Goniospectroradiometer with Moving Mirror (LSG-2000CCD)

Brochure

Global Office of Lisun Electronics Inc.

http://www.Lisungroup.com

Lisun Group (Hong Kong) Limited
Add: Room 803, Chevalier House, 45-51 Chatham Road South, Tsim Sha Tsui, KL, HK
Tel: 00852-68852050 Fax: 00852-30785638
Email: SalesHK@Lisungroup.com

Lisun Electronics (Shanghai) Co., Ltd
Add: 113-114, No. 1 Building, Nanxiang Zhidi Industry Park, No. 1101, Huyi Road, Jiading District, Shanghai, 201802, China
Tel: +86(21)5108 3341 Fax: +86(21)5108 3342
Email: SalesSH@Lisungroup.com

Lisun Electronics Inc. (USA)
Add: 445 S. Figueroa Street, Los Angeless, CA 90071, U.S.A.
Email: Sales@Lisungroup.com

Lisun China Factory
Add: NO. 37, Xiangyuan Road, Hangzhou City, Zhejiang Province, China
Tel: +86-189-1799-6096
Email: Engineering@Lisungroup.com

Leader in Lighting & Electrical Test Instruments

Rev. 1/16/2020

1.System Configuration

A. LSG-2000CCD Goniophotometric System:

- Goniometric Rotating Console: Japanese Mitsubishi Motor and German Angle encoder System to keep the test accuracy.
- 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.
- Goniometric Rotating Control Instrument in dark room: This can allow the customer to control the rotating in the dark room when install the lumainires but no need to control in the PC.
- Double Channel & High Precision Photometer
- Germany produced Class L Constant Temperature Photo Detector
- Cross-beam Laser System for Calibrating
- English Measuring Software
- Automatic Adjust Diaphragm: remote control to adjust the size of diaphragm for the different diameter size luminaries test
- Two sets of luminaries Clamps: multi-functions
- Oversea Delivery and Packing: all of the instruments and accessories will be packed with Fumigation free three plywood, include the delivery cost to Shanghai sea port

B. SLS-150W DC Standard Light Intensity Lamp

C. LS2010 Digital Power Meter: High Accuracy to measure AC and DC voltage, current, power and power factor, also measure harmonic

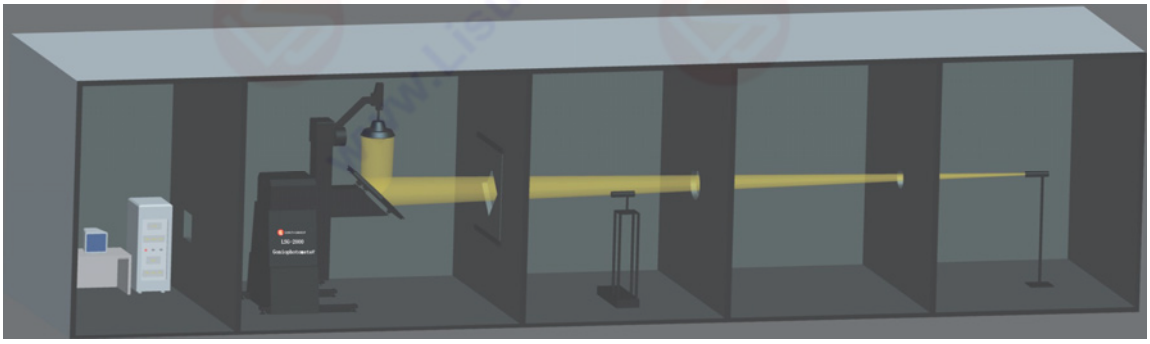
D. DC3010 CC & CV DC Power Source: DC3010 output is 30V/10A, Option can be DC6010 (output is 60V/10A) and DC12010 (output is 120V/10A)

E. LSP-1KVAR AC Power Source: 1KVA Pure Sine Wave AC Power Source

F. CASE-19IN 19inch Standard Instruments Cabinet

G. LMS-9000B High Precision CCD Spectraidomeeter

H. CLAMP-9000 Accessories and Adjustable Tripod for LMS-9000B



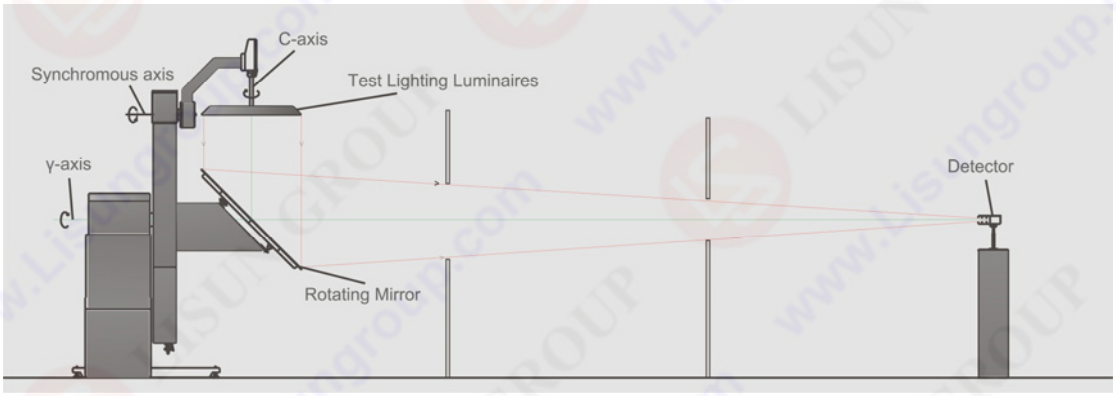
Full View for LSG-2000CCD Goniospectroradiometer with Moving Mirror

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

2. Measurement Principle

Goniospectroradiometer with Moving Mirror (also called Goniospectroradiometer with Rotating Mirror) can test luminaries rotating in the prescribed burning position and around the vertical axle and a reflecting mirror rotates around the horizontal axle, meanwhile, a synchronous axle will rotate toward the opposite direction synchronously. The photometer head located at a fixed position of the limiting photometric distance in front of the reflecting mirror to gather the light in each direction.

The rotation priority is determined by the software. If mirror axle is took precedence of rotation, the goniospectroradiometer 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 woof. See the following figure.



Measurement Principle

3. System Functions

LSG-2000CCD Goniospectroradiometer with Moving Mirror

The LSG-2000CCD fully meets LM-79 Clause 9.3.1, CIE and GB standards for Goniophotometric of luminaries, this system is used to measure spatial luminous intensity distribution of luminaries 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, luminaries 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 luminaries etc.

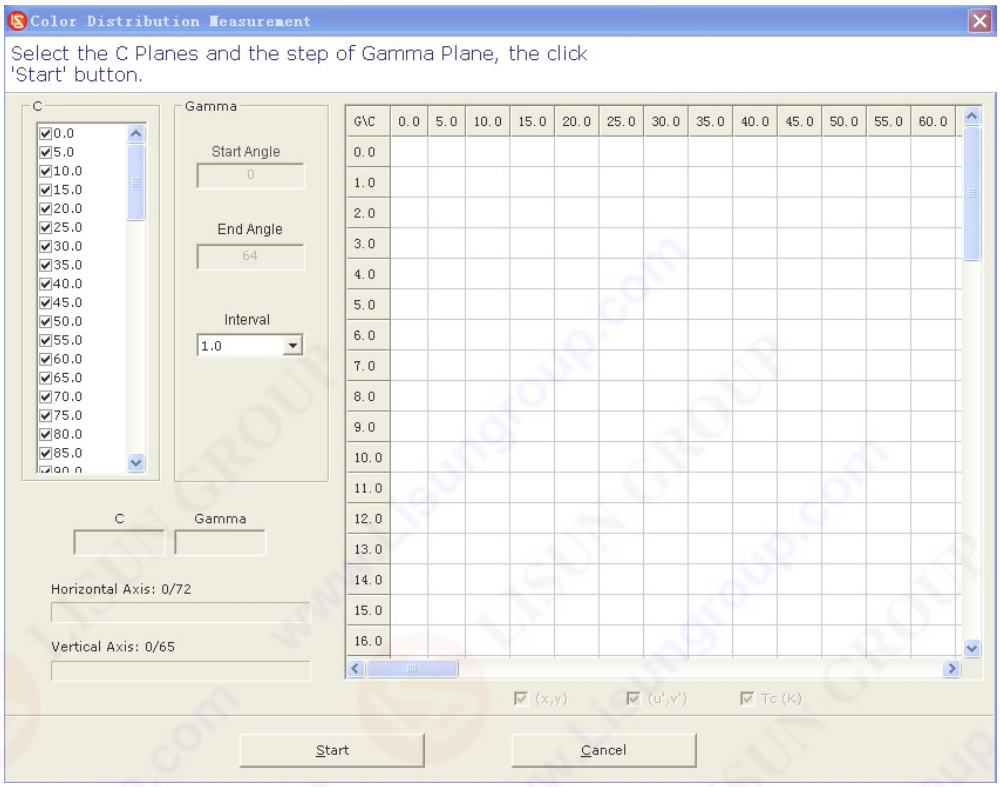





LSG-2000CCD Can test all of the above luminaires

4. Specifications

1) The tested luminaire rotates around the mirror with an angle of (γ)±180°(or 0-360°) and the tested luminaire rotates around itself with an angle of (C)±180°(or 0-360°)
2) The accuracy of angle: 0.05° Resolution of angle: 0.001°
3) Luminosity Testing Range: Illuminance 0.001lx~99,999lx; Light Intensity 1.0cd～10^7cd(detector)
4) Accuracy of photometry: Germany produced constant temperature photo detector DIN5032-6/CIE pub1. No. 69 Class L
5) Testing Accuracy: 2%(Under Standard lamp); Stray Light: less than 0.1%
6) Work with high accuracy and quick CCD Spectroradiometer to measure spatial color parameters.
7) Accuracy of chromaticity coordinate: ±0.0015 or ±0.0005(under standard A lamp)
8) Spectral Wavelength Range: 380nm ~780nm; Accuracy of wavelength: ±0.5nm
9) English version software can run in Win7, Win8 or Win10



Model Number	LSG-2000BCCD (Big Size)	LSG-2000CCD (Standard Size)	LSG-2000SCCD (Small Size)
Measure Size (mm)	Diameter=1600	Diameter=1400	Diameter=1000
Measure Weight (Kg)	50	40	30
Measure Power(W)	600V/10A, AC/DC	600V/10A,AC/DC	600V/10A,AC/DC

5. Laboratory Requirements

1) Room Requirements according to CIE

Model	Dark Room (W*H*L)	Operation Room(W*L)
LSG-2000BCCD	5*6*8~30m	4*4m
LSG-2000CCD	4*5*8~30m	4*4m
LSG-2000SCCD	4*4.2*8~30m	4*4m

