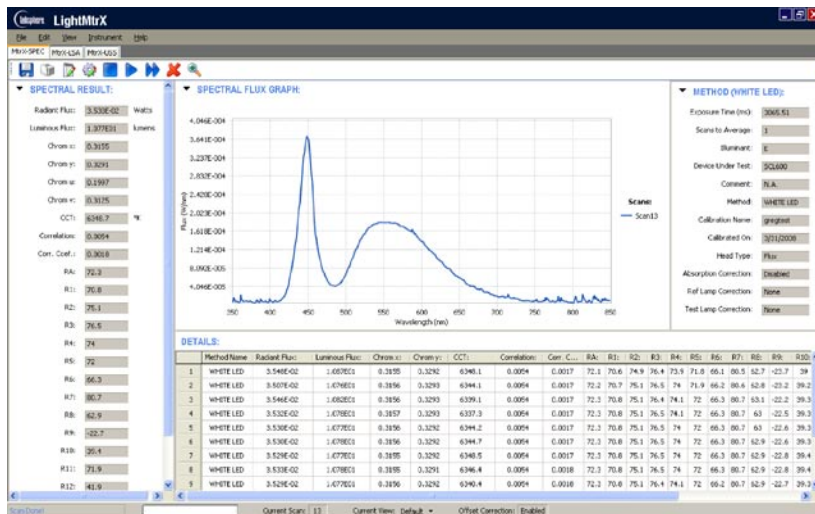


LARGE SPECTRAL LED MEASUREMENT SYSTEMS

Fast, practical, and easy-to-use systems for Large LED arrays and lamp characterization



LABSPHERE LIGHT MEASUREMENT SOFTWARE LIGHT MTRX-SPEC

ACCURATE

The Large CSLMS LED Systems are affordably priced and easily customized through a variety of interchangeable light measurement accessories. NIST traceable total spectral flux standards enable simple in-house system calibration and verification from 350 to 1050 nm. The systems can be expanded to include an auxiliary lamp for the correction of absorption error to ensure accurate test results.

CSLMS LED Large Systems combine intuitive software with high-speed hardware to simplify complex measurements. The coupling of application specific software with a CCD-based spectrometer, integrating sphere, and cosine receiver, makes it possible to deliver total spectral flux, luminous flux, radiometric flux, and colorimetric results in milliseconds. Designed with the user in mind, the starter package are easy enough for you to use, even if it is your first time using light measurement systems.

FEATURES:

- NIST Traceable Standards for In-house Recalibration
- Spectral Results in Milliseconds
- Comprehensive Light Measurement Software
 - Total Spectral Flux
 - Luminous Flux
 - Radiant Flux
 - Chromaticity
 - CCT
 - CRI
 - Peak Wavelength
 - Dominant Wavelength

Spectrafect® Interior

CIE Recommended Geometry

Backed by an ISO 9001:2000 Registered Quality Management System

BEST FOR MEASURING:

- LED Sourced Systems
- Large-area LED displays
- Automotive Lighting
- Architectural Lighting
- General Lighting

EASY-TO-USE

Sphere diameters of 40, 65, or 76-inches are coated with Spectrafect® which combines a 98% reflective surface with nearly perfect Lambertian reflectance. Both durable and highly stable over time, this coating provides consistent integration of light over the lifetime of your sphere.

The Windows®-based LightMtrX-SPEC software guides users through testing, providing straightforward testing procedures and repeatable results to meet the needs of both new users and experienced researchers.

Top and bottom ports admit additional cables for assembled fixtures while the external port provides for the unobstructed positioning of board-mounted or heat-sinked devices for forward and partial flux measurements. The telescopic lamp mount can be repositioned with a quick twist for base up, base down, or horizontal lamp positioning. Exchangeable baffles give optimal detector screening efficiency while quick connect internal and external electrical contacts allow for effortless substitution between devices under test.



