

280-SP Series Silicon Cell Pyranometers

The **280-SP Series Silicon Cell Pyranometers** are excellent for applications that do not require the higher accuracy and cost of a thermopile pyranometer. They are less expensive and have faster response times, but have higher errors under cloudy conditions.

The 280-SP pyranometers are sensitive in the 360-1120 nm shortwave radiation range and are calibrated to estimate total shortwave radiation across the entire solar spectrum.

The solar radiation sensors consist of a cast acrylic diffuser, photodiode, and signal processing circuitry potted solid in an anodized aluminum housing.

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
- Optional in-line connector (30 cm from sensor head) for simplified maintenance

Applications

- Agriculture
- Meteorology
- Solar Energy



Optional in-line connector



280-SP Series Pyranometer

Spectral range	360-1120 nm (wavelengths where response is 10 % of maximum)		
Cosine response	± 5% at 75° zenith angle		
Calibration Uncertainty	± 5%		
Non-linearity	Less than 1 % up to 2000 W m ⁻²		
Long-term drift	Less than 2% per year		
Operating environment	-40°C to +70°C, 0-100% humidity (can be submerged to 30m in water)		
Cable	5 meters (16.4 feet) std. of shielded, twisted-pair wire; additional cable available in multiples of 5 m; TPR jacket (high water resistance, high UV stability, flexibility in cold conditions); pigtail lead wires		
Model 280-SP-110-SS	0-400 mV (0-2000 Wm ⁻²)	0.2 mV per Wm ⁻²	self-powered
Model 280-SP-212-SS	0-2.5 V (0-2000 Wm ⁻²)	1.25 mV per Wm ⁻²	5 to 24 Volts, nominal 300 uA
Model 280-SP-214-SS	4-20 mA (0-2000 Wm ⁻²)	0.008 mA per Wm ⁻²	5 to 36 Volts, up to 22 mA max
Model 280-SP-215-SS	0-5 V (0-2000 Wm ⁻²)	2.5 mV per Wm ⁻²	5.5 to 24 Volts, nominal 300 uA
Dimensions and weight	28 mm high x 24 mm diameter, Model 280-SP-214 140g, Others 90 g		

Ordering Information

280-SP-110-SS	Silicon Cell Pyranometer, 0-350 mV, 5m cable
280-SP-212-SS	Silicon Cell Pyranometer, 0-2.5 V, 5m cable
280-SP-214-SS	Silicon Cell Pyranometer, 4-20 mA, 5m cable
280-SP-215-SS	Silicon Cell Pyranometer, 0-5 V, 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
280-AL-100	Leveling Plate
280-AL-120	Mounting Bracket with Leveling Plate
280-153	Tower Mounting Arm 1'

Note: The sensor can be purchased without the connector, but delivery will be longer and the wire colors will be different.