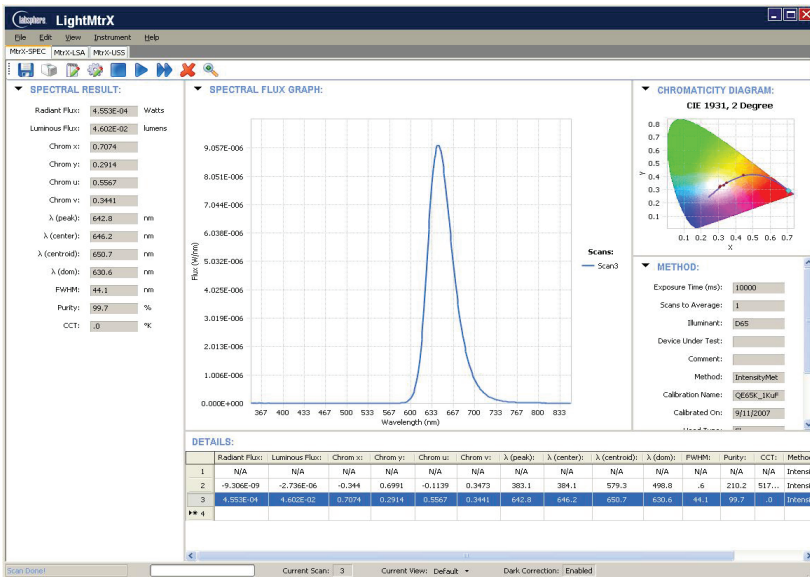


# CHOICE SOLUTIONS FOR SPECTRAL INTENSITY OF LEDs AND SMALL LIGHT SOURCES

Fast, accurate LED measurements that are repeatable from research to production



LIGHTMTRX SOFTWARE

## ACCURATE

With NIST traceable results, the Labsphere Choice Solutions for intensity of LEDs and small light sources provide accurate repeatable results time and time again. These packages meet today's standards for LED measurement while providing better quality from any packaged LED light source. Choice solutions measure average spectral intensity and luminous intensity, CIE chromaticity, correlated color temperature, dominant wavelength, and purity in a matter of milliseconds.

Labsphere's Choice Solutions are designed to position packaged LEDs for CIE average intensity as defined by CIE conditions A and B. Fed by an optical fiber from the intensity head to the CCD spectrometer, the package's software and spectrometer provide fast results of your specific LED.

## FEATURES:

- Load, light, and test in less than five seconds
- NIST traceable standards for In-house recalibration
- Intensity results in milliseconds
- Spectrafect® interior
- Optional LED Sockets
- CIE Recommended Geometry
- Backed by an ISO 9001:2000 Registered Quality Management System

## BEST FOR MEASURING:

Packaged LEDs

## EASY-TO-USE

The out of the box design of these solutions make set up easy, while the software is simple to install with user-friendly interfaces to make intuitive calibration easier. The small footprint of the hardware allows for a clutter-free workspace, while the practical, ergonomic design allows LEDs to be loaded, lit and measured in less than five seconds. Choose from Labsphere's wide variety of LS series LED sockets that are specially designed to fit with the intensity heads, or work with our engineers to develop a socket to specially fit your LED design.

When you are ready to increase your capacity, the integral design and graphical user interface of the CDS 1100 and 2100 high-end spectrometers make it easy to transition accurate measurement results from research to production with the same high performance you demand from the lab and with the ease of use that your operations team desires.

Users have the ability to calibrate their solutions with Labsphere's IES 1000 intensity standard and Labsphere's software, LightMtrX. The software module is the most intuitive platform for calibrating and analyzing spectral radiometric, photometric and colorimetric properties of light sources. Sources range from simple lamps and LEDs to solid state lighting assemblies and traditional indoor and outdoor lighting systems. The LightMtrX temporal feature allows you to monitor optical and electrical performance versus elapsed operating time.



TESTING SOLUTION FOR SPECTRAL INTENSITY LEDs AND SMALL LIGHT SOURCES

# Specifications

## Choice Package Includes:

	Model (Choose one)	Description	Part Number
Intensity Head	I 1000	Condition B Intensity Head	AS-02700-100
	I 2000	Condition A & B Intensity Head	AS-02700-316
Spectrometer	CDS 1100	280nm - 850nm	AS-02715-000
	CDS 2100	350nm - 1050nm	AS-02715-001
Software	MtrX-SPEC	Spectral Light Measurement Software	MtrX-SPEC
Calibration	CAL-LX-INT	Intensity Calibration, LightMtrX Software	CAL-LX-INT

## System Properties and Performance

Intensity Heads	I 1000	I 2000
Measurement Geometry	Condition B	Condition A and B
Solid Angle	0.1 sr	0.01 sr
Measurement Distance	10 cm	10cm and 31.6cm
Receiver Area	1 cm <sup>2</sup>	1cm <sup>2</sup>
Collection Optics	Near Cosine Spectralon Integrating Sphere	Near Cosine Spectralon Integrating Sphere
Fiber Connector	SMA	SMA
Alignment	Ring collar	Ring collar
Finish	Black Anodized	Black Anodized and White
Weight	2.10 lbs (0.95 kg)	2.78 lbs (1.26 kg)
Dimensions (W x D x H)	7.8 x 7.1 x 2.8 in (20 x 18 x 7 cm)	7.8 x 15.3 x 3.5 in (20 x 39 x 9 cm)

Spectrometer	CDS 1100 with Condition B Intensity Head	CDS 2100 with Condition B Intensity Head
Detector	TE Cooled 1044 x 64 CCD (back thinned)	TE Cooled 1044 x 64 CCD (back thinned)
Spectral range	250-850 nm	350-1050 nm
Resolution	1.5 FWHM	1.5 FWHM
Integration time	10 ms - 60 s	10 ms - 60 s
Cooling	10 +/- 0.05 C	10 +/- 0.05 C
TE Temp Drift	+/- 1 C	+/- 1 C
Linearity	+/- 0.5%	+/- 0.5%
Wavelength Accuracy	<+/- 0.4 nm	<+/- 0.4 nm
Stray light Broadband	<10 <sup>-4</sup> at 400nm w/ III A source	<10 <sup>-4</sup> at 400nm w/ III A source
Stray light LED/laser	<10 <sup>-5</sup> at 500nm w/633 nm laser	<10 <sup>-5</sup> at 500nm w/633 nm laser
Focal Length	100 mm	100 mm
Slit Width		
Optical Input	Choice of Optical Fibers sold separately (SMA connection)	Choice of Optical Fibers sold separately (SMA connection)
Speed	0.1 scans /sec	0.1 scans /sec
Dynamic range (single scan)	30000:1	30000:1
Spectral Sample interval	0.25nm	0.25nm
Mechanical Shutter	Yes	Yes
Radiometric Sensitivity range	2E-7 - 20 W/m <sup>2</sup> -nm at 600nm	2E-7 - 20 W/m <sup>2</sup> -nm at 600nm
Sensitivity at 1s integration time	4E-6 W/m <sup>2</sup> -nm at 600nm	4E-6 W/m <sup>2</sup> -nm at 600nm
Spectroradiometric Accuracy	+/- 5%	+/- 5%
Chromaticity Accuracy (x,y)	<+/-0.001	<+/-0.001
Chromaticity Repeatability	+/-0.0001*	+/-0.0001*
Lamp Standard Uncertainty	<+/-3%	<+/-3%
AD Converter	16 bit	16 bit
A/D Rate	TBD	TBD
PC Interface	USB 2.0	USB 2.0
Trigger	11.3 lbs (5.04 kg)	11.3 lbs (5.04 kg)
Dimensions (W x D x H)	8.3 x 13.0 x 3.5 in (21.1 x 32.9 x 8.9 cm)	8.3 x 13.0 x 3.5 in (21.1 x 32.9 x 8.9 cm)

## Optional Accessories

LSA 3000 Goniometer	AS-02707-000
LS LED Sockets	Choose your type
LS TE Temperature Controlled LED Sockets	Choose your type
IE 1000 Irradiance Head	AS-02700-000
CAL-LX-IRR Calibration of IE 1000 with LightMtrX and Spectrometer	CAL-LX-IRR
IES 1000 Intensity/Irradiance Calibration Lamp Standard	AS-02700-602