LMS-400

Specifications

CSLMS LED Choice Spectral Light Measurement System	CSLMS LED 4060 AS-02479-800	CSLMS LED 4061 AS-02479-900
System Includes: Lamp Measurement Sphere, 40, 65, 76 inch CCD Spectrometer, CDS 600 or 610 Spectral Calibrated Lamp SCL-1400 Lamp Power Supply, LPS-150-0268	AS-02479-000 AS-02767-000 AS-01342-000 AS-02656-268	AS-02479-000 AS-02767-100 AS-01342-000 AS-02656-268
Required, Sold Separately Light Measurement Software, Light MtrX-SPEC	MtrX-SPEC	MtrX-SPEC

System Properties and Performance

Sphere	LMS-400	LMS-400
Sphere Diameter	40 in (1.02 m)	40 in (1.02 m)
Sphere Coating Reflectance	98%	98%
Radiometric Range	1,500 W (max)	1,500 W (max)
Photometric Range (Illuminant A)	2 – 72,500 lm	2 – 72,500 lm
Red LED Range	0.62 – 26,000 lm	0.62 – 26,000 lm
Green LED Range	0.60 – 28,500 lm	0.60 – 28,500 lm
Blue LED Range	0.25 – 8,900 lm	0.25 – 8,900 lm
Max recommended lamp dimension	4 x 4 in (10 x 10 cm)	4 x 4 in (10 x 10 cm)
Maximum Tubular Lamp Length	24 in (60 cm)	24 in (60 cm)
Sphere Dimension (W x D x H)	48.9 x 42.3 x 68.5 in (1.24 x 1.07 x 1.74 m)	48.9 x 42.3 x 68.5 in (1.24 x 1.07 x 1.74 m)
Spectrometer	CDS 600	CDS 610
Dimensions:	89.1 mm x 63.3 mm x 34.4 mm	89.1 mm x 63.3 mm x 34.4 mm
Pixels:	2048 pixels	2048 pixels
Pixel size:	14 µm x 200 µm	14 µm x 200 µm
Pixel well depth:	~62,500 electrons	~62,500 electrons
Sensitivity:	75 photons/ count at 400 nm; 41 photons/ count at 600 nm	75 photons/ count at 400 nm; 41 photons/ count at 600 nm
Focal length:	42 mm input; 68 mm output	42 mm input; 68 mm output
Entrance aperture:	100 µm	100 µm
Wavelength range:	200-850 nm	350-1000 nm
Signal-to-noise ratio:	250:1 (at full signal)	250:1 (at full signal)
A/D resolution:	16 bit	16 bit
Dynamic range:	2 x 10 ⁸ (system)	2 x 10 ⁸ (system)
Integration time:	8 ms to 20 seconds	8 ms to 20 seconds
Stray light:	<0.05% at 600 nm; <0.10% at 435 nm	<0.05% at 600 nm; <0.10% at 435 nm
Corrected linearity:	>99.8%	>99.8%
Power Supply	LPS 150-0268	LPS 150-0268
Power Requirements	110./220 VAC, 50/60 Hz	110./220 VAC, 50/60 Hz
Current Stability	+/- 0.01%	+/- 0.01%
Current Rise Time	20 +/- 5 seconds	20 +/- 5 seconds
Regulated Current	2.679 A +/- 0.1%	2.679 A +/- 0.1%
Weight	6.5 lbs. (2.9 kg)	6.5 lbs. (2.9 kg)
Dimension (W x D x H)	8.3 x 10.5 x 3.5 in (21.1 x 26.7 x 8.9 cm)	8.3 x 10.5 x 3.5 in (21.1 x 26.7 x 8.9 cm)
Compliance	CE	CE

Optional Accessories

LS Series LED Sockets	Choose your own
I 1000 Condition B Intensity Head	AS-02700-100
I 2000 Condition A & B Intensity Head	AS-02700-316
E 1000 Spectral Irradiance Head	AS-02700-000
IES 1000 Intensity/Irradiance Calibration Lamp Standard	AS-02700-602
CAL-LX-IRR Calibration of E 1000 with Light MtrX and Spectrometer	CAL-LX-IRR
CAL-LX-INT Spectral Intensity Calibration	CAL-LX-INT
Absorption Correction Lamp, AUX-100	AS-02737-000
Preset Power Supply, LPS-100-0833, 8.33A 100W	AS-02600-833
Calibrated Spectral Flux Set, CSFS-1400	AS-01343-000
Horizontal Lamp Mount Bracket	AS-02477-003
Temperature Probe, TP-400	AS-02637-400
Temperature Probe and Monitor, TPM-400	AS-02638-400

