

## LFC-100-LE Light Flux Color and Luminous Efficacy Measurement Systems

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

LightFluxColor-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, LightFluxColor 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. LightFluxColor 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.

LightFluxColor-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 Spectrafect® 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:

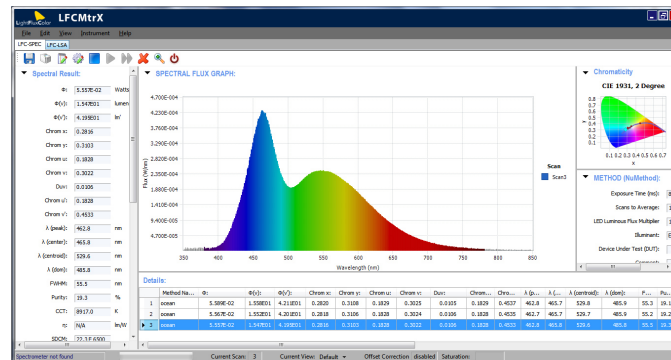
- Automotive Lamps
- Traffic Lighting
- LED Clusters
- Architectural Lighting
- LED Bulbs
- Railway Lighting

LightFluxColor-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 LightFluxColor 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, LightFluxColor Systems have the best value of all the LED measurement systems in the market.



### 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® Spectrafect® 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.

Light  
Measurement  
Software

## Detailed Technical Specifications

### LFC-100 1 meter System includes:

Light Measurement Sphere, 1 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, RC1

### LFC-100-LES

Part # AA-01166-100  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓

### LFC-100-LEX

Part # AA-01165-100  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓

### Also Available

LFC-200/050-LEX (2 m and 0.5 m sphere systems with LEX rack)  
LFC-200/050-LES (2 m and 0.5 m sphere systems with LES rack)

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

## System Properties and Specifications

Sphere 40 in (100 cm)  
Sphere Coating Reflectance 98%  
Photometric Range(Illuminant A) 5 - 15,000 lm  
Spectral Range (Spectrometer) 250\* - 850 nm  
2 pi Port Size 12in (30cm)  
Sphere Weight 110 kg  
System input power requirements: 220V-240V, 16A

40 in (100 cm)  
98%  
5 - 15,000 lm  
250\* - 850 nm  
12in (30cm)  
110 kg

40 in (100 cm)  
98%  
5 - 15,000 lm  
250\* - 850 nm  
12in (30cm)  
110 kg

### Spectrometer Detector

Spectral Range  
Integration Time  
Wavelength Accuracy  
Optical Input Optical Fiber

**Sony ILX511 linear silicon CCD array**  
250\* - 850 nm  
1 ms - 5 s  
<+/- 0.5 nm  
600 um, 3 m long,  
(SMA Connection)

**Sony ILX511 linear silicon CCD array**  
350 - 1000 nm  
1 ms - 5 s  
<+/- 0.5 nm  
600 um, 3 m long,  
(SMA Connection)

### Lamp Standard

Power  
Approximate Luminous Flux  
Rated Life (Calibrated)  
Calibration  
Traceability

35 W  
600 lm  
50 hrs  
Spectral Flux (W/nm)  
350 - 1050 nm  
NIST traceable

35 W  
600 lm  
50 hrs  
Spectral Flux (W/nm)  
350 - 1050 nm  
NIST traceable

### Power Supply (DC)

Power Requirements  
Current Stability  
Current Rise Time  
Dimension (W x D x H)

**M8811, DC 30V, 5A**  
110/220 VAC, 50/60 Hz  
0.1%  
35 s  
8.3 x 10.5 x 3.5 in  
(21.1 x 26.7 x 8.9 cm)  
CE

**M8811, DC 30V, 5A**  
110/220 VAC, 50/60 Hz  
0.1%  
35 s  
8.3 x 10.5 x 3.5 in  
(21.1 x 26.7 x 8.9 cm)  
CE

### Compliance

### Aux Lamp

\*system calibration range 350 - 1050 nm

**AUX-50 (50W)**

**AUX-50 (50W)**

## System Optional Components

SCL 600 cal lamp  
Replacement Aux-50 bulb  
CSFS-600

### Part Number

AS-01335-000  
LEW-00014-000  
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
- Spectrafect® interior coating for sphere
- Absorption correction capabilities included