

COASTAL ENVIRONMENTAL SYSTEMS

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**PART#: S1092W
S1092Z**

SENSOR

High Precision Solar Radiation

• 9mV Sensitivity • 1% Cosine Response • Linearity 0.5% •

Principle of Operation

The Precision Spectral Pyranometer is a World Meteorological Organization First Class Radiometer designed for the measurement of sun and sky radiation, totally or in defined broad wavelength bands. It comprises a circular multi-junction wire-wound Eppley thermopile which has the ability to withstand severe mechanical vibration and shock. Its receiver is coated with Parson's black lacquer (non-wavelength selective absorption). This instrument is supplied with a pair of removable precision ground and polished hemispheres of Schott optical glass. Both hemispheres are made of clear WG295 glass which is uniformly transparent to energy between 0.285 to 2.8 μ m. For special applications, other Schott glasses and Infrasil II quartz hemispheres are available. Included is a spirit level, adjustable leveling screws and a desiccator which can be readily inspected. The instrument has a cast bronze body with a white enameled guard disk (shield) and comes with a transit/storage case. A calibration certificate traceable to the World Radiation Reference and a temperature compensation curve are included.

Technical Specifications

Spectral Response:	285 - 2800
Sensitivity:	Approximately 9 μ V/Wm ⁻²
Impedance:	Approximately 650 Ohms.
Temperature Dependence:	\pm 1% over ambient temperature range -20 to +40°C (temperature compensation of sensitivity can be supplied over other ranges at additional charge).
Linearity:	\pm 0.5% from 0 to 2800 Wm ⁻²
Response time:	1 second (1/e signal).
Cosine:	\pm 1% from normalization 0-70° zenith angle \pm 3% 70-80° zenith angle.
Mechanical Vibration:	Tested up to 20 g's without damage
Calibration:	Integrating hemisphere
Size:	5.75 inch diameter, 3.75 inches high.
Weight:	7 pounds
Orientation:	Performance is not affected by orientation or tilt



The following products are compatible with the High Precision Solar Radiation sensor.

• ZENO®-3200