Specifications

CSLMS LED Choice Spectral Light Measurement System	CSLMS LED 6560 AS-02480-800	CSLMS LED 6561 AS-02480-900
System Includes: Lamp Measurement Sphere, 40, 65, 76 inch CCD Spectrometer, CDS 600 or 610 Spectral Calibrated Lamp SCL-1400 Lamp Power Supply, LPS-150-0268	AS-02480-000 AS-02767-000 AS-01342-000 AS-02656-268	AS-02480-000 AS-02767-100 AS-01342-000 AS-02656-268
Required, Sold Separately Light Measurement Software, Light MtrX-SPEC	MtrX-SPEC	MtrX-SPEC

System Properties and Performance

Sphere	LMS-6500	LMS-6500
Sphere Diameter	65 in (1.65 m)	65 in (1.65 m)
Sphere Coating Reflectance	98%	98%
Radiometric Range	4,000 W (max)	4,000 W (max)
Photometric Range (Illuminant A)	6 – 200,000 lm	6 – 200,000 lm
Red LED Range	1.2 – 68,000 lm	1.2 – 68,000 lm
Green LED Range	1.5 – 77,000 lm	1.5 – 77,000 lm
Blue LED Range	0.50 – 23,000 lm	0.50 – 23,000 lm
Max recommended lamp dimension	7 x 7 in (18 x 18 cm)	7 x 7 in (18 x 18 cm)
Maximum Tubular Lamp Length	34 in (86 cm)	34 in (60 cm)
Sphere Dimension (W x D x H)	112.6 x 78.4 x 84.1 in (2.86 x 1.99 x 2.13 m)	112.6 x 78.4 x 84.1 in (2.86 x 1.99 x 2.13 m)
Spectrometer	CDS 600	CDS 610
Dimensions:	89.1 mm x 63.3 mm x 34.4 mm	89.1 mm x 63.3 mm x 34.4 mm
Pixels:	2048 pixels	2048 pixels
Pixel size:	14 µm x 200 µm	14 µm x 200 µm
Pixel well depth:	~62,500 electrons	~62,500 electrons
Sensitivity:	75 photons/ count at 400 nm; 41 photons/ count at 600 nm	75 photons/ count at 400 nm; 41 photons/ count at 600 nm
Focal length:	42 mm input; 68 mm output	42 mm input; 68 mm output
Entrance aperture:	100 µm	100 µm
Wavelength range:	200-850 nm	350-1000 nm
Signal-to-noise ratio:	250:1 (at full signal)	250:1 (at full signal)
A/D resolution:	16 bit	16 bit
Dynamic range:	2 x 10 ⁸ (system)	2 x 10 ⁸ (system)
Integration time:	8 ms to 20 seconds	8 ms to 20 seconds
Stray light:	<0.05% at 600 nm; <0.10% at 435 nm	<0.05% at 600 nm; <0.10% at 435 nm
Corrected linearity:	>99.8%	>99.8%
Power Supply	LPS 150-0268	LPS 150-0268
Power Requirements	110./220 VAC, 50/60 Hz	110./220 VAC, 50/60 Hz
Current Stability	+/- 0.01%	+/- 0.01%
Current Rise Time	20 +/- 5 seconds	20 +/- 5 seconds
Regulated Current	2.679 A +/- 0.1%	2.679 A +/- 0.1%
Weight	6.5 lbs. (2.9 kg)	6.5 lbs. (2.9 kg)
Dimension (W x D x H)	8.3 x 10.5 x 3.5 in (21.1 x 26.7 x 8.9 cm)	8.3 x 10.5 x 3.5 in (21.1 x 26.7 x 8.9 cm)
Compliance	CE	CE
Optional Accessories		Choose your own
LS Series LED Sockets		AS-02700-100
I 1000 Condition B Intensity Head		AS-02700-316
I 2000 Condition A & B Intensity Head		AS-02700-000
E 1000 Spectral Irradiance Head		AS-02700-602
IES 1000 Intensity/Irradiance Calibration Lamp Standard		CAL-LX-IRR
CAL-LX-IRR Calibration of E 1000 with Light MtrX and Spectrometer		CAL-LX-INT
CAL-LX-INT Spectral Intensity Calibration		AS-02737-000
Absorption Correction Lamp, AUX-100		AS-02600-833
Preset Power Supply, LPS-100-0833, 8.33A 100W		AS-01343-000
Calibrated Spectral Flux Set, CSFS-1400		AS-02477-003
Horizontal Lamp Mount Bracket		AS-02637-400
Temperature Probe, TP-400		AS-02638-400
Temperature Probe and Monitor, TPM-400		

