



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 ²
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 ²
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% per wavelength
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