



Moving Detector Goniophotometer (LSG-6000) Brochure

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Leader in Lighting & Electrical Test Instruments

Rev. 7/4/2023

1. System Configuration

A. LSG-6000 Goniophotometric System:

- Goniometric Rotating Console: [Japanese Mitsubishi Motor and German Angle encoder System](#) to keep the test accuracy. Both Far Field and Near Field Test.
- [High Reflective Moving Mirror](#): Special design and produced to keep high reflective value.
- Goniometric Rotating Control Instrument in 19inch cabinet: It connects to the PC and was controlled by the software.
- It has Goniometric Rotating Control Android App which can control it to rotating angle in the dark room easily
- Far Field and Near Field applied with [Germany produced Class L Constant Temperature Photo Detector](#)
- Cross-beam Laser System for Calibrating
- English Measuring Software
- Three 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

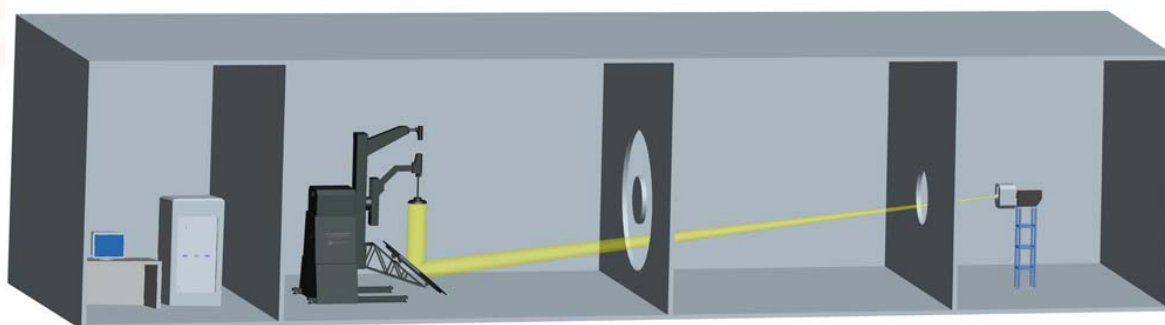
B. SLS-150W DC Standard Light Intensity Lamp

C. **LS2050C Digital Power Meter:** With LCD screen display, it is used to test AC/DC voltage, current, power, PF, DF and Harmonic

D. **DC3010 CC & CV DC Power Source:** DC3010 output is 30V/10A, Option can be DC6010 (output is 60V/10A) and DC12010 (output is 120V/10A)

E. **AC Power Source:** LSP-500V ARC Pure Sine Wave AC Power Source with LCD Screen: 500VA Output. It can communicate with PC via software

F. **CASE-19IN 19inch Standard Instruments Cabinet.**



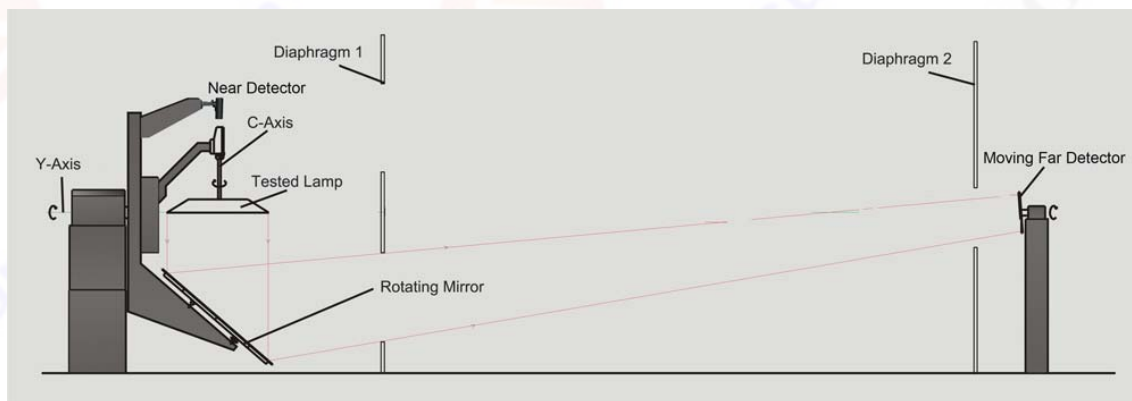
Full View for LSG-6000 Moving Detector Goniophotometer

Note: PC and Printer prepared by the customer (request at least one USB port)

2. Measurement Principle

LSG-6000 Moving Detector Goniophotometer is full meet LM-79-19 request. The tested lamp will keep burning position and be fixed, near field detector move together with the big mirror in a line, and the far field detector will move with the big mirror synchronously. The detector will always sense the light directly from the luminaries.

The rotation priority is determined by the software. If mirror axle is took precedence of rotation, the goniophotometer will continuously measure the luminous intensity at each γ angle on a vertical plane determined by the C angle, the measuring trace is equivalent to the longitude. Similarly, while the luminaries axle is priority, the system will continuously measure the luminous intensity at each C angle on a conical surface determined by the γ angle, the trace can be looked upon the wolf. See the following figure.

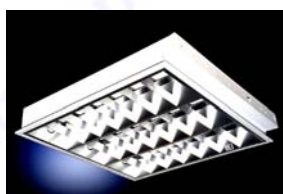


Measurement Principle

3. System Functions



The LSG-6000 full meet LM-79-19, EN13032, CIE S025, SASO2902, IS 16106, GB and other standards for Goniophotometric of luminaires, this system is used to measure spatial luminous intensity distribution of luminaires for floodlight, street lighting and interior lighting, and other photometric parameters such as spatial iso-intensity curve, intensity distribution curve of each section (shown in rectangular coordinate system or polar coordinate system), iso-illuminance distribution curve, luminance limitation curve, luminaires efficiency, glare grade, effective beam angles, upward luminous flux ratio, downward luminous flux ratio, total luminous flux, effective luminous flux, utilization factor and electric parameters (wattage, power factor, voltage and current) of luminaires etc.



LSG-6000 Can test all of the above luminaires

4. Specifications

- The tested luminaire rotates around the mirror with an angle of $(\gamma)\pm 180^\circ$ (or 0-360°) and the tested luminaire rotates around itself with an angle of $(C)\pm 180^\circ$ (or 0-360°)
- The accuracy of angle: 0.05° Resolution of angle: 0.001°
- Luminosity Testing Range: Illuminance 0.001lx~99,999lx; Light Intensity 1.0cd~10⁷cd(detector)
- Accuracy of photometry: Germany produced constant temperature photo detector DIN5032-6/CIE pub1. No. 69 Class L
- Testing Accuracy: 2%(Under Standard lamp); Stray Light: less than 0.1%
- English version software can be run in Win7, Win8 or Win10, Win11

5. Laboratory Requirements

1) Room Requirements according to CIE

LISUN MODEL	Center Height (A)	Total Height (B)	Total Depth (C)	Total Width (D)	The max size for the Testing Lamp: Diameter(E)*Depth(F)	The max diameter of the mast rotating(G)	Max Testing Weight
LSG-6000	2070	4030	2750	1750	∅1600×600max	∅3960	50kg
LSG-6000L	2580	5080	3180	2200	∅2000×900max	∅5000	80kg
LSG-6000B	2330	4600	2900	1900	∅1800×800max	∅4500	60kg
LSG-6000S	1500	2950	2450	1350	∅1200×500max	∅2900	40kg

Table 1 The Dimensions of the Goniophotometer Master

Note: E is the max diameter of the testing lamp. Depends on the darkroom size, the max diameter of the light-emitting area will be about 200mm less and the thickness F will also be less accordingly

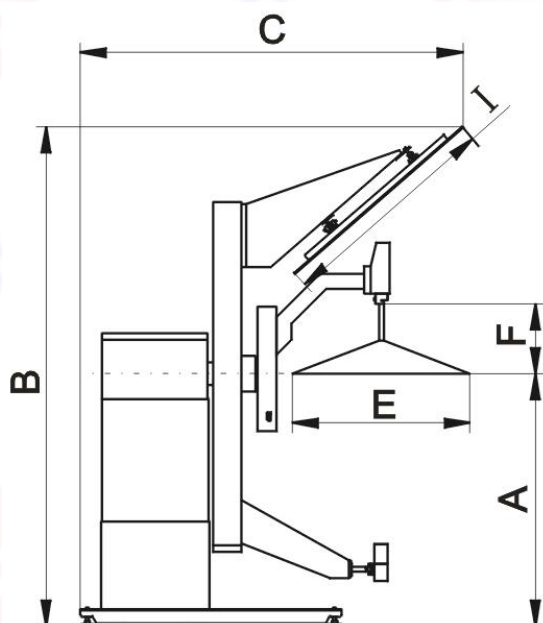


Figure 1 The Side View

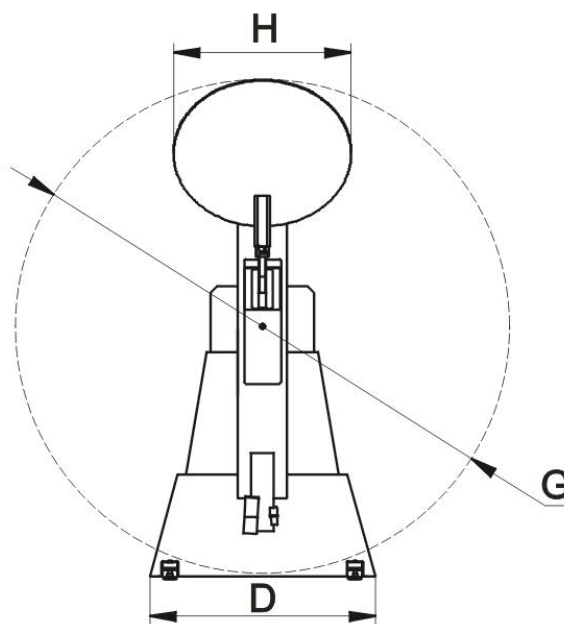


Figure 2 The Vertical View

- 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. **NOTE: The longer dark room, the better test accuracy. LISUN recommends you to prepare as longer dark room as you can (max 30m)**

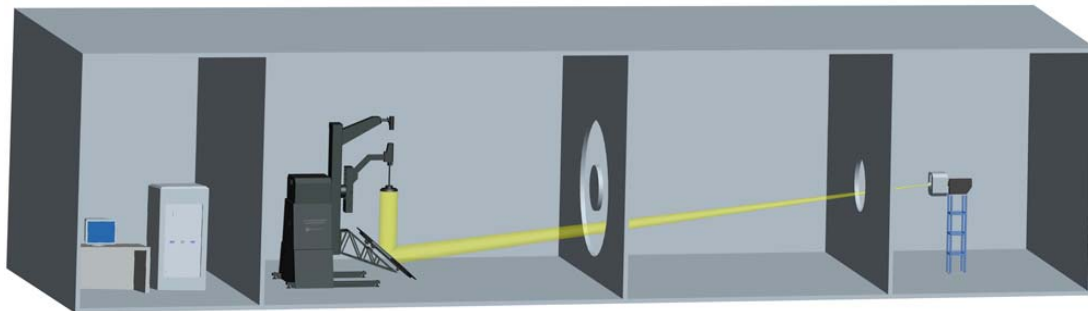
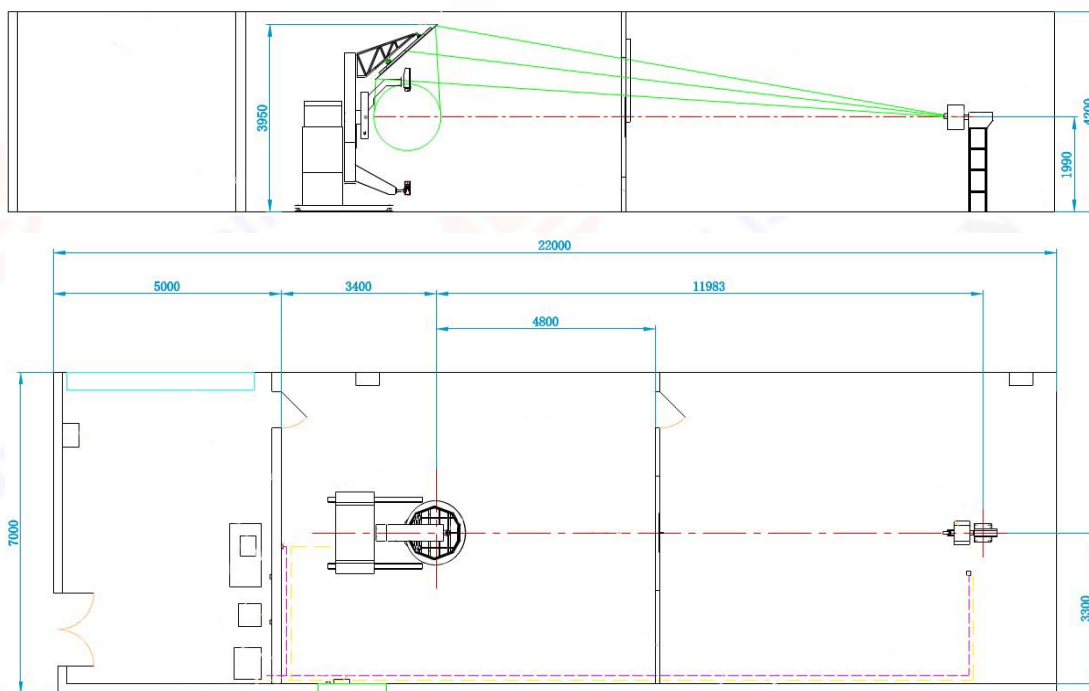


Fig: LSG-6000 lab dark room view



2) Requirements of Eliminating the stray Light

Luminaires must be where the photo detector can only receive the light reflected by the two moving mirror in the LSG-6000 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 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.

6. 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

7. Design Standard of Device

The construction, technical parameter, test & operate steps as well as data processing software of LSG-6000 Moving Detector Goniophotometer meet the following requirements:

- CIE Pub. NO.70,"The Measurement of Absolute Luminous Intensity Distributions"
- CIE DIV. II -TC10,"Photometry of Luminaires"
- IES LM-35-1989,"IES Approved Method for Photometric Testing of Floodlights"
- IES LM-31,"IES Approved Method for Photometric Testing of Roadway Luminaires"
- IES-LM-79-19, "Electrical and Photometric Measurements of Solid-State Lighting Products"
- GB/T 7002-1986,"Luminosity Test of Flood Luminaires"
- GB/T 9467-1988, "Luminosity Test of Indoor Luminaires"
- GB/T 9468-1988, "Luminosity Test of Street Luminaires"
- IES 61341 "Method of Measurement of Center Beam Intensity and Beam Angle(s) of Reflector Lamp"
- CIE Pub.NO.76, "Photometry-the CIE System of Physical Photometry"

8. Typical overseas 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.

9. Application Software

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 of LSG-6000:

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Lisun Goniophotometer Test Report

Product Info

 Luminaire Category : **Roadway**

 Luminaire : **AK-KH120**

 Lamp Category : **CREE**

 Lamp : **011507**

 Manufacturer : **Philips Lighting B.V.**

 Submitter : **Michael Aslami**

 Number of Lamps : **1**

 Lumens per Lamp : **2100 lm**

 Luminous Length : **20 mm**

 Luminous Width : **15 mm**

 Luminous Height : **5 mm**

Electric Parameters

 Voltage : **230.00 V** Current : **0.1813 A** Power : **21.60 W** Power Factor : **0.518** Frequency : **50.00 Hz**

Photometric Parameters

 IES Classification : **Type II**

 Total Rated Lamp Lumens : **2100.0 lm**

 Efficiency : **94.85 %**

 Downward Ratio : **94.85 %**

 Maximum Intensity : **1097.62 cd**

 Luminaire Efficacy Rating (LER) : **92**

 Beam Angle (C0-C180) : **133.9 °**

 Field Angle(C0-C180) : **145.5 °**

 Longitudinal Classification : **Short**

 Measurement Flux : **1991.9 lm**

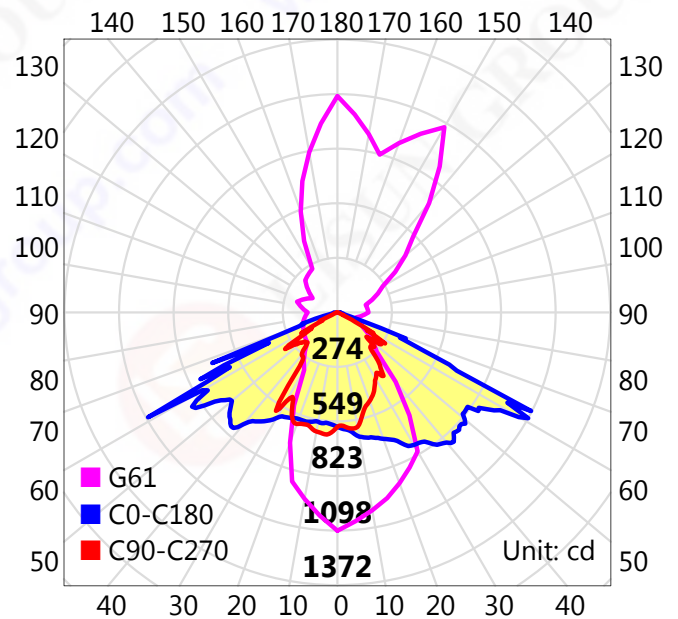
 Upward Ratio : **0.00 %**

 Central Intensity : **576.11 cd**

 Position Of Maximum Intensity : **C0° γ61°**

 Energy Efficiency Class : **F (EU 2019/2015 η_{TM}:92lm/W)**

 Beam Angle (C90-C270) : **95.9 °**

 Field Angle(C90-C270) : **127.9 °**


Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

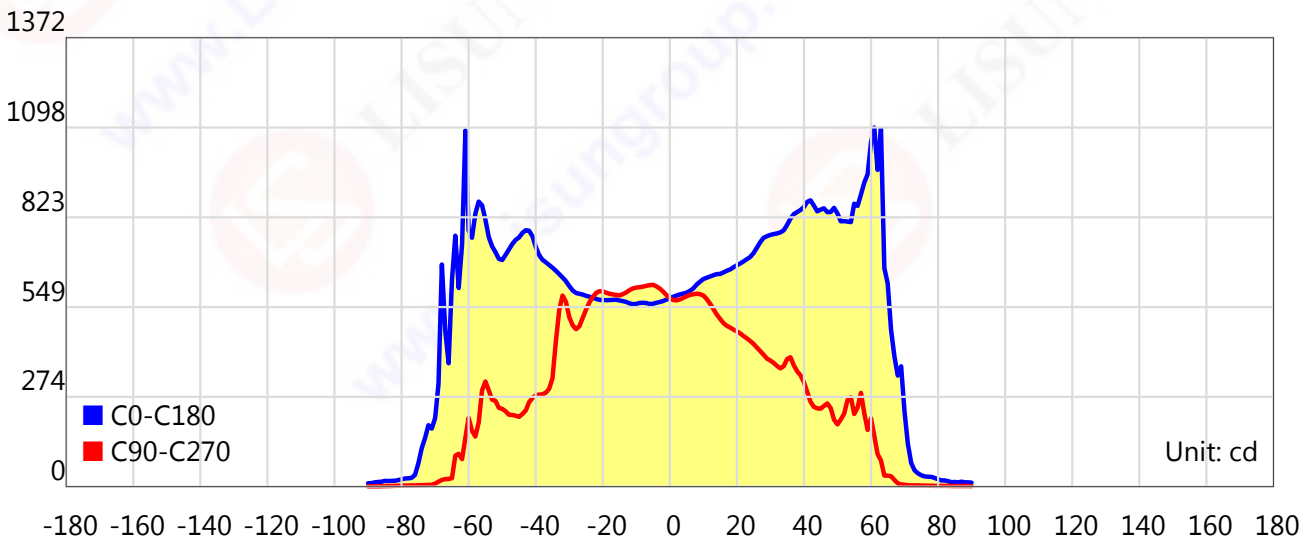
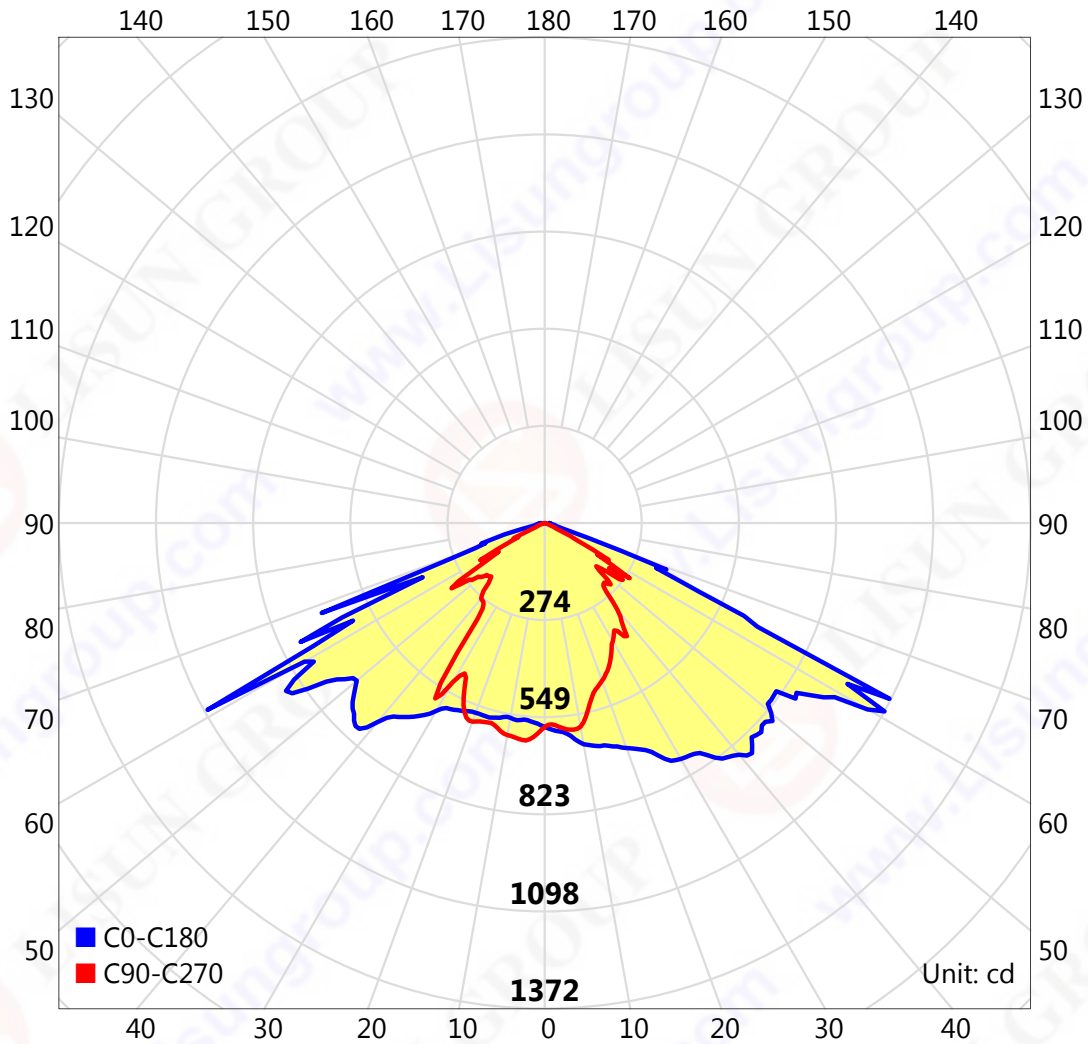
Humidity : 65.0%

Test Lab : LISUN GROUP

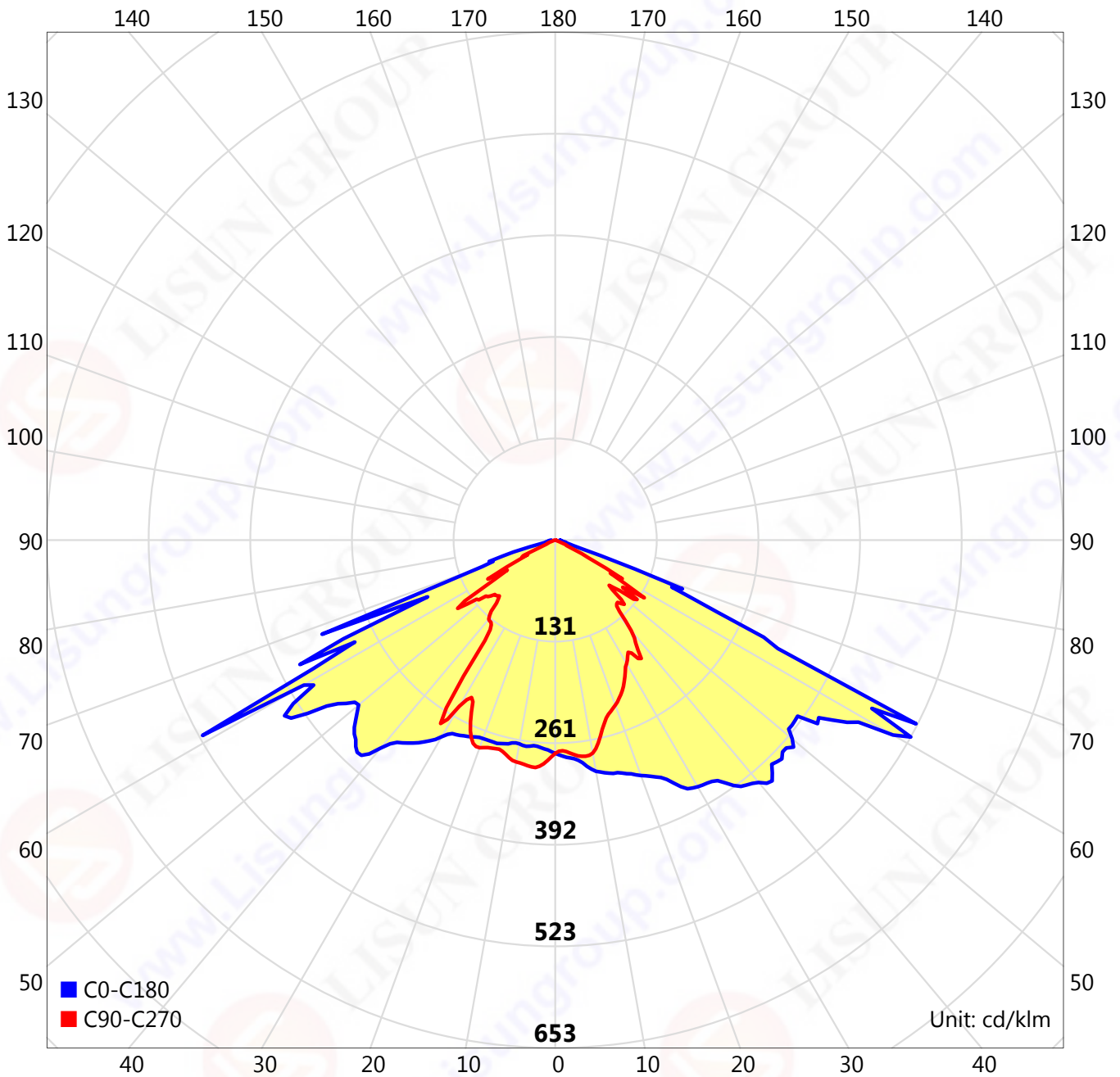
Test By : Thomas Fiodorow

Review By :

Light Distribution Curve



Light Distribution Curve (cd/klm)



