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 lumainires but no need to control in the PC.
- Double Channel & High Precision Photometer
- Class L Constant Temperature Photo Detector
- Laser System for Calibrating
- English Measuring Software
- Two sets of luminaries 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. DC6010 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-α 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.
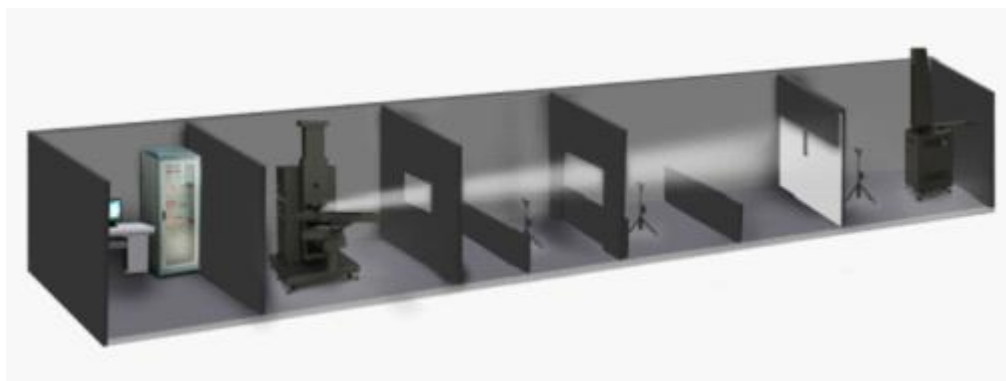
3. Specifications

1) It is designed according to EN, IEC, GB, ECE, SAE and FMVSS108.
2) The accuracy of angle: 0.01° (LSG-1950), Resolution of angle: 0.001°
3) Luminosity Testing Range: Illuminance 0.001lx~99,999lx; Light Intensity 1.0cd~10^7cd(detector)
4) Accuracy of photometry: Class L
5) Testing Accuracy: 2%(Under Standard lamp); Stray Light: less than 0.1%
6) Can test max lamp to 35kg
7) English version software can run in WinXP or Win7/Win8/Win10

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 luminaries 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 luminaries must be 25℃±1℃ during the test. Exceptions can be given according to relative lamps as following.

a. Tungsten Incandescent Lamp: 25℃±5℃

b. Double-caps Fluorescent Lamp: 25℃±1℃

c. High Pressure Mercury Lamp: 25℃±2℃

d. Metal Halogen Lamp: 25℃±2℃

e. High Pressure Sodium Lamp: 25℃±2℃

f. Low Pressure Sodium Lamp: 25℃±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 10m/s2(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 Goniophtometer, Please get the reference customers' information from Lisun Group Oversea Sales Dept.

8. Application Software

All control of the LSG-1950 goniophotometer operations can be realized by the software, including gonophotometer movement, data acquisition and processing, real-time display on screen, report print and etc, thus enabling the measurement easy and secure.

This system can export data files as following formats:

```
IESNA Files (*.ies)
EULUMDAT Files (*.ldt)
CIEBSE TM14 Files (*.cib)
CIEBSE TM14 Files (*.tm4)
CIE Files (*.cie)
DIN CEN Files (*.cen)
Excel File(*.csv)
```

This kind of format files can be transferred by other illumination and luminaire design software such as DiaLux

Application software can also implement essential calculation for lighting design as iso-illuminance distribution curve on a working plane, luminance limitation curve, luminaire efficiency, effective beam angle, upward luminous flux ratio, downward luminous flux ratio, effective luminous flux, utilization factor curve etc.

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
Manufactureri ̄s name   : lisun
Manufactureri ̄s address   : shanghai
Light source module   : no
Light source module specific   : 12lo
identification code
Operator   : oprt
Voltage   : 12.140 V
Test Instrument   : LSG-1950
Test Distance   : 3.580 m
Test Time   : 2017-10-19 18:19

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