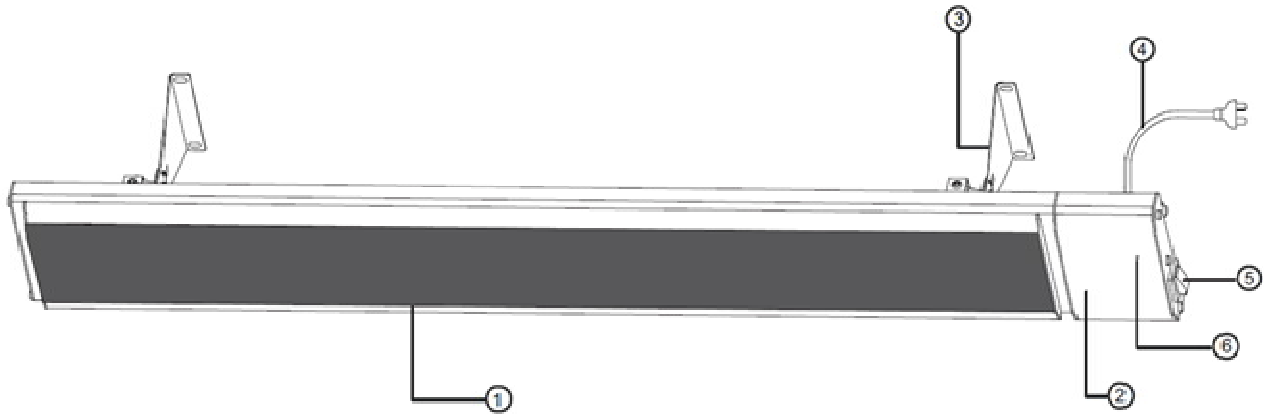
- **Read the instruction before using.** During use of the infrared heater, it is necessary to observe some precautions. Improper operation with disregard of precautions may result in infliction of harm to health of the user and other people, as well as in infliction of damage to their property.
- Use only the voltage specified on the rating plate of the heater.
- ONLY connect the appliance to a properly installed socket-outlet with earth contact.
- The heater should be connected to the electric mains equipped with an automatic circuit breaker.
- The unit must be handled with care, and avoid vibration or hitting.
- **WARNING:** FIRE RISK EXISTS IF THE HEATER IS COVERED BY OR POSITIONED CLOSE TO CURTAINS OR OTHER COMBUSTIBLE MATERIALS.
- Do not use the appliance in areas where gasoline, paint or other flammable liquids are used or stored.
- Do not use the appliance in particularly duty and explosive areas.
- Do not use the appliance in a building site, green house, barn or stable where there's flammable dust.
- Do not use the appliance as a sauna heater.
- **WARNING:** Do not touch the radiating plate. The temperature of radiating boards during operation of the heater may reach 380 °C. To avoid burns, do not touch the appliance surface by hand and other body parts. It is also necessary to exclude the possibility of touching the heater radiating boards by a person (including accidental) via proper instructions and allocation of the heater in an inaccessible place.
It keeps hot for a period after shut down. Potential danger would be occurring when touching it during this period.
- Do not place any items of clothing, hand towels or similar over the heater to dry. Risk of overheating and fire hazard.
- Do not leave the heater unattended whilst in use.
- Do not use this heater on a wet surface, or where it can fall or be pushed into water.
- Do not reach for an appliance that has fallen into water. Switch off at supply and unplug immediately.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- If the heater is defective, it must be checked and repaired by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Do not operate appliance with wet hands.
- Use this appliance only as described in this manual. Any other use is not recommended by the

manufacturer and may cause fire, electric shock or injury.

- Do not use abrasive cleaning products on this appliance. Clean with a damp cloth (not wet) rinsed in hot soapy water only. Always remove plug from the mains supply before cleaning.
- The heater must be installed at least 1.8 m above the floor.
- The heater must not be located immediately below a socket-outlet. Socket-outlet should not be located at the back of the heater. They should be located outside the physical footprint of the units to minimize heat build-up behind the heater. The installation must be equipped with an all-pole disconnection mechanism with a break contact distance of at least 3mm. The All-pole disconnection mechanism must be installed on the height less than 1.8m from the floor.
- The heater is to be installed so that switches and other controls cannot be touched by a person in the bath or shower.
- If the heater is to be mounted on an incline (eg. Vaulted ceiling), ensure the electrical connection is located at that lowest point of the heater.
- Do not connect the appliance to the mains source until it has been installed in its final location and adjusted to the position it will be used in.
- Do not operate with the cord coiled up as this could cause a build up of heat, which could pose a hazard.
- The use of an extension cord with this appliance is not recommended.
- Do not allow cord to come in contact with heated surfaces during operation.
- Do not run cord under carpeting, throw rugs or runners etc. Arrange cord away from areas where it is likely to be tripped over.
- Children and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge are not allowed to use the appliance unless they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- The appliance is only intended for the purpose described in user manual.
- Do not use appliance or any part of the appliance out of the intended use to avoid risk.
- The use of attachments which are not recommended or sold by the appliance manufacturer may cause a risk of injury to persons
- **CAUTION** — some parts of this product can become very hot and cause burns. Particular attention has to be given where children and vulnerable people are present.
- Install and operate the heater in strictly horizontal position on the ceiling or ceiling structural elements. At that, thermal resistance of the ceiling coating material should be at least 80 °C.
- **WARNING:** This heater is not equipped with a device to control the room temperature. Do not use this heater in small rooms when they are occupied by persons not capable of leaving the room on their own, unless constant supervision is provided.