011507/CREE

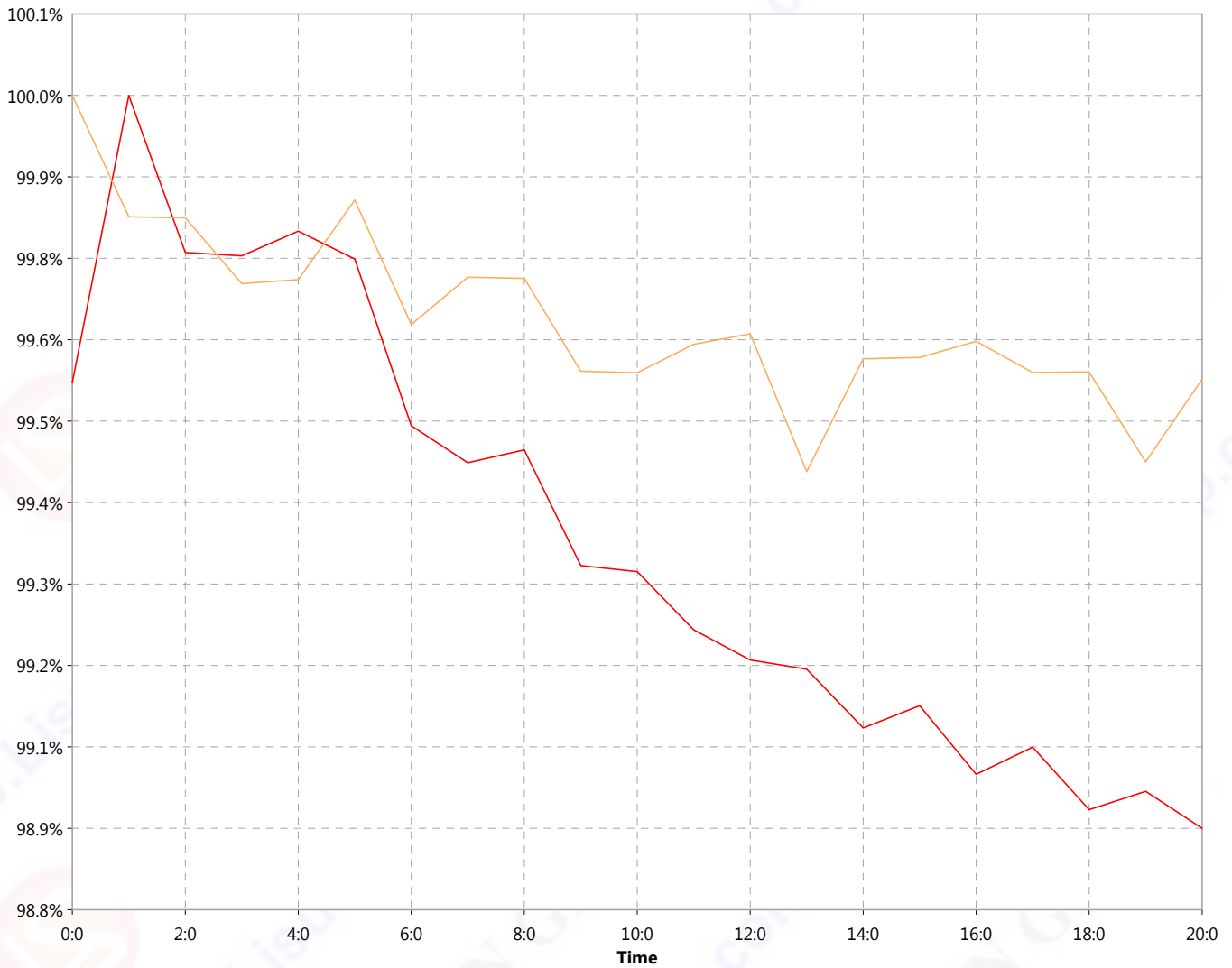
$\eta=94.85\%$

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Warmup Log



Stable time: 20:0

Uptime: 0:0

Parameters	Maximum	Minimum	Change
Luminous intensity ,cd	582.69	576.51	6.18
Power ,W	21.72	21.60	0.12

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

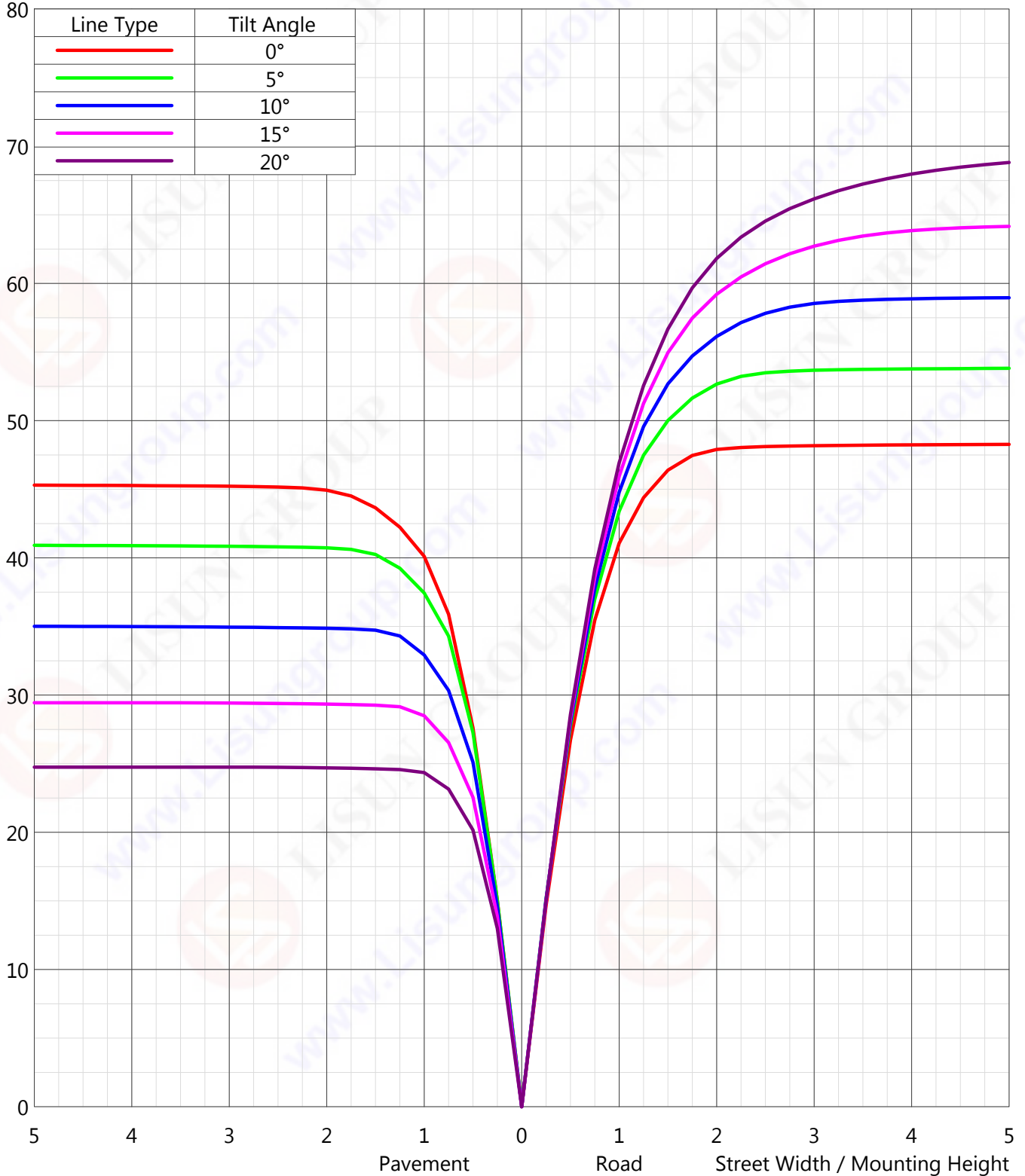
Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

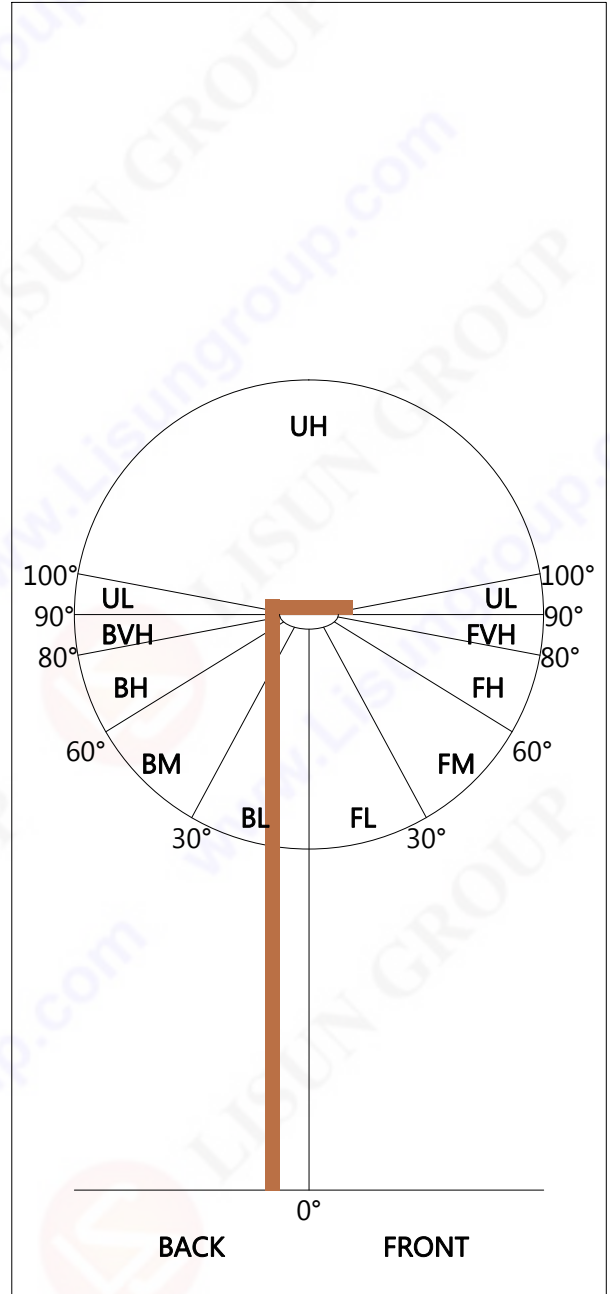
Roadway CU

Efficiency (%)



BUG Ratings

ZONE	LUMENS	% LAMP LUMENS
FORWARD LIGHT	1022	48.7
FL (0°-30°)	233	11.1
FM (30°-60°)	601	28.6
FH (60°-80°)	183	8.7
FVH (80°-90°)	5	0.2
BACK LIGHT	970	46.2
BL (0°-30°)	260	12.4
BM (30°-60°)	593	28.2
BH (60°-80°)	113	5.4
BVH (80°-90°)	4	0.2
UP LIGHT	0	0.0
UL (90°-100°)	0	0.0
UH (100°-180°)	0	0.0
TRAPPED LIGHT	108	5.1



BUG(Backlight,Uplight,Glare) Rating Base On	TM-15-07	TM-15-11
Asymmetrical Luminaire Types (Type I,II,III,IV)	B1 U0 G1	B1 U0 G1
Quadrilateral Symmetrical Luminaire Types (Type V,Area Light)	B1 U0 G0	B1 U0 G0

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

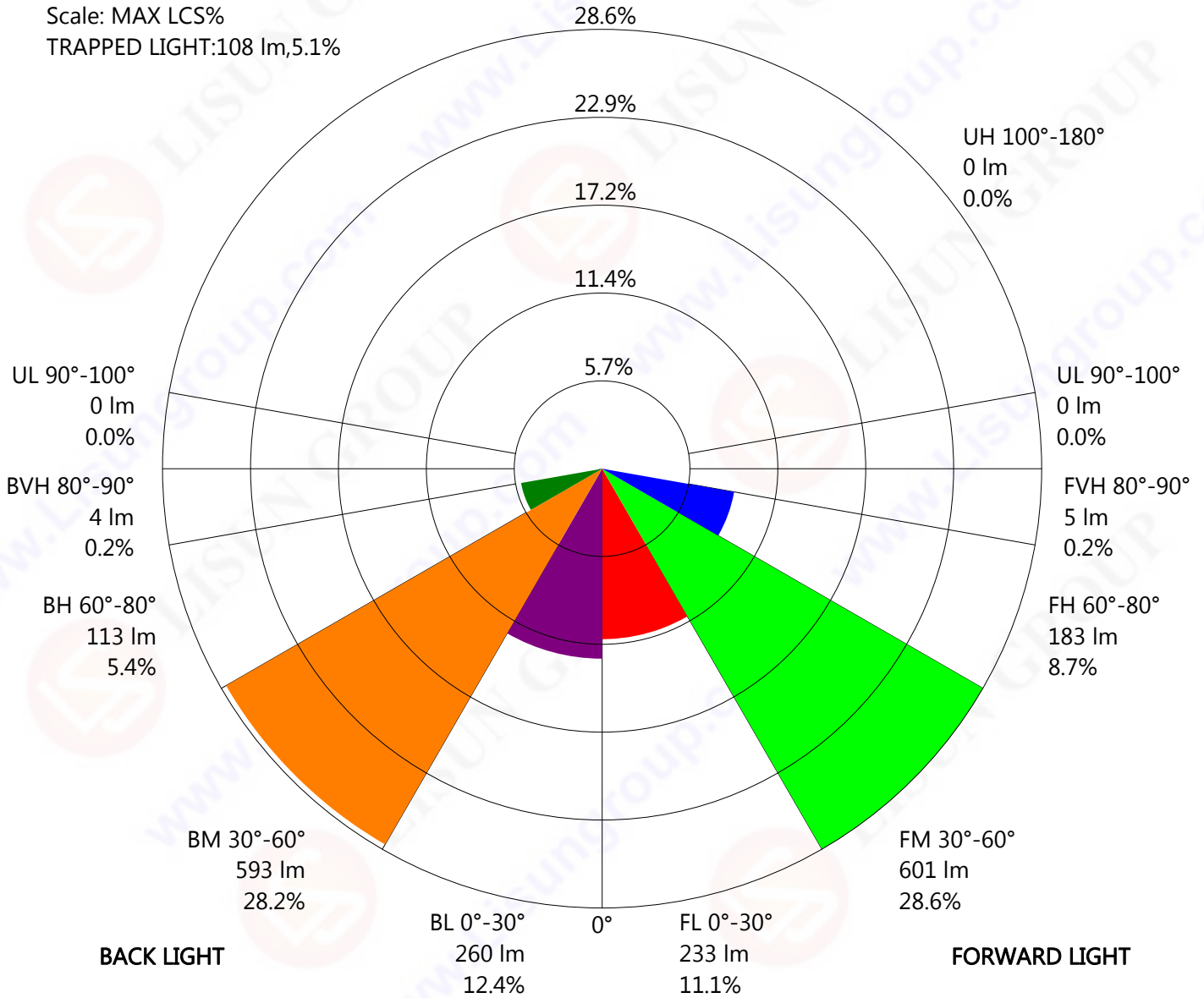
Review By :

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LCS Graph



Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

 γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

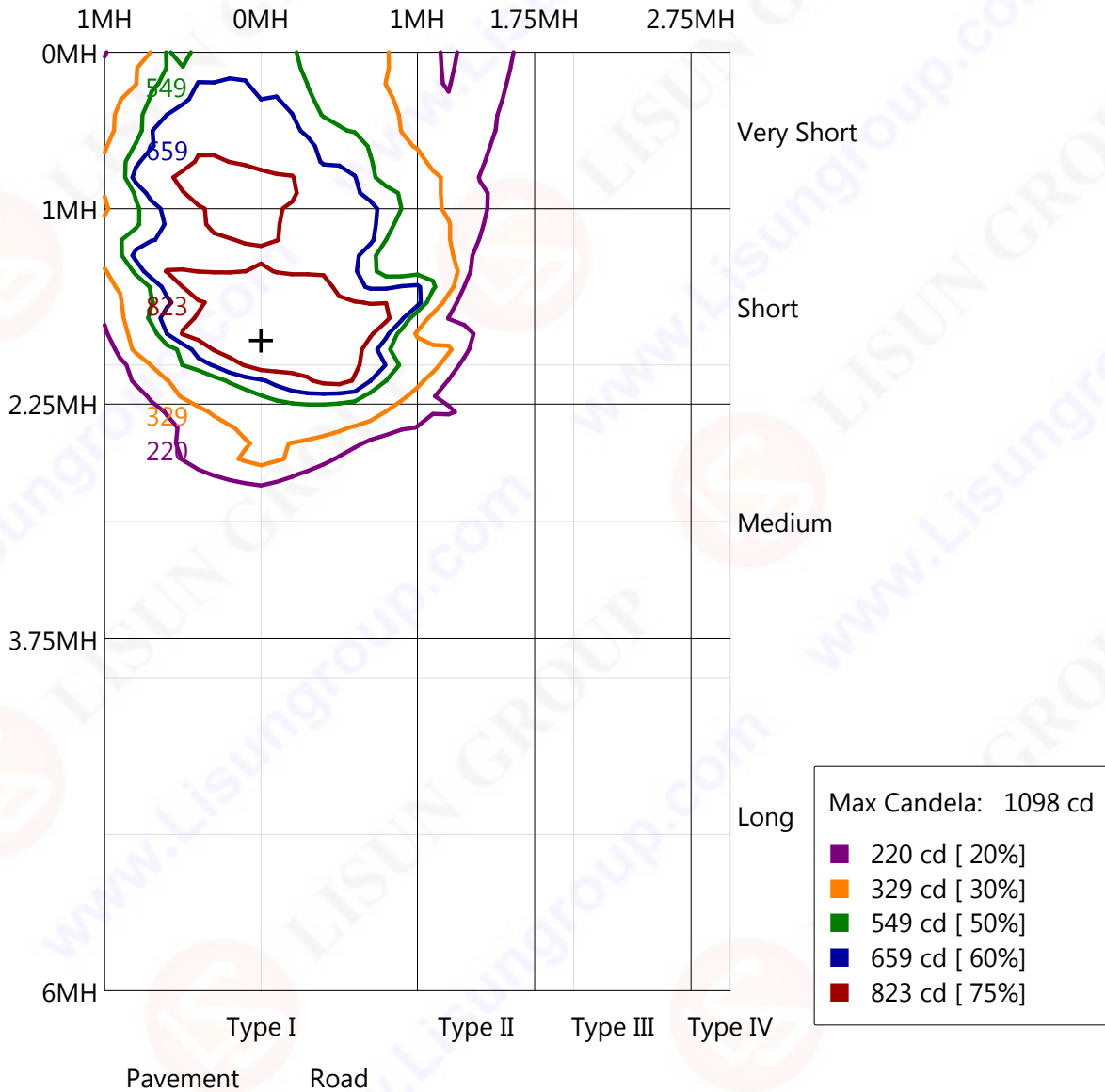
Humidity : 65.0%

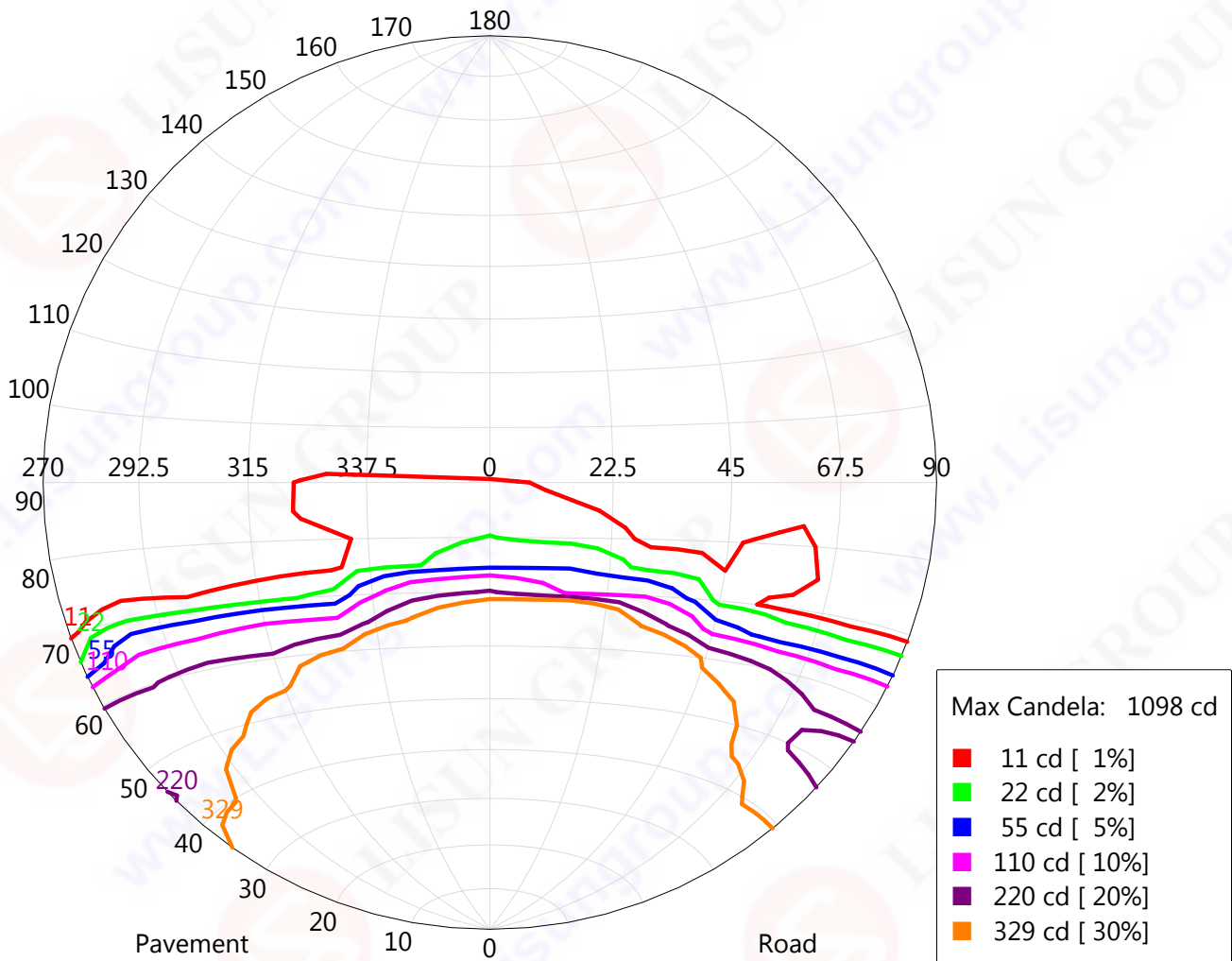
Test Lab : LISUN GROUP

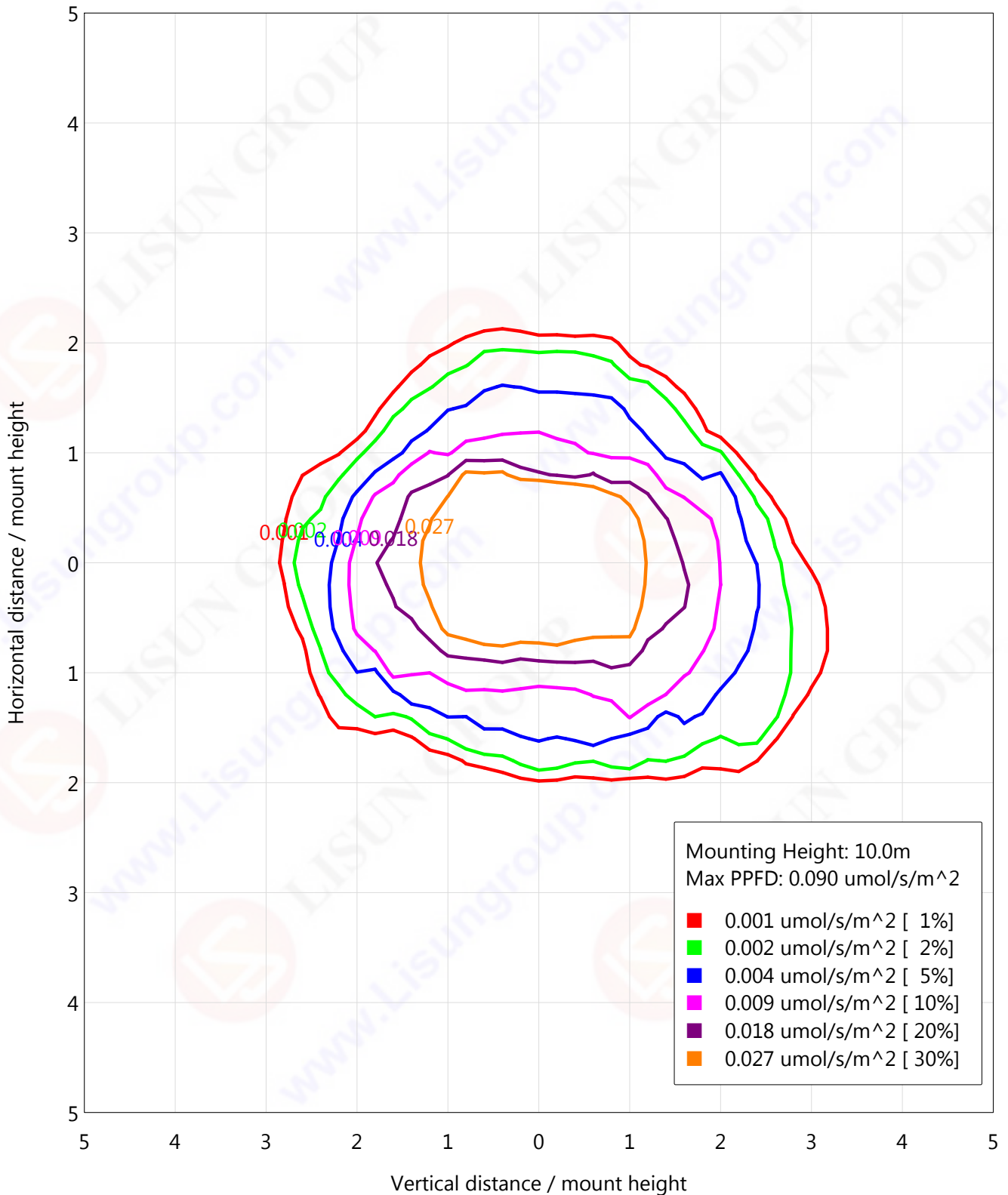
Test By : Thomas Fiodorow

Review By :

Road Surface IsoCandela Diagram



IsoCandela


IsoPPFD


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Zonal Flux

Gamma °	Imean cd	Zonal Flux lm	Sum Zonal Flux lm	Rel Zonal Flux %	Sum Rel Zonal Flux %
0.0-1.0	576.6	0.6	0.6	0.03	0.03
1.0-2.0	578.3	1.7	2.2	0.08	0.11
2.0-3.0	581.5	2.8	5.0	0.13	0.24
3.0-4.0	585.4	3.9	8.9	0.19	0.42
4.0-5.0	589.3	5.1	14.0	0.24	0.67
5.0-6.0	593.0	6.2	20.2	0.30	0.96
6.0-7.0	596.6	7.4	27.6	0.35	1.32
7.0-8.0	600.5	8.6	36.2	0.41	1.72
8.0-9.0	603.7	9.8	46.0	0.47	2.19
9.0-10.0	605.2	11.0	57.0	0.52	2.71
10.0-11.0	605.2	12.1	69.0	0.58	3.29
11.0-12.0	604.0	13.2	82.3	0.63	3.92
12.0-13.0	601.7	14.3	96.5	0.68	4.60
13.0-14.0	598.8	15.3	111.9	0.73	5.33
14.0-15.0	595.5	16.4	128.2	0.78	6.11
15.0-16.0	592.6	17.4	145.6	0.83	6.93
16.0-17.0	590.3	18.4	164.0	0.88	7.81
17.0-18.0	588.6	19.4	183.4	0.92	8.73
18.0-19.0	587.4	20.4	203.8	0.97	9.71
19.0-20.0	586.7	21.5	225.3	1.02	10.73
20.0-21.0	586.6	22.5	247.8	1.07	11.80
21.0-22.0	586.5	23.6	271.4	1.12	12.92
22.0-23.0	586.4	24.6	296.0	1.17	14.10
23.0-24.0	585.9	25.6	321.6	1.22	15.32
24.0-25.0	584.3	26.6	348.2	1.27	16.58
25.0-26.0	581.2	27.4	375.6	1.31	17.89
26.0-27.0	576.9	28.2	403.9	1.34	19.23
27.0-28.0	572.4	29.0	432.8	1.38	20.61
28.0-29.0	569.5	29.8	462.6	1.42	22.03
29.0-30.0	569.6	30.8	493.4	1.46	23.50
30.0-31.0	572.8	31.9	525.3	1.52	25.01
31.0-32.0	577.4	33.1	558.4	1.58	26.59
32.0-33.0	582.1	34.3	592.7	1.63	28.22
33.0-34.0	583.6	35.3	628.0	1.68	29.90
34.0-35.0	579.6	36.0	664.0	1.71	31.62
35.0-36.0	575.2	36.6	700.6	1.74	33.36
36.0-37.0	572.4	37.3	738.0	1.78	35.14
37.0-38.0	567.1	37.9	775.8	1.80	36.94
38.0-39.0	561.8	38.3	814.2	1.83	38.77
39.0-40.0	560.2	39.1	853.2	1.86	40.63

