



STS-RAD

Microspectrometer

Spectral Irradiance in a Tiny Footprint

The STS-RAD Microspectrometer provides powerful spectral performance in a small footprint. This compact instrument comprises a radiometrically calibrated STS-VIS spectrometer with direct-attach cosine corrector, and is ideal for irradiance applications including LED characterization and upwelling/downwelling measurements. Its rugged design and great unit-to-unit reproducibility make STS-RAD attractive for use in the lab and in the field, or for integration into high-volume applications such as LED sorting on a production line.





At a Glance

Size: 40 x 42 x 24 mm
(spectrometer)

Weight: ~60 g (spectrometer)

Spectrometer: STS-VIS (350-800 nm)

Entrance slit: 50 μm

Sampling optics: CC-3-DA
direct-attach cosine corrector
(collection area: 7140 μm^2)

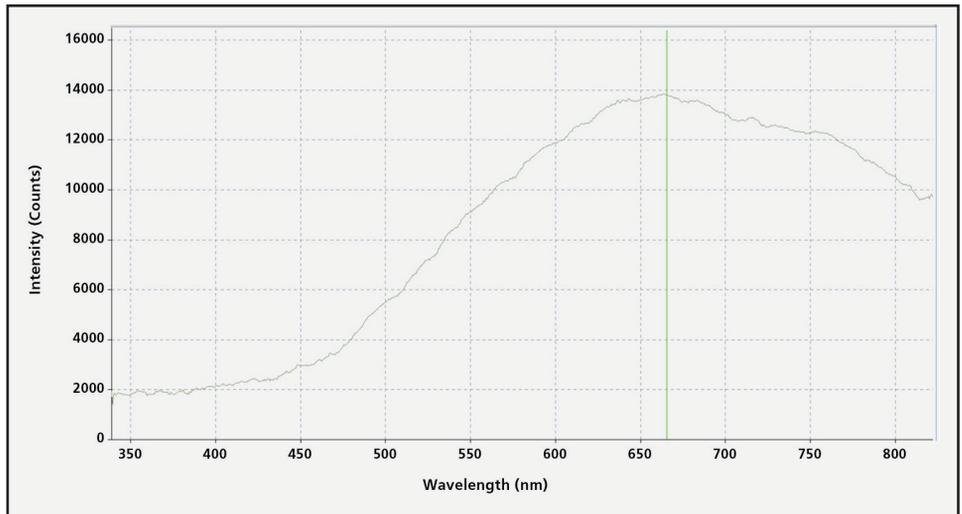
Radiometric calibration:
Yes, using NIST-traceable source

Software: OceanView
spectroscopy software



About the STS Spectrometer

STS microspectrometers are a family of very small, cost-effective instruments ideal for embedding into OEM devices or utilizing in lab and field research. Despite its size – less than 42 mm square and 24 mm high – STS has an advanced optical design and CMOS detector that elevates performance to levels comparable to larger and more expensive spectrometers. Excellent linearity, high dynamic range, and wavelength accuracy ensure reproducible and repeatable results. Standard STS models are available for the UV (190-650 nm), Visible (350-800 nm) and Shortwave NIR (650-1100 nm), with the preconfigured STS-RAD for irradiance and an STS Developers Kit that includes Raspberry Pi microcomputer and wireless capabilities.



Absolute irradiance measurement of quartz tungsten halogen transfer standard lamp

About the Sampling Optics

STS-RAD has a cosine corrector (optical diffuser) that attaches to the spectrometer and collects signal from a 180° field of view. The amount of light collected varies with the cosine of the angle of incidence on the cosine corrector. The corrector samples any light incident on the diameter of its Spectralon diffusing surface, and specifically in that plane. A direct-attach cosine corrector is especially useful in the field, where optical fibers can be tricky to manage.

When you specify an STS-RAD for your application, you will benefit from our experience in radiometrically calibrating spectral systems and be ready to take measurements right out of the box. An absolute irradiance measurement yields a spectrum that is accurate in shape and magnitude. Typically, the y-axis is expressed in power or flux units, from which other measurements can be derived. We calibrate the system with the cosine corrector attached; removing the cosine corrector will invalidate the calibration.



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