Solar Radiation Sensor   PYRA 300 V2

The Solar Radiation Sensor, or solar pyranometer, measures global radiation, the sum at the point of measurement of both the direct and diffuse components of solar irradiance. The sensor's transducer, which converts incident radiation to electrical current, is a silicon photodiode with wide spectral response. From the sensor's output voltage, the console calculates and displays solar irradiance. It also integrates the irradiance values and displays total incident energy over a set period of time.

The outer shell shields the sensor body from thermal radiation and provides an airflow path for convection cooling of the body, minimizing heating of the sensor interior. It includes a cutoff ring for cosine response, a level indicator, and fins to aid in aligning the sensor with the sun's rays. The space between the shield and the body also provides a runoff path for water, greatly reducing the possibility of rain- or irrigation-water entrapment. The diffuser is welded to the body for a weather-tight seal; it provides an excellent cosine response. The transducer is an hermetically-sealed silicon photodiode with integrated amplifier. Spring-loaded mounting screws, in conjunction with the level indicator, enable rapid and accurate leveling of the sensor. Each sensor is calibrated against a secondary standard Pyranometer in natural daylight.
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Specifications

Operating Temperature	-40° to +65° C
Storage Temperature	-45° to +70°C
Transducer	Silicon photodiode
Spectral Response	400 to 1100 nanometers
Cosine Response Percent of Reading Percent of Full Scale	 ±3% (0° to ±70° Incident angle) ±10% (±70° to ±85° Incident angle) ±2% (0° to ±90°)
Temperature Coefficient	+ 0.12% per °C
Reference temperature	25°C
Housing Material	UV-resistant PVC plastic
Weight	< 250 g including mounting hardware
Range	0 to 1800 W/m2
Accuracy	±5% of full scale
Drift	up to ±2% per year
Output	0 to 10 VDC Green color
Excitation Voltage	12 to 26 VDC 5 mA (typical) Yellow color Gnd Brown & white Color

Solar Radiation sensor

Y   WB   G

+   -
12 to 26 V
DC supply

-    +
Voltage
Indicator