

HEATSTRIP[®]

RADIANT OUTDOOR HEATERS



Product Manual



HEATSTRIP[®] Max (THX)

Take Heating to the Max!





Product Overview

Rev I NOV 17

Why choose HEATSTRIP® electric radiant heaters for your outdoor or hard-to-heat indoor area?

As there is typically constant air movement in an outdoor or open indoor area, many conventional heaters rely on convection heating which works by heating the surrounding air. This can be quite impractical for these areas, as this heated air can easily blow away with natural air movement. Radiant style heaters transfer heat directly to objects through infra-red waves.

Whilst convection heaters heat the air in between objects, radiant heaters heat the surface of the objects themselves. HEATSTRIP® electric radiant heaters are more effective within an outdoor or uninsulated indoor area because they provide targeted warmth directly to the people and objects in their path.

Innovative, High Performance Electric Heating Technology — for outdoor and indoor areas

Using the radiant heating principle, HEATSTRIP® Max can provide effective and energy efficient comfort heating for outdoor (undercover and open) and indoor open areas. HEATSTRIP® has successfully enabled many entertainment venues such as restaurants, pubs and clubs to utilise their outdoor dining areas day and night, through all seasons. Within your workplace or business, HEATSTRIP® can provide comfort heating for designated outdoor smoking and leisure areas, as well as for workstation spot heating in factories, warehouses and showrooms. Within your home, HEATSTRIP® can provide comfort heating for undercover alfresco dining and BBQ area, patios, verandas, courtyards and balconies.

There are 5 different ranges within the HEATSTRIP® product category. Each has a different temperature rating making them suited to a variety of applications. Below is a list of some common applications, to assist with the selection of the most effective and efficient series. This is a general guide only, please refer to the Product Manual for each product, for more information.

HEATSTRIP® Classic (THH models) is a premium high temperature heater and is primarily used for outdoor rooms where there is 1,2 3, or 4 enclosed sides, with a mounting height range of 2.1 m to 2.7m.

HEATSTRIP® Max (THX models) is an ultra high temperature heater used for uncovered or open areas with a mounting height of 2.1m to 3.5m (maximum 3.0m Outdoors and 3.5m Indoors).

HEATSTRIP® Indoor (THS models) is a medium intensity heater used for protected indoor applications.

APPLICATION	THS	THH THE	THX	THY
Indoor insulated areas: classrooms, offices, bathrooms, wet areas, drying rooms	√	√		√
Outdoor under cover: café, veranda, patio, balcony ceiling height 2.7m or less		√	√	√
Outdoor under cover: café, veranda, patio, balcony ceiling height 2.7m or more			√	
Highly exposed outdoor area			√	√
Indoor open area: warehouse, factory, production areas, sports facilities	√	√	√	√
Indoor spot heating, above tables, assembly areas		√	√	√



Innovative, High Performance Electric Heating Technology

Features & Benefits

High Output radiant heat

The Heatstrip Max range of electric radiant heaters produces a high temperature radiant warmth that travels through the air directly to people and surfaces below – similar to the heat rays emitted by the Sun. Radiant heating is the only viable option for outdoor or tough indoor sites.

Unique low-glow heating technology

Specially designed and engineered "low-glow" heating element provides a very gentle and unobtrusive glow. There is no blinding light, like other infra-red heaters, so you can enjoy the experience. Energy is directed towards producing heat, rather than an annoying light.

Maximum heat performance – multiple applications

The high temperature output of the Heatstrip Max is perfect for exposed outdoor sites, high ceilings and hard-to-heat indoor and outdoor applications.

The dual element design allows for a very compact unit, and maximum efficiency. Outdoor applications include al-fresco and dining/entertainment areas, patios, veranda's and balconies, to name a few. Indoor applications such as factories, warehouses, showrooms, workshops and workstation spot heating are ideal for the Heatstrip Max.

Suitable for permanent outdoor mounting, no protection needed.

For outdoor applications, the Heatstrip Max is suitable for both permanently exposed (eg. courtyards and patios) and undercover installations - does not need to be fully protected from the elements.

High Strength element – virtually indestructible

The unique metallic "Incoloy" element is 14mm thick, meaning it is vandal proof and will not shatter like other glass quartz heating elements. Provides piece of mind in both commercial and domestic situations.

Commercial grade quality – 2 years full replacement warranty

Constructed of extremely robust, commercial grade material, the Heatstrip Max is designed for long-life and durability in all conditions. It is fully supported by a 2 year replacement warranty under both residential and commercial conditions.

Corrosion protection

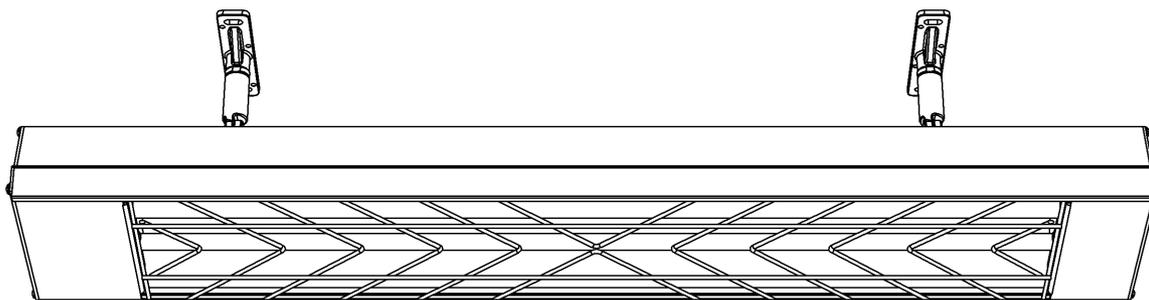
Built from corrosion resistant alloy, it is suitable for use in most applications, including difficult corrosive environments such as coastal areas.

Multi-Purpose Mounting Options

The Heatstrip Max is supplied with flexible mounting options. The standard bracket will allow both ceiling and wall mounting, at various angles, as well as suspension by chains/wires and metal rods. Optional twin mount and end-to-end brackets are also available.

2 models – DIY or hard-wired

2 models are available. The THX 2400 (2400W) is supplied with a lead and plug, therefore ideal for a DIY installations. The THX 3600 (3600W) requires hard-wiring to a 15amp power supply.



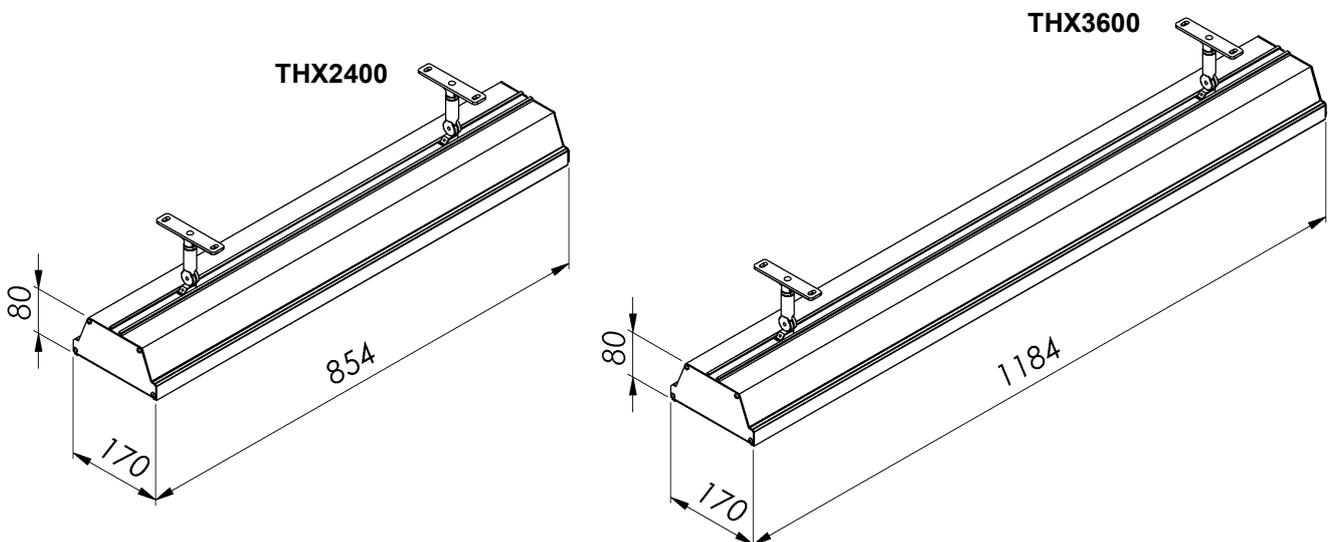


Specifications - Australia

MODEL	POWER (WATTS)	CURRENT (AMPS)	DIMENSIONS (mm)	WEIGHT (Kg)	LEAD LENGTH (mm)	PLUG
THX 2400	2400	10	854 x 170 x 80	6	1000	YES
THX 3600	3600	15	1184 x 170 x 80	8	1000	NO

MODEL

HEATER TYPE	High intensity electric radiant, infra-red overhead heater with Incoloy 840 element	
OUTPUT	Refer to model code chart above	
POWER	230-240 Volts Nominal at 50—60 Hertz, Single Phase	
CONNECTION	3 Core Cable 2.5mm ²	
APPROVALS	AUSTRALIA / NZ	
MOUNTING HEIGHT	MINIMUM	2.1 m
	RECOMMENDED	2.3 m to 2.8 m
	MAXIMUM	3.0m Outdoors and 3.5m Indoors (For higher ceiling heights, units can be lowered using optional bracket kits)
MOUNTING OPTIONS	Suitable for ceiling, wall, beam mounting. Also available for extension mount using rigid fixing poles and chain mount bracket, flush, twin and end to end.	
PROTECTION RATING	IPX5 Protection from water ingress from all directions	
MATERIALS OF CONSTRUCTION	Anodised alloy casing and end caps, chromed grille	





Spot heating principle

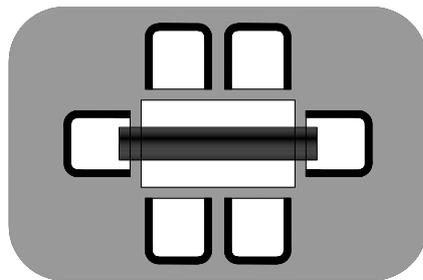
In most outdoor or difficult-to-heat indoor applications, there are 2 methods when looking at the size and quantity of heaters required.

