



2024 Catalog
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Leader in Lighting and Electrical Test Instruments



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Company Profile

Lisun Instruments Limited was found by LISUN GROUP in 2003. We have sales and service offices in China, Russia, India and Korea. In 2012, we built a high level products show room and Accreditation lab in Shanghai. LISUN has setup a new manufactory in China to design & produce the lighting and electrical test instruments. Its quality system has been strictly certified by ISO9001:2015. As a CIE Membership, LISUN products are designed based on CIE, IEC and other international or national standards. All products passed CE certificate and authenticated by the third party lab.

Our main products are Goniophotometer, Integrating Sphere, Spectroradiometer, Surge Generator, ESD Simulator, EMI Receiver, EMC Test Equipment, Electrical Safety Tester, Environmental Chamber, Temperature Chamber, Climate Chamber, Thermal Chamber, Salt Spray Test, Dust Test Chamber, IP Waterproof Test, RoHS Test (EDXRF), Glow Wire Test and Needle Flame Test, Plug and Switch Testing, AC and DC Power Supply.

LISUN products have been sold to more than 150 countries and regions all over the world. Its quality is well accepted by many world famous companies such as UL, SGS, NIST, NIM, UNDP, Philips, OSRAM and so on. LISUN wins thousands of customers' trust with motto "Right Product, Right Price and Right Service". We will continue presenting more and more high quality products to our customers in the future.

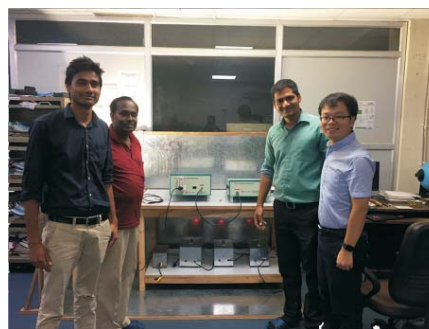
- **Right Product**
- **Right Price**
- **Right Service**



Our Customers



LM-79 Type C Goniophotometer in USA



EMI and EMC Install & Training in India



LSG-1890B Goniophotometer in Germany



3m Integrating Sphere in Spain



IP Waterproof Test System in Costa Rica



Glow Wire & Needle Flame Tester in Mexico

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LM-79 Mirror Type C Goniophotometer System (LSG-6000)

The LSG-6000 Moving Detector Goniophotometer (Mirror Type C) is designed according to IES LM-79-19 clause 8.1 refer to LM-75-01/R12, EN13032-1 clause 6.1.1.3 type 4, CIE, IEC and GB. It is an automatic light distribution intensity 3D curve testing systems. The darkroom can be designed according to the customer's existing room size.

The LSG-6000 can measure all types of lighting sources, CFL, HID or LED luminaires such as indoor and outdoor luminaires, Plant lighting(horticulture), roadway luminaires, street lamps, flood lights and other kinds of luminaires.

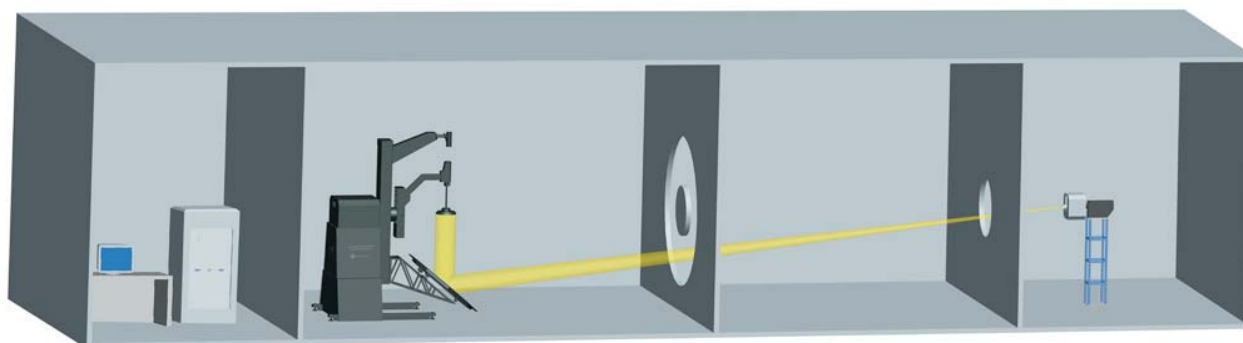
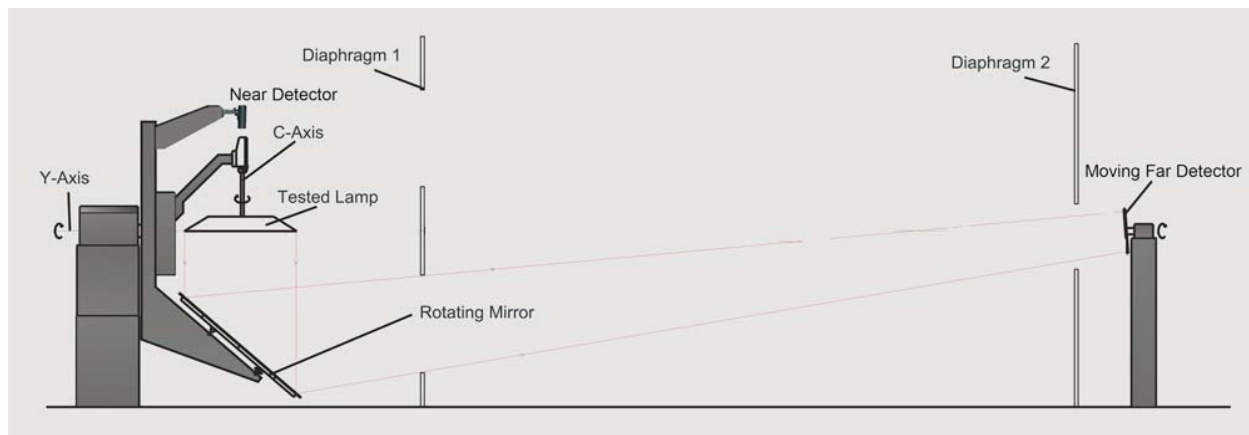
Japan MITSUBISHI Motors
Germany Angle Decode System
Constant Temperature Class L Photo Detector



Measurement:

Luminous Intensity Data, Luminous Intensity Distribution, Zonal Luminous Flux, Luminaires Efficiency, Luminance Distribution (Option), Coefficient Of Utilization, Luminance Limitation Curves Glare, Maximum Ratio of Distance to Height, Equal Illuminance Diagrams, Curves of Luminaires VS Lighting Area, Isocandela Diagrams, Efficient Luminescence Angle, EEI, UGR, CCT, CRI, Color Temperature Distribution, Spectrum, (x, y)/(u, v), PAR, PPF, PPF 3D distribution test and etc

Test Principle:



LSG-6000 Moving Detector Goniophotometer - Mirror Type C

Goniophotometer for Automotive and Signal Lamps (LSG-1950, LSG-1950S)

Measurement:

LSG-1950/LSG-1950S is the CIE A-a Goniophotometer which used to test automotive lighting, traffic signal, bus, train, ship, and aircraft lighting. The photometer head keeps static and faces to the test sample while the test sample rotates around both horizontal axis and vertical axis, so the luminous intensity and illuminance of the tested lamp or luminaires can be tested.



LSG-1950 Standard Version



LSG-1950S Economic Version

Specification:

- It is designed according to EN, IEC, GB, ECE, SAE and FMVSS108
- The accuracy of angle: 0.01°(LSG-1950) or 0.1° (LSG-1950S), Resolution of angle: 0.001°
- Accuracy of photometry: CIE Class A (Class L is option)
- Testing Accuracy: 2% (Under Standard lamp); Stray Light: less than 0.1%
- English version software can be run in Win7, Win8 and Win10, Win11
- It can test lamp weighing up to 35kg



Measurement Wizard

Step 2: Press 'Start' button after confirming your settings.

V _H (cd)	0	5	10	15	30	45	60	90	135	180	225	270
min	170	170	170	170	170	170	170	170	170	170	170	170
8	---	---	---	---	---	---	---	---	---	---	---	---
max	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
min	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
max	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
min	230	230	230	230	230	230	230	230	230	230	230	230
0	---	---	---	---	---	---	---	---	---	---	---	---
max	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
min	---	---	---	---	---	---	---	---	---	---	---	---
-2	---	---	---	---	---	---	---	---	---	---	---	---
max	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
min	170	170	170	170	170	170	170	170	170	170	170	170
-8	---	---	---	---	---	---	---	---	---	---	---	---
max	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500

Test Speed: Fast

Electric Parameter: Voltage (V) 0, Power (W) 0, Current (A) 0, Power factor 0

Horizontal: 9.50, Vertical: 280.22

Preheat, Duration(min): 15

Folder: D:\HR\, File: lsg-af

Buttons: < Back, Next >, Start, Cancel

Rotation Luminaire Goniophotometer (LSG-1890B, LSG-1800A)

The Rotation Luminaire Goniophotometer is an automatic goniophotometric measurement system for measuring photometric parameters of luminaires, such as LED road lighting fixture, indoor lighting fixture and projecting lighting fixture. The measured data meets IES standard format and can be applied in lighting design by lighting design software. The measurement system is fully satisfied the requirements of lighting design work.

Measurement:

Luminous Intensity Data, Luminous Intensity Distribution, Zonal Luminous Flux, Luminaries Efficiency, Luminance Distribution (Option), Coefficient Of Utilization, Luminance Limitation Curves Glare, Maximum Ratio of Distance to Height, Equal Illuminance Diagrams, Curves of Luminaires VS Lighting Area, Isocandela Diagrams, Efficient Luminescence Angle, EEI, UGR and so on.



LSG-1890B uses Japanese MITSUBISHI SERVO MOTORS and German Angle decode

Specification:

- Fully meet the EN13032-1 clause 6.1.1.3 type 1, CIE-70, CIE-121, IES LM-79, LM-75, IEC & GB
- The goniphotometer can do the B-β test with the two pillars and the C-γ test with single pillar & multi-function jigs.
- Test Max Luminaires size and weight: LSG-1890B is 2000mm and LSG-1800A is 1600mm
- The tested luminaires rotate around an angle of (γ)±180°(or 0~360°) and the tested luminaire rotates around itself with an angle of (C)±180° (or 0~360°)
- The accuracy of angle: 0.1° (LSG-1890B) and 0.2° (LSG-1800A)
- Accuracy of photometry: Class A Constant Temperature Photo Detector (Class L is option)
- Testing Accuracy: 2%; Stray Light: less than 0.1%
- English version software can run in Win7, Win8 and Win10, Win11
- This system can export data files as following formats: ies, ldt, cie, cib, tm4, cen, excel and so on. These kinds of format files can be transferred by luminaire design software such as DiaLux
- The following Photo Detectors are optional to test UV light: PHOTO-UVA-A to test UVA 320~400nm; PHOTO-UVB-A to test UVB 275~320nm; PHOTO-UVC-A to test UVC 200~275nm.

LISUN Model	The max size for the Testing Lamp (Unit: mm)		Max Weight
	C-Gamma Test with one Pillar	B-Beta Test with Two Pillars	
LSG-1890B	Φ 2000*600(Diameter*Depth)	600*600(Length*Width)	60kg
LSG-1800A	Φ 1600*600(Diameter*Depth)	600*600(Length*Width)	50kg

Goniospectroradiometer (LSG-1890BCCD, LSG-1800ACCD)

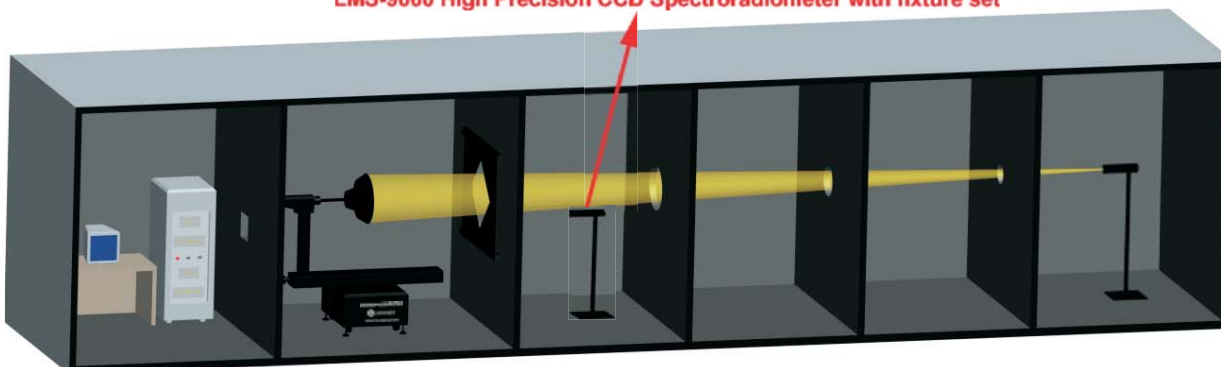
The Goniospectroradiometer System can do the spatial CCT, CRI and other Spectrum parameters test as well as the intensity distribution test. It is for industrial laboratory measurements the photometric data of luminaires such as LED luminaires, Plant Lighting, HID lamps, fluorescent lamps and so on.



Specification:

- Fully meet the EN13032-1 clause 6.1.1.3 type 1, CIE-70, CIE-121, IES LM-79, LM-75, IEC & GB
- It can do the B-β test with two pillars and the C-γ test with single pillar & multi-function jigs
- Test Max Luminaires size and weight: LSG-1890BCCD is 2000mm and LSG-1800ACCD is 1600mm
- The tested luminaires rotate around an angle of (γ)±180°(or 0~360°) and the tested luminaire rotates around itself with an angle of (C)±180° (or 0~360°)
- The accuracy of angle: LSG-1890BCCD is 0.1° and LSG-1800ACCD is 0.2°
- Accuracy of photometry: High Precision Class A Constant Temperature Photo Detector (Class L is option)
- Testing Accuracy: 2%; Stray Light: less than 0.1%
- Testing Accuracy: 2%(Under Standard lamp); Stray Light: less than 0.1%
- English version software can be run in Win7, Win8 and Win10, Win11
- This system can export data files as following formats: ies, ldt, cie, cib, tm4, cen, excel and so on. These kinds of format files can be transferred by luminaire design software such as DiaLux
- Work with High Accuracy and quick CCD Spectroidomeeter to measure spatial color parameters.
- Accuracy of chromaticity coordinate: ±0.0015 or ±0.0005(under standard A lamp)
- Spectral Range Wavelength: 350nm~800nm; Accuracy of wavelength: ±0.5nm
- Accuracy of photometry: CIE Class A (Class L is for option)
- The Hardware and Software can do the PAR, PPF and PPF 3D distribution test

LMS-9000 High Precision CCD Spectroradiometer with fixture set



Goniospectroradiometer Test System

Compact Goniophotometer (LSG-1200A)

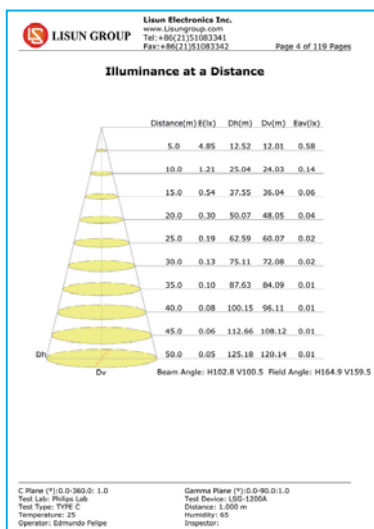
The compact goniophotometer LSG-1200A is applied to measure the luminous intensity distribution curve, intensity data, spread angle and other parameters for chip LED, LED module, LED spotlight and all other lights whose illumination angle is no more than 180 degrees.

Optional Function: The LSG-1200A can work with Digital Power Meter (LS2012 DC & AC Power Meter or LS2050B High Accuracy Power Meter), LSP Series AC Power Source or DC Series DC Power Source.

