



Integrating Sphere Spectroradiometer System for LED (LPCE-2)

Brochure

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[Lead in CFL & LED Test Instruments](#)

Integrating Sphere Spectroradiometer System for LED

(LPCE-2)



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1、 CCD Spectroradiometer (LMS-8000S)



LMS-8000S LED Measurement System is an automated measurement system for identifying the performance of individual LED. It is designed to have a capability of producing any visible spectral distribution, mimicking various light sources in the visible region by feedback control of the radiant power emitted by individual LEDs. This LED test system will be used as a transfer standard for photometric, colorimetric and radiometric applications.

Measures:

Electrical: Forward Voltage, Reverse Current

Photometric: Total Luminous Flux, Luminous Efficiency

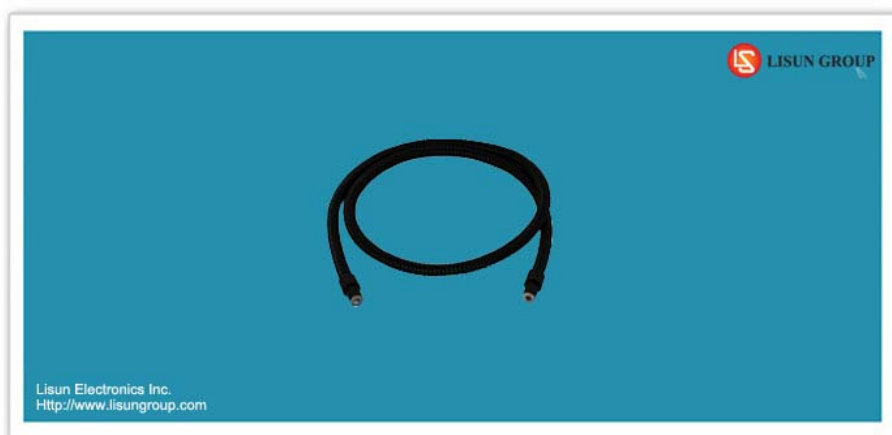
Colorimetric: Total Radiant Intensity, Dominant Wavelength, Peak Wavelength, Color Coordinates, Half-bandwidth, Spectral Purity, Correlated Color Temperature (Color Temperature Meter), Color Rendering Index, Color Difference, Chromaticity, Spatial Radiation Pattern

Features:

- The LMS-8000S can connected two integrating spheres at the same time
- Cost-effective and robust CCD spectrometer technology
- Different models for the UV-VIS and VIS-NIR spectral range
- SMA905 Optical Fiber coupling rises to unattenuated light transmission
- High spectral resolution, High sensitivity and excellent reliability
- With a built-in 3000.0mA constant current power supply to drive LED
- Complete measurement results in less than 5 seconds
- Standard USB interface
- Friendly graphic user interface provides an easy-to-use operation environment
- Be used in quality management and analysis
- Compliance with the CIE Technical Report for Measurement of LEDs (CIE 127-1997) and IES LM 79-08 standards

Specifications:

- Spectral Range: 200nm ~ 780nm / 380nm ~ 780nm / 380nm ~ 1050nm
- Spectral Resolution: $\pm 0.2\text{nm}$, Reproducibility: $\pm 0.5\text{nm}$
- Accuracy of Chromaticity Coordinate (Δx , Δy): ± 0.003
- Correlated Color Temperature CCT: 1500K ~ 25000K ($\pm 3\%$)
- Forward Current IF: 0.1mA ~ 3000.0mA ($\pm 0.5\%$)
- Reverse Current IR: 0.1 μA ~ 200.0 μA ($\pm 1\%$)
- Forward Voltage VF: 0.1V ~ 30.0V

2、 Optical Fiber (CFO-1.5M)

1.5m length Connect the Spectroradiometer and integrating sphere

3、 Digital power meter (AC & DC model) (UI2012)

- Measure Vrms, Irms, W, PF/Hz;
- Measure AC, DC, AC+DC;
- Automatic selecting ,out of limit alarming, advance the work efficiency;
- Voltage range: AC:5-600V, DC:1-600V. Current range: AC&DC:0.005-20A, Automatic
- Accuracy: $\pm(0.4\%\text{reading} + 0.1\%\text{range} + 1\text{digit})$.

4、 AC Power Source (LSP-500VA)



- AC-DC-AC frequency conversion technology
- Digital wave synthesis, wave feed-back technology, low power distortion
- Controlled and tested by 16 bits MCU, which has high automation
- High speed 12 bits A/D sampling technology, exactly display Voltage, Current, Power, Power factor, Frequency
- Zero output impedance, equivalent resistance ≤ 0.1
- Insulation for power output to make test safely and steady
- Protection for over hot and thundering voltage and current
- Input by keyboard, big/small adjustment, fast parameter set-up
- Output frequency range: 45.00-65.00Hz
- Output voltage range: AC 0.0-300.0V
- Total voltage distortion: $\leq 0.6\%$; Voltage stability: $\leq 0.1\%/30$ min
- Load adjust rate: $\leq 0.1\%$; Frequency stability: $\leq 0.05\%/30$ min

Lisun Model	Output Power	Remark
LSP-500VA LSP-500VAR	500W	0~150V: 4.2A, 150~300V: 2.1A (LSP-500VAR has RS-232 port can communicate with PC)
LSP-1KVA LSP-1KVAR	1000W	0~150V: 8.4A, 150~300V: 4.2A (LSP-1KVAR has RS-232 port can communicate with PC)

5、 Integrating Sphere (IS-0.3M IS-1.5M)



A Molding Integrating Sphere **VS** the traditional Integrating Sphere

The integrating sphere works with LMS-5000 for photo and color parameters test:

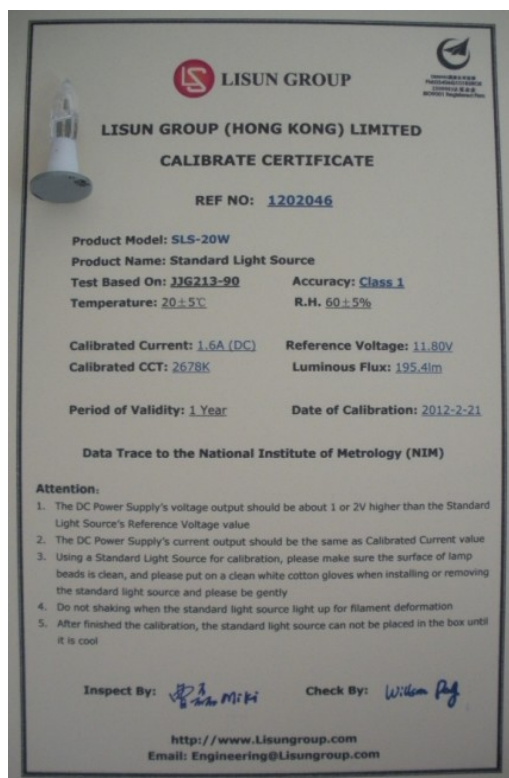
- The IS-1.5M is for LED tube and LED bulb test and IS-0.3M is for single LEDs test.
- The traditional integrating sphere which is assembled by several pieces, Lisun Group developed A Molding Technology to produce the integrating sphere. A molding integrating sphere will be more circle and the test results will be more accurate than the traditional integrating sphere
- Multi-interfaces on the sphere to make sure test photo and color parameters at the same time.
- Building position inside: vertical and horizontal which are for tube and bulb test
- The integrating sphere inside painted by Spin™ coating which is smooth and long life.
- In the visible range, the reflectance $\rho \approx 0.8$ and variation of $\rho(\lambda) < 1.5\%$ are according to CIE-84:1989.

For the LED Street luminaries test, you can option the bellowing integrating spheres:

Model Number	Inner Diameter	Side Opening Size
IS-1.5M55P	1.5m	500x500mm
IS-2.0M77P	2.0m	700x700mm

6、 Standard Lamp Source (SLS-10W SLS-50W)

OSRAM Standard Lamp to calibrate the spectrum and luminous flux with Lisun Lab certification. The SLS-10W is for the small sphere calibrate and SLS-50W is for the big sphere calibrate. The data can be traced NIM.



7、 Standard Instrument Cabinet 19Inch (CASE-19IN)

Combine all of the test instruments in a 19 inch standard Cabinet, makes the whole systems looks nice and is simple to use

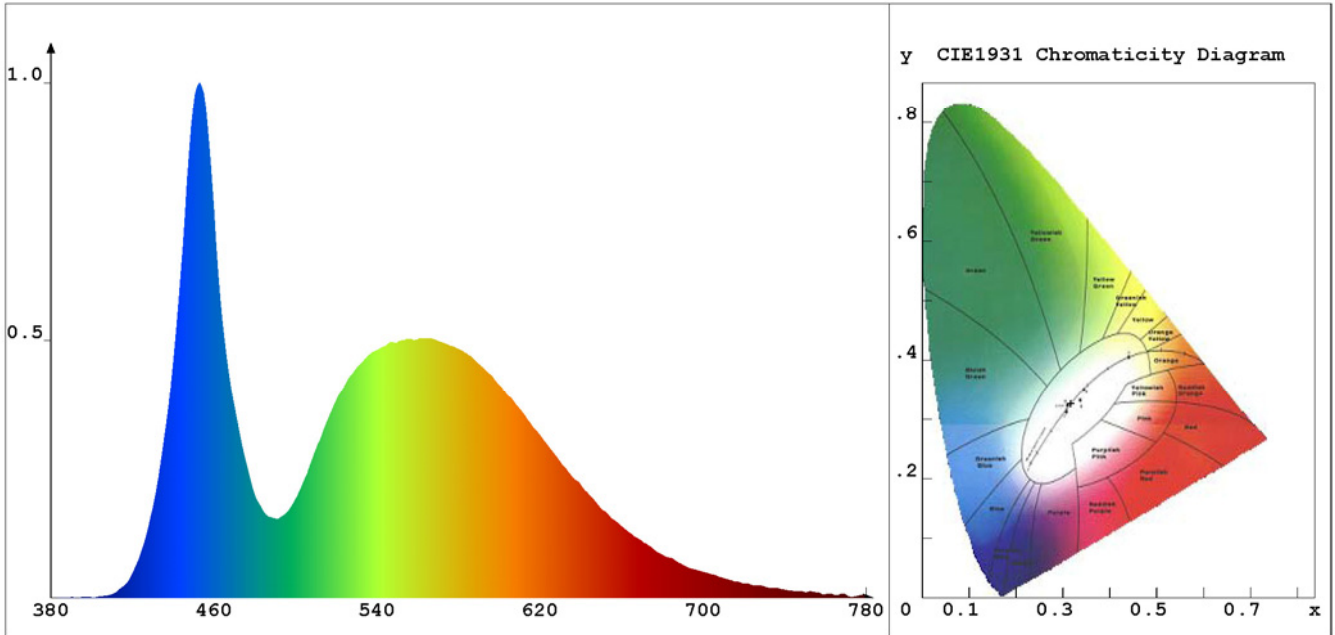
Next page is the test report for single LED & LED lamp:

Single LED Test Report

Product Mark

Product Type :LW01S
 Temperature :25'C
 Operator :Jacky

Manufacturer :CREE
 Humidity :65%
 Test Date :2008-04-02



Chroma Parameters

Chro.Coor.: x=0.3168 y=0.3262 u=0.2018 v=0.3116 duv=-0.0004
 CCT: Tc= 6301K Dominant Wave.: 487.0nm Purity: 6.1%
 R ratio: R= 13.1 Peak Wavelength: 453.1nm Half Width: 23.9nm

Rending Index: Ra= 76.3

R1 =74.1 R2 =82.4 R3 =84.1 R4 =73.5 R5 =73.3 R6 =72.7 R7 =86.2
 R8 =64.2 R9 =-12.1 R10=54.1 R11=68.2 R12=40.9 R13=76.4 R14=91.0
 R15=0.0

Photo Parameters

Flux: 7.260lm Effi.: 0.0lm/W Radiant: 22.6mW Iv: 0.0mcd

Ele. Parameters

Forward Current:If=20.0mA Forward Voltage:Vf=2.97V
 Reverse Voltage:Vr=5.00V Reverse Current:Ir=0.00uA

