hurlcon heating

# Solazar
# Natural Convectors

## Installation and operating instructions


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| | | | |
|---|---|---|---|
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## 1 - INTRODUCTION

This brochure has been compiled to provide installers with technical information on selecting, installing and operating Solazar natural convectors. Solazar natural convectors are designed as low surface temperature (LST) and low water content, making them ideal for aged care facilities, kindergartens etc. Solazar natural convectors come in a wide range of sizes, providing flexibility for every project. Produced in Melbourne Australia at Hurlcon Heating's manufacturing plant using state of the art manufacturing equipment, the Solazar natural convectors are electrostatically powder coated on our modern powder coating line. Solazar recyclable heat exchangers are manufactured from copper tube with aluminium fins and tested to 13 bar static pressure.

## 2 - GENERAL ADVICE

1. The convector outputs in this catalogue are quoted with the standard conditions of water temperatures of 90°C flow and 70°C return with an ambient air temperature of 20°C. The convectors can be operated at different water temperatures, with varying heat outputs. Please refer to page 4 for further technical details.
2. Solazar natural convectors are designed to be installed in a hydronic heating system only.
3. Solazar natural convectors can be used indefinitely without changing the water in the system.
4. The pipe work should be pressure tested to eliminate any leaks but **DO NOT** use **MAINS PRESSURE** if the convectors are connected.
5. Use only **OVENTROP** or approved valves on both the flow and return connections. The control valve should be connected on the top manifold/inlet side. The lockshield valve should be connected on the lower manifold/outlet side. NB: The use of thermostatic valves will provide greater comfort and economy.
6. A manual air vent is installed on the heat exchanger to enable venting of the convector.
7. The normal operating pressure is between 1 - 2 Bars.
8. Solazar natural convectors are designed to operate in conjunction with condensing boilers.
9. Maximum water temperature 95°C.

## 3 - TECHNICAL SPECIFICATIONS

All Hurlcon Solazar natural convectors are manufactured to the following specifications:

| | |
|---|---|
| • Steel casing | 1.15mm Galfan |
| • Wall Brackets | 0.75mm Galfan |
| • Heat Exchanger | 16mm Copper with 0.2mm aluminium fins |
| • Test pressure | 13 BAR minimum |
| • Working pressure | 10 BAR maximum |
| • Connections | 1/2" BSP |
| • Powdercoat Finish | Horizon White 901-51608 Dulux Surreal Effect Scylla Ripples |
| • Air bleed | 1/8" BSP |

## 4 - SIZES & TYPES AVAILABLE

Solazar convectors range of lengths: 600, 800, 1000, 1200, 1400, 1600, 1800, 2000 and 2400mm.
Heights: 300, 450, 600, 750 and 900mm.
Depth: 124mm (4 Tube) and 184mm (6 Tube).

**NOTE**: All Hurlcon Solazars are manufactured to order, lead times are 4-6 weeks depending on quantities. This should be checked with your nearest Hurlcon sales office prior to scheduling of installation.

## 5 – PACKAGING

1. In order to protect the Solazar convector and avoid external damage, all Solazars convectors are packed with bubble wrap packaging.
2. The Solazars are labelled with job and part number.

## 6 - MAINTENANCE

1. Any dust build up in the heat exchanger can be easily removed using a vacuum cleaner, the front cover can be removed to provide easy access.
2. The casing should only be cleaned using a soft cloth and warm soapy water, please do not use corrosive or abrasive agents to clean your convector.

## 7 - HEAT OUTPUTS AND CORRECTION FACTORS

How to select a Solazar natural convector:
Heat outputs vary according to the difference between the room air temperature and the average of the flow and return water temperatures (mean water temperature). The data supplied is based on 90/70°C water temperature and a room temperature of 20°C .

### Wall mounted outputs kW's

| HEIGHT (H mm) | TUBES (T) | LENGTH (L mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | 2000 | 2400 |
| 300 | 4T | 0.73 | 1.04 | 1.35 | 1.67 | 1.98 | 2.30 | 2.61 | 2.93 | 3.56 |
| | 6T | 1.04 | 1.50 | 1.98 | 2.40 | 2.90 | 3.36 | 3.82 | 4.28 | 5.20 |
| 450 | 4T | 0.81 | 1.17 | 1.52 | 1.88 | 2.23 | 2.59 | 2.94 | 3.30 | 4.00 |
| | 6T | 1.17 | 1.68 | 2.19 | 2.70 | 3.20 | 3.72 | 4.23 | 4.74 | 5.75 |
| 600 | 4T | 0.94 | 1.35 | 1.75 | 2.16 | 2.56 | 2.97 | 3.38 | 3.79 | 4.60 |
| | 6T | 1.34 | 1.93 | 2.51 | 3.10 | 3.68 | 4.27 | 4.85 | 5.44 | 6.60 |
| 750 | 4T | 0.98 | 1.40 | 1.83 | 2.26 | 2.68 | 3.11 | 3.54 | 3.96 | 4.82 |
| | 6T | 1.40 | 2.01 | 2.63 | 3.24 | 3.85 | 4.46 | 5.07 | 5.68 | 6.91 |
| 900 | 4T | 1.05 | 1.50 | 1.95 | 2.41 | 2.86 | 3.32 | 3.77 | 4.23 | 5.14 |
| | 6T | 1.50 | 2.15 | 2.80 | 3.46 | 4.11 | 4.76 | 5.42 | 6.07 | 7.38 |