- 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

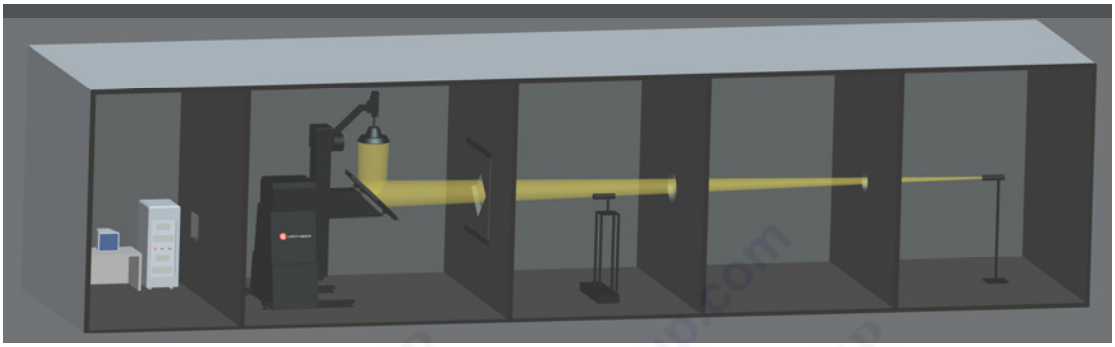
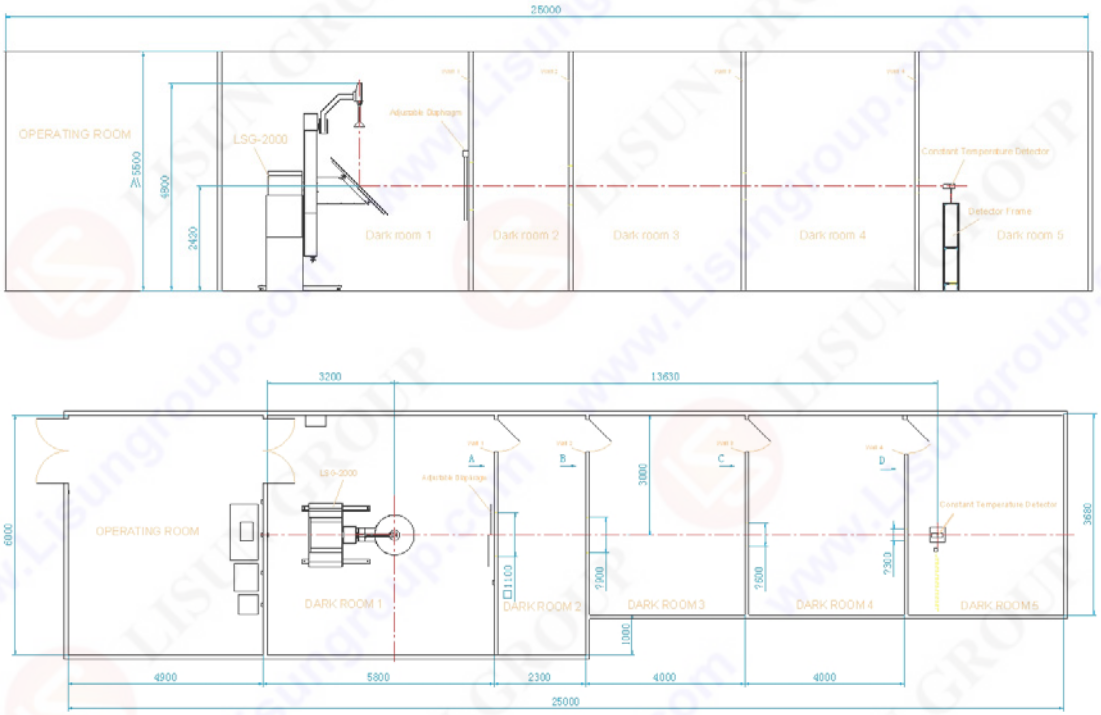


Fig: LSG-2000CCD lab dark room view



2) Requirements of Eliminating the stray Light

Luminaires must be where the photodetector can only receive the light reflected by the rotating mirror in the LSG-2000CCD system. The light given off directly by the luminaries and reflected by the wall and floor is warded off by the light fence. Internal surface of the dark room and dark path together with the surface of the light fence should be painted unpolished black or be covered by black cloth and black carpet.

3) Temperature of the Environment

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

a. Tungsten Incandescent Lamp: 25℃±5℃
b. Double-caps Fluorescent Lamp: 25℃±1℃
c. High Pressure Mercury Lamp: 25℃±2℃
d. Metal Halogen Lamp: 25℃±2℃

e. High Pressure Sodium Lamp: 25℃±2℃
f. Low Pressure Sodium Lamp: 25℃±2

4) Airflow

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

5) Vibration and shock

When the lamp is in lighting, the vibration couldn't exceed 10m/s2(4～3000Hz), or the moving scope of the lamp couldn't exceed 30mm (at most 4Hz)

6) Smoke, Dust and Moisture

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

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-2000CCD Goniospectroradiometer with Moving Mirror meet the following requirements:

3.1 CIE Pub. NO.70,"The Measurement of Absolute Luminous Intensity Distributions"

3.2 CIE DIV.Ⅱ-TC10,"Photometry of Luminaires"

3.3 IES LM-35-1989,"IES Approved Method for Photometric Testing of Floodlights"

3.4 IES LM-31,"IES Approved Method for Photometric Testing of Roadway Luminaires"

3.5 IES-LM-79, "Electrical & Photometric Measurements of Solid-State Lighting Products"

3.6 GB/T 7002-1986,"Luminosity Test of Flood Luminaires"

3.7 GB/T 9467-1988, "Luminosity Test of Indoor Luminaires"

3.8 GB/T 9468-1988, "Luminosity Test of Street Luminaires"

3.9 IES 61341 "Method of Measurement of Center Beam Intensity and Beam Angle(s) of Reflector Lamp"

3.10 CIE Pub.NO.76, "Photometry-the CIE System of Physical Photometry"

8. Typical oversea market customers:

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

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:

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

Report No.: LS1711 Test Time: 8/28/2017 17:02

Luminaire Property

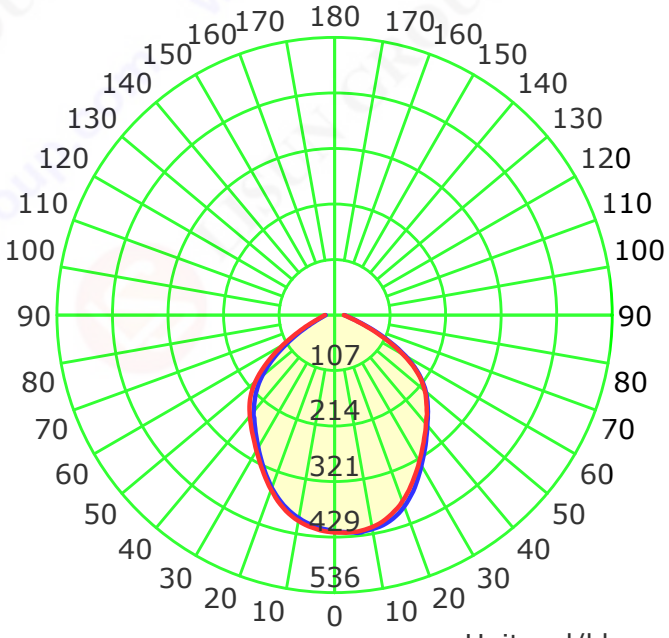
Luminaire Manufacturer: LISUN
Luminaire Category: LED Philips 112
Luminaire Description: LS-71-83-8077
Lamp Catalog: LUMINUS
Lamp Description: LUMINUS001
Number of Lamps: 1
Lumens per Lamp: 550
Luminous Length (mm): 50
Luminous Width (mm): 50
Luminous Height (mm): 100
Voltage: 119.9 V
Current: 0.530 A
Power: 63.55 W
Power Factor: 0.999

Photometric Results

CIE Class: Direct
Total Rated Lamp Lumens: 550.0 lm
Measurement Flux: 539.5 lm
Efficiency: 98.08%
Downward Ratio: 98.08%
Upward Ratio: 0.00%
Horizontal Diffuse Angle(50%): H99.2
Vertical Diffuse Angle(50%): V101.5
Luminaire Efficacy Rating (LER): 8.54
Central Intensity: 417.76 cd/klm
Max. Intensity: 429.28 cd/klm
Pos of Max. Intensity: H45 V8
S/MH(C0/C180): 1.14
S/MH(C90/C270): 1.13