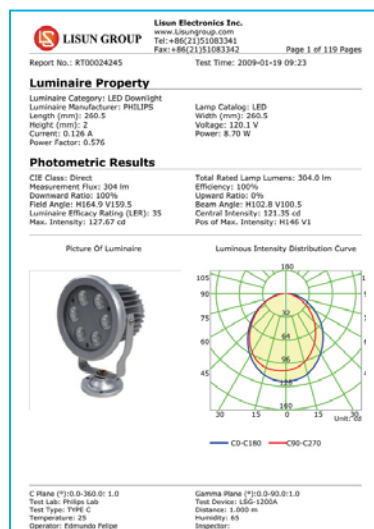


Specification:

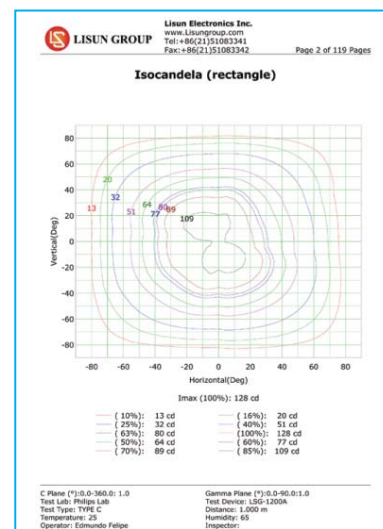
- Meet the requirements of IEC, CIE and LM-79 standards
- Measure beam angle automatically: staple half intensity angle as well as 1/4 intensity angle, 3/4 intensity angle and 1/10 intensity angle which meets the special requirements.
- Measured data are matched with international standard form (IES, etc) and can be applied for lighting design by other lighting design software such as Dialux
- LSG-1200A has included a dark chamber, measures the maximum size of lamps: 180mm
- Test range of candela: 0.1~30,000cd. Test accuracy of detector: Class A
- The distance between the tested lamp and detector is 316mm/1000mm
- Angle interval: Horizontal angle: 1°/5°/10°/15°/22.5°/30°/45°/90°, Vertical angle: 0.5°/2°/1.5°
- The LSG-1200A horizontal automatic rotating on 0°~360° and Vertical automatic rotating on -90°~+90°
- Test accuracy of angle: ±0.2°



Illuminance



Photometric



Isocandela

Scientific Grade CCD Spectroradiometer(LMS-9500C)

LMS-9500C Scientific Grade CCD Spectroradiometer fully meets Energy Star IESNA LM-79 and GB/T24824 standards etc. It is used to test CFL, HID, Promise Light, Tungsten Halogen Lamps, which can reach the scientific grade measurement accuracy. LMS-9500C is composed of Concave Average Diffraction Grating and Scientific Grade CCD, and uses unique stray light control technology, wide dynamic linear technology, precision CCD electronic drive technology and complex matrix software technology. The instrument can be traceable to the Chinese National Institute of Metrology(NIM) and the USA NIST standards.



Specification:

- CCD detector: Hamamatsu TE-cooled (Temp: $-10^{\circ}\text{C} \pm 0.05^{\circ}\text{C}$) high sensitivity back-thinned detector (LMS-9500CSWIR used InGaAs)
- Spectral wavelength accuracy: $\pm 0.2\text{nm}$, Resolution: $\pm 0.1\text{nm}$, Sample scanning steps: $\pm 0.1\text{nm}$
- Accuracy of chromaticity coordinate ($\Delta x, \Delta y$): ± 0.0015 (under Standard A Lamp)
- Correlated color temperature CCT: 1, 500K~100, 000K, CCT accuracy: $\pm 0.2\%$
- Color Rendering Index Range: 0~100.0, Accuracy: $\pm(0.3\% \text{rd} \pm 0.3)$
- Photometric linear: $\pm 0.2\%$, Stray light: $< 0.015\%$ (600nm) and $< 0.03\%$ (435nm)
- Time of integration: 0.1ms to 60s
- It can measure the temperatures inside and outside of integrating sphere
- Flux testing method: spectrum, photometric and spectrum with photometric revision
- Spectrum sensors: SMA905 optical fiber and Class A Photo detector

LISUN Model	LMS-9500C	LMS-9500CUV-VIS	LMS-9500CVIS-NIR	LMS-9500CSWIR
Wavelength	350~800nm	200~800nm	350~1050nm	800~1700nm

High Precision CCD Spectroradiometer (LMS-9000C)

LMS-9000C adopts the world advanced Holographic grating with flat-field correction, precision optical system and the electronic shutter control technology. The test speed can be in milliseconds and the test accuracy is in the laboratory level. It has the lowest value of stray light. LMS-9000C has high repeatability and stability testing. It fully meets CIE127-1997, IES LM-79-19, IES LM-80 and IES LM-82.



Specification:

- Spectral Wavelength Accuracy: $\pm 0.3\text{nm}$, Resolution: $\pm 0.1\text{nm}$, Sample Scanning Steps: $\pm 0.1\text{nm}$
- Accuracy of Chromaticity Coordinate ($\Delta x, \Delta y$): ± 0.002
- Correlated Color Temperature CCT: 1,500K~100,000K, CCT Accuracy: $\pm 0.3\%$
- Color Rendering Index Range: 0~100.0, Accuracy: $\pm(0.3\% \text{rd} \pm 0.3)$
- Photometric linear: $\pm 0.3\%$, Stray light: $< 0.015\%$ (600nm) and $< 0.03\%$ (435nm)
- Time of integration: 0.1ms to 10,000ms
- Total flux testing method: Spectrum, Photometric and Spectrum with Photometric revision
- Spectrum sensors: SMA905 optical fiber and Class A Photo detector
- It can measure the temperature inside and outside of integrating sphere

LMS-9000C uses the Band pass-filter Wheel Correcting Technique, Spectrometer & Broadband-radiometer & photometer Combined Technique, and modified with NIST stray light correction technology, the LMS-9000C can realize ultra low stray light and super photometry linearity in overall dynamic range.

LISUN Model	LMS-9000C	LMS-9000CUV-VIS	LMS-9000CVIS-NIR	LMS-9000CUV
Wavelength	350~800nm	200~800nm	350~1050nm	200~400nm

Test Report of LMS-9500C and LMS-9000C

Test Report:

LISUN GROUP Lisun Instruments Limited
 www.Lisungroup.com
 Sales@Lisungroup.com
 Tel:+86(21)51083341

Lightsource Test Report

Report No: 47 Test Time: 2022-11-25 10:19:40
 Category: Spec: LED Bulb Type: Number: 47
 Manufacturer: Philips Lighting B.V. Submitter:

CIE Colorimetric Parameters
 CIE(x,y): 0.3438,0.3555 CIE(u,v): 0.2090,0.3243 CIE(u',v'): 0.2090,0.4864
 CCT: 5064 K (Duv=0.002485) Dominant Wavelength: 569.4 nm Color Purity: 0.099
 Peak Wavelength: 455.5 nm Half Width: 27.7 nm Color Ratio: R:0.157, G:0.792, B:0.051

Color Render Index: Ra:84.1, avg(R1-14):77.7, avg(L1-15):77.8
 R1: 83 R2: 91 R3: 95 R4: 81 R5: 82 R6: 86 R7: 87 R8: 68
 R9: 13 R10: 77 R11: 80 R12: 62 R13: 85 R14: 97 R15: 78

Color Quality Scale: Qa:81.9, Qb:82.2, Qc:81.3, Qd:91.6,
 Q1: 82 Q2: 98 Q3: 80 Q4: 73 Q5: 78 Q6: 80 Q7: 85 Q8: 89
 Q9: 97 Q10: 89 Q11: 84 Q12: 83 Q13: 83 Q14: 73 Q15: 77

TM-30-18: Rf:84, Rg:94 Gamut Area Index (GAI): GAI_EES:80.9, GAI_BB:89.14, GAI_BB_15:97.3

Photometric Parameters
 Luminous Flux: 4105.49 lm Radiant Power: 12.940 W Efficiency: 112.09 lm/W
 Energy Efficiency Class/E (EU 2019/2015): η_{lm}:112.09lm/W S/P: 2.007
 M/P Ratio (WELL): 0.856 Kmel,v(D65): 0.775

Pupil Flux: 7069.12 Plm (Kp=1.722) Pupil Lumens per Watt: 193.01 Plm/W
 Circptoc Flux: 16583.41 lm Mesopic Flux (CIE R): 5383.41 lm (Lp=0.100)
 Mesopic Flux (USP): 6325.51 lm (Lp=0.100) Mesopic Flux (MOVE): 5599.07 lm (Lp=0.100)

Electric Parameters
 Voltage: 220.068 V Current: 0.1745 A Power: 36.627 W
 Power Factor: 0.9535 Frequency: 50.00 Hz Displacement Factor: 0.9635

TMF Temperature Data
 Welding foot T1: 23.7°C Aluminum plate T2: 83.8°C Upper the outer wall T3: 23.1°C Middle the outer wall T4: 23.4°C
 Under the outer wallT5: 22.8°C Lamp holder T6: 22.7°C

Geometry: 4n, 1.5m Self-absorption Factor: 1.000 Photometric Method: sphere-spectroradiometer
 Warmup Time: 5 Minutes 1 Second Integration Time: 0.8 ms Peak of Signal: 47.733
 Spectroradiometer: LMS-9500C Digital Power Meter: LS2050C Power Source: LSP-Series

Test Lab: LISUN Testing Environment: Ts:20.5°C, Ta:20.6°C,65%
 Operator: Michael Asiami Approver:

1/5

Light Source Test Report

LISUN GROUP Lisun Instruments Limited
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 Sales@Lisungroup.com
 Tel:+86(21)51083341

Spectral Power Distribution Data

Report No: 47 Test Time: 2022-11-25 10:19:40
 Category: Spec: LED Bulb Type: Number: 47
 Manufacturer: Philips Lighting B.V. Submitter:

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0014	0.1437	525	0.5402	53.7655
385	0.0004	0.0445	560	0.6260	62.3093
390	0.0012	0.1146	565	0.6353	63.2297
395	0.0010	0.1024	570	0.6409	63.7923
400	0.0015	0.1460	575	0.6452	64.2171
405	0.0030	0.2994	580	0.6484	64.5314
410	0.0065	0.6435	585	0.6471	64.4023
415	0.0163	1.6187	590	0.6430	63.9992
420	0.0351	3.4900	595	0.6357	63.2668
425	0.0600	6.0628	600	0.6219	61.8965
430	0.1230	12.2378	605	0.6052	60.2368
435	0.2098	20.8846	610	0.5835	58.0796
440	0.3403	33.8736	615	0.5566	55.4001
445	0.5380	53.5468	620	0.5249	52.2461
450	0.8215	81.7637	625	0.4927	49.0342
455	1.0000	99.5307	630	0.4555	45.3321
460	0.8763	87.2176	635	0.4195	41.7575
465	0.6693	66.6114	640	0.3822	38.0436
470	0.5411	53.8593	645	0.3477	34.6086
475	0.4328	43.0572	650	0.3137	31.2203
480	0.3487	34.7096	655	0.2825	28.1159
485	0.3173	31.5810	660	0.2510	24.9860
490	0.3195	31.7999	665	0.2239	22.2821
495	0.3390	33.7362			
500	0.3735	37.1746			
505	0.4144	41.2466			
510	0.4646	46.2355			
515	0.4879	48.5637			
520	0.5171	51.4675			

Test Lab: LISUN Testing Environment: Ts:20.5°C, Ta:20.6°C,65%
 Operator: Michael Asiami Approver:

4/5

Spectral Power Distribution Data

LISUN GROUP Lisun Instruments Limited
 www.Lisungroup.com

Plant Growth Lamp Test Report

Report No: RT2021216 Test Time: 2021-12-12 17:36:53
 Category: Spec: LED Bulb Type: Number: 12
 Manufacturer: OSRAM GmbH Submitter:

CIE Colorimetric Parameters
 CIE(x,y): 0.3178,0.3410 CIE(u,v): 0.1969,0.3169 CIE(u',v'): 0.1969,0.4753
 CCT: 6122 K (Duv=0.008274) Dominant Wavelength: 498.2 nm Color Purity: 0.048
 Peak Wavelength: 452.3 nm Half Width: 24.0 nm Color Ratio: R:0.120, G:0.838, B:0.042

Color Render Index: Ra:72.3, avg(R1-14):61.0, avg(L1-15):61.1
 R1: 68 R2: 77 R3: 82 R4: 73 R5: 85 R6: 68 R7: 83 R8: 58
 R9: 36 R10: 45 R11: 67 R12: 40 R13: 70 R14: 90 R15: 64

Photometric Parameters
 Luminous Flux: 900.08 lm Radiant Power: 121.63 mW Efficiency: 101.63 lm/W
 Photosynthetic Photon Flux (PPF): 12.093 umol/s Radiant Efficiency (η): 0.369
 Photosynthetic Photon Flux Density (PPFD): 2.469 μmol/m²/s Photosynthetic Photon Efficiency (η_P): 1.634 umol/m²/s
 Photon Flux (300-500nm): 3.252 umol/s Photon Flux (500-600nm): 4.653 umol/m²/s
 Photon Flux (600-700nm): 2.290 umol/s Photon Flux (700-800nm): 0.247 umol/m²/s
 Photon Flux (800-900nm): 0.093 umol/m²/s Photon Flux (900-1000nm): 0.044 umol/m²/s
 Radiant Flux (300-500nm): 0.854 W Radiant Flux (500-600nm): 0.528 W
 Radiant Flux (600-700nm): 0.000 W Radiant Flux (700-800nm): 0.048 W
 Radiant Flux (800-900nm): 0.000 W Radiant Flux (900-1000nm): 0.000 W
 YPF (300-700nm): 0.142 umol/s YPF (400-500nm): 0.316 umol/s
 YPF (500-700nm): 0.259 umol/s YPF (600-700nm): 0.268 umol/s
 YPF (700-800nm): 0.049 umol/s YPF (800-900nm): 0.001 umol/s
 Radiant Flux (Chl-a): 0.181 W Radiant Flux (Chl-b): 0.514 W

Electric Parameters
 Voltage: 220.20 V Current: 0.0730 A Power: 7.40 W
 Power Factor: 0.9390 Frequency: 50.05 Hz Displacement Factor: 0.9635

Geometry: 4n, 1.5m Self-absorption Factor: 1.000 Photometric Method: sphere-spectroradiometer
 Warmup Time: 30 Minutes Integration Time: 0.2 ms Peak of Signal: 68.8
 Spectroradiometer: LMS-9500C Digital Power Meter: LS2050C Power Source: LSP-Series

Test Lab: LISUN Testing Environment: Ts:26.5°C, Ta:25.5°C,65%
 Operator: Michael Asiami Approver:

LED Plant Lamp Test Report

LISUN GROUP Lisun Instruments Limited
 www.Lisungroup.com

IES TM-30 Color Rendition Report

Report No: RT2021216 Test Time: 2021-12-12 17:36:53
 Category: Spec: LED Bulb Type: Number: 12
 Manufacturer: OSRAM GmbH Submitter:

Color Rendering Index (CRI): 91.2
 Color Fidelity Index (Rf): 84.1
 Gamut Area Index (GAI): 80.9

Test Lab: LISUN Testing Environment: Ts:26.5°C, Ta:25.5°C,65%
 Operator: Michael Asiami Approver:

IES TM-30 Color Test Report

LISUN GROUP Lisun Instruments Limited
 www.Lisungroup.com

Warmup Curve

Report No: RT2021216 Test Time: 2021-12-12 17:36:53
 Category: Spec: LED Bulb Type: Number: 12
 Manufacturer: OSRAM GmbH Submitter:

Parameter	Maximum	Minimum	Change
Luminous Flux_lm	885.78	892.28	166.50
Power_W	8.45	7.40	1.05
Efficiency_lm/W	128.35	121.43	4.92
CCT_K	6178	5930	248
CRI_A	8.5228	8.1317	0.0448
Peak Wavelength_nm	452.2	449.7	0.0099
Δu	0.1777	0.168	2.8
Δv	0.3173	0.310	2.3

Stable time: 30.0 s Uptime: 0.0 s

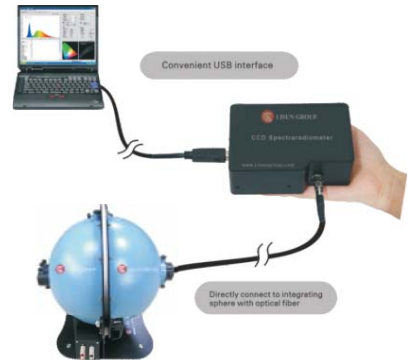
Test Lab: LISUN Testing Environment: Ts:26.5°C, Ta:25.5°C,65%
 Operator: Michael Asiami Approver:

LED Aging Test Report

CCD Spectroradiometer (LMS-7000)

The LMS-7000 works with LISUN a-molding integrating sphere as ALL-IN-ONE system. It is used to test photometric, colorimetric and electrical parameters of LED lighting. The test speed is quick and test results are accurate. It fully meets CIE127-1997, IES LM-79-19 and IES LM-80-08. The LMS-7000 is a cost-efficient CCD Spectroradiometer which is widely used by the LED manufacturers.