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Zonal Flux

Gamma °	I _{mean} cd	Zonal Flux lm	Sum Zonal Flux lm	Rel Zonal Flux %	Sum Rel Zonal Flux %
40.0-41.0	560.7	39.9	893.2	1.90	42.53
41.0-42.0	558.2	40.6	933.7	1.93	44.46
42.0-43.0	553.0	41.0	974.7	1.95	46.41
43.0-44.0	546.6	41.3	1016.0	1.96	48.38
44.0-45.0	539.9	41.5	1057.5	1.98	50.35
45.0-46.0	532.7	41.7	1099.1	1.98	52.34
46.0-47.0	523.4	41.6	1140.8	1.98	54.32
47.0-48.0	513.4	41.5	1182.3	1.98	56.30
48.0-49.0	504.9	41.5	1223.7	1.97	58.27
49.0-50.0	496.8	41.4	1265.2	1.97	60.25
50.0-51.0	489.0	41.4	1306.5	1.97	62.22
51.0-52.0	482.2	41.4	1347.9	1.97	64.19
52.0-53.0	478.8	41.7	1389.6	1.98	66.17
53.0-54.0	477.4	42.1	1431.7	2.00	68.17
54.0-55.0	476.8	42.6	1474.2	2.03	70.20
55.0-56.0	475.4	43.0	1517.2	2.05	72.25
56.0-57.0	471.5	43.1	1560.3	2.05	74.30
57.0-58.0	461.9	42.7	1603.0	2.03	76.33
58.0-59.0	447.2	41.8	1644.8	1.99	78.33
59.0-60.0	447.5	42.3	1687.1	2.01	80.34
60.0-61.0	455.9	43.5	1730.6	2.07	82.41
61.0-62.0	425.4	41.0	1771.6	1.95	84.36
62.0-63.0	366.6	35.7	1807.3	1.70	86.06
63.0-64.0	314.1	30.8	1838.1	1.47	87.53
64.0-65.0	280.5	27.8	1865.9	1.32	88.85
65.0-66.0	252.2	25.2	1891.0	1.20	90.05
66.0-67.0	202.8	20.4	1911.4	0.97	91.02
67.0-68.0	155.9	15.8	1927.2	0.75	91.77
68.0-69.0	123.7	12.6	1939.9	0.60	92.37
69.0-70.0	102.1	10.5	1950.3	0.50	92.87
70.0-71.0	82.6	8.5	1958.9	0.41	93.28
71.0-72.0	60.7	6.3	1965.2	0.30	93.58
72.0-73.0	43.8	4.6	1969.8	0.22	93.80
73.0-74.0	32.2	3.4	1973.2	0.16	93.96
74.0-75.0	24.4	2.6	1975.7	0.12	94.08
75.0-76.0	18.5	2.0	1977.7	0.09	94.18
76.0-77.0	14.9	1.6	1979.3	0.08	94.25
77.0-78.0	13.0	1.4	1980.7	0.07	94.32
78.0-79.0	11.8	1.3	1981.9	0.06	94.38
79.0-80.0	10.8	1.2	1983.1	0.06	94.43

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Zonal Flux

Gamma °	I _{mean} cd	Zonal Flux lm	Sum Zonal Flux lm	Rel Zonal Flux %	Sum Rel Zonal Flux %
80.0-81.0	9.9	1.1	1984.2	0.05	94.49
81.0-82.0	9.2	1.0	1985.2	0.05	94.53
82.0-83.0	8.8	1.0	1986.1	0.05	94.58
83.0-84.0	8.4	0.9	1987.1	0.04	94.62
84.0-85.0	8.2	0.9	1988.0	0.04	94.66
85.0-86.0	8.0	0.9	1988.8	0.04	94.71
86.0-87.0	7.7	0.8	1989.7	0.04	94.75
87.0-88.0	7.4	0.8	1990.5	0.04	94.78
88.0-89.0	6.7	0.7	1991.2	0.03	94.82
89.0-90.0	6.2	0.7	1991.9	0.03	94.85

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Light Distribution Data

Unit: cd

G\C	C0.0	C15.0	C30.0	C45.0	C60.0	C75.0	C90.0	C105.0
G0.0	576.1	576.1	576.1	576.1	576.1	576.1	576.1	576.1
G1.0	580.2	578.3	576.7	576.4	573.5	575.3	570.6	573.6
G2.0	584.2	579.6	577.2	577.6	574.0	578.2	569.4	574.1
G3.0	587.6	580.3	578.4	579.6	576.7	582.9	572.0	579.5
G4.0	590.1	582.5	579.4	586.5	581.0	587.8	576.9	584.3
G5.0	593.0	586.5	583.7	593.2	586.5	593.9	581.7	588.6
G6.0	598.4	592.7	589.4	600.8	592.3	597.0	586.3	590.8
G7.0	605.9	600.7	596.5	606.9	597.4	598.3	588.3	591.4
G8.0	617.3	610.9	608.4	613.8	600.0	598.4	589.8	590.5
G9.0	626.6	621.0	617.5	618.8	601.0	597.5	588.8	584.8
G10.0	634.4	631.7	624.4	620.8	600.9	594.0	584.5	573.2
G11.0	638.4	638.6	630.8	623.9	601.7	587.2	574.2	559.1
G12.0	642.6	644.3	637.3	627.4	599.5	574.3	560.0	545.1
G13.0	646.5	649.9	642.3	627.1	594.0	559.3	543.1	530.2
G14.0	649.8	653.4	645.5	623.4	586.5	544.6	526.5	516.7
G15.0	650.5	659.8	646.9	617.7	576.4	526.3	512.9	501.2
G16.0	654.7	662.9	650.0	608.8	564.5	514.0	500.1	488.9
G17.0	660.1	663.1	653.2	597.8	553.6	504.6	492.0	480.1
G18.0	664.0	664.3	656.2	586.8	546.2	498.9	486.5	473.1
G19.0	670.9	666.6	659.1	576.2	541.2	493.5	480.1	468.2
G20.0	676.8	669.0	661.8	569.2	536.5	487.4	474.5	462.7
G21.0	682.1	670.8	662.8	564.7	531.8	479.8	468.7	457.8
G22.0	688.4	674.3	660.6	562.2	525.7	474.5	460.7	452.1
G23.0	695.1	681.6	656.7	562.4	517.3	472.9	453.8	446.8
G24.0	702.2	690.2	651.4	564.0	509.2	471.6	445.4	442.9
G25.0	713.7	697.3	645.6	562.2	503.8	470.0	436.3	436.9
G26.0	730.7	703.8	639.5	557.8	501.1	464.5	425.1	427.3
G27.0	747.5	710.8	634.2	551.2	502.0	457.8	414.4	415.1
G28.0	761.0	719.0	631.7	545.1	504.2	448.3	403.1	404.1
G29.0	765.9	728.6	634.5	541.2	503.9	433.1	391.6	396.0
G30.0	769.6	741.9	642.2	541.2	499.0	421.8	385.7	390.5
G31.0	772.2	754.4	651.0	545.9	493.0	413.3	378.2	382.5
G32.0	774.1	765.1	658.1	552.6	487.1	407.0	369.2	374.1
G33.0	777.4	774.9	659.8	558.0	481.7	400.9	361.8	369.5
G34.0	784.1	780.5	658.1	560.6	481.1	399.6	368.6	371.7
G35.0	800.6	784.5	654.0	559.5	482.0	418.2	390.7	375.6
G36.0	819.4	789.1	646.9	555.9	477.1	436.5	395.4	373.9
G37.0	833.3	794.5	640.0	561.6	465.7	414.7	370.7	376.5
G38.0	839.7	801.9	638.4	583.5	455.3	372.6	352.6	382.8
G39.0	846.0	817.7	643.4	610.6	456.6	343.0	340.0	390.2

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Light Distribution Data

Unit: cd

G\C	C0.0	C15.0	C30.0	C45.0	C60.0	C75.0	C90.0	C105.0
G40.0	854.8	835.9	652.9	624.6	476.3	308.8	318.9	386.7
G41.0	870.6	846.6	664.6	617.7	473.8	284.3	290.2	361.5
G42.0	875.3	841.3	685.4	597.4	444.9	276.0	259.3	308.2
G43.0	859.4	824.6	708.4	573.9	399.6	273.0	243.7	271.8
G44.0	841.7	803.8	734.3	562.2	357.7	258.9	239.5	249.9
G45.0	847.0	799.0	752.0	559.0	341.4	253.9	238.3	233.9
G46.0	850.9	803.5	747.1	543.7	327.2	268.8	246.9	232.0
G47.0	839.1	798.7	732.0	514.1	312.1	262.3	254.8	242.5
G48.0	839.4	798.5	744.0	491.5	298.9	233.7	240.3	259.2
G49.0	852.5	820.2	763.5	494.4	302.1	220.2	204.7	277.6
G50.0	835.3	825.7	780.3	538.5	308.3	211.3	190.4	246.0
G51.0	811.3	793.7	769.1	543.8	301.4	226.4	205.4	210.7
G52.0	811.9	760.9	715.6	534.0	233.2	249.8	223.4	210.9
G53.0	810.5	751.0	703.0	538.9	249.2	282.5	265.0	229.4
G54.0	809.0	743.0	710.6	456.9	287.2	243.6	273.2	271.9
G55.0	864.8	793.3	631.6	376.5	275.6	227.5	222.4	308.9
G56.0	858.0	842.6	537.7	356.3	284.5	250.5	241.7	289.2
G57.0	892.7	880.9	491.7	364.2	253.9	232.1	286.7	239.8
G58.0	929.4	868.5	490.6	352.1	219.8	209.0	224.0	178.9
G59.0	955.4	884.4	519.3	363.8	201.3	142.5	173.5	262.8
G60.0	1053.4	1000.1	654.5	305.2	219.4	183.4	209.3	233.4
G61.0	1097.6	967.1	807.2	281.1	148.6	97.7	156.4	148.0
G62.0	968.4	950.5	822.2	224.9	112.3	79.0	99.6	107.8
G63.0	1093.4	1073.3	463.6	154.5	101.2	44.5	80.6	82.3
G64.0	668.5	892.3	263.5	121.3	48.9	32.0	33.9	39.7
G65.0	621.3	968.8	303.0	77.0	37.6	32.1	33.9	40.0
G66.0	479.5	646.3	403.6	55.7	31.1	26.4	32.1	31.0
G67.0	398.5	493.4	253.2	43.7	23.7	13.9	20.9	20.3
G68.0	339.8	312.8	179.3	30.4	15.9	8.4	10.3	10.3
G69.0	368.3	192.6	241.0	17.8	9.5	6.7	7.0	8.2
G70.0	230.4	103.4	104.6	13.6	8.6	5.2	6.1	6.9
G71.0	131.4	89.6	37.1	12.4	8.5	4.9	4.8	6.5
G72.0	72.3	82.0	31.2	11.1	9.1	4.9	4.4	6.5
G73.0	50.0	62.9	24.9	11.3	10.0	5.1	4.1	6.2
G74.0	41.0	56.9	17.0	11.8	11.9	4.9	3.9	6.2
G75.0	35.2	49.1	13.8	11.0	14.0	4.3	3.7	6.2
G76.0	31.6	39.2	12.0	10.6	13.5	3.9	3.6	7.0
G77.0	30.6	27.1	11.8	10.4	12.3	3.8	3.2	7.1
G78.0	29.9	17.8	11.9	10.0	11.8	3.7	2.9	7.2
G79.0	26.9	14.7	10.3	9.6	12.6	3.5	2.9	7.7

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Light Distribution Data

Unit: cd

G\C	C0.0	C15.0	C30.0	C45.0	C60.0	C75.0	C90.0	C105.0
G80.0	22.6	15.0	9.9	10.5	12.8	3.4	2.8	7.7
G81.0	19.3	12.2	9.5	11.0	12.7	3.2	2.7	7.1
G82.0	19.2	9.9	9.5	10.5	11.1	3.1	2.5	6.5
G83.0	16.6	8.9	9.3	9.5	11.1	2.9	2.5	6.0
G84.0	14.0	9.2	9.3	8.6	10.7	2.7	2.4	5.4
G85.0	14.2	12.0	9.0	8.0	9.9	2.8	2.3	5.1
G86.0	13.3	11.0	7.5	8.4	9.2	2.6	2.2	4.8
G87.0	15.3	8.9	7.7	9.3	8.8	2.5	2.1	4.6
G88.0	13.3	9.3	8.5	8.2	7.8	2.3	2.1	4.2
G89.0	13.3	8.6	6.4	6.4	6.6	2.2	2.0	3.8
G90.0	12.6	9.3	5.2	6.9	6.1	2.0	1.8	3.5

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Light Distribution Data

Unit: cd

G\C	C120.0	C135.0	C150.0	C165.0	C180.0	C195.0	C210.0	C225.0
G0.0	576.1	576.1	576.1	576.1	576.1	576.1	576.1	576.1
G1.0	569.6	571.7	570.5	571.0	572.1	574.0	576.3	577.8
G2.0	566.7	568.7	565.7	565.7	567.4	571.3	578.0	580.5
G3.0	566.7	568.2	560.3	561.4	564.8	569.0	580.0	585.7
G4.0	569.1	568.3	557.8	556.8	562.2	569.8	581.4	589.6
G5.0	574.5	573.5	556.1	553.2	559.1	570.8	583.4	591.9
G6.0	579.3	577.9	556.5	551.3	558.3	570.1	585.8	591.9
G7.0	583.9	581.7	557.8	553.3	561.1	572.7	591.0	594.5
G8.0	586.3	583.6	561.2	553.1	562.5	576.8	594.1	598.4
G9.0	584.0	584.3	563.3	551.2	561.6	580.8	595.9	600.9
G10.0	578.2	584.2	565.0	551.1	558.8	583.8	597.2	600.7
G11.0	572.3	581.4	567.9	554.8	558.0	586.2	599.2	601.6
G12.0	564.3	577.7	573.0	559.3	560.3	586.3	601.4	600.5
G13.0	556.3	572.9	574.0	564.5	564.8	586.7	603.3	598.3
G14.0	544.8	564.4	573.8	568.5	567.0	589.7	606.6	593.7
G15.0	531.5	556.1	573.7	572.4	569.2	592.7	608.8	586.9
G16.0	516.6	548.0	572.1	574.8	571.5	596.2	609.1	579.0
G17.0	501.7	538.6	570.1	577.2	570.9	598.2	607.5	572.5
G18.0	491.3	529.3	568.1	577.5	570.7	598.4	604.3	569.9
G19.0	482.3	520.3	563.7	578.6	570.3	598.6	600.2	569.4
G20.0	474.3	513.4	559.1	581.6	570.8	597.6	594.8	572.3
G21.0	469.8	508.9	553.0	581.4	571.1	599.9	588.8	574.7
G22.0	467.2	503.3	548.9	580.9	573.9	603.3	582.1	571.2
G23.0	462.6	497.9	546.3	580.3	577.4	606.9	579.4	566.0
G24.0	458.4	494.2	544.2	579.3	580.8	609.5	576.2	564.3
G25.0	455.6	492.2	541.6	579.2	583.5	608.5	573.4	569.5
G26.0	452.3	490.7	538.9	582.3	587.1	608.1	571.6	581.5
G27.0	448.2	488.8	538.1	586.5	589.9	608.6	570.5	599.3
G28.0	440.6	486.3	537.8	589.7	592.1	611.4	570.3	611.5
G29.0	431.4	486.4	535.6	593.2	600.0	615.0	570.7	613.8
G30.0	423.7	485.6	534.6	603.3	613.3	620.9	571.9	607.3
G31.0	416.4	480.6	535.5	613.2	628.5	629.1	573.6	591.7
G32.0	415.0	476.4	533.2	623.4	639.6	634.7	576.7	570.6
G33.0	413.9	473.1	533.0	633.1	650.0	638.0	585.7	542.8
G34.0	411.2	467.8	536.9	642.0	660.3	639.1	605.9	512.4
G35.0	406.6	462.3	545.7	652.7	669.2	644.6	634.3	486.1
G36.0	404.2	459.0	555.0	668.2	677.7	655.9	658.3	471.6
G37.0	402.6	456.3	562.4	681.9	686.2	673.2	667.3	470.7
G38.0	402.2	455.7	569.0	695.9	693.7	683.2	665.5	476.9
G39.0	400.1	455.3	577.7	708.5	708.4	694.7	658.3	493.7

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Light Distribution Data

Unit: cd

G\C	C120.0	C135.0	C150.0	C165.0	C180.0	C195.0	C210.0	C225.0
G40.0	398.5	457.5	583.8	719.7	733.8	707.8	661.4	529.7
G41.0	403.4	460.9	592.9	730.5	765.3	717.6	669.7	564.2
G42.0	411.7	464.7	604.2	740.6	782.4	730.4	673.0	583.5
G43.0	433.3	469.7	615.3	750.4	784.1	743.4	666.4	628.1
G44.0	458.5	478.8	630.3	758.8	775.7	756.3	648.9	604.0
G45.0	468.2	494.9	660.0	764.6	761.7	760.5	638.9	528.4
G46.0	444.3	512.5	689.2	769.8	754.3	752.1	640.3	440.3
G47.0	389.5	529.2	717.0	774.0	741.9	731.3	652.8	367.4
G48.0	326.6	543.0	737.8	765.5	725.1	703.0	655.5	303.7
G49.0	281.7	577.3	751.9	741.3	708.7	676.4	650.0	270.7
G50.0	251.5	647.0	763.6	698.8	692.9	659.0	647.7	267.6
G51.0	245.5	688.2	760.2	677.5	696.5	662.9	663.8	269.0
G52.0	248.4	684.1	720.8	679.3	716.7	662.2	672.1	271.6
G53.0	291.0	638.7	673.8	701.1	734.5	674.4	621.2	273.7
G54.0	400.4	563.4	632.3	724.1	762.7	708.5	570.7	273.1
G55.0	378.5	540.6	620.4	775.4	816.3	730.7	567.2	261.4
G56.0	254.6	530.5	615.0	809.3	860.3	725.7	395.1	246.5
G57.0	246.9	534.0	673.8	857.6	871.5	666.7	276.9	245.3
G58.0	254.3	548.0	746.5	1026.1	834.4	654.9	270.0	224.6
G59.0	351.5	610.5	790.0	895.4	760.9	661.4	239.3	210.2
G60.0	462.9	641.3	1001.8	714.3	783.4	610.4	236.4	219.1
G61.0	263.5	539.2	1075.6	822.1	1088.7	683.6	252.9	229.7
G62.0	206.0	370.8	726.0	1043.3	739.6	542.6	231.6	204.2
G63.0	229.8	239.5	514.3	991.1	607.5	449.9	201.3	193.9
G64.0	241.1	312.8	600.5	559.9	767.1	627.9	167.3	155.4
G65.0	109.1	375.5	796.1	494.7	631.3	759.1	104.4	94.5
G66.0	54.5	354.6	673.0	925.8	377.3	513.5	93.4	84.1
G67.0	57.5	277.9	354.8	829.2	477.6	253.0	41.9	76.6
G68.0	46.8	144.7	415.0	491.2	679.3	151.0	30.2	54.6
G69.0	30.1	151.6	378.8	376.0	314.5	114.2	27.2	38.6
G70.0	15.3	112.3	516.2	530.7	209.8	88.8	23.7	18.2
G71.0	13.2	63.8	516.9	323.2	177.6	61.4	17.7	15.2
G72.0	12.5	30.8	199.9	383.0	187.9	41.2	11.9	12.2
G73.0	11.5	23.7	122.3	254.7	148.7	30.3	10.2	9.1
G74.0	10.3	20.6	89.0	171.7	117.7	22.3	9.3	7.5
G75.0	9.5	17.0	52.6	114.3	71.1	18.2	8.6	6.8
G76.0	8.8	13.9	45.8	73.6	35.9	17.9	8.1	7.0
G77.0	7.8	11.9	38.6	48.1	27.0	18.3	8.2	6.7
G78.0	8.0	10.0	31.2	40.4	25.8	16.5	8.0	6.5
G79.0	8.9	8.6	25.0	32.9	25.3	14.5	7.6	6.2

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Light Distribution Data

Unit: cd

G\C	C120.0	C135.0	C150.0	C165.0	C180.0	C195.0	C210.0	C225.0
G80.0	8.6	8.1	18.1	26.9	23.0	13.3	7.1	6.2
G81.0	8.0	7.9	13.3	23.2	20.3	13.2	5.9	6.3
G82.0	7.7	7.8	11.8	19.5	18.4	12.8	5.5	6.7
G83.0	6.8	7.7	10.9	16.1	17.6	12.9	5.2	6.8
G84.0	6.4	8.1	9.9	14.6	17.3	13.3	5.2	6.1
G85.0	6.5	7.9	8.6	13.5	17.6	12.9	5.5	5.6
G86.0	7.1	8.0	8.1	12.4	15.5	12.1	5.1	5.1
G87.0	6.7	8.0	7.2	11.6	14.6	10.2	4.7	4.9
G88.0	7.0	7.1	6.6	10.0	13.3	7.8	4.3	4.5
G89.0	6.5	5.6	5.7	8.9	10.8	7.2	4.1	4.1
G90.0	4.9	4.7	5.0	8.8	10.6	7.9	4.0	3.8

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Light Distribution Data

Unit: cd

G\C	C240.0	C255.0	C270.0	C285.0	C300.0	C315.0	C330.0	C345.0
G0.0	576.1	576.1	576.1	576.1	576.1	576.1	576.1	576.1
G1.0	580.9	581.3	585.1	582.8	584.9	582.9	582.3	581.0
G2.0	588.8	588.4	595.9	592.8	597.2	592.4	590.5	585.5
G3.0	594.3	597.1	605.3	605.0	609.1	603.9	601.3	591.6
G4.0	597.7	604.7	612.3	616.3	619.5	615.5	608.2	598.7
G5.0	599.7	611.5	616.9	623.4	624.4	622.9	616.6	603.8
G6.0	601.1	612.2	616.2	628.0	627.8	630.4	626.9	611.3
G7.0	602.5	612.6	614.1	628.3	628.9	636.8	637.7	621.4
G8.0	605.6	611.0	611.5	627.9	631.9	644.6	648.7	632.5
G9.0	606.2	610.3	609.5	627.1	635.2	652.2	657.7	642.9
G10.0	602.7	608.4	608.6	626.5	637.7	654.6	659.7	650.7
G11.0	597.5	604.1	606.4	625.7	638.6	655.4	661.5	652.4
G12.0	589.0	596.3	601.1	622.5	636.8	656.4	662.3	656.0
G13.0	578.7	586.6	594.3	617.8	634.4	660.2	662.3	662.4
G14.0	568.5	579.0	588.5	611.4	633.3	662.1	664.8	669.2
G15.0	558.5	573.3	585.0	606.7	633.7	666.2	669.0	676.5
G16.0	553.2	567.3	586.0	605.5	636.7	673.1	673.8	684.9
G17.0	549.1	564.0	587.8	606.5	638.2	679.2	681.6	697.0
G18.0	548.1	559.7	589.7	610.5	641.2	684.9	685.0	703.4
G19.0	548.1	556.8	592.9	615.8	645.9	689.1	689.9	706.8
G20.0	549.8	560.9	597.1	619.5	654.1	689.7	696.1	710.2
G21.0	552.4	566.8	597.7	623.4	664.2	688.5	705.2	712.1
G22.0	561.9	572.7	592.5	623.6	675.9	692.5	714.3	713.7
G23.0	574.1	572.6	580.4	618.3	681.8	698.4	726.7	717.0
G24.0	580.9	564.1	564.0	607.7	680.1	705.2	737.3	727.0
G25.0	578.2	538.2	541.5	599.2	670.0	713.6	745.3	738.9
G26.0	559.3	505.7	516.5	587.6	660.8	717.3	747.7	746.5
G27.0	524.5	470.9	490.3	573.9	653.3	716.6	747.9	747.5
G28.0	478.6	446.3	481.7	562.8	648.5	713.6	754.4	745.2
G29.0	450.3	440.8	493.4	556.4	640.6	711.5	768.5	745.1
G30.0	438.5	451.8	518.0	547.3	635.4	710.0	789.2	753.0
G31.0	441.0	473.4	564.7	539.0	640.1	716.9	798.7	766.3
G32.0	454.4	516.8	584.2	555.4	639.9	729.2	801.6	778.9
G33.0	478.0	610.9	540.0	571.7	632.4	741.5	802.7	792.9
G34.0	528.2	595.2	443.0	557.3	626.6	746.0	806.8	806.9
G35.0	603.1	396.3	331.4	526.3	629.8	744.2	815.4	816.9
G36.0	596.0	304.9	299.0	518.5	630.2	749.0	818.6	821.7
G37.0	489.9	286.5	287.2	525.0	619.2	764.3	830.6	830.4
G38.0	352.6	269.7	281.8	475.7	614.0	774.0	844.2	851.1
G39.0	294.8	266.2	281.4	344.5	623.2	758.4	836.7	882.7

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Light Distribution Data

Unit: cd

G\C	C240.0	C255.0	C270.0	C285.0	C300.0	C315.0	C330.0	C345.0
G40.0	275.2	263.1	279.3	305.2	626.8	732.4	809.2	913.2
G41.0	263.7	261.3	270.5	297.0	611.7	714.6	802.1	921.7
G42.0	254.3	253.4	258.3	292.3	546.0	711.2	834.1	907.5
G43.0	251.0	243.5	232.9	291.4	462.1	714.2	884.0	885.2
G44.0	246.5	231.4	222.2	287.8	412.2	727.2	878.0	862.3
G45.0	241.5	216.1	213.7	270.5	411.0	745.7	842.9	846.3
G46.0	236.8	210.0	216.8	254.2	353.5	736.5	811.7	839.3
G47.0	235.4	210.4	219.4	240.4	322.9	728.3	778.3	846.0
G48.0	227.3	216.9	219.6	233.3	307.6	735.2	748.5	849.4
G49.0	220.0	214.1	230.4	233.2	292.5	683.5	713.7	852.6
G50.0	213.4	210.0	237.9	235.4	286.5	551.7	673.6	842.5
G51.0	214.3	223.9	240.7	236.8	275.8	480.8	654.7	802.9
G52.0	214.9	236.4	262.4	244.4	254.7	445.4	652.0	787.3
G53.0	216.5	245.5	265.7	244.8	247.6	380.6	660.8	789.5
G54.0	231.1	254.0	294.4	246.9	228.8	332.0	649.9	759.4
G55.0	234.1	275.0	321.7	255.6	220.5	289.2	674.9	799.2
G56.0	242.2	319.8	294.4	263.6	228.8	275.6	785.7	851.3
G57.0	263.2	305.2	196.6	297.6	219.8	280.2	730.2	966.4
G58.0	310.7	177.8	153.1	286.6	222.9	265.3	613.8	834.4
G59.0	278.6	153.0	170.7	225.0	236.6	270.9	427.3	783.7
G60.0	178.8	161.3	210.4	215.8	248.8	236.7	350.2	784.0
G61.0	144.4	210.2	149.8	177.9	195.8	214.7	334.8	880.0
G62.0	141.0	169.8	84.3	200.1	162.9	183.5	230.7	849.0
G63.0	195.3	86.7	100.7	147.5	119.2	170.7	240.6	563.5
G64.0	92.1	94.3	95.1	116.8	118.1	126.6	185.1	571.0
G65.0	68.1	135.2	26.3	101.4	110.4	133.7	132.3	349.6
G66.0	73.4	30.3	23.6	81.3	79.1	81.2	95.6	324.2
G67.0	62.0	23.8	23.2	27.1	56.8	49.7	55.6	228.6
G68.0	20.6	23.3	20.6	22.6	35.0	51.9	39.2	188.9
G69.0	18.4	21.1	15.3	21.0	16.6	22.6	31.4	188.5
G70.0	16.5	16.8	9.6	18.5	14.4	18.1	25.7	169.5
G71.0	14.0	8.9	6.2	12.4	12.0	15.6	20.2	109.6
G72.0	9.4	6.4	5.5	6.9	9.7	12.5	13.7	64.4
G73.0	6.8	5.6	5.0	6.1	6.4	8.3	11.9	36.6
G74.0	6.4	5.0	4.7	5.6	5.4	7.2	10.5	24.9
G75.0	6.0	4.6	4.5	5.0	5.1	7.7	9.5	19.8
G76.0	5.3	4.3	4.1	4.8	4.8	7.3	8.9	17.6
G77.0	5.0	4.0	3.9	4.6	4.6	7.1	8.5	16.9
G78.0	4.8	3.9	3.8	4.5	4.6	6.7	9.0	16.9
G79.0	4.5	3.7	3.6	4.3	4.7	8.0	9.2	16.9