Option 1 is to comfort heat the entire area based on the total dimensions of the space, regardless of whether the entire area is being fully occupied or not.

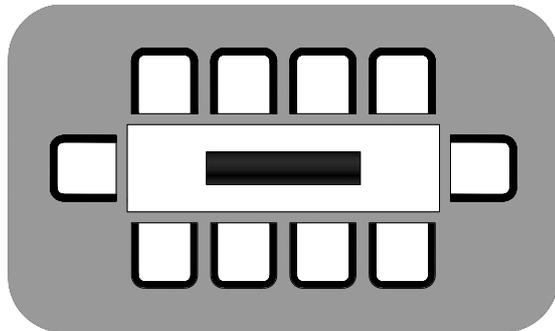
Option 2 is to spot heat the high use areas, such as over outdoor tables, BBQ's, lounges, assembly lines or indoor workstations.

Often it is more practical and efficient to spot heat these areas. Spot heating will help to reduce the initial capital cost, as well as the on-going running costs. Spot heating will allow the area to be "zoned", meaning heating only the areas that are being used, such as tables in a restaurant or outdoor alfresco area.

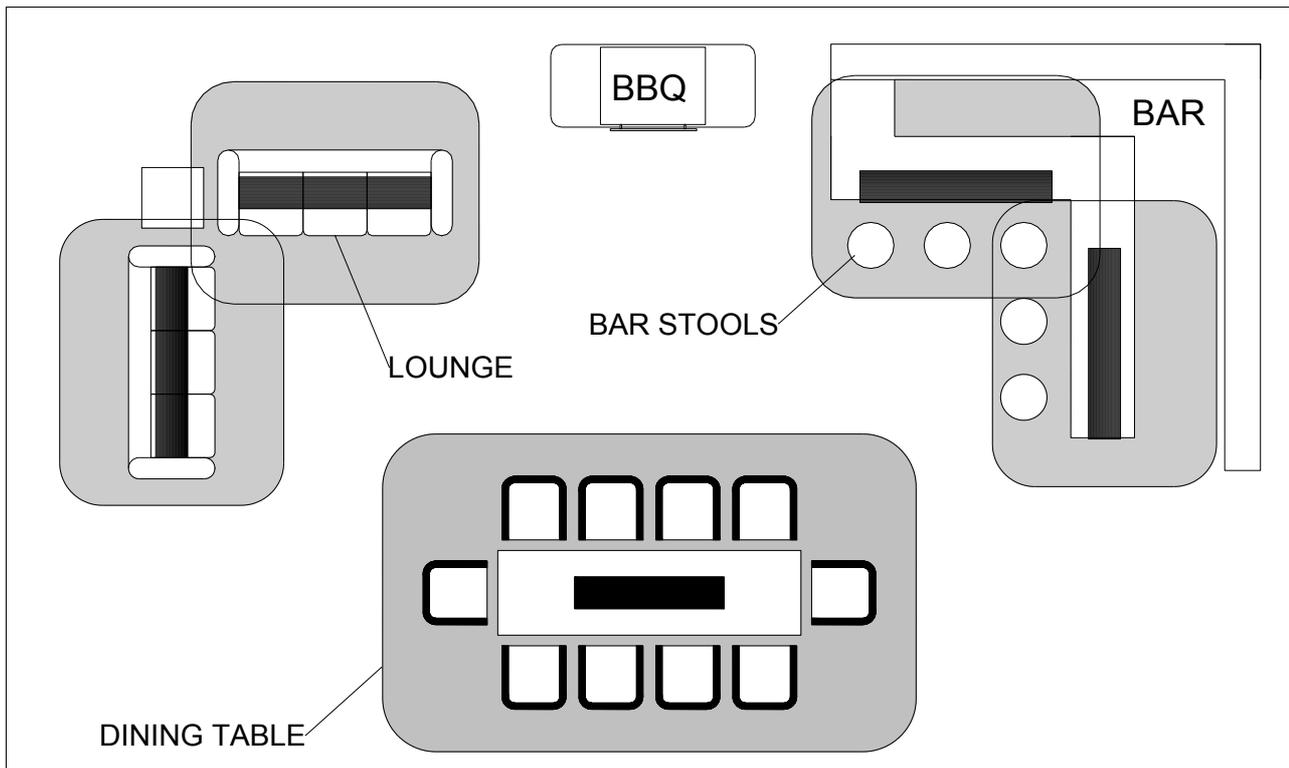
The top diagram shows how HEATSTRIP® Max is recommended to be used directly over a table, while the bottom diagram indicates how to spot heat a large area.



THX2400



THX3600





Radiant footprint

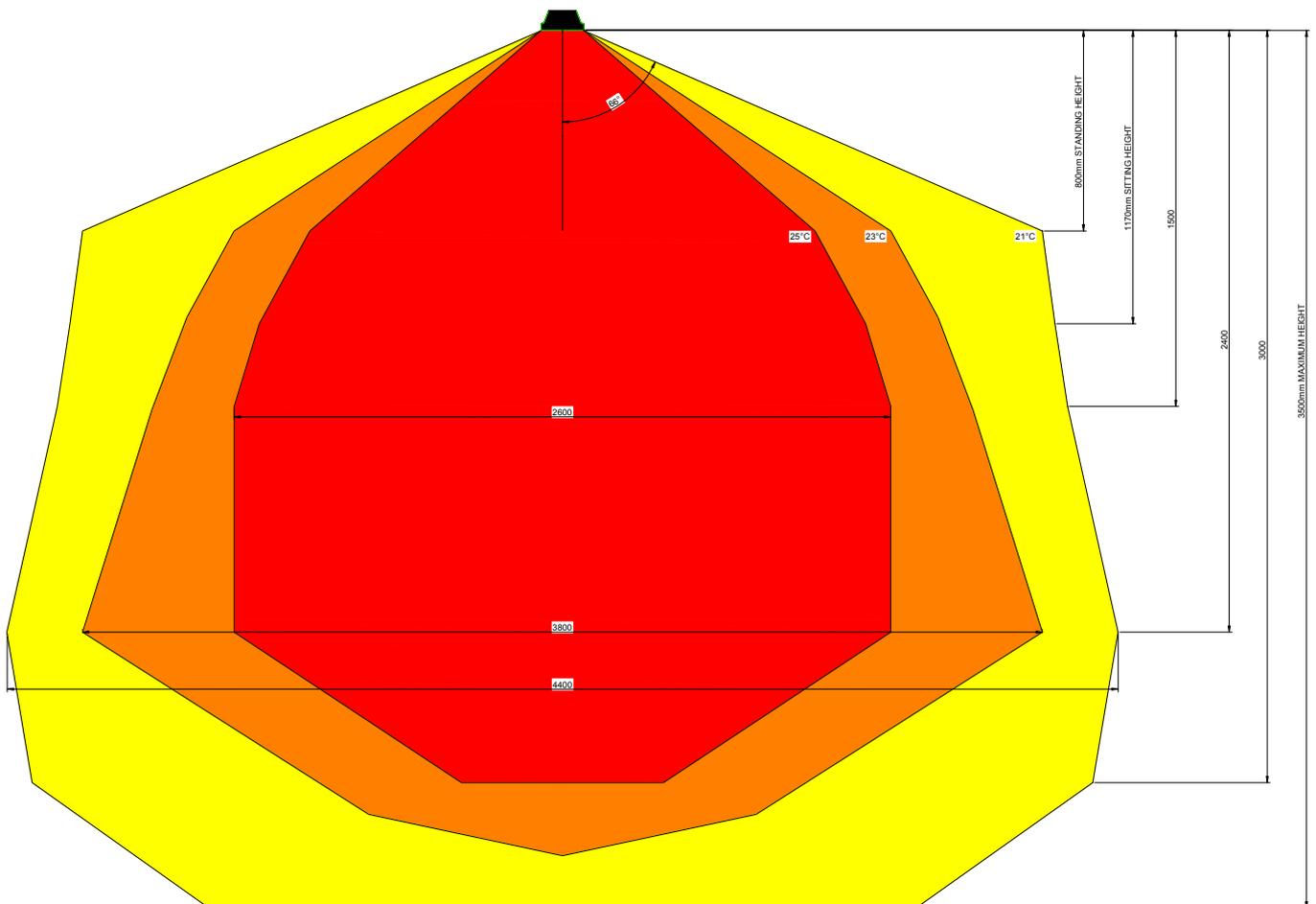
HEATSTRIP® Max electric heaters produce radiant heat, which heats objects rather than the air. Therefore, it is imperative that objects to be heated (ie. people), are within the direct radiant footprint of the heater.