The LMS-7000 system has been certificated by the third CNAS lab, and the test results can be traced to NIM and NIST.



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

Measurement:

- Colorimetric: Chromaticity Coordinate (x, y) and (u, v), Relative Spectral Power Distribution P(λ), Correlated Color Temperature (Tc), Color Rendering Index (Ra, R1 to R15), Color Difference, Dominant Wavelength, Peak Wavelength, Half-bandwidth, Spectral Purity, TM30 (Rf, Rg), CQS
- Photometric: Luminous Flux (Lumen), Luminous Efficiency, Radiant Power, EEI, PAR, PPF
- Electrical: Voltage, Current, Power, Power Factor, Harmonic (Optional)

Specification:

- Spectral Wavelength Accuracy: ±0.5nm, Resolution: ±0.2nm, Sample Scanning Steps: ±0.1nm
- Accuracy of Chromaticity Coordinate (Δx, Δy): ±0.003
- Correlated Color Temperature CCT: 1,500K~100,000K, CCT Accuracy: ±0.5%
- Color Rendering Index Range: 0~100.0, Accuracy: ±(0.3%rd±0.3)
- Photometric linear: ±0.5%, Stray light: <0.015%(600nm) and <0.03%(435nm)
- Time of integration: 0.5ms to 1,000ms
- Spectrum sensors: SMA905 optical fiber
- Communicate with PC via USB2.0, the software can be run in Win7, Win8 and Win10, Win11

Test Report:

Lisun Electronics Inc.
 www.Lisungroup.com
 Tel: +86(21)51083341
 Fax: +86(21)51083342

Lightsources Test Report

Product Information

Product Number:	Product Type:
Product Category: Bulb	Product Spec:
Manufacturer: PHILIP	Buyer:
Submitted Unit:	

CIE Colorimetric Parameters

Chromatic Coordinate: x=0.3411 y=0.3296 u(u')=0.1986 v=0.3126 v'=0.4689
 CCT: 6415K
 Peak Wavelength: 452.6nm Color Ratio: R=15.052 G=43.993 B=41.807
 Half Bandwidth: 24.0nm
 Dominant Wave: 489.2nm Color Purity: 6.754%
 Color Render Index: Ra=83.8 TM30: Rf=79.3, Rg=100.0
 R1=R2 R2=R3 R3=R4 R4=R5 R5=R6 R6=R7 R7=R8 R8=R9 R9=R10
 R10=R11 R11=R12 R12=R13 R13=R14 R14=R15 R15=R16 R16=R17 R17=R18 R18=R19 R19=R20
 Color Quality Scale: Qa=91.8, Qb=91.9, Qc=91.7, Qd=91.2, Qe=91.1, Qf=90.9, Qg=89.7, Qh=88.4, Qi=86.8, Qj=85.3, Qk=83.7, Ql=82.2, Qm=80.7, Qn=79.2, Qo=77.7

Photometric Parameters

Luminous Flux: 353.05lm	Efficiency: 83.17lm/W	Radiant Power: 3.802W
TM: 83.18	Energy Efficiency Class: G(IE019/2020)	
PAR: 1.777W	PPF: 7.992lm/s	RB: 0.6
Photonic: 2.06lm/s(400~500nm)	Photonic: 1.944lm/s(600~700nm)	

Electric Parameters

Voltage: 220.50V	Current: 0.036A	Power: 6.60W
Power Factor: 0.8440	Frequency: 49.99Hz	

Test Information: Size Range: 100~600, Dim: Photometric Method: sphere spectroradiometer, Substrate: Inc. Dim: Radiometric Unit: Sphere, 1.0 Accuracy: 40, Max of Span: 1000, CCD Integration Time: 20

Environment: T: 25.1°C, T1: 24.3°C, RH: 60% Test Device: Lisun LMS-7000
 Test Lab: Lisun Lab Test Time: 2023/12/29 14:01:22
 Operator: Jacky Inspector:

Light Source Test Report

Lisun Electronics Inc.
 www.Lisungroup.com
 Tel: +86(21)51083341
 Fax: +86(21)51083342

WL(nm)	PL PE(nW/nm)	WL(nm)	PL PE(nW/nm)	WL(nm)	PL PE(nW/nm)
380	0.0000 0.0000	525	0.4242 3.2012	670	0.1096 1.8456
385	0.0000 0.0000	530	0.4327 3.3040	675	0.0953 1.6681
390	0.0000 0.0000	535	0.4434 3.4369	680	0.0827 1.0145
395	0.0000 0.0000	540	0.4564 3.6227	685	0.0724 0.9793
400	0.0006 0.0069	545	0.4597 3.6363	690	0.0619 0.7390
405	0.0010 0.0120	550	0.4661 3.7399	695	0.0531 0.6513
410	0.0049 0.0598	555	0.4738 3.8093	700	0.0455 0.5375
415	0.0119 0.1455	560	0.4764 3.8417	705	0.0389 0.4770
420	0.0283 0.3472	565	0.4774 3.8529	710	0.0328 0.4039
425	0.0639 0.7840	570	0.4779 3.8599	715	0.0288 0.3530
430	0.1333 1.6341	575	0.4710 3.7249	720	0.0247 0.3025
435	0.2543 1.1179	580	0.4680 3.7178	725	0.0211 0.2613
440	0.4268 3.2532	585	0.4598 3.6360	730	0.0186 0.2210
445	0.6946 5.5159	590	0.4519 3.5407	735	0.0159 0.1889
450	0.9511 11.4608	595	0.4410 3.4069	740	0.0131 0.1633
455	0.9503 11.7449	600	0.4246 3.2302	745	0.0111 0.1366
460	0.6918 8.4920	605	0.4097 3.0232	750	0.0091 0.1190
465	0.4878 3.9806	610	0.3889 2.7682	755	0.0081 0.1013
470	0.2844 1.7136	615	0.3666 2.4945	760	0.0069 0.0849
475	0.3027 3.7115	620	0.3418 2.1902	765	0.0061 0.0748
480	0.2601 3.2875	625	0.3197 3.8704	770	0.0051 0.0647
485	0.2763 3.3877	630	0.2977 3.5290	775	0.0046 0.0563
490	0.3020 3.7033	635	0.2611 3.2015	780	0.0039 0.0473
495	0.3333 4.0860	640	0.2194 2.8860	785	0.0034 0.0411
500	0.3617 4.4351	645	0.2096 2.5697	790	0.0029 0.0344
505	0.3884 4.7638	650	0.2064 2.2673	795	0.0026 0.0313
510	0.4020 4.9283	655	0.1649 2.0220	800	0.0024 0.0292
515	0.4115 5.0655	660	0.1412 1.7394		
520	0.4191 5.1380	665	0.1258 1.5420		

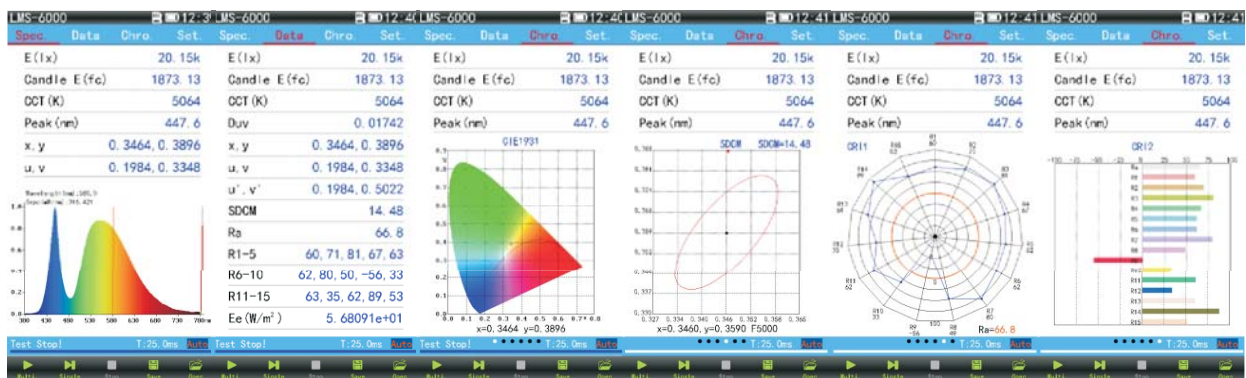
Spectral Power Distribution Data

Portable CCD Spectroradiometer (LMS-6000)

Specification:

- 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 ($\Delta x, \Delta y$): ± 0.005
- Correlated Color Temperature CCT: 1,500K~100,000K, CCT Accuracy: $\pm 0.6\%$
- Color Rendering Index Range: 0~100.0, Accuracy: $\pm(0.3\%rd\pm 0.3)$
- Photometric linear: $\pm 0.6\%$, Stray light: $< 0.015\%$ (600nm) and $< 0.03\%$ (435nm)
- 5inch 480*854 pixel LCD capacitive touch screen with 4000mAh Li-ion battery can work max 20 hours
- Includes a 8GB SD Card, the software can be run in Win7, Win8 and Win10, Win11

LISUN Model	Functions
LMS-6000	illuminance (lux), E(Fc), Ee(W/m2), Tc (K), Duv Correlated Color Temperature (CCT), Chromaticity Coordinates, CRI, Purity, Peak Wavelength, Dominant Wavelength, Half Bandwidth, Center Wavelength, Centroid Wavelength, Total Color Difference, Brightness Difference, Red-Green Degree, Yellow-Blue Degree, CCT, TM-30(Rf, Rg) and 380-780nm
LMS-6000C	LMS-6000 parameter without PC software and TM-30(Rf, Rg)
LMS-6000UV	UV-A, UV-B, UV-C and UV total Radiant Irradiance, UV hazard irradiance, UV spectrum, Dominant Wavelength, Peak signal, Start wavelength, End wavelength and 200-400nm
LMS-6000F	LMS-6000 Parameters+Flicker test and 380-780nm
LMS-6000L	Brightness(cd/m ²), fL, Tc (K), Duv Correlated Color Temperature(CCT), Chromaticity Coordinates, CRI, TM-30 (Rf, Rg), Purity, Peak Wavelength, Dominant Wavelength, Half Bandwidth, Center Wavelength, Centroid Wavelength, Total Color Difference, Brightness Difference, Red-Green Degree, Yellow-Blue Degree, CCT Difference, SDCM Diagram, Spectrum Diagram and 380-780nm
LMS-6000B	LMS-6000 Parameters+Blue Light Hazard Weighted Irradiance according to GB/T20145, CIE S009/E:2002 and 350-800nm
LMS-6000BF	LMS-6000B Parameters+Flicker test and 350-800nm
LMS-6000P	LMS-6000 Parameters+PAR, PPF, YPF, Blue-purple irradiance Eb, Yellow-green irradiance Ey, Red-orange irradiance Er, Ratio of red and 380-800nm
LMS-6000S	LMS-6000P Parameters+Blue Light Hazard Weighted Irradiance according to GB/T20145, CIE S009/E:2002 and 350-950nm
LMS-6000SF	Full functions: LMS-6000S parameters+Flicker and 350-950nm
LMS-6000I	Input and Output Control via RS485 and 380-780nm



Lux Meter | Brightness Meter | PPFd Meter | UV Irradiance Meter (PHOTO-200)

The PHOTO-200 series Lux Meter | Brightness Meter | PPFd Meter | UV Irradiance Meter use high-precision linear optoelectronic sensor, which has the characteristics of lightweight, stable performance, high accuracy, high cost performance, and easy carrying. Widely used on-site lighting measurement, the research and development of light source products, quality monitoring of production lines, and plant factories.

Specification:

- Detector Accuracy: Class A ($\pm 4\%$ reading ± 1 reading)
- Measurement Repetitiveness: $\pm 0.5\%$
- Display Screen: 1.54inch IPS HD LCD touch screen with 180° rotation
- Communication method: USB Type C or Bluetooth
- Power: 1600mA lithium battery can continuous work up to 12hours
- Product Size: 65mm*60mm*60mm
- Product Weight: Aluminum alloy body, 100g
- Secondary development: Support



LISUN Model	Functions
PHOTO-200	Pocket Illuminance Meter: Illuminance lux test range (380-780nm): 0.1-500,000lx (± 0.1 lx), upper and lower limit settings, sorting tests, optical change curves(PC software) illuminance, average illuminance, maximum illuminance, minimum illuminance, point illumination, illuminance transmission (%)
PHOTO-200L	Pocket Brightness Meter: Brightness test range (380-780nm): 0.1-500,000cd/m ² (± 0.1 cd/m ²), upper and lower limit settings, sorting test, light change curve(PC software) brightness, average brightness, maximum brightness, minimum brightness, points brightness, brightness transmission (%)
PHOTO-200P	PPFD Sensor and Lux Meter: illuminance lx, PPFd umol/m ² .s (400-700nm) test range: 0.1-500,000umol/m ² .s (± 0.01 umol/m ² .s) , Up and down limit settings, sorting tests, optical change curves (PC software), PPFd, average PPFd, maximum PPFd, minimum PPFd energy, transmission ratio (%), test time
PHOTO-200DLI	PPFD Sensor (DLI): PPFd umol/m ² .s (400-700nm) test range: 0.1-500,000umol/m ² .s (± 0.01 umol/m ² .s), total amount of effective radiation umol/m ² .d
PHOTO-200B	Blue Light Irradiance (460nm): Irradiance test range: 0.1-200,000μW/cm ² (± 0.1), upper and lower limit settings, sorting tests, optical change curves irradiation, average Irradiance degree, maximum Irradiance, minimum Irradiance degree, minimum Irradiance degree Blu -ray energy μJ/cm ² , Irradiance transmission ratio (%), test time
PHOTO-200UV	UV Irradiance: Irradiance (222 nm or 254nm or 365nm) test range: 0.1-500,000μW/cm ² (± 0.01), upper and lower limit settings, sorting tests, optical change curves, Irradiance degree, average Irradiance degree, maximum Irradiance, minimum Irradiance, UV energy radiation transmission ratio (%), test time
PHOTO-200UVZ	UV Irradiance (Multiband): Irradiance (254nm and 365nm) test range: 0.1-500,000 μW/cm ² (± 0.01), upper and lower limit settings, sorting tests, optical change curve, radiation, average radiation, maximum radiation, minimum radiation, UV energy, radical transmission ratio (%), test time
PHOTO-200R	Red Light Irradiance (650nm): Irradiance test range: 0.1-200,000μW/cm ² (± 0.1), upper and lower limit settings, sorting tests, light change curve, irradiation, average radiation degree, maximum radiation, minimum radiation, red light energy μJ/cm ² , radiation transmission ratio (%), testing time
PHOTO-200IR	nIR Irradiance (850 or 940nm): Irradiance test range: 0.1-500,000μW/cm ² (± 0.01)
PHOTO-200IRZ	nIR Irradiance (850 and 940nm): Irradiance test range: 0.1-500,000μW/cm ² (± 0.01)

Integrating Sphere with Testing Holder Base (IS-*MA)

As the LED luminaires such as LED street luminaires developed, it is hard to do 4π geometry testing in the traditional integrating sphere for all kinds of LED luminaires. LISUN designed this new type of integrating sphere to solve this problem.



The holder base can be installed on the top or on the bottom.
The integrating sphere includes a cross laser to help adjust the lamp position.

Specification:

1. The hold base can hold up to 20kg. The sphere test all lamps such as E27/E40, all tubes such as T5/T8/T12, and all kinds of luminaires
2. The hold base can be installed on the top or on the bottom. And its height can be adjusted
3. Four wires of the holder base connected to the external power supply and max power is 5KW
4. Diameter: IS-0.3M (Φ0.3m), IS-0.5M (Φ0.5m), IS-1.0MA (Φ1.0m), IS-1.5MA (Φ1.5m), IS-1.75MA (Φ1.75m), IS-2.0MA (Φ2.0m), IS-2.5MA(Φ2.5m) and IS-3.0MA(Φ3.0m). Other sizes can be designed according to the customer's request
5. The painting of integrating spheres is designed according to CIE Pub. No.84 (1989)

Integrating Sphere theory and Applications:

The integrating sphere works with a Spectroradiometer to do the photometric, colorimetric and electrical parameters measurement:

- IS-0.3M/IS-0.5M is suitable for LEDs, LED modules, High Power LED, mini bulbs and other small lamps. The flux testing range is 0.001 to 1,999 lm
- IS-1.0MA is suitable for CFL or LED bulbs. The flux testing range is 0.1 to 199,990 lm
- IS-1.5MA/IS-1.75MA is suitable for CFL, LED bulb and tube, fluorescent lamp, CCFL. The flux testing range is 0.1 to 1,999,900 lm
- IS-2.0MA is suitable for HID lamps or high power lamps. The flux testing range is 0.1 to 1,999,900lm
- IS-2.5MA and IS-3.0MA is suitable for CNAS accredited laboratory big luminaires to test

Integrating Sphere with Side Assistant Opening (IS-*MAP, IS-*MA**C)**

According to IES LM-79 Clause 9.1.2, it requires the 4π geometry and 2π geometry configuring integrating sphere for the LED Testing. Lisun Group developed the integrating sphere with side assistant opening using A-Molding Technology to meet the requirements.