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-001

Test Time : 2023-01-03 14:12:36

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Light Distribution Data

Unit: cd

G\C	C240.0	C255.0	C270.0	C285.0	C300.0	C315.0	C330.0	C345.0
G80.0	4.1	3.7	3.3	3.9	4.7	7.8	9.0	15.9
G81.0	3.9	3.2	2.9	3.5	5.0	7.5	9.5	16.0
G82.0	3.9	3.0	2.7	3.2	5.4	7.0	12.2	16.9
G83.0	3.7	2.7	2.3	2.8	5.5	6.3	16.0	16.2
G84.0	3.5	2.6	2.1	2.7	5.8	6.2	14.7	15.5
G85.0	3.4	2.4	1.9	2.6	5.7	6.0	14.7	17.7
G86.0	3.2	2.2	1.7	2.5	5.4	5.4	18.0	16.6
G87.0	3.3	2.2	1.4	2.6	5.4	5.2	20.4	17.3
G88.0	3.1	2.0	1.3	2.5	5.4	5.0	17.2	16.2
G89.0	2.8	1.9	1.3	2.3	4.7	4.5	15.1	17.0
G90.0	2.6	1.7	1.2	2.2	4.8	4.1	15.8	14.2

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:15.0

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-002

Test Time : 2023-01-03 15:40:15

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Lisun Goniophotometer Test Report

Product Info

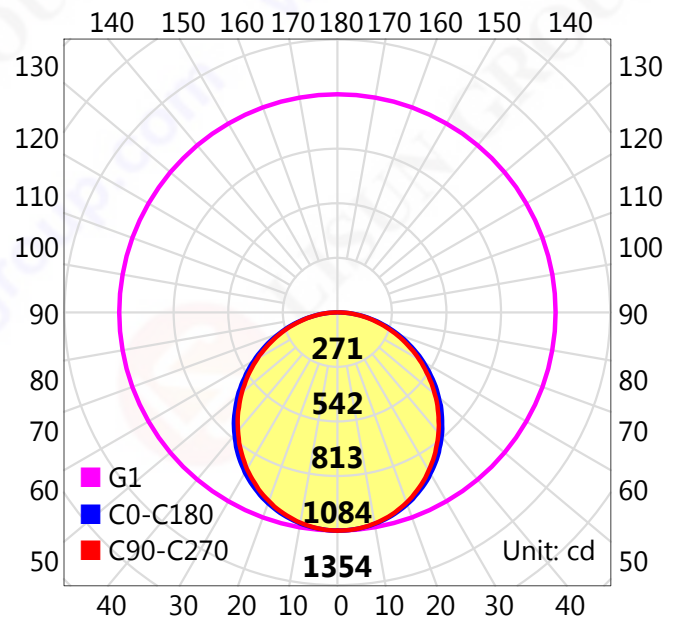
Luminaire Category : **Indoor**
 Luminaire : **ID-AC297**
 Lamp Category : **CREE**
 Lamp : **011507**
 Manufacturer : **Philips Lighting B.V.**
 Submitter : **Michael Aslami**
 Number of Lamps : **1** Lumens per Lamp : **3300 lm**
 Luminous Length : **595 mm** Luminous Width : **595 mm** Luminous Height : **0 mm**

Electric Parameters

Voltage : **230.00 V** Current : **0.2089 A** Power : **46.95 W** Power Factor : **0.978** Frequency : **50.00 Hz**

Photometric Parameters

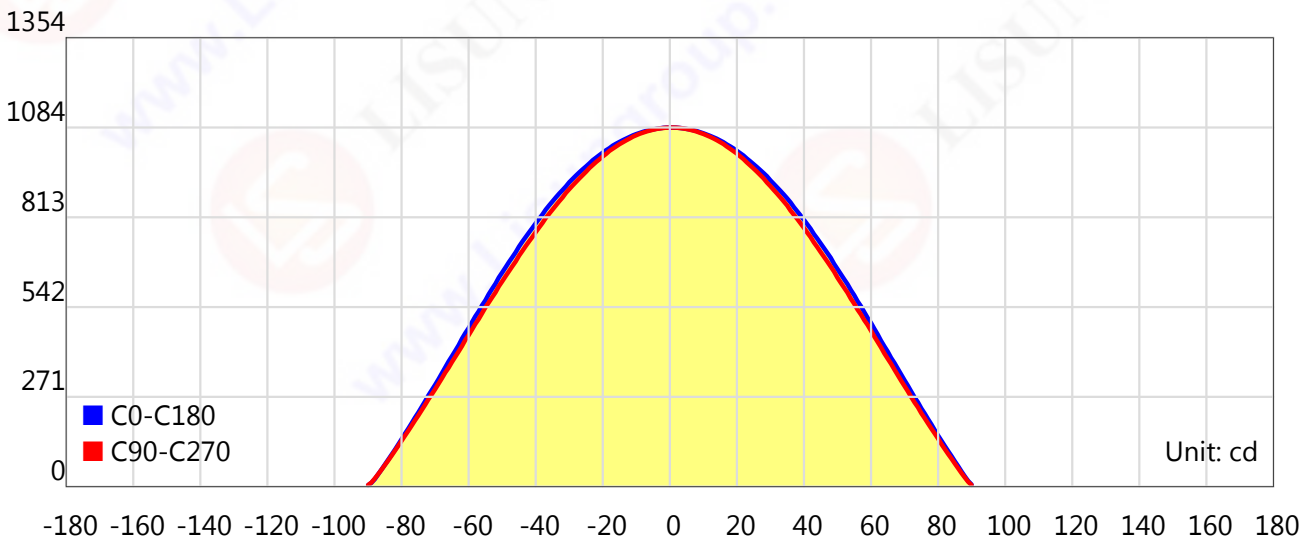
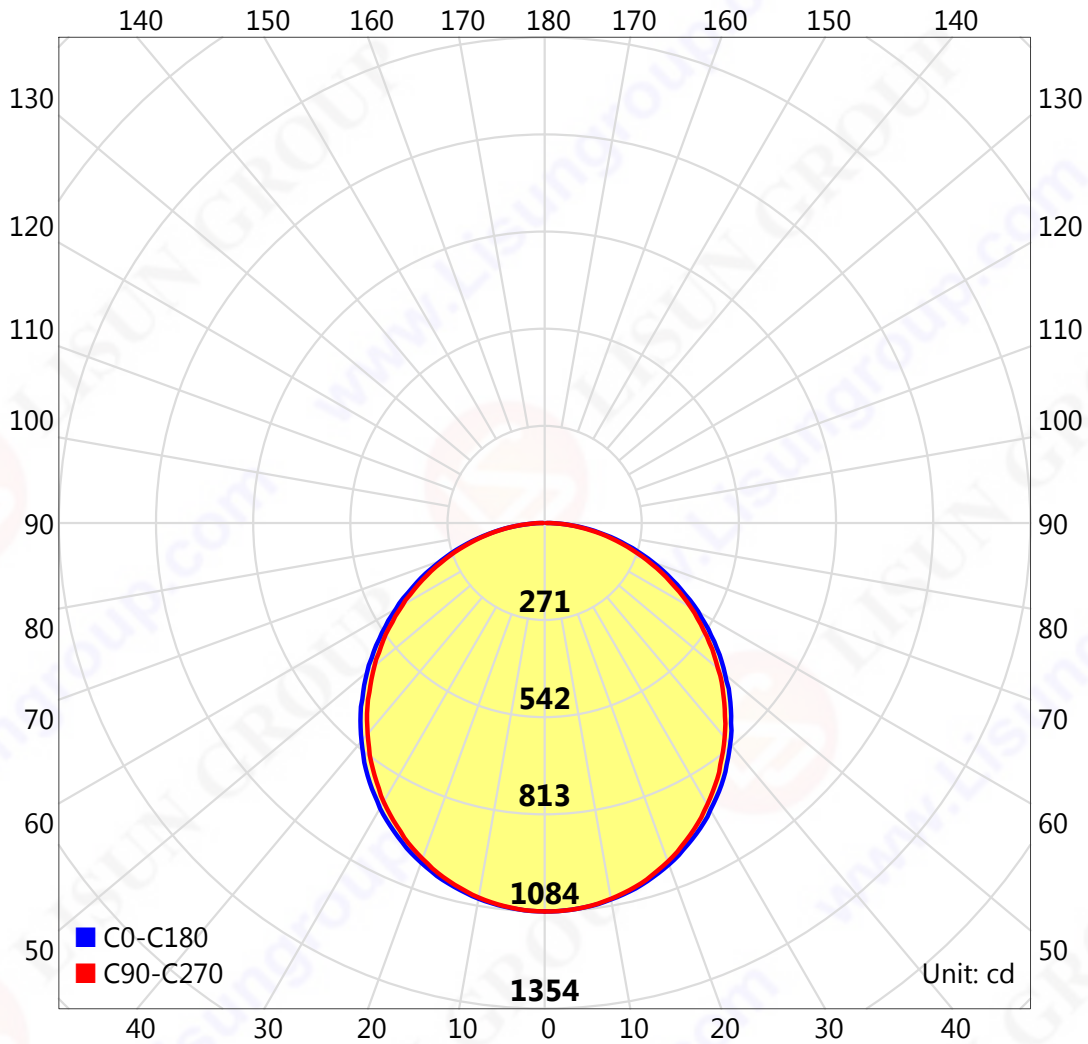
CIE Class : Direct Measurement Flux : 3124.1 lm Upward Ratio : 0.00 % Maximum Intensity : 1083.51 cd Central Intensity : 1083.42 cd Luminaire Efficacy Rating (LER) : 67 Beam Angle (C0-C180,C90-C270) : 113.5 °, 110.5 ° Field Angle (C0-C180,C90-C270) : 165.2 °, 164.4 °	Total Rated Lamp Lumens : 3300.0 lm Efficiency : 94.67 % Downward Ratio : 94.67 % Position Of Maximum Intensity : C90° γ1° S/MH(C0-C180,C90-C270) : 1.26, 1.24 Energy Efficiency Class : G (EU 2019/2015 η_{TM}:67lm/W) Beam Angle (C45-C225,C135-C315) : 111.9 °, 111.9 ° Field Angle (C45-C225,C135-C315) : 164.8 °, 164.8 °
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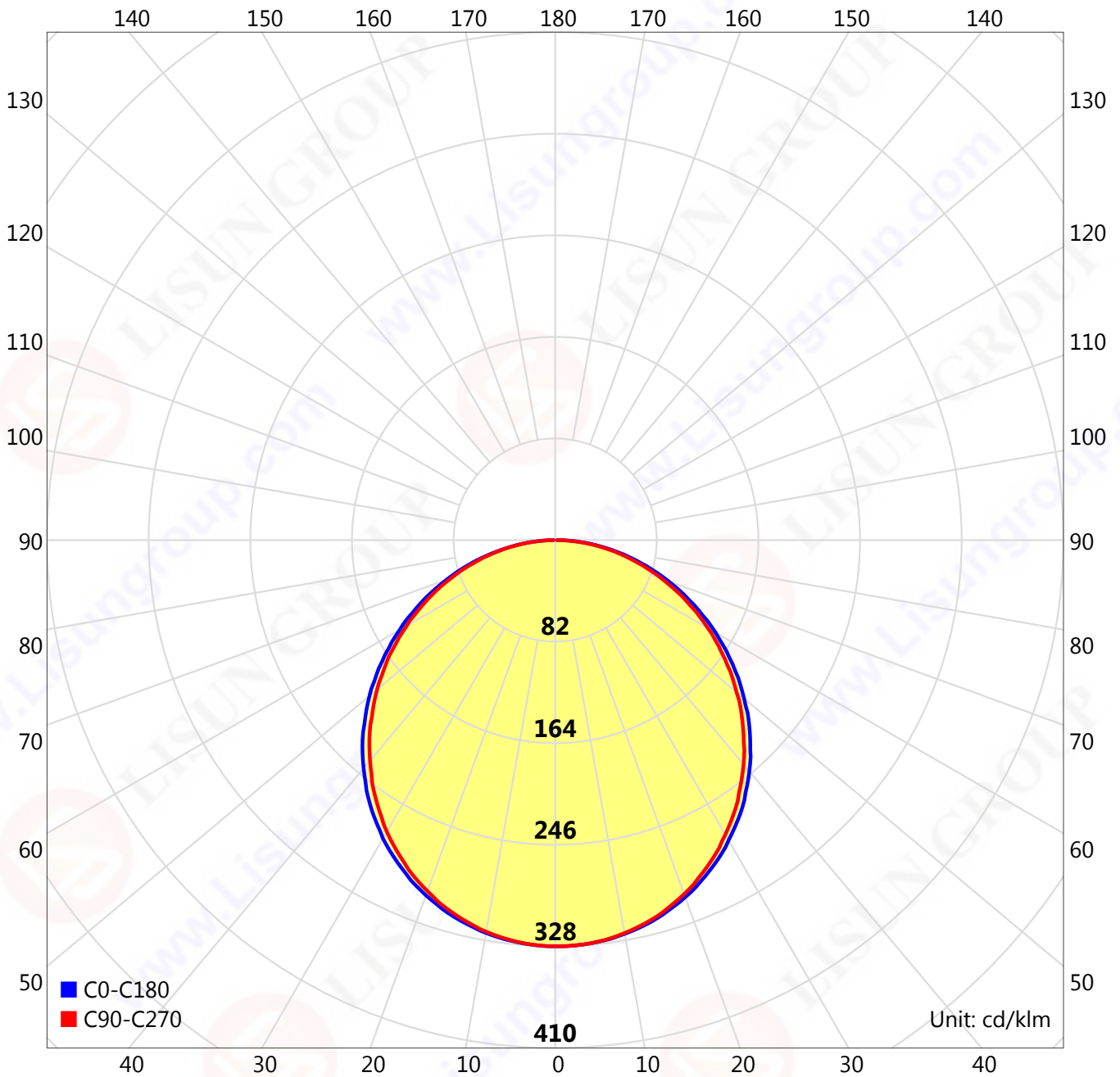
Average Beam Angle (50%): 111.9°

Test Type : Type C	Test Distance : 15.172 m	C Plane (°): 0.0-360.0:22.5	γ (°): 0.0-90.0:1.0
Test Device : LSG-6000		Temperature : 25°C	Humidity : 65.0%
Test Lab : LISUN GROUP			
Test By : Thomas Fiodorow		Review By :	

Light Distribution Curve



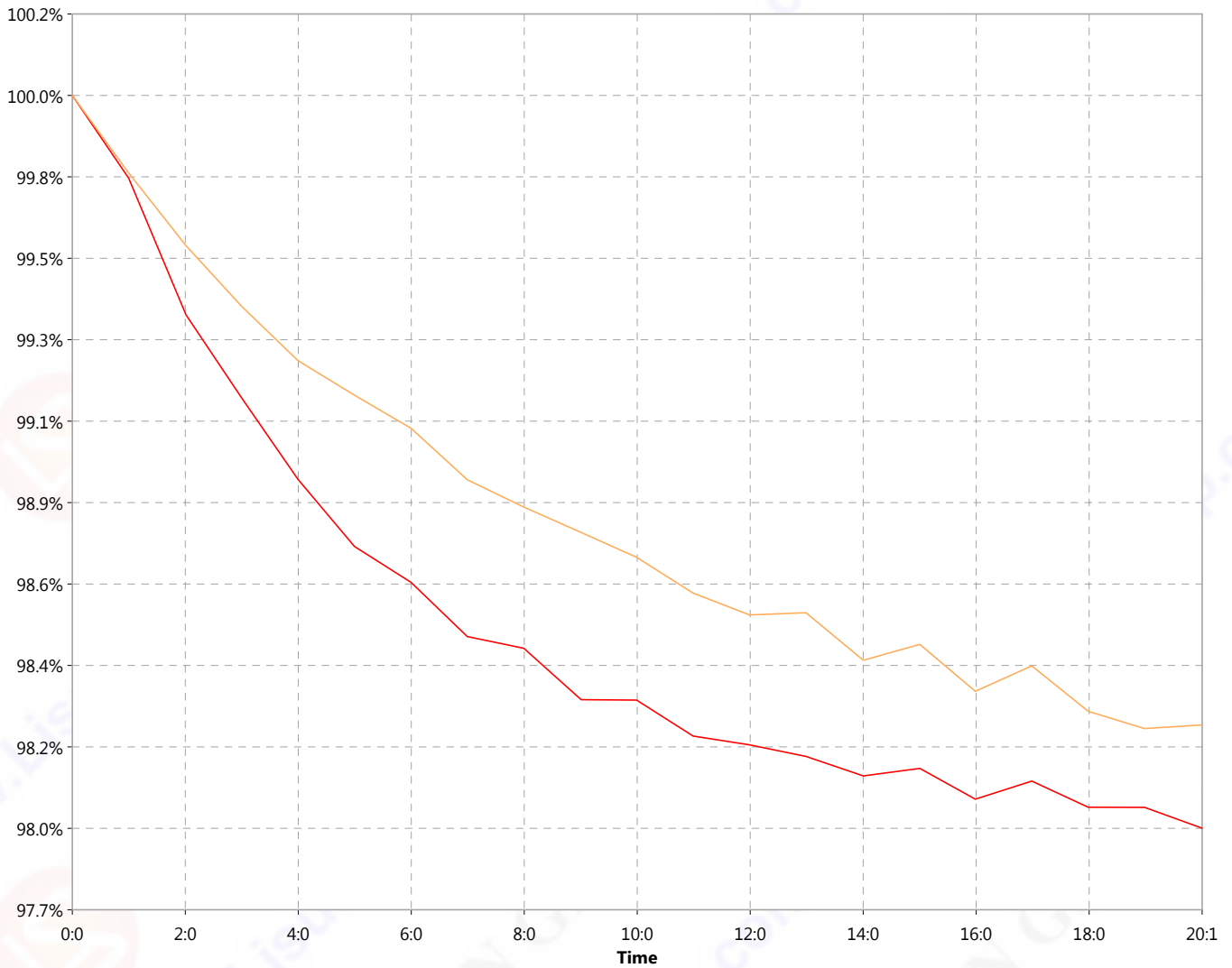
Light Distribution Curve (cd/klm)



011507/CREE

$\eta=94.67\%$

Warmup Log



Stable time: 20:1

Uptime: 0:0

Parameters	Maximum	Minimum	Change
Luminous intensity ,cd	1104.33	1081.91	22.41
Power ,W	47.83	47.00	0.84

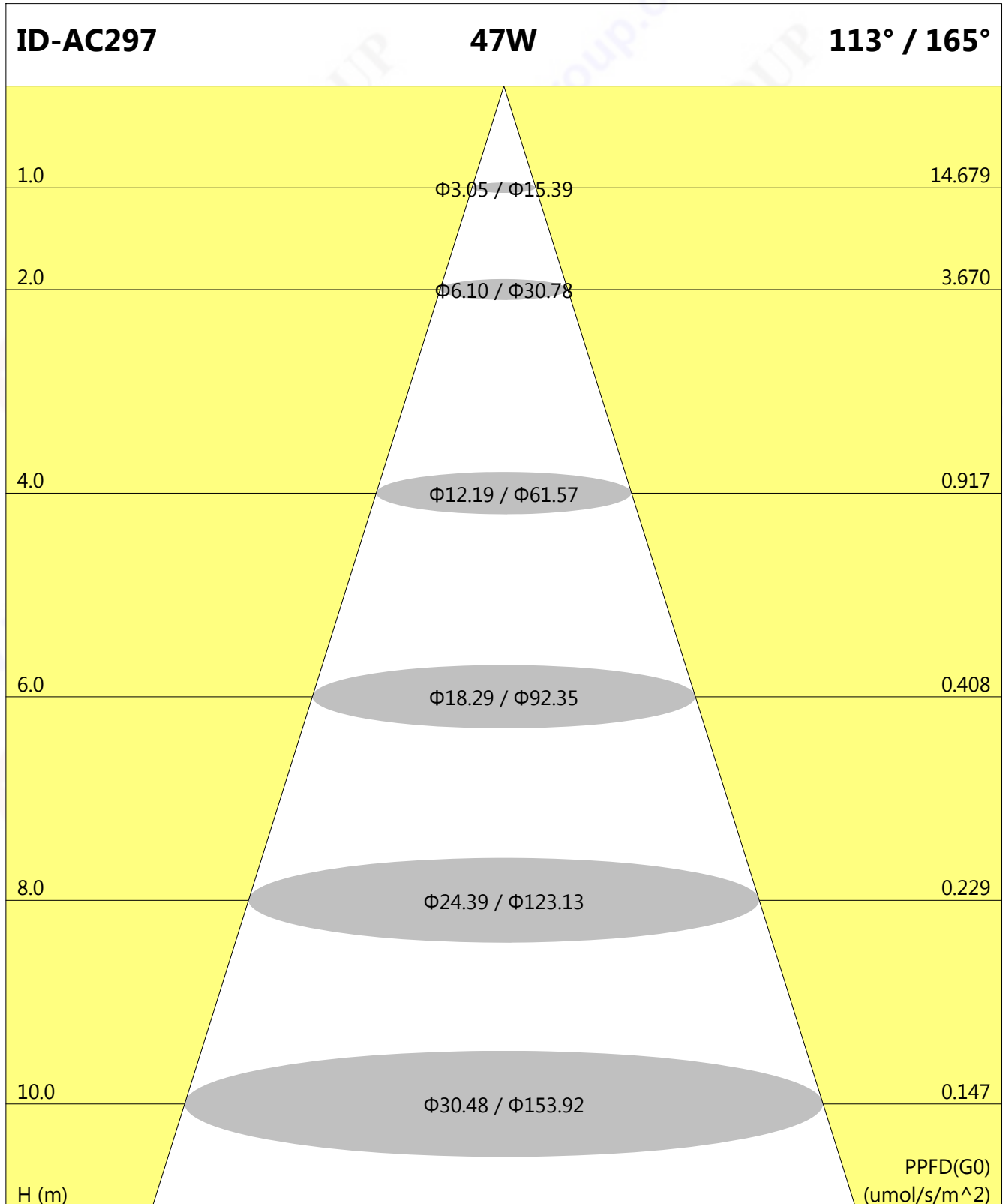
UGR

Reflectance										
Ceiling (cavity)	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
X=2H Y=2H	15.8	17.4	16.1	17.7	18.0	15.4	17.1	15.8	17.4	17.7
3H	17.7	19.2	18.1	19.5	19.9	17.4	18.9	17.7	19.2	19.5
4H	18.5	19.9	18.9	20.2	20.6	18.1	19.5	18.5	19.9	20.3
6H	19.1	20.4	19.5	20.8	21.2	18.7	20.1	19.2	20.4	20.8
8H	19.4	20.6	19.8	21.0	21.4	19.0	20.2	19.4	20.6	21.0
12H	19.6	20.8	20.0	21.1	21.6	19.1	20.3	19.6	20.7	21.2
X=4H Y=2H	16.4	17.8	16.8	18.1	18.5	16.2	17.6	16.6	17.9	18.3
3H	18.6	19.8	19.0	20.1	20.5	18.3	19.5	18.7	19.9	20.3
4H	19.5	20.6	19.9	21.0	21.4	19.2	20.3	19.6	20.7	21.1
6H	20.3	21.2	20.7	21.7	22.1	19.9	20.9	20.4	21.3	21.8
8H	20.6	21.5	21.0	21.9	22.4	20.2	21.1	20.7	21.5	22.0
12H	20.8	21.6	21.3	22.1	22.6	20.4	21.2	20.9	21.7	22.2
X=8H Y=4H	19.8	20.7	20.3	21.2	21.6	19.6	20.4	20.0	20.9	21.4
6H	20.7	21.5	21.3	22.0	22.5	20.4	21.2	20.9	21.7	22.2
8H	21.2	21.8	21.7	22.3	22.8	20.8	21.5	21.3	22.0	22.5
12H	21.5	22.1	22.0	22.6	23.1	21.1	21.7	21.6	22.2	22.8
X=12H Y=4H	19.9	20.7	20.4	21.2	21.6	19.6	20.4	20.1	20.9	21.4
6H	20.9	21.5	21.4	22.0	22.5	20.6	21.2	21.1	21.7	22.2
8H	21.3	21.9	21.8	22.4	22.9	21.0	21.6	21.5	22.1	22.6

Calculate in accordance with CIE 190:2010. The table is corrected with 3300lm ($8\log(F/F_0) = 4.1$).

Reflectance										
Ceiling (cavity)	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
X=2H Y=2H	16.2	17.6	16.5	17.9	18.1	16.0	17.4	16.3	17.6	17.9
3H	17.9	19.2	18.2	19.5	19.8	17.6	18.9	18.0	19.2	19.5
4H	18.6	19.9	19.0	20.2	20.5	18.3	19.5	18.7	19.8	20.1
6H	19.2	20.4	19.6	20.7	21.0	18.9	20.0	19.3	20.3	20.7
8H	19.5	20.6	19.8	20.9	21.2	19.1	20.2	19.5	20.5	20.8
12H	19.6	20.7	20.0	21.0	21.4	19.2	20.3	19.6	20.6	21.0
X=4H Y=2H	16.9	18.1	17.2	18.4	18.7	16.7	17.9	17.1	18.2	18.5
3H	18.8	19.8	19.2	20.2	20.5	18.5	19.6	18.9	19.9	20.3
4H	19.7	20.6	20.1	21.0	21.3	19.4	20.3	19.8	20.7	21.1
6H	20.4	21.2	20.8	21.6	22.0	20.1	20.9	20.5	21.3	21.7
8H	20.7	21.5	21.1	21.9	22.3	20.4	21.1	20.8	21.5	22.0
12H	20.9	21.6	21.4	22.0	22.5	20.6	21.3	21.0	21.7	22.1
X=8H Y=4H	20.0	20.8	20.4	21.2	21.6	19.8	20.5	20.2	20.9	21.3
6H	20.9	21.5	21.4	22.0	22.4	20.6	21.3	21.1	21.7	22.2
8H	21.3	21.8	21.8	22.3	22.8	21.0	21.6	21.5	22.0	22.5
12H	21.6	22.1	22.1	22.6	23.1	21.3	21.8	21.8	22.3	22.8
X=12H Y=4H	20.0	20.7	20.5	21.1	21.6	19.8	20.5	20.3	20.9	21.4
6H	21.0	21.5	21.5	22.0	22.5	20.7	21.3	21.2	21.7	22.2
8H	21.4	21.9	21.9	22.4	22.9	21.1	21.6	21.6	22.1	22.6
Variations with the observer position at spacings										
S=1.0H						+0.2/-0.2				
S=1.5H						+0.4/-0.4				
S=2.0H						+0.5/-0.7				

Calculate in accordance with CIE Pub.117. The table is corrected with 3300lm ($8\log(F/F_0) = 4.1$).