Picture Of Luminaire

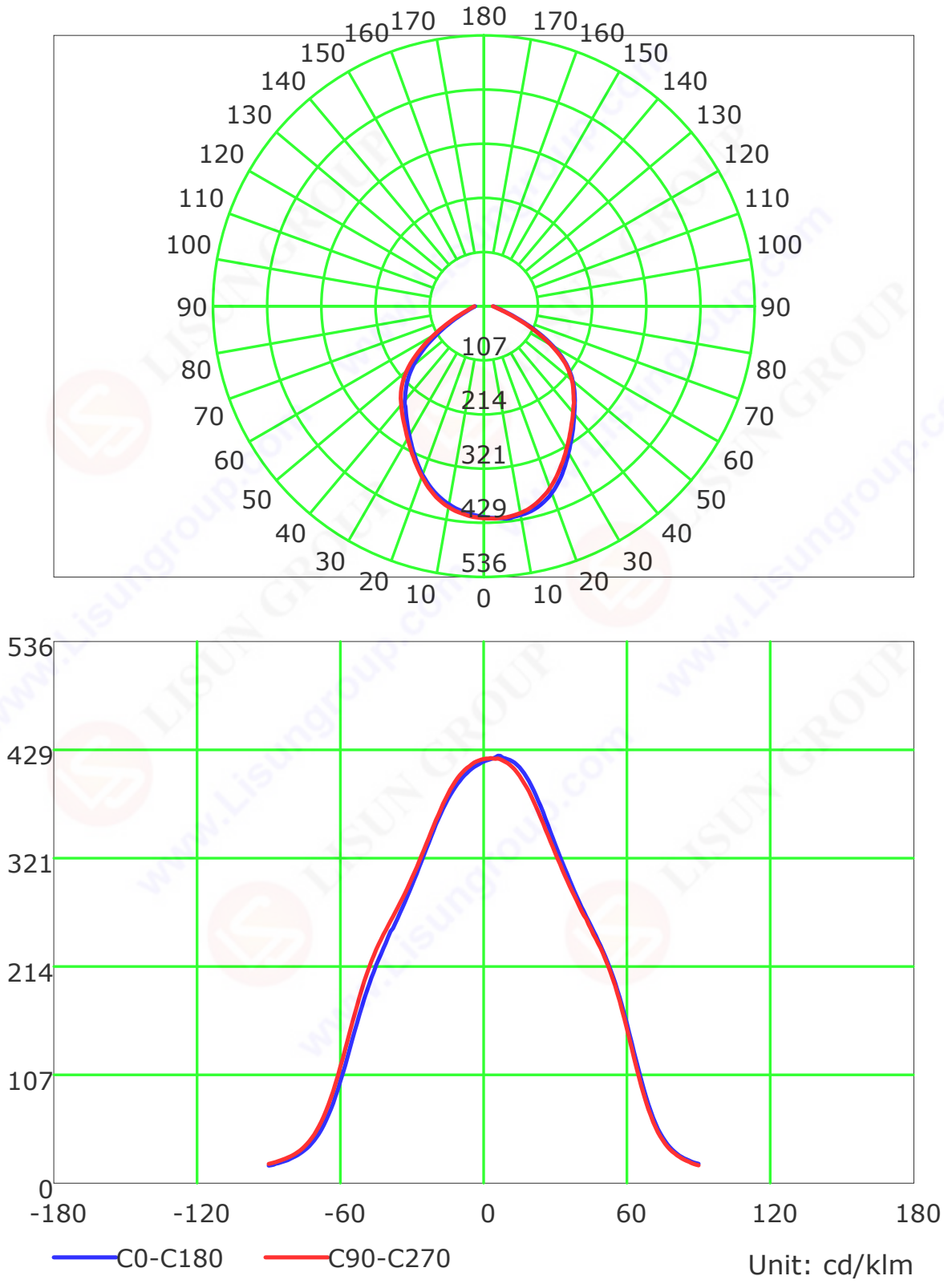
Luminous Intensity Distribution Curve



Unit: cd/klm
Average Diffuse Angle(50%): 100.1°
C0-C180 C90-C270

C Plane (°):0.0-360.0: 45.0
Gamma Plane (°):0.0-90.0:1.0
Test Lab: LISUN
Test Device: LSG-2000CCD
Test Type: TYPE C
Distance: 8.000 m
Temperature: 24.5°
Humidity: 60%
Operator: Jacky
Inspector:

Luminous Intensity Distribution Curve



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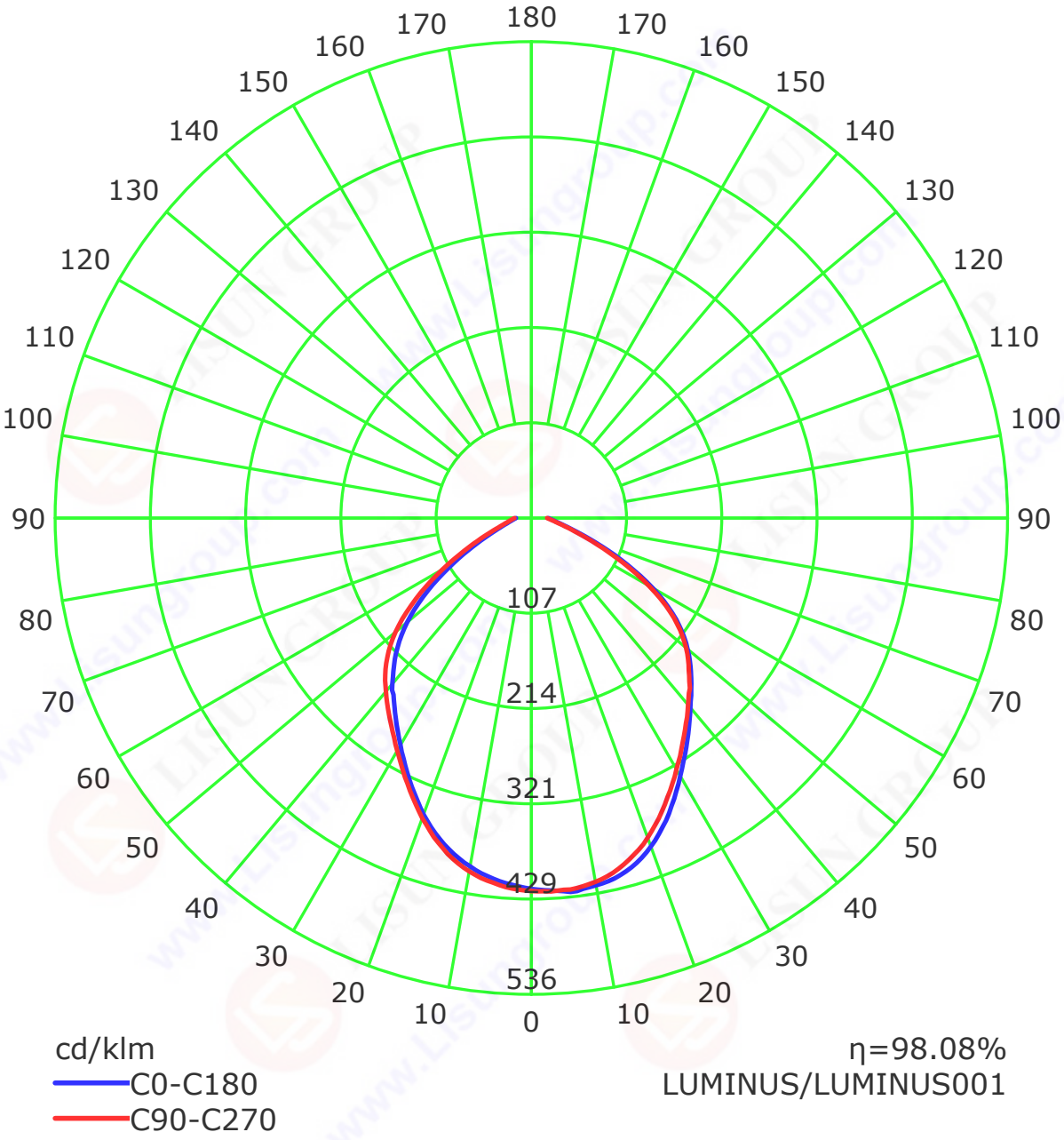
Inspector:

Luminous Intensity Distribution Curve(cd/klm)



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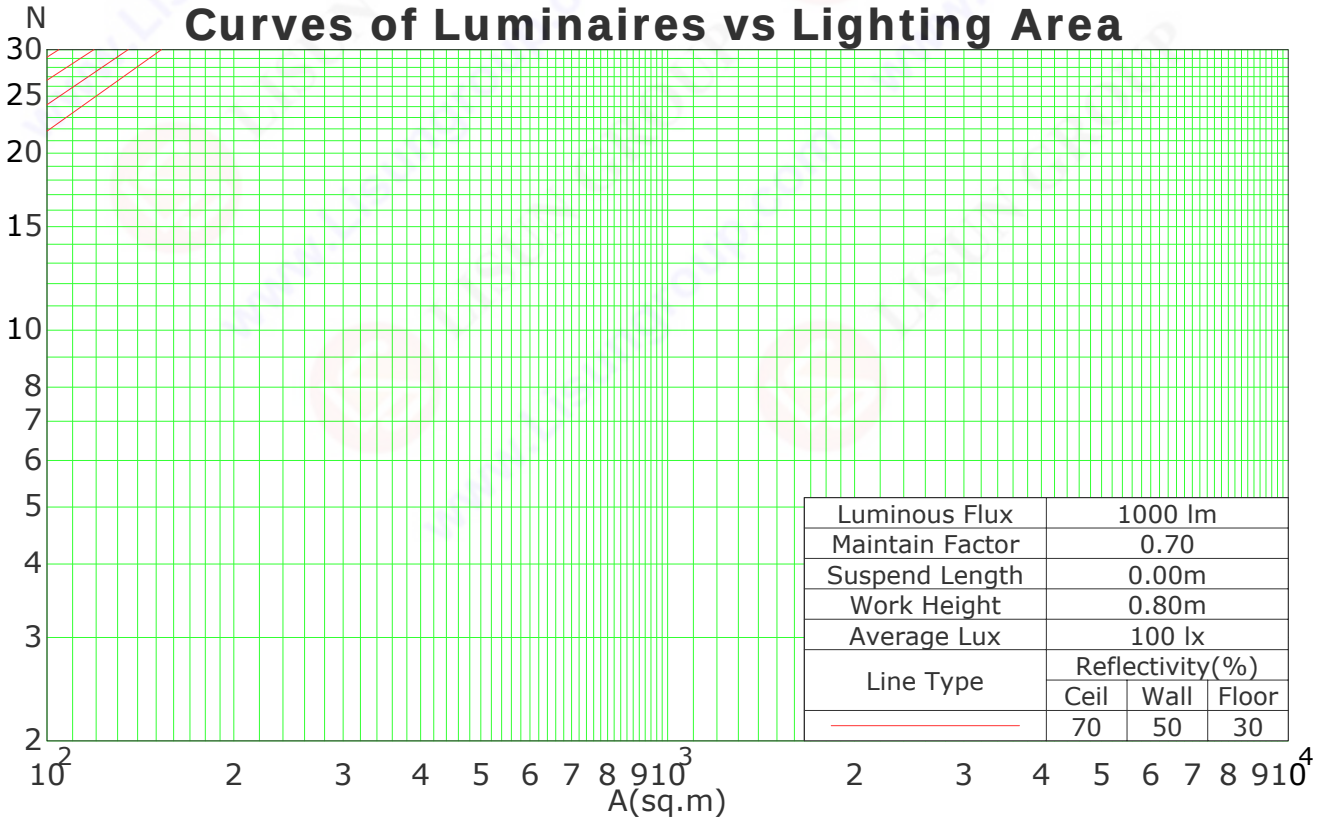
Coefficients Of Utilization - Zonal Cavity Method

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	117	117	117	117	114	114	114	114	109	109	109	104	104	104	100	100	100	98
1	107	103	99	95	105	101	97	94	96	93	91	93	90	88	89	87	85	83
2	98	91	84	79	96	89	83	78	85	80	76	82	78	74	79	76	73	71
3	90	80	73	67	88	79	72	66	76	70	65	73	68	64	71	66	63	61
4	83	72	63	57	81	70	63	57	68	61	56	66	60	55	64	59	55	52
5	76	64	56	50	74	63	55	49	61	54	49	59	53	48	58	52	48	46
6	71	58	50	44	69	57	49	44	56	48	43	54	48	43	52	47	42	40
7	66	53	45	39	64	52	44	39	51	44	38	49	43	38	48	42	38	36
8	61	49	40	35	60	48	40	35	47	40	35	45	39	34	44	38	34	32
9	57	45	37	32	56	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	34	29	40	33	29	39	33	28	38	32	28	27

Spacing Criteria (0-180): 1.14
Spacing Criteria (90-270): 1.13
Spacing Criteria (Diagonal): 1.27