The diagram below shows the radiant footprint of HEATSTRIP® Max, and is an approximate guide based on a fully enclosed, outdoor environment.

This diagram shows that the maximum heat output is found directly under the heater, and the temperature decreases as you move away from the heater.

It highlights the importance of maintaining recommended mounting heights, and positioning the heater directly above the area to be heated, if possible.

Also, the temperature (ie. surface temperature) is the same for both models, regardless of the wattage. However, as the size increases and the length of the unit increases, the radiant footprint will be larger.





Selection guide

General recommendations for **HEATSTRIP® Max**:

- Ideal mounting height: 2.3m to 2.8m. Maximum is 3.0m Outdoors and 3.5m Indoors
- Ideal mounting location: ceiling mounted, directly above area to be heated (eg. above a table)
- Based on the radiant footprint of the previous page, for a protected outdoor area, a minimum of 250W/m² is required. For indoor spot heating, a minimum heating capacity of 150W/m² is recommended.

The below table outlines the coverage of each HEATSTRIP® Max model (in m²), based on 3 different scenarios. For example, in an outdoor area that is protected from prevailing winds by walls, café blinds etc. (eg outdoor enclosed), Model THX 2400 will cover 10m² and Model THX 3600 will cover 15m².

This data is based on direct overhead ceiling mounting. If the heaters are wall mounted, the radiant footprint will be reduced.

MODEL	INDOOR PROTECTED (m ²)	OUTDOOR ENCLOSED (m ²)	OUTDOOR EXPOSED (m ²)
THX 2400	16	10	6
THX 3600	24	15	9

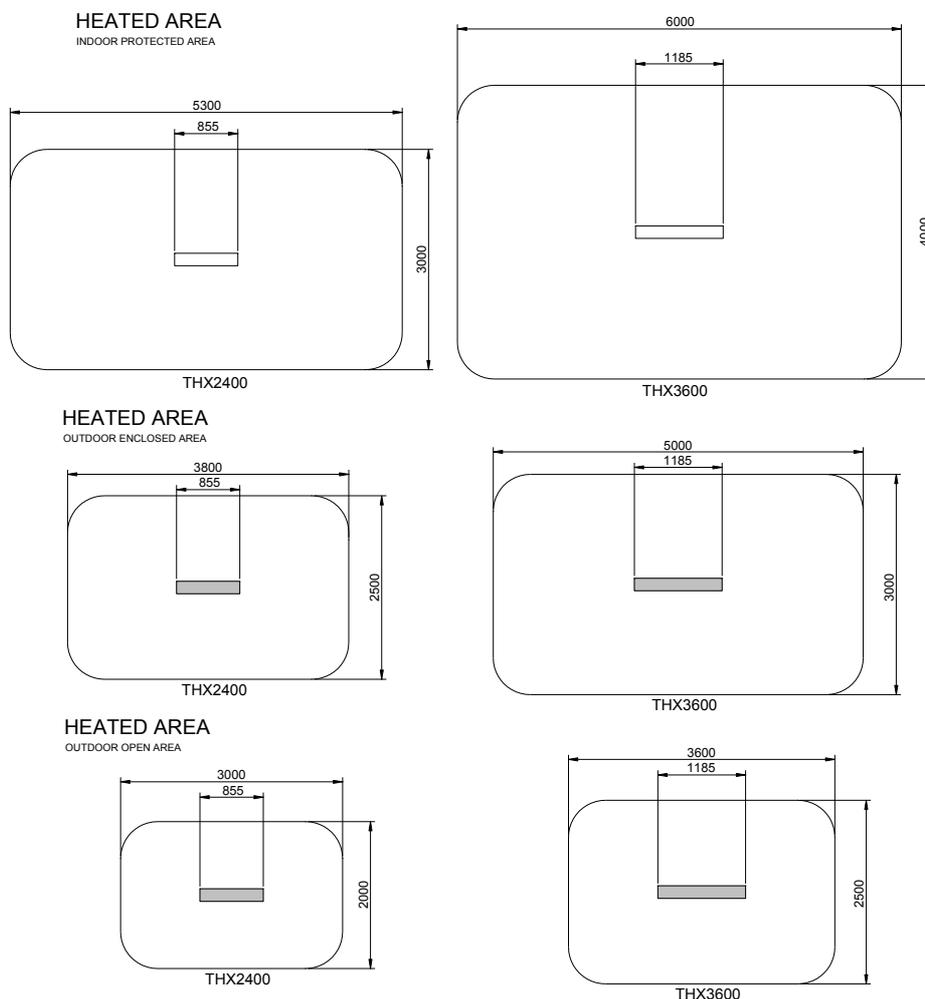
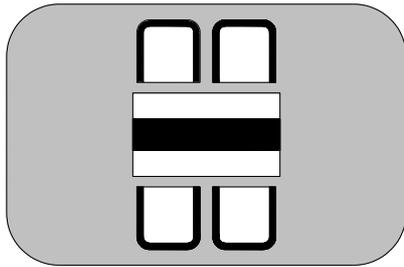




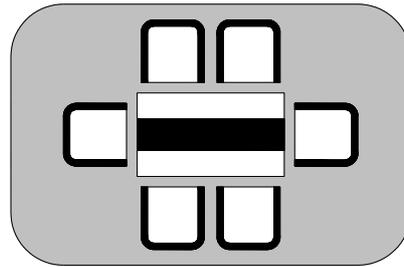
Table layout

For the majority of outdoor applications, the most effective method is to spot heat a table or similar area. The below diagrams provides an easy selection guide for the approximate model and quantity of heaters required to heat common residential table settings.

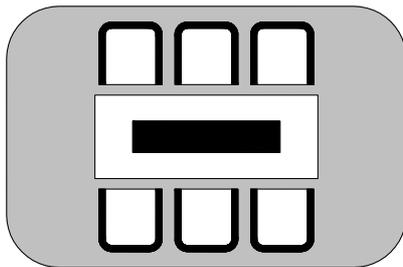
Selections are based on HEATSTRIP® Max being mounted at 2.7m from the floor and an undercover fully enclosed outdoor area.



