



Goniophotometer System (LSG-1800)

Brochure

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

LSG-1800 Rotation Luminaire Goniophotometer

LSG-1800 Goniophotometer is automatic goniophotometric instrumentation for luminous intensity distribution measurements with facility for turning the light source. It was designed as a low budget system for industrial laboratory measurements to determine the photometric data of luminaires.



Be utilized to measure photometric parameters of luminaires for LED road lighting fixture, room lighting fixture and projecting lighting fixture, such as spatial intensity distribution curve, spatial iso-intensity curve, intensity distribution curve on each section (represent by right-angled coordinates or polar coordinates, luminance limitation curve, luminaire efficiency, glare grade, effective beam angle, upward luminous flux ratio, downward luminous flux ratio, total luminous flux, effective luminous flux, utilization factor and electric parameters voltage, current, wattage, power factor and etc. The measured data meets IES standard format and can be applied for lighting design by lighting design software. The measurement system fully satisfies the requirement of lighting design work.



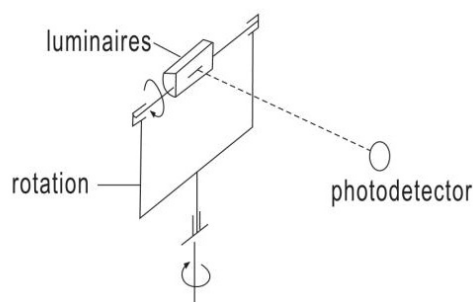
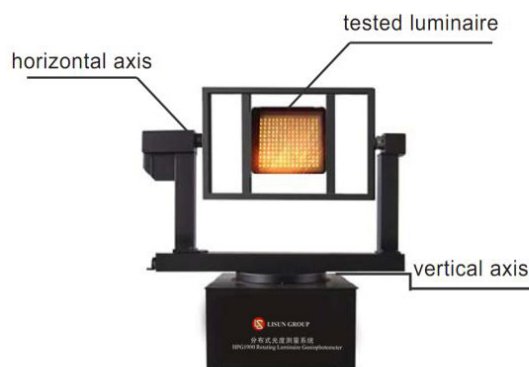
LSG-1800 Test all of the luminaires which max size is 1.65x1.6m (LxW)

Working Principle

LSG 1800 Goniophotometric System carries out measuring methods of fixed location and rotating luminaires. The measured luminaire is installed on the rotating supporter, the center of which is in line with the rotating supporter center with the help of Laser sight. The fixed photometry detector is testing the luminous intensity in various horizontal directions, while the light source rotating. The mechanical equipment allows turning the tested luminaires around a vertical axis and a horizontal axis. When tested luminaires turn around horizontal axis, the detector which is at the same level with rotating table will measure the intensity of each direction at this surface. When rotating with vertical axis, the detector will measure the intensity at the vertical surface. The vertical and horizontal axis can be rotated continuously at $-180^{\circ} \sim +180^{\circ}$. According to the measurement requirements, the system can be operated in B- β , A- α and C- γ coordinates. When getting intensity distribution data, computer will calculate other photometric parameters automatically.

Double pillars structure (B- β , A- α coordinate system)

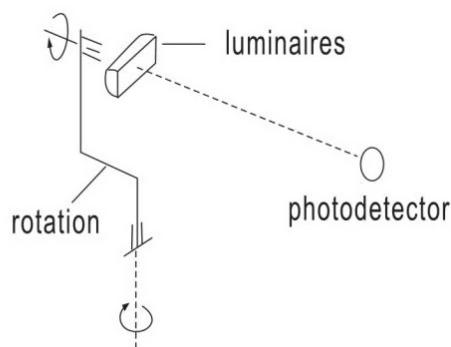
This type is applied to fixed grille lamp. The symmetry axis of lamp and the horizontal of rotating supporter is coaxial, in the B- β coordinate system, and the two is vertical Cross, in the A- α coordinate system.



Double pillars structure

Single pillar structure (C- γ coordinate and Conic coordinate)

The single column structure will be gotten when the assistant column is taken down from double columns structure. This type is applied to fixed tube lamp, spot lamp etc. The axis radiation of lamp and the horizontal of rotating supporter is coaxial.



Features:

- Meets the requirements of CIE, IEC, IES & GB standards
- Reaching many measurement ways such as B- β and C- γ
- Can be drive by both double pillars and single pillar
- Special laser cross aim device makes the installation of luminaire
- The special rotating electric devices for lighting the tested luminaire
- Provided with the precious metal fiber for signal transmission
- Measured data match with international standard form (IES) and can be applied for lighting design by other lighting design software such as Dialux
- RS-232C interface, compatible with all kinds of computers

Technical Specifications:

- Photometric accuracy: class 1 (1%)
- Test range of illuminance: 0.001Lx to 100,000Lx;
- Angle accuracy: 0.01 degree
- Rotating scope: H: $-180^{\circ} \sim +270^{\circ}$; V: $-180^{\circ} \sim +180^{\circ}$
- Electric meter accuracy: class 0.5
- Principal axis goniometer resolution: 0.0016 degree
- Luminaire can be rotated by $-180 \sim 180^{\circ}$ or $0 \sim 360^{\circ}$ along with vertical axis
- Luminaire can be rotated by $-180 \sim 180^{\circ}$ or $0 \sim 360^{\circ}$ along with horizontal axis
- Maximum capacity of luminaires: 5KW/50kg (double pillar) and 1.65mx1.6m (LxW)
- Measuring distance: Between 5m ~ 30m

System Configuration:

- LSG-1800 Goniophotometer
- LSG-1800CT Goniophotometers Control
- $V(\lambda)$ detector
- Tripod
- Digital Power Meter (AC & DC)
- AC Power Supply
- 200W Standard Lamp
- 19inch standard Case
- 18m Detector connection cable
- 6m Control cable
- 6m Machine power with 6-cell cable
- RS232 cable
- English Version Software and User's Manual
- Calibrate Certificate and Warranty Certificate

Installation Requirements for the Laboratory Room:

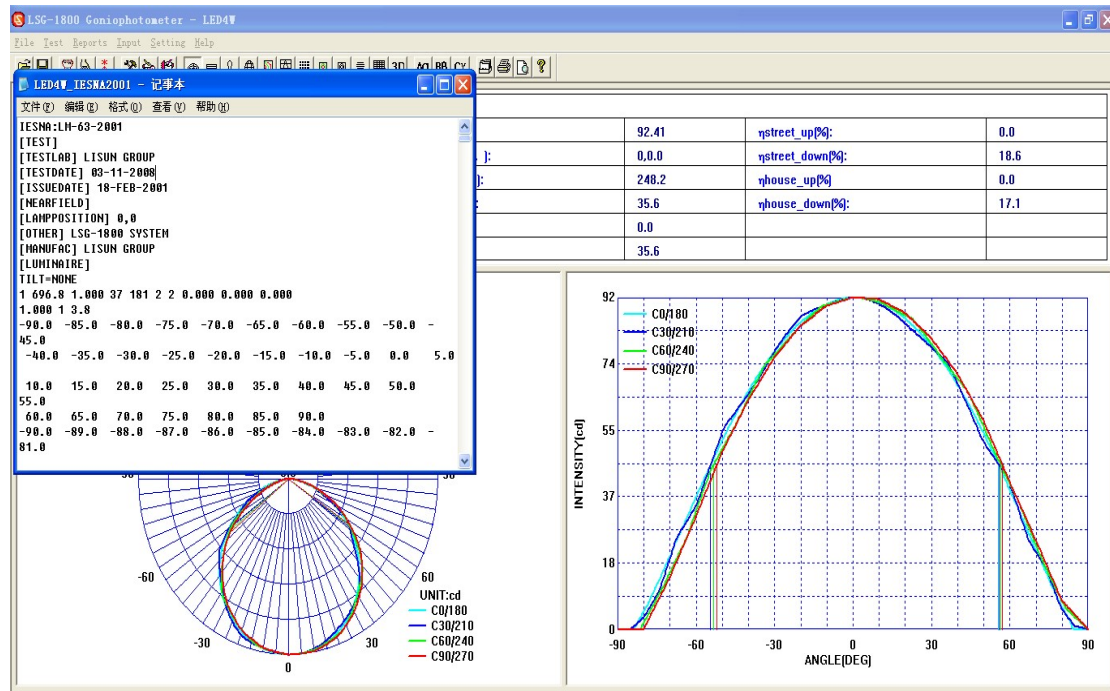
- Prepare a computer with WinXP, the PC request at least two RS-232 and one USB ports
- Dark Room for Goniometric Console Dimension: W3.0m*H2.5m*L(8-30)m
- Operator Room for controlling cabinet, computer and printer Dimension: No less than W3.0m*L3m
- The wall, ceiling and floor should be all coated with dull black paint or be covered by black cloth and black carpet.
- Air-conditioner should be set in the dark room to control the temperature around lamps to the standard value upon the CIE requirements
- LISUN engineer dept will submit the Lab Design support documents according to the customer's lab size after the formal purchase order was confirmed



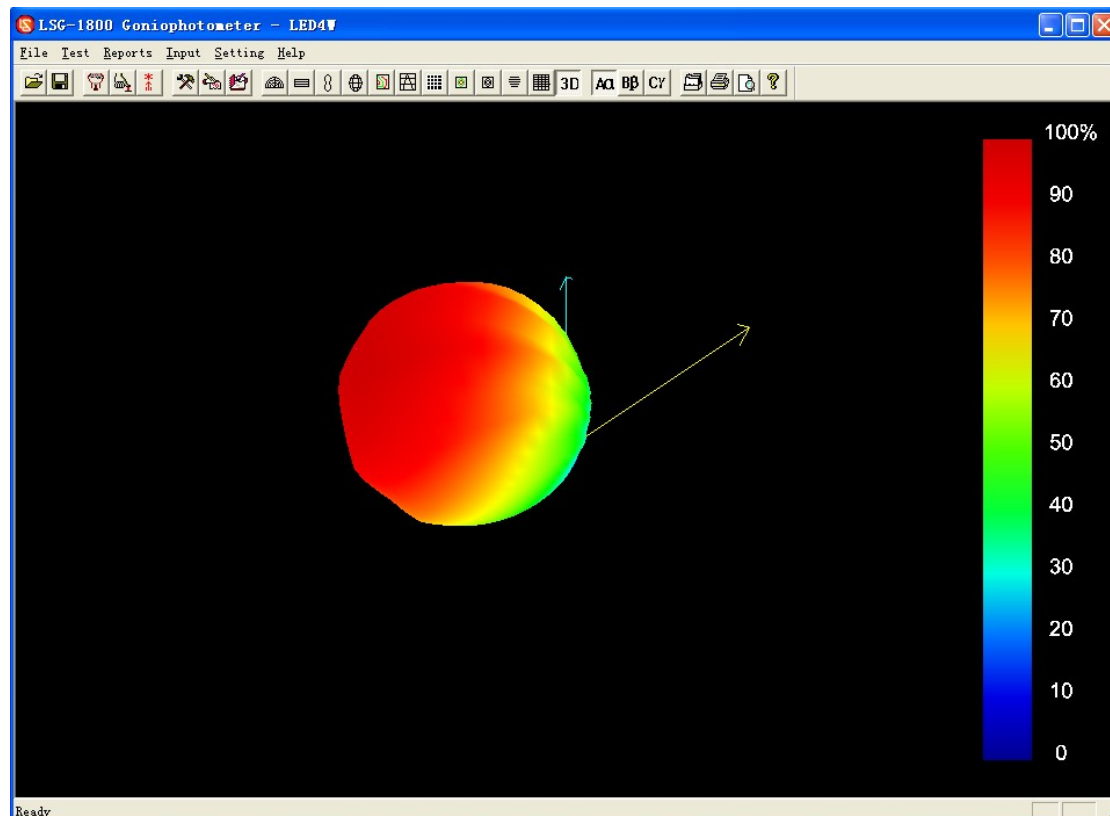
Typical overseas market customers:

Please get the reference customers' information from Lisun Oversea Sales Dept.

Export the IES standard format document



3D Graph Distribution



The Next Page is the Test Report by the software of LSG-1800:

LUMINAIRE PHOTOMETRIC TEST REPORT

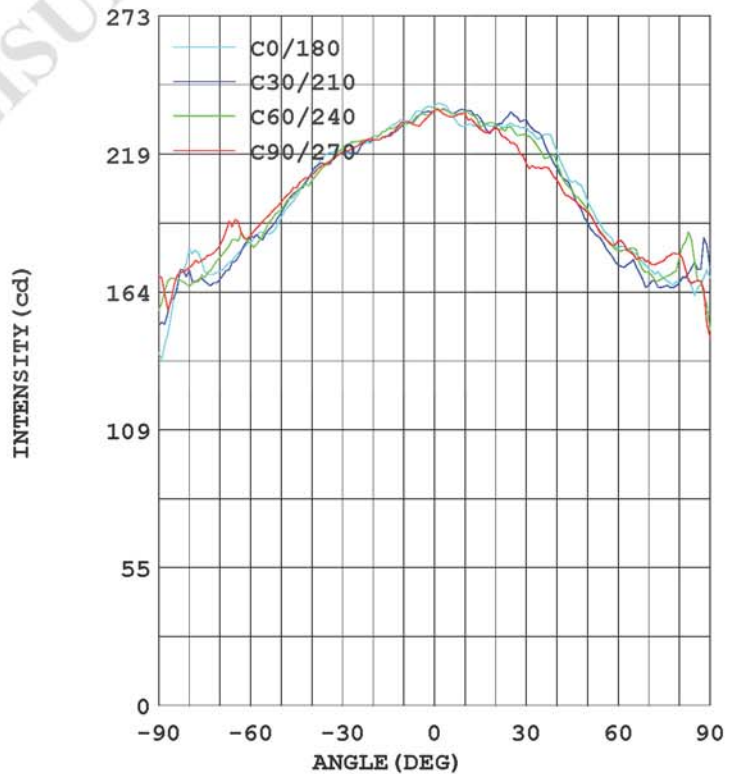
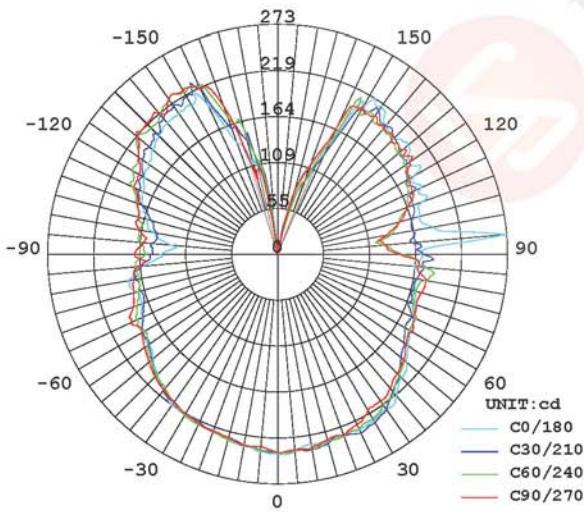
Report number: RP2008030028

MANUFACTURER: Philips Lighting	Address:	
NAME: LSD200W	TYPE:	WEIGHT:5kg
SPECIFICATION:	DIMENSION:	SERIAL No.:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL		I _{max} (cd)	286.1	S/MH (C0/180)	1.42
NOMINAL POWER (W)	180	EFFICIENCY (%)	326.7	S/MH (C90/270)	1.41
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	2276.6	η UP (C0-180)	
NOMINAL FLUX (lm)	696.8	CIE CLASS	DIFFUSE	η DN (C0-180)	
LAMPS QUANTITY	1	η up (%)	155.8	η UP (C180-360)	
TEST VOLTAGE (V)	220.4	η down (%)	171.0	η DN (C180-360)	

LUMINOUS INTENSITY DISTRIBUTION

LUMINOUS INTENSITY DISTRIBUTION



Test:U:220.3V I:0.817A P:180.1W PF:1.000

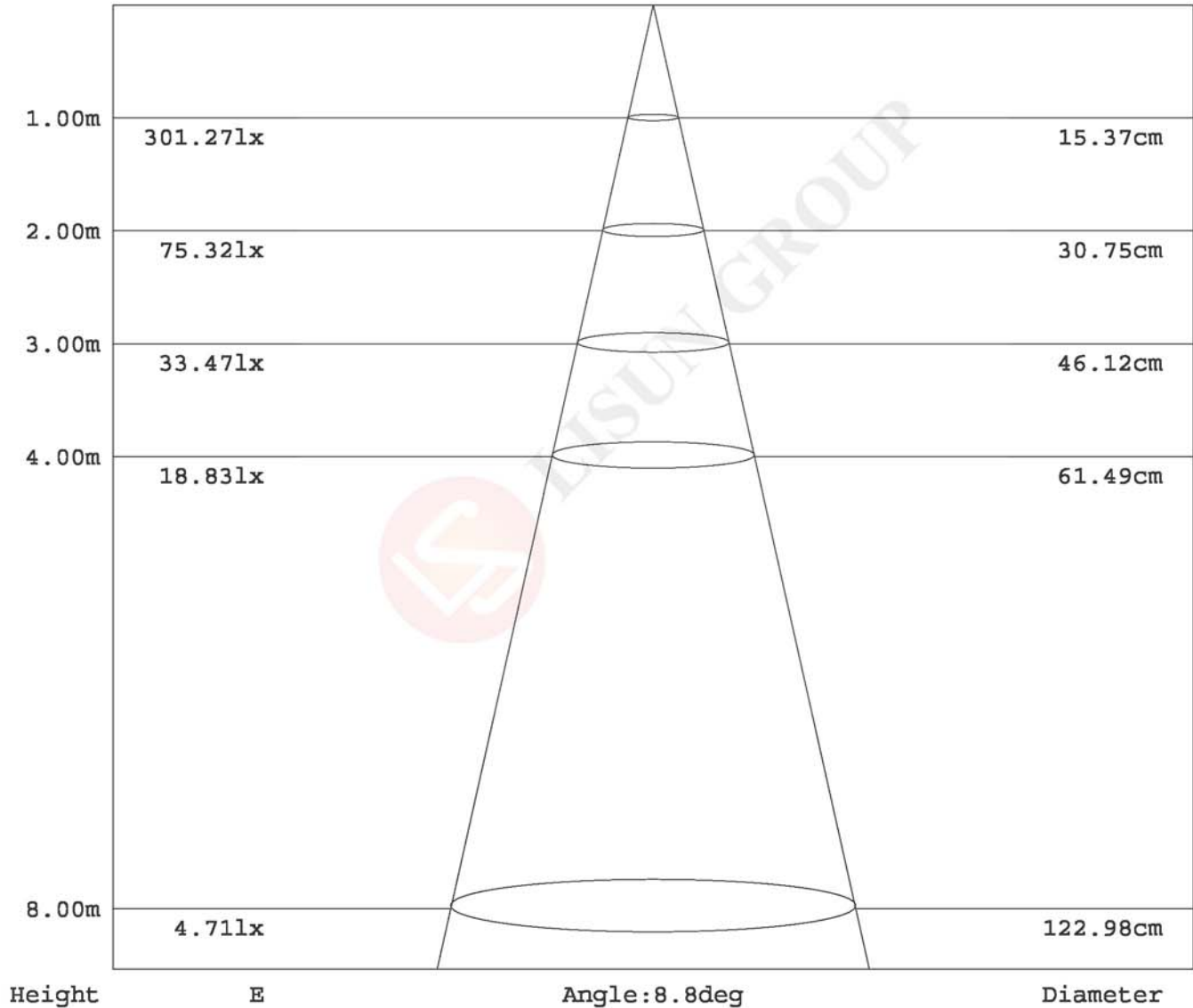
Test System:LSG-1800
 Temperature:25.3DEG
 Operators:Paul Cervone
 Test Date:03-11-2008

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.725 m
 Remarks:

AVERAGE E Figure

Report number: RP2008030028

MANUFACTURER: Philips Lighting	Address:	
NAME: LSD200W	TYPE:	WEIGHT:5kg
SPECIFICATION:	DIMENSION:	SERIAL No.:



Test System:LSG-1800
 Temperature:25.3DEG
 Operators:Paul Cervone
 Test Date:03-11-2008

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.725 m
 Remarks:

ZONAL FLUX DIAGRAM

Report number: RP2008030028

MANUFACTURER: Philips Lighting	Address:	
NAME: LSD200W	TYPE:	WEIGHT:5kg
SPECIFICATION:	DIMENSION:	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total
5.0	235.2	231.0	229.3	226.0	235.2	236.2	233.1	235.6	0- 5	3.590	3.590
10.0	231.4	228.7	231.0	224.1	229.5	234.9	234.3	234.7	5- 10	12.38	15.97
15.0	228.3	225.6	225.4	221.1	231.2	231.4	228.2	232.6	10- 15	21.01	36.99
20.0	224.1	224.3	224.1	226.5	229.2	229.5	228.8	230.2	15- 20	29.22	66.22
25.0	221.9	220.3	221.7	221.2	230.5	230.1	222.8	224.6	20- 25	37.10	103.3
30.0	219.0	218.2	219.4	217.1	228.9	229.2	214.7	218.6	25- 30	44.38	147.7
35.0	218.7	209.4	215.1	209.9	225.1	227.3	212.7	214.8	30- 35	50.86	198.5
40.0	210.1	206.9	210.1	205.0	219.7	216.0	208.2	205.4	35- 40	56.55	255.1
45.0	201.6	199.0	205.1	198.9	207.3	205.8	200.7	194.9	40- 45	60.59	315.7
50.0	193.2	193.5	199.5	191.7	199.8	194.6	195.2	190.1	45- 50	63.98	379.7
55.0	187.4	184.6	193.2	183.0	188.7	186.8	186.3	183.6	50- 55	66.03	445.7
60.0	183.7	190.1	186.3	179.1	181.2	180.1	184.1	179.4	55- 60	67.76	513.5
65.0	177.9	177.7	192.6	178.9	179.3	177.0	178.6	172.2	60- 65	70.06	583.5
70.0	172.1	170.7	182.3	174.6	173.2	173.4	176.1	166.7	65- 70	71.34	654.9
75.0	172.0	166.7	176.9	167.8	169.2	165.9	176.3	165.8	70- 75	71.29	726.2
80.0	180.7	169.8	173.6	169.3	167.7	166.1	178.9	176.9	75- 80	73.02	799.2
85.0	161.9	157.6	166.4	173.4	162.6	171.2	168.0	166.0	80- 85	74.13	873.3
90.0	139.6	148.7	170.2	153.6	169.5	160.8	146.0	152.7	85- 90	73.26	946.6
95.0	126.9	158.7	160.3	154.7	273.1	144.0	128.3	122.9	90- 95	67.02	1014
100.0	148.7	154.4	166.7	157.5	187.4	139.6	132.2	121.0	95-100	65.25	1079
105.0	161.3	166.1	171.1	163.7	173.1	149.2	150.6	144.2	100-105	65.91	1145
110.0	171.4	186.5	178.4	166.8	183.0	166.4	164.4	154.7	105-110	68.29	1213
115.0	176.9	191.3	187.9	182.3	188.3	169.6	176.5	162.2	110-115	70.47	1284
120.0	182.9	196.5	189.2	187.3	187.1	182.0	181.2	169.8	115-120	70.84	1354
125.0	188.3	203.7	201.0	197.8	193.2	187.4	190.7	168.2	120-125	69.59	1424
130.0	193.6	207.5	217.4	199.0	201.5	189.5	195.0	182.3	125-130	68.27	1492
135.0	200.0	213.7	220.5	212.8	193.6	189.7	189.6	186.0	130-135	65.23	1558
140.0	203.7	215.2	219.0	206.3	201.6	197.2	198.0	189.6	135-140	60.95	1619
145.0	205.3	222.7	225.7	210.6	215.5	195.4	201.2	198.3	140-145	56.00	1675
150.0	204.1	219.6	225.4	194.7	200.7	202.8	203.4	203.5	145-150	50.29	1725
155.0	196.8	189.7	216.5	154.3	146.0	182.9	167.4	198.1	150-155	41.88	1767
160.0	141.1	147.9	186.9	123.9	114.6	121.3	110.6	167.2	155-160	28.90	1796
165.0	111.5	118.8	90.97	38.67	63.26	76.50	81.14	105.6	160-165	16.58	1812
170.0	96.07	39.43	73.38	0	25.19	43.84	0	88.99	165-170	7.301	1819
175.0	5.176	0	1.065	0	0	0.990	0	60.97	170-175	1.732	1821
180.0	0	0	0	0	0	0	0	0	175-180	0.080	1821
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

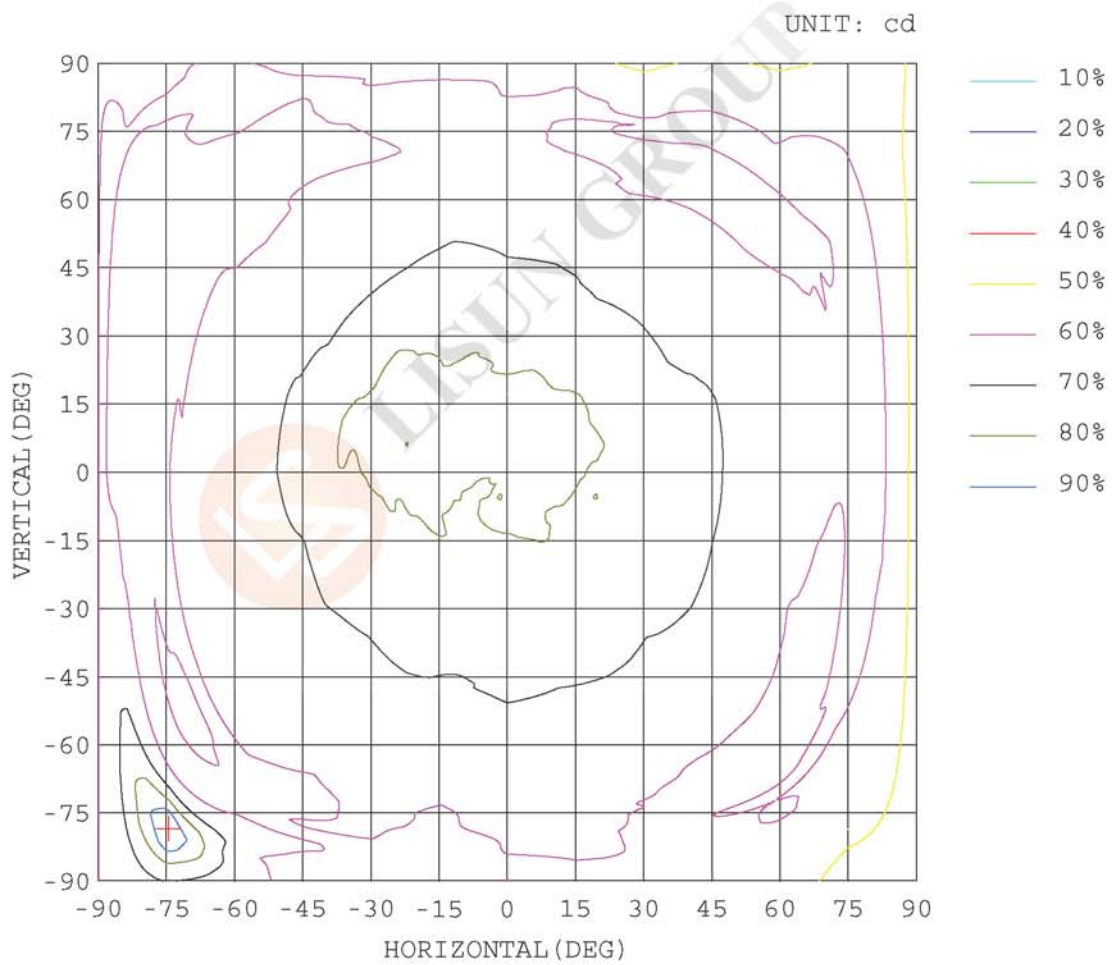
Test System:LSG-1800
 Temperature:25.3DEG
 Operators:Paul Cervone
 Test Date:03-11-2008

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.725 m
 Remarks:

ISOCANDELA DIAGRAM

Report number: RP2008030028

MANUFACTURER: Philips Lighting	Address:	
NAME: LSD200W	TYPE:	WEIGHT:5kg
SPECIFICATION:	DIMENSION:	SERIAL No.:



Test System:LSG-1800
Temperature:25.3DEG
Operators:Paul Cervone
Test Date:03-11-2008

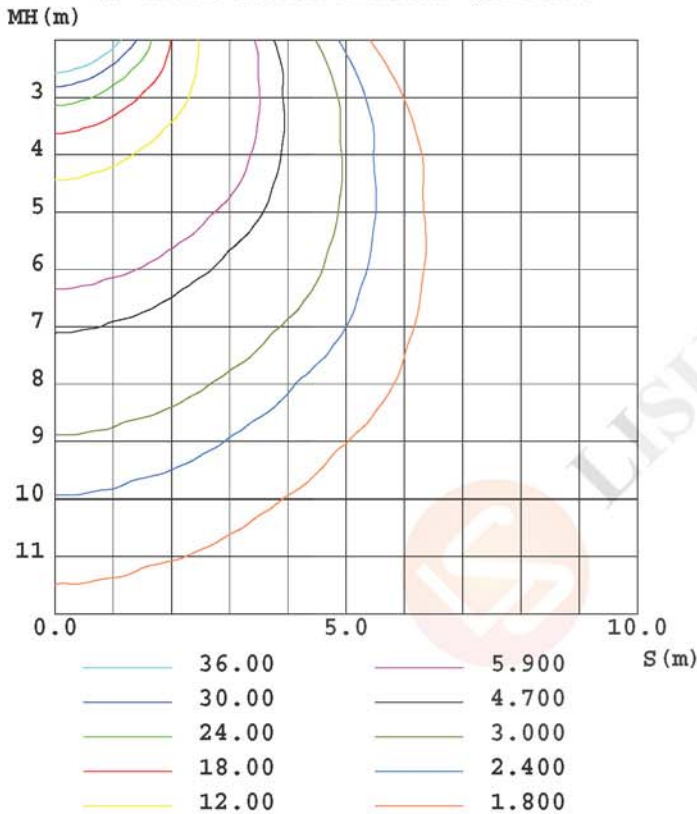
Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:8.725 m
Remarks:

ISOLUX DIAGRAM

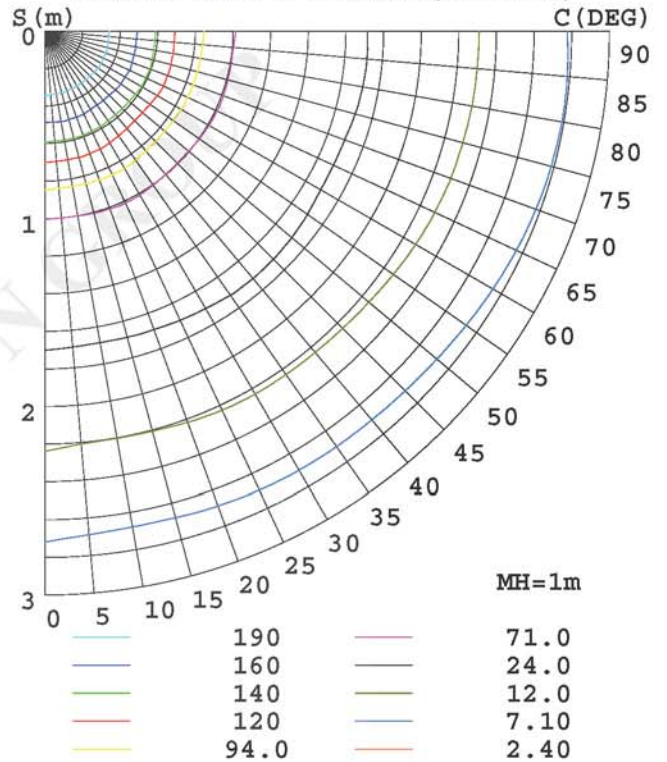
Report number: RP2008030028

MANUFACTURER: Philips Lighting	Address:	
NAME: LSD200W	TYPE:	WEIGHT:5kg
SPECIFICATION:	DIMENSION:	SERIAL No.:

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



PLANAR ISOLUX DIAGRAM (UNIT:lx)



Test System:LSG-1800
 Temperature:25.3DEG
 Operators:Paul Cervone
 Test Date:03-11-2008

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.725 m
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number: RP2008030028

MANUFACTURER: Philips Lighting	Address:	
NAME: LSD200W	TYPE:	WEIGHT: 5kg
SPECIFICATION:	DIMENSION:	SERIAL No.:

