

SOLAR RADIATION SENSOR

(SR50 Series)

Features

- Incident short wave detector
- Silicon photovoltaic cell
- Accuracy $\pm 3\%$
- Cosine accuracy $\pm 2\%$

Applications

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

Description

The SR50 Series Solar Radiation Sensor is a general purpose 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 SR50 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 $\pm 2\%$ under most conditions of natural daylight.

SR50 series readings should not be taken as absolute when recording under vegetation or artificial lights.

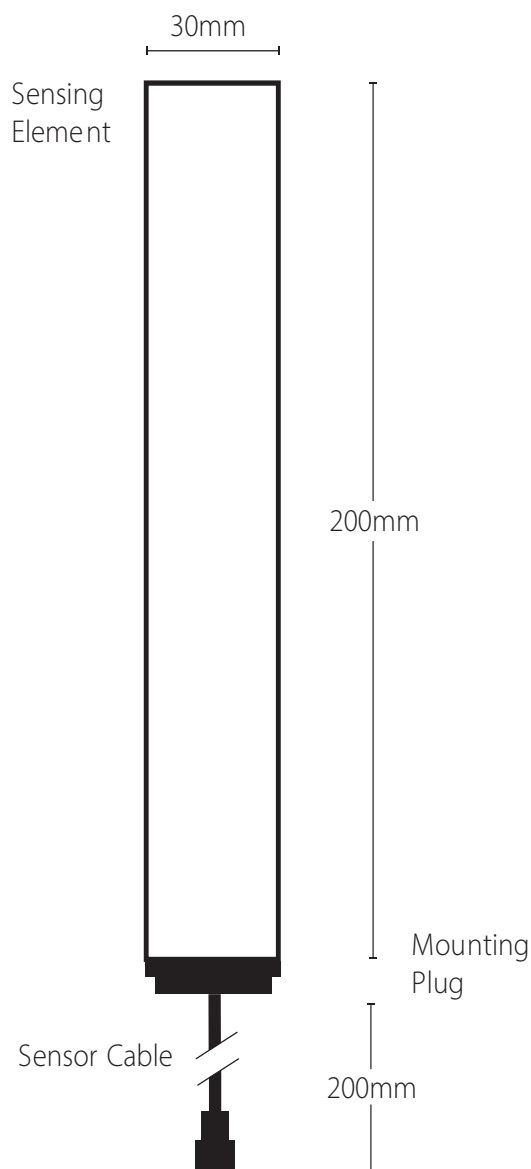
SOLAR RADIATION SENSOR SPECIFICATIONS

VN: 241128

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 1% over 360° at 45° elevation
Stability	Less than 1% change over a 1 year period
Temperature Stability	Max. 0.015%/°C
Total Accuracy	± 3% of F. S.
Calibration	Calibrated against a secondary standard thermopile pyranometer
Reliability	Field Calibration Checks recommended annually Factory recalibration recommended every 5 years
Sensor Mounting	Unobstructed sky at elevations > 5°
Supply Voltage	5.5 to 15 Volts DC
Current Drain	< 4.5 mA at 12V DC
Output	+5 Volt Pulse, Square wave

Operating Conditions

- Temperature -20°C to +70°C
- Humidity 0% to 100%



Configuration

- Output at 0 watts/m² 10 Hz
- Output at 2000 watts/m² 50 Hz
- Output has a linear scale
- Cable 3 core shielded
- Cable Length 200mm
- Model SR50 Male plug

Options

- FX1M5 - 1.5m cable
- FX16 - 16m cable