The traditional integrating sphere is assembled by several pieces. Lisun Group developed A-Molding Technology to produce the sphere. A-Molding Integrating Sphere will be more round and the test results will be more accurate than the traditional integrating sphere.



Figure: A-Molding Integrating Sphere VS the traditional Integrating Sphere

Specification:

- Painting material of integrating spheres is designed according to CIE Pub.No.84(1989)
- Internal BaSO₄ painting: $\rho(\lambda) \geq 0.96(450\text{nm} \sim 800\text{nm})$ and $\rho(\lambda) \geq 0.92(380\text{nm} \sim 450\text{nm})$
- Fine diffuse reflection: Reflectance $\rho \approx 0.8$ and accuracy of $\rho(\lambda) < 1.5\%$
- Build-in all functional lamp testing jigs: the vertical is for E40/E27, the horizontal is for T5/T8/T12 tubes and the Testing Holder Base for LED street luminaires. The holder base can be installed on the top or on the bottom.
- Power cable, power terminal and auxiliary lamp position have been built-in (Auxiliary lamp is optional)
- Two photo detector ports, one optical fiber port and one temperature sensor port are built-in
- Ordering Code: IS-1.5MA55P or IS-1.5MA55C ($\Phi 1.5\text{m}$, IS-1.5MA55P means square side opening size is $0.5 \times 0.5\text{m}$, IS-1.5MA55C means cycle side opening diameter is 0.5m). IS-1.75MA66P or IS-1.75M66C ($\Phi 1.75\text{m}$ and side opening is 0.6m). IS-2.0MA77P or IS-2.0MA77C ($\Phi 2.0\text{m}$ and side opening is 0.7m). Other size such as diameter 2.5m , 3.0m can be designed according to customer's request

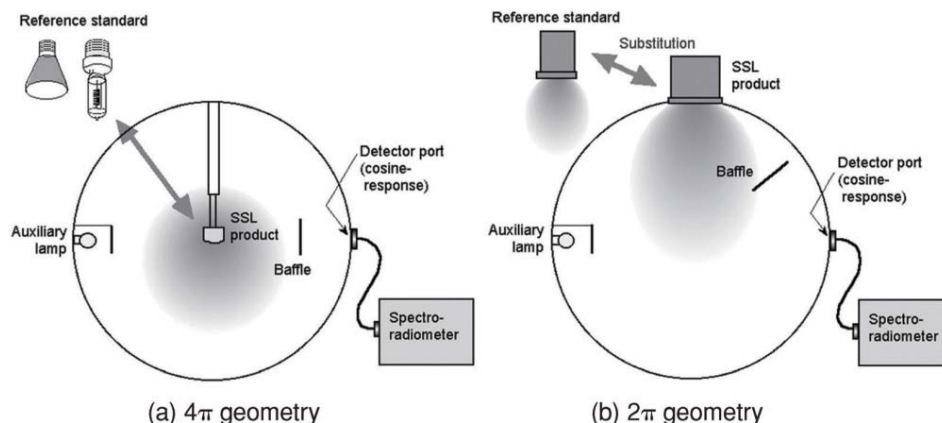


Fig: LM-79 Clause 9.1.2

Constant Temperature Integrating Sphere (IS-*MT)

According to requirements of IEC standards, the standard test temperature is 25°C. But high power lamps such as HID lamps and LED outdoor luminaires will produce a lot of heat during the test, thus the temperature inside the integrating sphere can not meet the requirements of IEC standards. Lisun Group designed the Constant Temperature Integrating Sphere which allows the lamp to be tested in a constant air temperature.

Specification:

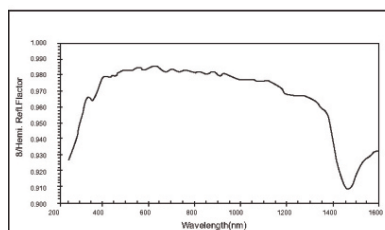
- Diameter: IS-0.3MT (Φ 0.3m), IS-0.5MT (Φ 0.5m), IS-1.0MT (Φ 1.0m), IS-1.5MT (Φ 1.5m), IS-1.75MT (Φ 1.75m), IS-2.0MT (Φ 2.0m). Other size can be designed according to the customer's request.
- Painting of integrating spheres is designed according to CIE Pub. No.84 (1989).
- Material: Pure barium sulfate (BaSO_4).
- BaSO_4 coating: $\rho(\lambda) \geq 0.96$ (450nm~800nm) and $\rho(\lambda) \geq 0.92$ (380nm~450nm).
- Fine diffuse reflection: Reflectance $\rho \approx 0.8$ and accuracy of $\rho(\lambda) < 1.5\%$.
- Build-in all functional lamp testing jigs: jigs for E40/E27 and T5/T8/T12 tubes and the Testing Holder Base for LED street luminaires. The holder base can be installed on the top or on the bottom.
- Auxiliary lamp position has been built-in. Auxiliary lamp and Auxiliary lamp holder are optional.
- Power cable and socket has been build-in. It is convenient to power the lamp.
- Two photo detector ports, one optical fiber port and one temperature sensor port are built-in.
- Constant temperature range: 25°C~55°C (refer to the environmental temperature at 25°C).
 - A. Temperature increasing tolerance: $\pm 1^\circ\text{C}$
 - B. Temperature down tolerance: $\pm 2^\circ\text{C}$
- Build-in cross laser can help to install the standard lamp and the lamp under test in the center of the integrating sphere

Application:

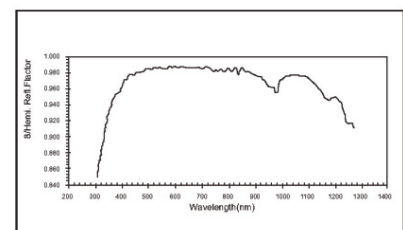
- The integrating sphere works with a Spectroradiometer to do the photometric, colorimetric and electrical parameters measurement:
 - IS-0.3MT/IS-0.5MT is suitable for LEDs, LED modules, High Power LED, mini bulbs and other small lamps. The flux testing range is 0.001 to 1,999 lm.
 - IS-1.0MT is suitable for CFL or LED bulbs. The flux testing range is 0.1 to 199,990 lm.
 - IS-1.5MT/IS-1.75MT is suitable for CFL, LED bulb and tube, fluorescent lamp, CCFL. The flux testing range is 0.1 to 1,999,900 lm.
 - IS-2.0MT is suitable for HID lamps or high power lamps. The flux testing range is 0.1 to 1,999,900 lm
- LISUN IS-*MT Constant Temperature Integrating Sphere is fully meet IES LM-82 Clause 4.4.



UV-VIS High Index of Reflective Coating



VIS High Index of Reflective Coating



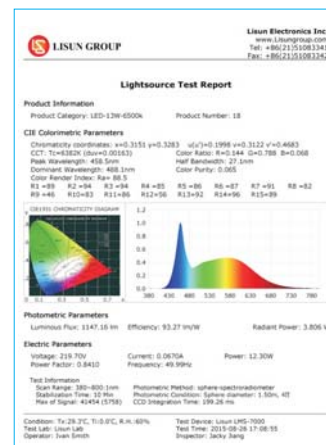
Spectroradiometer and Integrating Sphere Compact System for LED (LPCE-3)

Due to the LED Test System is hard to install and debug, LISUN developed the Spectroradiometer and Integrating Sphere compact System LPCE-3. The LPCE-3 system combines the cabinet, test equipments and integrating sphere together. The system looks better and it is extremely easy to operate.

The LPCE-3 is used to identify the performance of single LEDs and LED lamps. LED's quality should be tested by checking its photometric, colorimetric and electrical parameters. The LPCE-3 system fully meets CIE127-1997, IES LM-79-19 and IES LM-80-08. The integrating sphere is produced by A-Molding technology. A cross laser system and auxiliary position are built in to improve the test accuracy.

ALL-IN-ONE LED Test System

1. CCD Spectroradiometer
2. Big Integrating Sphere with Cabinet
3. Standard Lamp
4. Auxiliary Lamp
5. Digital Power Meter
6. AC Power Supply
7. DC Power Supply
8. Optical Fiber
9. PC (Optional)



Integrating Sphere Spectroradiometer System (LPCE-2)

LPCE-2 Integrating Sphere Spectroradiometer Test System is used to test energy-saving lamps, fluorescent lamps, HID lamps, CCFL, plant lighting and LED lighting. The test results meet the requirements of CIE and IES LM-79-19 for the photometry and colorimetry measurement. The LPCE-2 is applied with LMS-9000 or LMS-9500 CCD Spectroradiometer and a-molding integrating sphere with testing holder base function which will be more circle and the test results will be more accurate than the traditional integrating sphere.

- ① LS2012 Digital Power Meter
- ② LMS-9000 CCD Spectroradiometer
- ③ DC3005 DC Power Supply
- ④ LSP-500VARC AC Power Source
- ⑤ CASE-19IN 19inch Cabinet
- ⑦ CFO-1.5M Optical Fiber
- ⑧ Small Integrating Sphere
- ⑨ Big Integrating Sphere



Measurement:

- Colorimetric: Chromaticity coordinates, CCT, Color Ratio, Peak Wavelength, Half Bandwidth, Dominant Wavelength, Color Purity, CRI, CQS, TM-30, Spectrum Test
- Photometric: Luminous Flux, Efficiency, Radiant Power, EEI, Energy Efficiency Class, Pupil Flux, Cirtopic Flux, PAR and PPF
- Electric: Voltage, Current, Power, Power Factor (PF), Displacement Factor (DF), Harmonic
- LED Light aging test according to LM-80: Flux VS time, CCT VS time, CRI VS time, Power VS time, Power Factor VS time, Current VS time and Flux Efficiency VS time.

Lamp Start, Run-up time and Flicker Test System (LSRF-3)

LSRF-3 is equipped with Class A photo detector, so the sampling speed is up to 100kHz. It fully meets the requirement of BASIC, Energy Star V2.1, IEC TR 61547-1:2020 IEC-Pst, CA CEC, ASSIST, CIE TN006-2016 CIE SVM, IEEE Std 1789 standards, etc. It is professional for flicker test of LED lights and lamps, energy-saving lamps, etc. According to EU directives 1194/2012, 2009/125 / EC, SASO2902, EU2019/2015 - EU2019/2020 and IEC60969 "Self-ballasted Lamps for General Lighting Services - Performance Requirements" and other requirements.

The integrating sphere & standard lamp are optional

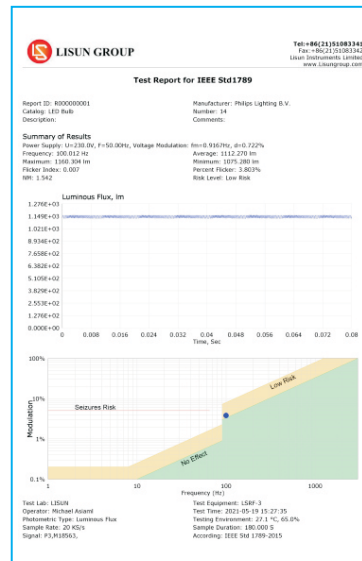
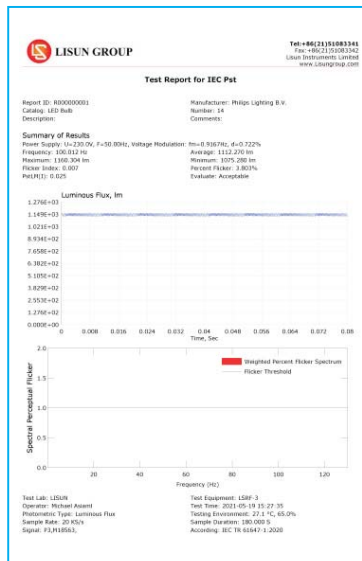
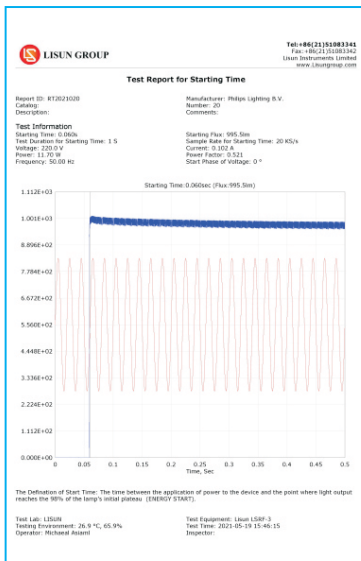


Test Parameters:

Lamp Flicker test: the LSRF-3 needs to work with LISUN Integrating Sphere to test flicker. It also can work with LPCE-2/LPCE-3 Integrating Sphere System, LSG-6000/LSG-1890B/LSG-1800A Goniophotometer system, or LSG-6000CCD/LSG-1890BCCD/LSG-1800ACCD Goniospectroradiometer.

Lamp Start and Run-up Test: the LSRF-3 needs to work with LISUN's LSP-500VARC AC Power Source (With Trigger Function) or LSP-500VARC-Pst (IEC-Pst AC Power Source) to test the Start and Run-up time of lamps which is according to clause 11.4 Start Time Test Method & clause 11.5 Run-Up Time Test Method in the US Standards of Energy Star V2.1, and SASO2902 Table 13.

According to IEC TR 61547-1:2020, The LSRF-3 do the Light Pst V measure on AC Stable as below Figure 1a , and also can do the Light Pst LM(I) measure on AC Fluctuation as below Figure 1b. Note: The Light Pst LM(I) measurements need to work with LISUN's LSP-500VARC-Pst (IEC-Pst AC Power Source).



Optical Radiation Safety Test System (EN62471-C)

IEC62471-2006(CIE S009) Photobiological Safety of Lamps and Lamp System and IEC TR62471-2(2009) Guidance on Manufacturing Requirements Relating to Non-laser Optical Radiation Safety have been published addressing hazard to human (mostly eye and skin), and are completely suitable to assess the optical radiation safety of non-laser sources, such as LED products, UV radiation in general lighting products and etc.

The LED Photobiological Radiation Safety Test System is also according to IEC62471-1, EN62471-1, CIE S009, IEC62471-6:2022, IEC62471-7:2023 (instead for IEC62778), GB/T 20145, IEC/EN 60598 Annex P, IEC/EN 60432, IEC60335-2-27, EN60335-2-27, IEC60335-2-59, GB 7000.1 and 2009/125/EC.