HOW TO OPERATE THE HEATER

General design layout



1. Heating element
2. Control box
3. Bracket for wall or ceiling mounting
4. Power cords and plug (CH32A4 no plug)
5. ON/OFF main power switch
6. Indicator of heating status

Operation principle

The infrared heater is an appliance with an electric heating element and extruded aluminum plate, which upon heating emits heat to the environment via directed infrared radiation. Radiant energy is absorbed by the surrounding surfaces and it heats them being transformed to thermal energy. Surface temperature of objects can be different depending on their absorbing properties (surface color, material), incidence angle of infrared beams, surface shape and area. Surfaces also release some heat to air. As a result, heated air flows up to the ceiling and gradually cools down. As a result, air temperature at the head level of a standing person appears below the floor temperature by 1-2 °C.

Main features

- They have a significant economic effect as compared to conventional heating, where heat is significantly consumed for heating of unused roof space (first, air is heated throughout the room volume, and then air heats objects and surfaces in the room).
- Capability of local heating only for those areas in the room, where it is necessary, without heating of the whole room volume.
- Low air temperature in the room at comfortable temperature on surfaces of objects, floor, and walls creates the freshness effect air is not dried up.
- Low convection (thermal movement of air volumes) reduces amount of dust kicked up from the floor.
- As these heaters heat individuals and objects and not the air, contrary to conventional heating sources, such as electric convective air heaters and central heating radiators, which heat the air. In spaces with high ceiling height, the hot air goes up and this has as a result that the space is not properly heated..

Area of application

Infrared heaters are designed for general, additional, and local heating of industrial, production, utility, and similar rooms (flats, offices, trade enterprises, exercise rooms, educational institutions, public catering enterprises, storage facilities, hangars, agricultural facilities, cafeterias, restaurants, gymnasiums etc.).

Technical Specification

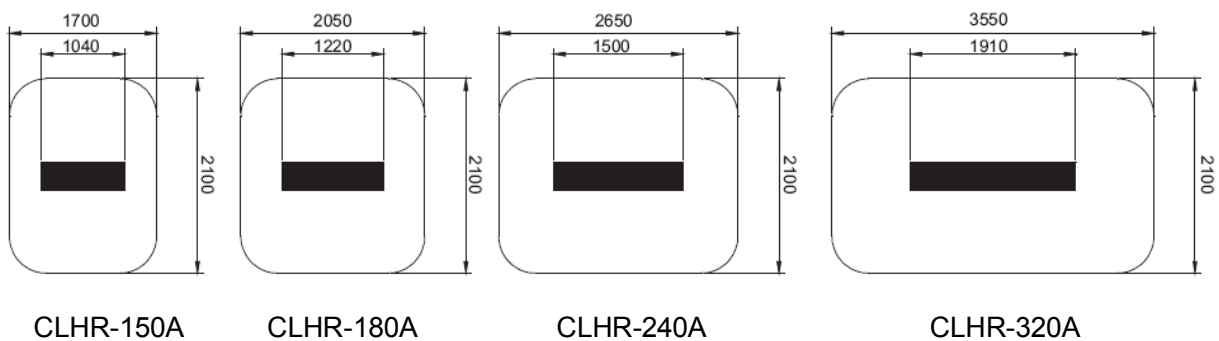
| MODEL NAME | CLHR-150A | CLHR-180A | CLHR-240A | CLHR-320A |
|---|----------------|----------------|----------------|----------------|
| Voltage | 230-240V~ 50Hz | 230-240V~ 50Hz | 230-240V~ 50Hz | 230-240V~ 50Hz |
| Rated power (W) | 1500 | 1800 | 2400 | 3200 |
| Ideal Mounting height (M) | 2.1 | 2.3 | 2.5 | 2.7 |
| Electric protection class | I | I | I | I |
| Water splash proof rate | IP65 | IP65 | IP65 | IP65 |
| Unit size- L*W*H(mm) | 1040*160*50 | 1220*160*50 | 1500*160*50 | 1910*160*50 |
| Heating area (indoor) (m ²) | 4-5 | 5-6 | 6-8 | 8-10 |
| Heating area (outdoor) (m ²)* | 3-4* | 4-5* | 5-7* | 7-9* |

* The heating outdoor area fluctuates in square meters, due to orientation of space, the space coverage with nylon covers or glasses and to the outer temperature and it is significantly decreased when the outdoor area is fully exposed, with out any protective covers.

