



# Spectrophotometer & Integrating Sphere Test System (LPCE-1)

## Brochure

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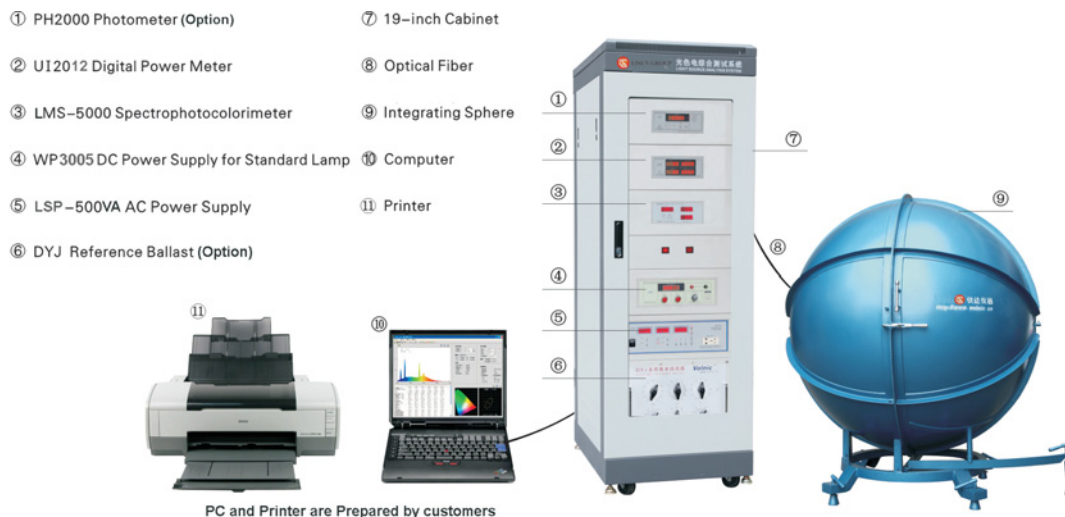
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[Lead in CFL & LED Test Instruments](#)

# Spectrophotometer & Integrating Sphere Test System

## (LPCE-1)



※ The PC request at least two RS-232 COMs

Name	Model	Remark	Page
Quick-Scan Spectrophotometer Colorimeter	LMS-5000		----2
Optical Fiber	CFO-1.2M		----3
Digital power meter (AC & DC model)	UI2012		----3
Digital CC and CV DC Power Supply	WP3005		----4
High Precision AC Power Source	LSP-500VAR		----5
Integrating Sphere	IS-1.5M	Option is IS-2.0M, IS-1.5M55P, IS-2.0M77P	----6
Standard Lamp Source	SLS-50W		----6
19 Inch Case	CASE-19IN		----6
<b>Appendix: Light Source Test Report</b>			----7

## 1、 Quick-Scan Spectrophotometer Colorimeter (LMS-5000)

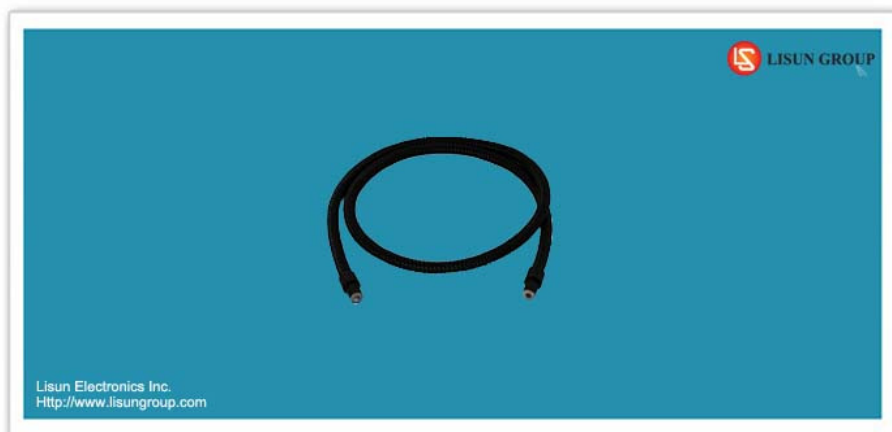


LMS-5000 Quick-Scan Spectrophotometer Colorimeter is a very widely applied single monochromators spectrophotometer with high accuracy. A typical measuring time during the spectral range from 380~800nm is less than 10seconds. LMS-5000 used with right size [integrating sphere](#) and OSRAM standard lamp can be applied to do spectral measurement of LEDs, LED modules, CFL, Fluorescent Lamp, CCFL, HID lamps and other luminaries.

### Specification:

- High accuracy and high speed test less than 10seconds
- Spectral range wavelength: 380nm ~ 800nm (Optional: 200nm-1050nm UV-VIS-nIR)
- Spectral Wavelength Accuracy:  $\pm 0.2\text{nm}$ , Wavelength Reproducibility:  $\pm 0.1\text{nm}$
- Sample Scanning Steps:  $\pm 5\text{nm}$  (Optional:  $\pm 1\text{nm}$ )
- Accuracy of Chromaticity Coordinate ( $\Delta x, \Delta y$ ):  $\pm 0.0003$  (under standard illuminate A)
- Correlated Color Temperature CCT: 1000K~100000K, CCT Accuracy:  $\pm 0.3\%$
- Color Rendering Index Range: 0~100.0, Accuracy:  $\pm (0.3\% \text{rd} \pm 0.3)$
- Photometry linearity:  $\pm 0.3\%$ , Photometer detector: Class A
- Luminous Flux: 0.01lm~199,900lm (Equipped with right size of integrating sphere)
- Environment temperature measure range:  $-10^{\circ}\text{C} \sim 100^{\circ}\text{C}$ , Accuracy:  $\pm 0.1^{\circ}\text{C}$
- Temperature measure range(In sphere):  $-10^{\circ}\text{C} \sim 100^{\circ}\text{C}$ , Accuracy:  $\pm 0.1^{\circ}\text{C}$

## 2、 Optical Fiber (CFO-1.2M)



1.2m length Connect the Spectrophotometer 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、 Digital CC and CV DC Power Supply (WP3005)



The WP 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 lamp and the large power LED. Other voltage and current DC Power Supply can be designed according to customer's request.