### Correction Factors

| M.E.D. | 30℃ | 40℃ | 50℃ | 55℃ | 65℃ | 70℃ |
|---|---|---|---|---|---|---|
| Factor | 0.38 | 0.50 | 0.77 | 0.90 | 1.11 | 1.22 |

For temperatures other than 60℃, use the table abo ve for correct emissions. To calculate the obtain Mean Effective Temperature Difference (M.E.D.) use the following equation: M.E.D. = Flow + Return water temp. / 2 - Room Temp.

## 8 - CALCULATING WATER FLOW

To ascertain water flow requirement the following information must be calculated:

- Selected output
- Temperature difference between Flow and Return (**ΔT**)

Calculate flow rates in l/s using the following formula:

$$\textbf{Flow in l/s} = \frac{\textbf{output kW}}{\textbf{ΔT x 4.18}}$$

**Example:**

Required output of 2.0 kW
Boiler capacity - flow 80°C return 70°C thus **ΔT** = 10
The calculation is:

$$\text{Required Flow} = \frac{\textbf{2.0}}{10 \times 4.18} = 0.048 \text{ l/s}$$

## 9 - INSTALLATION DETAILS

1. The Solazar heat exchanger can be installed as either a left or right hand installation, by simply rotating the heat exchanger to allow pipe connections to be made on either end of the casing.
2. **Please Note:** *Do not overtighten pipe fittings, recommended 15 N-m torque maximum.*
3. The Solazar must be installed between 100 and 200mm from floor level to bottom of the convector.
4. Ensure clear air flow through the Solazar, no obstructions such as shelves should be immediately above.
5. Dimensions for the outer casing, along with measurements for fixing points on the wall mounting brackets are on the drawings on Page 7.
6. Pipework can exit the wall behind the casing if you bring pipework down through the wall from above.
7. Fix the wall mounting brackets vertically to the wall, ensure that the top of the brackets are level, refer Page 7.
8. Slide the heat exchanger into the brackets.
9. When fixing brackets, please take into consideration the limited adjustment as per slots in the base of the front cover.
10. Fit the outer casing top and side assembly.
11. Fit the front panel after the pipework connections have been completed and the thermostatic head or manual handle has been fitted. The front panel can be easily removed when necessary for system commissioning.

## 10 - PROBLEM SOLVING

1. Solazar convectors require the correct hot water flow rate to operate correctly.
2. Solazar convectors must be free of air to operate correctly.
3. The total heating system water quality must be maintained and free of air at all times for the convectors to operate correctly.

## 11 - WARRANTY

Solazar natural convectors are warranteed for 10 years against defects in material or workmanship. Warranty includes rework or replacement of the convector (parts only).
This warranty **DOES NOT COVER** any labour charges, travel time expenses, or any consequential losses or damage.

