CCD Spectroradiometer Integrating Sphere Compact System for LED (LPCE-3)

Brochure

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Leader in Lighting & Electrical Test Instruments

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CONTENT TABLE

Note the following: If you need to test the single LED or LED Chip, you should choose the items which marked by Blue

1、 CCD Spectroradiometer (LMS-7000VIS)

The LMS-7000 work with LISUN A molding integrating sphere to be an ALL-IN-ONE system to test single LED and LED luminaires photometric, colorimetric and electrical parameters. The test speed is quick and test results are very accuracy. It is fully meet CIE127-1997, IES LM-79-08 and IES LM-80-08. The LMS-7000 is a cost-efficient CCD Spectroradiometer which was widely used by the LED manufactory.

The LMS-7000 is quick and high accuracy testing. It has been certificated by the third CNAS lab, the test results can be traced to NIM and NIST.

Specifications:

- Spectral Resolution: ±0.2nm
- Reproducibility: ±0.5nm
- Accuracy of Chromaticity Coordinate (Δx, Δy): ±0.003
- Correlated Color Temperature CCT: 1, 500K ~ 25, 000K (±3%)
- High spectral resolution, High sensitivity and excellent reliability
- Spectrum senors: SMA905 optical fiber
- Communicate PC via USB, the software can be run-in Win7, Win8 and Win10

LMS-7000UV	LMS-7000UV-VIS	LMS-7000VIS	LMS-7000VIS-NIR	LMS-7000UV-VIS-NIR
200~400nm	200~800nm	350~950nm	380~1050nm	200~1050nm

2、 Optical Fiber (CFO-1.5M)

CFO-1.5M is 1.5m length optical fiber used to connect the spectroradiometer and integrating sphere. CFO-1.5MY is Y type optical fiber which can connect with two integrating spheres at the same time.

3、 Digital DC Power Supply (DC3005S)

The DC Series Power Supplies are with high stability and high accuracy. The voltage and current can be adjustable and simple operation. They are suitable to supply DC Power for the standard lamps.

Specifications:

- Output voltage range: 0.005~30.00V
- Output current range: 0.005~5.000A
- Digital control for Constant Current output or Constant Voltage output
- Communicate with PC via software, the Voltage & Current set by the software and Power Output can be remote controlled.

4、 Digital Power Meter (LS2008R)

- Measure Voltage, Current, Power and Power Factor (AC model).
- Voltage range: 10~600V; Current range: 0.005~20A
- Accuracy: ± (0.4%reading + 0.1%range + 1digit)
- Communicate with PC via software

Model	Measure	Remark
LS2008R	AC Parameters: U, I, P, PF	
LS2010	AC Parameters: U, I, P, PF and harmonic	Special Software can show harmonic in Win7 or Win8
LS2012	AC+DC Parameters: U, I, P, PF	DC: 1~600V, DC Current Range: 0.005~20A (small current 0.005~2A optional), out of limit alarming

5、 AC Power Source (LSP-500VAS)

- AC-DC-AC frequency conversion technology, Controlled & tested by 16 bits MCU
- Protection for over hot, thundering voltage and current
- Total voltage distortion: ≤0.6%; Voltage stability: ≤0.1%/30min
- Load adjust rate: ≤0.1%; Frequency stability: ≤0.05%/30min
- Output voltage range: AC 0.0~300.0V, Output Frequency Range: 45~70Hz, 100Hz, 200Hz and 400Hz
- Power output: LSP-500VAS: 0~150V is 4.2A and 150~300V is 2.1A. LSP-1KVAS: 0~150V is 8.4A and 150~300V is 4.2A.
- Input Power: 220V and 50/60Hz

• Communicate with PC via software, the Voltage & Current set by the software and Power Output can be remote controlled.

6、 Integrating Sphere with Cabinet (IS-1.5MA-CASE)

Due to the LED luminaries such as LED street luminaries developed, to do 4π geometry testing, it is hard to be hold in the traditional integrating sphere design. To solve this problem, LISUN design a new kind of sphere.