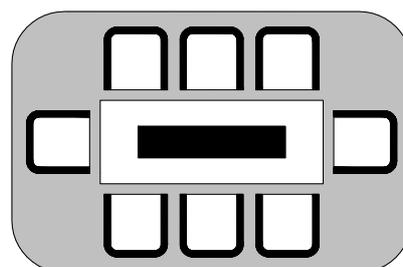
THX2400



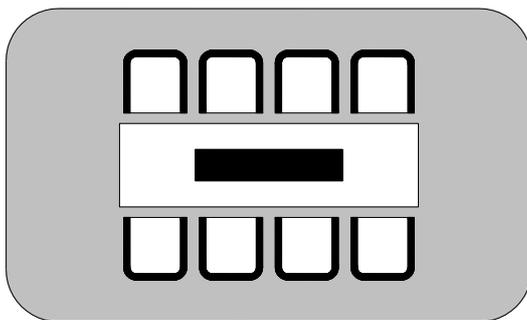
THX2400



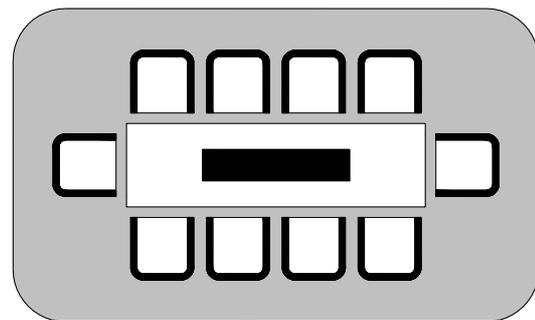
THX2400



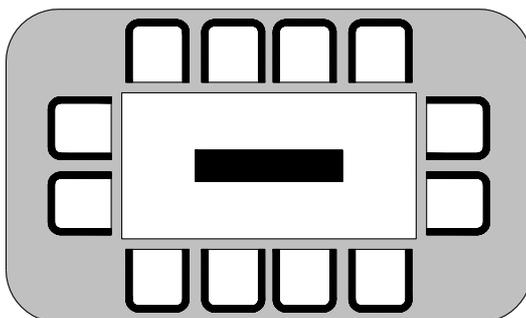
THX2400



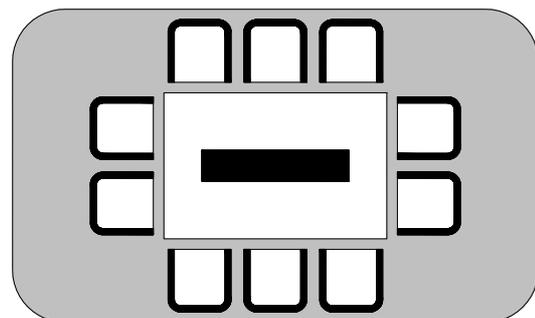
THX3600



THX3600



THX3600



THX3600



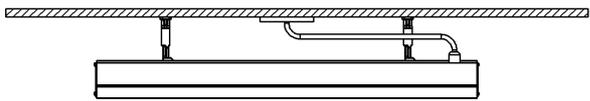
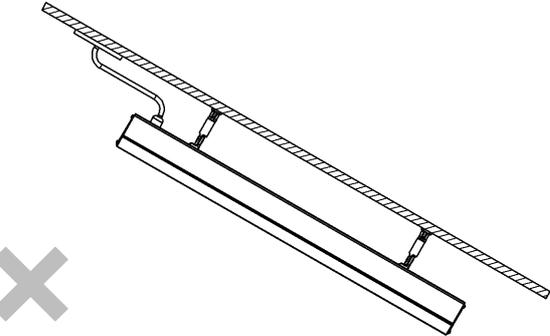
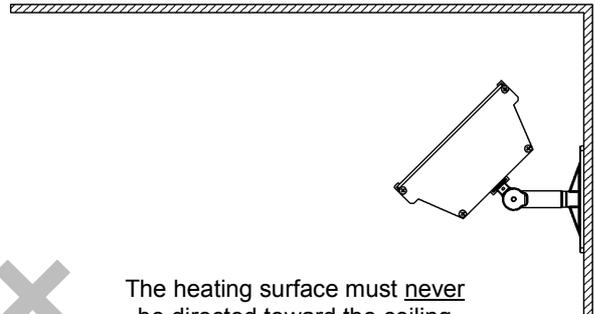
Installation Requirements

The ideal mounting position for the HEATSTRIP® Max is on the ceiling, directly above the area to be heated. If this is not possible, HEATSTRIP® Max can be mounted on a wall and angled downwards. In this situation, ensure the mounting height is in the range of 2.3m to 2.8m and the table is within 3.0m of the wall.

For mounting heights more than 3.0m outdoors, we recommend the use of the optional accessories to reduce the height of the heater to 2.3m—2.8 m. This will increase the effectiveness of your HEATSTRIP®. Refer to the Mounting Accessory section for more information.

Electrical connections/GPO's 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 units.

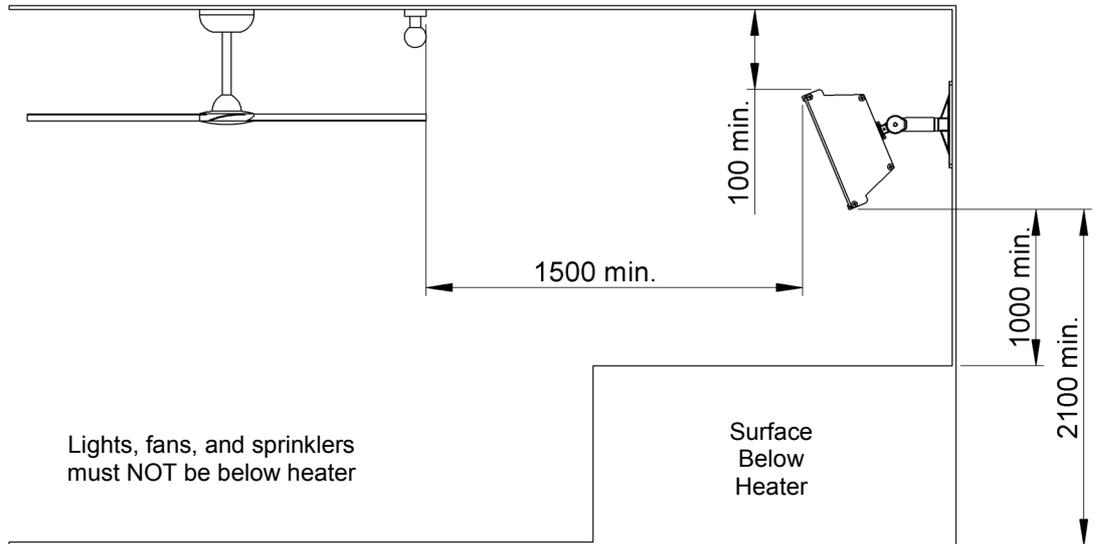
The HEATSTRIP® Max is not suitable for mounting on an incline, along the length.

Incorrect Installation	Correct Installation
	
	
 <p data-bbox="311 1892 655 1951">The heating surface must <u>never</u> be directed toward the ceiling</p>	

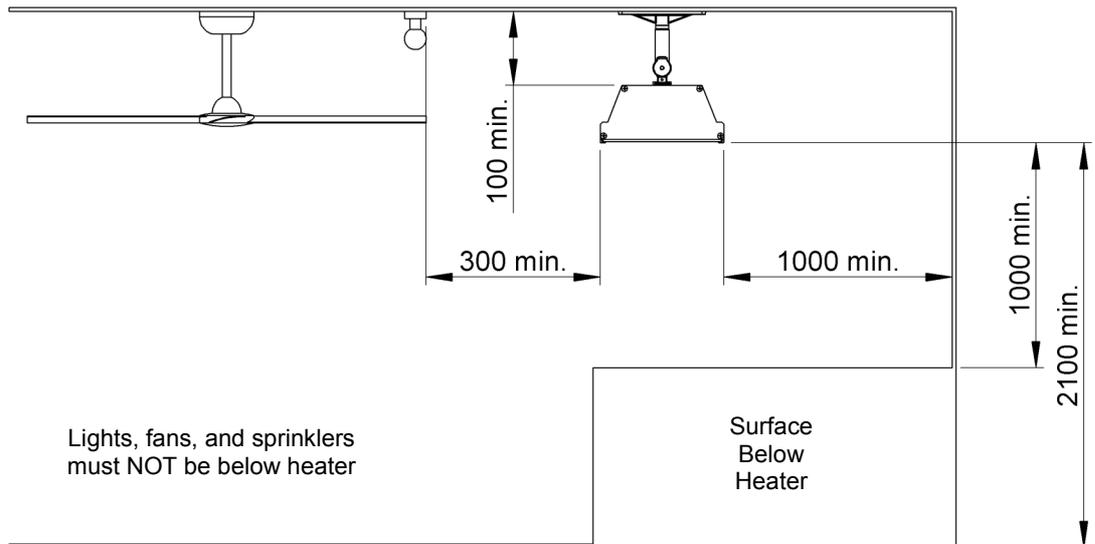


Installation location — the below diagrams confirm the minimum recommended clearances.

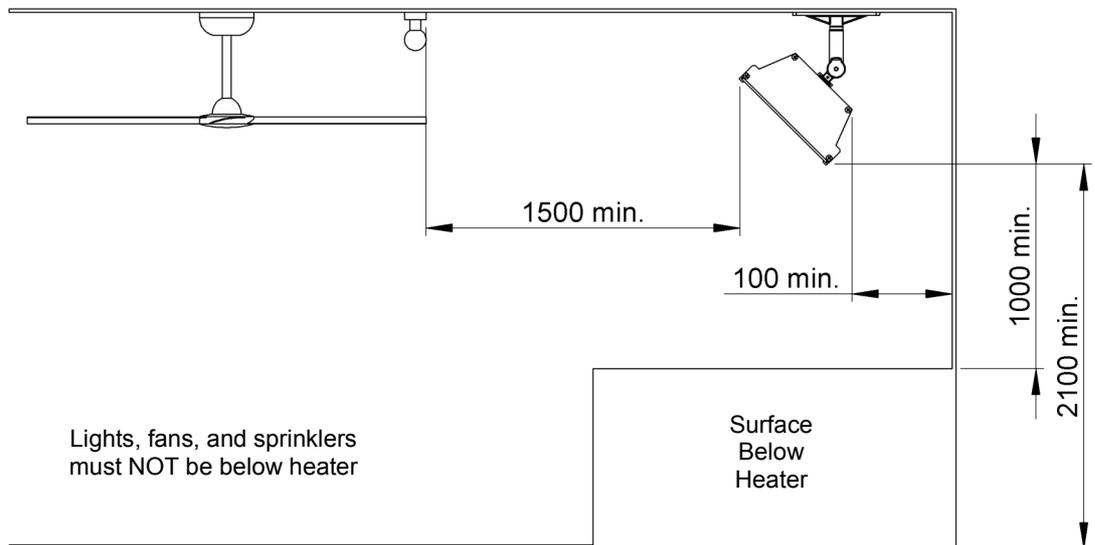
Angled Wall Installation



Ceiling Installation



Angled Ceiling Installation

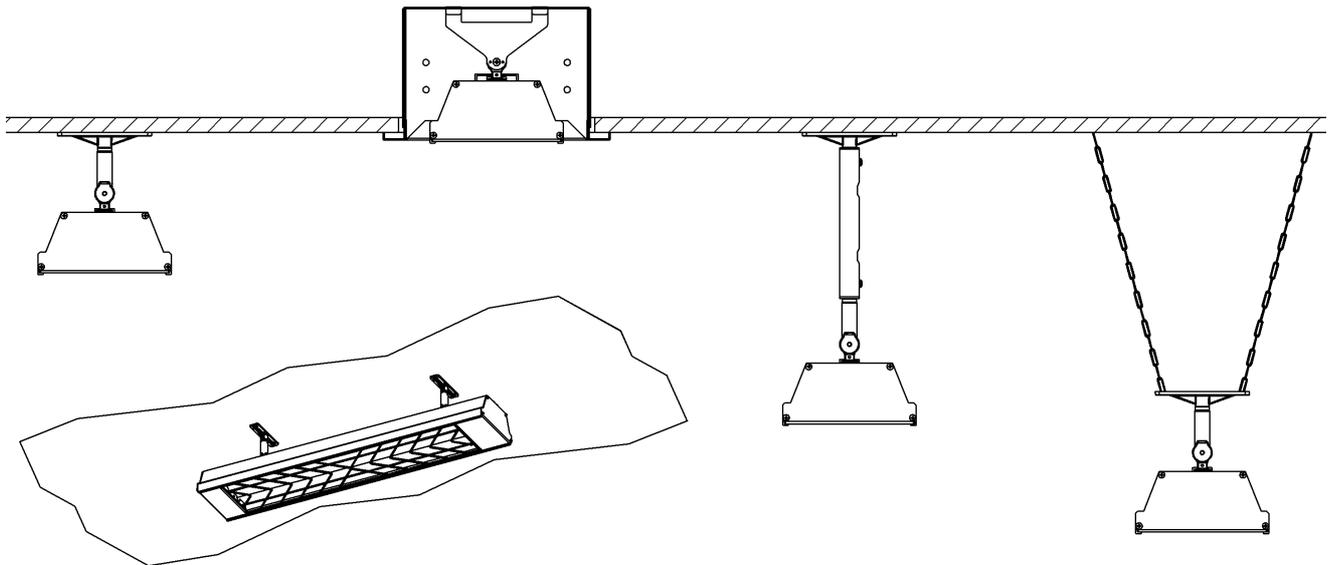




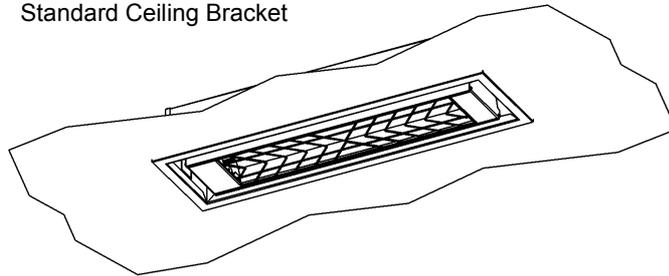
Mounting options

The installation of HEATSTRIP® Max is simple and easy with the standard mounting brackets supplied. For other more challenging locations there are a range of mounting options available - refer to below diagrams.

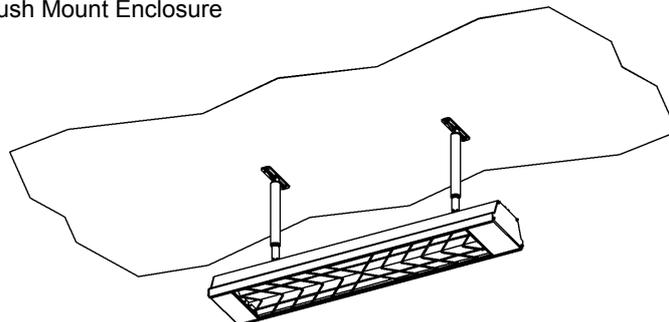
The HEATSTRIP® Max can be mounted directly to the ceiling, angled downwards on a wall, suspended on chains or poles; attached to beams or poles; or 2 units together. Refer to the following pages for more detailed information on each mounting option.



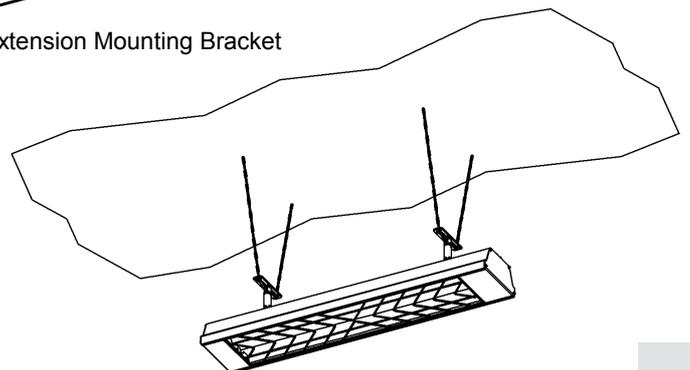
Standard Ceiling Bracket



Flush Mount Enclosure



Extension Mounting Bracket



Chain / Wire Mounting



Standard mounting brackets

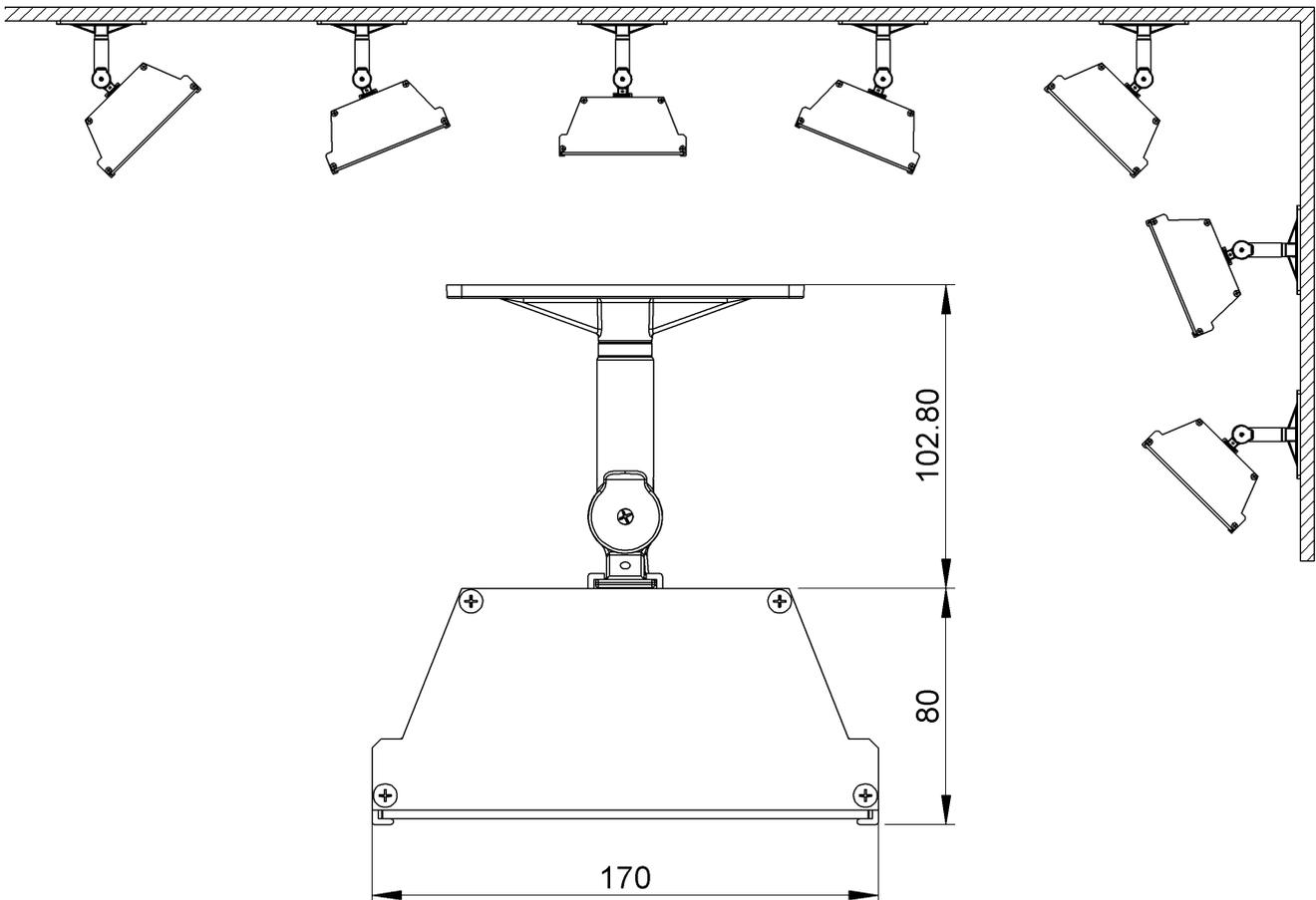
The HEATSTRIP® Max comes with a pair of standard mounting brackets. These adjustable brackets allow direct ceiling or wall mount, and come with preset angle options of parallel, 22.5° and 45°.

The flexible standard mounting bracket can be turned 90 degrees to mount onto a beam, it can also be used to suspend with chains.

The brackets need to be mounted onto a secure frame or wall with a minimum distance between the two brackets. The minimum distance ("B") for each model is listed in the table below.

When completing the installation, ensure all screws are tight and unit is secure.

Note: When suspension mounting, chains are not included.



Standard Mounting Bracket

PART No	PACKAGED DIMENSIONS (mm)	WEIGHT (kg)	MATERIALS
	125 x 100 x 40	0.2	ALLOY



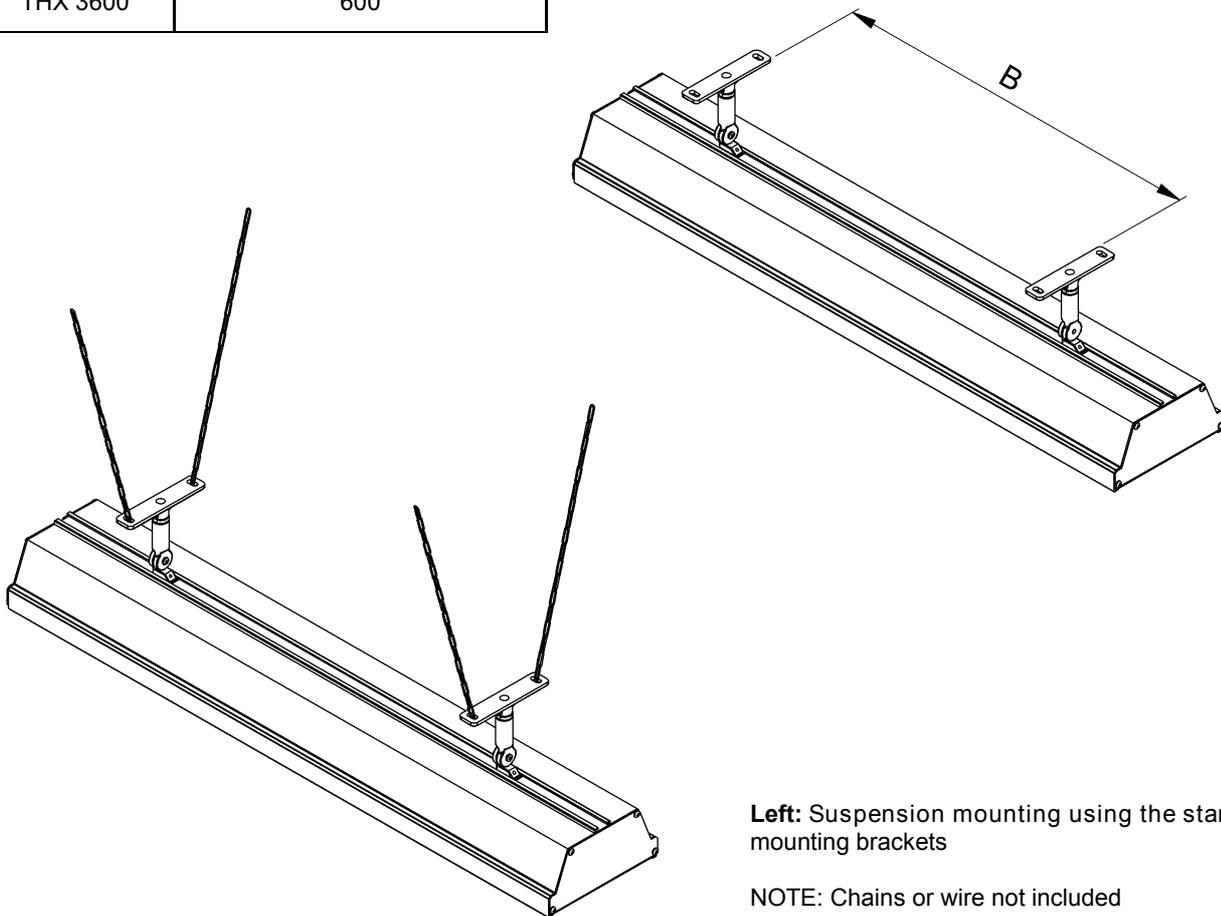
MOUNTING

Fix the two mounting brackets to the ceiling or wall in the desired location (refer minimum bracket centre chart). Make sure the method of fixing (bolts or screws) will be more than strong enough to support the weight of the heater, allowing for strong winds and other conditions.

- Slide the 2 locking brackets into the groove on the back of the heater. Make sure the pins on the locking bracket are facing the matching holes in the top mounting bracket.
- Lift heater into position and secure the 2 locking brackets to the mounting brackets using the screws provided. Make sure the 2 pins on the locking bracket engage with the matching holes in the mounting bracket. The pins will allow for both horizontal or angle mounting as required
- Tighten all screws and tighten the round nut at the top of the bracket, so it locks onto the top part of the mounting bracket.

NOTE: the standard bracket allows for normal or angle mounting of the heater and is suitable for ceiling or wall mounting.

MODEL	"B" MINIMUM DISTANCE (mm)
THX 2400	400
THX 3600	600



Left: Suspension mounting using the standard mounting brackets

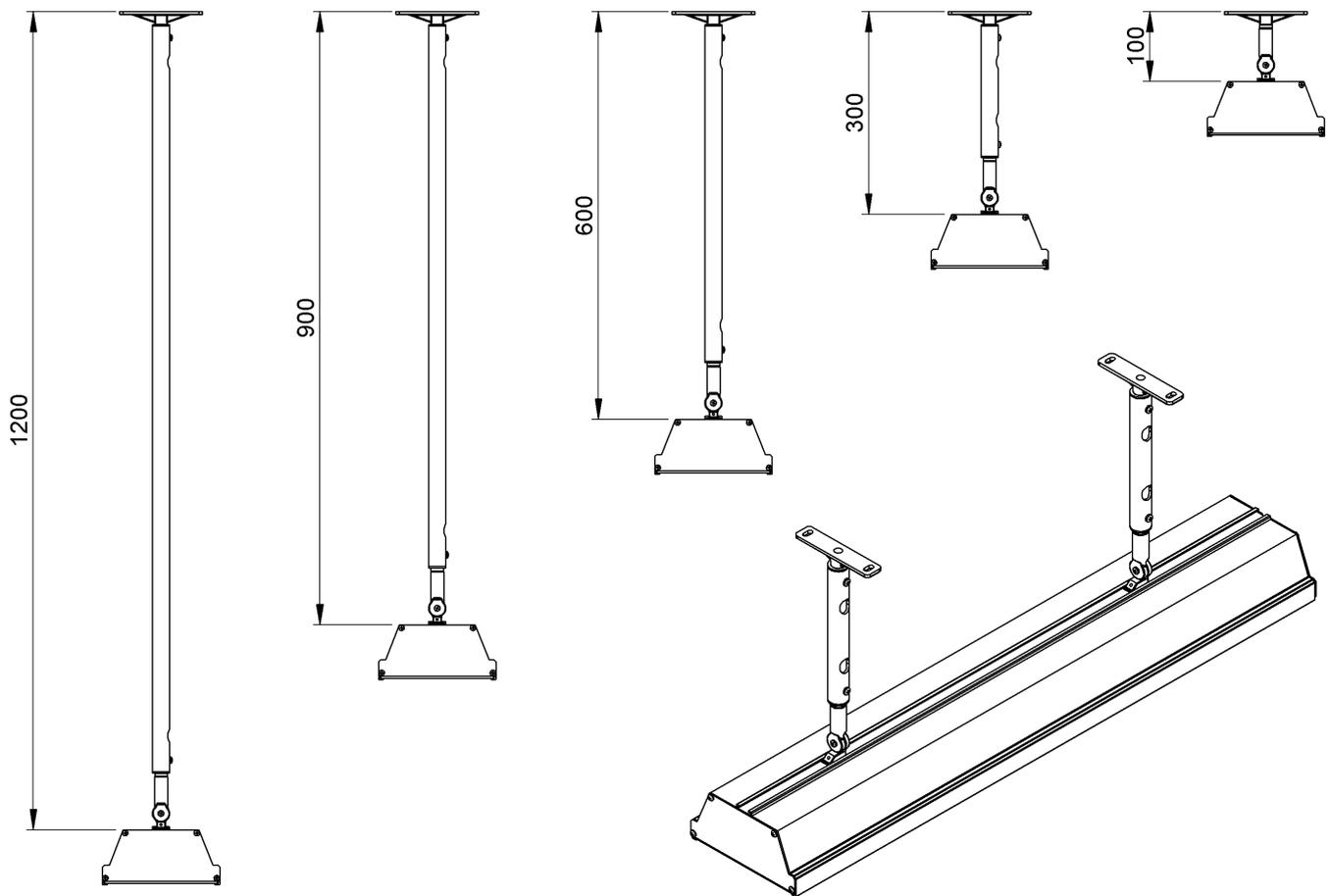
NOTE: Chains or wire not included



Extension Mount Bracket

The Extension Mount bracket allows HEATSTRIP® Max units to be lowered from high ceilings, using rigid connections. The brackets are for use with 25mm x 25mm x 1mm tube (SHS), supplied as a complete kit with brackets, pre-cut poles and connections. The standard length options as part of the kit are 300mm, 600mm, 900mm and 1200mm.