Curves of Luminaires vs Lighting Area



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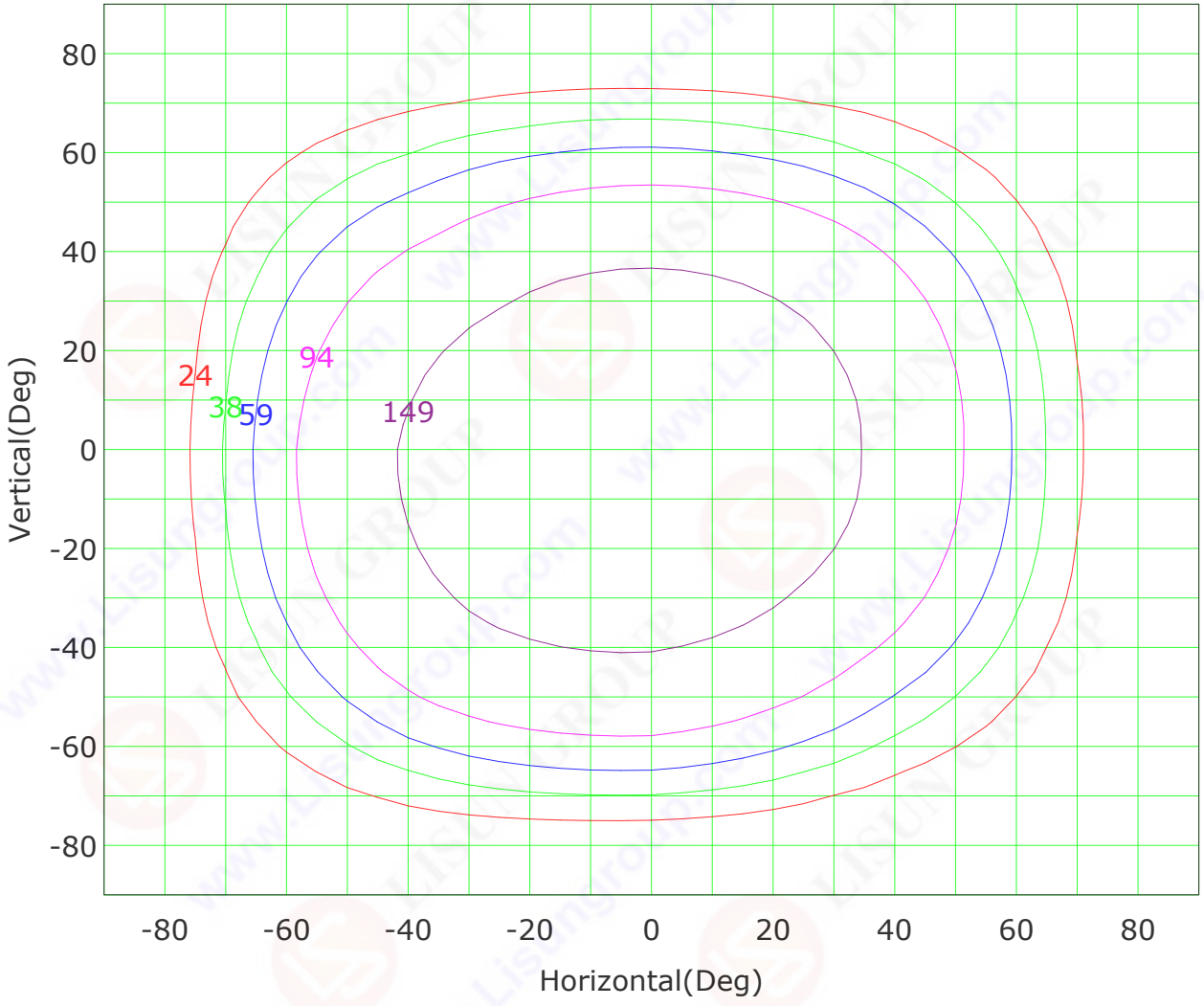
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Isocandela (rectangle)



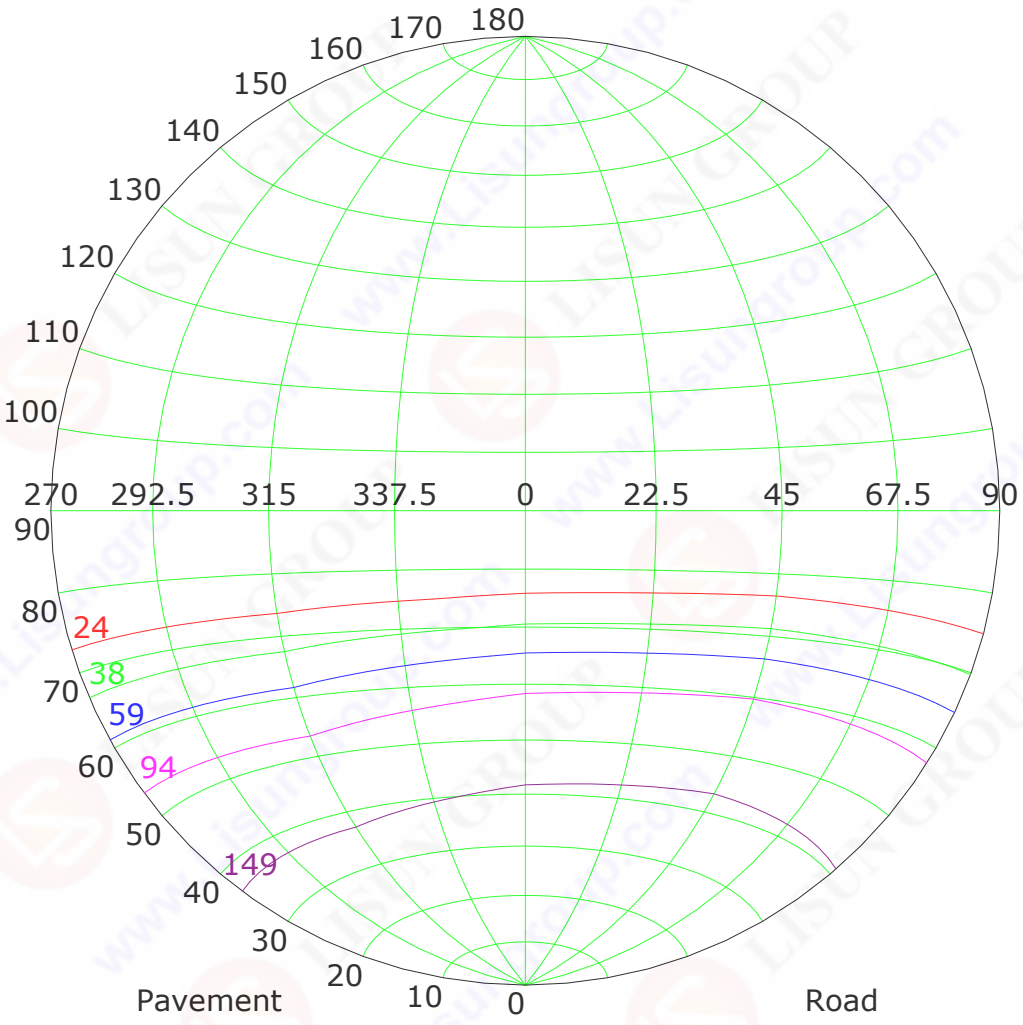
Imax (100%): 236 cd

(10%):	24 cd	(16%):	38 cd
(25%):	59 cd	(40%):	94 cd
(63%):	149 cd	(100%):	236 cd

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Isocandela (sphere)



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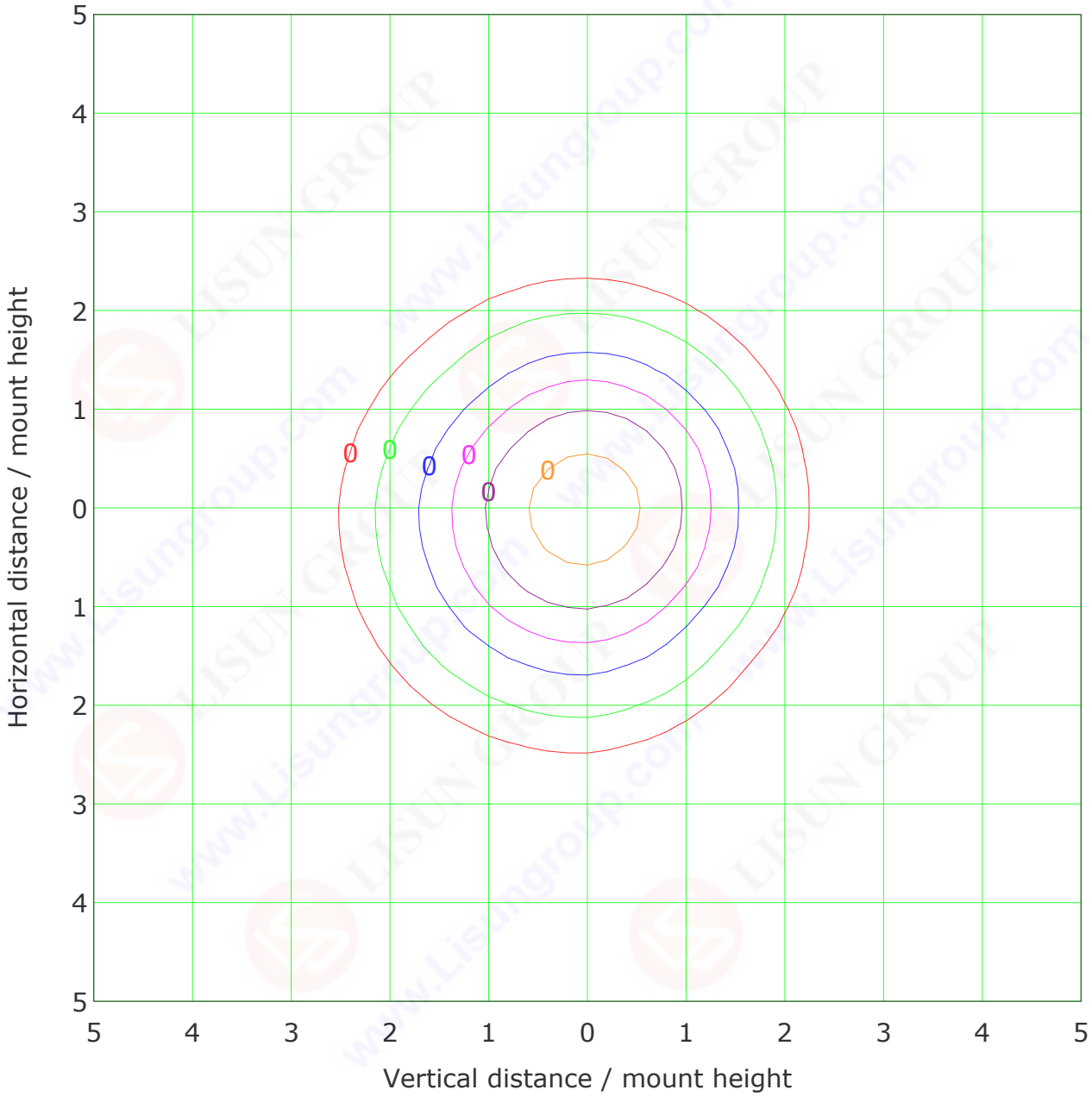
Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

