

SST-1800 Series

<https://www.gigahertz-optik.com/en-us/product/sst-1800-series/>

Product tags: UV , VIS , NIR



Description

The spectral irradiance measurement of artificial sources of solar radiation is required for a wide range of applications within industry and research. Some typical example are listed below:

Solar simulators in environmental chambers and systems for product testing

Proof of compliance with specified spectral power distributions and irradiance levels is required for which there is a large number of international standards and industrial test procedures, including:

- DIN 75220 Aging of automotive components in sun simulation systems
- MIL-STD-810 Environmental test conditions for military equipment
- DIN EN 60068-2-5 Simulated solar radiation near the ground
- DIN EN ISO 11341 - 2004-12 Paints and varnishes - Artificial weathering and artificial radiation
- Telcordia GR-487-CORE Requirements for telecommunications equipment in outdoor environments
- PR306.5 Test specification of the Bayerische Motoren Werke.
- 32-00-022 Test specification - Renault
- EPA 40-CFR / SC03 Test specification of the US Environmental Protection Agency (EPA)
- ASTM Standards
- and many more.

Solar simulators for photovoltaic devices

to investigate performance (flash simulator) and aging (continuous simulation).

- DIN EN 60904-9 Photovoltaic devices; Part 9: Performance requirements for solar simulators
- Multi-junction PV tests in research and industry.

Solar simulators for aerospace products

- AM0 extra-terrestrial spectrum (spectrum outside the atmosphere)

Photobiological safety of incoherent optical radiation

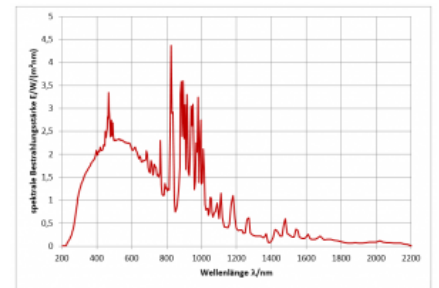
Measurement of the spectral irradiance for the implementation of EU directive 2006/25 / EG in the wavelength ranges:

- UV radiation (200 nm to 400 nm) skin and eyes
- Visible radiation (380 nm to 780 nm) eyes
- Near infrared (780 nm to 1400 nm) eyes
- Heat radiation (1400 nm to 3000 nm) skin and eyes.

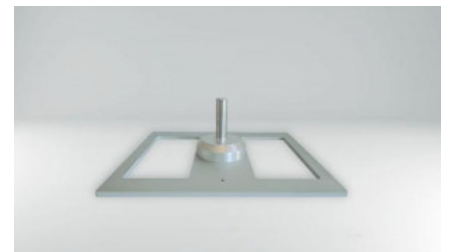
Spectroradiometers enable the precise measurement of the wavelength-dependent irradiance with traceability to international standards. The



SST-18xx mounted on a tripod



AM0 (spectrum of simulator for extraterrestrial solar radiation)



Accessory: adapter plate for tripod mounting

spectral power distribution data is essential to determine whether a solar simulator has the correct spectral adaptation and to investigate the wavelength-dependent aging behavior of broadband optical radiation sources. Spectroradiometers offer significantly greater precision compared to filter based radiometers. This is due to the fact that the spectral sensitivity of broadband radiometers can only ever be an approximation of the desired weighting function. In contrast, the measurement result of a spectroradiometer can be exact as a theoretically perfect radiometric weighting function (e.g. rectangular) can be applied.

Gigahertz-Optik offers the transportable SST-1800 series spectroradiometers for the convenient and precise measurement of solar simulator irradiance and other artificial radiation sources in the spectral range from 200 nm to 3000 nm. These instruments employ the latest design criteria for radiometric measuring devices within the field of optical radiation. They are based on the technology of the BTS2048-Series of spectroradiometers, which have been tried and tested in research and industry. The SST-1800 devices are built in a compact, mobile and splash-proof metal housing with active air circulation.

Several variants are offered for the different applications:

SST-1801 for applications in environmental simulation:

- Wavelength range 280 nm to 3000 nm.
- Spectral resolution 2 nm (280 nm to 1050 nm) and 9 nm (800 nm to 2150 nm).
Additional broadband detector for measuring the irradiance in the wavelength range up to 3000 nm.

SST-1802 typically for applications in radiation protection and with AM0 solar simulators.

- Wavelength range 200 nm to 3000 nm.
- Spectral resolution 0.8 nm (200 nm to 430 nm), 2 nm (280 nm to 1050 nm) and 9 nm (800 nm to 2150 nm).
- Additional broadband detector for measuring the irradiance in the wavelength range up to 3000 nm.

SST-1803 typically for applications in photovoltaic facilities:

- Wavelength range 280 nm to 2150 nm.
- Spectral resolution 2 nm (280 nm to 1050 nm) and 9 nm (800 nm to 2150 nm).

Software

Software is supplied for control, data acquisition and display of results via the Ethernet interface. A software development kit is optionally available for applications in which the measuring device is to be integrated with user written software.



SST-18xx radiation input optics

Factory calibration

The measuring laboratory of the Gigahertz-Optik offers factory calibrations for the SST-1800 irradiance measuring instruments at the highest level in terms of traceability and implementation of the calibrations. The guarantee for this is that factory calibrations are subject to the same quality management as used in Gigahertz-Optik's ISO 17025 laboratory accredited by DAkkS.

Specifications

General

Short description	Irradiance measuring device for artificial radiation sources in the spectral range from 200 nm to 3000 nm. Combined spectral and broadband measuring method.
Main features	Mobile measuring device. Spectroradiometer 200 nm to 2150 nm for CW and pulse operation. High spectral resolution (0.8 nm within 200 nm to 400 nm, 2 nm within 280 nm to 1050 nm, 9 nm within 950 nm to 2150 nm). Broadband measuring device 2150 nm to 3000 nm. Splash-proof housing.
Measurement ranges	Spectral irradiance 200 nm to 2150 nm. Integral irradiance 2150 nm to 3000 nm.
Typical applications	Spectral irradiance measurement of artificial optical radiation sources such as solar simulators for product testing, photovoltaic applications and for photobiological safety assessment.
Calibration	Factory calibration of irradiance responsivity.

Product

Software	Application Software S-BTS2048
Detector	BTS2048-IR (950 nm to 2150 nm) BTS2048-VL-TEC (280 nm to 1050 nm) BTS2048-UV-S (200 nm to 430 nm) additional broadband detector for measuring the irradiance up to 3000 nm
Housing	temperature stable as long as surrounding air temperature is within specification splashproof

Miscellaneous

Temperature range	Storage: (-10 bis 50) °C Application: (10 bis 30) °C
Weight	23 kg
Dimensions	461 mm x 315 mm x 400 mm
Voltage Input	mains voltage (110 -230) V (50-60) Hz

Purchasing information

Article-Nr	Modell	Description
Product		

Article-Nr	Modell	Description
15311187	SST-1801	Spectral irradiance measuring device for solar simulation systems, wavelength range 280 nm - 3000 nm, manual application software, factory calibration certificate.
15311188	SST-1802	Spectral irradiance measuring device for solar simulation systems, wavelength range 200 nm - 3000 nm, manual, application software, factory calibration certificate.
15311189	SST-1803	Spectral irradiance measuring device for solar simulation systems, wavelength range 280 nm - 2150 nm, manual, application software, factory calibration certificate.
Accessories		
15312152	SST-18xx-Z01	Adapter plate for mounting an SST-18xx on a tripod.

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- After-Sales Support
- Calibrations & Re-Calibrations ([ISO/IEC 17025 Calibration Services](#), [factory calibration](#), [Calibration of Third-Party Products](#))
- Repairs & Updates
- OEM & Feasibility Consulting of Customized Solutions

[Send us your inquiry](#) or contact us by phone or e-mail. We would welcome your feedback too or review us on [Google](#).

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