PPFD-Distance


Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

 γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

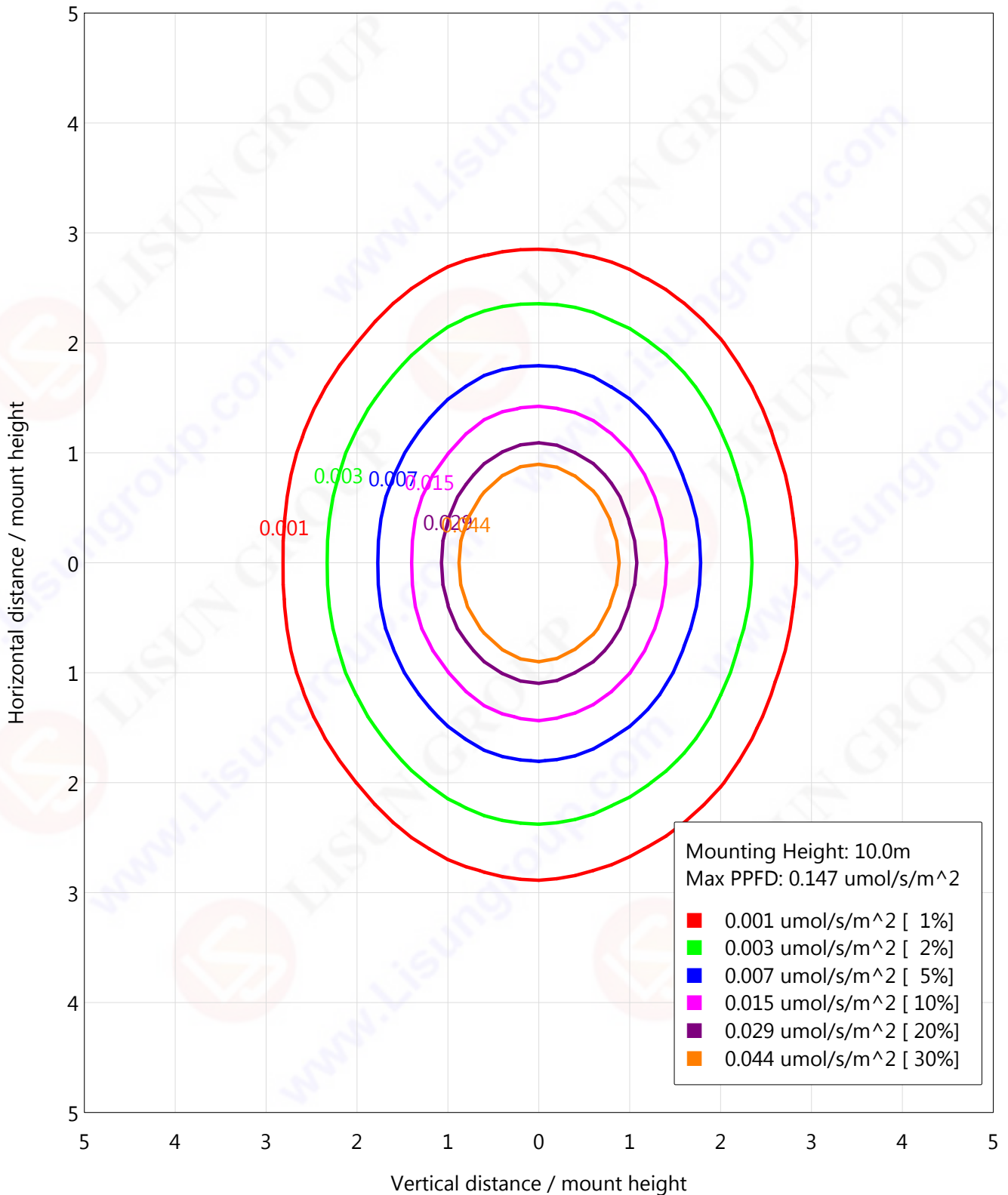
Temperature : 25°C

Humidity : 65.0%

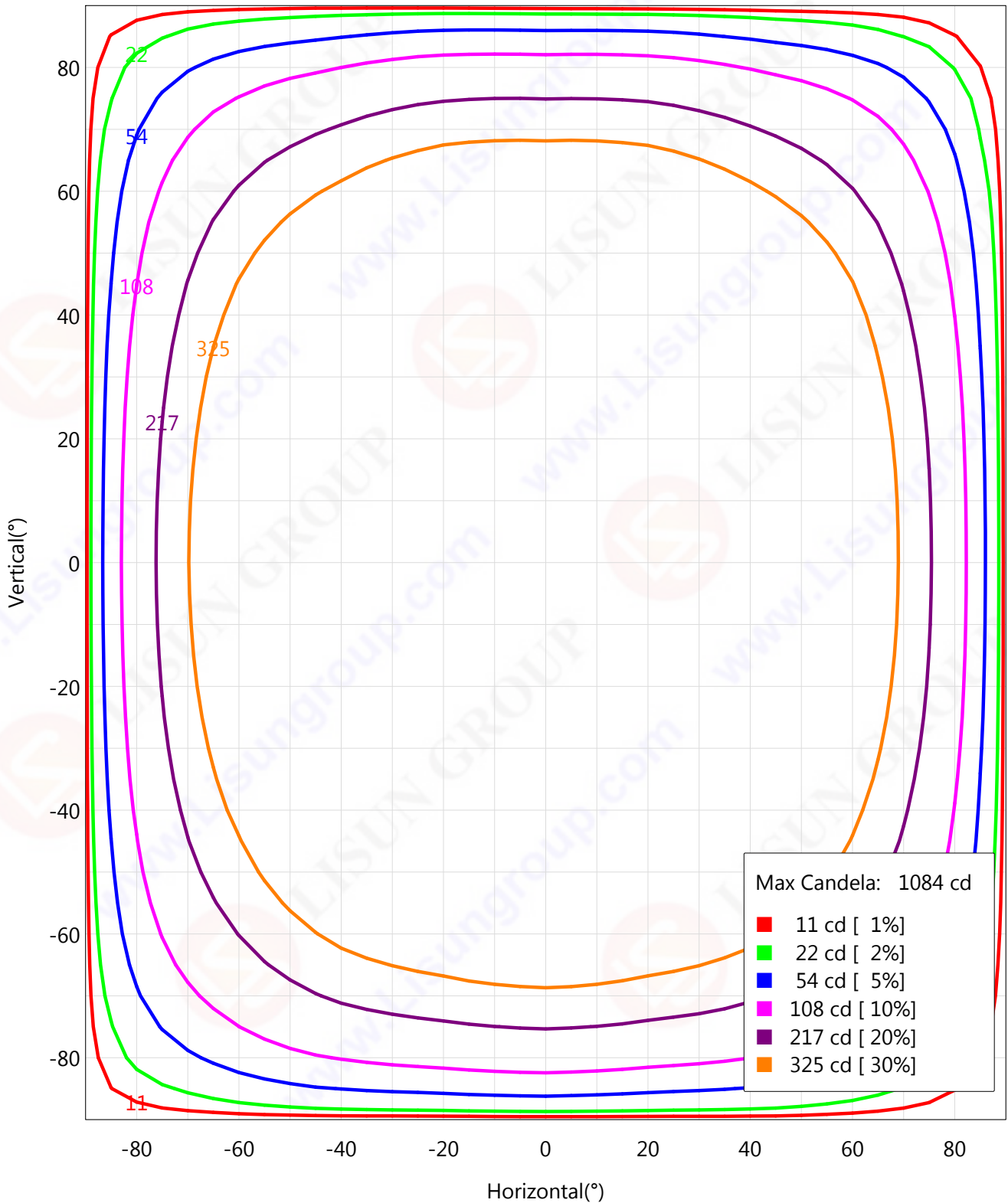
Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

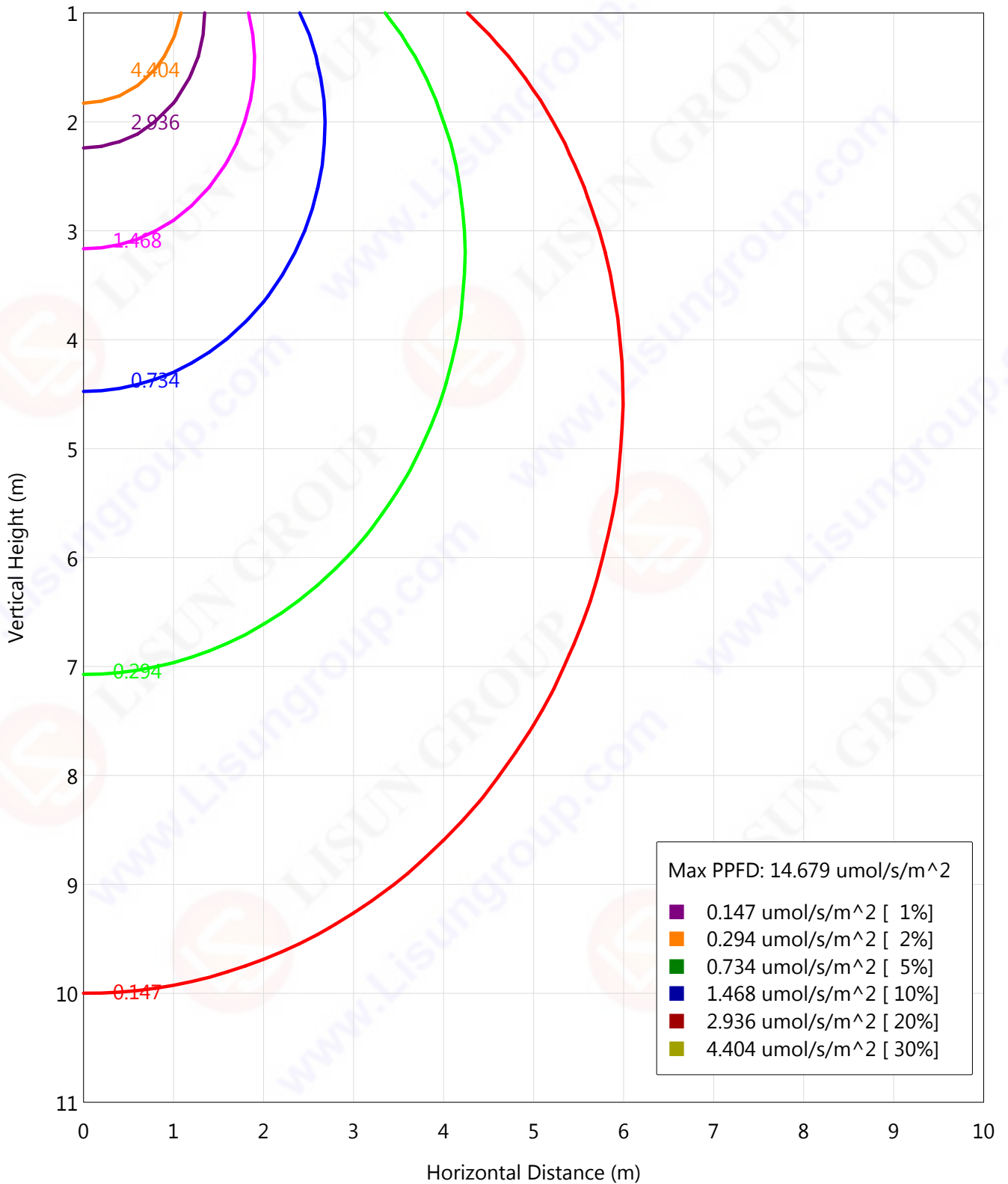
Review By :

IsoPPFD


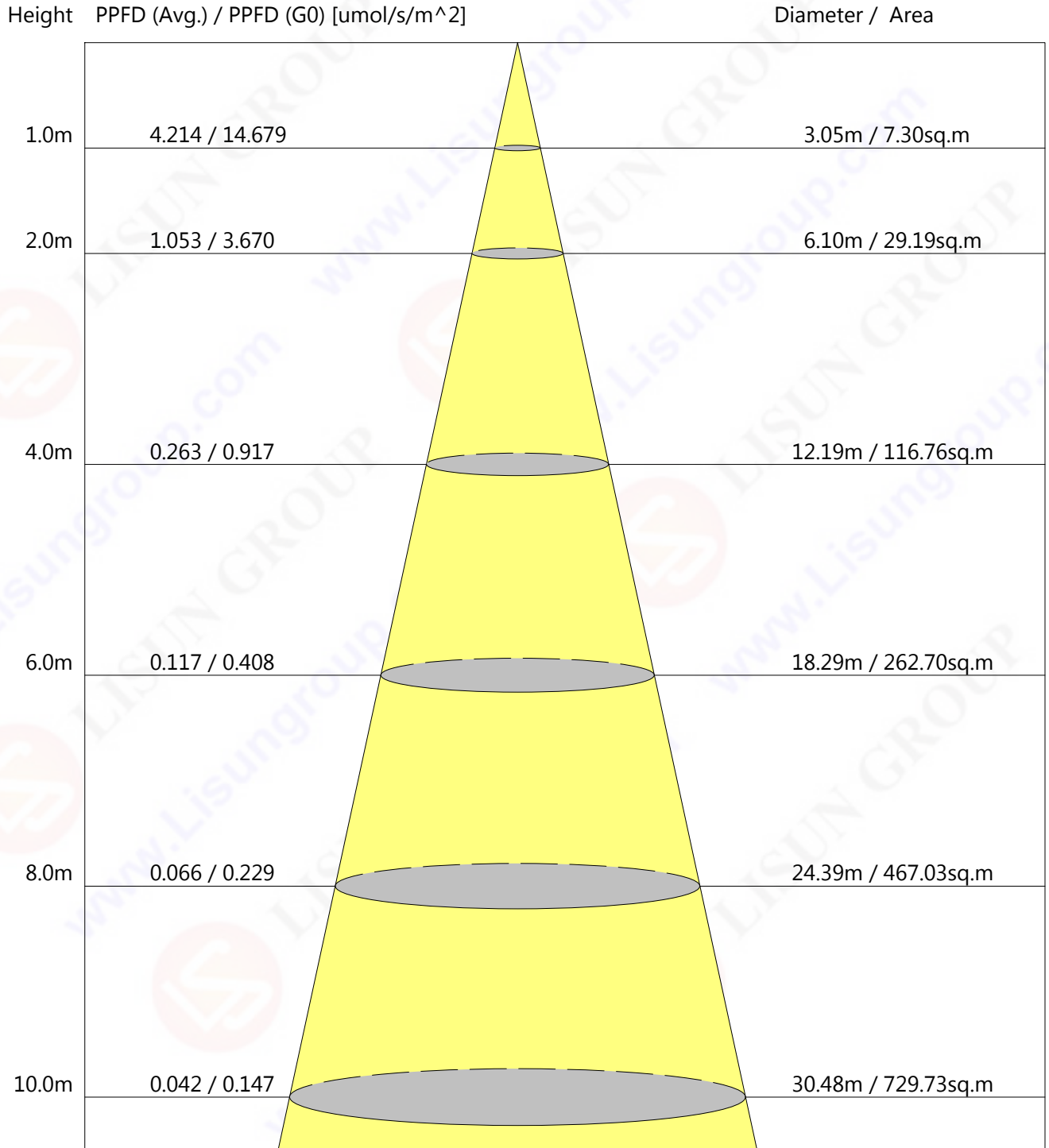
IsoCandela



Vertical IsoPPFD Plot



Average PPFD Effective Figure

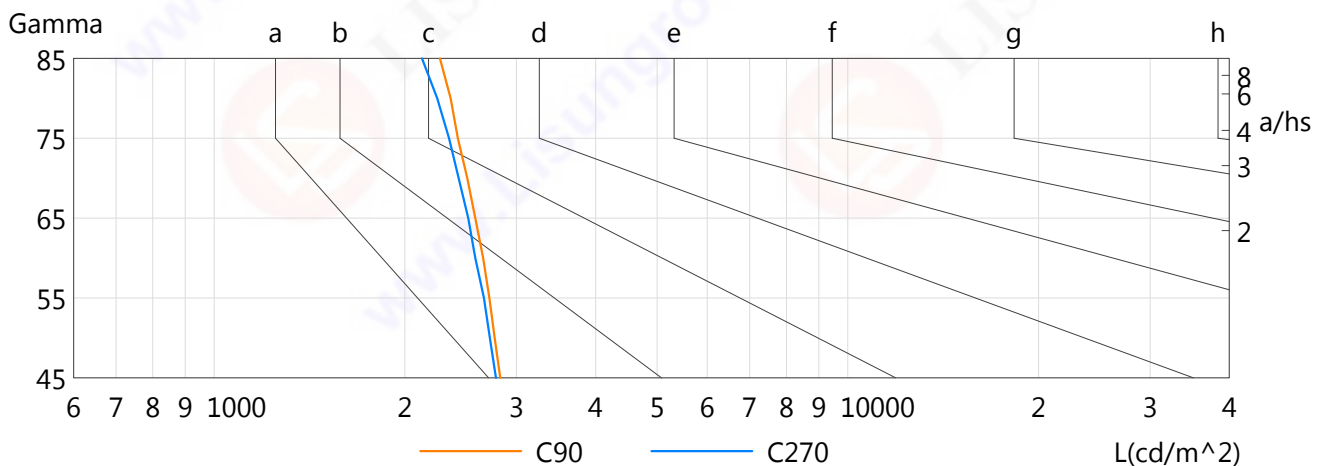
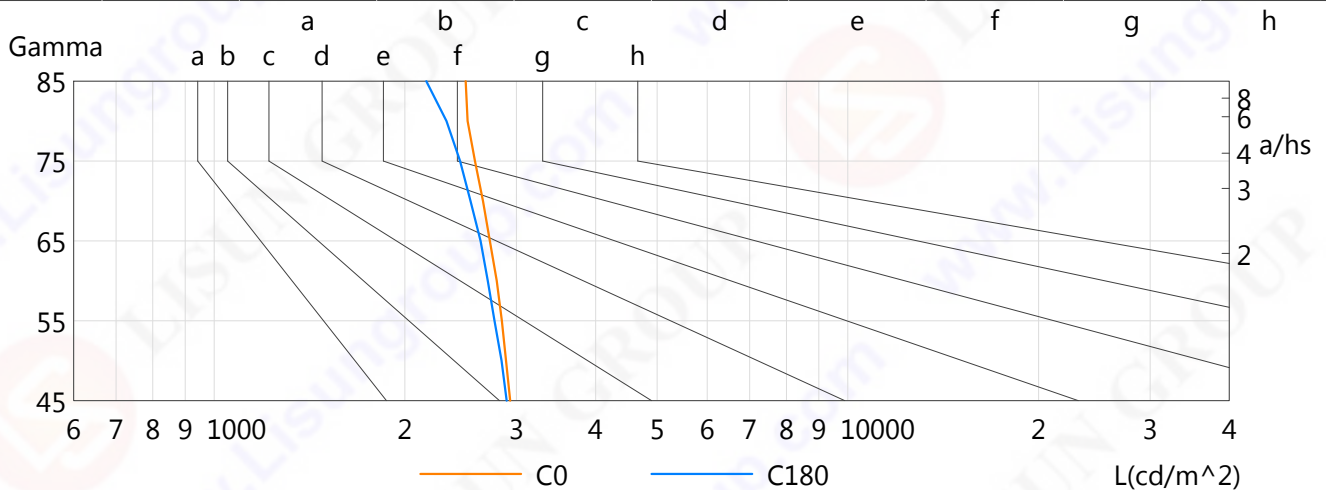


Beam Angle: 113.5° PPF Out: 30.751 $\mu\text{mol/s}$

Lumen Limit Curve

L (cd/m ²)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	2932	2887	2845	2792	2724	2655	2580	2512	2495
C90	2829	2772	2719	2658	2583	2508	2424	2361	2271
C270	2894	2841	2770	2703	2632	2539	2445	2326	2162
C90	2785	2724	2665	2583	2517	2432	2348	2249	2128

Dazzle	Quality	Illuminance (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300



Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

TM5 UF Table

Utilisation Factors UF (F)			SHR NOM = 1.25								
Room Reflectance			Room Index(RI)								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.53	0.63	0.70	0.75	0.82	0.87	0.90	0.94	0.97
	0.30		0.45	0.55	0.63	0.68	0.76	0.81	0.85	0.90	0.94
	0.20		0.40	0.50	0.57	0.63	0.71	0.77	0.81	0.87	0.91
0.50	0.50	0.20	0.51	0.61	0.67	0.72	0.79	0.83	0.86	0.91	0.93
	0.30		0.45	0.54	0.61	0.66	0.74	0.79	0.82	0.87	0.90
	0.20		0.40	0.49	0.56	0.62	0.69	0.75	0.79	0.84	0.88
0.30	0.50	0.20	0.50	0.59	0.65	0.70	0.76	0.80	0.83	0.87	0.90
	0.30		0.44	0.53	0.60	0.65	0.72	0.76	0.80	0.84	0.87
	0.20		0.39	0.49	0.55	0.61	0.68	0.73	0.77	0.82	0.85
0.00	0.00	0.00	0.37	0.46	0.53	0.58	0.65	0.69	0.73	0.78	0.81
Utilisation Factors UF (W)			SHR NOM = 1.25								
Room Reflectance			Room Index(RI)								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.96	0.79	0.68	0.59	0.48	0.40	0.34	0.26	0.22
	0.30		0.80	0.68	0.59	0.52	0.43	0.36	0.31	0.25	0.21
	0.20		0.69	0.59	0.52	0.47	0.39	0.34	0.29	0.23	0.20
0.50	0.50	0.20	0.93	0.76	0.65	0.57	0.46	0.41	0.32	0.25	0.21
	0.30		0.78	0.66	0.58	0.51	0.42	0.35	0.30	0.24	0.20
	0.20		0.68	0.59	0.52	0.46	0.38	0.33	0.28	0.23	0.19
0.30	0.50	0.20	0.90	0.74	0.63	0.55	0.44	0.36	0.31	0.24	0.20
	0.30		0.77	0.65	0.56	0.49	0.40	0.34	0.29	0.23	0.19
	0.20		0.67	0.58	0.51	0.45	0.37	0.32	0.28	0.22	0.18
0.00	0.00	0.00	0.58	0.49	0.42	0.37	0.30	0.25	0.22	0.17	0.14
Utilisation Factors UF (C)			SHR NOM = 1.25								
Room Reflectance			Room Index(RI)								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.16	0.17	0.18	0.18	0.19	0.20	0.20	0.20	0.21
	0.30		0.09	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18
	0.20		0.04	0.06	0.07	0.08	0.10	0.12	0.13	0.15	0.16
0.50	0.50	0.20	0.15	0.16	0.17	0.18	0.18	0.19	0.19	0.20	0.20
	0.30		0.09	0.10	0.11	0.12	0.14	0.15	0.16	0.17	0.18
	0.20		0.04	0.06	0.07	0.08	0.10	0.12	0.13	0.14	0.15
0.30	0.50	0.20	0.15	0.16	0.16	0.17	0.18	0.18	0.18	0.19	0.19
	0.30		0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17
	0.20		0.04	0.06	0.07	0.08	0.10	0.11	0.12	0.14	0.15
0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA

Rating: 47W Photometrically tested without ceiling board.

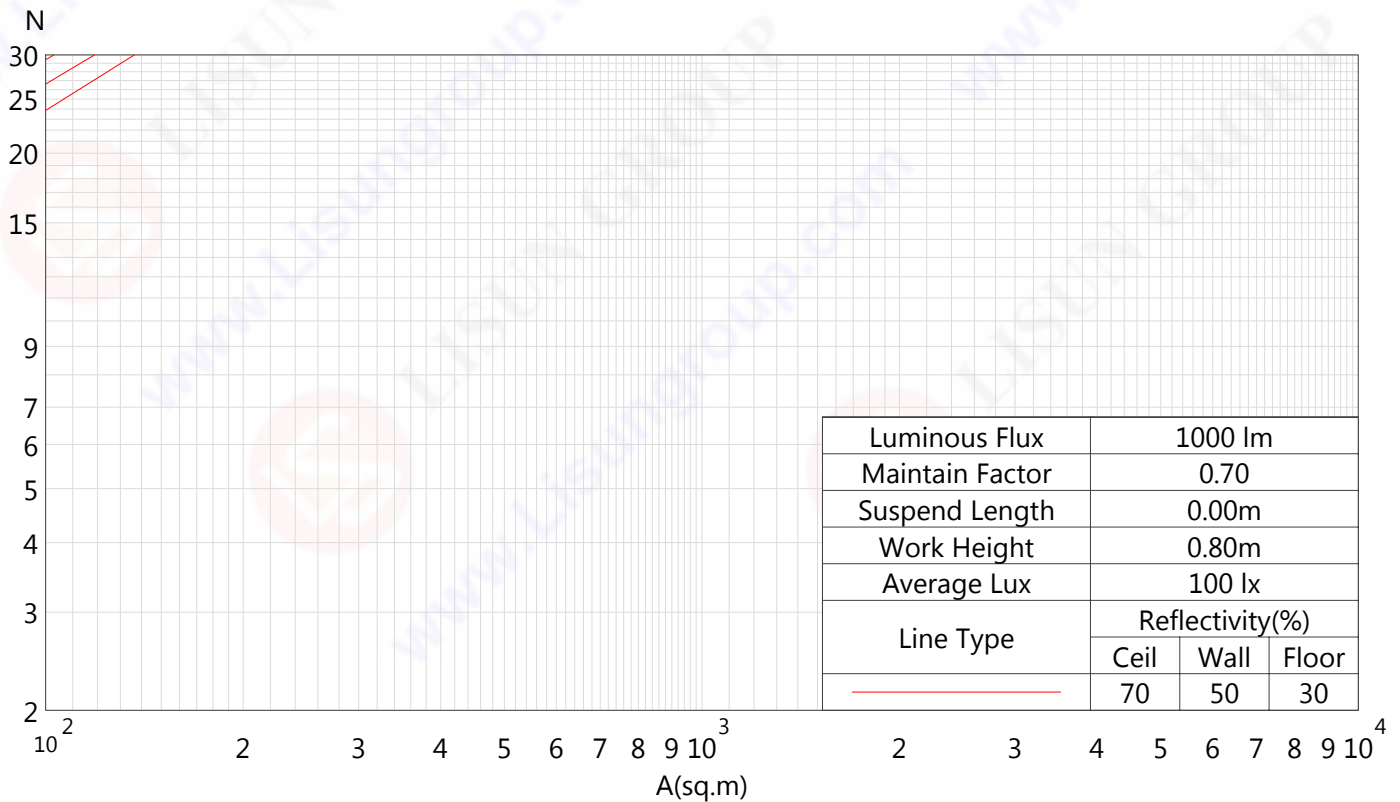
Multiply UF values by service correction factors

Calculate in accordance with CIBSE Technical Memorandum No.5/1980

Indoor CU, Curves of Luminaires vs Lighting Area

RC	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.3	0.3	0.3	0.1	0.1	0.1	0
RW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0
RCR	RF = 0.2																	
0	113	113	113	113	110	110	110	110	105	105	105	101	101	101	97	97	97	95
1	103	98	94	90	100	96	92	88	92	89	86	88	85	83	85	82	81	79
2	93	85	78	73	91	83	77	72	80	75	70	77	72	69	74	70	67	65
3	85	75	67	60	82	73	66	60	70	64	59	68	62	58	65	61	57	55
4	78	66	58	51	75	65	57	51	62	55	50	60	54	49	58	53	49	47
5	71	59	50	44	69	58	50	44	56	49	43	54	48	43	52	47	42	40
6	66	53	44	38	64	52	44	38	50	43	38	49	42	37	47	42	37	35
7	61	48	40	34	59	47	39	34	46	39	33	44	38	33	43	37	33	31
8	57	44	36	30	55	43	35	30	42	35	30	41	34	30	40	34	29	28
9	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25
10	50	37	30	25	49	37	29	24	36	29	24	35	29	24	34	28	24	22

Spacing Criteria: 1.26 (0-180), 1.24 (90-270), 1.37 (Diagonal)



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Zonal Flux

Gamma °	I _{mean} cd	Zonal Flux lm	Sum Zonal Flux lm	Rel Zonal Flux %	Sum Rel Zonal Flux %
0.0-1.0	1083.3	1.0	1.0	0.03	0.03
1.0-2.0	1082.9	3.1	4.1	0.09	0.13
2.0-3.0	1082.1	5.2	9.3	0.16	0.28
3.0-4.0	1080.9	7.2	16.6	0.22	0.50
4.0-5.0	1079.3	9.3	25.8	0.28	0.78
5.0-6.0	1077.3	11.3	37.2	0.34	1.13
6.0-7.0	1075.0	13.3	50.5	0.40	1.53
7.0-8.0	1072.3	15.3	65.9	0.47	2.00
8.0-9.0	1069.2	17.3	83.2	0.53	2.52
9.0-10.0	1065.6	19.3	102.5	0.58	3.11
10.0-11.0	1061.7	21.2	123.7	0.64	3.75
11.0-12.0	1057.3	23.1	146.8	0.70	4.45
12.0-13.0	1052.6	25.0	171.8	0.76	5.21
13.0-14.0	1047.6	26.8	198.6	0.81	6.02
14.0-15.0	1042.3	28.6	227.2	0.87	6.89
15.0-16.0	1036.4	30.4	257.6	0.92	7.81
16.0-17.0	1030.2	32.1	289.7	0.97	8.78
17.0-18.0	1023.5	33.8	323.4	1.02	9.80
18.0-19.0	1016.6	35.4	358.8	1.07	10.87
19.0-20.0	1009.3	36.9	395.8	1.12	11.99
20.0-21.0	1001.7	38.5	434.2	1.17	13.16
21.0-22.0	993.8	39.9	474.2	1.21	14.37
22.0-23.0	985.4	41.4	515.5	1.25	15.62
23.0-24.0	976.5	42.7	558.2	1.29	16.92
24.0-25.0	967.3	44.0	602.2	1.33	18.25
25.0-26.0	957.9	45.2	647.4	1.37	19.62
26.0-27.0	948.3	46.4	693.8	1.41	21.03
27.0-28.0	938.5	47.5	741.4	1.44	22.47
28.0-29.0	928.2	48.6	789.9	1.47	23.94
29.0-30.0	917.4	49.5	839.5	1.50	25.44
30.0-31.0	906.1	50.4	889.9	1.53	26.97
31.0-32.0	894.5	51.3	941.1	1.55	28.52
32.0-33.0	883.0	52.0	993.2	1.58	30.10
33.0-34.0	871.4	52.7	1045.9	1.60	31.69
34.0-35.0	859.3	53.4	1099.3	1.62	33.31
35.0-36.0	846.8	53.9	1153.2	1.63	34.95
36.0-37.0	833.9	54.4	1207.6	1.65	36.59
37.0-38.0	820.6	54.8	1262.4	1.66	38.25
38.0-39.0	807.2	55.1	1317.5	1.67	39.92
39.0-40.0	793.8	55.4	1372.9	1.68	41.60