Model	WP3005	WP3010	WP5005	WP5010	WP12010
Output Voltage Range	0.005~30.00V	0.005~30.00V	0.005V~50.00V	0.005V~50.00V	0.0010V~120.0V
Output Current Range	0.005A~5.000A	0.005A~10.00A	0.005A~5.000A	0.005A~10.00A	0.005A~10.00A
Voltage	30V Range: 5V/10V/25V/30V 50V Range: 5V/10V/25V/50V				12V/24/60V/120V
Resolution of Voltmeter	0.10001V(0.1111V~10.000V) 0.001V(10.000V~50.000V)				
Accuracy of Voltage and Current	+/--(0.02%Reading+0.01%Range+1Digit)				
Stability of Output Voltage	+/-0.01%Reading/3min				
Stability of Output Current	+/-0.01%Reading/3min				

### 5、 High Precision AC Power Source (LSP-500VAR)



- 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  $\leq 0.1$
- 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)

## 6、 Integrating Sphere (IS-1.5M)



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

IS-1.5M Diameter is 1.5meter work with LMS-5000 for photo and color parameters 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.

## 7、 Standard Lamp Source (SLS-50W)

OSRAM Standard Lamp to calibrate the spectrum and luminous flux with Lisun Lab certification: 24V/50W. The data can be traced NIM.



## 8、 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

## Light Source Test Report

### Production Info

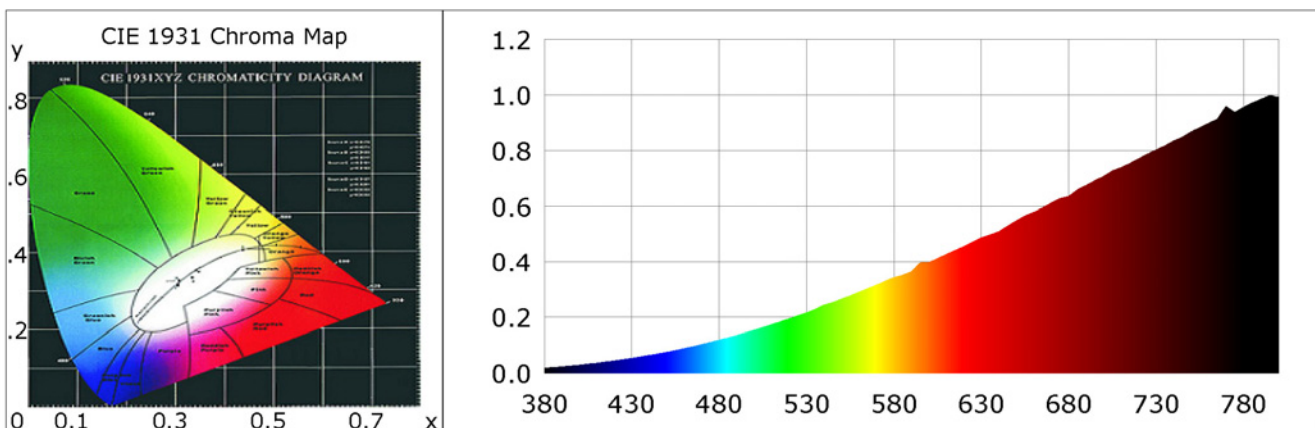
Product Category: Halogen Lamp  
Product Spec: SLS-50W  
Manufacturer: OSRAM Lighting  
Buyer: Lisun Lab

Product Type: Standard Lamp  
Product Number: SLS-50W  
Submitted Unit: 5

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.4707$   $y=0.4128$   $u(u')=0.2685$   $v=0.3532$   $v'(v)=0.5298$   
CCT:  $T_c=2572K$  ( $duv=0.00003$ ) Color Ratio:  $R=0.293$   $G=0.684$   $B=0.024$   
Peak Wavelength: 795nm Half Bandwidth: 164.3nm  
Dominant Wavelength: 585.9nm Color Purity: 0.652  
Rendering Index:  $R_a=99.9$

R1 =100 R2 =100 R3 =100 R4 =100 R5 =100 R6 =100 R7 =100 R8 =100  
R9 =100 R10=100 R11=100 R12=100 R13=100 R14=100 R15=100



### Photometric Parameters

Luminous Flux: 781.5 lm  
Radiant Power: 2.472 W

Efficiency: 15.63 lm/W

### Electric Parameters

Voltage:  $U=24.00V$  Current:  $I=2.1020A$  Power:  $P=50.000W$  Power Factor:  $PF=1.0000$

#### Test Info

Scan Range: 380nm~800nm  
Max of Main: 828992 (0x04,0)

Scan Interval: 5nm  
Reference : 1887296 (0x03)

PMT HV: -550V  
Max of waviness: 1.011%

Temperature:  $T_x=20.0^{\circ}C$ ,  $T_i=22.0^{\circ}C$   
Test Device: Lisun LMS-5000  
Operator: Ivane Jone

Humidity: 65%  
Test Time: 2008-04-21 10:35  
Inspector: Jackson Tsang