IsoPPFD Plot



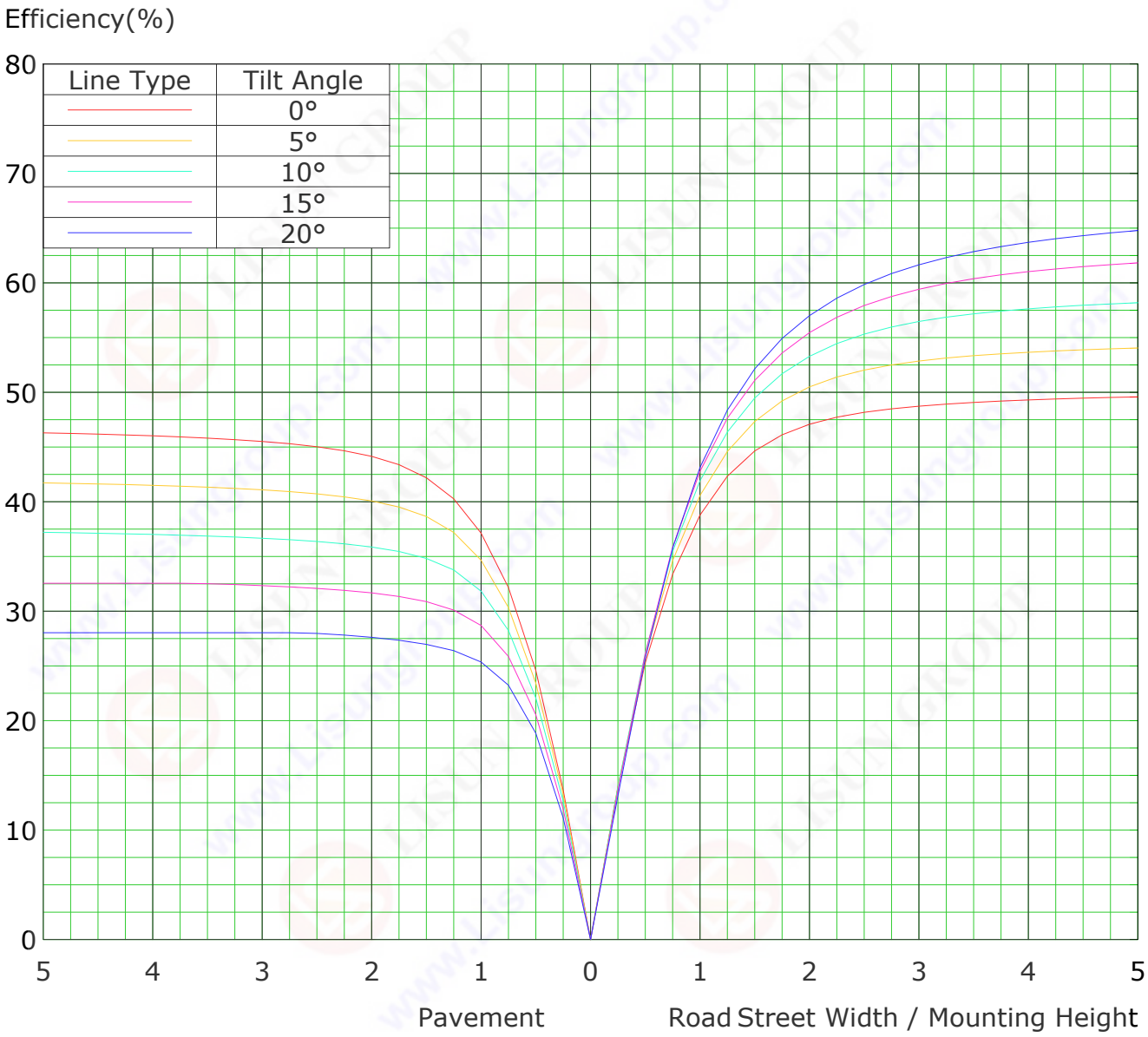
Mounting Height: 10.0m Max PPFD(100%): 0.048 umol/s/m^2

(1%): 0.000 umol/s/m^2
(2%): 0.001 umol/s/m^2
(5%): 0.002 umol/s/m^2
(10%): 0.005 umol/s/m^2
(20%): 0.010 umol/s/m^2
(50%): 0.024 umol/s/m^2
(100%): 0.048 umol/s/m^2

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Roadway CU Curve

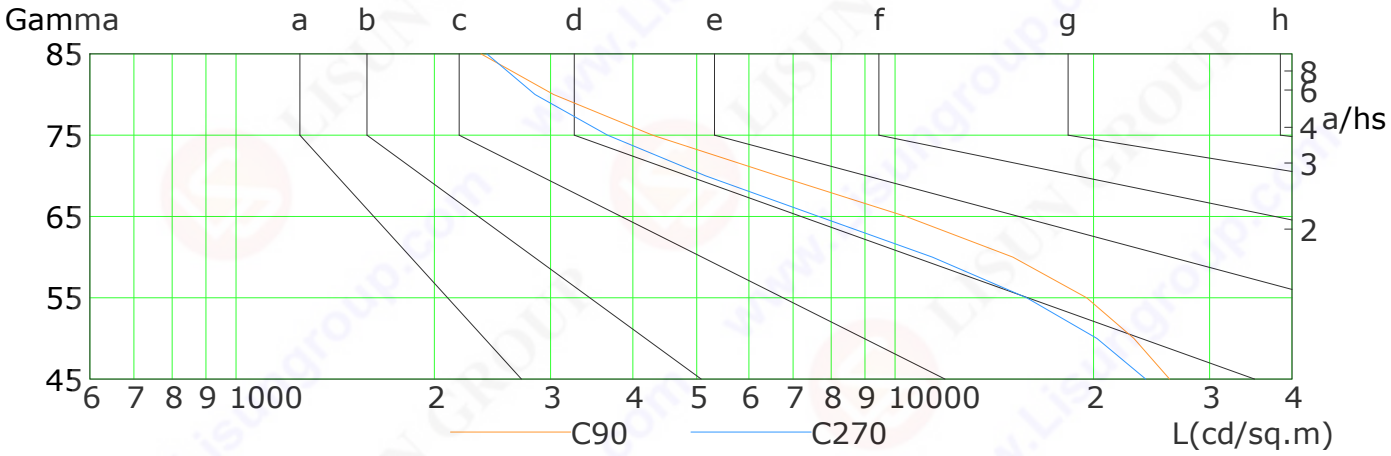


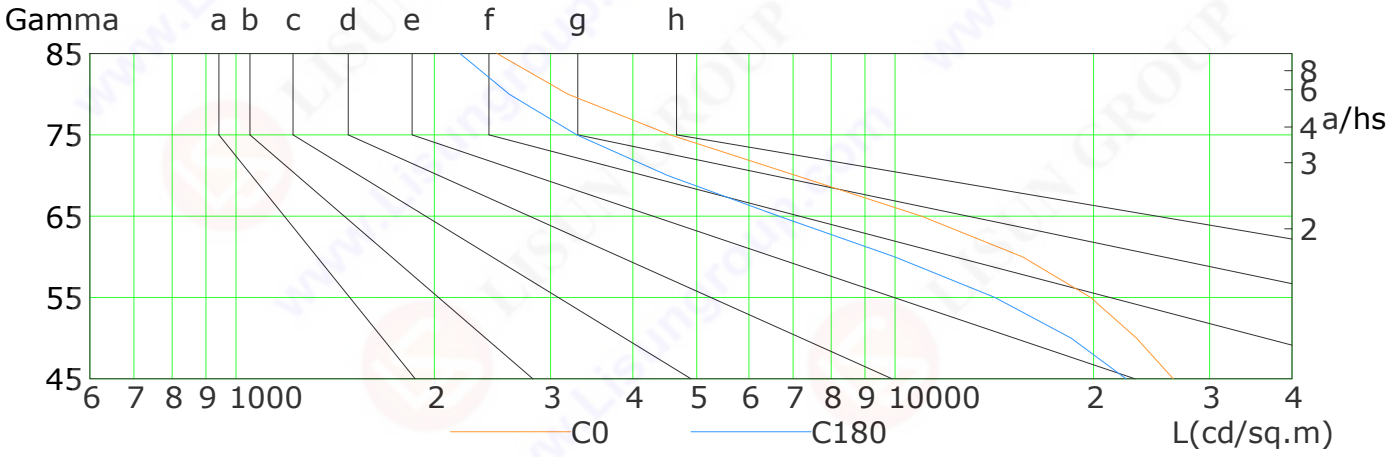
C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Lum Limit Curve

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
		a	b	c	d	e	f	g	h





L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	26425	23238	19800	15600	10964	7073	4558	3190	2489
C90	26091	23021	19522	15087	10385	6637	4285	3033	2352
C180	22409	18493	14174	9978	6661	4520	3288	2598	2187
C270	24002	20235	15829	11389	7657	5155	3661	2842	2402

C Plane (°):0.0-360.0: 45.0
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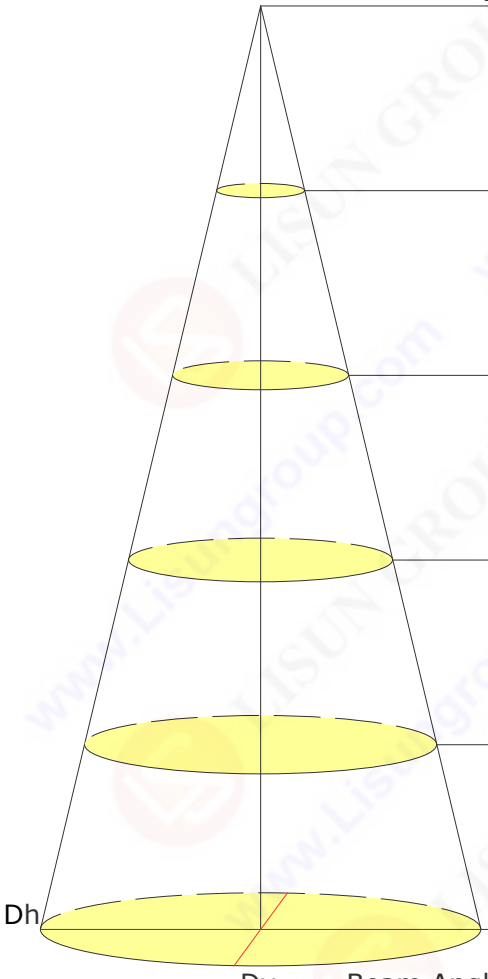
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

PPFD at a Distance



Dist(m)	PPFD (umol/s/m^2)	Dh/Dv_B(m) Dh/Dv_F(m)	S_B(sq.m) S_F(sq.m)	PPFDav_B PPFDav_F (umol/s/m^2)
1.0	4.728	2.33/2.44	4.5	1.004
		6.72/6.99	37.9	0.051
2.0	1.182	4.67/4.89	18.1	0.251
		13.45/13.98	151.5	0.013
3.0	0.525	7.00/7.33	40.8	0.112
		20.17/20.96	340.9	0.006
4.0	0.295	9.33/9.77	72.5	0.063
		26.89/27.95	606.1	0.003
5.0	0.189	11.67/12.21	113.4	0.040
		33.62/34.94	947.0	0.002