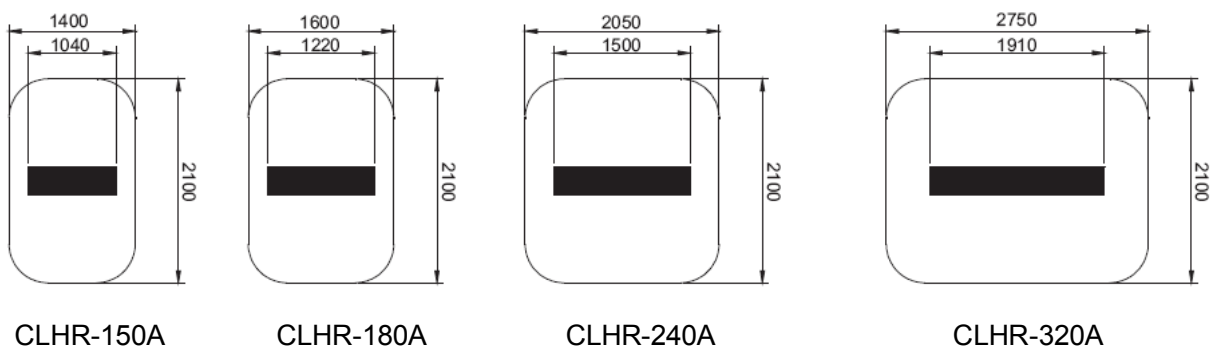
Heating area (M2)

The radiator panel heater produces radiant heat which heats objects rather than the air. Therefore, it is imperative that objects to be heated (i.e. People), are within the direct radiant footprint of the heater. The below diagrams show the approximate heating area for each model based on an indoor and outdoor enclosed environment. The diagrams show that the maximum heat output is found directly under the heater, and the temperature decreases as the user move away from the heater.

Indoor spot heating (mm)

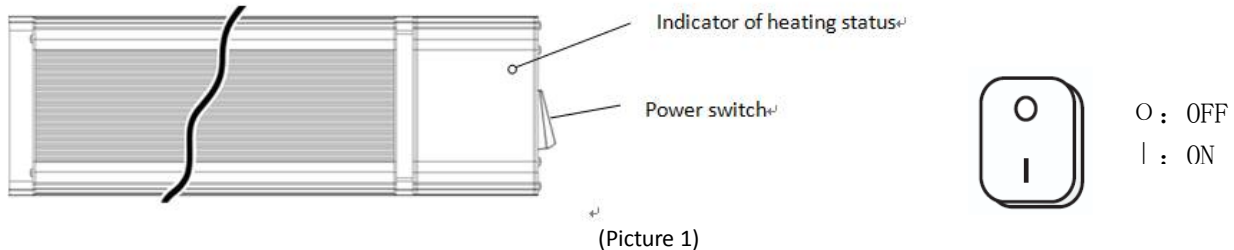


Outdoor enclosed area(mm)



Operation

- Before switching the heater, it is necessary to thoroughly wipe the surface of the radiating boards first with a soft rag moistened in alcohol and then with a dry rag in order to exclude appearance of burnt spots.
- Connect the unit to the main power, press the power switch to the position of I (see picture 1), The orange operation indicator will light to indicate the heater is on and the heater will begin to radiate infrared heat.
- Press the power switch to the position of O to turn off the heater. The operation indicator will go out.



(Picture 1)

- To exclude unpleasant burnt odour, it is recommended to keep the heater clean preventing accumulation of dust on it.

WARNING!

Slight crackles may be heard during operation at the moment of heating or cooling, which disappear, when the heater reaches the working mode.

NOTE:

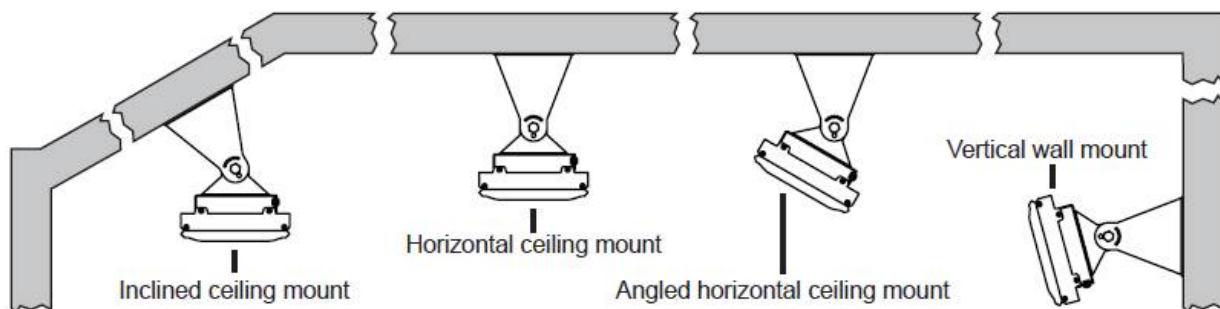
- ✓ Discoloration of paint on the heater body wall directed to the ceiling during operation is not a defect. Changing of color for heating plates is not defect.
- ✓ After switching on the appliance for the first time and following extended periods on non-use, the appliance may smell for a short time. It will not affect the use of the heater.
- ✓ The heater may take up to 15 minutes to reach maximum heat, depending on the area being heated and the conditions.
- ✓ The heater may take up to 60 minutes to fully cool down, depending on the area being heated and the conditions.

INSTALLATION

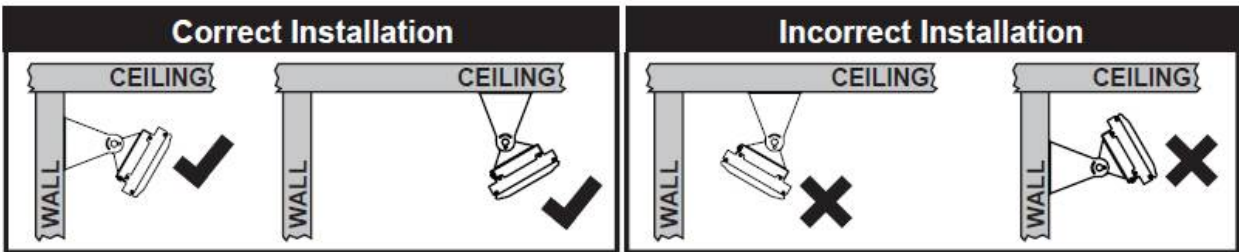
Before installation, read the manual carefully.

The heater must be installed in accordance with the manufacturer's installation instructions

This heater comes with a pair of stainless steel adjustable angle mounting brackets. The adjustable angle enables the heater to be installed on vertical, horizontal and inclined surfaces.



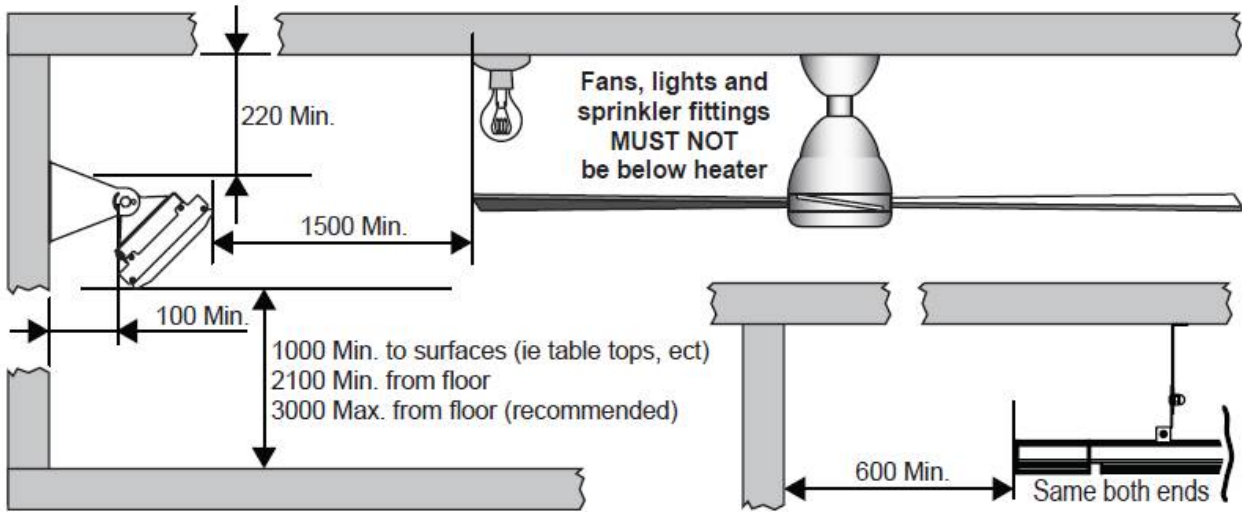
The ideal mounting position is directly above the area to be heated with a longitudinal orientation and facing vertically downwards. If this is not possible, the heater(s) can be mounted on a wall and angled downwards. For this application ensure the mounting height is within 2.1m to 2.7m.