Specification:

- Wavelength range: 200~800nm(EN62471-A), 200~1500nm(EN62471-B), 200~3000nm(EN62471-C)
- Radiance geometry: optics simulating human eye's retina
- Acceptance aperture: Dia. 7mm for radiance; Dia. 20mm & 7mm for irradiance
- FOV range: 1.5mrad to 110mrad (1.7mrad, 11mrad, 100/110mrad) according to exposure duration of radiance measurement; 100mrad, 1.4rad and 6.28rad for irradiance measurement
- Testing distance: 200mm to 6.0m(optional) with constant FOVs and input aperture
- Image resolution:1600*1200
- Maximum exposure scanning range: 2pi-space
- Calibration: It can be traced to NIM
- Detectors: PMT/InGaAs/Si/PbS
- Imaging radiance meter: scientific grade 16bit CCD camera with TEC
- Sampling speed of pulse source:20us to 10s
- Wavelength accuracy: 0.1nm(UV), 0.2nm(VIS), 0.4nm(IR)

Test report:



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Photobiological Safety Test Report of Light source1/3

Product Information							
Name	CT-T004535W(Track light)						
SN	S01						
Model	CT-T004535W(Track light)						
Made by	YOOHUN LIGHTING						
Sent by	YOOHUN LIGHTING						
Sent Date	2018-2-18						
Test condition							
Measure Distance (mm)	3000.0						
Stable Time(min)	1						
Ref FILE	IEC62471-CBT20145						
Test Lab	Antitek compliance Laboratory						
Lamp Type	CW						
Tested by	Alan						
Temperature(°C)	25.3						
Approved by	VIC						
Humidity(%)	60.0						
Testing Time	2018-2-18						
Test Results							
Spectral distribution							
Emission Limits for Risk Group of Continuous Wave Lamps							
Risk	Exempt		Low Risk		Med Risk		RG
	Limit	Result	Limit	Result	Limit	Result	
E ₀ (m-2)	0.001	1.92e-09	0.003	1.92e-09	0.03	1.92e-09	RG0
E _{uv} (W m-2)	10	4.24e-04	33	4.24e-04	100	4.24e-04	RG0
L ₀ (W m-2 sr-1)	100	1.23e+00	10000	3.05e+01	4000000	3.05e+01	RG0
E ₀ (W m-2)	-	-	-	-	-	-	-
L ₀ (W m-2 sr-1)	1.05e+06	2.89e+02	1.05e+06	4.33e+02	2.99e+06	4.33e+02	RG0
L ₀ (W m-2 sr-1)	3.26e+05	3.16e-01	3.26e+05	3.16e-01	3.26e+05	3.16e-01	RG0
E ₀ (W m-2)	100	7.21e-03	970	7.21e-03	3000	7.21e-03	RG0
g ₀ (mrad)	26.5	-	-	-	-	-	-
RG	-	-	-	-	-	-	-

Electric Results	
Voltage[V]	230.0000
Current[A]	0.0000
Watt [W]	0.0000
Power Factor	0.0000

LED Lumen Maintenance and Aging Life Test System (LEDLM-84PL)

LEDLM-80PL LED Lumen Maintenance and Aging Life Test System is designed according to IES-LM-80 and TM-21. It is used to test & record the optical and electrical maintenance for single LED or LED module. The software is based on Arrhenius model and TM-21 to calculate the LED life. The LEDLM-80PL needs to work with a GDJW/GW Series High Temperature Chamber and DC12010 DC Power Source.

LEDLM-84PL LED Lumen Maintenance and Aging Life Test System is designed according to IES LM-84 and TM-28. It is used to test & record the optical and electrical Maintenance for LED luminaires. The software is based on Arrhenius model and TM-28 to calculate the LED life. The LEDLM-84PL needs to work with a GDJW/GW Series High Temperature Chamber and and LSP-1KVARC AC Power Source.

System Configuration:

- Record the changing curves of lumen, colorimetric and electrical parameters VS time for L70 and L50:
 - L70 (hour): time to 70% lumen maintenance
 - L50 (hour): time to 50% lumen maintenance
- Test and record the light attenuation data within a short time, then software will predict the LED life
- LEDLM-80PL/LEDLM-84PL test system can test 8 DUTs one time. (More DUTs can be special designed according to customer’s requirements)
- The test system already includes two sets of testing devices in the temperature chamber
- The system supply two solutions for LED lumen maintenance and aging test:
 - Strictly according to LM-80 or LM-84 to test up to 6000 hours to get L50 and L70 test report based on TM-21 or TM-28. LISUN LEDLM-80PL/LEDLM-84PL test system will be fully automatic and no need human to operate during 6000hours test.
 - LISUN LEDLM-80PL/LEDLM-84PL test system supply a fast accelerated test. The software was designed based on the Arrhenius Model to simulate 6000 hours testing in a “short time” to get the L50 and L70 test report based on TM-21 or TM-28. This solution saves a lot of time for the testing company.



Design according to IES LM-84 and TM-28

The Life Calculated by TM-21:

Slope(m)	-3.067E-06
Intercept(b)	1.365E-02
$\alpha 1$	3.067E-06
B 1	1.014
Calculated L ₇₀ (6k)	121,000

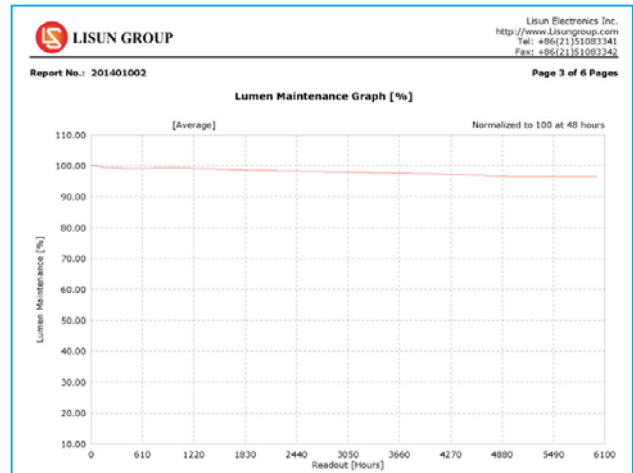
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Lumen Maintenance Life Prediction(Based on TM-21)

Test Condition - 55°C Case Temp	
Sample Name:	White SMD LED
Model:	YL-T3528W-AA-60C
Ratings:	20mA, 6.5lm, 75(Ra), 6000K
Manufacturer:	OSRAM Lighting
Sample Quantity	6
Number Of Failures	0
DUT drive voltage used in the test (V/Hz)	220.1/50.02
Test duration (hours)	6000
Test duration used for projection (hour to hour)	1000 - 6000
Tested case temperature (°C)	55
α	6.081E-006
B	0.998
Calculated L70(6k) (hours)	815715
Reported L70(6k) (hours)	> 33000
Calculated L50(6k) (hours)	871049
Reported L50(6k) (hours)	> 33000

Lumen Maintenance Life Prediction Report



Lumen Maintenance Graph

LED Driver Aging Test Rack (LEDRACK-100W192P)

The LED Driver Aging Test Rack is applied to the production line for the finished products testing. With features of simplified operation and nice-looking, it can improve the workers' work efficiency. This system can meet the requirements of IEC62384, GB24825-2009 and other relative standards.

Configuration:

The LED Driver Aging Rack includes three parts: LED Driver Aging Rack, Aging Control System includes PC & software, and LED Load Modules.



Specification:

- Application range: LED driver and multi channel driver power aging. It is equipped with computer and monitor. The working condition can be set on the computer software, and the software will record all the real time data to do the statistical analysis
- The parameters of load can be set freely on the software. The monitor shows the real time voltage, current, and power etc
- Load mode: CC, CV, CR, CP, and LED
- Aging control system includes: ON/OFF control signal output; signal of relay switch control; K type thermocouple temperature acquisition
- The channels are parallel connected under arbitrary load mode, which can allow product power expansion
- The LED Driver Aging Rack can also be designed according to customer's LED driver power and other requirement

Aging and Life Test Rack (SY2036)

The LED aging and life test rack is fully designed according to the IEC standards, and it can also be designed based on the customer request. SY2036 can test all kinds of lamps and luminaires, such as LED, CFL, HID, indoor and outdoor lighting.

Features:

- PLC program and English/Chinese touch screen, easy for the operation and maintenance
- Built-in over-current protection system. When the load's current becomes too high, the device will give alarm and switch off the output to protect the transformer
- Contains 3 independent layers and each can work separately



Specification:

- Input Power supply: AC220V, 50/60HZ, 12KVA Min (110V is optional)
- Built-in transformer: 0-250V 5KVA and 0-300V 5KVA (Other power is optional)
- Maximum power for EUT: 5KVA and 12A (Other power is optional)
- EUT and quantity: 112pcs B22, 112pcs E27. 36pcs T5/T8/T12 Tube. 22pcs LED panel (Other EUT can be designed according to customer request)
- ON/OFF test: Can be set on the touch screen with program
- Test number: 0~99999(Adjustable)

LED Power Driver Tester (LS2090)

LS2090 LED Power Driver Tester is the comprehensive test instrument for LED power driver which is according to GB/T 24825-2009 and IEC 62384:2006. It can measure the following parameters: input characteristics test (AC&DC), output characteristics test (AC&DC), output start characteristics test (DC) and harmonic test.

The LS2090 usually works with LISUN LSP-500VARC pure sine AC power source and LISUN M9822 DC electronic load to test LED driver. The software can be run Win7, Win8, Win10, Win11.



Specification:

1. Input Characteristics Test (AC)

- Measures the input voltage, current, power, power factor, power frequency
- The fundamental frequency scope of the current and voltage: 45Hz~65Hz; Narrow band range: 45Hz~5kHz; Broadband range: 45Hz~1MHz.
- U range: 3~300V (CF=1.67); Current: 5mA~2.7A (CF=3); Power: 0.015~800W; PF: 0.000~+1.000.

2. Input Characteristics Test (DC)

- Measures voltage, current, power.
- Voltage range: 3~500V; Current range: 5mA~8A; Power range: 0.015~4KW

3. Output Characteristics Test (AC)

- Measures lamp voltage, lamp current and lamp power.
- Lamp U range: 3~300V(CF=3); Lamp I range: 5mA~2.7A(CF=3); Lamp P range: 0.015~800W

4. Output Characteristics Test (DC)

- Measures output lamp voltage, lamp current, lamp power, ripple wave current.
- U range: 3~500V; I range: 5mA~8A; P: 0.015~4KW; Ripple wave current: 5mA~2.5A.

5. Output Start Characteristics Test (DC)

- Change curve and data of the measuring lamp voltage and lamp current within 0~2 seconds.
- Lamp voltage range: 3~500V; Lamp current range: 5mA~8A

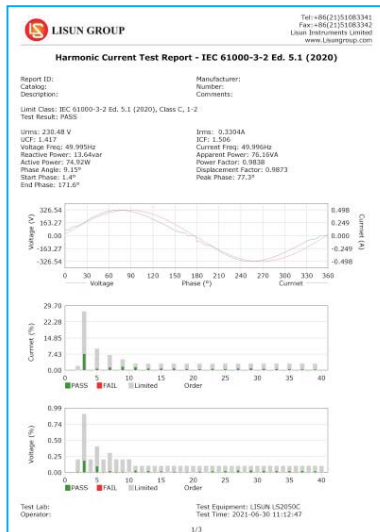
6. Harmonic Testing

- Total harmonic components test of 0~50 times, wave ratio, initial phase angle and peak phase angle

7. Displacement Factor (DF) Testing

- The LS2090 is an update version for WT2080, the LS2090 has the DF testing function.

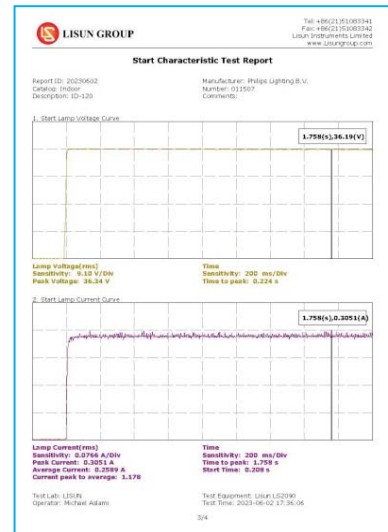
P.S. The LS2090-IEC with additional software (with extra cost) can fully meet EN/IEC6100-3-2:2019



IEC61000-3-2 Test Report



Input & Output Characteristics



Start Characteristics

Multiway Life Tester (CH316)

Feature:

- Measure 16 samples at the same time, evaluate and record the life of each sample.
- Very flexible: Samples can be added and changed at anytime.
- The life of each sample is readable at anytime.
- The switch ON/OFF time is adjustable (Minumum period is 1s).
- Automatically record the test result when the power is off, and resume the original measurement when power is on.
- Sound and light alarm when the product is failed.



Specification:

- Current range (normal load): 30mA~1000mA (RMS). Invalid if the load current is smaller than 30mA.
- Tested sample life range: 0~1,000,000 times.
- Switch on/off time: 1 second~99 hours 59 minutes 59 seconds (adjustable).

Digital Torsion Meter (CH338)

Digital Torsion Meter is mostly applied to measure the torque of all kinds of luminares lamp caps. The CH338 is a newly developed intelligent product with built-in microprocessor.

Specification:

- Range: 0~10N•m; Accuracy \leq 1%
- Repeatability: \leq 0.5%FS; Over loading: 120%FS
- It can measure the clockwise and anti-clockwise torque of lamp cap and it can preset upper limit alarm. The data won't be lost after turning off the instrument.
- Instrument is convenient to be used because it has several clamps for various lamp caps such as E27/E26, B22d, E14/E12, G13/G5 and so on.



"Go" and "Not Go" gauge (GNG-E27)

Specification:

According to the requirement of IEC60061, Lisun produced high accuracy and high quality "Go" and "Not go" gauge

- GNG-E27 is for E27 lamp cap measurement. It includes 7006-27B-1, 7006-28A-1, 7006-27C-1, 7006-50-1, 7006-51A-2, 7006-51-2
- GNG-E27H is for E27 lamp holder measurement. It includes 7006-25A-2, 7006-26-4, 7006-21-5, 7006-22A-4, 7006-22B-1, 7006-22C-1, 7006-22D-1
- GNG-E14 is for E14 lamp cap measurement. It includes 7006-27F-1, 7006-54-2, 7006-27G-1, 7006-55-2
- GNG-E40 is for E40 lamp cap standard source measurement: 7006-27-7, 7006-28D-1, 7006-52-1, 7006-53-1
- GNG-B22D is for B22d lamp cap measurement. It includes 7006-4A-2, 7006-4B-1, 7006-11-8, 7006-10-8, 7006-3-1, IEC60968 Fig3
- GNG-B22DH is for B22d lamp holder measurement. It includes 7006-12-8, 7006-15-7, 7006-20-4, 7006-12A-2, 7006-12B-2, 7006-15A-2, 7006-13-5, 7006-17B-1



Electrostatic Discharge Simulator (ESD61000-2C)



Electrostatic Discharge Simulator is in full compliance with IEC 61000-4-2, EN61000-4-2, ISO10605, GB/T17626.2, GB/T17215.301 and GB/T17215.322. The ESD simulator is designed for the assessment of electrical and electronic equipment to withstand ESD performance. It has LCD display in both English and Chinese.

Touch screen with super big LCD and built-in Android

Specification:

LISUN Model	ESD61000-2	ESD61000-2A
Output Voltage	0.1~20kV±5%	0.1~30kV±5%
Polarity	Positive/Negative	Positive/Negative
Energy Storage Capacitance	150pF±10% (Replaceable)	150pF±10% (Replaceable)
Discharge Resistor	330Ω±5% (Replaceable)	330Ω±5% (Replaceable)
Current Rise Time	0.6~1ns	0.6~1ns
Testing Functions	Single, Count, 20pps, Air, Contact, IEC level	Single, Count, 20pps, Air, Contact, IEC level
Trigger Mode	MANUAL/AUTO	MANUAL/AUTO
Number of Discharge	1~9999	1~9999
Repetition	0.05s~99.99s	0.05s~99.99s
Working Power	AC110V~240V, 50/60Hz	AC110V~240V, 50/60Hz

EFT Immunity Measurement (EFT61000-4)

EFT immunity tester EFT61000-4 is especially designed according to the characteristics and requirements of EFT measurement and it is an ideal disturbance source of EMS measurement. It has fine performance, such as high stability, high reliability, easy to use and etc. It meets the standard requirements of IEC 61000-4-4, EN 61000-4-4, GB/T17215.301, GB/T17215.322 and GB/T17626.4. EFT61000-4 has LCD display in both English and Chinese.

Specification:

- Output voltage: 0~5000V
- Pulse frequency: 1kHz~1000kHz (Adjustable)
- Polarity: positive, negative or automatic switching
- Source impedance: 50Ω±20% and 1000Ω±20%
- Rise time of a pulse: 5ns±30%
- Pulse width: 50ns±30% at 50Ω, 35ns~150ns at 1kΩ
- Burst duration: 0.01ms~20ms
- Burst period: 100ms~500ms, Test time: 1s~9999s
- Testing functions: Set test mode freely or IEC Level
- Coupling/Decoupling Network: Built-in 16A with 3 phases/5 wires
- Working Power: AC220V (Option 110V), 50/60Hz



Touch screen with super big LCD and built-in Windows CE

Surge Generator (SG61000-5)



SG61000-5 Surge Generator is used to assess the power cord and connect the internal switch stood in line to connect the internal switch to provide a common basis for switching the natural world and lightning caused by the high-energy transient interference performance. It fully meets the IEC61000-4-5, EN61000-4-5 and GB/T17626.5 standards.

Specification:

Touch screen with super big LCD and built-in Windows CE

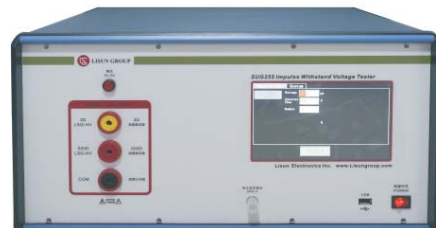
LISUN Model	SG61000-5	SG61000-5H-SP	SG61000-5H20-SP	SG61000-5H
Output Voltage (Open)	1.2/50μs±20%	1.2/50μs±20%	1.2/50μs±20%	1.2/50μs±20%
Output Current (Short)	8/20μs±20%	8/20μs±20%	8/20μs±20%	8/20μs±20%
Output Impedance	2Ω, 12Ω	2Ω, 12Ω, 500Ω	2Ω, 12Ω, 500Ω	2Ω, 12Ω, 500Ω
Output Voltage Range	0~6KV±10%	0~10KV±10%	0~20KV±10%	0~10KV±10%
Output Current Range	0~3KA±10%	0~5KA±10%	0~10KA±10%	0~5KA±10%
Surge Repetition	1~9999 times	1~9999 times	1~9999 times	1~9999 times
Polarity	Positive, negative or automatic switching			
Phase Shift	Asynchronous, Synchronization 0°~ 360° or Specific Angle			
Coupling/Decoupling Network (CDN)	Built-in a 16A single phase CDN	Built-in a 16A single phase CDN	Built-in a 16A single phase CDN	Built-in a 20A 3phases CDN

NOTE:

1. The above Surge Generator can work with LISUN Communication Lines Coupling Decoupling Network CDN61000-5C-*(External Optional): Select according to max Generator output or max EUT input.
2. The above Surge Generator can work with LISUN Power Cables Coupling Decoupling Network CDN61000-5P-*(External Optional): Select according to EUT data transmission rate or Surge output waveform.

Impulse Withstand Voltage Tester (SUG255LX, SUG255PX)

The Impulse Withstand Voltage Tester is designed according to IEC60255-5, IEC62368-1, IEC60060, GB14711, GB4943.1 and GBT17215.322. It is suitable for insulation performance test of all kinds of electrical and electronic products .



Specification:

LISUN Model	SUG255LX	SUG255MX	SUG255PX	SUG255PX-20KV	SUG255PX-30KV
Impedance of Generator	12Ω, 500Ω	38Ω, 500Ω	2Ω, 500Ω	2Ω, 500Ω	2Ω, 500Ω
Range of Output Voltage	0~12kV			0~20kV	0~30kV
Voltage Output Waveform	1.2/50μs				
Polarity of Output Voltage	Positive or Negative				
Operation Mode	Manual or Automatic				
Test Repetition	1~9999				
Interval Time	3~9999s				

Voltage Dips and Interruptions Generator (CSS61000-11)

The voltage dip and interruptions generator is specially designed according to the characteristics and requirements of EMS measurement under a sudden reduction or interruption of the voltage at a point. CSS61000-11/ CSS61000-11T uses a big LCD in both English and Chinese. It has fine performance such as high reliability, convenient operation, and it fully meets the standard requirements of IEC 61000-4-11, EN 61000-4-11 and GB/T17626.11



LISUN Model	CSS61000-11
Wave Generator	AC Sine Wave
Range of Voltage Variations	0~110% of 220V
IEC Level Build-in	100%, 80%, 70%, 40%, 0%
Dip Phase Set	0°~360°(1° Step)
Duration Time of Voltage Variation	0.5~9999.5T
Internal Time of Voltage Variation	1s~9999s
Voltage Dip Count	0~9999 times
Operating Mode	Automatic Dip
Trigger Mode	Manual, Auto and 50ms
Power Capacity For EUT	Single Phase AC 220V±10%, 16A max
Dimension (DxWxH)	44x45x90cm
Gross Weight	About 90kg

Immunity Test System for Automotive Electronics (EMS-ISO7637)

EMS-ISO7637 automotive multi-functional immunity test system meet latest ISO7637-2 requirement of <Road Vehicles – Conductive Coupling Electrical Interference – Part 2 Electrical Transient Conductivity Tests for Power Lines>. This standard was issued by international organization for standardization. The system includes all of ISO7637 required test waveform and meets most of automotive manufacturer's requirement for automotive electronic immunity test.



Specification:

- The system includes all ISO7637-2 & ISO7637-3 test waveform
- Operate screen: Adopted with big color LCD touch screen and applied with main module expand technology architecture design
- Designed for 12V/24V/36V (other is optional) automotive immunity test
- The PC software include all relevant test standards. Customers can also add standards freely and update by themselves
- Software can be run in Win 7, Win8 and Win10, Win11

System Configuration:

- LIS-7600: Control host of immunity test system
- LIS-7610: P1 and P2a waveform generator
- LIS-7620: P2b & P4 waveform generator
- LIS-7640: P2b & P4 waveform generator (ISO7637-2 & ISO16750-2)
- LIS-7630: P3a and P3b waveform generator
- LIS-7650: P5a and P5b waveform generator
- Transient conduct, emission electromagnetic interference test

RF Conducted Immunity Test System (RFCI61000-6)

RFCI61000-6 RF Conducted Immunity Test System is an automatic test system for the conduction sensitivity testing. It fully meets the IEC/EN61000-4-6 and ISO11452-4. RFCI61000-6 was built-in Power Amplifier, Signal Source, Power Meter and Attenuator, It can work with LISUN CDN Coupling Decoupled Network, AB-EM Electromagnetic Clamp and AB-100W Current Injection Clamp (Option).

Specification:

- Power Amplifier (Built-in): 150kHz~230MHz
- Signal Source (Built-in): 9k~1GHz(-60~10dBm)
- Power Meter (Built-in): 9k~3GHz(-40~+30dBm)
- Attenuator: DC~1GHz, 100W/6dB(50Ω)



LISUN Model	RFCI61000-6-85W	RFCI61000-6-35W
Output Voltage	1~30Vrms (CDN method) 1~18Vrms (Electromagnetic Clamp) 1~10Vrms (Current Injection Clamp)	1~17Vrms (CDN method) 1~11Vrms (Electromagnetic Clamp)
Max Output Power	85W, +49dBm	35W, +44dBm
Harmonic	<15dBc	<15dBc

Magnetic Field Generator (PFM61000-8A)

PFM61000-8A Magnetic Field Generator is high reliability test equipment with stable performance. It is specially designed for electrical and electronic products for measuring immunity characteristics and requirements of normal frequency magnetic fields. It fully meets IEC61000-4-8 and GB / T17626.8.

Specification:

- LCD display, built-in PC for control, easy to operate.
- Freely set the time of current injection and interval, and the time of test.
- Intelligently acquire current, voltage and magnetic field strength, all the parameters shown on the LCD display.
- Magnetic field coil: 1 square meter (others can be customized)
- Magnetic field strength: 0A/m~1000A/m continuously adjustable
- Output Current: AC
- The time of test: 999 times
- Test interval: 1~99min
- Current injection time: 1s to 99min
- Current distortion rate: <5%
- Work mode (current range for continuous working): 1A~100A
- Work mode (current range for short-time working): >100A~500A is 1~5s and >500A~1000A is 1~3s
- Methods of operation: manual, semi-automatic, automatic
- Power supply: AC220V 50/60Hz
- Working environment temperature: 15°C-35°C



Ring Wave Generator (RWG61000-12)

Ring Wave Generator is especially designed according to IEC61000-4-12, EN61000-4-12, ANSI-C62-41. This instrument is used for the simulative electrical network, the power supply of the reactive load and the control line switch, as well as sensing the ring wave of the low voltage cables terminal equipment caused by the disconnection of the power circuit, fault and insulation breakdown or lightning stroke. The RWG61000-12 series products have LCD display in both English and Chinese.



Touch screen with super big LCD and built-in Windows CE

Specification:

Product Model	RWG61000-12	RWG61000-12T	RWG61000-12A	RWG61000-12AT
Output Voltage	0~4KV		0~6KV	
Voltage/Current Wave	Open circuit voltage wave: frontier: 0.5μs±20%. Short circuit current wave: frontier: ≤1μs. Oscillation frequency: 100kHz±10%			
Polarity	Positive, Negative or Automatic switching			
Phase Shift	Asynchronous, Synchronization 0°~360° or Specific Angle			
Output Impedance	12Ω, 30Ω			
Coupling/Decoupling Network (CDN)	Built-in a 16A single phase	Built-in a 20A 3phases/5wires	Built-in a 16A single phase	Built-in a 20A 3phases/5wires
Working Power	AC220V(Option 110V)±10%, 50/60Hz			
Dimension (DxWxH)	44x45x35cm	44x45x20cm 44x45x35cm(CDN)	44x45x30cm 44x45x20cm(CDN)	44x45x30cm 44x45x35cm(CDN)
Gross Weight	About 28kg	About 46kg	About 45kg	About 48kg

Three Loop Antenna (VVLA-30M)

Specification:

- The three loop antenna VVLA-30M is a standard measurement antenna according to CISPR15-2018. It can work with LISUN GROUP EMI- 9KB, EMI-9KA EMI Receiver System for EUT magnetic field radiation test measurement between X, Y and Z planes
- Frequency range: 9KHz ~30MHz
- It can switch between X, Y and Z planes
- The sensor coefficient of current probe is 0dB; Impedance: 50Ω/BNC
- Ring diameter: 2m; No need to move EUT or loop during measurement process
- The antenna has been calibrated in the factory by placing calibration dipole antenna in the center of the antenna; users can also use it for recalibration



Glow-wire Test Apparatus (ZRS-3HS, ZRS-3H)

It is designed according to IEC60695-2-1, IEC60695-2-10, IEC60695-2-13 (GB/T5169.10-2006~GB/T5169.13-2006), < Basic testing methods of glow wire device> and UL 746A, IEC829, DIN695, VDE0471. The glow wire tester ZRS-3H is suitable for resistance to abnormal heat and fire test of lighting lamps, electronic products and household appliances. Adopting high-temperature coating spraying on steel structure, and with easy operation, stable performance. The equipment is applicable to flame resistance tests of all levels of QC departments and corresponding enterprises.

Equipped with large LCD touch screen

Specification:

- Thermocouple diameter: 1mm K type, import insulated thermocouple which can endure high temperature about 1100°C (superior to standard 1050°C).
- Heating temperature: adjustable continuously within the range of $\leq 500\sim 1000^{\circ}\text{C}$. The accuracy of temperature is 1°C . The resolution of temperature is $\pm 3^{\circ}\text{C}$.
- Glow-wire time: $0.1\sim 999.9\text{s}\pm 0.1\text{s}$ (adjustable).
- Ignition time: $0.1\sim 999.9\text{s}$, auto record, manual pause.
- Flame-out time: $0.1\sim 999.9\text{s}$, auto record, manual pause.
- Glow wire pressure on test specimen: $1\pm 0.2\text{N}$. Limit pressure depth is 7mm.
- Glow wire: 80%Ni, 20%Cr and made in specific dimensions.



Economy Version



Standard Version

Needle Flame Test (ZY-3S, ZY-3)

According to IEC60695-2-2 and IEC60695-11-5, ZY-3 Needle Flame Test is applied in the production and quality control department of lighting instrument, hyperpiesia electrical apparatus, domestic appliance, machine electric appliance, electrical machine, power tool, electronic instrument, electrician instrument and technical equipment. Also, it is suitable for the industry of insulation material, engineering plastics and solid combustible material.

Equipped with large LCD touch screen

Specification:

- Angle of burner: 45° (when in test) / 0° (when adjust the flame's height)
- Burning time: $0\sim 999.9\text{s}\pm 0.1\text{s}$ (adjustable, 30s in general)
- After-flame time: $0\sim 999.9\text{s}\pm 0.1\text{s}$, auto record and manually pause
- Height of flame: $12\text{mm} \pm 1\text{mm}$ (adjustable, gauge included)
- Gas: 95% butane
- Test range of temperature: $0\sim 1000^{\circ}\text{C}$
- Temperature rise time: within 23.5 seconds $\pm 1\text{s}$ when the temperature rises from $100^{\circ}\text{C}\pm 2^{\circ}\text{C}$ to $700^{\circ}\text{C}\pm 3^{\circ}\text{C}$
- Thermocouple: $\Phi 0.5\text{mm}$, K type



Economy Version



Standard Version

Horizontal Vertical Flame Tester (HVR-LSS, HVR-LS)

This equipment meets the requirements of ANSI/UL94, IEC60950-1, IEC695-2-2. It is used to do horizontal, vertical flammability test for the appliances and plastic materials parts of electrical equipment. The tester shell is iron spray, and configured a transparent viewing window, the digital meter shows the burning time, after-flame time, after-glow time. This device has beautiful appearance. It is easy to use and it has reliable performance.

Equipped with large LCD touch screen

Specification:

- Burning Time: 0~999.9S(Adjustable), After-flame Time: 0~999.9S (Adjustable), After-glow Time: 0~999.9S(Adjustable)
- Burning Angle: 0°, 20°, 45° (Adjustable), Flame Height: 20mm~175mm (Adjustable)
- Gas Flow: 0.03~0.3L/Min, Gas Pressure: 0~16Kpa
- Bunsen Lamp Holder: Internal tube diameter: 9.5±0.3mm, Length:100mm±10mm
- Timer: Accuracy is 0.1S, linear measure in millisecond
- Back Pressure: Measuring range 200mm water column, slow adjustment in 5mm increments
- Flow Meter: The maximum measurement accuracy is ±2%
- Position Adjustment: Sample position can be adjusted exactly according to the standard



Economy Version



Standard Version

Tracking Test Chamber (TTC-1)

TTC-1 Tracking Test Chamber fully meets IEC60695 and IEC60112 (Gb4207). It is used for determining the degree of protection against formation of conducting paths in solid insulating materials, due to the electric stress and electrolytic contamination of the surface. This method simulates tracking currents on insulation material by providing drops between electrodes. Insulating material may be exposed to moisture and dirt during the process of normal use. It may cause fire hazard if it become conductive.

Specification:

- It uses rectangle size of platinum electrode. Each electrode can force to the sample with 1.0±0.05N
- The testing voltage is 100~600V (48~60Hz) which can be adjustable
- Voltage drop does not exceed 10% when the short-circuit current is 1.0±0.1A
- Equipment will stop the test automatically if the short-circuit current is higher than 0.5 A and last for 2 seconds during the testing. That is, the sample doesn't pass the test
- The liquid drop device can make the liquid height from 30~40mm (adjustable), drops liquid size is 44 ~55 drops/1cm³. The interval drops of liquid is 30S ±5S (adjustable)
- Inside dimension: 800x800x800mm and outside dimension: 1120x520x1250mm (Special size can be ordered as customer's request)



Equipped with large LCD touch screen

Hot Wire Ignition Tester (RSY-LT)

Hot wire ignition tester is designed according to the standard requirement of IEC60695-2-20 and GB4943, which meets Standard Test Method for Ignition of Materials by Hot Wire Sources. It is suitable for electric and electronic products, household appliance materials to do ignition dangerous test. It simulates the heat source or ignition source of simulates glow component and overload resistance which may cause thermal stress in a short time

Hot-wire coil ignition test adopts the specific size (Dia: 0.5mm; Length: 250mm) and specific material (Ni80/Cr20) of heater strip which is pre-annealed with required heating power (0.26W/mm) and specified time (8s~12s). Then coil heater strip on the specimen for 5 cycles according to certain wire wrapping tension (5.4N) and certain wire wrapping distance (6.35mm). Then take the specimen with wrapping heater strip to test until 120s under the stipulate heating power (0.26W/mm). The users can judge the fire risk according to the specimen ignite and the ignite time.