The kits include all brackets, poles and bolts necessary for connection to the heaters, however it does not include screws for attachment to the ceiling.



PART No	PACKAGED DIMENSIONS (mm)	WEIGHT (kg)	MATERIALS	NOTES
THHAC-005	300 x 150 x 50	2	316 SS	Kit includes 2x300mm extension pole, screws and brackets
THHAC-006	600 x 150 x 50	2	316 SS	Kit includes 2x600mm extension pole, screws and brackets
THHAC-007	900 x 150 x 50	2.5	316 SS	Kit includes 2x900mm extension pole, screws and brackets
THHAC-008	1200 x 150 x 50	3	316 SS	Kit includes 2x1200mm extension pole, screws and brackets



HEATSTRIP® Wall Controller with Remote

The HEATSTRIP® Max can be controlled via a simple on/off wall mounted switch, however it is recommended to use a controller with a variable heat modulator and a timer, to give the best performance and lowest running cost.

TT-MTM2 Wall Controller

This controller is a custom designed and manufactured controller for HEATSTRIP® heaters. It has been designed for ease of use and to provide low running costs of your heater. It provides both temperature control (allowing the user to turn the heat output up or down depending on the ambient temperature and conditions) and a timer for automatic heater shut-off operation.

The timer function has four settings: 1 hour, 2 hours, 4 hours or constantly on. This feature is ideal for applications such as BBQ, alfresco areas, restaurant dining, assembly line production etc. when continuous heat is not required. The timer also reduces the likelihood of heaters being inadvertently left turned on.

Depending on the ambient temperature there may be a requirement to control the heat output of the heater. The controller has 3 settings, they are High, Medium and Low.

The controller allows a combination of the multiple timer (1/2/4 hour) and heat outputs (High/Medium/Low).

The controller comes with a remote control unit which provides convenient control of the heater power output and timer functions.

Controlling multiple heaters

It is possible to use one wall controller to control multiple heaters. The wall controller is rated at 16 Amps and 240 volts. For a larger current draw, talk to your electrician who can use a relay to connect more units.

Remote pairing

All units operate using the same remote control frequency, therefore, multiple wall controllers can be operated using a single remote control.

The remote will function at distances of over 8m when used in a straight line. This distance reduces when used at an angle.



MODEL	MAXIMUM VOLTAGE (Volts)	MAXIMUM CURRENT (Amps)	PACKAGED DIMENSIONS (mm)	UNIT WEIGHT (kg)
TT-MTM2	240	16	150 x 95 x 55	0.3



Safety

HEATSTRIP® Max has an IP rating of X5. This means it is safe for water ingress from all directions. The HEATSTRIP® can be safely hosed down.

HEATSTRIP® has undergone extensive testing both in laboratory conditions; in Thermofilm's manufacturing facility in Melbourne and field trials in Australia and overseas. It has been this testing that gives the purchaser the confidence of a high quality product.

Independent laboratory testing has confirmed Thermofilm's full compliance with Australian and other International Standards. This includes CE, AS/ANZ, UL/CSE

The heater comes in both plug (2400W) and hardwired (3600W) versions. In both cases the fixed wiring must be installed by a licensed electrician in accordance with the relevant wiring regulations.

HEATSTRIP® is Class 1 equipment and must be earthed.

In operation, this heater is VERY HOT— do not touch any part of the heater while it is turned on. Do not touch any part until 30 minutes after it is turned off.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or intellectual capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance.

Do not allow any cables, furnishings, flammable materials or other items come in contact with any surface of the heater.

If installed in wet areas, the heater switches or controls must be located so that they cannot be touched by persons in the bath or shower.

The heater needs to be installed as per the installation instructions paying special attention to the minimum clearances. The heater needs to be mounted on a rigid bracket or fixing.

The heater must not be mounted immediately below or in front of a socket outlet.

In case of a heater fault or damaged supply lead, the appliance should be returned to the point of purchase for return to Thermofilm for repair.

Maintenance

The HEATSTRIP® is made from durable materials, however regular care and maintenance of your heater will help prolong the life of the heater.

It is recommended that you hose down the heater and with a soft cloth gently wipe the surfaces of the heater with a mild detergent to remove the built up contaminants from the environment. Then rinse all detergent off the heater.

All chemicals in the atmosphere including cigarette smoke, pollution etc. will tarnish the surface of the heater. In this case, additional cleaning and maintenance may be required. The cleaning process at least every three months will reduce the amount of build up and keep it looking as best it can. If the heater is in a corrosive environment eg. salt spray, we recommend that you clean your heater with a light spray of fresh water every week. After cleaning, turn the heater on for 20 minutes to dry any water residue and prevent water staining.

Before cleaning or inspection activity, the heater must be switched off and cooled down completely.

Do not use any abrasive materials or products to clean the heater, this includes solvents, citrus based cleaners or other harsh cleaning products.

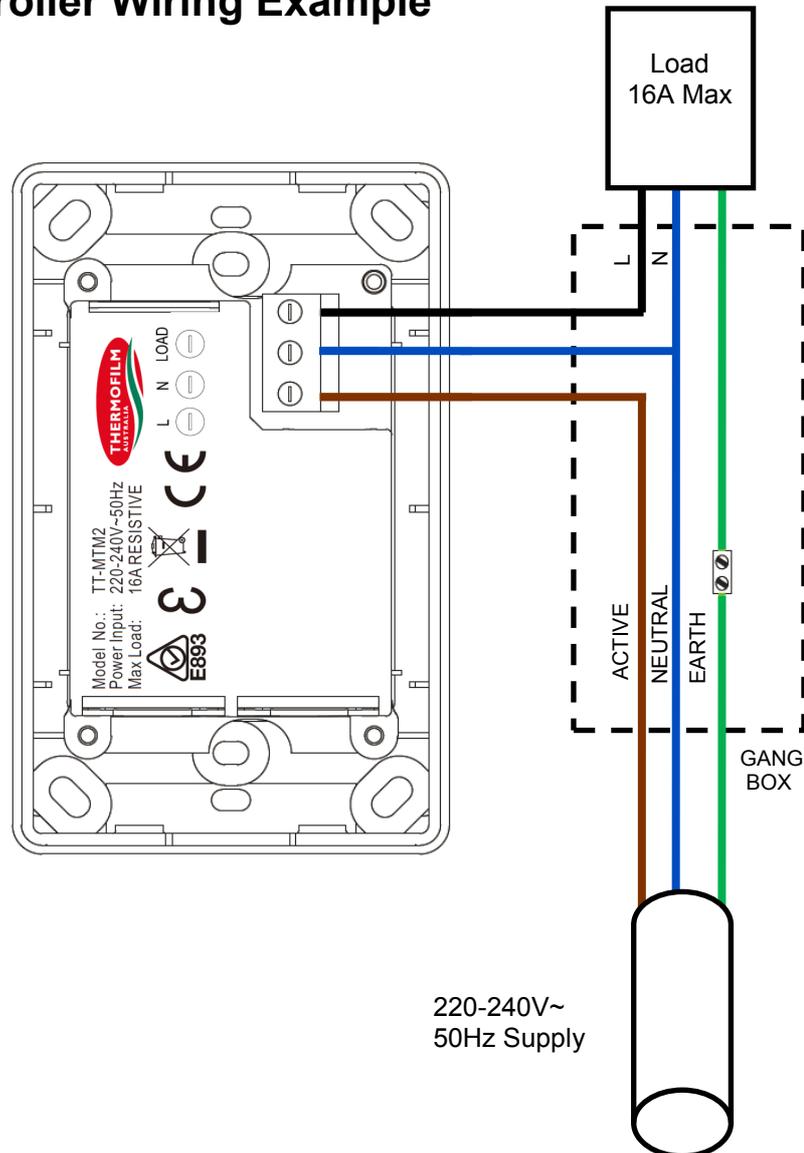
When handling the heater, ensure that your hands are clean or that you use clean gloves as grease or dirt can mark the surface of the heater.

Do not use high pressure water to clean heaters, light water spray only.



TT-MTM CONTROLLER INSTALLATION GUIDE

Controller Wiring Example



The TT-MTM2 controller requires sufficient air circulation in order to provide continuous operation on the high power load setting. The vents must remain clear at all times; never block or cover the vents.

An ideal controller installation will provide significant space around the back of the controller. Installing into restricted spaces, such as brick walls, may result in overheating if adequate ventilation is not provided.

