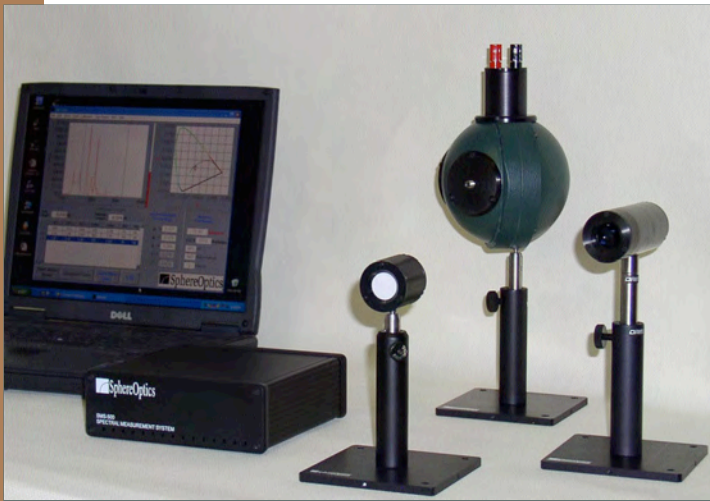


Spectral Measurement Systems

**HIGH PERFORMANCE, LOW COST
SOLUTION FOR SPECTRAL MEASUREMENT**



FEATURES

- Four base spectrometer models available
- Three optional geometric measurement heads
- Measure spectral flux, spectral irradiance or spectral radiance
- Calculates photopic and colorimetric parameters automatically
- Measurement heads have NIST traceable calibrations
- Easy to use software

APPLICATIONS

- Measure flux of directional sources
- Measure chromaticity of signal lights
- Measure irradiance on surfaces for botanical research
- Luminance and radiance contrast of visual displays

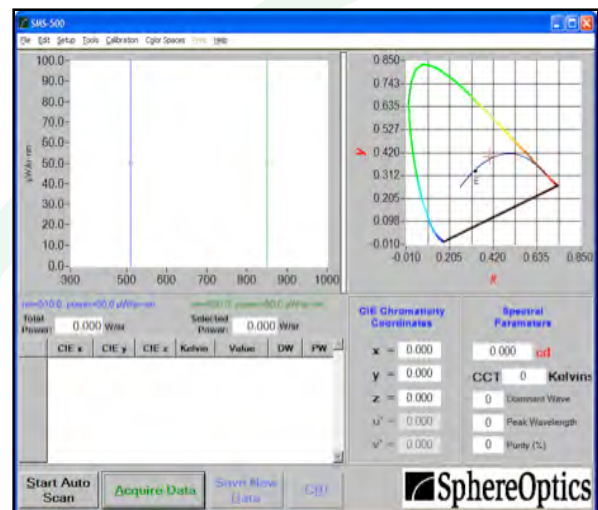
SMS-500 Spectral Measurement Systems

The SMS-500 features a stand-alone spectrometer with an optical fiber input that can be fitted with a variety of measurement heads to measure spectral flux, spectral irradiance or spectral radiance. The SMS Series includes model SMS-500 for measurements over the wavelength region 360 to 1000 nm, model SMS-500E, which offers slightly higher resolution, measures over the region 300 to 1050 nm, SMS-500-LL for low light level application and SMS-500-NIR covering the wavelength region 950 to 1650 nm.

The spectrometer separates the light from an optical fiber into a spectrum, then samples the light wavelength-by-wavelength and records the electrical signal produced at each sample. The system software then calculates and displays additional quantities based upon one of the optional measurement heads, which are calibrated to convert the electrical signal to one of four spectroradiometric quantities — $\mu\text{W}/\text{nm}$, $\mu\text{W}/\text{cm}^2\text{-nm}$ or $\mu\text{W}/\text{m}^2\text{-sr-nm}$. Each system is delivered factory-calibrated with appropriate calibration files for the measurement head chosen.