Specification:

- It is designed according to IEC60695-2-20 and GB4943
- Heating coil: ϕ 0.5mm, Ni80/Cr20, Length: 250mm \pm 5mm, Cold Resistance: 5.28 Ω /m, Anneal holder. Distance: 250mm
- Specimen holder distance and height: 70mm, Height: 60mm (The distance from stand surface to the connector plate surface)
- Wire wrapping tension and its distance: 5.4N \pm 0.05N, 6.3mm \pm 0.2mm (within 31.5mm \pm 0.5mm, coil 5 cycle, national standard is 6mm)
- Annealing time and power: 8s~12s (Digital display can be preset). 0.26W/mm \pm 4%(Digital display is adjustable)
- Testing time and power 120s (1s~999.9s Digital display can be preset), 0.26W/mm \pm 4%(Digital display is adjustable)
- Specimen size:
L \times W \times H: (125 \pm 5) \times (13.0 \pm 0.5) \times (0.75+0.075)mm, 1.5+0.150mm, 3+0.30mm) national standard 0.75 \pm 0.1 mm, 1.5 \pm 0.1 mm, 3 \pm 0.2 mm
- Combustion box volume is bigger than 0.5 cubes (other sizes can be optional)



Temperature Meter for Lamp Caps & Luminaires Test (TMP-L)

TMP-L fully meets IEC60360-1998 and GB2512-2001 (Standard method of measurement of lamp cap temperature rise). It is used to test the working and environmental temperature as well as temperature-rise of the burner and lamp. It meets the requirement of IEC and GB Standards

Specification:

- 2 channels temperature measurement to simultaneously display temperature rise curve
- Sensor: K type thermocouple and 2 channels for input temperature signal
- Temperature range: -40~300 $^{\circ}$ C and testing accuracy: Class 0.5
- Capable of circle monitoring, single monitoring, printing and RS-232 communication with PC
- Freely set up for channel sequence when circle monitoring
- Application software on Wind7, 8 and 10 to track the changing of the selected channel temperature
- Lamp holder: E14, E27, E40 and B22d (others are optional)
- TMP-LS inner size is 0.9*0.9*0.9m (L*W*H), TMP-LM inner size is 1.2*1*1.8m and TMP-LB inner size is 1.8*1.8*1.8m



Automatic Safety Test System (LS9955)

The LS9955/LS9956 Automatic Safety Test System fully meets GB4706.1, IEC/EN60335-1, UL60335, GB7000, IEC60598, GB4943, IEC60950 and GB9706.1. It is used for luminaries, home application and motor tools safety test in production line or Lab R&D.



Specification:

- Remote control device and can control by software (Optional)
- Display all setting parameters and testing results in the same big LCD screen
- It can set the PASS/FAIL limit value. It has light/noisy to warn
- Test mode programmable; Quick discharge, 50 memory groups, 8 steps per group
- Support 50Hz and 60Hz frequency; Electric safety wall detecting feature
- The LS9955 can test Withstand Voltage (AC/DC), Insulation Resistance (IR), Leakage Current (LLC) and Ground Resistance (GR)
- The LS9956 can test Withstand Voltage (AC/DC), Insulation Resistance (IR), Leakage Current (LLC), Ground Resistance (GR) and Power

Withstand Voltage Test (AC/DC)			Insulation Resistance Test (IR)		
Voltage Range	Accuracy	Current Range	IR Range	Accuracy	Voltage Range
100~4000V	±(5%+3V)	0.02~12.00mA	0.50~500MΩ	5%+0.5MΩ	DC100~1000V
Leakage Current Test (LLC)			Grounding Resistance Test (GR)		
LLC Range	Accuracy	Voltage Range	GR Range	Accuracy	Output Current
0.01~20mA	±(0.3%+5uA)	AC10.0~300.0V	0~600mΩ	±(5%+2mΩ)	AC1.00~30.00A
Power Test					
Voltage	Current	Power	PF	Accuracy	Test Time
10.0~300.0V	0.010~20.00A	1.0~6000.0W	0.2~1.0	Class 0.5	0~999.9s

Programmable Withstanding Voltage & Insulation Test (LS9923)

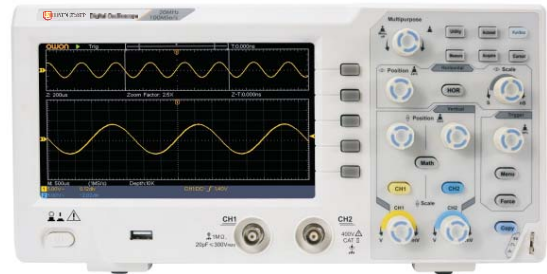
The LS9923 is a high-performance testing device specially for AC & DC withstanding voltage and insulation resistance test. It allows setting the output voltage. The limit value, testing time and other parameters can be set on the screen. It has a variety of automatic test functions. The testing is quick and high accurate which is not only applied in the production line but also in the lab developing research.



Withstanding Voltage	Output Voltage Range	AC/DC Max 5.00KV
	Output Voltage Accuracy	±(2%+3bits)
	Breakdown Current Range	AC/DC: 0.10~12mA
	Test time	0~999.9s
	Output frequency	50Hz/60Hz
Insulation Resistance	Output Voltage Range	DC Max 1.00KV
	Output Voltage Accuracy	±(2%+3bits)
	Insulation Resistance Range	1.0~2000MΩ
	Insulation Resistance Accuracy	±(5% +3bits) <100 MΩ and ±(10% +5bits) >100 MΩ
	Test time	0~999.9s

Digital Oscilloscope (OSP1102)

The OSP Series Digital Oscilloscope was designed and produced by high accuracy electronic components and modules. The test accuracy is world high class. It is used for all kinds of electronic products testing.



Specification:

LISUN Model	Channel	Width	Sample Rate	Vertical Resolution	Screen Size
OSP1102	Double Channels	100M	1G	8bits	7inch
OSP3202E	Double Channels	200M	1G	8bits	8inch
OSP3302	Double Channels	300M	2.5G	8bits	8inch
OSP3202A	Double Channels	200M	2.5G	14bits	8inch
OSP3104E	Four Channels	100M	1G	8bits	8inch
OSP3104AE	Four Channels	100M	1G	14bits	8inch
OSP3204E	Four Channels	200M	1G	8bits	8inch
OSP3204AE	Four Channels	200M	1G	14bits	8inch

Spectrum Analyzer (SPA-3P6G)

A spectrum analyzer measures the magnitude of an input signal versus frequency within the full frequency range of the instrument. The primary use is to measure the power of the spectrum of known and unknown signals.



Specification:

- Frequency range: 9kHz~1.5GHz(SPA-1P5G), 9kHz~3.6GHz(SPA-3P6G), 9kHz~7.5GHz(SPA-7P5G); Frequency rate: 1Hz
- Frequency span: 0Hz, 100Hz to maximum frequency of device; Frequency span accuracy: $\pm \text{span}/(\text{swept points}-1)$
- Internal reference frequency: 10.000000MHz; Internal reference frequency accuracy: $\pm [(\text{days from last calibrate} \times \text{freq aging rate}) + \text{temperature stability} + \text{initial accuracy}]$;
- Temperature stability: <2.5ppm(15°C to 35°C); Aging rate: <1ppm/year
- Marker frequency resolution: $\text{span}/(\text{swept points}-1)$
- Frequency counter resolution: 1 Hz, 10 Hz, 100 Hz, 1 kHz
- Resolution bandwidth (-3 dB): 10Hz to 500kHz(1~10 sequence), 1MHz, 3MHz; Accuracy: <5%

High & Low Temperature and Humidity Chamber (GDJS-015A, GDJW-010A)

The High & Low Temperature and Humidity Chamber is designed according to the IEC60068-2-1. It fully meets the test requirement of CFL/LED lamps, electricity products, electronic components, materials etc.

Specification:

- The chamber is made of SUS304 steel. The insulation material is made of polyurethane hard foam and ultra-fine fiber glass. Using double-deck aging silicone rubber door sealing strip to insulate the high temperature steam
- The controller is English and can communicate with PC.
- The temperature accuracy is 0.1°C and humidity is 0.1%R.H
- The temperature sensor is PT100 Ohms/MV resistor
- The humidity sensor is Finland brand electronic hygrometer.
- The heating system is full separately system which is made of Nickel chromium alloy electric heating type heater
- The cold system is applied by fully enclosed fan cooled single-stage and cascade refrigeration mode. The compressor is from France TECUMSEH brand which allow you get after sales support from local country.
- The circulation system uses temperature resistant and low noise air-conditioned motor and multi-blade centrifugal wind wheel
- The safety protection system includes electric leakage, short circuit, over temperature, motor overheating, compressor pressure, overload, over-current protection



High & Low Temperature and Humidity Chamber with Programmable Function (GDJS Series)

LISUN Model	GDJS-225*	GDJS-500*	GDJS-010*	GDJS-013*	GDJS-015*
Internal Dimension(cm)	50*60*75	70*80*90	100*100*100	100*100*130	100*100*150
External Dimension(cm)	105*102*200	132*132*217	167*152*231	217*152*231	245*160*231
Work Power	7.0kW	13.5kW	15.0kW	16.5kW	16.5kW
Temperature Range	A: -20°C~150°C B: -40°C~150°C C: -60°C~150°C D: -70°C~150°C				
Humidity Range	30%~98% R.H				
Fluctuation/Evenness	±0.5°C/±2°C				
Humidity Deviation	-2%~-3% R.H				
Temperature Rise Speed	1.0~3.0°C/min				
Temperature Fall Speed	0.7~1.0°C/min				

High and Low Temperature Chamber with Programmable Function (GDJW Series)

LISUN Model	GDJW-225*	GDJW-500*	GDJW-010*	GDJW-013*	GDJW-015*
Workroom Dimensions (cm)	50x60x75	70x80x90	100x100x100	100x100x130	100x100x150
Temperature Range	A: -20°C~150°C B: -40°C~150°C C: -60°C~150°C D: -70°C~150°C				
Fluctuation/Evenness	±0.5°C/±2°C				
Temperature Rise Speed	1.0°C~3.0°C/min				
Temperature Fall Speed	0.7°C~1.0°C/min				

The * in GDJS-225* means the temperature range A: -20°C~150°C, B: -40°C~150°C, C: -60°C~150°C

Waterproof Test and Waterproof Test Chamber (JL-X/JL-XC)

JL-X (Open Type) and JL-XC (Chamber Type) waterproof test system is according to IEC60529, IEC60598, IEC60335, IEC 60034-5 and GB7000.1. The JL-X (Open Type) needs a room and can test bigger EUT products such as LED tube or outdoor big luminaires, household products and outdoor device. The JL-XC (Chamber Type) doesn't need installation but test small EUT products such as electronic components, mobile & communication devices, medical equipments



JL-12



JL-34



JL-56



JL-8



JL-34CP-R600



JL-56CP-1000L

The whole JL-X/JL-XC waterproof test system includes:

- **Drip Box (JL-12)**: The drip box is for IPX1 and IPX2 drip test. The drip box size is 800*800*45mm (L*W*H). The diameter of drip hole is 0.4mm. The distant between each drip hole is 20mm, max sample 150kg.
- **Drip Box Chamber (JL-12CP)**: It is for IPX1 and IPX2 test. JL-12CP-600M drip box is 600*600mm and JL-12CP-1200M is 1200*1200mm, max sample 50kg.
- **Swing Pipe Water Spray Test Equipment (JL-34)**: It is for IPX3 and IPX4 test, the semi-diameter of swing pipe is 1 meter. The internal diameter of the swing pipe is 15mm. IPX3 is 120 degree and IPX4 is 180 degree. The automatic sample rotating table's diameter is 600mm and speed is 1~5rpm which is controlled by PLC
- **Swing Pipe Water Spray Test Chamber (JL-34CP)**: It is for IPX3 and IPX4 test. JL-34CP-R200 semi-diameter of swing pipe is 200mm, JL-34CP-R400 is 400mm and JL-34CP-R600 is 600mm.
- **Waterproof Jet Test Device (JL-56)**: Water tank size is 780x580x1100mm. Diameter of nozzle is 6.3mm for IPX5 and 12.5mm for IPX6. The water speed is 12.5±0.625L/min for IPX5 and 100±5L/min for IPX6.
- **Waterproof Jet Test Chamber (JL-56CP)**: It is for IPX5 and IPX6 test. The JL-56CP-500L chamber inside size is 800*800*800mm. JL-56CP-1000L chamber internal size is 1000*1000*1000mm and JL-56CP-1400L chamber internal size is 1180*1180*1000mm.
- **Immersion tank Waterproof test Device (JL-7)**: It is for IPX7 test. The water tank size is 1000x1000x1200mm. Max sample is 120kg.
- **Immersion tank Waterproof test Device (JL-8)**: It is for IPX8 test. It can simulate 0~50m water depth. The water immersion tank diameter is 600mm and height is 1200mm. The compressive stress is 10 atmospheric pressures or design according to customer request.

P.S. LISUN can combine JL-12CP, JL-34CP and JL-56CP in one chamber (Product item is JL-123456CP)

High Temperature & Pressure Jet Waterproof Test Chamber (JL-9K1L)

JL-9K1L High Temperature & Pressure Jet Waterproof Test Chamber is designed according to IEC60529, GB4208, DIN40050-9 and ISO20653 for protection level IPX9K test. It is a waterproof test machine designed for vehicle spare parts, electrical and electronic industry to simulate natural environment or human factors.

The both interior and exterior material of this chamber is high quality stainless steel, big glass observation window and it has elegant appearance. The turntable and spray lance motor adopt imported motor, rotation speed can be adjusted according to requirement.



Specification:

- Working Chamber: 1000*1000*1000mm
- Test time: 30s (Pre-settable and adjustable)
- Angle of Water Ring: 0°, 30°, 60°, 90° (The testing angle can be adjusted)
- Testing table: Load bearing 15kg/Φ400~500mm
- Based on horizontal line, distribute nozzle hole at anticlockwise: $\pm 0^\circ \pm 30^\circ \pm 60^\circ \pm 90^\circ$ with valve on nozzle
- Water Temperature in Tank: $80 \pm 5^\circ$ (Adjustable, enhanced temperature and water overflow protection)
- Spraying distance: 100mm~200mm and can be adjustable nozzle distance by manual
- Spraying pressure: 8,000~10,000kPa ($81.5 \sim 101.9 \text{ kg/cm}^2$)
- Electrical high temperature flow meter: Flow is 14~16 L/min
- Rotation speed of testing table: 5~17r/min (Motor drives turbine slow rotating, control speed and adjust to appropriate speed by frequency converter)

UL Water Spray Test Device (JL-UL)

UL Water Spray Test Device is designed according to UL60507-ENGL standard figure 38.1, figure 38.2, ANSI Z21.10.3-2004, Figure 10/Figure 11 clause of ANSI Z21.58 standard and CSA4.3-2004 standard. It also meets UL1598, UL153, UL154B, UL1703, UL8750, UL1741, UL514B, UL1278, UL1571 and other standards.

The main function of the equipment is to test the physical and other related properties of electronic and electrical products, lamps, cabinets, electrical components and other products under simulated rainy weather conditions. After testing, the performance of the product can be judged by verification, so as to facilitate the design, improvement, verification and factory inspection of the product.



Specification:

- Suitable for UL rain test and 45 degree sprinkler test
- The device consists of two parts: UL Water Spray Test Device (three UL nozzles on the top) and UL sprinkler test device (one UL nozzle on the bottom)
- The frame of the device is made of moulded aluminium material, which has stable structure and is easy to clean
- The nozzle rack is movable and can be lifted freely by hand-operated stainless steel wheel device
- The device adopts imported nozzles originally installed in UL laboratory and fully meets UL standards
- The support base adopts universal brake casters, which are convenient to move and fix

Dustproof Testing Machine (SC-015)

The Dustproof Test Chamber SC-015 is designed according to IEC60529, GB2423.37-89 (Test L: dust test methods), GB 4208-93 protective casing grade (IP code), GB/T 4942.2-93(protective casing grade of low-voltage apparatus), GB 7000.1-1996, GB 7001-1986(protective casing grade of lamps), DIN40050 and IP5K0. The SC-015 is applied to physical and other related performance tests for electronic and electrical products, lamps, electrical cabinets, electrical components, automobiles, motorcycles and their parts and other products under simulated dust climate conditions..

Specification:

- Temperature Range: environmental temperature +5~50°C
- Standard wire diameter of metal screen: 50um;
Standard spacing between wires: 75um
- Test dust: dry talc powder
- Total test time: 0~999H (adjustable);
Vibration time: 0~999H (adjustable);
- Vacuum:0~10Kpa (adjustable); Pumping speed:0~4800L/H (adjustable)
- The vibration device and heating device can ensure that the dust in the chamber is kept dry at all times, and the dust concentration in the air during the test always meets the standard requirements



Model Number	Working Room Size (mm)	Remark
SC-500	800*800*800	Single door structure
SC-010	1000*1000*1000	
SC-015	1000*1500*1000	Cabinet can be put in a horizontal direct or vertical direct
SC-020	1000*2000*1000	

IK Level Tester (IK01-06, IK07-10, IK07-10VT)

Most of the luminaires manufacturers are requested to do IK level test (Impact Protection). LISUN can supply the IK test instrument from IK01-10.

IK ratings are defined as IKXX, where "XX" is a number from 00 to 11 indicating the degrees of protection provided by enclosures (including luminaires) against external mechanical impacts. The different IK ratings relate to the ability of an enclosure to resist impact energy levels measured in joules (J). IEC 62262 specifies how the enclosure must be mounted for testing, the atmospheric conditions required, the quantity and distribution of the test impacts and the impact hammer to be used for each level of IK rating. The IK application on lighting luminaires testing is according to IEC60598 (GB7000) and IEC60068-2-75 (GB2423.55).