Specifications

CSLMS LED Choice Spectral Light Measurement System	CSLMS LED 7660 AS-02481-800	CSLMS LED 7661 AS-02481-900
System Includes: Lamp Measurement Sphere, 76 inch CCD Spectrometer, CDS 600 or 610 Spectral Calibrated Lamp SCL-1400 Lamp Power Supply, LPS-150-0268	AS-02481-000 AS-02767-000 AS-01342-000 AS-02656-268	AS-02481-000 AS-02767-100 AS-01342-000 AS-02656-268
Required, Sold Separately Light Measurement Software, Light MtrX-SPEC	MtrX-SPEC	MtrX-SPEC

System Properties and Performance

Sphere	LMS-7600	LMS-7600
Sphere Diameter	76 in (1.93 m)	76 in (1.93 m)
Sphere Coating Reflectance	98%	98%
Radiometric Range	5,000 W (max)	5,000 W (max)
Photometric Range (Illuminant A)	0.08 – 260,000 lm	0.08 – 260,000 lm
Red LED Range	1.7 – 93,000 lm	1.7 – 93,000 lm
Green LED Range	2.0 – 10,000 lm	2.0 – 10,000 lm
Blue LED Range	0.70 – 32,000 lm	0.70 – 32,000 lm
Max recommended lamp dimension	8 x 8 in (21 x 21 cm)	8 x 8 in (21 x 21 cm)
Maximum Tubular Lamp Length	52 in (1.3 m)	52 in (1.3 m)
Sphere Dimension (W x D x H)	116.9 x 88.2 x 91.4 in (2.97 x 2.24 x 2.32 m)	116.9 x 88.2 x 91.4 in (2.97 x 2.24 x 2.32 m)
Spectrometer	CDS 600	CDS 610
Dimensions:	89.1 mm x 63.3 mm x 34.4 mm	89.1 mm x 63.3 mm x 34.4 mm
Pixels:	2048 pixels	2048 pixels
Pixel size:	14 µm x 200 µm	14 µm x 200 µm
Pixel well depth:	~62,500 electrons	~62,500 electrons
Sensitivity:	75 photons/ count at 400 nm; 41 photons/ count at 600 nm	75 photons/ count at 400 nm; 41 photons/ count at 600 nm
Focal length:	42 mm input; 68 mm output	42 mm input; 68 mm output
Entrance aperture:	100 µm	100 µm
Wavelength range:	200-850 nm	350-1000 nm
Signal-to-noise ratio:	250:1 (at full signal)	250:1 (at full signal)
A/D resolution:	16 bit	16 bit
Dynamic range:	2 x 10 ⁸ (system)	2 x 10 ⁸ (system)
Integration time:	8 ms to 20 seconds	8 ms to 20 seconds
Stray light:	<0.05% at 600 nm; <0.10% at 435 nm	<0.05% at 600 nm; <0.10% at 435 nm
Corrected linearity:	>99.8%	>99.8%
Power Supply	LPS 150-0268	LPS 150-0268
Power Requirements	110./220 VAC, 50/60 Hz	110./220 VAC, 50/60 Hz
Current Stability	+/- 0.01%	+/- 0.01%
Current Rise Time	20 +/- 5 seconds	20 +/- 5 seconds
Regulated Current	2.679 A +/- 0.1%	2.679 A +/- 0.1%
Weight	6.5 lbs. (2.9 kg)	6.5 lbs. (2.9 kg)
Dimension (W x D x H)	8.3 x 10.5 x 3.5 in (21.1 x 26.7 x 8.9 cm)	8.3 x 10.5 x 3.5 in (21.1 x 26.7 x 8.9 cm)
Compliance	CE	CE

Optional Accessories

LS Series LED Sockets	Choose your own
I 1000 Condition B Intensity Head	AS-02700-100
I 2000 Condition A & B Intensity Head	AS-02700-316
E 1000 Spectral Irradiance Head	AS-02700-000
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CAL-LX-INT Spectral Intensity Calibration	CAL-LX-INT
Absorption Correction Lamp, AUX-100	AS-02737-000
Preset Power Supply, LPS-100-0833, 8.33A 100W	AS-02600-833
Calibrated Spectral Flux Set, CSFS-1400	AS-01343-000
Horizontal Lamp Mount Bracket	AS-02477-003
Temperature Probe, TP-400	AS-02637-400
Temperature Probe and Monitor, TPM-400	AS-02638-400