A Molding Integrating Sphere VS the traditional Integrating Sphere

LISUN new Integrating sphere has the following advantages:

- The hold base can bear max 20kg, it can test all kinds of luminaires and light source such as E27/E40, all tubes such as T5/T8/T12 and all kinds of luminaries
- The hold base can be installed in the ceiling or down, height can be adjustable
- The test hold base has four power cables connect to the outside Power Supply and max is 5KW
- Build-in Cross laser system which help to install the standard lamp and testing lamp in the center of the integrating sphere

Build-in Cross Laser System

Specification:

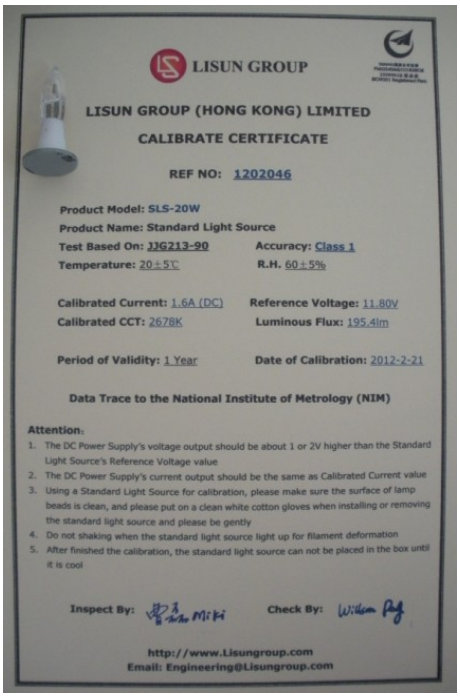
- Diameter: 0.3m, 0.5m, 1.0m, 1.5m, 1.75m, 2.0m, 2.5m and 3.0m
- The painting of integrating spheres is according to CIE Pub.No.84(1989)
- BaSO4 coating: ρ(λ)≥0.96(450nm~800nm) and ρ(λ)≥0.92(380nm~450nm)
- Fine diffuse reflection: Reflectanceρ≈0.8 and accuracy of ρ(λ)<1.5%
- IS-1.5MA-CASE (1.5m), IS-1.75MA-CASE (1.75m) and IS-2.0MA-CASE (2m) integrating sphere has built-in cabinet inside to combine all of the instruments.

P.S. The big sphere already includes the Auxiliary lamp position which allowed to work with the auxiliary lamp to do self-absorption revise, and also include the cross laser system to help install the lamp in the sphere.

7、 Standard Lamp Source

OSRAM Standard Lamp to calibrate the spectrum and luminous flux with Lisun Lab certification. The data can be traced NIM. The Standard Lamp Source is used to calibrate the integrating sphere system. The different size of Integrating Sphere should choose the right power of standard lamp source

Integrating Sphere Size	Standard Lamp Source
0.3m/0.5m	SLS-10W
1m/1.5m/1.75m	SLS-50W
2m/2.5m/3m	SLS-100W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CALIBRATE CERTIFICATE

REF NO: 1202046

Product Model: SLS-20W
Product Name: Standard Light Source
Test Based On: JJG213-90 Accuracy: Class 1
Temperature: 20±5℃ R.H. 60±5%

Calibrated Current: 1.6A (DC) Reference Voltage: 11.80V
Calibrated CCT: 2678K Luminous Flux: 195.4lm

Period of Validity: 1 Year Date of Calibration: 2012-2-21

Data Trace to the National Institute of Metrology (NIM)

Attention:
1. The DC Power Supply's voltage output should be about 1 or 2V higher than the Standard Light Source's Reference Voltage value
2. The DC Power Supply's current output should be the same as Calibrated Current value
3. Using a Standard Light Source for calibration, please make sure the surface of lamp beads is clean, and please put on a clean white cotton gloves when installing or removing the standard light source and please be gently
4. Do not shaking when the standard light source light up for filament deformation
5. After finished the calibration, the standard light source can not be placed in the box until it is cool

Inspect By: Miki Check By:

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8、 Auxiliary Lamp (RLS-50W)

Due to the luminaires material has self-absorption, the test flux will be a bit difference than the original flux when test the luminaires in the integrating sphere, according to CIE request, it is necessary use an Auxiliary lamp to do flux self-absorption revise.

The next pages are LPCE-3 Test Report.

