



# Goniophotometer for Automotive and Signal Lamps (LSG-1950)

## Brochure

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**Leader in Lighting & Electrical Test Instruments**

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# 1. System Configuration

## A. Goniophotometric System:

- Goniometric Rotating Console: Japanese Mitsubishi Motor and German Angle encoder System to keep the test accuracy to 0.01degree.
- Goniometric Rotating Control Instrument in 19inch cabinet: It connects to the PC and was controlled by the software.
- Goniometric Rotating Control Instrument in dark room: This can allow the customer to control the rotating in the dark room when install the luminaires but no need to control in the PC.
- Double Channel & High Precision Photometer
- Class A Constant Temperature Photo Detector
- Laser System for Calibrating
- English Measuring Software
- Two sets of luminaires Clamps: multi-functions
- Oversea Delivery and Packing: all of the instruments and accessories will be packed with Fumigation free three plywood, include the delivery cost to Shanghai sea port

## B. SLS-150W DC Standard Light Intensity Lamp

C. **LS2012 Digital Power Meter:** High Accuracy to measure AC and DC voltage, current, power and power factor

D. **DC3010 CC & CV DC Power Source:** DC6010 output is 60V/10A, Option can be DC12010 (output is 120V/10A)

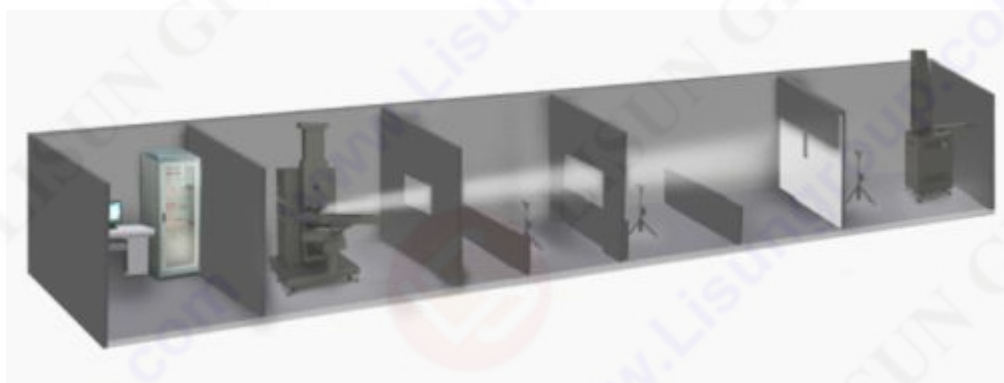
## E. CASE-19IN 19inch Standard Instruments Cabinet.



LSG-1950 Standard Version

## 2. Measurement Principle

LSG-1950 is the CIE A- $\alpha$  Goniophotometer . The photometer head keeps static and face 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.



## 3. Specifications

- 1) It is designed according to EN, IEC, GB, ECE, SAE and FMVSS108.
- 2) The accuracy of angle:  $0.01^\circ$  (LSG-1950), Resolution of angle:  $0.001^\circ$
- 3) Luminosity Testing Range: Illuminance  $0.001\text{lx}\sim 99,999\text{lx}$ ; Light Intensity  $1.0\text{cd}\sim 10^7\text{cd}$ (detector)
- 4) Accuracy of photometry: Class A, Class L is optional
- 5) Testing Accuracy: 2%(Under Standard lamp); Stray Light: less than 0.1%
- 6) English version software can run in Win7, Win8, Win10, Win11
- 7) If you test flash light, PM400F is optional and it can meet the following standards:
  - MH/T 6012-1999 – Aviation Obstruction Light
  - HB6490-1991 – General Specifications for Aircraft Navigation Light and Anti-collision Light
  - JTT 761—2022 – General Technical Conditions for Aids to Navigation Light
  - ECER65 Uniform Provisions Concerning The Approval of Special Warning Lamps for Motor Vehicles
  - JJF1330-2011 – Calibration Specification for Transient Effective Luminous Intensity Meter.



## 4. Laboratory Requirements

### 1) Room Requirements according to CIE

A. Dark Room: 3\*3\*8~30m (W\*H\*L)

B. Operating Room: 3\*3m (W\*L)

- The dark room wall, ceiling and floor should be all coated with dull black paint or be covered by black cloth and black carpet.
- Air-conditioner: be set in the dark room to control the temperature around lamps to the standard value upon the CIE requirements.

Note: LISUN GROUP engineer dept will submit the Lab Design support documents according to the customer's real lab size after the formal purchase order was confirmed

### 2) Requirements of Eliminating the stray Light

Luminaires must be where the photo detector can only receive the light reflected by the rotating mirror in the LSG-1950 system. The light given off directly by the luminaires and reflected by the wall and floor is warded off by the light fence. Internal surface of the dark room and dark path together with the surface of the light fence should be painted unpolished black or be covered by black cloth and black carpet.