Beam Angle(B): H98.8 V101.4 Field Angle(F): H146.9 V148.1

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Test Device: LSG-2000CCD
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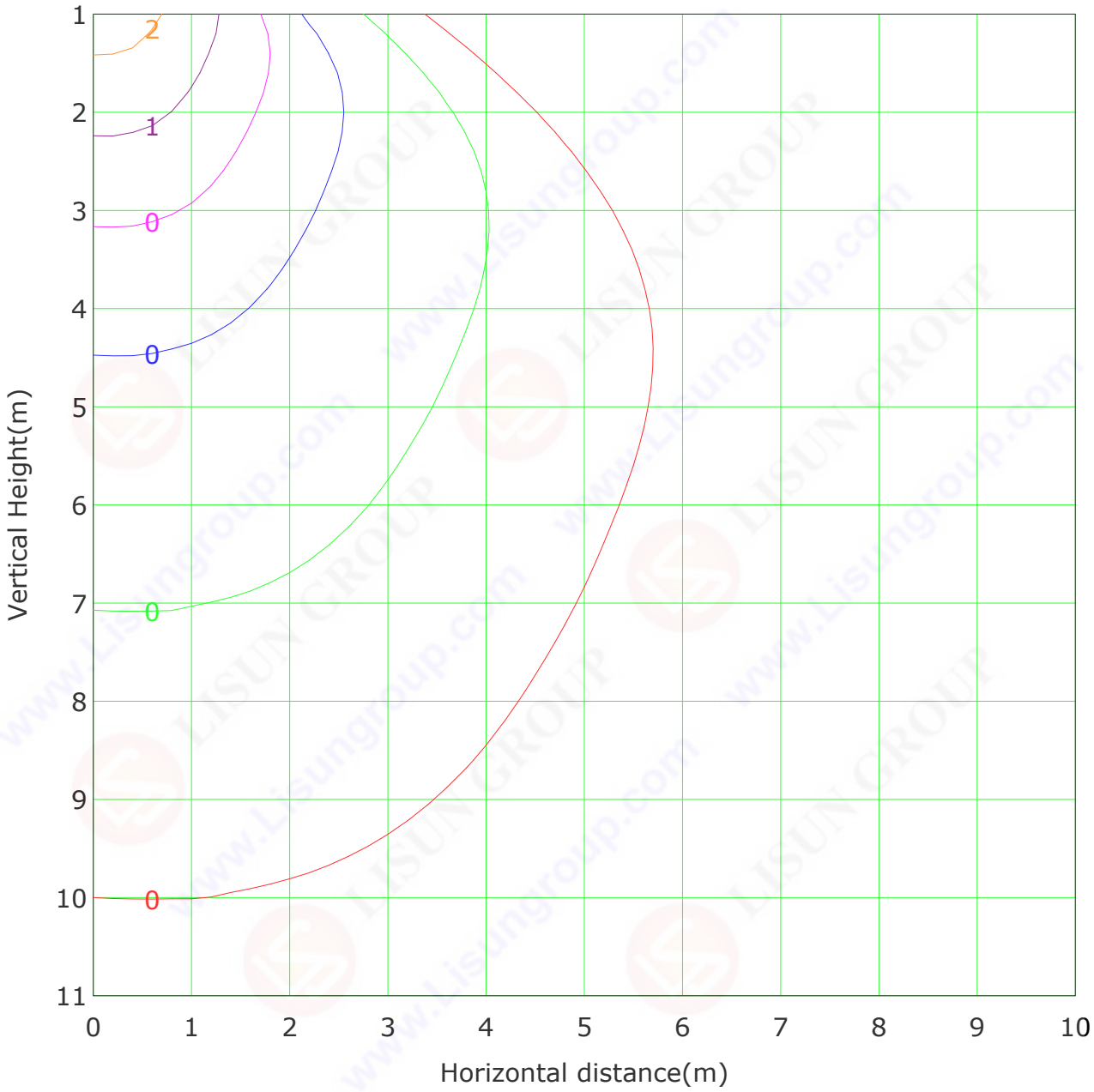
Humidity: 60%
Inspector:

Vertical IsoPPFD Plot



Lowest(m): 1.0m Highest(m): 11.000m Max PPFD: 4.7 umol/s/m^2

(1%): 0.047 umol/s/m^2
(2%): 0.095 umol/s/m^2
(5%): 0.236 umol/s/m^2
(10%): 0.473 umol/s/m^2
(20%): 0.946 umol/s/m^2
(50%): 2.364 umol/s/m^2
(100%): 4.728 umol/s/m^2

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Area Flux Table

Unit: lm/klm

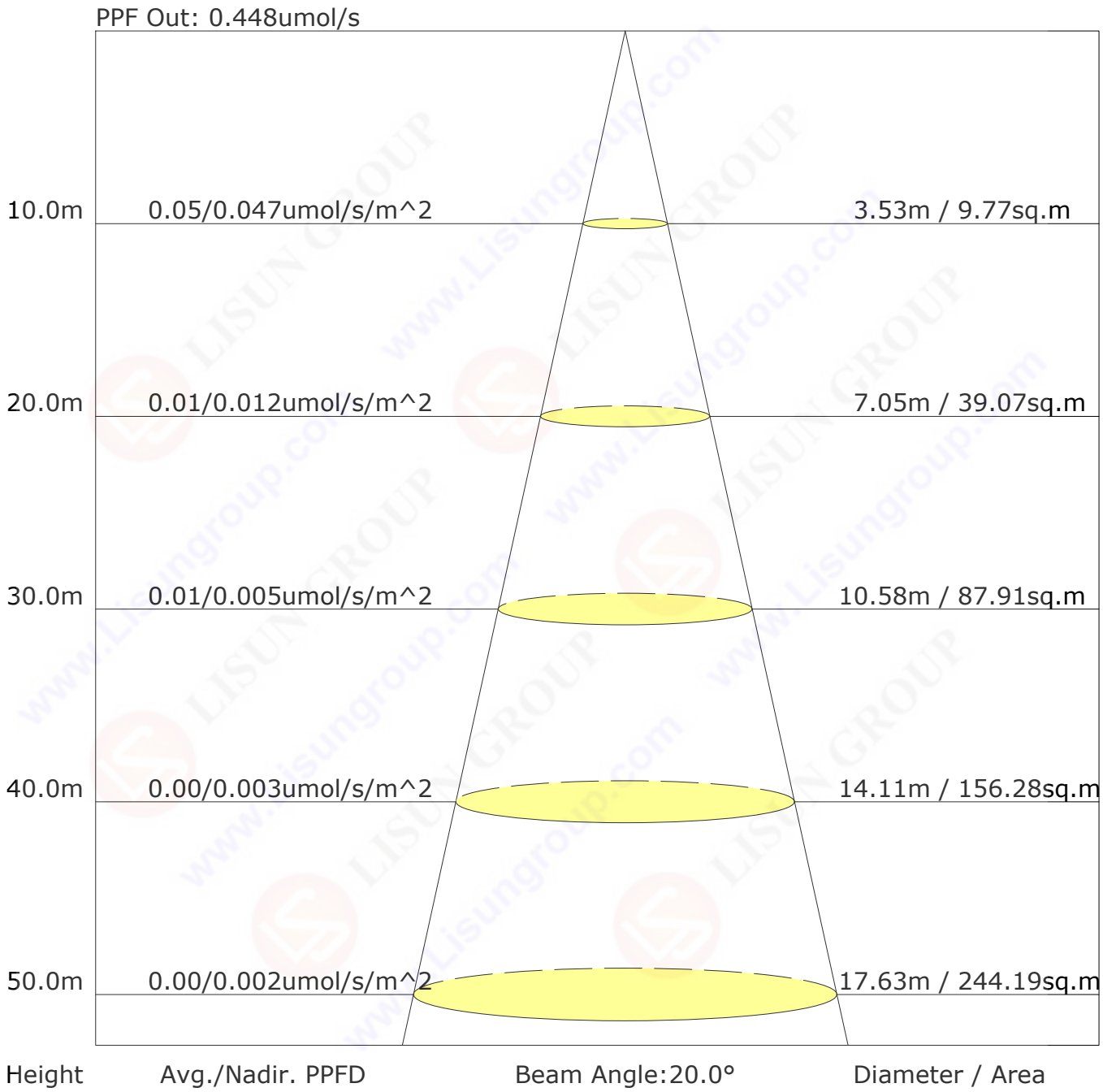
Vertical plane

Horizontal plane	-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	Flux(T)	Flux(E)
-90	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.3	0.2	0.1	7.7	0.0
-80	0.0	0.2	0.3	0.4	0.6	0.8	0.9	1.1	1.1	1.1	1.1	1.1	1.0	0.8	0.7	0.5	0.3	0.2	0.1	11.1	1.5
-70	0.1	0.2	0.3	0.6	0.9	1.3	1.7	2.1	2.4	2.4	2.4	2.2	1.9	1.4	1.0	0.7	0.4	0.2	0.1	19.8	16.4
-60	0.1	0.2	0.4	0.8	1.5	2.4	3.4	4.3	4.7	4.8	4.3	3.6	2.6	1.7	1.0	0.5	0.2	0.1	0.1	36.5	34.9
-50	0.1	0.2	0.5	1.2	2.3	3.9	5.4	6.4	6.9	6.9	6.4	5.4	4.1	2.8	1.5	0.7	0.3	0.1	0.1	55.0	54.0
-40	0.1	0.2	0.6	1.6	3.3	5.2	6.7	7.8	8.4	8.4	7.8	6.7	5.3	3.8	2.2	0.9	0.3	0.1	0.1	69.4	68.7
-30	0.1	0.3	0.8	2.0	4.1	6.0	7.6	9.0	9.9	10.0	9.3	7.9	6.3	4.6	2.7	1.1	0.3	0.1	0.1	81.8	81.3
-20	0.1	0.3	0.9	2.4	4.5	6.4	8.4	10.2	11.5	11.6	10.7	9.0	7.0	5.1	3.1	1.3	0.4	0.1	0.1	92.9	92.4
-10	0.1	0.3	0.9	2.5	4.6	6.7	8.9	11.0	12.4	12.5	11.7	9.9	7.5	5.4	3.4	1.4	0.4	0.1	0.1	99.7	99.2
0	0.1	0.3	0.9	2.5	4.6	6.7	8.9	11.0	12.4	12.9	12.1	10.0	7.6	5.5	3.5	1.5	0.4	0.1	0.1	100.8	100.4
10	0.1	0.3	0.9	2.5	4.6	6.7	8.9	11.0	12.4	12.9	12.1	10.0	7.6	5.5	3.5	1.5	0.4	0.1	0.1	100.8	100.4
20	0.1	0.3	0.9	2.5	4.6	6.7	8.9	11.0	12.4	12.5	11.7	9.9	7.5	5.4	3.4	1.4	0.4	0.1	0.1	99.7	99.2
30	0.1	0.3	0.8	2.0	4.1	6.0	7.6	9.0	9.9	10.0	9.3	7.9	6.3	4.6	2.7	1.1	0.3	0.1	0.1	81.8	81.3
40	0.1	0.2	0.6	1.6	3.3	5.2	6.7	7.8	8.4	8.4	7.8	6.7	5.3	3.8	2.2	0.9	0.3	0.1	0.1	69.4	68.7
50	0.1	0.2	0.5	1.2	2.3	3.9	5.4	6.4	6.9	6.9	6.4	5.4	4.1	2.8	1.5	0.7	0.3	0.1	0.1	55.0	54.0
60	0.1	0.2	0.4	0.8	1.5	2.4	3.4	4.3	4.7	4.8	4.3	3.6	2.6	1.7	1.0	0.5	0.2	0.1	0.1	36.5	34.9
70	0.0	0.2	0.3	0.6	0.9	1.3	1.7	2.1	2.4	2.4	2.2	1.9	1.4	1.0	0.7	0.4	0.2	0.1	0.1	19.8	16.4
80	0.0	0.1	0.2	0.4	0.6	0.8	0.9	1.1	1.1	1.1	1.1	1.0	0.8	0.7	0.5	0.3	0.2	0.1	0.1	11.1	1.5
90	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.3	0.2	0.2	0.1	7.7	0.0
Flux(T)	1.0	3.8	9.9	23.5	44.1	66.3	88.0	107.2	119.7	122.3	114.3	97.3	76.0	54.2	32.6	14.4	4.9	1.1	981		
Flux(E)	0.0	0.1	6.3	20.4	41.1	63.3	85.2	104.4	117.0	119.7	111.7	94.6	73.3	51.6	30.0	11.7	1.7	0.0		7.4	0.0
	-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	Flux(T)	Flux(E)
										Horizontal plane										932	

