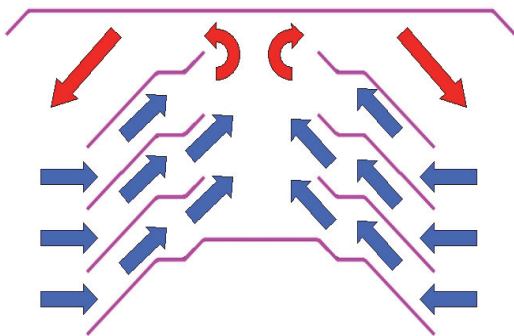
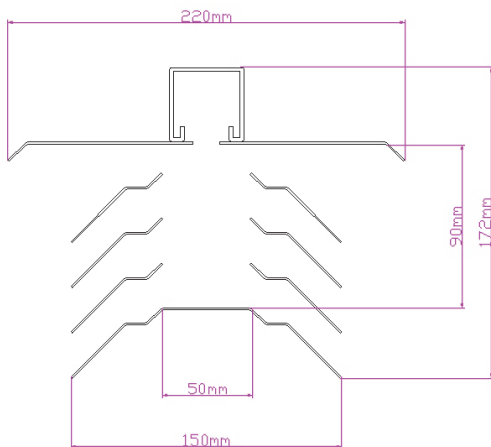


Solar Radiation Shield - Model THP-CL

The **Solar Radiation Shield** is a chamber made from a series of fins that use the natural convection of warm air to draw fresh air into the chamber and expel the heated air. Temperature, Humidity and Pressure Sensors that are placed within the chamber will experience a flow of fresh air and so give more accurate measurements than sensors that are exposed to direct sunlight. The fins are made from spun aluminium that has been powder coated white.



The **Solar Radiation Shield** is connected to the **T Bar Equipment Arm**. This is the most convenient way of mounting the shields to a tower, post or building.

The ventilated chamber within the **Solar Radiation Shield** is cylindrical in shape, 90mm high and 50mm in diameter.

This chamber is surrounded by a stainless steel mesh grill to protect the sensors from insects and wind blown debris.

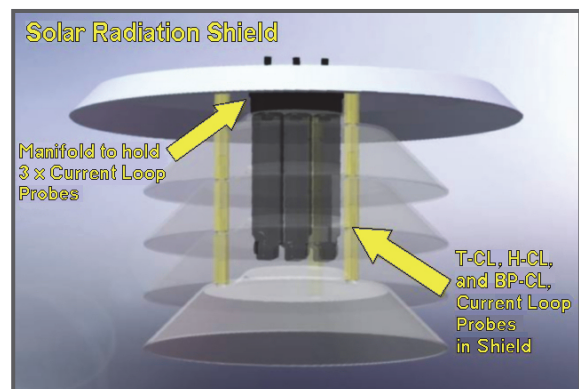
If sunlight falls on sensors they absorb radiant energy directly from the sunlight and are therefore at a higher temperature than the surrounding air. This causes erroneous readings.

If the sensors are put into a chamber so that the direct sunlight can not strike them but the chamber and the air within it are heated this will also cause erroneous readings.

If the chamber can be ventilated so that any heated air in chamber can rise and escape through convection then fresh air from the outside will be drawn in over the sensors and accurate readings of the air temperature, humidity and pressure can be made.

Solar Radiation Shield showing a transparent view of the internal weather sensors including:

- T-CL Temperature sensor
- H-CL Humidity Sensor
- BP-CL Barometric Pressure Sensor



Solar Radiation Shield Sensors

Temperature

The temperature sensor is a high accuracy thermistor which has been factory calibrated to within 0.2 °C. This alleviates the need for any user calibration. The sensor has low thermal mass so as to ensure a fast response time.

- Range -30°C~70°C.
- Accuracy $\pm 0.3^\circ\text{C}$ from (0°C~50°C).

Humidity

- Sensirion SHT11 Digital humidity sensor.
- Long-term stability.
- Fully calibrated by Sensirion.
- Response time 4 seconds.
- Range 0%~100%.
- Accuracy:
 - ◆ $\pm 3.5\% \text{RH}$ from 10% to 90%.
 - ◆ $\pm 5\% \text{RH}$ from 0% to 10% and 90% to 100%.

Barametric Pressure

- Intersema MS 5534B Digital Sensor.
- Fully calibrated by Intersema.
- Range 10 to 1100 mBar (hPa).
- Temperature Range -40 to +125.
- Resolution 0.1 mBar (hPa).
- Accuracy $\pm 1.5 \text{ mBar (hPa)}$.
- Temperature Co-efficient $\pm 2 \text{ mBar (hPa)}$ from -40°C to +85°C.



TBar with Wind Speed, Wind Direction plus Solar Radiation Shield