SolarSIM-3C

The SolarSIM-3C uses the power of spectral measurement to extract global, direct and diffuse irradiance data from a single sensor, with no moving parts.

The SolarSIM-3C is the only Class A pyranometer also capable of resolving direct and diffuse irradiance components, making it the ideal choice for meeting ISO requirements for diffuse irradiance measurement on PV power plants.

Designed to deploy like any other pyranometer, the SolarSIM-3C's automated software makes understanding and harnessing the benefits of three–component data intuitive and easy.

The SolarSIM-3C uses filtered photodiodes, to measure sunlight in several narrow wavelength bands. The SolarSIM-3C's software then uses these spectral measurements to accurately resolve the global solar spectral irradiance and GHI, while powerful machine-learning algorithms extract the diffuse and direct solar irradiance components.

- ### Unique capability
Class A GHI, as well as diffuse and direct irradiance from a single pyranometer.

- ### Easy-to-use
Easy to integrate with minimal maintenance required. Automated calculation of diffuse and direct irradiance components.

- ### Cost-effective, ISO compliant
Fulfills ISO requirements for diffuse irradiance measurement on PV plants while eliminating the need for an additional sensor.
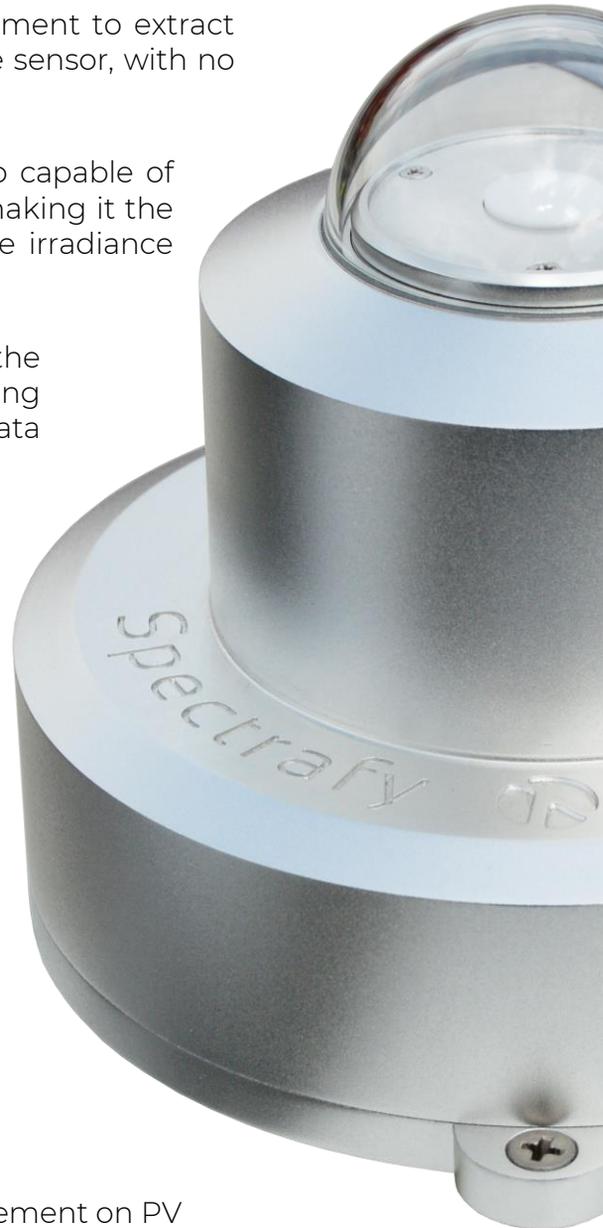
Broadband Irradiance

Spectral range	280 – 4000 nm
Maximum Irradiance	2000 W/m^2
Response Time (95%)	< 0.5s
Zero offsets (A and 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 (GHI/GTI)	Class A
ISO 9060:2018 sub-category: "Spectrally flat"	Compliant for sunlight
ISO 9060:2018 sub-category: "Fast response"	Optional
DHI uncertainty (90%)	± 20 W/m^2
DNI uncertainty (90%)	±40 W/m^2
DHI annual sum error	± 3.6%
DNI annual sum error	± 2.7%

Measurands

Global horizontal solar irradiance
Diffuse horizontal solar irradiance
Direct normal solar irradiance
Sunshine duration
Meteorological parameters (ambient temp, pressure, RH)

General

Weight	1.2 kg
Dimensions	132 x 132 x 110 mm
Power supply and use	12 VDC, <1W
Communication	RS-485 ASCII, Direct to PC, serial over ethernet, datalogger
Operating Temperature	-30 to 65 °C
Humidity Range	0 to 100% RH