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

The Average PPFD Effective Figure



C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

UGR Table

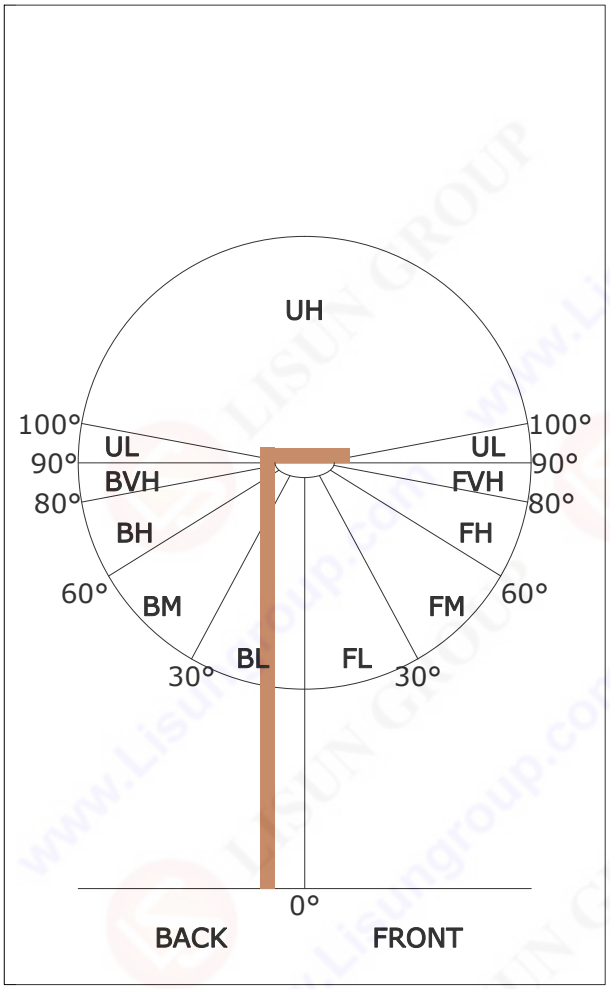
Reflectance: Ceiling (cavity)	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
X=2H Y=2H	22.5	23.8	22.8	24.1	24.3	22.1	23.4	22.4	23.6	23.9
3H	23.1	24.3	23.4	24.6	24.9	22.6	23.8	22.9	24.1	24.3
4H	23.3	24.4	23.6	24.7	25.0	22.7	23.8	23.1	24.1	24.4
6H	23.3	24.4	23.7	24.7	25.0	22.8	23.8	23.1	24.1	24.5
8H	23.4	24.4	23.7	24.7	25.0	22.8	23.8	23.2	24.1	24.5
12H	23.4	24.3	23.8	24.7	25.0	22.8	23.8	23.2	24.1	24.5
X=4H Y=2H	22.8	23.9	23.1	24.2	24.5	22.4	23.5	22.7	23.8	24.1
3H	23.5	24.4	23.8	24.8	25.1	23.0	24.0	23.4	24.3	24.6
4H	23.7	24.5	24.1	24.9	25.2	23.2	24.0	23.6	24.4	24.8
6H	23.8	24.6	24.2	24.9	25.3	23.3	24.1	23.7	24.5	24.9
8H	23.9	24.6	24.3	25.0	25.4	23.4	24.1	23.8	24.5	24.9
12H	23.9	24.6	24.4	25.0	25.4	23.4	24.1	23.9	24.5	24.9
X=8H Y=4H	23.7	24.4	24.1	24.8	25.2	23.2	23.9	23.7	24.3	24.7
6H	23.9	24.5	24.3	24.9	25.4	23.4	24.0	23.9	24.4	24.9
8H	24.0	24.5	24.5	24.9	25.4	23.5	24.0	24.0	24.5	25.0
12H	24.1	24.5	24.6	25.0	25.5	23.7	24.1	24.2	24.6	25.1
X=12H Y=4H	23.6	24.3	24.1	24.7	25.1	23.2	23.8	23.7	24.3	24.7
6H	23.9	24.4	24.4	24.8	25.3	23.4	23.9	23.9	24.4	24.9
8H	24.0	24.4	24.5	24.9	25.4	23.6	24.0	24.1	24.5	25.0
Variations with the observer position at spacings:										
S=1.0H	+0.2/-0.3					+0.3/-0.5				
S=1.5H	+0.6/-1.1					+0.8/-1.6				
S=2.0H	+1.6/-2.7					+1.8/-2.7				

Calculate in accordance with CIE Pub.117. The table is revised with 550lm (8log(F/F0) = -2.1).

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

FLUX DISTRIBUTION TABLE BASED ON THE IESNA LUMINAIRE CLASSIFICATION SYSTEM



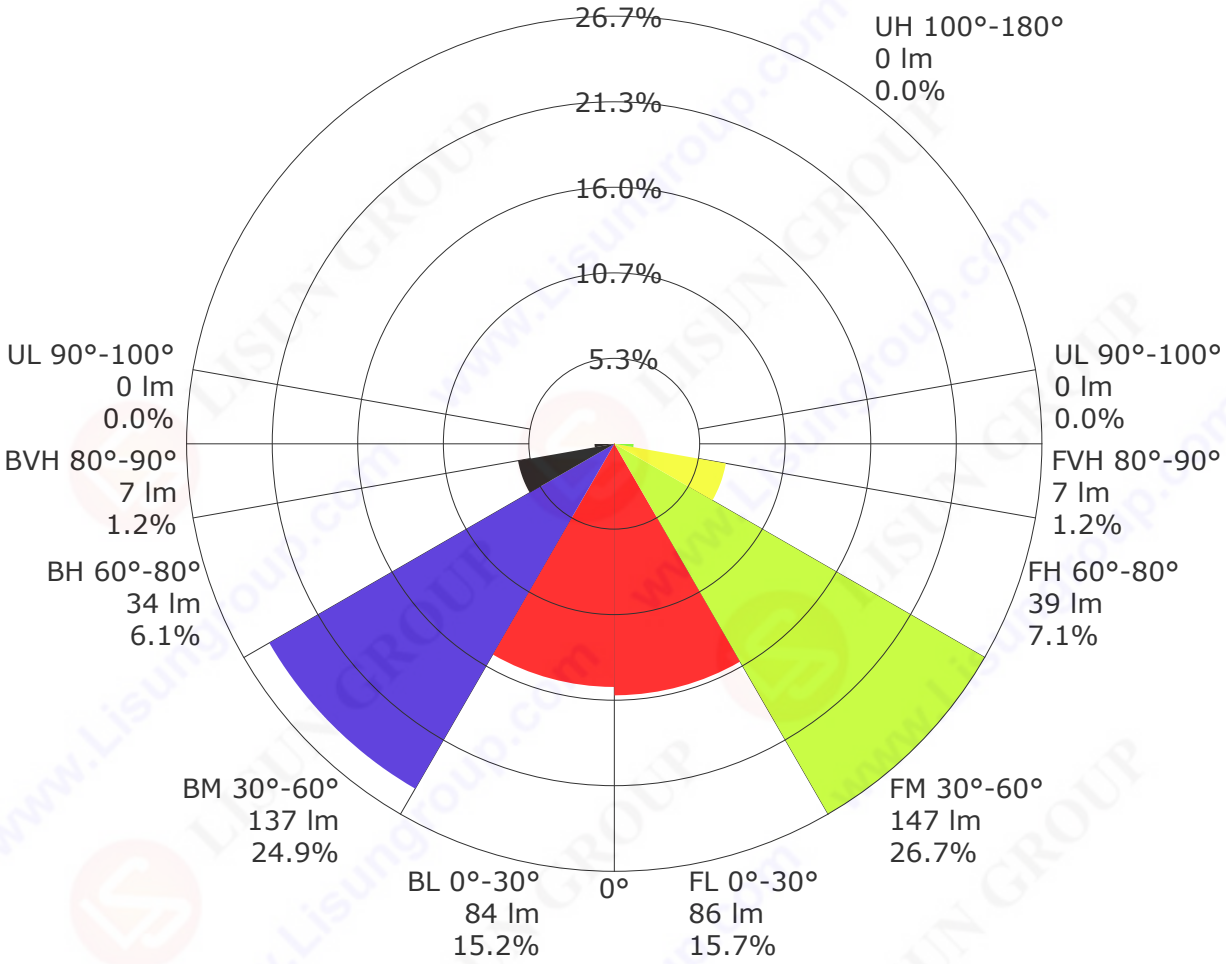
ZONE	LUMENS	% LAMP LUMENS
FORWARD LIGHT	279	50.7
FL (0°-30°)	86	15.7
FM (30°-60°)	147	26.7
FH (60°-80°)	39	7.1
FVH (80°-90°)	7	1.2
BACK LIGHT	261	47.4
BL (0°-30°)	84	15.2
BM (30°-60°)	137	24.9
BH (60°-80°)	34	6.1
BVH (80°-90°)	7	1.2
UP LIGHT	0	0.0
UL (90°-100°)	0	0.0
UH (100°-180°)	0	0.0
TRAPPED LIGHT	11	1.9