Degrees of protection against external mechanical impacts:

IK01	IK02	IK03	IK04	IK05	IK06	IK07	IK08	IK09	IK10	IK11(Optional)
0.14J	0.2J	0.35J	0.5J	0.7J	1J	2J	5J	10J	20J	50J



IK01-06 Spring Impact Hammer

Salt Spray Test Machine (YWX/Q-010)

The Salt Spray Test Machine/Chamber is applicable to the salt spray corrosive test for the protection level of components, parts, electronic and electrical parts and metal materials and industrial products.

Specification:

- The Salt Spray Test Machine is made of transparent materials so that the operator can see the tested sample in it and the spraying situation.
- A waterproof structure is adopted between the chamber cover and chamber body, thus there is no salt spray overflow.
- Can do continuous test and cycle test.
- It meets the following standards: IEC60068-2-11(GB/T2423.17), GB/T10125, ISO9227, ASTM-B117, GB/T2423-18, IEC 60068-2-52, ASTM-B368, MIL-STD-202, EIA-364-26, ASTM-B117, GJB150, DIN50021-75, ISO3768, 3769, 3770; CNS 3627, 3885, 4159, 7669 etc.



Model	Work Room Size (mm)	Exterior Size (mm)	Voltage	Power (kW)
YWX/Q-150	600*450*400	1100*750*930	1Phase/220V	2
YWX/Q-250	900*600*500	1500*900*1150	1Phase/220V	2.5
YWX/Q-750	1100*750*500	1700*1050*1150	1Phase/220V	3.5
YWX/Q-010	1200*800*500	1800*1100*1200	1Phase/220V	3.5
YWX/Q-016	1600*900*600	2300*1300*1300	3Phase/380V	5
YWX/Q-020	2000*1000*600	2700*1400*1500	3Phase/380V	7.5

Electrodynamic Vibration Generator System (LVD-100KG-6D)

Electrodynamic Vibration Generator System is complied with IEC 60068, IEC68-2-6, JJG189-97, GB/T13309-91, IEC60598 and GB2423 etc.

- LVD-100KG: Combined the Vertical and Longitudinal total 4 directions in one test table
- LVD-100KG-6D: Combined the Vertical, Level and Longitudinal total 6 directions in one test table

Specification:

- Sine Wave, Frequency Modulation, Sweep Frequency, Programmable, Frequency Doubling, Logarithm, High Acceleration speed, Amplitude Modulation, Time Control, Full-function Computer Control, simple and easy to set the acceleration and amplitude.
- Vibration table size: 500*500mm (Other size can be designed)
- Vibration: 0~5mm (Adjustable range P-P). Vibration waveform: sine wave (half wave and full wave). Acceleration speed: 0~20g (Adjustable)
- Maximum test load Capacity: 100kg
- Accuracy: Frequency can be displayed to 0.01 Hz. Precision 0.1 Hz
- Sweep Frequency function (1~600Hz): (Upper frequency, Lower frequency, Time range) It can set real standard arbitrarily to sweep frequency back and forth



UV Lamp Aging Chamber (UV-263LS)

UV lamp aging test Chamber is designed for evaluating the resistant performance of non-metallic materials, organic materials (plastics, paints, coatings, rubbers, etc.) under the specified conditions such as sunlight, temperature and other climatic conditions. The chamber fully complies with the requirements of Standard ISO 4892-1, ISO 4892-3, ASTM G53 and etc.

Specification:

- Temperature range: RT+40℃~70℃, Temperature uniformity: ±1℃
- Temperature fluctuation: ±0.5℃, Humidity range: ≥90%RH
- Irradiance is 1.0W/m²(adjustable) and Effective area is 900×430mm
- It includes the UV measuring and adjustable function.
- Temperature of irradiation blackboard: 50℃~70℃
- Lamp: L=1200/40W, 8pcs (UVA life ≥ 2000hrs)
- Sink depth: 25mm and auto control. Testing time: 0~999H(adjustable)
- Distance between lamps is 70mm. Distance between sample and lamp: 50±3mm
- The internal sample panel is suitable to install different size of EUT



Xenon Lamp Aging Test Chamber (XD-80LS)

Xenon lamp aging test Chamber adopts xenon arc lamp which can imitate the full spectrum of sunlight to reappear destructive spectral wave that exists in different environment. It is designed according to standard ISO 4892-1, ISO 4892-2, ISO 4892-3, GB/T16585-1996, GB14522-93, GB/T16422.3-97, ASTM D2565 and etc.

Specification:

- Working Room size: 800*800*800mm (W*D*H)
- Temperature range is 0℃~80℃ with tolerance is ±2℃
- Humidity range is 30~98% with tolerance is 2.5%
- The air cooling type long arc xenon lamp with full solar spectrum
- Xenon lamp wavelength: 290~800nm, Power: 1.8kW, Life: 1600 hours
- Raining Time is 1~9999min & Raining Cycle is 1~240min (adjustable)
- The distance between the lamp center and the sample: 350~380mm
- Sample rotation speed: 1r/min
- Water Spray time: 0~99h59min (adjustable)
- Refrigeration mode: mechanical refrigeration air cooling



Automatic Double Drop Test Machine (DT-60KG)

This series drop test bench is used to test the main simulation packages in the transportation, loading and unloading process under drop impact influence, identification package impact strength and packaging design.

Specification:

- The drop height is 400~1500mm and motor rotation for height
- The max weight test is 60kg and max size is 2000*800*300mm
- Drop angle tolerance is <1° and drop height tolerance is ±10mm
- Drop method: face, edge and corner
- Power supply: AC380V/50HZ and 4KVA
- The machine height display by the digital measuring instrument, also combined with calibration function
- Drop method: Electromagnetic drive drop control, click on the drop button can be achieved the drop test



Ozone Test Chamber (OTC-150A)

Ozone aging test is a technology to test the aging resistance of rubber products by accelerating the aging process of rubber by ozone by means of environmental simulation. Different products can be compared with each other according to the same ozone aging test standard, so as to obtain comparable aging resistance.

The OTC-150A ozone test chamber is designed according to ASTM1149, ASTM D3041-79, ASTM D1171-18, ISO1431-1 and ISO1431-3.

Specification:

- Inner room size: 500*500*600mm (W*D*H)
- Ozone concentration: 10~1,000pphm (Adjustable)
- Ozone concentration fluctuation: 2~3pphm
- Temperature range: 0°C~45°C; temperature fluctuation: $\pm 1^{\circ}\text{C}$;
temperature uniformity: 2°C; temperature deviation: $\pm 2^{\circ}\text{C}$
- Humidity range: 20%~90%RH (20°C~40°C);
humidity deviation: $\pm 5\%.\text{RH}$; humidity uniformity: 5%RH;
humidity fluctuation: $\leq \pm 3\%.\text{RH}$
- Rotation speed of sample holder: 8~25mm/s
- Fixture stretch rate: 5~45%; stretch frequency: 0~30 times/min;
Maximum stretch length: 0~90mm(Adjustable 15)
- Tensile test mode:
 - A. Static tensile mode;
 - B. Dynamic tensile mode;
 - C. Intermittent dynamic tensile test mode;



Sulfur Dioxide Test Chamber (SQ-010)

SQ-010 Sulfur Dioxide Test Equipment uses sulfur dioxide gas to accelerate corrosion of materials or products in a certain temperature environment, reproducing the damage degree suffered by materials or products within a certain time range. The chamber can be used to assess the ability of materials and their protective layers to resist sulfur dioxide corrosion, as well as the process quality comparison of similar protective layers, and can also be used to assess the ability of certain products to resist sulfur dioxide corrosion. This chamber is suitable for corrosive gas testing of parts, electronic components, metal materials and industrial products, etc.

SQ-010 Sulfur Dioxide Test Device is designed according to standard DIN50018, DIN50900, DIN53210, ISO6988, IEC-60068-2-42, IEC-60068-2-43, GB/T2423.33, GB/T5135.3, GB/T9789, GB25972.

Specification:

- Temperature range: $\text{RT}+5^{\circ}\text{C}\sim+50^{\circ}\text{C}$, Temperature uniformity: $\leq \pm 2^{\circ}\text{C}$,
Temperature fluctuation: $\leq \pm 1^{\circ}\text{C}$
- Test time: 0~999 H, M, S (adjustable), recirculating spray
- Sulfur dioxide concentration: 25PPM (adjustable),
or 0.1% to 1% sulfur dioxide concentration
- Sulfur dioxide production method: cylinder method
(Prepared by Customer)
- Gas control: high-precision stainless steel gas flow controller
- Box shell material: 8mm imported PP reinforced hard plastic board,
smooth and flat surface, and resistant to aging and corrosion.
Liner material: PP plastic board
- Cover material: It is made of tempered glass basin and foamed
sealing ring. It is convenient to observe the internal test situation
under the premise of ensuring the absolute safety of the seal



Digital CC and CV DC Power Supply (DC3005)

Specification:

The Adjustable Digital Constant Current and Constant Voltage DC Power Supply is with high stability and high precision which can display 0.0001A and 0.0001V accuracy. The voltage and current are adjustable, and it can output constant current or constant voltage. It is suitable to supply DC Power for the standard lamp and the high power LEDs.



Model	DC3005	DC3010	DC6005	DC6010	DC12005
Max Output Voltage/Current	30V/5A	30V/10A	60V/5A	60V/10A	120V/5A
Voltage Resolution	0.0001V(0.0000V~10.000V); 0.001V(10.000V~100.00V); 0.01V(>100.00V)				
Voltage Accuracy	±(0.02% rdg+0.01%rng+1digital)				
Current Resolution	0.0001A				
Current Accuracy	±(0.02%rdg+0.01%rng+1digital)<5A; ±(0.03%rdg+0.02%rng+1digital)≥5A				

AC Power Source (LSP-500VARC)

The LSP-500VARC High Precision Pure Sine Wave AC Power Supply has the characteristics of good output waveforms, low harmonic, high accuracy, integrated source and meter. With Output short -circuit, over-current, over-voltage, over-power, overheating alarm protection functions.



Specification:

- Output frequency range: 45.00~65.00Hz; Frequency stability: ≤0.05%/30min
- Total Harmonic Distortion: ≤0.3 % (No load or full load with resistive load)
- Voltage Stability: ≤0.1%/30min
- Equivalent internal resistance: ≤0.1 (Zero internal resistance design)
- Power Supply Efficiency: >40%; Load Effect: ≤0.1%
- Communication port: RS232/RS485
- Test Parameters: Voltage, Current, Power, PF, Frequency

P.S. LSP-500VARC and LSP-1KVARC are the updated versions with big LCD screen. The LSP-500VARC-Pst and LSP-1KVARC-Pst are according to IEC TR 61547-1:2020 IEC61000-3-3, IEC 61000-4-15 and IEEE 1453 Pst programmable function, and can work with LISUN LSRF-3 Lamp Start, Run-up Time and Flicker Test System to test Pst LM(I) parameter.

LISUN Model	Output Power	Max Current
LSP-500VARC	500W	2~150V: 4.2A, 150~300V: 2.1A
LSP-500VARC-Pst		
LSP-1KVARC	1000W	2~150V: 8.4A, 150~300V: 4.2A
LSP-1KVARC-Pst		

PWM Type AC Power Supply (LSP-5KVAS)

The LSP-5KVAS PWM Type AC Power Supply has the characteristics of ultra-low output voltage distortion and configurable output current protection value. It is specially developed for home appliances, motors, compressors and other industries. Used to replace traditional voltage regulators and frequency converters to provide efficient, low-cost, and accurate testing solutions.



Specification:

- Circuit Form: (IGBT) SPWM pulse wave width adjustment method
- Output Frequency: 45~70HZ
- Frequency Stability: $\leq \pm 0.1\%$
- Transient Restoration Time: $\leq 20\text{ms}$
- Source voltage/Load Efficiency: $\leq 1\%$
- Waveform Distortion: $\leq 1\%$
- Efficiency: $\geq 86\%$
- Self-protection function: over-voltage, over-current, over-load, short-circuit, over-temperature and automatic alarm display

Model	Output Power	Max Current
LSP-3KVAS	3000W	0~150V: 25A, 150~300V: 12.5A
LSP-5KVAS	5000W	0~150V: 42A, 150~300V: 21A

PS. More than 5KVA AC Power Source can be designed as customer's request

Digital Power Meter (LS2008R, LS2012, LS2050B, LS2050C)

- Measurement: Voltage, Current, Power and Power Factor
- Voltage range: 10~600V; Current range: 0.005~20A
- Accuracy: $\pm (0.4\% \text{reading} + 0.1\% \text{range} + 1 \text{digit})$. LS2050B/C: $\pm (0.1\% \text{reading} + 0.1\% \text{range} + 1 \text{digit})$
- Communicate with PC by RS232/RS485. The LS2050-IEC with additional software (need to add extra cost on LS2050C) fully meets EN/IEC6100-3-2:2019

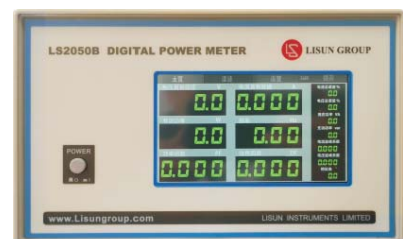
Model	Measure	Remark
LS2008R	AC Parameters: U, I, P, PF	AC model
LS2012	AC+DC Parameters: U, I, P, PF	Voltage Range: 1~600V, Current Range: 0.005~20A (small current 0.005~2A optional)
LS2050B	AC+DC Parameters: U, I, P, PF and DF Total 0-50 Harmonics in IEC/CSA	Test Accuracy is Class 0.5 with LCD touch screen, it has software can be run in Win7, Win8, Win10, Win11
LS2050C	AC+DC Parameters: U, I, P, PF and DF Total 0-50 Harmonics in IEC/CSA	Has all functions of LS2050B, test accuracy is Class 0.2 Fully meet LM-79-19, frequency Range: 0.5Hz-100kHz



LS2008R AC Model



LS2012 AC&DC Model



LS2050 High Accuracy Model

Application

Photometric, Colorimetric & Safety Performance Test Solution for LED

- Goniophotometer System: LSG-6000, LSG-1890B or LSG-1800ACCD
- Spectroradiometer & Integrating Sphere Test System: LPCE-2 or LPCE-3
- LED Life Maintains Test System according to LM-84: LEDLM-84PL
- Photobiological Radiation Safety Test System: EN62471-C or EN62471-P
- Lamp Start, Run-up time & Flicker Test System: LSRF-3 and LSP-500VARC-Pst
- LED Power Driver Test System: LS2090, M9822 and LSP-500VARC
- IK Level Tester | Spring Hammer Impact Tester: IK07-10, IK01-06
- Electricity Safety Tester: LS9955, ZRS-3H, ZY-3



Single LEDs or LED Chips

Environmental Chamber Test Solution for LED Luminaires

- Waterproof Test for IPX5 and IPX6: JL-56
- Dustproof Testing Machine for IP5X and IP6X: SC-015
- High & Low Temperature and Humidity Chamber: GDJS-015A
- Salt Spray Test Machine: YWX/Q-010
- UV Lamp Aging Test Chamber: UV-263LS
- Xenon Lamp Aging Test Chamber: XD-80LS
- Ozone Test Chamber: OTC-150A



LED Luminaires

EMC and EMI Test Solution for LED Drivers and LED Luminaires

- EMI Test System: EMI-9KB or EMI-9KA
- Electrostatic Discharge Simulator: ESD61000-2C
- EFT Immunity Measurement: EFT61000-4
- Surge Generator: SG61000-5
- Voltage Dips and Interruptions Generator: CSS61000-11
- Ring Wave Generator: RWG61000-12

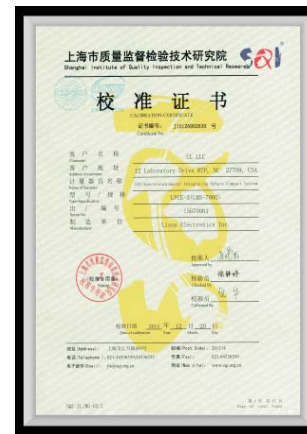


LED Power Driver

Certificate & Awards



CIE Supportive Membership



Calibrate Certificate



CE Certificate



LPCE-3 Patent



ISO9001:2015