



**Spectrafy**  
solar spectral sensors

# SolarSIM-GPV

The SolarSIM-GPV enables next-level irradiance monitoring for the PV industry by leveraging spectral measurement to provide Class A irradiance and automated PV spectral correction factors, from a single sensor.

The SolarSIM-GPV provides the PV professional with a powerful tool to minimize project uncertainty and optimize returns by accurately quantifying and eliminating spectral uncertainty from PV performance models and indicators.

Designed to deploy like any other pyranometer, the SolarSIM-GPVs automated software makes understanding and harnessing the benefits of spectral data intuitive and easy.

The SolarSIM-GPV uses filtered photodiodes, to measure sunlight in several narrow wavelength bands. The SolarSIM-G's powerful software then uses these measurements to accurately resolve global spectral and broadband irradiance and PV spectral correction factors.

- **Unique capability**

Class A broadband irradiance and spectral correction from a single pyranometer.

- **Easy-to-use**

Easy to integrate with minimal maintenance required. Automated calculation of spectral correction factors, easily applied in standard PV models.

- **Reduces project uncertainty**

Accurately quantify and eliminate spectral uncertainty from PV performance models and metrics.





## SolarSIM-GPV: Specifications

### Broadband Irradiance

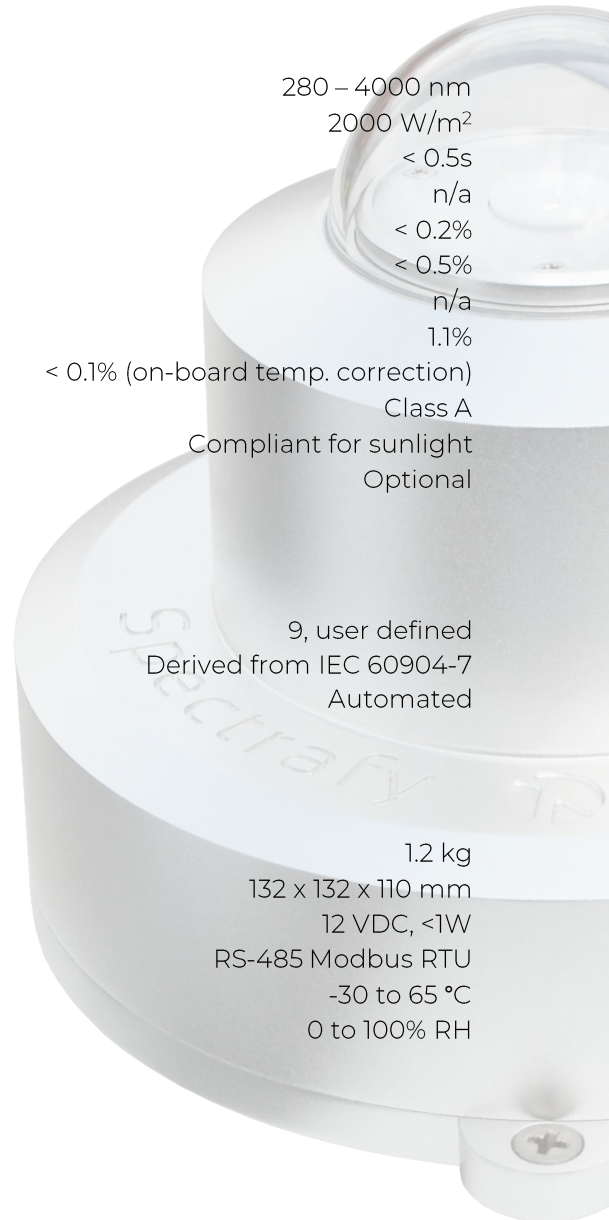
Spectral range	280 – 4000 nm
Maximum Irradiance	2000 W/m <sup>2</sup>
Response Time (95%)	< 0.5s
Zero offset B	n/a
Non-stability (change per year)	< 0.2%
Non-linearity	< 0.5%
Spectral selectivity	n/a
Calibration uncertainty	1.1%
Temperature response	< 0.1% (on-board temp. correction)
ISO 9060:2018 classification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

### Spectral correction factors

Number of panels	9, user defined
Method	Derived from IEC 60904-7
Calculation process	Automated

### General

Weight	1.2 kg
Dimensions	132 x 132 x 110 mm
Power supply and use	12 VDC, <1W
Communication	RS-485 Modbus RTU
Operating Temperature	-30 to 65 °C
Humidity Range	0 to 100% RH





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## iSG Integrated Spectrum Generator

The iSG Integrated Spectrum Generator simplifies integration of the SolarSIM-GPV by enabling in-line processing of the SolarSIM-GPV's raw data.

Processed global irradiance and spectral correction factor data can be fed directly to an onsite datalogger and subsequent SCADA system, without the need for additional software or processing hardware.

The iSG Integrated Spectrum Generator acts as a go-between, pulling raw data from the SolarSIM-GPV, processing it, and then outputting it to the met station data logger, via the RS485 Modbus RTU communication protocol.

This removes the need for additional data processing hardware and software and allows integrators to offer a turn-key solution for spectrally corrected irradiance.

Physically, the iSG can either be deployed in open-air, or within the data logger enclosure where it mounts via standard DIN rail.

- **Streamline deployment.**

The iSG Integrated Spectrum Generator simplifies deployment of the SolarSIM-GPV by enabling inline processing of spectral data.

- **Compact, low-power, robust.**

The iSG is designed for robust, field performance while minimizing space and power requirements.

- **Industry standard communication.**

The iSG communicates via standard RS485 Modbus RTU protocols. Exemplar datalogger code is provided with each iSG.





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## iSG Integrated Spectrum Generator

### Compatibility

Compatible SolarSIMs

SolarSIM-GPV

### Outputs

Global irradiance

PV spectral correction factors

SolarSIM-GPV raw data

GHI/GTI (ISO9060:2018 Class A)

Up to nine user-defined panels

### General

Weight

0.3 kg

Dimensions (L x W x H)

150 x 100 x 50 mm

Power supply and use

12 VDC, 20W max (SolarSIM-GPV + iSG)

Communication

RS-485 Modbus RTU

Operating temperature range

-30°C to +65 °C

Humidity range

0 to 100% RH

Environmental protection

IP66

Mounting

DIN rail

Ports

1. SolarSIM. 2. Power. 3. Datalogger.