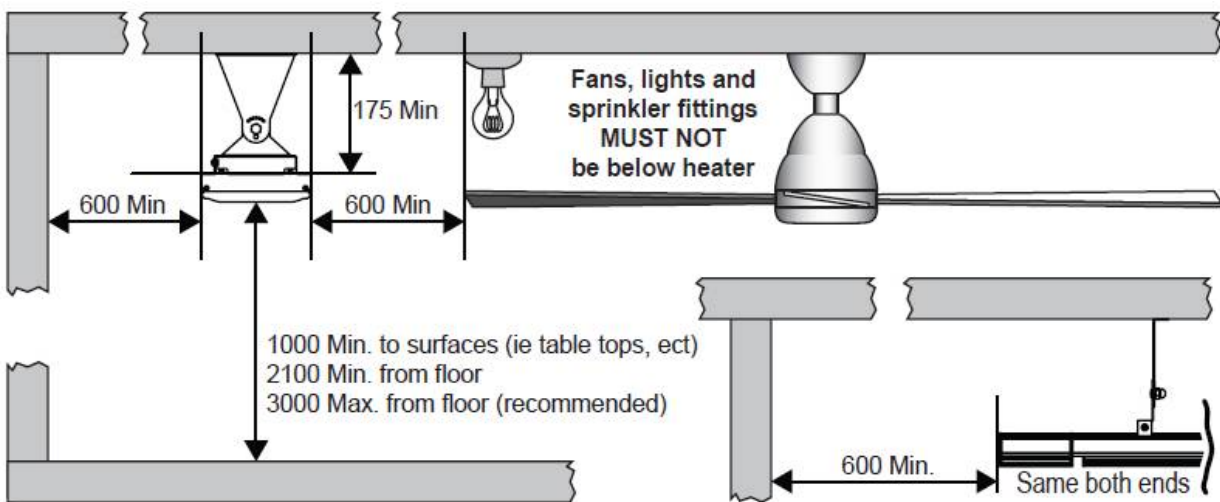
Warning: The heater must never be installed in the upwards or inwards facing position, the heating surface must always be positioned to direct the heat in a downwards or outwards direction.

Clearances

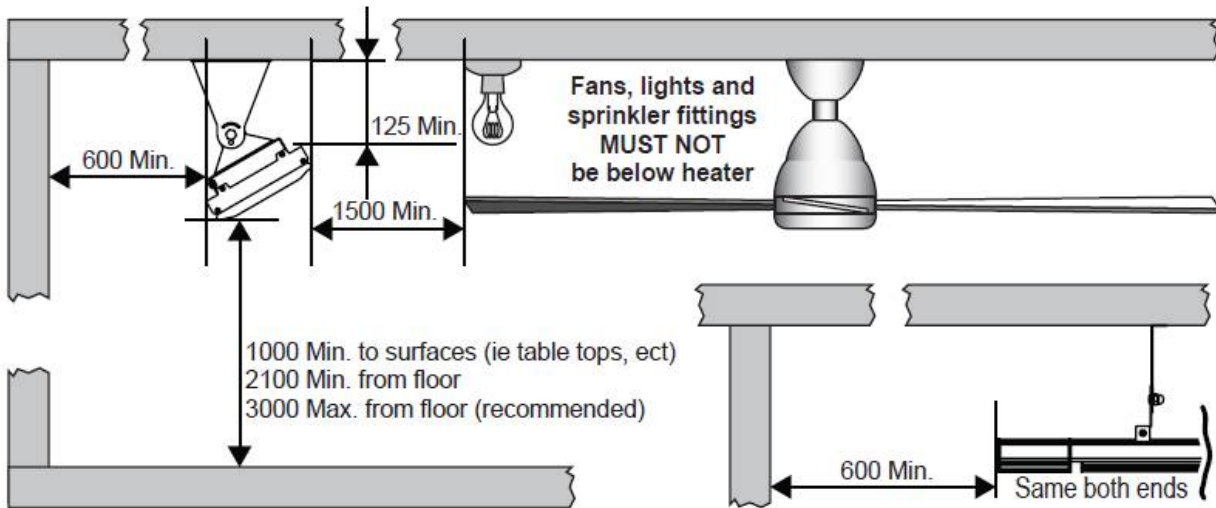
Minimum clearances when mounting the heater on A VERTICAL WALL