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-002

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Zonal Flux

Gamma °	I _{mean} cd	Zonal Flux lm	Sum Zonal Flux lm	Rel Zonal Flux %	Sum Rel Zonal Flux %
40.0-41.0	779.9	55.5	1428.4	1.68	43.28
41.0-42.0	766.1	55.7	1484.1	1.69	44.97
42.0-43.0	751.8	55.7	1539.8	1.69	46.66
43.0-44.0	737.3	55.7	1595.4	1.69	48.35
44.0-45.0	722.6	55.5	1651.0	1.68	50.03
45.0-46.0	707.4	55.3	1706.3	1.68	51.71
46.0-47.0	692.3	55.1	1761.3	1.67	53.37
47.0-48.0	677.3	54.8	1816.1	1.66	55.03
48.0-49.0	661.9	54.4	1870.5	1.65	56.68
49.0-50.0	646.2	53.9	1924.4	1.63	58.31
50.0-51.0	630.3	53.3	1977.7	1.62	59.93
51.0-52.0	614.3	52.7	2030.4	1.60	61.53
52.0-53.0	598.4	52.1	2082.5	1.58	63.11
53.0-54.0	582.2	51.3	2133.8	1.56	64.66
54.0-55.0	565.8	50.5	2184.3	1.53	66.19
55.0-56.0	549.3	49.6	2233.9	1.50	67.70
56.0-57.0	532.7	48.7	2282.7	1.48	69.17
57.0-58.0	516.2	47.7	2330.4	1.45	70.62
58.0-59.0	499.7	46.7	2377.1	1.42	72.03
59.0-60.0	483.0	45.6	2422.8	1.38	73.42
60.0-61.0	466.3	44.5	2467.3	1.35	74.77
61.0-62.0	449.5	43.3	2510.6	1.31	76.08
62.0-63.0	432.7	42.1	2552.7	1.28	77.35
63.0-64.0	415.8	40.8	2593.5	1.24	78.59
64.0-65.0	399.1	39.5	2633.0	1.20	79.79
65.0-66.0	382.4	38.2	2671.1	1.16	80.94
66.0-67.0	365.5	36.8	2707.9	1.11	82.06
67.0-68.0	348.8	35.3	2743.2	1.07	83.13
68.0-69.0	331.9	33.9	2777.1	1.03	84.15
69.0-70.0	315.1	32.4	2809.5	0.98	85.14
70.0-71.0	298.6	30.9	2840.3	0.94	86.07
71.0-72.0	282.1	29.3	2869.7	0.89	86.96
72.0-73.0	265.4	27.8	2897.4	0.84	87.80
73.0-74.0	249.1	26.2	2923.6	0.79	88.59
74.0-75.0	232.7	24.6	2948.2	0.75	89.34
75.0-76.0	216.6	23.0	2971.2	0.70	90.04
76.0-77.0	200.6	21.4	2992.6	0.65	90.68
77.0-78.0	184.6	19.8	3012.4	0.60	91.28
78.0-79.0	168.8	18.1	3030.5	0.55	91.83
79.0-80.0	153.1	16.5	3047.0	0.50	92.33

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Zonal Flux

Gamma °	I _{mean} cd	Zonal Flux lm	Sum Zonal Flux lm	Rel Zonal Flux %	Sum Rel Zonal Flux %
80.0-81.0	137.5	14.9	3061.9	0.45	92.78
81.0-82.0	122.1	13.2	3075.1	0.40	93.19
82.0-83.0	106.8	11.6	3086.7	0.35	93.54
83.0-84.0	91.8	10.0	3096.7	0.30	93.84
84.0-85.0	77.0	8.4	3105.1	0.25	94.10
85.0-86.0	62.3	6.8	3112.0	0.21	94.30
86.0-87.0	47.8	5.2	3117.2	0.16	94.46
87.0-88.0	33.5	3.7	3120.9	0.11	94.57
88.0-89.0	20.2	2.2	3123.1	0.07	94.64
89.0-90.0	9.6	1.0	3124.1	0.03	94.67

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Light Distribution Data

Unit: cd

G\C	C0.0	C22.5	C45.0	C67.5	C90.0	C112.5	C135.0	C157.5
G0.0	1083.4	1083.4	1083.4	1083.4	1083.4	1083.4	1083.4	1083.4
G1.0	1083.4	1082.9	1083.1	1082.9	1083.5	1083.1	1083.5	1083.1
G2.0	1083.1	1082.2	1083.0	1082.1	1083.1	1082.3	1083.3	1082.6
G3.0	1082.2	1081.2	1081.9	1081.0	1082.2	1081.4	1082.3	1081.4
G4.0	1081.2	1079.8	1080.7	1079.5	1080.9	1079.8	1081.2	1080.2
G5.0	1079.5	1077.8	1079.0	1077.5	1079.3	1077.5	1079.6	1078.3
G6.0	1077.7	1075.9	1077.1	1075.0	1077.1	1075.2	1077.7	1076.2
G7.0	1075.5	1073.2	1074.7	1072.3	1074.8	1072.5	1075.5	1073.9
G8.0	1073.1	1069.8	1072.1	1069.2	1071.9	1069.4	1073.0	1071.1
G9.0	1069.7	1066.7	1069.0	1065.0	1068.0	1065.9	1069.9	1067.4
G10.0	1066.2	1063.1	1065.6	1061.1	1064.3	1062.0	1066.5	1063.9
G11.0	1062.7	1059.1	1061.5	1056.8	1060.1	1057.8	1061.9	1059.9
G12.0	1058.8	1054.8	1056.7	1051.9	1055.5	1051.9	1057.9	1055.7
G13.0	1054.5	1050.0	1052.0	1046.8	1050.9	1047.1	1053.3	1051.1
G14.0	1050.1	1045.1	1047.1	1041.4	1045.6	1041.6	1048.3	1046.1
G15.0	1044.8	1038.6	1041.8	1034.3	1040.0	1035.8	1043.1	1040.9
G16.0	1039.3	1032.8	1035.9	1028.1	1033.9	1029.5	1037.5	1034.0
G17.0	1032.8	1026.6	1029.9	1021.3	1026.3	1022.8	1030.3	1028.1
G18.0	1026.7	1020.2	1022.3	1014.5	1019.4	1015.9	1023.8	1021.6
G19.0	1020.3	1013.6	1015.6	1007.1	1012.4	1007.4	1017.2	1015.1
G20.0	1013.5	1006.4	1008.3	999.4	1004.8	999.5	1010.1	1008.0
G21.0	1006.5	997.4	1000.7	991.5	996.8	991.5	1002.5	1000.7
G22.0	999.1	989.5	993.0	981.2	988.6	983.1	994.9	992.9
G23.0	989.9	981.3	984.7	972.5	978.5	974.2	986.8	983.3
G24.0	981.8	973.0	974.6	963.5	969.5	965.4	976.6	974.9
G25.0	973.3	964.2	965.7	954.1	960.1	954.0	967.7	966.1
G26.0	964.4	954.9	956.4	944.3	950.4	944.3	958.4	957.0
G27.0	955.5	945.5	946.9	934.3	940.5	934.1	949.0	947.6
G28.0	946.1	933.8	937.1	923.9	930.4	923.7	939.2	937.7
G29.0	936.5	923.8	927.0	911.2	917.7	913.3	929.2	925.9
G30.0	924.4	913.3	916.6	900.2	906.9	902.3	918.6	915.5
G31.0	914.0	902.5	903.5	888.9	895.6	888.6	905.7	904.7
G32.0	903.3	891.5	892.5	877.4	884.1	877.0	894.7	893.7
G33.0	892.4	880.2	881.4	865.7	872.6	865.3	883.5	882.4
G34.0	881.3	866.4	869.8	853.7	860.8	853.3	871.9	871.0
G35.0	869.7	854.5	857.8	838.7	848.4	840.8	859.8	856.7
G36.0	857.7	842.3	845.6	826.2	833.4	828.3	847.5	844.6
G37.0	843.3	829.7	830.6	813.1	820.7	815.3	832.8	831.8
G38.0	830.9	817.0	818.0	800.1	807.8	799.7	820.2	819.3
G39.0	818.2	804.1	805.0	787.0	794.6	786.4	806.9	806.4

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-002

Test Time : 2023-01-03 15:40:15

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Light Distribution Data

Unit: cd

G\C	C0.0	C22.5	C45.0	C67.5	C90.0	C112.5	C135.0	C157.5
G40.0	805.0	790.7	791.6	773.4	780.9	772.7	793.6	792.9
G41.0	791.9	774.6	778.0	756.7	767.2	758.9	780.0	779.5
G42.0	778.5	760.6	764.5	742.6	753.5	744.8	766.4	762.6
G43.0	762.2	746.6	750.8	728.5	736.9	730.5	750.0	748.5
G44.0	748.5	732.5	734.1	714.1	722.8	716.3	736.0	734.4
G45.0	734.0	718.0	719.7	699.7	708.2	698.8	721.5	719.9
G46.0	719.7	703.4	705.1	684.9	693.4	683.9	706.7	705.1
G47.0	705.1	688.5	690.3	670.1	679.0	669.1	692.2	690.3
G48.0	690.6	671.0	675.7	652.4	664.3	654.4	677.4	675.5
G49.0	672.3	655.9	660.6	637.4	649.2	639.4	659.1	657.2
G50.0	657.0	640.7	645.2	622.1	630.8	624.2	643.7	642.0
G51.0	641.5	625.4	626.6	607.0	615.4	605.8	628.2	626.6
G52.0	626.1	609.8	611.5	591.4	600.3	590.2	612.9	610.7
G53.0	611.2	591.2	596.5	576.2	585.2	574.9	597.6	595.2
G54.0	593.1	575.9	578.5	558.0	567.3	559.8	579.5	576.6
G55.0	577.6	560.8	563.0	543.0	552.1	541.7	564.1	561.2
G56.0	559.5	542.5	548.1	525.1	534.3	526.6	546.0	542.8
G57.0	544.5	527.4	530.3	510.2	519.8	508.8	531.2	527.6
G58.0	526.7	509.9	512.7	493.1	502.4	494.5	513.5	509.9
G59.0	509.0	492.4	498.2	475.9	487.9	477.3	495.8	495.2
G60.0	494.2	477.9	480.6	461.6	470.5	460.1	481.0	477.5
G61.0	476.7	460.7	463.5	444.9	453.7	443.2	463.9	460.2
G62.0	459.8	443.7	446.9	428.2	437.3	426.5	447.2	442.9
G63.0	440.4	427.3	430.5	412.1	421.0	410.5	430.6	426.3
G64.0	423.9	408.3	414.2	393.7	402.5	394.6	411.5	409.9
G65.0	407.5	392.3	395.5	378.1	386.5	378.9	395.3	390.9
G66.0	389.0	376.5	380.0	362.7	371.2	360.9	377.1	375.0
G67.0	373.5	358.5	362.2	345.2	353.8	345.8	361.9	356.8
G68.0	356.1	341.4	345.1	328.5	336.9	329.0	344.6	341.9
G69.0	338.6	324.5	327.9	312.0	320.1	312.4	327.3	324.7
G70.0	321.5	307.9	311.3	295.8	303.7	296.1	310.5	307.8
G71.0	305.1	291.8	295.3	280.2	288.0	280.4	294.4	289.2
G72.0	287.1	275.9	277.7	264.8	270.6	262.9	276.7	273.1
G73.0	269.9	258.8	263.0	248.2	254.1	248.2	259.6	255.9
G74.0	254.9	242.2	246.3	232.0	239.8	232.0	245.0	239.0
G75.0	236.4	226.2	230.1	216.4	222.1	216.3	226.7	222.7
G76.0	220.8	210.7	213.0	201.4	207.0	199.3	211.4	207.1
G77.0	204.1	194.1	196.6	185.4	191.0	184.9	194.9	190.3
G78.0	188.0	178.4	181.1	170.1	175.7	169.6	179.2	174.4
G79.0	170.7	161.7	165.8	155.6	160.7	153.3	162.2	159.1

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-002

Test Time : 2023-01-03 15:40:15

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Light Distribution Data

Unit: cd

G\C	C0.0	C22.5	C45.0	C67.5	C90.0	C112.5	C135.0	C157.5
G80.0	154.4	147.3	149.9	140.1	145.2	137.9	147.8	143.0
G81.0	139.2	130.7	133.5	125.5	129.1	123.3	131.3	127.8
G82.0	123.5	116.4	118.3	110.3	114.1	108.0	116.0	111.9
G83.0	107.7	100.6	103.0	95.2	99.1	94.2	100.4	97.3
G84.0	92.8	86.1	88.5	81.2	85.0	79.0	85.9	81.5
G85.0	77.0	71.5	73.1	67.2	70.1	65.0	70.5	66.8
G86.0	61.8	56.3	58.6	52.8	55.9	51.5	55.9	52.7
G87.0	46.2	41.8	43.7	39.2	41.4	37.9	40.9	37.5
G88.0	31.4	27.7	29.3	26.1	27.7	24.1	26.9	24.3
G89.0	16.9	14.5	15.5	13.4	14.8	12.8	14.4	12.5
G90.0	6.6	5.3	4.8	4.3	4.9	5.2	5.8	5.1

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-002

Test Time : 2023-01-03 15:40:15

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Light Distribution Data

Unit: cd

G\C	C180.0	C202.5	C225.0	C247.5	C270.0	C292.5	C315.0	C337.5
G0.0	1083.4	1083.4	1083.4	1083.4	1083.4	1083.4	1083.4	1083.4
G1.0	1083.1	1083.2	1082.9	1083.1	1083.1	1083.3	1083.0	1083.2
G2.0	1082.6	1083.0	1082.1	1082.8	1082.3	1083.1	1082.3	1083.1
G3.0	1081.4	1082.0	1080.8	1081.8	1081.1	1081.9	1081.0	1082.1
G4.0	1079.7	1081.0	1079.4	1080.5	1079.2	1080.5	1079.2	1080.8
G5.0	1077.8	1079.5	1077.5	1078.8	1076.9	1078.7	1077.3	1079.0
G6.0	1075.8	1077.4	1075.0	1076.3	1074.5	1076.7	1074.8	1077.0
G7.0	1073.4	1075.1	1072.5	1073.9	1071.5	1074.2	1072.0	1074.9
G8.0	1070.6	1072.6	1069.4	1071.0	1068.3	1071.3	1069.0	1071.9
G9.0	1067.5	1069.5	1066.2	1067.7	1064.7	1067.4	1065.7	1069.0
G10.0	1063.9	1066.3	1061.4	1064.1	1060.7	1063.6	1061.8	1065.7
G11.0	1060.1	1062.8	1057.3	1060.1	1056.1	1059.6	1057.8	1061.4
G12.0	1055.1	1058.7	1052.8	1054.7	1050.3	1055.3	1052.1	1057.2
G13.0	1050.6	1053.4	1047.9	1049.8	1045.1	1050.2	1047.4	1053.0
G14.0	1045.7	1048.6	1042.7	1044.5	1039.5	1045.0	1042.1	1047.8
G15.0	1040.3	1043.7	1037.1	1039.0	1033.4	1039.4	1036.2	1042.8
G16.0	1035.0	1038.2	1031.0	1032.9	1026.9	1032.4	1030.2	1037.3
G17.0	1029.0	1032.5	1023.3	1026.7	1020.2	1026.0	1024.0	1031.6
G18.0	1021.6	1026.4	1016.8	1020.2	1013.4	1019.2	1016.0	1024.2
G19.0	1015.0	1019.9	1009.7	1011.7	1004.3	1012.2	1008.8	1017.6
G20.0	1008.2	1011.7	1002.0	1004.0	996.4	1004.8	1001.3	1010.8
G21.0	1000.6	1004.6	994.2	996.3	988.2	996.9	993.6	1003.5
G22.0	993.2	997.3	986.4	988.3	979.7	987.3	985.5	996.2
G23.0	985.3	989.4	976.4	979.9	971.0	978.9	977.1	988.4
G24.0	975.4	981.3	967.5	970.9	961.8	969.8	966.6	978.4
G25.0	966.6	972.8	958.1	961.8	950.3	960.8	957.2	969.8
G26.0	957.7	962.2	948.8	950.5	940.3	951.4	947.8	961.0
G27.0	948.4	953.2	939.1	940.7	930.4	941.8	938.3	951.9
G28.0	938.9	943.6	929.2	930.6	919.8	931.7	928.2	942.4
G29.0	928.9	933.6	918.8	920.2	909.1	919.1	917.7	932.5
G30.0	918.6	923.6	905.9	909.4	898.1	908.4	907.1	922.2
G31.0	906.0	913.1	894.9	898.4	886.6	897.4	894.0	909.6
G32.0	895.1	900.4	883.7	884.9	873.0	886.2	882.8	898.9
G33.0	884.2	889.2	872.3	873.2	861.0	874.6	871.4	887.8
G34.0	872.6	877.7	860.3	861.3	848.8	862.6	859.5	876.4
G35.0	860.6	866.1	847.9	849.2	836.2	850.6	847.2	864.6
G36.0	848.5	854.3	835.5	836.8	823.7	835.7	834.9	852.8
G37.0	836.2	841.8	820.4	824.3	810.9	823.2	822.3	840.6
G38.0	821.3	829.3	807.6	811.2	795.3	810.2	807.1	825.6
G39.0	808.0	816.4	794.3	798.0	781.8	797.0	793.7	812.7

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Light Distribution Data

Unit: cd

G\C	C180.0	C202.5	C225.0	C247.5	C270.0	C292.5	C315.0	C337.5
G40.0	794.6	800.7	780.6	781.9	767.9	783.6	780.0	799.6
G41.0	781.1	787.4	766.9	768.3	754.1	770.3	766.4	786.5
G42.0	767.5	774.1	753.2	754.8	740.3	756.8	752.8	773.2
G43.0	753.7	760.2	739.4	740.8	726.4	740.0	738.9	759.1
G44.0	739.3	746.1	721.9	726.5	711.7	725.8	724.5	745.2
G45.0	724.6	731.8	707.2	712.1	697.1	711.5	709.7	728.1
G46.0	707.1	714.4	692.6	694.8	679.6	696.9	692.4	713.8
G47.0	692.3	699.7	678.0	680.0	664.9	682.2	677.8	699.0
G48.0	677.5	684.5	663.1	665.0	650.3	667.3	663.0	684.1
G49.0	661.9	669.5	647.7	650.1	635.0	652.3	647.9	669.1
G50.0	646.5	654.1	632.5	634.8	619.8	634.1	632.6	653.9
G51.0	631.1	638.7	614.1	619.5	604.8	619.0	614.2	638.7
G52.0	612.4	623.2	598.6	604.3	586.5	603.8	598.9	620.1
G53.0	596.8	604.5	583.3	586.0	571.4	588.4	583.8	604.9
G54.0	581.1	589.1	567.8	570.8	556.1	570.4	568.5	589.5
G55.0	562.4	573.7	549.4	555.8	541.1	555.2	550.5	571.3
G56.0	547.3	555.6	534.5	538.0	523.4	540.6	535.6	556.4
G57.0	529.0	537.4	516.7	520.2	506.0	523.0	518.0	538.4
G58.0	514.2	522.3	502.0	505.6	491.5	505.2	503.4	523.4
G59.0	496.1	504.5	484.3	488.2	474.1	490.8	485.9	505.7
G60.0	478.4	486.8	467.1	471.2	457.2	473.7	468.8	488.2
G61.0	463.9	469.6	450.2	454.3	443.4	457.0	452.1	471.1
G62.0	446.8	452.3	433.6	437.7	424.4	440.3	435.6	454.0
G63.0	427.2	435.5	417.2	421.2	408.3	423.9	419.4	437.2
G64.0	410.4	418.8	400.7	405.1	392.3	407.8	403.2	420.8
G65.0	393.8	402.6	384.7	389.4	376.6	389.4	387.2	404.7
G66.0	378.0	384.0	366.6	371.6	359.0	374.2	369.4	386.4
G67.0	359.8	368.3	351.5	356.4	344.3	356.5	352.0	368.2
G68.0	342.0	350.4	334.2	339.0	327.3	339.2	337.3	353.1
G69.0	324.4	333.0	317.1	322.2	310.7	324.8	320.5	335.9
G70.0	307.4	316.1	300.5	305.9	294.5	306.2	304.0	319.1
G71.0	291.2	299.8	284.7	290.1	279.0	290.5	286.2	300.6
G72.0	275.3	281.3	267.1	272.4	263.9	275.0	270.9	284.7
G73.0	257.7	263.8	252.1	255.3	247.2	257.9	254.1	267.2
G74.0	240.5	248.8	235.3	240.9	230.9	241.5	237.5	250.3
G75.0	224.0	230.4	219.2	223.2	215.1	225.7	221.7	234.2
G76.0	208.3	214.8	203.9	208.0	200.3	208.7	206.7	218.7
G77.0	191.4	197.6	187.5	191.5	184.2	194.0	190.4	201.6
G78.0	175.1	181.3	171.7	175.8	168.7	178.3	175.0	185.5
G79.0	159.5	165.8	156.4	160.8	153.9	161.7	158.3	168.4

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-002

Test Time : 2023-01-03 15:40:15

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Light Distribution Data

Unit: cd

G\C	C180.0	C202.5	C225.0	C247.5	C270.0	C292.5	C315.0	C337.5
G80.0	143.0	149.6	140.3	145.2	138.2	146.1	144.1	152.5
G81.0	127.6	132.8	125.3	129.1	123.8	131.5	127.9	137.5
G82.0	111.8	116.8	110.0	113.7	108.7	116.1	113.0	121.6
G83.0	97.0	102.2	94.4	98.3	93.7	100.6	97.8	105.7
G84.0	81.8	86.0	79.5	84.1	79.5	86.3	83.6	90.9
G85.0	66.7	70.4	64.9	69.1	65.7	71.4	68.9	75.5
G86.0	52.1	55.5	50.9	54.8	51.4	56.1	54.9	59.6
G87.0	37.5	40.6	36.5	39.7	38.0	41.8	40.4	44.7
G88.0	23.1	25.4	22.8	26.1	24.7	28.1	26.7	30.2
G89.0	11.8	12.5	10.8	13.2	12.6	15.3	14.4	16.3
G90.0	4.6	4.3	4.0	4.2	4.9	6.1	7.3	6.9

Test Type : Type C

Test Distance : 15.172 m

C Plane (°): 0.0-360.0:22.5

γ (°): 0.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Lisun Goniophotometer Test Report

Product Info

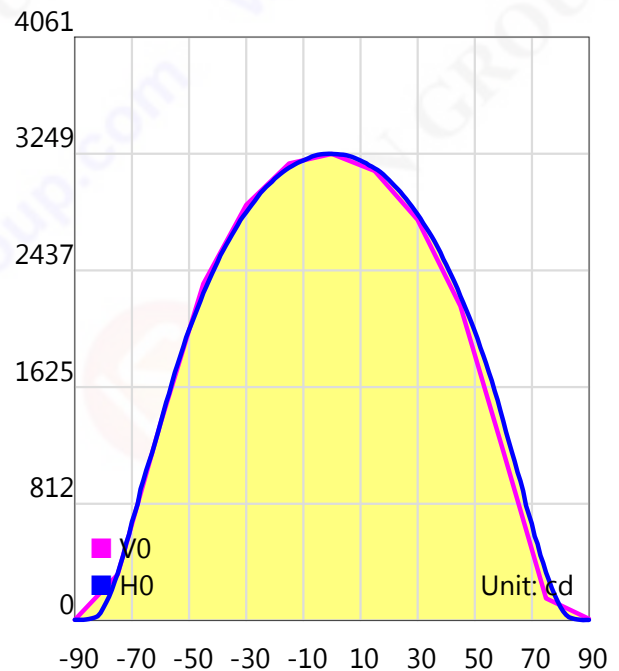
Luminaire Category : **Flood**
 Luminaire : **BT-EF295**
 Lamp Category : **CREE**
 Lamp : **011507**
 Manufacturer : **Philips Lighting B.V.**
 Submitter : **Michael Aslami**
 Number of Lamps : **1** Lumens per Lamp : **9000 lm**
 Luminous Length : **230 mm** Luminous Width : **135 mm** Luminous Height : **0 mm**

Electric Parameters

Voltage : **230.00 V** Current : **0.4948 A** Power : **106.44 W** Power Factor : **0.936** Frequency : **50.00 Hz**

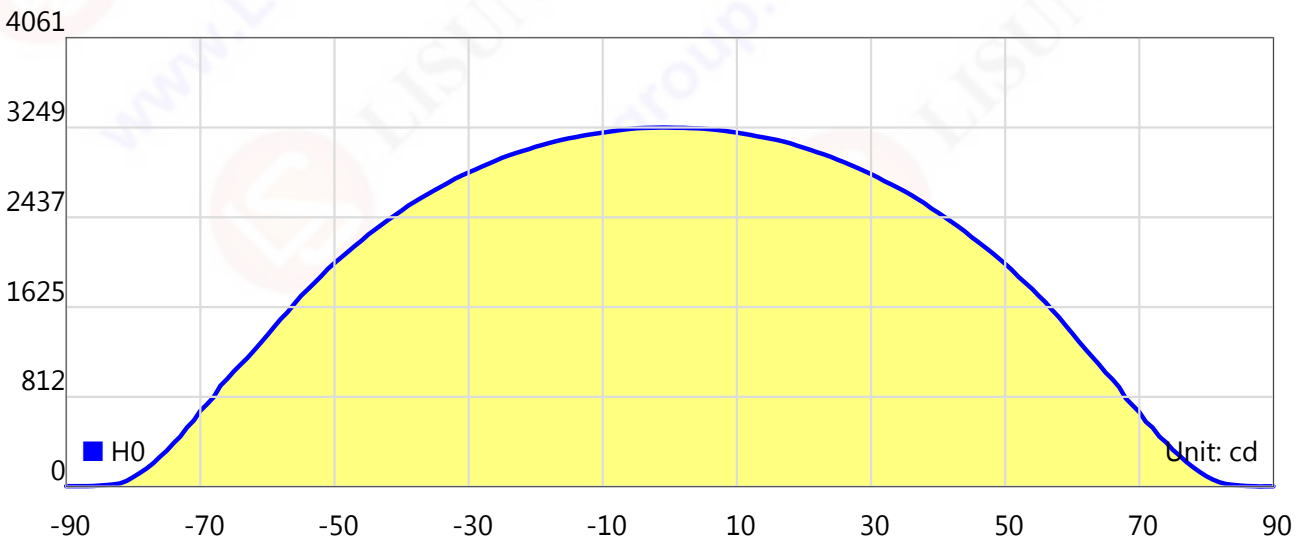
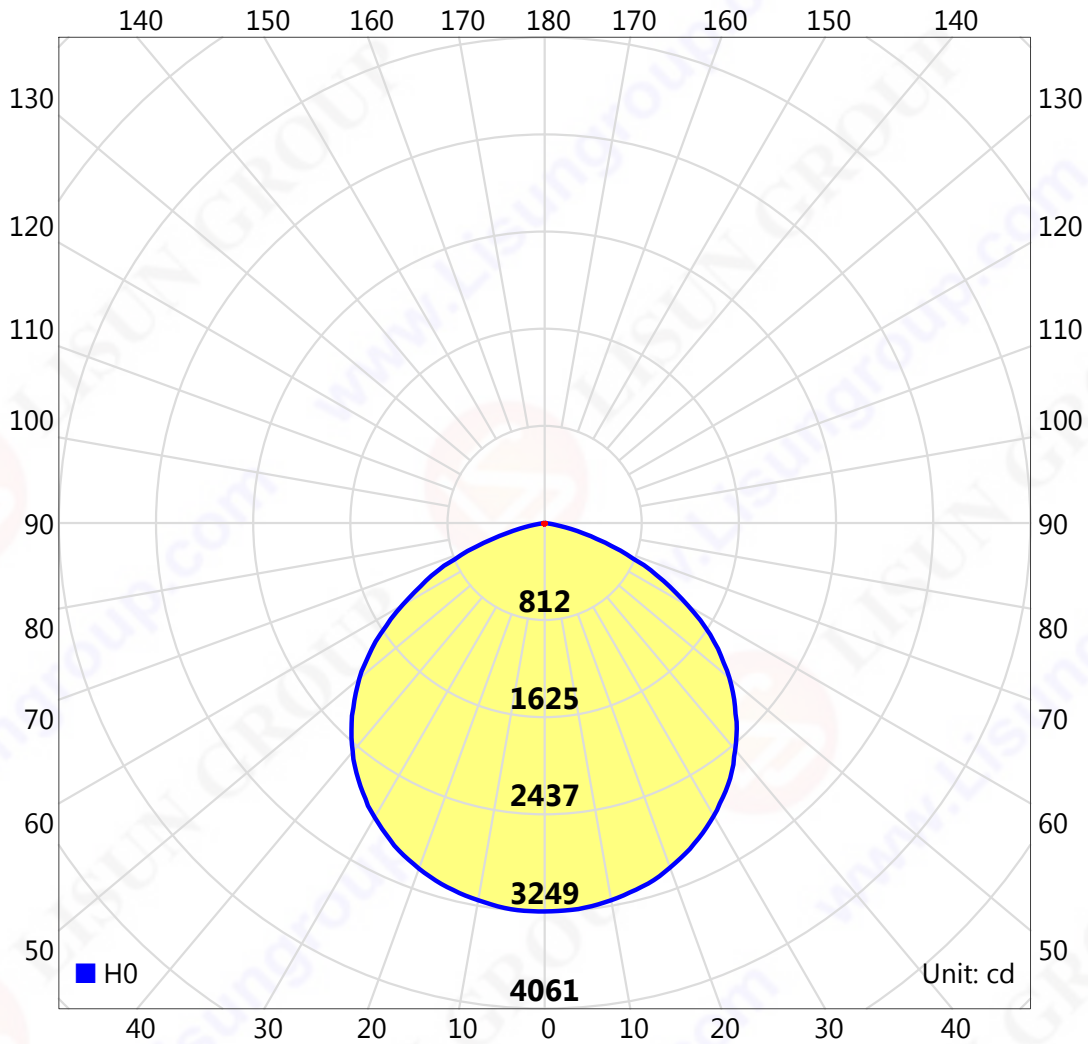
Photometric Parameters

IES NEMA Type : 7H x 7V Measurement Flux : 8844.4 lm Field Lumens : 8673.6 lm Central Intensity : 3248.14 cd Position Of Maximum Intensity : H-1° V0° Energy Efficiency Class : G (EU 2019/2015 η_{TM}:82lm/W) Beam Angle (Vertical) : 109.5 ° Field Angle (Vertical) : 147.4 °	Total Rated Lamp Lumens : 9000.0 lm Efficiency : 98.27 % Field Efficiency : 96.37 % Maximum Intensity : 3249.04 cd Luminaire Efficacy Rating (LER) : 83 Beam Angle (Horizontal) : 113.0 ° Field Angle (Horizontal) : 150.2 °
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Test Type : Type B	Test Distance : 15.172 m	B Plane (°): -90.0-90.0:15.0
Test Device : LSG-6000	Temperature : 25°C	β (°) : -90.0-90.0:1.0
Test Lab : LISUN GROUP		Humidity : 65.0%
Test By : Thomas Fiodorow	Review By :	

Light Distribution Curve



Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°) : -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

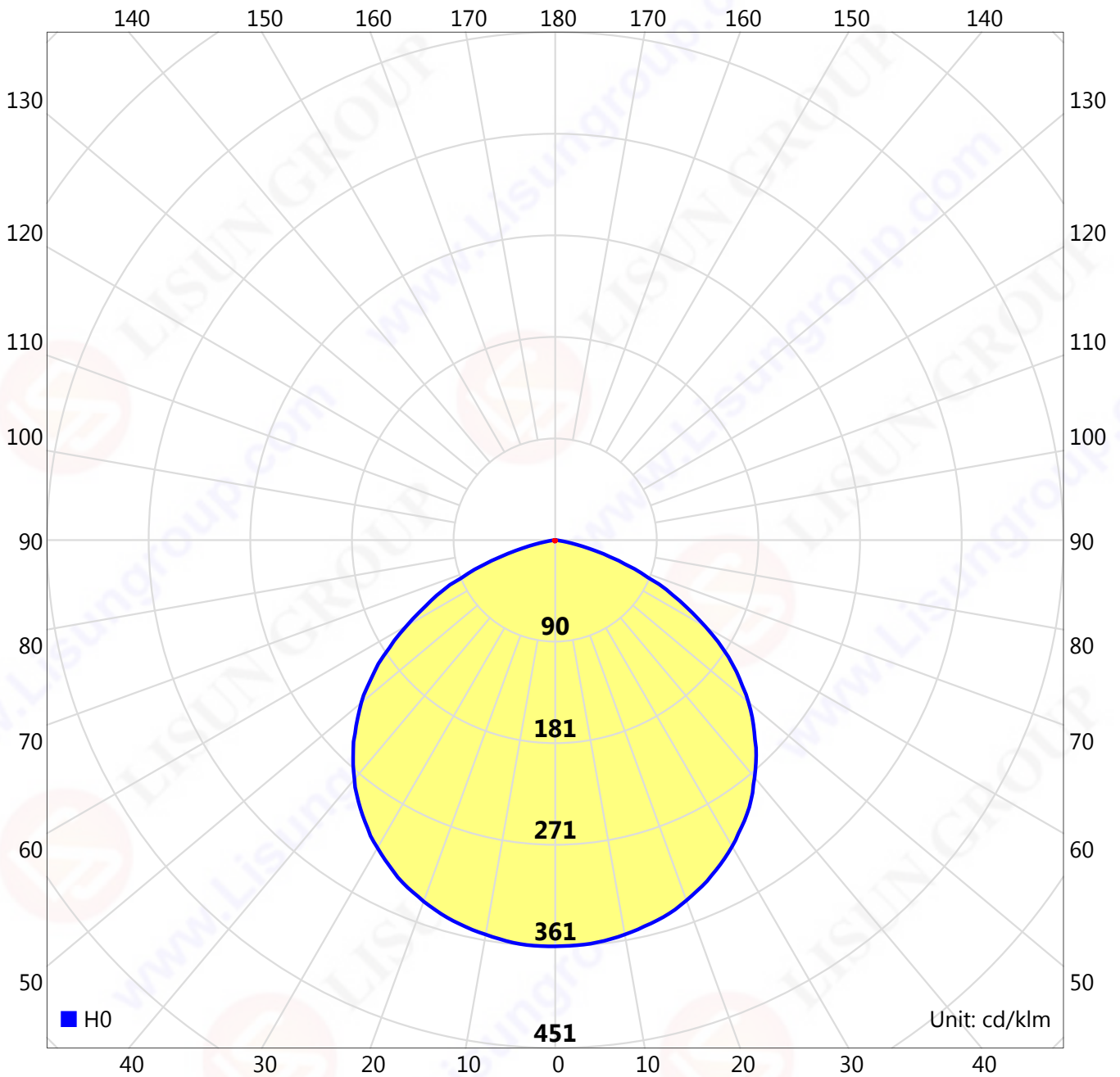
Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Light Distribution Curve (cd/klm)



011507/CREE

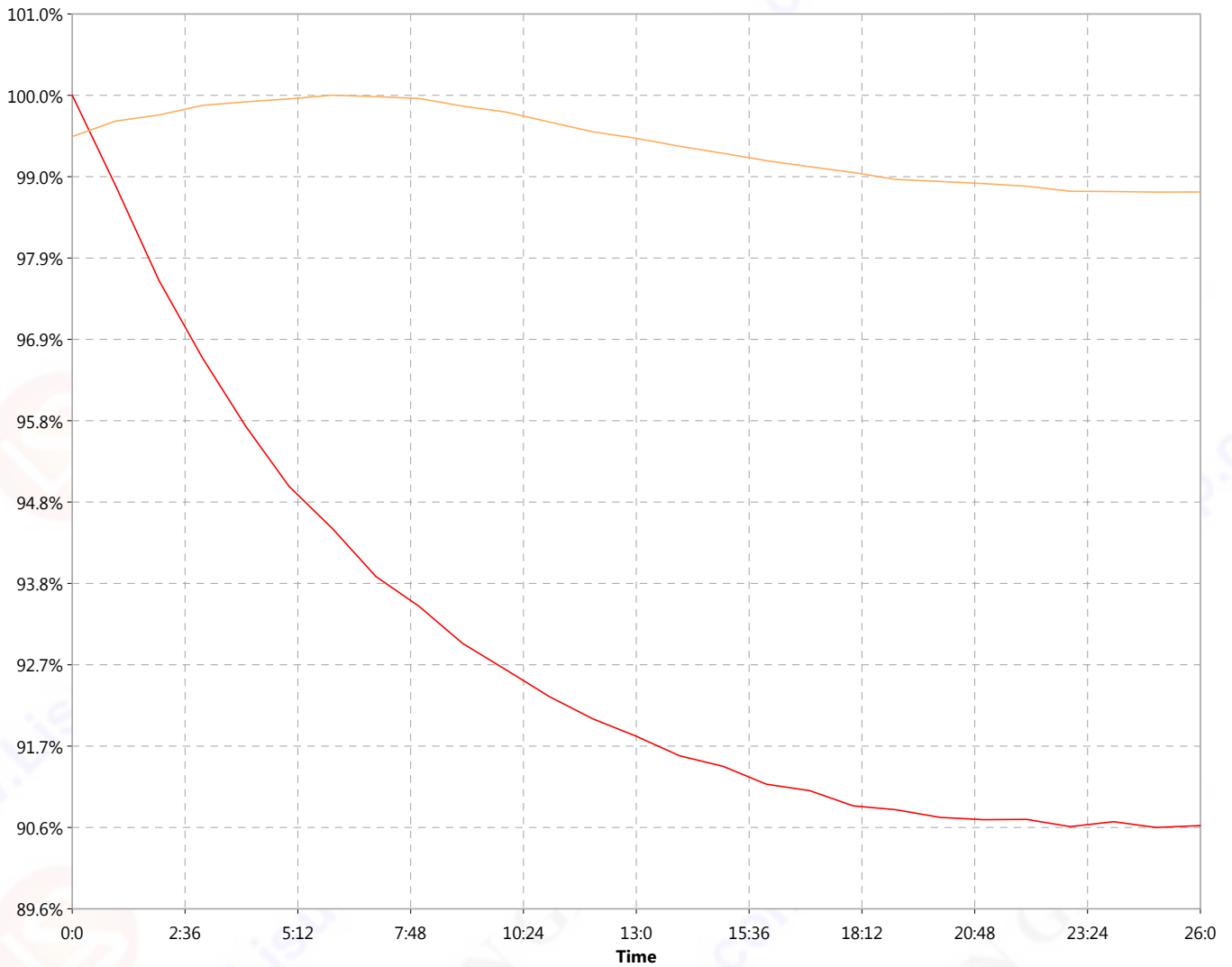
$\eta=98.27\%$

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Warmup Log



Stable time: 26:0

Uptime: 0:0

Parameters	Maximum	Minimum	Change
Luminous intensity ,cd	3585.48	3249.97	335.51
Power ,W	107.97	106.64	1.34

Test Type : Type B

Test Distance : 15.172 m

 B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Area Flux

		Vertical																				
		-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	Horizontal	
∅(E)	∅(T)	00	00	0.1	0.1	0.3	0.6	1.2	1.7	2.3	2.9	3.0	3.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	00	00
00	08	13.6	24.6	112.9	121.6	277.1	486.1	683.0	850.3	970.6	1033	1030	963.4	838.3	668.6	472.7	276.7	114.9	22.7	0.7	8845	----
00	00	0.1	0.1	0.2	0.4	0.7	1.1	1.5	1.7	1.8	1.8	1.8	1.6	1.3	0.9	0.6	0.3	0.2	0.1	0.0	14.4	0.0
00	00	0.1	0.1	0.5	1.3	2.5	4.0	5.4	6.4	6.9	6.8	6.2	5.1	3.7	2.3	1.1	0.4	0.1	0.0	0.0	53.0	14.9
00	00	0.3	0.3	1.6	4.9	9.7	15.1	20.0	23.5	25.3	25.1	23.0	19.3	14.5	9.1	4.5	1.4	0.2	0.0	0.0	197.5	185.6
00	00	0.6	0.6	3.7	10.3	19.2	28.6	36.8	42.7	45.7	45.5	42.1	35.8	27.5	18.1	9.5	3.3	0.5	0.0	0.0	370.0	364.6
00	00	1.2	1.2	6.7	16.8	29.6	42.4	53.2	61.1	65.1	64.9	60.3	52.0	40.8	28.1	15.5	5.9	1.0	0.0	0.0	544.5	541.3
01	01	1.7	1.7	9.0	21.5	36.9	51.8	64.4	73.5	78.2	78.0	73.0	63.6	50.8	36.0	21.0	8.6	1.6	0.0	0.0	669.8	667.5
01	01	2.3	2.3	11.2	25.6	42.7	59.0	72.7	82.5	87.7	87.5	82.1	72.0	58.0	41.7	25.0	10.6	2.1	0.1	0.1	762.8	760.9
01	01	2.9	2.9	13.0	28.8	47.0	64.2	78.5	88.7	94.0	93.8	88.0	77.3	62.6	45.3	27.5	11.9	2.5	0.1	0.1	826.2	824.5
01	01	3.0	3.0	13.4	29.8	48.5	66.2	80.9	91.4	96.9	96.8	91.1	80.3	65.3	47.6	29.4	13.0	2.8	0.1	0.1	856.6	855.1
01	01	3.0	3.0	13.5	30.0	48.8	66.6	81.4	92.0	97.4	97.3	91.6	80.7	65.7	48.0	29.6	13.2	2.9	0.1	0.1	861.8	860.3
01	01	2.9	2.9	13.2	29.4	47.8	65.3	79.9	90.3	95.5	95.3	89.6	78.7	63.8	46.3	28.2	12.4	2.6	0.1	0.1	841.5	839.9
01	01	2.4	2.4	11.6	26.3	43.9	60.7	74.9	85.0	90.2	90.1	84.6	74.2	60.0	43.3	26.1	11.2	2.3	0.1	0.1	787.0	785.2
00	00	1.8	1.8	9.6	22.6	38.6	54.2	67.4	76.9	81.8	81.6	76.5	66.8	53.5	38.1	22.4	9.3	1.8	0.0	0.0	702.9	700.7
00	00	1.3	1.3	7.4	18.2	31.8	45.4	57.0	65.4	69.7	69.4	64.7	55.9	44.1	30.7	17.2	6.7	1.1	0.0	0.0	586.2	583.3
00	00	0.7	0.7	4.4	11.8	21.5	31.9	41.0	47.6	51.1	51.0	47.3	40.5	31.4	21.1	11.3	4.1	0.6	0.0	0.0	417.4	412.9
00	00	0.3	0.3	2.0	6.1	11.8	18.2	24.0	28.4	30.7	30.7	28.3	23.9	18.2	11.7	6.0	2.0	0.3	0.0	0.0	242.5	233.4
00	00	0.1	0.1	0.5	1.8	3.9	6.4	8.7	10.5	11.5	11.4	10.4	8.6	6.2	3.7	1.7	0.5	0.1	0.0	0.0	86.1	43.5
00	00	0.0	0.0	0.2	0.5	1.1	1.8	2.4	3.0	3.3	3.3	3.0	2.4	1.7	1.0	0.5	0.1	0.0	0.0	0.0	24.3	0.0

Unit: lm

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

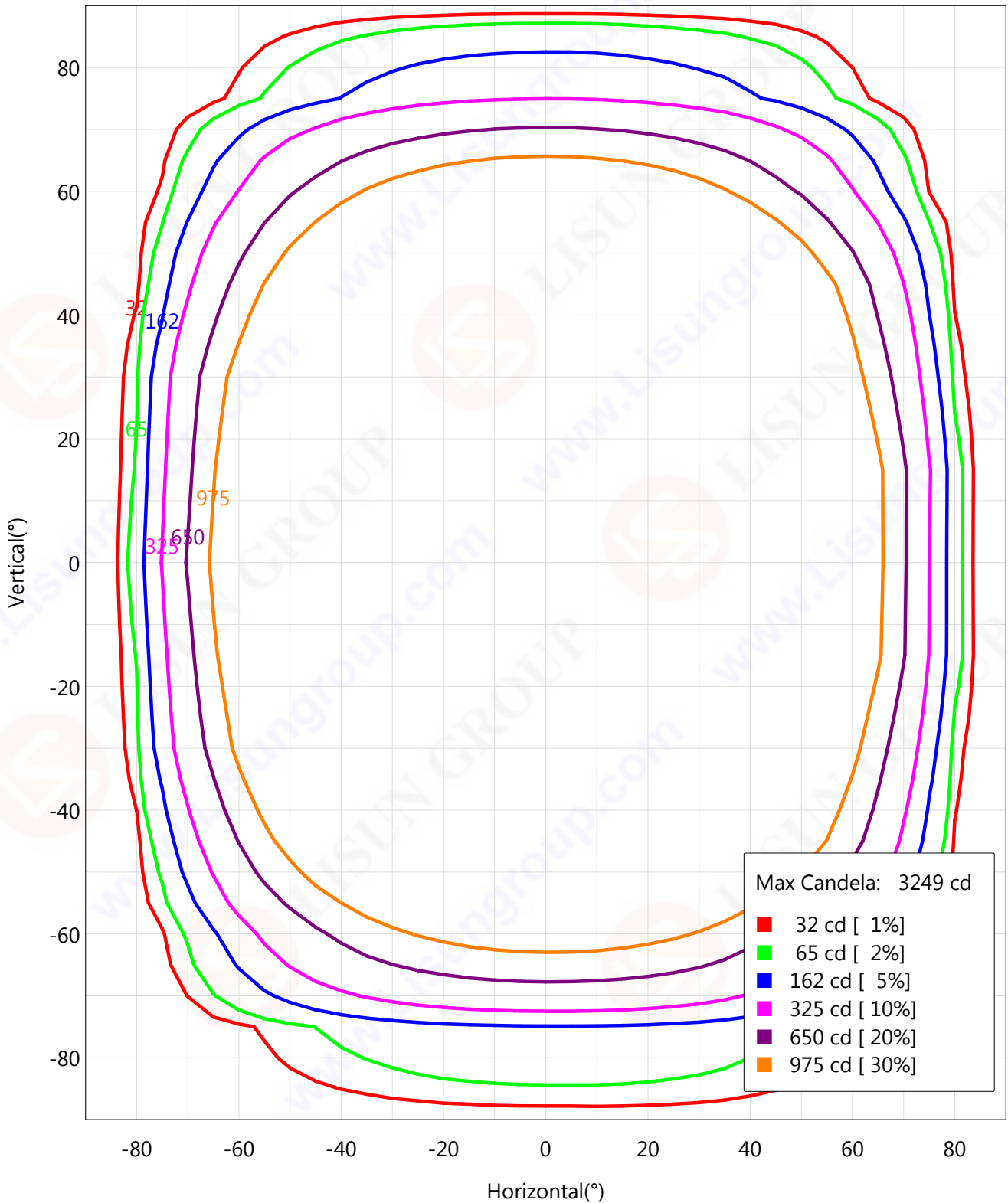
Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

IsoCandela



Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

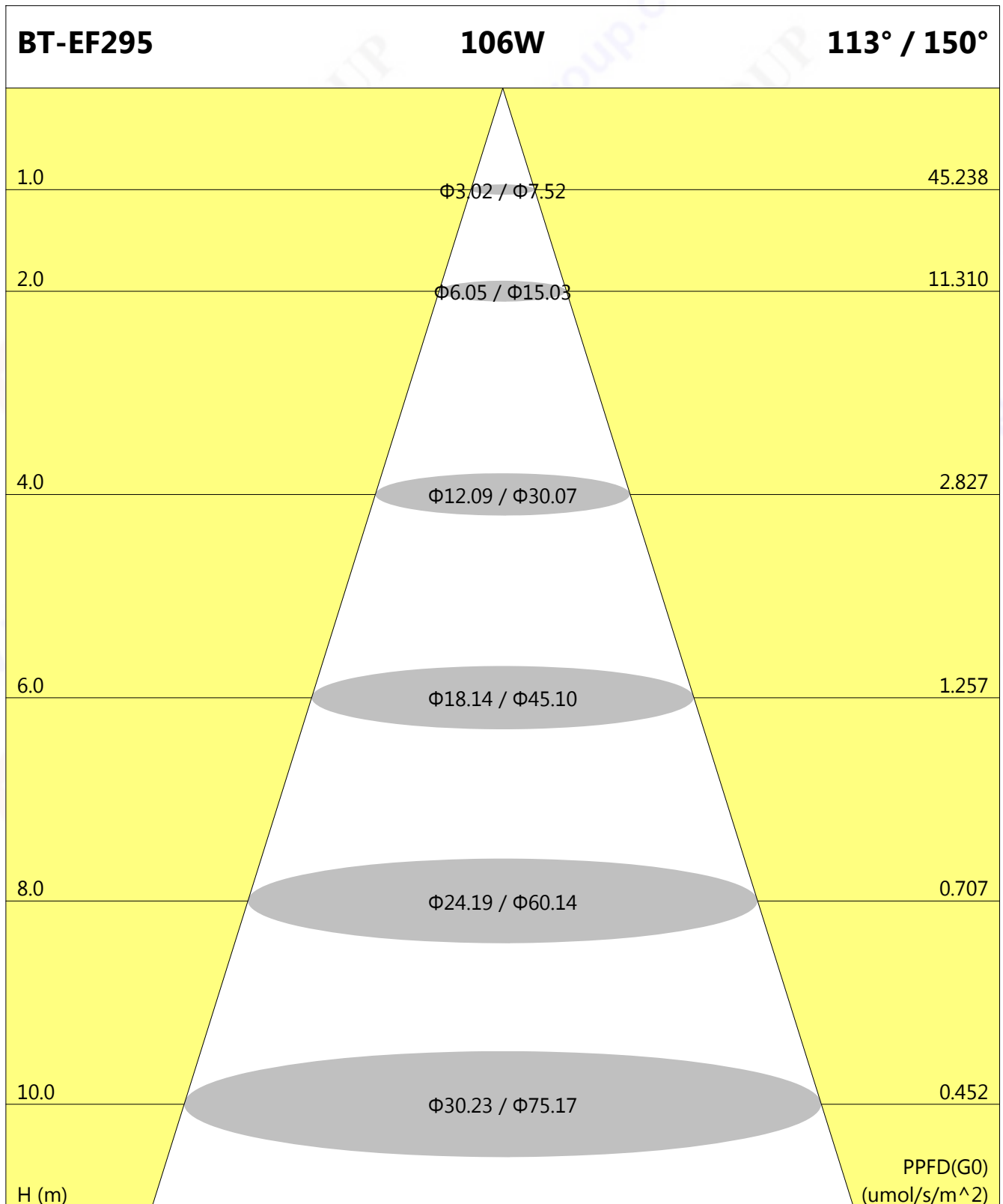
Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

PPFD-Distance


Test Type : Type B

Test Distance : 15.172 m

 B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

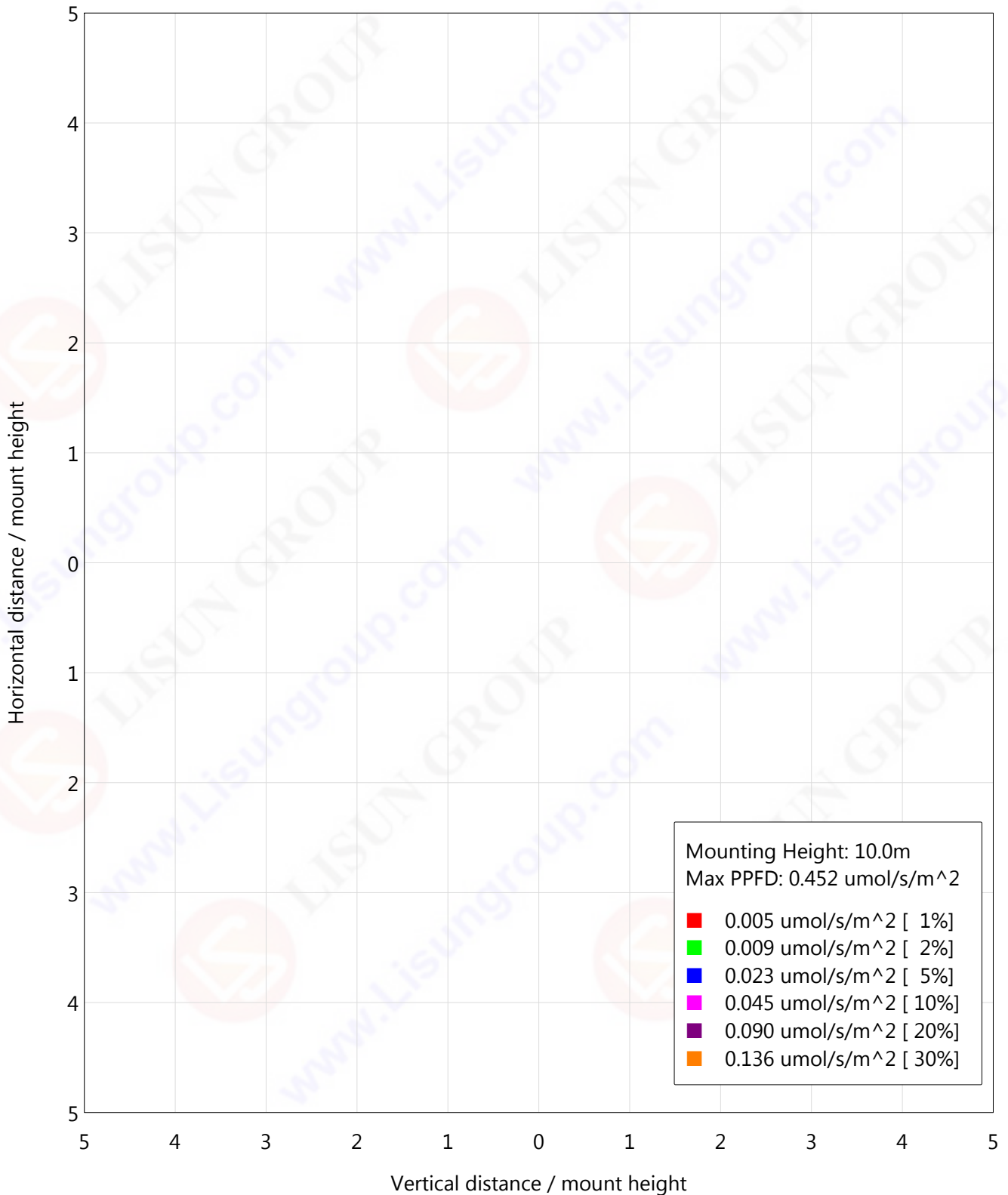
Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