UNIT: cd

C (DEG) \ γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210
0.0	237	237	236	234	236	234	235	233	237	235	237	236	237	237	236
5.0	235	231	234	231	234	232	229	226	228	226	226	225	235	238	235
10.0	231	230	230	229	230	230	231	229	230	224	225	229	230	235	236
15.0	228	227	226	226	229	227	225	224	223	221	228	227	231	234	233
20.0	224	227	224	224	225	225	224	220	224	227	228	230	229	229	230
25.0	222	221	219	220	223	221	222	218	221	221	224	226	231	229	235
30.0	219	219	219	218	221	220	219	215	217	217	221	224	229	233	232
35.0	219	217	214	209	215	216	215	210	211	210	217	217	225	229	226
40.0	210	210	211	207	208	209	210	205	207	205	206	209	220	219	213
45.0	202	202	204	199	203	203	205	200	203	199	202	202	207	212	204
50.0	193	192	195	194	196	196	200	192	198	192	195	193	200	200	192
55.0	187	186	187	185	189	190	193	184	188	183	187	185	189	188	184
60.0	184	179	186	190	183	186	186	178	180	179	182	182	181	181	175
65.0	178	171	176	178	185	191	193	183	185	179	184	179	179	177	177
70.0	172	166	169	171	178	184	182	175	178	175	177	174	173	172	166
75.0	172	165	168	167	170	180	177	168	175	168	170	169	169	167	166
80.0	181	171	172	170	166	178	174	163	172	169	167	171	168	167	167
85.0	162	150	162	158	169	171	166	158	162	173	187	215	163	168	176
90.0	140	135	151	149	157	164	170	155	156	154	189	200	170	167	173
95.0	127	136	150	159	165	170	160	161	160	155	177	177	273	221	160
100.0	149	142	146	154	167	170	167	159	157	158	168	169	187	169	163
105.0	161	160	155	166	172	178	171	162	158	164	166	179	173	164	166
110.0	171	172	171	187	179	177	178	173	165	167	171	178	183	172	171
115.0	177	177	181	191	191	192	188	186	180	182	178	185	188	189	180
120.0	183	185	185	197	199	198	189	188	190	187	186	185	187	186	179
125.0	188	191	197	204	201	212	201	206	200	198	192	189	193	196	187
130.0	194	195	199	208	218	217	217	217	203	199	197	193	202	198	188
135.0	200	200	203	214	213	215	221	212	212	213	199	193	194	207	196
140.0	204	205	211	215	217	211	219	223	207	206	211	202	202	205	200
145.0	205	207	217	223	225	227	226	219	221	211	210	193	216	214	209
150.0	204	206	216	220	222	219	225	226	228	195	205	169	201	215	198
155.0	197	173	225	190	220	207	217	203	196	154	159	133	146	172	132
160.0	141	136	159	148	174	161	187	118	167	124	136	100	115	125	92.5
165.0	112	107	141	119	154	131	90.9	52.6	111	38.6	39.8	43.5	63.2	96.8	63.4
170.0	96.0	41.1	105	39.4	101	8.90	73.3	0.00	20.9	0.00	7.53	0.00	25.1	68.3	14.3
175.0	5.17	0.00	5.02	0.00	2.81	0.00	1.06	0.00	0.00	0.00	0.00	0.00	0.00	3.95	0.00
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Test System: LSG-1800
 Temperature: 25.3DEG
 Operators: Paul Cervone
 Test Date: 03-11-2008

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 8.725 m
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number: RP2008030028

MANUFACTURER: Philips Lighting	Address:	
NAME: LSD200W	TYPE:	WEIGHT: 5kg
SPECIFICATION:	DIMENSION:	SERIAL No.:

UNIT: cd

C (DEG) \ γ (DEG)	225	240	255	270	285	300	315	330	345
0.0	234	236	234	235	233	237	235	237	236
5.0	236	235	235	233	233	233	236	235	236
10.0	235	235	234	234	232	233	235	232	233
15.0	231	229	233	228	233	233	233	231	232
20.0	230	230	229	229	230	228	230	228	229
25.0	230	229	228	223	224	223	225	222	223
30.0	229	226	222	215	219	214	219	214	220
35.0	227	219	217	213	214	211	215	212	215
40.0	216	215	215	208	208	203	205	203	211
45.0	206	204	209	201	201	195	195	194	203
50.0	195	197	201	195	194	187	190	188	195
55.0	187	187	192	186	186	181	184	182	189
60.0	180	180	185	184	183	177	179	180	185
65.0	177	181	190	179	176	169	172	172	179
70.0	173	172	178	176	172	166	167	165	172
75.0	166	170	174	176	165	167	166	168	170
80.0	166	178	182	179	174	168	177	174	179
85.0	171	176	180	168	170	158	166	164	170
90.0	161	149	153	146	157	131	153	133	152
95.0	144	126	142	128	128	115	123	116	112
100.0	140	137	119	132	119	125	121	142	132
105.0	149	149	145	151	131	145	144	160	159
110.0	166	165	161	164	150	158	155	165	166
115.0	170	171	178	177	170	169	162	176	175
120.0	182	179	183	181	176	172	170	185	180
125.0	187	185	196	191	182	178	168	190	187
130.0	190	188	196	195	193	191	182	197	195
135.0	190	193	195	190	197	194	186	202	203
140.0	197	194	199	198	200	201	190	207	209
145.0	195	199	212	201	199	205	198	212	214
150.0	203	194	200	203	208	206	204	207	216
155.0	183	147	208	167	202	211	198	189	218
160.0	121	93.8	133	111	157	128	167	141	192
165.0	76.5	46.6	101	81.1	101	83.9	106	105	135
170.0	43.8	0.00	24.2	0.00	65.9	59.3	88.9	78.9	108
175.0	0.99	0.00	0.61	0.00	28.1	0.00	60.9	29.3	61.8
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Test System:LSG-1800
 Temperature:25.3DEG
 Operators:Paul Cervone
 Test Date:03-11-2008

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
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 Remarks: