

240-SP-230 Silicon Cell Pyranometer - Heated

The **240-SP-320 Silicon Cell Pyranometer** is an all-season heated solar radiation sensor. An internal 0.2W heater keeps water (liquid and frozen) off the sensor, minimizing errors caused by dew, frost, rain or snow blocking the optical path.

The 240-SP-230 is sensitive in the 360-1120 nm shortwave radiation range and is calibrated to estimate total shortwave radiation across the entire solar spectrum.

The solar radiation sensor consists of a cast acrylic diffuser, photodiode, and signal processing circuitry potted solid in an anodized aluminum housing. The included 100 mm tall stand elevates the sensor above snow accumulations.

Features

- Dome shaped sensor head (diffuser and body) facilitates runoff of dew and rain to keep the diffuser clean
- Cosine-corrected for accurate readings even at low zenith levels
- Rugged design for continuous outdoor use in all climates
- Low-power operation and quick response time
- In-line connector (30 cm from sensor head) for simplified maintenance



Heated Sensor on Stand

Applications

- Agriculture
- Meteorology
- Solar Energy



Standard in-line Connector

ISO 9060:2018	Class C (previously known as <i>second class</i>)
Power	12 Vdc @ 15.4 mA (for heater)
Output	0-400 mV = 0-2000 Wm ⁻² (0.2 mV per Wm ⁻²) Response time less than 1 mS
Calibration factor	5 Wm ⁻² per mV
Calibration uncertainty	Less than 3% @ 1000 Wm ⁻²
Measurement repeatability	Less than 1%
Long-term drift	Less than 2% per year
Non-linearity	Less than 1% up to 2000 Wm ⁻²
Field of view	180°
Spectral range	360-1120 nm
Cosine response	± 5% at 75° zenith angle
Temperature response	0.04 ± 0.04 % per C
Operating environment	-40°C to +70°C, 0-100% humidity (can be submerged to 30m in water)
Cable	5 meters (16.4 feet) std., shielded, wire leads TPR jacket (high water resistance, high UV stability, flexibility in cold conditions)
Dimensions and weight	31 mm diameter x 128 mm high / 192 g (with 5 m cable)

Ordering Information

240-SP-230-SS	Silicon Cell Pyranometer, heated, 0-350 mV, with connector, 5m cable
Cable options:	-L-10 for 10 meter cable, -L-20 for 20 meter cable, -L-xx where xx is the total length in meters
240-AL-100	Leveling Plate
240-AL-120	Mounting Bracket with Leveling Plate
240-153	Tower Mount, 12-inch boom