



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

Brochure

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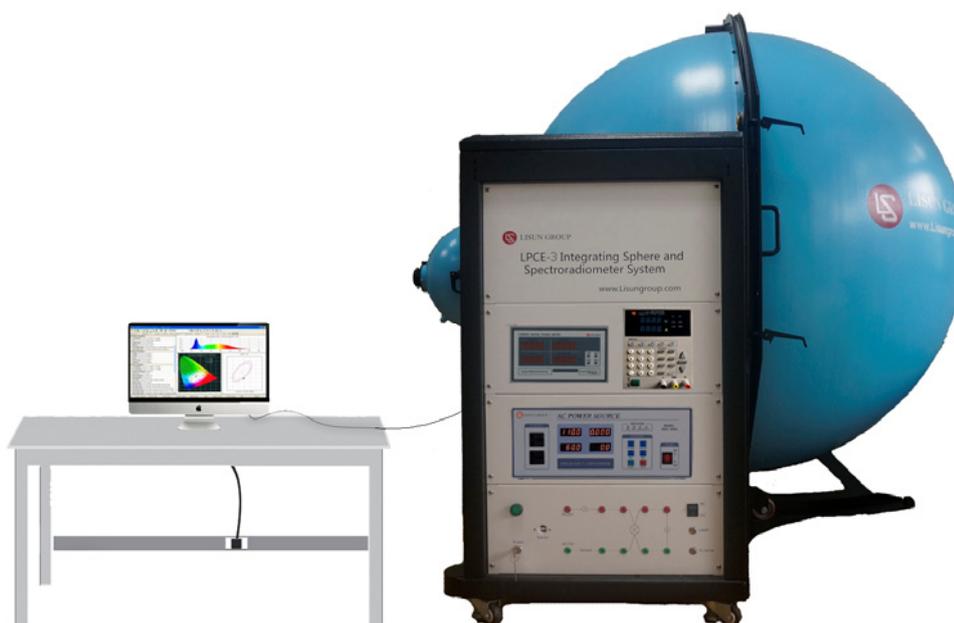
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[Lead in CFL & LED Test Instruments](#)

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LM-79 LED Colorimetric, Photometric and Electrical Test Report			

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 Wavelength Accuracy: $\pm 0.5\text{nm}$, Resolution: $\pm 0.2\text{nm}$, Sample Scanning Steps: $\pm 0.1\text{nm}$
- Accuracy of Chromaticity Coordinate (Δx , Δy): ± 0.003
- Correlated Color Temperature CCT: 1,500K~25,000K, CCT Accuracy: $\pm 0.5\%$
- Color Rendering Index Range: 0~100.0, Accuracy: $\pm(0.3\% \text{rd} \pm 0.3)$
- Photometric linear: $\pm 0.5\%$, Stray light: $< 0.015\%$ (600nm) and $< 0.03\%$ (435nm)
- Time of integration: 0.1ms-5s
- Spectrum sensors: SMA905 optical fiber
- Communicate with PC via USB2.0, 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: $\pm (0.4\% \text{reading} + 0.1\% \text{range} + 1 \text{digit})$
- 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: $\leq 0.6\%$; Voltage stability: $\leq 0.1\%/30\text{min}$
- Load adjust rate: $\leq 0.1\%$; Frequency stability: $\leq 0.05\%/30\text{min}$
- 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 4 π 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.

The 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, it can be adjusted the height
- The test hold base has four power cables connect to the outside Power Supply and max is 5KW



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: $\rho(\lambda) \geq 0.96(450\text{nm} \sim 800\text{nm})$ and $\rho(\lambda) \geq 0.92(380\text{nm} \sim 450\text{nm})$
- Fine diffuse reflection: Reflectance $\rho \approx 0.8$ and accuracy of $\rho(\lambda) < 1.5\%$
- 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



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 page is LPCE-3 system test report.



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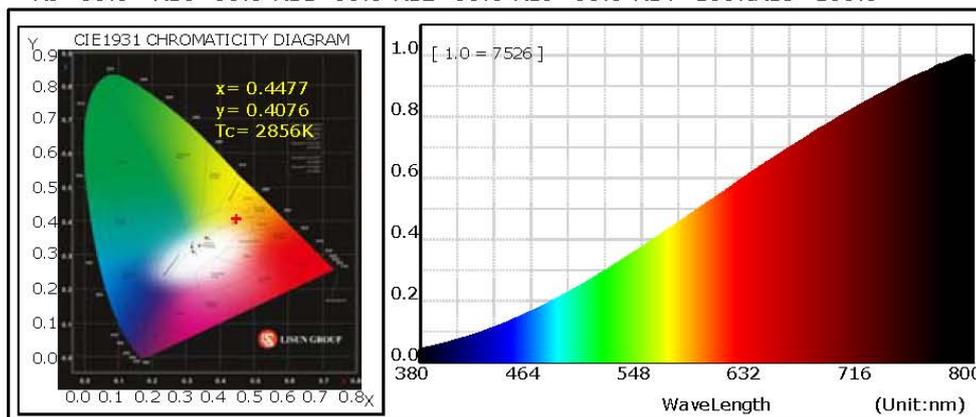
Lightsource Test Report