Instrument state

IntgeTime: 122.581ms VPeak: 14253 VDark: 1412
 Scan Range: 380-780nm

LED Lamp Test Report

Product Mark

Product Type :LD12KQ

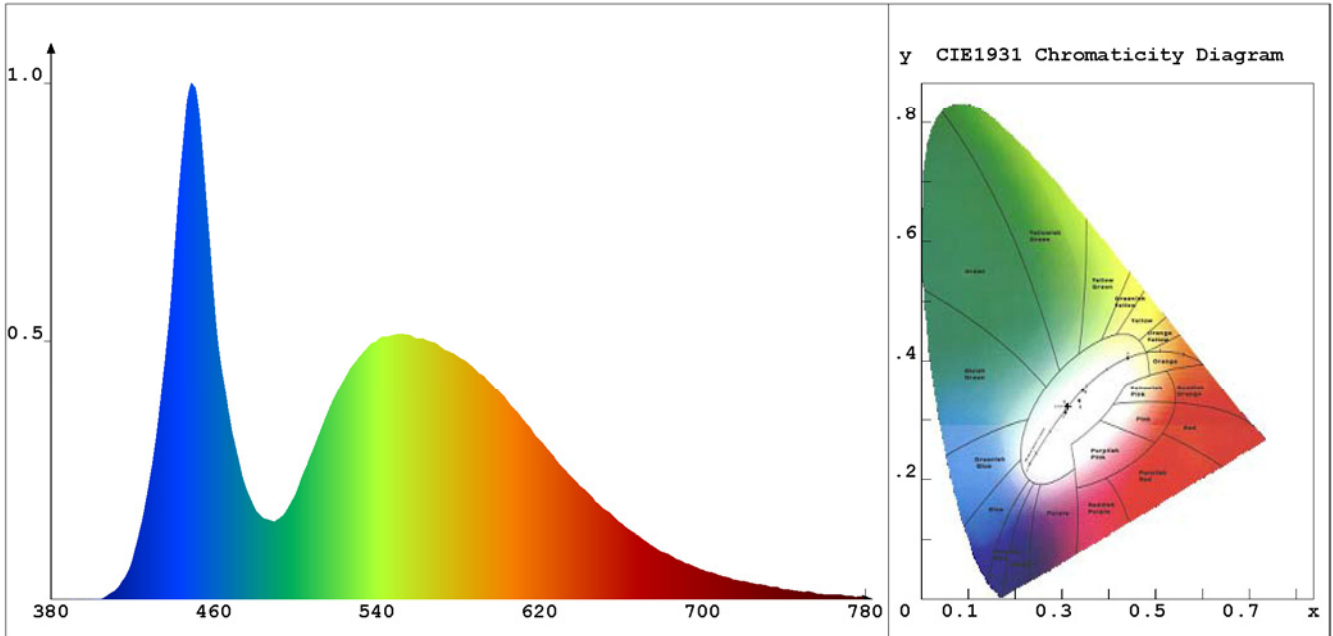
Temperature :22'C

Operator :Peter

Manufacturer :OSRAM Lighting

Humidity :65%

Test Date :2009-11-15



Chroma Parameters

Chro.Coor.: x=0.3127 y=0.3225 u=0.2003 v=0.3099 duv=-0.0002

CCT: Tc= 6555K Dominant Wave.: 485.7nm Purity: 7.8%

R ratio: R= 12.8 Peak Wavelength: 448.8nm Half Width: 24.9nm

Rending Index: Ra= 75.2

R1 =73.4 R2 =79.3 R3 =79.9 R4 =75.4 R5 =73.6 R6 =69.8 R7 =85.0

R8 =65.9 R9 =-10.2 R10=47.4 R11=70.6 R12=42.0 R13=74.5 R14=88.5

R15=0.0

Photo Parameters

Flux: 215.72lm Effi.: 53.9lm/W Radiant: 679.9mW Iv: 0.0mcd

Ele. Parameters

Voltage:U=220.1V

Current:I=0.044A

Power:P= 4.0W

Power Factor:PF=0.418

Instrument state

IntgeTime: 112.339ms

VPeak: 13397

VDark: 1415

Scan Range: 380-780nm