Minimum clearances when mounting the heater parallel with A CEILING



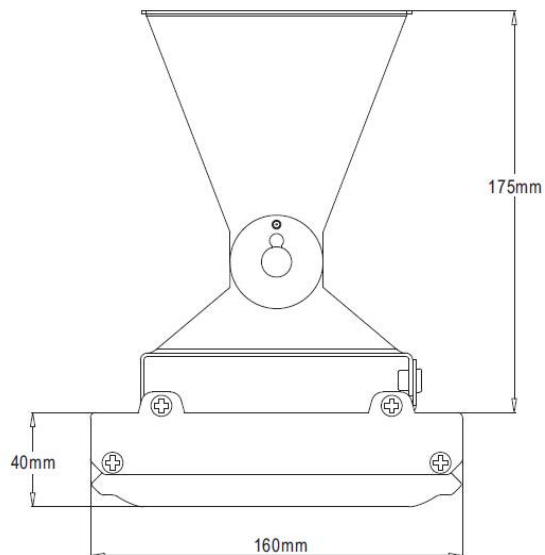
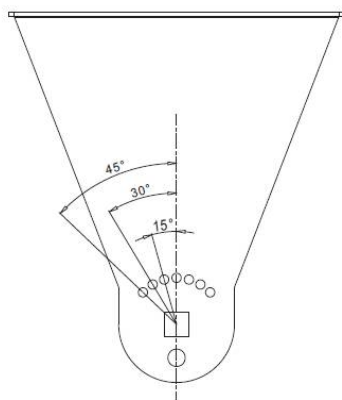
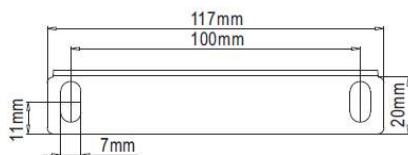
Minimum clearances when mounting the heater at an ANGLE TO A CEILING.



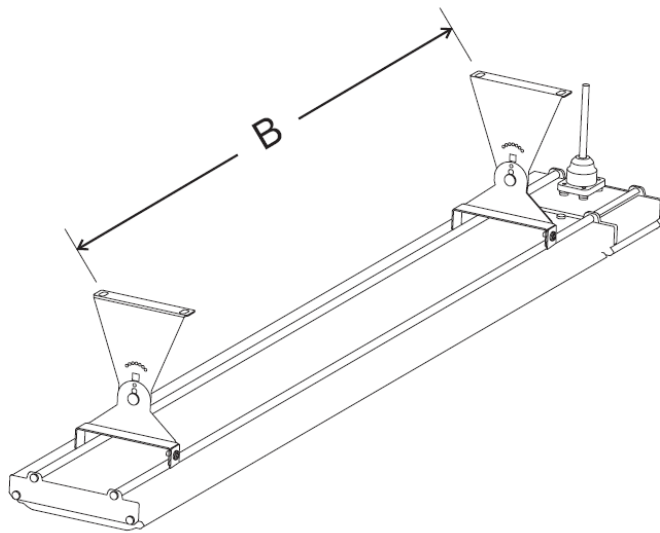
Installation Process

WARNING! Mounting of the infrared heater and its connection to the electric mains should be carried out only by qualified specialists according to the Electrical Installation Regulations and Power System Safety Standards

1. Open the factory package and carefully take the heater out.
2. Take out the packing paper sheet from the end of heater
3. Take out one pair of mounting Brackets. These adjustable brackets allow direct ceiling or wall mount, and come with preset angle options of parallel, 15° , 30° , 45° and height 175mm.

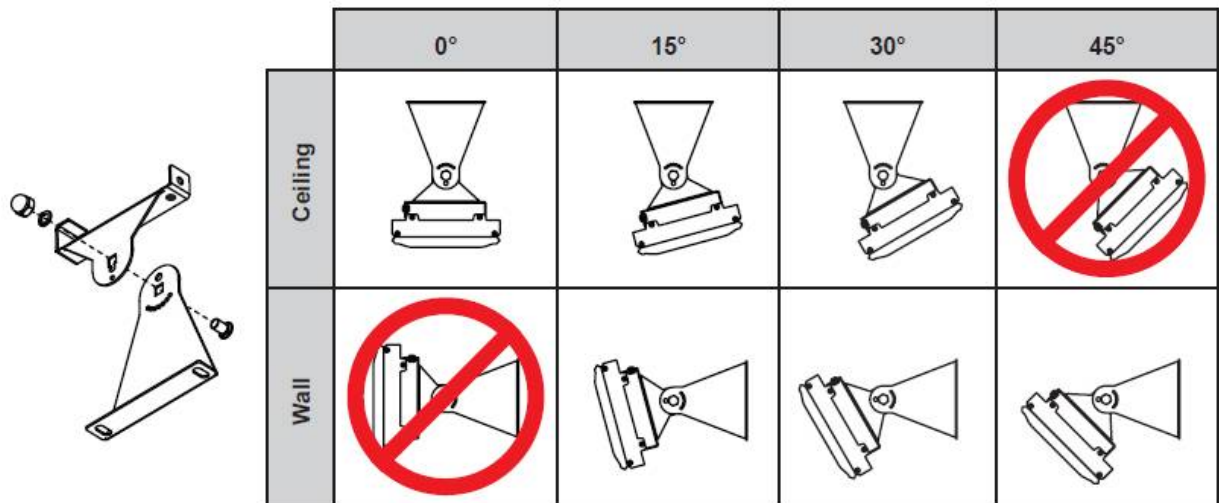


4. According to terms of installation process above, select the heater installation place on the ceiling or ceiling structural elements with observation of minimum clearances from the floor and other objections.
5. Install two brackets on the ceiling or wall with the following minimum recommended bracket distance "B".