Product Information

Product Number: 150 Product Type: CAL201711100
Product Category: Standard Lamp Product Spec: SLS-50W
Manufacturer: Philips Buyer: LISUN
Submitted Unit: LISUN

CIE Colorimetric Parameters

Chromatic Coordinate: $x=0.4477$ $y=0.4076$ $u(u')=0.2560$ $v=0.3496$ $v'=0.5243$
CCT: 2856K Color Ratio: R=86.521 G=13.084 B=0.395
Peak WaveLength: 795.8nm Half WaveLength: 100.0nm
Domaint Wave: 583.4nm Color Purity: 56.724%
Color Render Index: Ra=100.0 avgR(1~14)=107.6 avgR(1~15)=107.1
R1=99.9 R2=100.0 R3=100.0 R4=99.9 R5=99.9 R6=99.9 R7=100.0 R8=100.0
R9=99.9 R10=99.9 R11=99.9 R12=99.8 R13=99.9 R14=100.0 R15=100.0



Photometric Parameters

Luminous Flux: 783.34lm Efficiency: 14.67lm/W Radiant Power: 5.521W

Electric Parameters

Voltage: 25.28V Current: 2.112A Power: 53.39W
Power Factor: 0.0000 Frequency: 0.00Hz

Test Information

Scan Range: 380~800:1nm Photometric Method: sphere-spectroradiometer
Stabilization Time: 0min Photometric Condition: Sphere:1.5,Geometry:4n
Max of Signal: 7526 CCD Integration Time: 288

Environment: Tx:25.1°C, Ti:24.5°C, RH:60%
Test Lab: LISUN
Operator: Joye

Test Device: Lisun LMS-7000
TestTime: 2017/11/23 17:26:22
Inspector:

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0398	0.7159	525	0.3025	5.4408	670	0.7175	12.9068
385	0.0432	0.7775	530	0.3159	5.6833	675	0.7311	13.1511
390	0.0476	0.8569	535	0.3302	5.9397	680	0.7458	13.4155
395	0.0528	0.9502	540	0.3441	6.1900	685	0.7591	13.6553
400	0.0584	1.0514	545	0.3578	6.4372	690	0.7717	13.8813
405	0.0642	1.1555	550	0.3720	6.6927	695	0.7850	14.1211
410	0.0705	1.2689	555	0.3867	6.9563	700	0.7976	14.3483
415	0.0766	1.3774	560	0.4008	7.2093	705	0.8096	14.5636
420	0.0827	1.4870	565	0.4151	7.4672	710	0.8223	14.7928
425	0.0900	1.6197	570	0.4302	7.7397	715	0.8355	15.0291
430	0.0977	1.7581	575	0.4442	7.9902	720	0.8471	15.2389
435	0.1055	1.8976	580	0.4582	8.2427	725	0.8580	15.4347
440	0.1134	2.0399	585	0.4732	8.5115	730	0.8688	15.6287
445	0.1223	2.1994	590	0.4887	8.7918	735	0.8793	15.8181
450	0.1315	2.3651	595	0.5035	9.0577	740	0.8910	16.0282
455	0.1407	2.5316	600	0.5176	9.3114	745	0.9034	16.2518
460	0.1505	2.7079	605	0.5320	9.5706	750	0.9153	16.4645
465	0.1607	2.8902	610	0.5466	9.8328	755	0.9244	16.6292
470	0.1709	3.0736	615	0.5611	10.0938	760	0.9341	16.8027
475	0.1810	3.2560	620	0.5760	10.3613	765	0.9425	16.9540
480	0.1921	3.4547	625	0.5908	10.6280	770	0.9526	17.1354
485	0.2032	3.6562	630	0.6049	10.8809	775	0.9652	17.3622
490	0.2151	3.8687	635	0.6200	11.1537	780	0.9723	17.4898
495	0.2269	4.0818	640	0.6346	11.4159	785	0.9812	17.6497
500	0.2389	4.2972	645	0.6482	11.6601	790	0.9932	17.8673
505	0.2511	4.5172	650	0.6629	11.9255	795	0.9991	17.9731
510	0.2634	4.7391	655	0.6781	12.1989	800	0.9873	17.7608
515	0.2765	4.9746	660	0.6919	12.4462			
520	0.2896	5.2104	665	0.7046	12.6743			