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Lightsource Test Report

Product Information

Product Number: DG-11 Product Type:
Product Category: Product Spec: 220V/8W
Manufacturer: GE Lighting Buyer: LISUN
Submitted Unit:

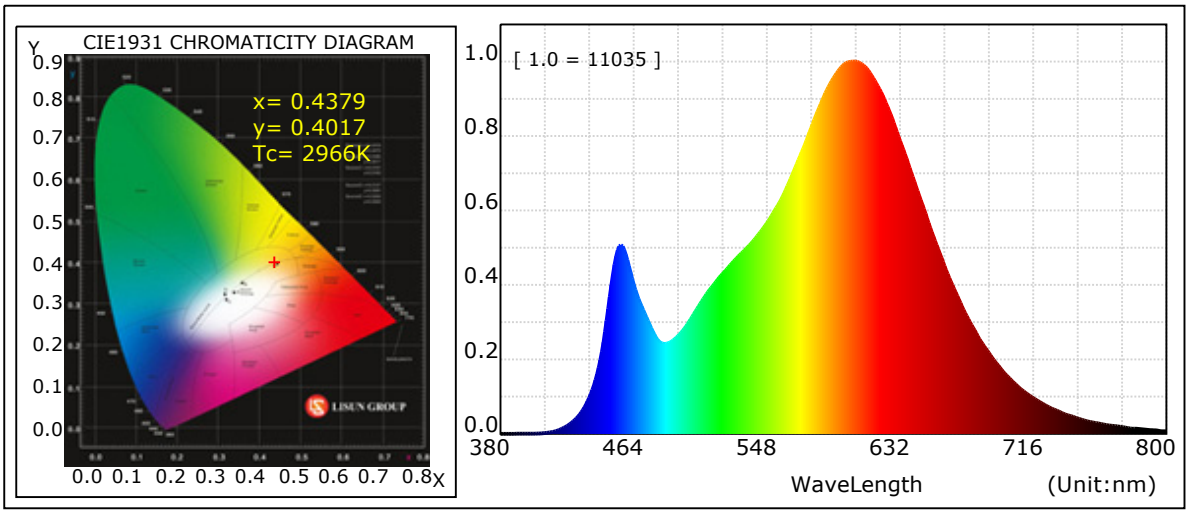
CIE Colorimetric Parameters

Chromatic Coordinate: x=0.4379 y=0.4017 u(u')=0.2522 v=0.3471 v'=0.5206
CCT: 2966K Color Ratio: R=51.564 G=41.938 B=6.790
Peak WaveLength: 602.4nm Half WaveLength: 100.0nm
Domaint Wave: 583.4nm Color Purity: 52.045%
Color Render Index: Ra=82.0 TM30: Rf= 68.3, Rg= 100.0

R1=81	R2=93	R3=93	R4=78	R5=82	R6=92	R7=79	R8=56
R9=5	R10=85	R11=78	R12=74	R13=85	R14=97	R15=74	

Color Quality Scale: Qa=80.6, Qf=81.0, Qp=79.0, Qg=88.5

Q1=78	Q2=95	Q3=81	Q4=73	Q5=76	Q6=78	Q7=81	Q8=86
Q9=94	Q10=93	Q11=88	Q12=85	Q13=83	Q14=70	Q15=73	



Photometric Parameters

Luminous Flux: 744.13lm Efficiency: 99.88lm/W Radiant Power: 2.278W
EEI: 0.12 Energy Efficiency Class: A+(EU874-2012)
PAR: 1.505W PPF: 7.242umol/s R/B: 2.9
Photons1: 0.725umol/s(400~500nm) Photons2: 3.248umol/s(600~700nm)

Electric Parameters

Voltage: 220.50V Current: 0.063A Power: 7.45W
Power Factor: 0.5370 Frequency: 50.00Hz

Test Information

Scan Range: 380~800：1nm
Stabilization Time: 0min
Max of Signal: 11035
Photometric Method: sphere-spectroradiometer
Photometric Condition: Sphere:1.5 Geometry:4π
CCD Integration Time: 1

Environment: Tx:25.1℃ Ti:24.5℃ RH:60%
Test Device: Lisun LMS-7000
Test Lab: Lisun Lab
Test Time:
Operator:
Inspector: