SR11

FIRST CLASS PYRANOMETER

The SR11 is a research grade solar radiation sensor (otherwise known as a pyranometer), intended for global and surface reflected short-wave (SW) solar irradiance studies. The SR11 is a 'First Class' compliant instrument, as per the latest ISO and WMO pyranometer standards.

The SR11 pyranometer is suitable for measuring global short-wave solar irradiance incidenting a plane surface, offering a full 180° field of view (FOV). Capable of measuring up to two suns, 2000 W/m², the SR11 is also well suited for higher intensity indoors artificial lamp measurement applications. Employing entirely passive thermopile-based sensing technology, the SR11 generates a low level DC millivolt output signal proportional to the solar short-wave flux received at the detector surface. The instrument design serves to reduce the possibility of wind related signal noise and thermal offset related error effects by employing a set (two) of precision ground and polished glass domes, resulting in improved measurement accuracy. Determining short-wave solar irradiance requires connection to either a data logger or digital voltmeter with a measurement resolution of ten micro-volts or better; simply divide the SR11 millivolt output signal by the factory supplied calibration factor to arrive at irradiance in W/m² units. Typical SR11 measurement applications include scientific meteorological observations, building physics, climate and solar collector/PV panel efficiency testing. For conventional horizontal plane mounting applications requiring accurate leveling, the SR11 is equipped standard with adjustable leveling feet and a bulls-eye bubble level; see leveling feet (7) and bubble level (11) illustration in Figure 1. The SR11 signal cable can be easily installed and replaced by the user, thus minimizing down-time and expense otherwise associated with instrument re-cabling by the manufacturer.

APPLICABLE STANDARDS

ISO 9060 and 9847, WMO (World Meteorological Organization) and ASTM E824-94. The SR11 can also be used for stability estimations according to EPA (EPA-454/R-99-005); also see LP02 ISO Second Class Pyranometer model for lower cost instrument alternative.

APPLICATIONS

- **Agrometeorology**
- **Climatology / Meteorology**
- **Industrial Light Measurement & Process Control**
- **Material Testing Research**
- **Solar Collector & PV Panel Efficiency Validation**

Note: Above applications are inclusive of, but not limited to the entire SR11 application range.

SR11 SPECIFICATIONS

ISO classification:	First Class
Spectral range:	305 to 2800 nm
Sensitivity (nominal):	15 µV/W/m²
Response time (95%):	13 sec.
Directional error (1000 W/m² beam):	± 20 W/m²
Range :	0 to 2000 W/m²
Non-linearity (to 1000 W/m²):	± 1%
Temperature range:	-40 to +80° C
Temperature dependence:	< ± 0.1 %/°C
Calibration traceability:	WRR
Non stability (drift):	< ± 1% per year
Cable length:	5 meter standard *(longer lengths optional)*

OPTIONS

Additional cable length by the meter, AC100/AC420 amplifiers, LI 18 hand-held display unit

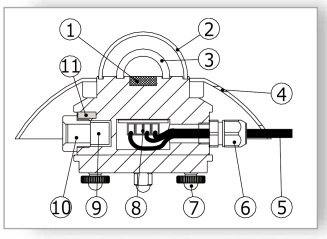

Figure 1: SR11 pyranometer. (1) sensor, (2, 3) glass domes, (5) cable, standard length 5 m, (9) desiccant.

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