LightFluxColor

LFC-050-LE Light Flux Color and Luminous Efficacy Measurement Systems

The most economical and accurate solution for IESNA LM-79 and equivalent testing needs!

Light**F**lux**C**olor-LE Series Systems are the most affordable and accurate systems for testing LED lighting products per the LM-79 standard. Whether you are a manufacturer of LED luminaires, street lights, solar powered LED lanterns, LED bulbs, or any other type of LED lighting product, **L**ight**F**lux**C**olor Systems will meet all your testing requirements. Test reports produced by following IESNA LM-79 and other equivalent standards not only make LED products comply with energy efficient lighting regulations but also provide confidence in quality of the product. **L**ight**F**lux**C**olor Systems allow luminaire manufacturers to test LED products per global testing standards, quickly launch their products to the market, and prove superior quality to their customers. The systems are not only required by manufacturers but are also essential for government labs, municipalities, and production facilities to ensure strict quality control and vendor qualifications.

Light**F**lux**C**olor-LE Series Systems allow users to test AC/DC characterization of lamps at various input frequencies along with lumens and color parameters. Electrical lamp parameters such as power factor can also be tested.

The NIST traceable calibrated standard included with the system allows users to perform simple in-house system recalibration and verification without having to ship the system to our manufacturing facility. The system is available with 0.5 m, 1 m, 1.5 m and 2 m integrating sphere size options to accommodate LED chips as well as larger street lights. The integrating sphere is coated with Spectraflect® coating which has up to 98% reflectance with perfectly Lambertian properties. The integrating sphere coating is highly durable and extremely stable, does not yellow over time, and doesn't need periodic recoating. The integrating spheres are designed as per LM-79, BIS IS 16106:2012 and other equivalent standards to measure LED sources in both the 2 pi and 4 pi geometries.

Ideal For Flux, Color & AC/DC Electrical Characterization of:

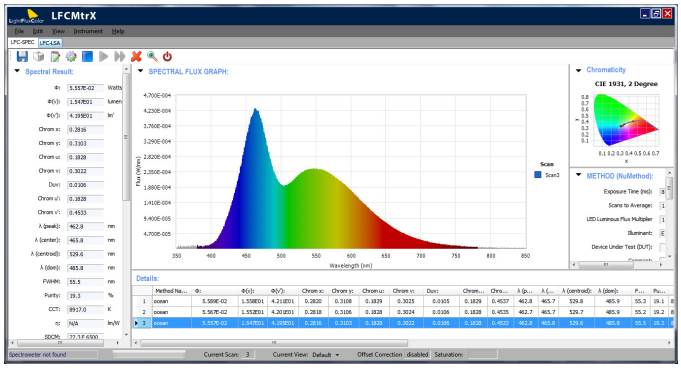
Automotive Lamps	Traffic Lighting
LED Clusters	Architectural Lighting
LED Bulbs	Railway Lighting

Light**F**lux**C**olor-LE Series Systems also include a highly sensitive mini-calibrated CCD Array Spectrometer with spectral range from 250 to 850 nm. This low noise and broad spectral response spectrometer provide instantaneous measurement of radiometric, photometric, and color characteristics of the LED sources.

The fast results from the spectrometer helps to increase the rate of product development, decrease the time to market, and reduce development costs.

Users of the systems are also able to perform absorption correction with standard **L**ight**F**lux**C**olor Systems and the system includes application specific software.

With ability to measure light source spectrum, luminous flux, electrical characteristics and complete color parameters with highest degree of accuracy and traceability, **L**ight**F**lux**C**olor Systems have the best value of all the LED measurement systems in the market.



Light Measurement Software

Why Choose LightFluxColor

- Calibrations are traceable to NIST (USA) which are accepted and recognized globally.
- Calibrated lamp standards NVLAP accreditation Lab Code 200951-0 (ISO 17025)
- Spectral flux standards (calibration performed at each wavelength) are supplied with each system for highest possible accuracy.
- Single software controls all electronics and provides optical and electrical data.
- Competitor's systems only provide luminous flux standards with CCT calibration which limits overall system accuracy.
- AC/DC operation in one packaged testing system
- An auxiliary lamp is provided for absorption correction and auxiliary correction is applied at each wavelength. This improves overall measurement accuracy as compared to other systems on the market.
- The integrating sphere is coated with Labsphere® Spectraflect® coating that has up to 98% reflectance and is the highest Lambertian coating in the market.
- The sphere coating doesn't yellow over time and doesn't degrade in due course.
- The integrating spheres are designed per IESNA LM-79 standard and are capable of measuring in 2 pi and 4 pi geometries.
- Local support and training.

