

10718 SOLAR RADIATION SENSOR

SILICON-CELL PYRANOMETER



FEATURES:

- Accurate – Traceable to the World Radiometric Reference
- Stability < 2%/Year
- Rugged Domed Shaped
- Sensor Head
- Self-Cleaning Head
- Optional Heater

Met One Instruments Silicon-cell pyranometer, P/N 10718, is a compact, rugged and cost-effective sensor for shortwave radiation measurements.

Applications include agriculture, ecological and hydrological weather networks, and solar panel arrays.

Each sensor is calibrated in controlled laboratory conditions, traceable to the World Radiometric Reference in Davos, Switzerland. The pyranometers are cosine-corrected with directional errors less than +/- 5% at a solar zenith angle of 75 degrees. Long-term nonstability determined from multiple replicate pyranometers in accelerated aging tests and field conditions is less than 2% per year.

A patented domed-shaped sensor head (diffuser and body) facilitates runoff of dew and rain to keep the diffuser clean and minimize errors caused by dust blocking the

radiation path. Sensors are housed in a rugged anodized aluminum body, and the electronics are fully potted.

These pyranometers are calibrated through side-by-side comparison to the mean of four transfer standard pyranometers (shortwave radiation reference) under high-intensity discharge metal halide lamps. The transfer standard pyranometers are calibrated through side-by-side comparison to the mean of at least two ISO-classified reference pyranometers under sunlight (clear sky conditions). Each of four ISO-classified reference pyranometers is recalibrated on an alternating year schedule (two instruments each year) at the National Renewable Energy Laboratory (NREL). NREL reference standards are calibrated to the World Radiometric Reference (WRR) in Davos, Switzerland.

Power Supply	5 to 24 VDC with a nominal current draw of 300 μ A
Output (Sensitivity)	1.25 mV per $W\ m^{-2}$
Calibration Factor (Reciprocal of Output)	0.8 $W\ m^{-2}$ per mV (reciprocal of sensitivity)
Calibration Uncertainty	< 3% at 1000 $W\ m^{-2}$
Measurement Repeatability	< 1%
Long-Term Drift	< 2% per year
Non-Linearity	< 1% up to 2000 $W\ m^{-2}$, maximum radiation measurement is 2000
Response Time	< 1 ms
Field of View	180°
Spectral Range	360 to 1120 nm
Directional Response	+/- 5% at 75° zenith angle
Temperature Response	0.04 +/- 0.04% per C
Operating Environment	-40° to 70° C; 0 to 100% Relative Humidity
Dimensions	30.5 mm diameter, 37 mm height
Mass	140 g
Cable	5 m shielded, twisted-pair, santoprene rubber jacket

Specifications are subject to change at any time.

