



Solar Radiation Sensor Pyranometer (SR40)

Features

- Incident short wave detector
- Silicon photovoltaic cell
- Accuracy $\pm 5\%$
- Cosine accuracy $\pm 3\%$
- High stability

Applications

- Solar Radiation Intensity
- Meteorological
- Heat Stress
- Evaporation
- Evapotranspiration
- Agricultural
- Irrigation management
- Bush fire management

Description

The SR40 Series Solar Radiation Sensor is a general purpose global incoming solar radiation sensor with cosine correction.

It has been designed for recording total incident solar energy as well as hours of sunshine.

Cosine correction is achieved by shaping a teflon diffuser and accurately housing this inside an opaque cylinder. A silicon photovoltaic cell is mounted inside the diffuser. This combination provides a standardised reading equivalent to radiation falling on a non-reflective flat surface.

For clear unobstructed daylight conditions, the SR40 series compares favourably with first class thermopile-type pyranometers at a fraction of the cost. The spectral response of the Envirodata pyranometer does not cover the full range of the



solar spectrum, but the error introduced is less than $\pm 5\%$ under most conditions of natural daylight.

SR40 series readings should not be taken as absolute when recording under vegetation or artificial lights.

For routine maintenance it is advisable that the top of the sensor be cleaned with a soft tissue to remove dust.

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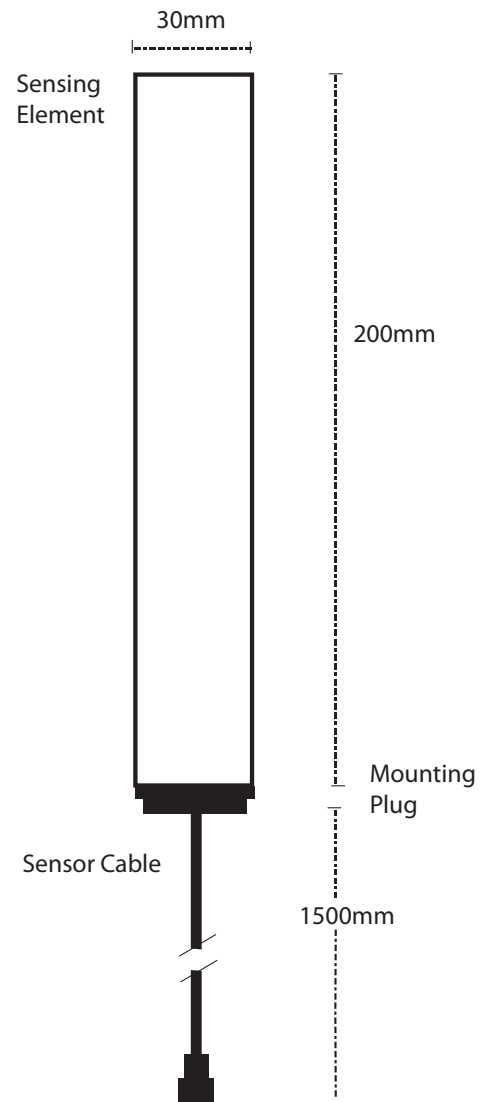


SR40 Series

Specifications

Sensing Element:	Photovoltaic cell
Measurement Units:	watts/m ² (intensity) Joules/m ² (energy)
Spectrum Response:	<-3dB from 400nm to 1000nm peaking at 900nm
Linearity:	Max. deviation of 1% up to 2000 watts/m ²
Resolution:	1 watts/m ² or better
Cosine Correction:	Cosine corrected to 3% up to 80° angle of incidence
Azimuth Error:	Less than 2% over 360° at 45° elevation
Stability:	Less than 2% change over a 1 year period
Temperature Stability:	max. 0.15%/°C
Calibration:	Calibrated against a standard thermo-pile pyranometer
Reliability:	Capable of operating for a period of five (5) years before factory overhaul.
Operating Conditions:	
• Temperature:	-20°C to +50°C
• Humidity:	0% to 100%
Sensor Mounting:	Unobstructed sky at elevations > 5°
Supply Voltage:	5.5 to 15 Volts DC
Current Drain:	< 4.5 mA
Output:	+5 Volt Pulse, Square wave

Dimensions



Configuration

• Model	SR40
• Output at 0 watts/m ² :	10 hz
• Output at 2000 watts/m ² :	50hz
• Output has a pure linear scale	
• Cable Type	3 core Shielded
• Cable Length	1.5m