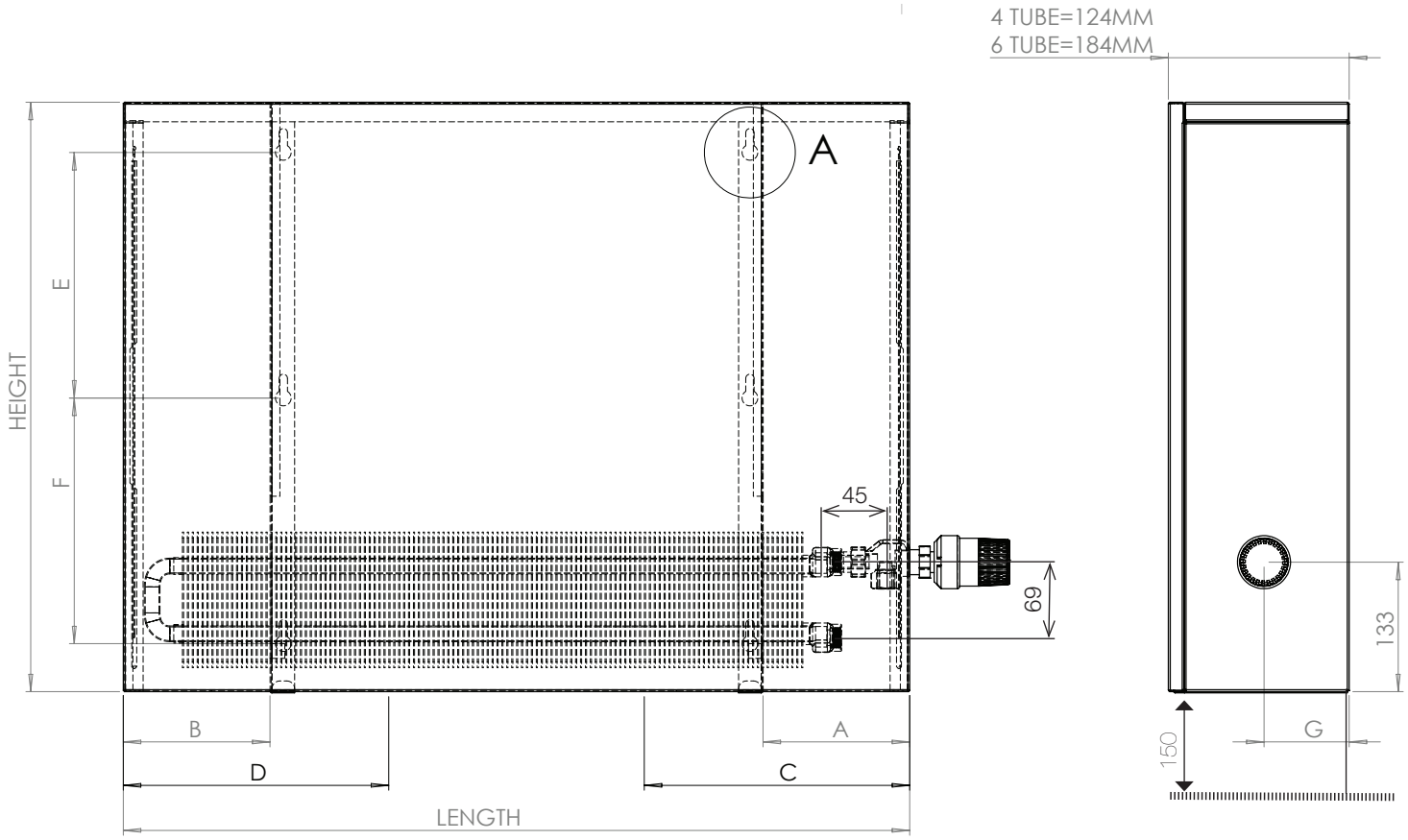
The products must be installed and used according to accepted plumbing practices such as BS5449. Failure to do so will void the warranty.

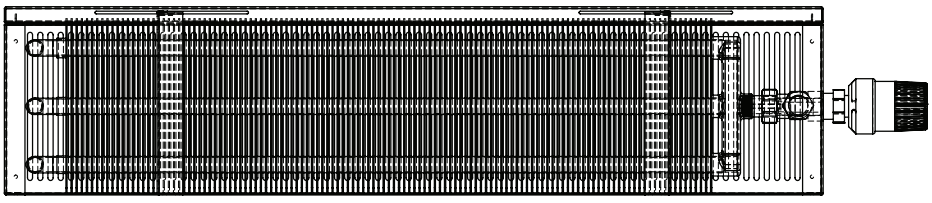
The below items must also be followed or else the warranty may be voided:

1. Solazar Natural Convectors must only be used for the purpose for which they are intended.
2. Please ensure that the connection elements are free of any dirt and burr after the installation.
3. After installation the system must be properly flushed.
4. When filling the convectors for the first time, heating system controls should be closed and the system should be set to the correct pressure.
5. Do not overtighten the airvents or valves, or the connection threads could be damaged.
6. After the installation, the system should be tested by qualified personnel only.
7. Do not use the convectors in humid environment (swimming pool, sauna bath, green house).
8. Please take precautions against the risk of freezing.
9. Avoid dropping or flexing (bending) the convectors when carrying or transporting.
10. Please do not use corrosive or abrasive agents to clean your convector.
11. Placing more than 10 kgs weight onto the convector may result in brackets coming out of the wall.
12. This warranty shall not apply to any convectors that have been subject to accident, negligence, alteration, abuse or misuse.

## 12 - DIMENSIONS

# BRACKET LOCATIONS AND DIMENSIONAL DRAWINGS WALL MOUNT 4 & 6 TUBE

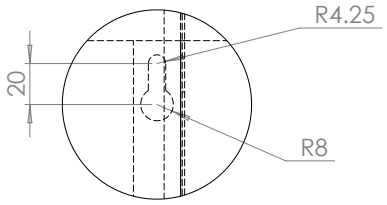


6 Tube heat exchanger

| MODEL | G |
|---|---|
| 4 TUBE | 58.15 |
| 6 TUBE | 86.65 |

| HEIGHT | E | F |
|---|---|---|
| 300 | 205 | - |
| 450 | 185 | 185 |
| 600 | 250 | 250 |
| 750 | 310 | 310 |
| 900 | 375 | 375 |




DETAIL A

SCALE 2 : 5

| LENGTH | A | B | C | D |
|---|---|---|---|---|
| 600 | 110 | 110 | - | - |
| 800 | 150 | 150 | - | - |
| 1000 | 185 | 185 | - | - |
| 1200 | 225 | 225 | 600 | - |
| 1400 | 260 | 260 | 700 | - |
| 1600 | 295 | 295 | 800 | - |
| 1800 | 330 | 330 | 900 | - |
| 2000 | 370 | 370 | 700 | 700 |
| 2400 | 445 | 445 | 900 | 900 |

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