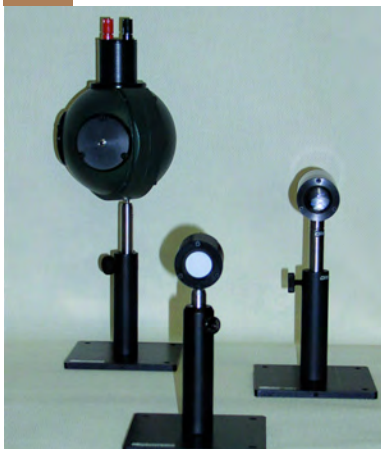
Operating Software

Easy-to-use software, runs on Windows-XP® and is included with the base spectrometer. The software displays the spectral curve and instantly calculates the appropriate spectral and photopic units, as well as color information such as CCT, CRI, dominant wavelength, purity and x, y, u', v'. Manipulation and viewing of the spectral data is simple and quick. The spectrometer connects to a computer via a USB 2.0 port.



Ask about our SMS spectral measurement option for our Luminance/Radiance Integrating Sphere Systems. A simple, efficient and low cost solution for monitoring a sphere source of radiance.

MEASUREMENT HEAD OPTIONS

**Measurement Flexibility**

Measurement heads are calibrated together with the fiber and spectrometer as a unit to generate appropriate calibration files for measurements.

SMS-FLUX – Integrating sphere flux measurement head. System software reports spectral flux (W/nm^2), luminous flux (lumens), CCT, CRI, x, y, u', v', dominant wavelength and purity.

SMS-RMH – Radiance measurement head has a 100 mm (4-inch) working distance from the lens surface and views a spot of approximately 1.0 mm diameter with an N.A. of 0.125 (f2lens, 1-to-1 imaging, working F/# of f/4).

SMS-IMH – Irradiance measurement head is designed to provide measurement quantities of either flux/solid angle or flux/area. The measurement head is calibrated as a unit to provide irradiance measurements.

Irradiance is measured with a detector that responds to the amount of flux striking the surface, regardless of angle of incidence. The irradiance detector is a diffuser that is viewed by the fiber. The diffuser, fiber and spectrometer are calibrated as a unit with a known source of spectral radiance to generate a calibration file.

SPECIFICATIONS AND ORDERING INFORMATION

SPECTROMETER SPECIFICATIONS:

Order Number	SMS-500	SMS-500E	SMS-500-LL	SMS-500-NIR
Wavelength Range:	360-1000 nm	300-1050 nm	400-900 nm	950-1650 nm
Wavelength Accuracy:	± 0.25 nm	± 0.25 nm	± 0.25 nm	± 0.25 nm
Resolution:	1.5 nm	1.5 nm	< 5 nm	10 nm
A/D Resolution:	16 bit	16 bit	16 bit	16 bit
Integration Range:	1ms-4000 ms	1 ms-4000 ms	1ms-4000 ms	1ms-4000ms
Sample interval:	1 nm	1 nm	1 nm	1 nm
Fiber Optic Length:	2 m	2 m	2m	2m
Field-of-View (FOV):				
with Fiber (NA=0.22)	25.4 °	25.4°	25.4 °	25.4 °
with Radiance Head (F#=4)	14.4°	14.4°	14.4°	14.4°

MEASUREMENT HEADS ORDERING INFORMATION:

Order Number	Description
SMS-FLUX:	Integrating sphere flux measurement head
SMS-RMH:	Radiance measurement head
SMS-IMH:	Irradiance measurement head

Computer Operating Requirements:

The SMS Series Spectral Measurement Systems require the following minimum computer specifications:

Pentium™ 300 MHz or greater processor, 32 MB RAM, 4 MB Hard Drive, one (1) available USB 2.0 port and WindowsXP™ operating system.

 **SphereOptics** www.sphereoptics.com

www.sphereoptics.de

USA

SphereOptics, LLC
Tel: 603-715-3000 • US Sales 858-695-2895
Fax: 603-225-3089
Email: sales@sphereoptics.com

GERMANY

SphereOptics GmbH
Tel: +49 (0) 7556 929 9666
Fax: +49 (0) 7556 50108
Email: infode@sphereoptics.com

FRANCE

SphereOptics SARL
Tel: +33 (0) 1 69 07 21 84
Fax: +33 (0) 1 69 07 71 38
Email: infofr@sphereoptics.com