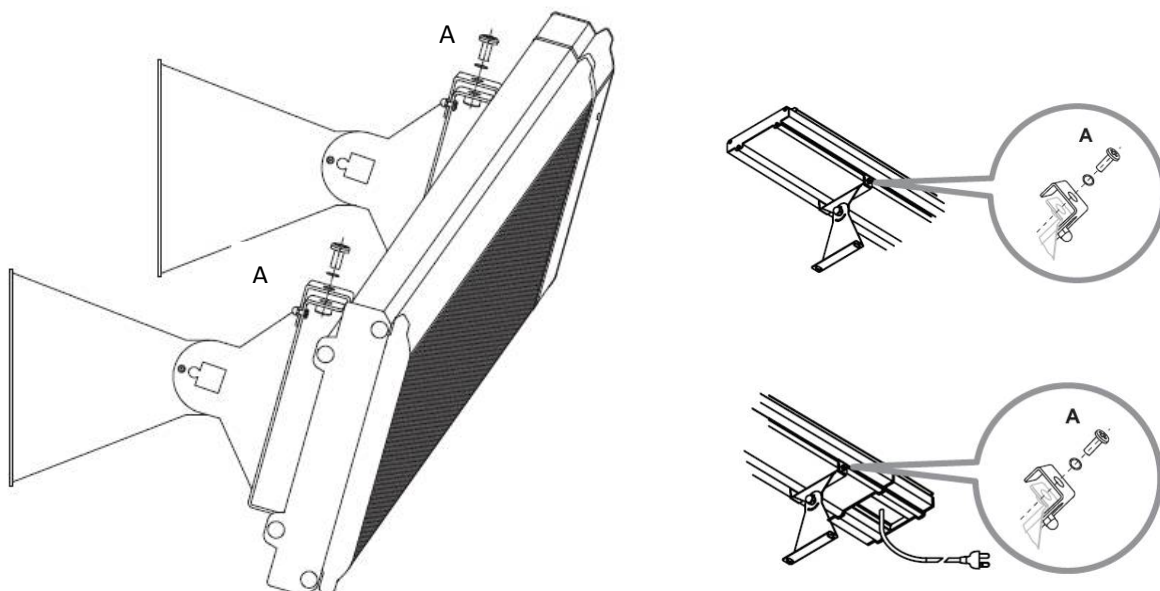


| Model No | "B" MINIMUM DISTANCE (mm) |
|-----------|------------------------------|
| CLHR-150A | 530 ± 50 |
| CLHR-180A | 710 ± 50 |
| CLHR-240A | 990 ± 50 |
| CLHR-320A | 1400 ± 50 |

6. Set the adjustable angle mounting brackets to desired angle and fasten brackets by spanner κλειδί. For ceiling mounted installations the available mount angles are restricted to 0°, 15° and 30° only. For wall mounted installations the available mount angles are restricted to 15°, 30° and 45° only.



7. Hang the heater on the brackets and firmly secure in place with the mounting bracket locking plates by tightening bolts labelled A.



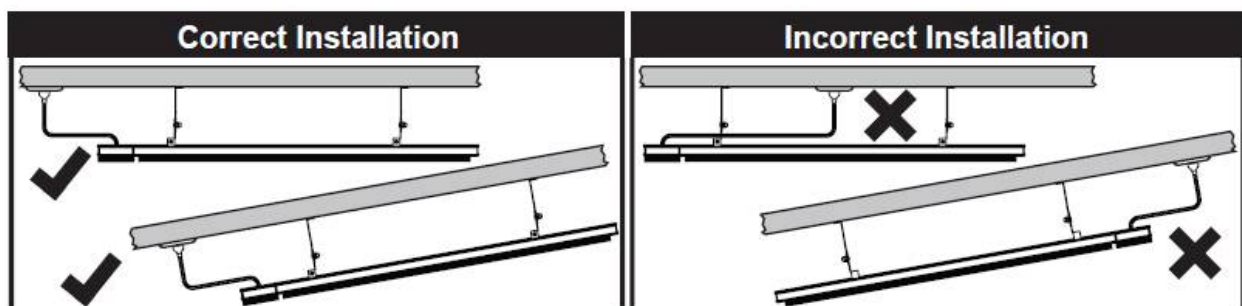
NOTE:

- ✓ Depending on the material and the design of ceiling structural elements, the heater is secured onto appropriate fasteners chosen on basis of the strength condition. Strength of the ceiling or structural elements, to which the heater is secured, should be sufficient to endure 5-fold weight of the heater.