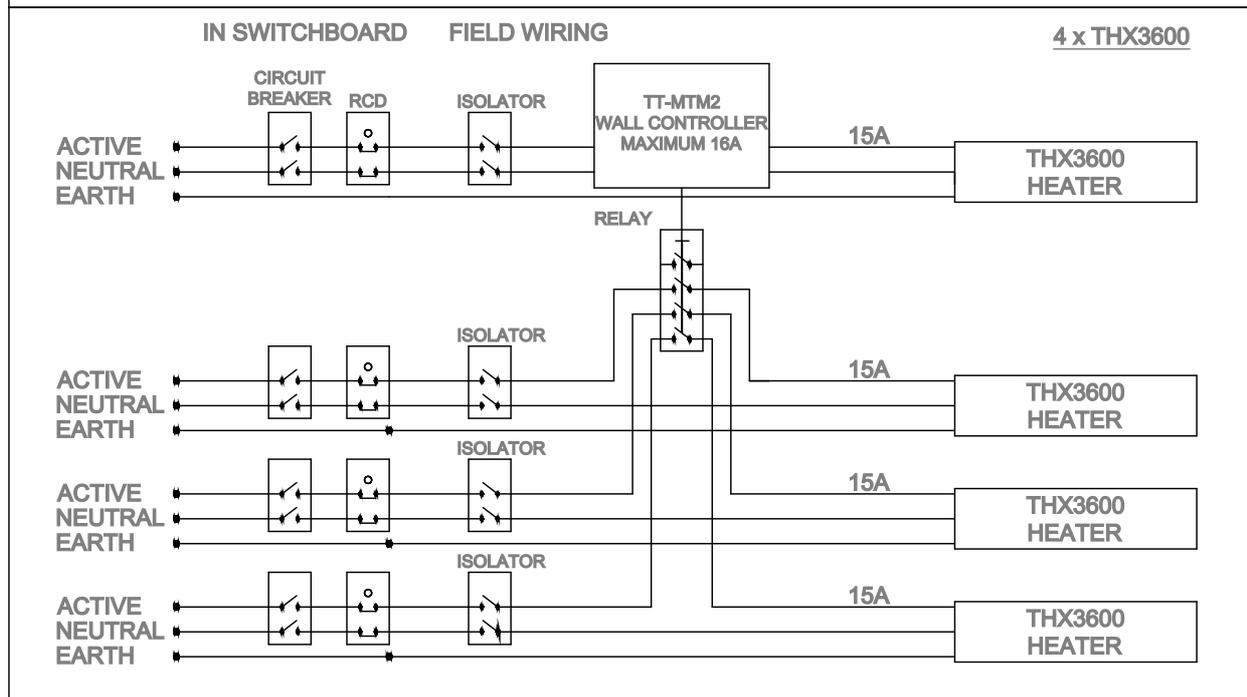
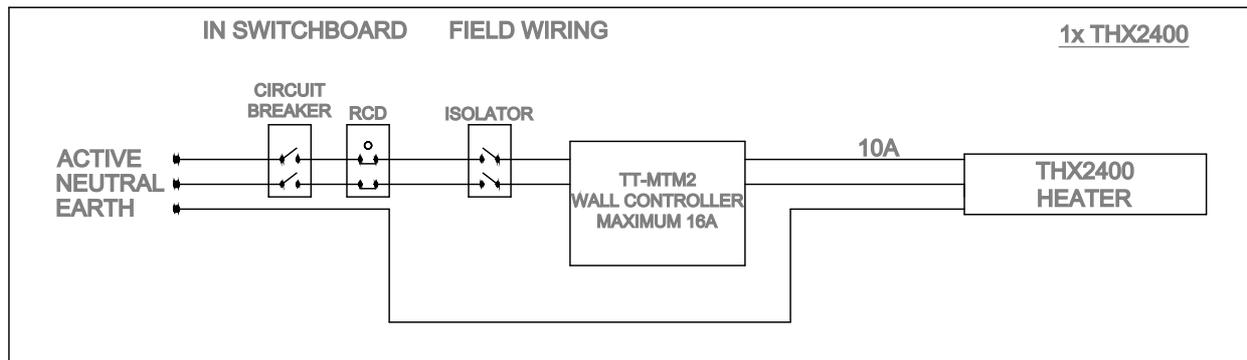
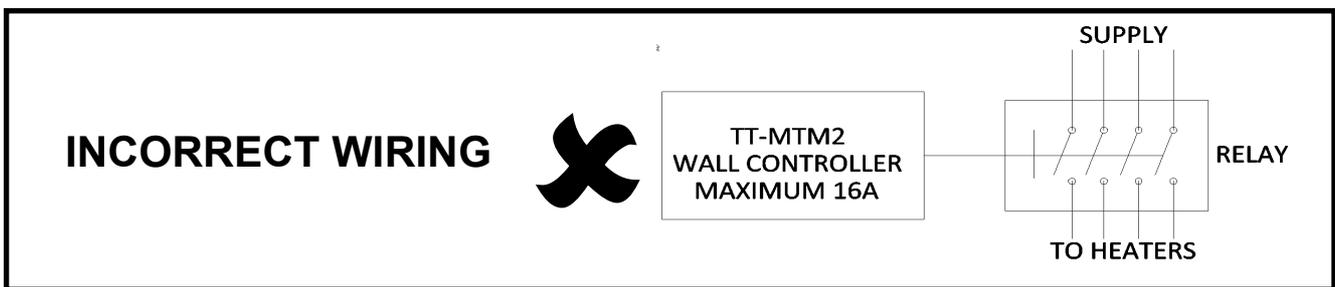


Heater wiring schematic diagrams

The HEATSTRIP® Max is required to be fitted with an "ON/OFF" isolation switch and can also be controlled with the use of a timer type control. It is recommended to use the TT-MTM Wall Controller for maximum performance and control options. When more units need to be connected from the same switch, a relay is needed. It is recommended that you talk to your electrician for more detail.

Note to electrician: The controller modulates the heat output using a "timed on / timed off" function. The controller does not modulate the voltage output. A relay is therefore suitable for this application.

CAUTION: A MINIMUM 250W LOAD MUST BE PLACED ACROSS THE CONTROLLER
 Failure to provide this minimum load will potentially damage both the relay/contactors AND the controller.





Warranty Terms & Conditions

The below Warranty Terms and Conditions apply for **New Zealand and Australia only**. For international warranty please refer to international warranty terms and conditions.

Thermofilm warrants to the original owner that HEATSTRIP® Max products will be free from defects in materials and workmanship for a period of 24 months from the date of purchase in accordance with the following warranty terms and conditions.

Provision of this warranty is subject to:

- The HEATSTRIP® product must be installed in accordance with the Installation Instructions and relevant electrical standards and codes.
- The HEATSTRIP® product must be maintained and cleaned according to instructions detailed in the Installation Manual.
- There is no warranty expressed or implied with regard to capacity requirements. The selection of the unit or units depends entirely upon the system design and capacities as determined by the purchaser.
- The customer has not repaired, opened or altered the product in any unauthorised manner.
- This warranty excludes damage to the product or components arising from circumstances outside the control of Thermofilm, including, but not limited to, where the product is not used for intended purpose; where the product has been rectified in any way; incorrect installation; incorrect power supply; damaged caused during delivery; misapplication, misuse, abuse, vandalism, lack of maintenance or accident.
- Thermofilm's obligations under this warranty are limited to repair or replacement at Thermofilm's factory of any components of the product which Thermofilm identifies to its satisfaction to be defective.
- Transportation charges involved in return of the product to the Thermofilm factory (or any other location authorised in writing by Thermofilm) is the sole responsibility of the customer.
- All products are inspected and tested before despatch and are at the risk of the purchaser after the shipment from the Thermofilm factory, if not delivered by Thermofilm to destination.
- Discolouration of the surface may occur after a period of time, this does not constitute a warrantable event.
- Twisting and bending of the heaters may occur, this does not constitute a warrantable event.
- No products or components will be supplied in advance of an examination of the faulty product or components by Thermofilm or an authorized representative of Thermofilm.
- Thermofilm does not participate in any site related costs or labour expenses incidental to replacement of parts, repairing, removing, installing, servicing, transportation or handling of parts to complete products, and assumes no liability on parts repaired or replaced without written authorisation. Thermofilm shall not be liable for any default or delay in performance of its warranty obligations caused by any circumstances beyond its control, including, but not limited to, judicial or government restrictions, strikes, fires, floods, abnormal weather conditions, delayed supply of components.

Should products be determined as damaged on arrival, immediately notify the transport company of the condition and have them noted on the freight documents. If damage is discovered after unpacking, demand immediate inspection by the transportation company and insist that a record of the damage is made on the freight documentation.

The customer warrants using the product in accordance with:

- Any instructions provided to it by Thermofilm from time to time.
- All government and local regulations, including but not limited to all relevant electrical, environmental laws and regulations governing the installation, storage, use, handling and maintenance of the goods.
- All necessary and appropriate precautions and safety measures relating to the installation, storage, use, handling and maintenance of goods.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

All warranty requests for repairs or replacements must be accompanied by a complete "Warranty Claim Form" available from Thermofilm, together with proof of purchase (and where possible, photos of the installation) and the heater returned to the place of purchase.

In the event of a warranty claim, the goods need to be returned to the distributor/retailer for repair/replacement. Contact

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 Email: info@thermofilm.com.au