### 3) Temperature of the Environment

Temperature around the lamp or luminaires must be  $25^{\circ}\text{C}\pm 1^{\circ}\text{C}$  during the test. Exceptions can be given according to relative lamps as following.

- a. Tungsten Incandescent Lamp:  $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$
- b. Double-caps Fluorescent Lamp:  $25^{\circ}\text{C}\pm 1^{\circ}\text{C}$
- c. High Pressure Mercury Lamp:  $25^{\circ}\text{C}\pm 2^{\circ}\text{C}$
- d. Metal Halogen Lamp:  $25^{\circ}\text{C}\pm 2^{\circ}\text{C}$
- e. High Pressure Sodium Lamp:  $25^{\circ}\text{C}\pm 2^{\circ}\text{C}$

f. Low Pressure Sodium Lamp:  $25^{\circ}\text{C}\pm 2$

#### **4) Airflow**

Airflow may be induced by natural aeration, air conditioner or movement of the luminaries in the goniophotometer, but the speed of the airflow couldn't exceed 0.2m/s.

#### **5) Vibration and shock**

When the lamp is in lighting, the vibration couldn't exceed  $10\text{m/s}^2$  (4~3000Hz), or the moving scope of the lamp couldn't exceed 30mm (at most 4Hz)

#### **6) Smoke, Dust and Moisture**

The test environment must free from smoke, dust or moisture. At the same time, even not during the measurement, smoke, dust or moisture will also influence the reflectance of the reflecting mirror and induce more stray light. So, the test room must be kept clean, no smoke and dry. The humidity should be less than 60% RH.

## **5. Service**

### **1) Installation and Training**

LISUN GROUP engineers will take responsibility for installation and Training of the system at the customer's

### **2) Period of Guarantee: 24 months**

The service is for free except technician's travel payment if the service provided by LISUN GROUP implement at the customer's.

### **3) Upgrading the applications software for free**

## **6. Design Standard of Device**

The construction, technical parameter, test & operate steps as well as data processing software of LSG-1950 Goniophotometer for Automotive and Signal Lamps meet the following requirements: GB, ECE, SAE, JIS, KS and FMVSS108

## **7. Typical oversea market customers:**

There are many world famous company and lab institute choose Lisun Goniophotometer, Please get the reference customers' information from Lisun Group Oversea Sales Dept.

**The Next Page is the Test Report by the software:**

Report No. : LS171124  
 Program : Special Warning Lights  
 Standard : ECE Addendum 64 Regulation No.65  
 Revision :  
 Function : Category X Blue Day  
 Trade name or mark : LISUN  
 Type : lilp  
 Light source : led  
 Rated voltage : 12v  
 Manufacturer's name : lisun  
 Manufacturer's address : shanghai  
 Light source module : no  
 Light source module specific identification code : 12lo  
 Operator : opt  
 Voltage : 12.140 V  
 Test Instrument : LSG-1950  
 Test Distance : 3.580 m  
 Test Time : 2017-10-19 18:19

H V	-90°	-45°	-30°	-20°	-10°	0°	10°	20°	30°	45°	90°
min 8° max					100 <b>92.5</b> 1500		100 <b>96.5</b> 1500				
min 6° max				100 <b>115.1</b> 1500		150 <b>140.4</b> 1500		100 <b>176.6</b> 1500			
min 4° max	40 <b>62.0</b> 1000	40 <b>45.2</b> 1000	40 <b>115.7</b> 1000		200 <b>165.6</b> 3000		200 <b>206.0</b> 3000		40 <b>236.6</b> 1000	40 <b>218.8</b> 1000	40 <b>113.8</b> 1000
min 0° max	100 <b>197.3</b> 1000	100 <b>128.8</b> 1000	100 <b>181.5</b> 1000	150 <b>243.6</b> 1500		200 <b>426.7</b> 3000		150 <b>515.7</b> 1500	100 <b>463.7</b> 1000	100 <b>431.6</b> 100	100 <b>276.9</b> 1000
min -4° max	40 <b>349.6</b> 1000	40 <b>426.3</b> 1000	40 <b>420.9</b> 1000		200 <b>687.7</b> 3000		200 <b>720.7</b> 3000		40 <b>620.2</b> 1000	40 <b>476.8</b> 1000	40 <b>275.9</b> 1000
min -6° max				100 <b>552.9</b> 1500		150 <b>617.1</b> 1500		100 <b>492.3</b> 1500			
min -8° max					100 <b>337.1</b> 1500		100 <b>257.3</b> 1500				