Connection to electric mains

After installation of the heater and before switching for the first time, it is necessary to wipe the radiating board with alcohol. After that, it is PROHIBITED to touch the radiating board.

- The heater is designed for connection to the single-phase 230V~ 50HZ electric mains equipped with a grounding loop.
- Before connection, make sure that specifications of the electric mains at the connection point meet the parameters indicated on the appliance nameplate.
- Models CLHR-150A, CLHR-180A και CLHR-240A with plug to connect to supply mains, and model CLHR-320A is fixed wiring.
- For the model CLHR-150A, CLHR-180A και CLHR-240A: The electric mains should be equipped with an automatic circuit breaker with rated current not less than 16A and height less than 1.8m from the floor..
- For the model CLHR-320A: For disconnection must be incorporated in the fixed wiring in accordance with the wiring rules. The installation must be equipped with an all-pole disconnection mechanism with a break contact distance of at least 3mm. The All-pole disconnection mechanism must be installed on the easily pull out and insert to the plugs by persons and height less than 1.8m from the floor.
- The heater must not be located immediately below a socket-outlet. Socket-outlet should not be located at the back of the heater. They should be located outside the physical footprint of the units to minimize heat build-up behind the heater.
- If the heater is to be mounted on an incline (eg. Vaulted ceiling), ensure the electrical connection is located at that lowest point of the heater.

**MAINTENANCE**

- Any maintenance should only be carried out by a qualified electrician.
- During operation, it is necessary to periodically (once a year) check the electric cable contacts and terminal connectors for good tightening.
- If the body becomes dirty, wipe off dust with a towel. Radiating boards should be wiped in cold condition with alcohol.

NOTE:

- ✓ Radiating boards should be wiped with a soft rag moistened in alcohol leaving no scratches on the surface. Use of other liquids is prohibited!

WARNING!

- ✓ Never immerse the appliance in water! Danger to life!

TROUBLESHOOTING

Possible malfunctions are given in table below.

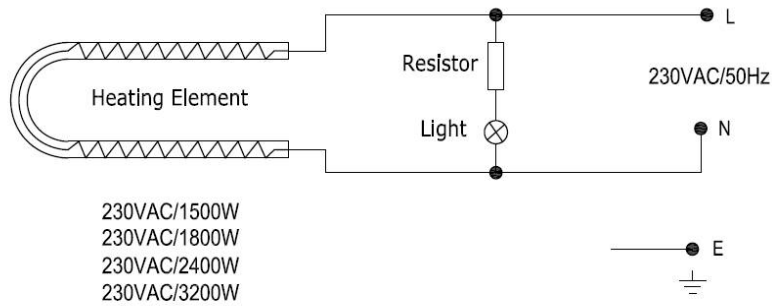
| <u>SYMPTOM</u> | <u>CAUSE</u> |
|---|--|
| Will not heat / No operation indicator | Check that power is connected and switched on |
| Heater smells when first used. | This is caused by oil or dust left over from the manufacturing process and will stop after a short time |
| Faint smell for short periods after turning on the heater | This is normal and should stop after a short time |
| Heater smells when turned on after periods of no use | Build up of debris and dust on the heater, Switch the heater off and allow it to cool down and then clean |
| Clinking noises when heater is turned on and after being turned off | This is expansion and contraction noises of the heaters metal components and is normal |
| Poor heating performance | Exposure to extreme ambient conditions such as high winds / excessively cold temperatures can lower the heating performance of an outdoor installation |

When to contact the authorized service or seller


There are no user serviceable parts in this appliance, only an authorised person can such as a qualified electrician can service or maintain this appliance.

| <u>SYMPTOM</u> | <u>CAUSE</u> |
|--|---|
| There is a burning smell and or strange sounds (other than normal expansion and contraction noises) coming from the unit | Turn off the heater, and contact seller. |
| When associated circuit breaker (safety, ground) is thrown or a fuse is blown | Turn off the heater, and contact your authorized electrical installer |
| Poor heating performance | Incorrectly sized installation, contact your authorized electrical installer |
| | Faulty heater element, turn off the heater, and contact seller |
| Will not heat / No operation indicator | Check that power is connected and switched on, if still faulty, turn off the heater, and contact seller |

WIRING SCHEMATIC DIAGRAM



CORRECT DISPOSAL OF THIS PRODUCT

The symbol  on the product means that at the end of its life, the appliance has not to be considered a common waste. It is a special waste and has to be demolished in specific recovery and disposal area, as prescribed by the EC Directive 2002/96/EC(WEEE). By disposing this product correctly, you can avoid negative consequences for the environment and for the human health, due to the presence of potentially dangerous substances in the product.