



**Spectrafy**  
solar spectral sensors

# SolarSIM-G

The SolarSIM-G delivers a new standard in solar measurement. It combines Spectrafy's ground-breaking, multi-spectral measurement approach with innovative optics to enable highly accurate retrieval of full-range global and spectral solar irradiance - all within one rugged, compact, digital sensor.

The SolarSIM-G uses silicon and InGaAs photodiodes, coupled with hard-coated optical filters to accurately measure the global solar spectrum in several narrow wavelength bands. The SolarSIM-G's powerful radiative transfer software then uses these measurements to accurately resolve the complete solar spectrum and total broadband irradiance with Class A accuracy.

The SolarSIM-G goes one step further by simplifying the use of spectral data. The SolarSIM-G's software can automatically convert spectral data into intuitive, easy-to-use spectral correction factors, thereby making the SolarSIM-G the clear choice for whenever solar spectral effects need to be quantified.

- **All-in-one**

Measure full-range spectral and total irradiance all in one, compact, reliable, digital sensor.

- **Easy-to-use**

Easy to deploy with minimal maintenance required. Automated calculation of spectral correction factors.

- **Accurate & reliable**

Validated by leading laboratories all over the world. The SolarSIM-G uses the highest quality optical and electronic components, ensuring highly stable and accurate performance for years.





## SolarSIM-G: Specifications

### Broadband Irradiance

Spectral range .....	280 – 4000 nm
Custom range selection .....	Yes
Maximum Irradiance .....	2000 W/m <sup>2</sup>
Response Time (95%) .....	0.7s (0.4s optional)
Zero offset A .....	n/a
Zero offset B .....	n/a
Non-stability (change per year) .....	< 0.2%
Non-linearity .....	< 0.3%
Spectral error .....	< 0.5%
Temperature response .....	< 0.1% (on-board temp. correction)
Directional/cosine response .....	< 10 W/m <sup>2</sup>
Tilt response .....	n/a
Calibration uncertainty .....	1.1%
ISO 9060:2018 classification .....	Class A
ISO 9060:2018 sub-category: "Spectrally flat" .....	Compliant for sunlight
ISO 9060:2018 sub-category: "Fast response" .....	Optional

### Spectral Irradiance

Wavelength Range .....	280 – 4000 nm
Spectral resolution (FWHM) .....	1 nm
Wavelength accuracy .....	± 0.1 nm
Spectral measurement uncertainty .....	±5% ±0.05 W/m <sup>2</sup> /nm
Exposure time .....	< 1 ms
Max. acquisition rate .....	0.5 Hz
Temperature dependency .....	< 0.1% (on-board temp. correction)

### General

Weight .....	1.3 kg
Dimensions .....	132 x 132 x 110 mm
Power supply .....	12 VDC
Power consumption .....	< 1W
Communication .....	RS-485 ASCII, Direct to PC, serial over ethernet, datalogger
Operating Temperature .....	-30 to 65 °C
Humidity Range .....	0 to 100% RH