

LFC-050 Light Flux and Color Measurement Systems

The most economical and reliable solution for photometry of light source needs!

LightFluxColor Measurement Systems are the most affordable and reliable systems for testing LED lighting products. 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. LightFluxColor systems allow luminaire manufacturers to test LED products for photometric performance.

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 systems are 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 and fixtures.

The integrating sphere is coated with Spectrafect® coating which has up to 98% reflectance with near Lambertian properties. Spectrafect is extremely stable, does not yellow over time, and doesn't need periodic recoating. The integrating spheres are designed to measure LED sources in both the 2π and 4π geometries.

Ideal For Flux & Color Characterization of:

- | | |
|-------------------------|-------------------------------|
| LED Clusters | Railway Lighting |
| LED Chips | Architectural Lighting |
| LED Bulbs | Automotive Lighting |
| Traffic Lighting | |

LightFluxColor Measurement Systems also include highly sensitive mini-calibrated CCD Array Spectrometers with spectral ranges from 250 to 850 nm or 350 to 1000 nm. These low noise and broad spectral response spectrometers provide instantaneous measurement of radiometric, photometric, and color characteristics of the LED sources.

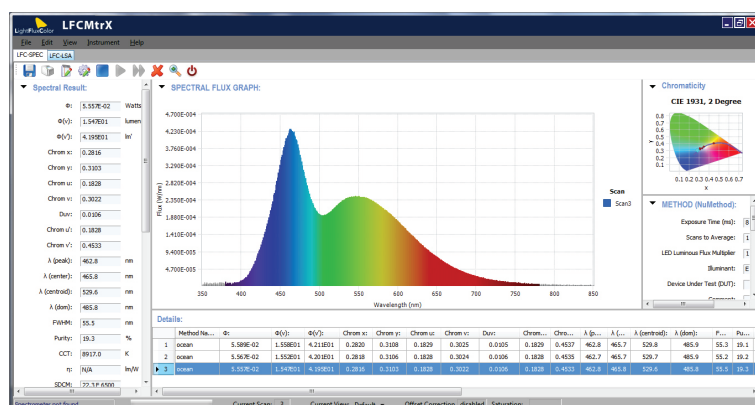
The fast results from the spectrometers help to increase the rate of product development, decrease the time to market, and reduce development costs.

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, radiant flux and complete color parameters with highest degree of accuracy and traceability, the 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.
- Competitive systems only provide luminous flux standards with CCT calibration which limits overall system accuracy.
- An auxiliary lamp is provided for absorption correction which 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's Spectrafect® featuring 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 capable of measuring in 2π and 4π geometries.
- Local support and training.



Light Measurement Software

Key System Features

- NIST traceable calibrated standards for in-house recalibration NVLAP accreditation Lab Code 200951-0 (ISO 17025)
- 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
- DC power only

Detailed Technical Specifications

LFC-050 0.5 meter System includes:

	LFC-050-60	LFC-050-61
Light Measurement Sphere, 0.5 meter	✓	✓
Spectrally Calibrated Lamp	✓	✓
Auxiliary Lamp	✓	✓
Lamp Socket Assembly	✓	✓
Power Supply, M8811, 30V, 5A	✓	✓
CCD Array Spectrometer	✓	✓
Light Measurement Software	✓	✓
System Manual and Electrical Rack	✓	✓

*System can be upgraded to measure electrical properties of AC operated lamps.

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	350 - 1000 nm
2π 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

Spectrometer Detector

Spectral Range	Sony ILX511 linear silicon CCD array 250* - 850 nm	Sony ILX511 linear silicon CCD array 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	650 lm	650 lm
Calibration	Spectral Flux (W/nm)	Spectral Flux (W/nm)
Traceability	350 - 1050 nm NIST traceable	350 - 1050 nm NIST traceable

Power Supply (DC)

Power Requirements	M8811, DC 30V, 5A 110/220 VAC, 50/60 Hz	M8811, DC 30V, 5A 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 Upgrades for AC lamp operation

LEX upgrade rack
LES upgrade rack

Part Number

AA-01165-900
AA-01166-900

System Optional Components

SCL-650 Cal Lamp
Replacement AUX-50 Bulb

Part Number

AS-01335-100
LEW-00014-000

Key System Features

- NIST traceable calibrated standards for in-house recalibration NVLAP accreditation Lab Code 200951-0 (ISO 17025)
- 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
- DC power only

Detailed Technical Specifications

LFC-100 1 meter System includes:

	LFC-100-60	LFC-100-61
Light Measurement Sphere, 1 meter	Part # AA-90020-100	Part # AA-90030-100
Spectrally Calibrated Lamp	✓	✓
Auxiliary Lamp	✓	✓
Lamp Socket Assembly	✓	✓
Power Supply, M8811, 30V, 5A	✓	✓
CCD Array Spectrometer	✓	✓
Light Measurement Software	✓	✓
System Manual and Electrical Rack	✓	✓

*System can be upgraded to measure electrical properties of AC operated lamps.