IsoPPFD


Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-90.0	H-89.0	H-88.0	H-87.0	H-86.0	H-85.0	H-84.0	H-83.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-60.0	4.5	3.6	3.6	3.6	3.6	3.6	4.5	5.4
V-45.0	4.5	4.5	3.6	3.6	4.5	6.3	9.0	11.7
V-30.0	4.5	4.5	3.6	4.5	5.4	8.1	11.7	15.3
V-15.0	4.5	4.5	4.5	5.4	8.1	11.7	15.3	21.6
V0.0	4.5	4.5	4.5	5.4	7.2	10.8	15.3	20.7
V15.0	5.4	5.4	5.4	6.3	8.1	11.7	16.2	21.6
V30.0	7.2	7.2	7.2	7.2	8.1	10.8	14.4	18.0
V45.0	9.0	9.0	9.0	9.0	9.0	10.8	12.6	15.3
V60.0	9.9	9.9	9.9	9.9	9.9	9.9	10.8	11.7
V75.0	9.9	9.9	9.9	9.9	9.9	9.9	10.8	10.8
V90.0	9.9	9.9	9.9	9.9	9.9	9.9	10.8	10.8

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-82.0	H-81.0	H-80.0	H-79.0	H-78.0	H-77.0	H-76.0	H-75.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	3.6	3.6	4.5	5.4	6.3	7.2	8.1	9.0
V-60.0	7.2	9.0	11.7	13.5	16.2	19.8	24.3	31.5
V-45.0	15.3	18.9	25.2	38.7	57.6	81.0	107.1	135.0
V-30.0	20.7	28.8	49.5	74.7	105.3	140.4	183.6	224.0
V-15.0	34.2	59.4	89.1	127.8	172.8	224.0	278.9	337.4
V0.0	29.7	53.1	87.3	125.1	165.6	214.1	273.5	326.6
V15.0	32.4	56.7	89.1	122.4	165.6	211.4	268.1	320.3
V30.0	22.5	30.6	45.0	69.3	99.0	135.0	168.3	211.4
V45.0	18.9	23.4	28.8	35.1	52.2	71.1	95.4	118.8
V60.0	12.6	14.4	16.2	18.9	21.6	24.3	27.0	30.6
V75.0	10.8	11.7	11.7	12.6	13.5	13.5	14.4	15.3
V90.0	10.8	11.7	11.7	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-74.0	H-73.0	H-72.0	H-71.0	H-70.0	H-69.0	H-68.0	H-67.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	9.9	10.8	12.6	13.5	15.3	16.2	18.0	20.7
V-60.0	41.4	54.0	66.6	83.7	99.9	117.9	137.7	160.2
V-45.0	167.4	200.6	239.3	282.5	327.5	369.8	417.5	476.0
V-30.0	275.3	323.0	372.5	431.9	505.7	554.3	619.0	680.2
V-15.0	392.3	457.1	539.9	600.1	687.4	745.9	809.8	911.5
V0.0	394.1	454.4	537.2	598.3	686.5	746.8	811.6	915.1
V15.0	385.1	447.2	527.3	585.7	667.6	730.6	790.0	883.6
V30.0	255.5	304.1	355.4	413.9	465.2	535.4	583.0	653.2
V45.0	148.5	180.9	215.0	251.0	288.8	334.7	370.7	422.0
V60.0	35.1	44.1	54.0	65.7	78.3	92.7	108.0	126.0
V75.0	15.3	16.2	17.1	18.0	18.9	19.8	20.7	21.6
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-66.0	H-65.0	H-64.0	H-63.0	H-62.0	H-61.0	H-60.0	H-59.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	22.5	25.2	28.8	33.3	36.9	41.4	46.8	52.2
V-60.0	184.5	203.3	225.8	257.3	278.0	311.3	334.7	366.2
V-45.0	513.8	559.7	622.6	663.1	705.4	771.1	826.9	871.0
V-30.0	736.0	803.5	881.8	934.9	991.5	1045.5	1098.6	1157.1
V-15.0	969.9	1038.3	1095.9	1156.2	1224.6	1290.3	1360.4	1431.5
V0.0	974.4	1044.6	1104.9	1164.3	1232.7	1302.9	1372.1	1445.9
V15.0	951.0	1016.7	1076.1	1133.7	1210.2	1275.0	1331.6	1400.0
V30.0	712.6	760.3	838.6	907.0	961.8	1014.9	1068.0	1122.0
V45.0	461.6	515.6	551.6	610.9	653.2	693.7	740.5	808.0
V60.0	142.2	162.9	181.8	198.8	224.0	241.1	269.0	288.8
V75.0	22.5	24.3	25.2	27.0	28.8	30.6	31.5	33.3
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-58.0	H-57.0	H-56.0	H-55.0	H-54.0	H-53.0	H-52.0	H-51.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	58.5	63.9	70.2	75.6	82.8	89.1	95.4	101.7
V-60.0	392.3	416.6	441.8	481.4	503.0	526.4	557.0	597.4
V-45.0	917.8	961.8	1000.5	1050.9	1094.1	1140.9	1194.0	1240.8
V-30.0	1220.1	1275.9	1344.2	1399.1	1462.1	1515.2	1571.0	1635.8
V-15.0	1503.5	1577.3	1639.4	1706.8	1762.6	1820.2	1888.6	1943.5
V0.0	1518.8	1579.1	1653.8	1726.6	1785.1	1843.6	1904.8	1971.4
V15.0	1471.1	1543.1	1605.2	1675.4	1730.2	1786.9	1855.3	1909.3
V30.0	1172.4	1234.5	1296.6	1348.7	1401.8	1466.6	1522.4	1577.3
V45.0	852.1	889.0	933.1	969.9	1013.1	1052.7	1102.2	1143.6
V60.0	320.3	338.3	372.5	395.9	413.9	443.6	469.7	494.0
V75.0	36.0	38.7	41.4	45.0	46.8	50.4	53.1	55.8
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-50.0	H-49.0	H-48.0	H-47.0	H-46.0	H-45.0	H-44.0	H-43.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	109.8	115.2	122.4	129.6	135.0	145.8	150.3	158.4
V-60.0	622.6	646.0	670.3	696.4	718.9	742.3	766.6	793.6
V-45.0	1286.7	1329.8	1373.9	1417.1	1468.4	1509.8	1547.6	1584.5
V-30.0	1689.8	1742.8	1794.1	1842.7	1887.7	1939.9	1982.2	2024.5
V-15.0	1996.6	2048.8	2100.0	2148.6	2202.6	2245.8	2288.1	2332.2
V0.0	2023.6	2073.9	2125.2	2176.5	2224.2	2280.0	2324.1	2369.1
V15.0	1959.7	2010.1	2061.4	2118.9	2163.9	2206.2	2247.6	2290.8
V30.0	1629.5	1679.0	1738.3	1786.0	1829.2	1871.5	1913.8	1957.0
V45.0	1185.9	1229.1	1271.4	1311.9	1363.1	1403.6	1441.4	1478.3
V60.0	514.7	542.6	574.9	596.5	617.2	642.4	662.2	682.0
V75.0	59.4	62.1	64.8	69.3	72.0	75.6	78.3	81.9
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-42.0	H-41.0	H-40.0	H-39.0	H-38.0	H-37.0	H-36.0	H-35.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	165.6	171.0	175.5	184.5	191.6	197.0	201.5	209.6
V-60.0	820.6	846.7	877.3	900.7	923.2	947.4	970.8	993.3
V-45.0	1621.4	1657.4	1691.6	1731.1	1762.6	1794.1	1825.6	1855.3
V-30.0	2066.8	2107.2	2147.7	2187.3	2226.0	2271.9	2306.1	2337.6
V-15.0	2375.4	2416.8	2456.3	2502.2	2539.1	2576.0	2612.0	2645.3
V0.0	2414.1	2456.3	2496.8	2542.7	2578.7	2615.6	2650.7	2685.8
V15.0	2333.1	2374.5	2420.4	2456.3	2493.2	2529.2	2564.3	2597.6
V30.0	1998.4	2044.3	2080.2	2115.3	2151.3	2186.4	2218.8	2254.8
V45.0	1515.2	1548.5	1579.1	1614.2	1643.9	1674.5	1704.1	1730.2
V60.0	702.7	724.3	745.9	770.2	792.7	816.1	836.8	858.4
V75.0	84.6	89.1	90.9	96.3	99.0	100.8	105.3	108.0
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-34.0	H-33.0	H-32.0	H-31.0	H-30.0	H-29.0	H-28.0	H-27.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	216.8	221.3	226.7	230.3	233.9	238.4	243.8	249.2
V-60.0	1019.4	1040.1	1059.0	1076.1	1093.2	1111.2	1128.3	1149.9
V-45.0	1888.6	1915.6	1941.7	1966.9	1991.2	2015.5	2038.0	2064.1
V-30.0	2367.3	2397.9	2427.6	2462.6	2490.5	2516.6	2542.7	2567.9
V-15.0	2675.9	2711.9	2739.8	2767.7	2794.7	2821.6	2848.6	2879.2
V0.0	2719.1	2751.5	2788.4	2816.3	2842.3	2869.3	2896.3	2922.4
V15.0	2634.5	2663.3	2690.3	2718.2	2744.3	2770.4	2801.9	2827.0
V30.0	2284.5	2315.1	2344.8	2374.5	2401.5	2426.7	2454.5	2477.0
V45.0	1755.4	1786.9	1812.1	1836.4	1858.9	1878.7	1900.3	1925.5
V60.0	878.2	898.0	916.0	935.8	951.9	966.3	980.7	996.0
V75.0	110.7	114.3	117.0	118.8	121.5	124.2	126.9	129.6
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-26.0	H-25.0	H-24.0	H-23.0	H-22.0	H-21.0	H-20.0	H-19.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	254.6	259.1	263.6	268.1	273.5	277.1	280.7	285.2
V-60.0	1166.1	1181.4	1196.7	1210.2	1222.8	1237.2	1248.9	1260.6
V-45.0	2084.7	2104.5	2123.4	2142.3	2160.3	2181.0	2197.2	2211.6
V-30.0	2591.3	2620.1	2643.5	2666.9	2686.7	2704.7	2720.9	2738.9
V-15.0	2903.5	2925.1	2945.8	2965.6	2984.5	3007.0	3023.2	3040.3
V0.0	2948.5	2976.4	2998.0	3018.7	3036.7	3054.7	3075.4	3092.5
V15.0	2850.4	2871.1	2891.8	2911.6	2934.1	2952.1	2970.1	2986.3
V30.0	2498.6	2521.1	2542.7	2565.2	2585.0	2605.7	2622.8	2637.2
V45.0	1947.1	1966.0	1984.0	2000.2	2016.4	2036.2	2052.4	2067.7
V60.0	1008.6	1023.9	1035.6	1047.3	1059.0	1068.9	1079.7	1090.5
V75.0	130.5	132.3	135.0	136.8	138.6	140.4	142.2	144.9
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-18.0	H-17.0	H-16.0	H-15.0	H-14.0	H-13.0	H-12.0	H-11.0
V-90.0	3.6	3.6	3.6	4.5	4.5	4.5	4.5	4.5
V-75.0	287.9	292.4	296.0	298.7	301.4	304.1	306.8	309.5
V-60.0	1272.3	1283.1	1293.0	1304.7	1313.7	1320.8	1327.1	1333.4
V-45.0	2226.0	2239.5	2251.2	2263.8	2276.4	2286.3	2295.3	2303.4
V-30.0	2753.3	2768.6	2783.0	2796.5	2810.0	2821.6	2833.3	2842.3
V-15.0	3055.6	3070.0	3082.6	3094.3	3106.9	3116.8	3125.8	3135.7
V0.0	3108.7	3124.9	3139.3	3152.8	3163.6	3175.3	3186.1	3195.1
V15.0	3002.5	3016.0	3029.5	3043.0	3053.8	3063.7	3072.7	3082.6
V30.0	2653.4	2667.8	2684.9	2699.3	2711.0	2722.7	2731.7	2739.8
V45.0	2080.2	2091.9	2102.7	2111.7	2125.2	2136.0	2145.9	2155.8
V60.0	1100.4	1109.4	1117.5	1124.7	1131.9	1140.0	1145.4	1150.8
V75.0	145.8	146.7	147.6	149.4	150.3	151.2	152.1	152.1
V90.0	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-10.0	H-9.0	H-8.0	H-7.0	H-6.0	H-5.0	H-4.0	H-3.0
V-90.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
V-75.0	312.2	314.0	314.9	316.7	317.6	319.4	321.2	321.2
V-60.0	1338.8	1346.0	1353.2	1357.7	1361.3	1364.9	1368.5	1372.1
V-45.0	2310.6	2317.8	2325.0	2330.4	2335.8	2339.4	2343.0	2345.7
V-30.0	2850.4	2858.5	2865.7	2872.9	2881.0	2886.4	2890.9	2892.7
V-15.0	3143.8	3151.9	3160.0	3167.2	3171.7	3176.2	3178.9	3179.8
V0.0	3203.1	3212.1	3220.2	3230.1	3236.4	3241.8	3245.4	3247.2
V15.0	3091.6	3101.5	3108.7	3115.0	3119.5	3124.0	3126.7	3128.5
V30.0	2747.9	2756.9	2764.1	2771.3	2777.6	2783.0	2787.5	2790.2
V45.0	2162.1	2167.5	2173.8	2179.2	2183.7	2188.2	2191.8	2192.7
V60.0	1156.2	1161.6	1166.1	1169.7	1172.4	1175.1	1176.9	1177.8
V75.0	153.0	153.9	154.8	154.8	154.8	154.8	155.7	155.7
V90.0	12.6	12.6	12.6	11.7	11.7	11.7	11.7	11.7

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H-2.0	H-1.0	H0.0	H1.0	H2.0	H3.0	H4.0	H5.0
V-90.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
V-75.0	321.2	320.3	320.3	320.3	320.3	320.3	318.5	316.7
V-60.0	1373.0	1371.2	1370.3	1368.5	1367.6	1366.7	1365.8	1362.2
V-45.0	2345.7	2345.7	2343.9	2342.1	2339.4	2336.7	2333.1	2327.7
V-30.0	2893.6	2892.7	2892.7	2890.9	2890.0	2888.2	2886.4	2882.8
V-15.0	3181.6	3182.5	3181.6	3180.7	3179.8	3177.1	3173.5	3168.1
V0.0	3248.1	3249.0	3248.1	3247.2	3246.3	3244.5	3242.7	3240.0
V15.0	3130.3	3130.3	3130.3	3129.4	3127.6	3124.9	3120.4	3115.0
V30.0	2791.1	2792.0	2791.1	2791.1	2790.2	2788.4	2784.8	2781.2
V45.0	2191.8	2190.9	2189.1	2188.2	2188.2	2186.4	2183.7	2177.4
V60.0	1177.8	1177.8	1178.7	1177.8	1177.8	1176.0	1173.3	1169.7
V75.0	155.7	154.8	154.8	154.8	154.8	153.9	153.9	153.0
V90.0	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H6.0	H7.0	H8.0	H9.0	H10.0	H11.0	H12.0	H13.0
V-90.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
V-75.0	314.9	313.1	312.2	311.3	308.6	305.9	302.3	299.6
V-60.0	1359.5	1355.9	1352.3	1347.8	1340.6	1331.6	1321.7	1313.7
V-45.0	2322.3	2316.0	2308.8	2301.6	2293.5	2284.5	2274.6	2262.9
V-30.0	2878.3	2871.1	2863.9	2855.8	2846.8	2837.8	2827.9	2818.1
V-15.0	3161.8	3154.6	3146.5	3137.5	3128.5	3116.8	3105.1	3093.4
V0.0	3233.7	3228.3	3220.2	3212.1	3203.1	3193.3	3183.4	3169.9
V15.0	3108.7	3101.5	3094.3	3086.2	3075.4	3065.5	3054.7	3043.0
V30.0	2774.9	2768.6	2760.5	2753.3	2743.4	2734.4	2725.4	2715.5
V45.0	2171.1	2164.8	2157.6	2150.4	2143.2	2135.1	2122.5	2109.9
V60.0	1165.2	1160.7	1155.3	1149.9	1144.5	1138.2	1132.8	1123.8
V75.0	152.1	152.1	150.3	150.3	148.5	147.6	146.7	144.9
V90.0	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H14.0	H15.0	H16.0	H17.0	H18.0	H19.0	H20.0	H21.0
V-90.0	4.5	4.5	4.5	4.5	3.6	3.6	3.6	3.6
V-75.0	297.8	296.0	292.4	288.8	285.2	280.7	278.0	274.4
V-60.0	1306.5	1298.4	1289.4	1279.5	1267.8	1257.9	1246.2	1231.8
V-45.0	2250.3	2236.8	2221.5	2203.5	2188.2	2172.0	2156.7	2138.7
V-30.0	2805.5	2792.0	2777.6	2761.4	2744.3	2727.2	2706.5	2687.6
V-15.0	3081.7	3068.2	3053.8	3038.5	3017.8	3000.7	2981.8	2962.0
V0.0	3160.0	3148.3	3136.6	3122.2	3106.0	3085.3	3066.4	3046.6
V15.0	3030.4	3017.8	3002.5	2983.6	2967.4	2949.4	2931.4	2912.5
V30.0	2704.7	2692.1	2677.7	2658.8	2642.6	2626.4	2610.2	2592.2
V45.0	2096.4	2083.8	2071.2	2058.7	2042.5	2027.2	2010.1	1992.1
V60.0	1115.7	1107.6	1098.6	1088.7	1077.9	1064.4	1053.6	1042.8
V75.0	144.0	142.2	141.3	139.5	137.7	135.9	134.1	131.4
V90.0	11.7	10.8	10.8	10.8	10.8	10.8	10.8	10.8

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H22.0	H23.0	H24.0	H25.0	H26.0	H27.0	H28.0	H29.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	270.8	265.4	260.0	255.5	250.1	243.8	238.4	232.1
V-60.0	1217.4	1203.0	1186.8	1172.4	1158.9	1143.6	1128.3	1111.2
V-45.0	2120.7	2100.9	2082.0	2058.7	2037.1	2014.6	1990.3	1964.2
V-30.0	2669.6	2650.7	2630.0	2608.4	2585.0	2554.4	2530.1	2505.8
V-15.0	2943.1	2921.5	2899.0	2871.1	2846.8	2821.6	2794.7	2767.7
V0.0	3025.9	3006.1	2984.5	2958.4	2935.0	2909.8	2883.7	2855.8
V15.0	2891.8	2871.1	2844.1	2820.7	2796.5	2771.3	2745.2	2718.2
V30.0	2572.4	2549.0	2527.4	2505.8	2482.4	2459.0	2434.8	2411.4
V45.0	1973.2	1955.2	1938.1	1913.8	1892.2	1867.9	1843.6	1821.1
V60.0	1031.1	1018.5	1005.0	992.4	974.4	959.1	943.8	929.5
V75.0	128.7	126.9	124.2	122.4	120.6	118.8	115.2	111.6
V90.0	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H30.0	H31.0	H32.0	H33.0	H34.0	H35.0	H36.0	H37.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	227.6	223.1	217.7	210.5	201.5	196.1	190.7	184.5
V-60.0	1093.2	1070.7	1051.8	1032.9	1014.9	996.0	977.1	956.4
V-45.0	1938.1	1910.2	1878.7	1852.6	1825.6	1795.9	1764.4	1734.7
V-30.0	2479.7	2452.7	2423.1	2386.2	2353.8	2321.4	2288.1	2253.9
V-15.0	2739.8	2710.1	2673.2	2641.7	2609.3	2576.0	2540.0	2503.1
V0.0	2827.9	2799.2	2765.0	2735.3	2705.6	2673.2	2639.0	2601.2
V15.0	2690.3	2655.2	2624.6	2593.1	2560.7	2526.5	2492.3	2455.4
V30.0	2380.8	2353.8	2325.0	2294.4	2262.9	2231.4	2199.0	2158.5
V45.0	1798.6	1775.2	1743.7	1714.9	1687.1	1659.2	1631.3	1600.7
V60.0	915.1	898.9	881.8	862.0	843.1	823.3	803.5	783.7
V75.0	108.9	107.1	103.5	100.8	99.0	95.4	91.8	90.0
V90.0	9.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H38.0	H39.0	H40.0	H41.0	H42.0	H43.0	H44.0	H45.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	175.5	170.1	164.7	156.6	148.5	144.0	137.7	129.6
V-60.0	928.6	904.3	880.0	853.0	827.8	803.5	771.1	745.0
V-45.0	1696.0	1662.8	1627.7	1590.8	1554.8	1519.7	1484.6	1447.7
V-30.0	2220.6	2177.4	2139.6	2100.9	2061.4	2021.8	1981.3	1939.9
V-15.0	2464.4	2418.6	2379.0	2338.5	2297.1	2253.0	2208.0	2163.0
V0.0	2563.4	2516.6	2478.8	2438.4	2397.0	2354.7	2310.6	2257.5
V15.0	2409.6	2370.9	2332.2	2291.7	2250.3	2206.2	2163.0	2118.0
V30.0	2124.3	2089.2	2052.4	2014.6	1977.7	1931.8	1892.2	1850.8
V45.0	1568.3	1536.8	1499.9	1468.4	1433.3	1397.3	1361.3	1324.4
V60.0	762.1	734.2	712.6	688.3	665.8	645.1	624.4	597.4
V75.0	86.4	82.8	81.0	78.3	74.7	72.9	68.4	65.7
V90.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H46.0	H47.0	H48.0	H49.0	H50.0	H51.0	H52.0	H53.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	124.2	118.8	111.6	105.3	98.1	93.6	86.4	81.9
V-60.0	718.9	692.8	668.5	646.0	622.6	590.2	549.8	524.6
V-45.0	1408.1	1357.7	1312.8	1265.1	1218.3	1174.2	1127.4	1072.5
V-30.0	1885.9	1840.0	1795.0	1750.0	1702.3	1652.0	1601.6	1540.4
V-15.0	2118.0	2061.4	2011.0	1960.6	1908.4	1856.2	1804.9	1738.3
V0.0	2212.5	2166.6	2118.9	2068.6	2016.4	1962.4	1899.4	1845.4
V15.0	2064.1	2017.3	1966.9	1916.5	1865.2	1815.7	1752.7	1696.9
V30.0	1806.7	1762.6	1717.6	1664.6	1617.8	1569.2	1517.9	1467.5
V45.0	1284.0	1232.7	1190.4	1148.1	1104.0	1059.9	1019.4	968.1
V60.0	577.6	557.0	537.2	503.9	476.9	458.0	435.5	407.6
V75.0	62.1	59.4	56.7	53.1	51.3	47.7	45.0	42.3
V90.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H54.0	H55.0	H56.0	H57.0	H58.0	H59.0	H60.0	H61.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	73.8	69.3	63.0	57.6	51.3	47.7	43.2	38.7
V-60.0	498.5	476.0	441.8	410.3	386.9	363.5	330.2	308.6
V-45.0	1028.4	983.4	930.4	892.6	848.5	801.7	737.8	687.4
V-30.0	1486.4	1418.9	1361.3	1295.7	1239.0	1175.1	1114.8	1051.8
V-15.0	1682.6	1626.8	1555.7	1491.8	1416.2	1347.8	1286.7	1216.5
V0.0	1791.4	1727.5	1670.0	1598.9	1535.9	1460.3	1387.4	1313.7
V15.0	1641.2	1585.4	1512.5	1448.6	1378.4	1308.3	1237.2	1182.3
V30.0	1402.7	1346.9	1281.3	1227.3	1165.2	1106.7	1056.3	996.0
V45.0	928.6	889.9	844.9	809.8	748.6	700.0	659.5	621.7
V60.0	380.6	359.9	343.7	306.8	291.5	274.4	243.8	226.7
V75.0	39.6	36.9	35.1	32.4	29.7	27.9	26.1	24.3
V90.0	9.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

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Light Distribution Data

Unit: cd

V\H	H62.0	H63.0	H64.0	H65.0	H66.0	H67.0	H68.0	H69.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	34.2	30.6	27.0	24.3	21.6	19.8	18.0	16.2
V-60.0	282.5	256.4	235.7	208.7	189.8	166.5	144.0	123.3
V-45.0	648.7	603.7	533.6	499.4	459.8	403.1	369.8	321.2
V-30.0	992.4	937.6	885.4	810.7	736.9	682.0	623.5	556.1
V-15.0	1149.9	1079.7	1020.3	951.0	889.9	787.3	735.1	676.6
V0.0	1243.5	1175.1	1107.6	1032.0	971.7	901.6	799.0	736.9
V15.0	1113.9	1049.1	981.6	924.1	846.7	765.7	704.5	643.3
V30.0	943.8	891.7	810.7	745.0	699.1	640.6	564.1	518.3
V45.0	563.3	519.2	485.9	429.2	394.1	357.2	315.8	287.0
V60.0	205.1	187.2	167.4	148.5	132.3	115.2	98.1	86.4
V75.0	23.4	21.6	20.7	18.9	18.0	17.1	15.3	14.4
V90.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

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Test Time : 2023-01-03 16:45:44

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Light Distribution Data

Unit: cd

V\H	H70.0	H71.0	H72.0	H73.0	H74.0	H75.0	H76.0	H77.0
V-90.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
V-75.0	14.4	13.5	11.7	10.8	9.9	8.1	7.2	6.3
V-60.0	104.4	88.2	73.8	60.3	47.7	36.9	27.9	23.4
V-45.0	289.7	244.7	208.7	172.8	141.3	113.4	90.9	66.6
V-30.0	508.4	431.9	392.3	329.3	287.9	240.2	197.0	151.2
V-15.0	587.5	528.2	453.5	402.2	340.1	286.1	237.5	189.8
V0.0	674.8	586.6	534.5	453.5	402.2	333.8	281.6	225.8
V15.0	563.3	512.9	438.2	388.7	323.9	268.1	221.3	174.6
V30.0	453.5	406.7	346.4	309.5	258.2	214.1	171.9	135.9
V45.0	245.6	206.9	174.6	146.7	119.7	94.5	72.0	55.8
V60.0	72.0	62.1	52.2	42.3	34.2	28.8	24.3	20.7
V75.0	13.5	12.6	11.7	10.8	10.8	9.9	9.0	8.1
V90.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

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Light Distribution Data

Unit: cd

V\H	H78.0	H79.0	H80.0	H81.0	H82.0	H83.0	H84.0	H85.0
V-90.0	3.6	4.5	3.6	4.5	4.5	4.5	4.5	4.5
V-75.0	5.4	5.4	4.5	3.6	3.6	3.6	3.6	3.6
V-60.0	18.9	16.2	12.6	10.8	9.0	7.2	5.4	4.5
V-45.0	48.6	33.3	24.3	18.0	14.4	10.8	8.1	6.3
V-30.0	116.1	82.8	57.6	37.8	25.2	17.1	12.6	9.0
V-15.0	144.0	104.4	71.1	46.8	28.8	18.9	13.5	9.9
V0.0	177.3	134.1	94.5	63.9	39.6	23.4	16.2	10.8
V15.0	139.5	98.1	67.5	43.2	27.0	18.9	13.5	9.9
V30.0	100.8	74.7	51.3	33.3	23.4	18.0	13.5	9.9
V45.0	39.6	28.8	23.4	18.9	15.3	11.7	9.0	7.2
V60.0	18.0	16.2	13.5	11.7	9.9	9.0	8.1	7.2
V75.0	8.1	8.1	7.2	7.2	7.2	8.1	8.1	8.1
V90.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :

Report No. : LISUN-003

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Light Distribution Data

Unit: cd

V\H	H86.0	H87.0	H88.0	H89.0	H90.0			
V-90.0	4.5	4.5	4.5	4.5	4.5			
V-75.0	3.6	3.6	3.6	3.6	3.6			
V-60.0	3.6	3.6	3.6	4.5	4.5			
V-45.0	4.5	3.6	3.6	3.6	3.6			
V-30.0	6.3	4.5	3.6	3.6	3.6			
V-15.0	6.3	4.5	3.6	3.6	3.6			
V0.0	7.2	4.5	2.7	3.6	3.6			
V15.0	6.3	4.5	3.6	3.6	3.6			
V30.0	7.2	5.4	5.4	5.4	5.4			
V45.0	6.3	6.3	6.3	6.3	6.3			
V60.0	7.2	7.2	7.2	7.2	7.2			
V75.0	8.1	8.1	8.1	7.2	7.2			
V90.0	8.1	8.1	8.1	7.2	7.2			

Test Type : Type B

Test Distance : 15.172 m

B Plane (°): -90.0-90.0:15.0 β (°): -90.0-90.0:1.0

Test Device : LSG-6000

Temperature : 25°C

Humidity : 65.0%

Test Lab : LISUN GROUP

Test By : Thomas Fiodorow

Review By :