![Spectrafy - solar spectral sensors]

# SolarSIM-E

The SolarSIM-E automated shadowband leverages Spectrafy's patented spectral sensors to produce highly accurate measurements of global, direct and diffuse irradiance from a single, ISO9060 Class A sensor. In addition, the ability to resolve both broadband and spectral irradiance yields unmatched insights for both research and solar resource assessment applications.

A compelling alternative to more expensive, solar tracker-based solutions and more accurate than traditional silicon-based shadowbands, the SolarSIM-E is fully automated and maintenance free.

The SolarSIM-E takes shadowband measurements to a new level of speed and accuracy. By combining the precision of an ISO9060 Class A pyranometer, the fast-response of photodiode measurements, and the insight of spectral correction, the SolarSIM-E provides an unmatched solution for quantifying the solar resource.

▪ **All-in-one**
Measure global, diffuse and direct irradiance components, broadband and spectral, with a single instrument.

▪ **Robust and reliable**
Easy to deploy, fully-automated and low-power. The robust, all-weather motor ensures reliable, maintenance-free operation.

▪ **Accurate & spectral**
The only shadowband that uses an ISO9060 Class A pyranometer. Automated spectral correction factors boost accuracy even further, resulting in the lowest uncertainty for solar resource assessment.

# SolarSIM-E: **Specifications**

## General

Compatible with .................................................................................................SolarSIM-G
Shadow band geometry ............................................................................ 5° FOV
Min. measurement interval ...................................................................15 s
Operating temperature range .......................................................... -30 to 65 °C
Power supply .................................................................................. 12 V
Power consumption ................................................................ 10 W / 2 W (stand-by)
Dimensions ................................................................ 420 x 150 x 132 mm (L x W x H)
Weight .................................................................................... 3 kg
Communication ........................................................ RS-485 ASCII, (PC, SoE, datalogger)
Operating humidity range ...................................................... 0 to 100% RH

## Measurands

Global horizontal irradiance .......................................................................... W/m$^2$
Diffuse horizontal irradiance .......................................................................... W/m$^2$
Direct normal irradiance (automatically calculated) ...................................... W/m$^2$
Global horizontal spectral irradiance ....................................... (280-4000nm) W/m$^2$/nm
Diffuse horizontal spectral irradiance .................................... (280-4000nm) W/m$^2$/nm
Direct normal spectral irradiance (automatically calculated) ............. (280-4000nm) W/m$^2$/nm
Precipitable water vapour (total column) ..................................................... mm

note: the SolarSIM-E can also be deployed in tilted orientations