Labsphere, Inc • 231 Shaker Street, North Sutton, NH 03260 • 603-927-4266 • www.lightfluxcolor.com

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Detailed Technical Specifications

LFC-050 0.5 meter System includes:	LFC-050-LES	LFC-050-LEX
	Part # AA-01166-050	Part # AA-01165-050
Light Measurement Sphere, 0.5 meter	√	√
Spectrally Calibrated Lamp, SCL-600	√	√
Auxiliary Lamp, AUX-50	√	√
Calibration and Aux Lamp Socket Assembly	√	√
Programmable DC Power Supply, M8811, 30V, 5A	√	√
CCD Array Spectrometer (250 - 850 nm)	√	√
Light Measurement Software	√	√
System Manual and Electrical Rack	√	√
AC Power Supply, Parwa APS6001L 0-300V,1KW	√	
AC Power Meter, TET P62201	√	
AC Power Supply, Chroma61603,0-300V, 1.5KW		√
Power Meter, Yokogawa® WT210		√
Relay Controller, Arroyo RC1	√	√

Also Available	Part Number
LFC-200/050-LEX (2 m and 0.5 m sphere systems with LEX rack)	AA-01165-000
LFC-200/050-LES (2 m and 0.5 m sphere systems with LES rack)	AA-01166-000

*This configuration includes a 2 m and 0.5 m sphere with shared electronic rack and suitable cables.

LFC-200/050 LES LFC-200/050 LEX System Properties and Specifications

Sphere	20 in (50 cm)	20 in (50 cm)
Sphere Coating Reflectance	98%	98%
Photometric Range(Illuminant A)	0.5 - 1800 lm	0.5 - 1800 lm
Spectral Range (Spectrometer)	250* - 850 nm	250* - 850 nm
2 pi Port Size	6 in (15.24 cm)	6 in (15.24 cm)
Sphere & Crate Weight	60 kg	60 kg
Crate Dimension (W x D x H)	0.7 M x 1.45 M x 1.0 M	0.7 M x 1.45 M x 1.0 M
System input power requirements: 220V-240V, 16A		
Spectrometer Detector	**Sony ILX511 linear silicon CCD array**	**Sony ILX511 linear silicon CCD array**
Spectral Range	250* - 850 nm	350 - 1000 nm
Integration Time	1 ms – 5 s	1 ms - 5 s
Wavelength Accuracy	<+/- 0.5 nm	<+/- 0.5 nm
Optical Input Optical Fiber	600 um, 3 m long, (SMA Connection)	600 um, 3 m long, (SMA Connection)
Lamp Standard		
Power	35 W	35 W
Approximate Luminous Flux	600 lm	600 lm
Rated Life (Calibrated)	50 hrs	50 hrs
Calibration	Spectral Flux (W/nm)	Spectral Flux (W/nm)
Traceability	350 - 1050 nm NIST traceable	350 - 1050 nm NIST traceable
Power Supply (DC)	**M8811, DC 30V, 5A**	**M8811, DC 30V, 5A**
Power Requirements	110/220 VAC, 50/60 Hz	110/220 VAC, 50/60 Hz
Current Stability	0.1%	0.1%
Current Rise Time	35 s	35 s
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
Aux Lamp	**AUX-50 (50W)**	**AUX-50 (50W)**

*system calibration range 350 - 1050 nm

System Optional Components

	Part Number
SCL 600 cal lamp	AS-01335-000
Replacement Aux-50 bulb	LEW-00014-000
CSFS-600	AS-01336-000

Key System Features

- Fully complies with IESNA LM-79 standard
- AC/DC operation
- NIST traceable calibrated standards for in-house recalibration NVLAP accreditation Lab Code 200951-0 (ISO 17025)
- Measurement of electrical parameters including power factor
- Measure absolute spectrum in milliseconds
- Comprehensive Light Measurement Software capable of measuring:
  - Total Spectral Flux (Watts/nm)
  - Luminous Flux (Lumens)
  - Luminous Efficacy (Lumens/Watt)
  - Radiant Flux (Watts)
  - Chromaticity (x, y, u, v)
  - CCT
  - CRI
  - Peak Wavelength
  - Dominant Wavelength
- Spectraflect® interior coating for sphere
- Absorption correction capabilities included