System Properties and Specifications

Sphere	40 in (100 cm)	40 in (100 cm)
Sphere Coating Reflectance	98%	98%
Photometric Range(Illuminant A)	5 - 15,000 lm	5 - 15,000 lm
Spectral Range (Spectrometer)	250* - 850 nm	350 - 1000 nm
2π Port Size	12 in (30 cm)	12 in (30 cm)
Sphere Weight	110 kg	110 kg

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	650 lm	650 lm
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 Upgrades for AC lamp operation

LEX upgrade rack
LES upgrade rack

Part Number

AA-01165-900
AA-01166-900

System Optional Components

SCL-650 Cal Lamp
Replacement AUX-50 Bulb

Part Number

AS-01335-100
LEW-00014-000

Key System Features

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- 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
- DC power only

Detailed Technical Specifications

LFC-150 1.5 meter System includes:

	LFC-150-60	LFC-150-61
Light Measurement Sphere, 1.5 meter	Part # AA-90020-150	Part # AA-90030-150
Spectrally Calibrated Lamp	✓	✓
Auxiliary Lamp	✓	✓
Lamp Socket Assembly	✓	✓
Power Supply, M8811, 30V, 5A	✓	✓
CCD Array Spectrometer	✓	✓
Light Measurement Software	✓	✓
System Manual and Electrical Rack	✓	✓

*System can be upgraded to measure electrical properties of AC operated lamps.

System Properties and Specifications

Sphere	60 in (1.5 m)	60 in (1.5 m)
Sphere Coating Reflectance	98%	98%
Photometric Range(Illuminant A)	10 - 40,000 lm	10 - 40,000 lm
Spectral Range (Spectrometer)	250* - 850 nm	350 - 1000 nm
2π Port Size	18 in (45 cm)	18 in (45 cm)
Sphere Weight	200 kg	200 kg

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	650 lm	650 lm
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 Upgrades for AC lamp operation

LEX upgrade rack
LES upgrade rack

Part Number

AA-01165-900
AA-01166-900

System Optional Components

SCL-650 Cal Lamp
Replacement AUX-50 Bulb

Part Number

AS-01335-100
LEW-00014-000

Key System Features

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- 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
- DC power only

Detailed Technical Specifications

LFC-200 2 meter System includes:

	LFC-200-60	LFC-200-61
Light Measurement Sphere, 2 meter	Part # AA-90020-200	Part # AA-90030-200
Spectrally Calibrated Lamp	✓	✓
Auxiliary Lamp	✓	✓
Lamp Socket Assembly	✓	✓
Power Supply, M8811, 30V, 5A	✓	✓
CCD Array Spectrometer	✓	✓
Light Measurement Software	✓	✓
System Manual and Electrical Rack	✓	✓

*System can be upgraded to measure electrical properties of AC operated lamps.

System Properties and Specifications

Sphere	78 in (200 cm)	78 in (200 cm)
Sphere Coating Reflectance	98%	98%
Photometric Range(Illuminant A)	15 - 50,000 lm	15 - 50,000 lm
Spectral Range (Spectrometer)	250* - 850 nm	350 - 1000 nm
2π Port Size	20 in (50.8 cm)	20 in (50.8 cm)
Sphere & Crate Weight	500 kg	500 kg
Crate Dimension (W x D x H)	2.3 M x 2.45 M x 2.53 M	2.3 M x 2.45 M x 2.53 M

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	650 lm	650 lm
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 Upgrades for AC lamp operation

LEX upgrade rack
LES upgrade rack

Part Number

AA-01165-900
AA-01166-900

System Optional Components

SCL-650 Cal Lamp
Replacement AUX-50 Bulb

Part Number

AS-01335-100
LEW-00014-000