BUG(Backlight,Uplight,Glare) Rating Base On TM-15-07	
Asymmetrical Luminaire Types (Type I,II,III,IV)	B0 U0 G0
Quadrilateral Symmetrical Luminaire Types (Type V,Area Light)	B0 U0 G0

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

LCS Graph



Scale= MAX LCS%

Trapped Light:11 lm,1.9%

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Color Properties

Chromaticity Coordinate: x=0.4651 y=0.4138 u(u')=0.2645 v=0.3529 v'=0.5293
Correlated Color Temperature: Tc=2653K (duv=0.00074)

Measurement Flux: 539.5lm, PAR: 2.189W, PPF: 11.100umol/s

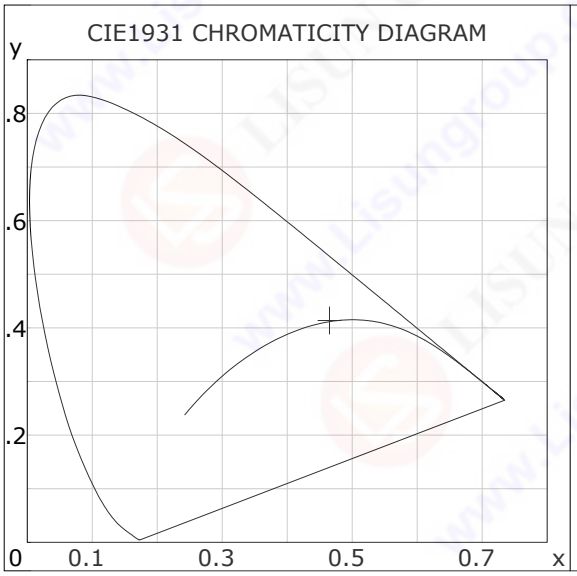
Peak Wavelength: 800nm
Dominant Wavelength: 584.2nm
Half Bandwidth: 185.4nm
Color Purity: 0.638

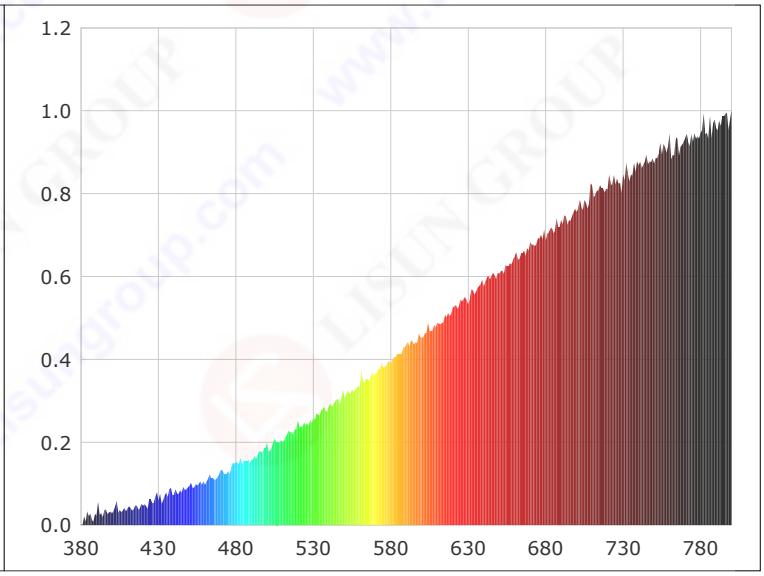
Color Ratio: R=0.269 G=0.704 B=0.027

TM30: Rf=99, Rg=99

Color Render Index: Ra= 99.5
R1 =99.5 R2 =99.5 R3 =99.5 R4 =99.4 R5 =99.3 R6 =99.1 R7 =99.7 R8 =99.6
R9 =98.8 R10=98.8 R11=99.3 R12=98.1 R13=99.4 R14=99.7 R15=99.3

Color Quality Scale: Qa= 96.2 Qf= 98.8 Qp= 98.5 Qg= 96.4
Q1 =96.7 Q2 =97.2 Q3 =97.1 Q4 =96.9 Q5 =96.6 Q6 =96.2 Q7 =95.9 Q8 =95.7
Q9 =95.0 Q10=95.5 Q11=96.0 Q12=96.5 Q13=96.7 Q14=97.2 Q15=0.0





C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Utilisation Factor Table(Floor cavity)

Utilisation Factors UF(F)			SHR NOM = 1.25								
Room Reflectance			Room Index(RI)								
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.59	0.69	0.76	0.81	0.88	0.92	0.96	1.00	1.02
	0.30		0.52	0.62	0.70	0.75	0.82	0.87	0.91	0.96	0.99
	0.20		0.47	0.57	0.64	0.70	0.78	0.83	0.87	0.92	0.96
0.50	0.50	0.20	0.58	0.67	0.74	0.79	0.85	0.89	0.92	0.96	0.98
	0.30		0.51	0.61	0.68	0.73	0.80	0.85	0.88	0.93	0.95
	0.20		0.46	0.56	0.64	0.69	0.76	0.81	0.85	0.90	0.93
0.30	0.50	0.20	0.56	0.66	0.72	0.76	0.82	0.86	0.89	0.92	0.94
	0.30		0.51	0.60	0.67	0.72	0.78	0.82	0.86	0.90	0.92
	0.20		0.46	0.56	0.63	0.68	0.75	0.79	0.83	0.87	0.90
0.00	0.00	0.00	0.44	0.54	0.60	0.65	0.71	0.76	0.79	0.83	0.86

Rating:64W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Utilisation Factor Table(Wall)

Utilisation Factors UF(W)			SHR NOM = 1.25								
Room Reflectance			Room Index(RI)								
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.92	0.75	0.64	0.55	0.44	0.37	0.31	0.25	0.20
	0.30		0.77	0.64	0.56	0.49	0.40	0.34	0.29	0.23	0.19
	0.20		0.66	0.56	0.49	0.44	0.36	0.31	0.27	0.22	0.18
0.50	0.50	0.20	0.89	0.72	0.61	0.53	0.42	0.38	0.30	0.23	0.19
	0.30		0.75	0.63	0.54	0.47	0.38	0.32	0.28	0.22	0.18
	0.20		0.65	0.55	0.48	0.43	0.35	0.30	0.26	0.21	0.18
0.30	0.50	0.20	0.86	0.69	0.59	0.51	0.40	0.33	0.29	0.22	0.18
	0.30		0.74	0.61	0.52	0.46	0.37	0.31	0.27	0.21	0.18
	0.20		0.65	0.55	0.47	0.42	0.34	0.29	0.25	0.20	0.17
0.00	0.00	0.00	0.54	0.45	0.38	0.33	0.27	0.23	0.19	0.15	0.13

Rating:64W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Utilisation Factor Table(Ceiling cavity)

Utilisation Factors UF(C)			SHR NOM = 1.25								
Room Reflectance			Room Index(RI)								
Ceiling	Wall	Floor	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	0.21	0.21
	0.30		0.09	0.11	0.12	0.13	0.15	0.16	0.17	0.18	0.19
	0.20		0.05	0.06	0.08	0.09	0.11	0.13	0.14	0.16	0.17
0.50	0.50	0.20	0.15	0.16	0.17	0.18	0.19	0.19	0.19	0.20	0.20
	0.30		0.09	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18
	0.20		0.05	0.06	0.08	0.09	0.11	0.12	0.14	0.15	0.16
0.30	0.50	0.20	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.19	0.19
	0.30		0.09	0.10	0.12	0.13	0.14	0.15	0.16	0.17	0.18
	0.20		0.05	0.06	0.08	0.09	0.11	0.12	0.13	0.15	0.16
0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA

Rating:64W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Zonal Lumen

Gamma [°]	Imean [cd/klm]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
0.0-1.0	419.2	0.2	0.2	0.04	0.04
1.0-2.0	419.0	0.7	0.9	0.12	0.16
2.0-3.0	418.8	1.1	2.0	0.20	0.36
3.0-4.0	418.4	1.5	3.5	0.28	0.64
4.0-5.0	417.8	2.0	5.5	0.36	1.00
5.0-6.0	417.0	2.4	7.9	0.44	1.44
6.0-7.0	416.1	2.8	10.8	0.52	1.96
7.0-8.0	414.7	3.3	14.0	0.59	2.55
8.0-9.0	413.0	3.7	17.7	0.67	3.22
9.0-10.0	411.1	4.1	21.8	0.74	3.96
10.0-11.0	409.0	4.5	26.3	0.82	4.78
11.0-12.0	406.6	4.9	31.2	0.89	5.67
12.0-13.0	403.9	5.3	36.4	0.96	6.63
13.0-14.0	400.7	5.6	42.1	1.03	7.65
14.0-15.0	397.1	6.0	48.1	1.09	8.74
15.0-16.0	393.3	6.3	54.4	1.15	9.90
16.0-17.0	389.1	6.7	61.1	1.21	11.11
17.0-18.0	384.7	7.0	68.1	1.27	12.38
18.0-19.0	379.9	7.3	75.3	1.32	13.70
19.0-20.0	374.9	7.5	82.9	1.37	15.07
20.0-21.0	369.6	7.8	90.7	1.42	16.49
21.0-22.0	364.0	8.0	98.7	1.46	17.95
22.0-23.0	358.4	8.3	107.0	1.50	19.46
23.0-24.0	352.7	8.5	115.5	1.54	21.00
24.0-25.0	346.9	8.7	124.2	1.58	22.58
25.0-26.0	341.0	8.9	133.0	1.61	24.19
26.0-27.0	335.1	9.0	142.0	1.64	25.83
27.0-28.0	329.1	9.2	151.2	1.67	27.49
28.0-29.0	323.2	9.3	160.5	1.69	29.18
29.0-30.0	317.4	9.4	169.9	1.71	30.90
30.0-31.0	311.6	9.5	179.5	1.73	32.63
31.0-32.0	306.0	9.6	189.1	1.75	34.39
32.0-33.0	300.5	9.7	198.9	1.77	36.16
33.0-34.0	295.1	9.8	208.7	1.79	37.94
34.0-35.0	289.8	9.9	218.6	1.80	39.74
35.0-36.0	284.6	10.0	228.6	1.81	41.55

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Zonal Lumen (Continue 1)

Gamma [°]	Imean [cd/klm]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
36.0-37.0	279.5	10.0	238.6	1.82	43.38
37.0-38.0	274.5	10.1	248.7	1.83	45.21
38.0-39.0	269.7	10.1	258.8	1.84	47.05
39.0-40.0	264.9	10.2	268.9	1.85	48.90
40.0-41.0	259.8	10.2	279.1	1.85	50.75
41.0-42.0	254.9	10.2	289.3	1.85	52.60
42.0-43.0	250.1	10.2	299.5	1.85	54.46
43.0-44.0	245.1	10.2	309.7	1.85	56.31
44.0-45.0	240.0	10.1	319.8	1.84	58.15
45.0-46.0	234.7	10.1	329.9	1.84	59.99
46.0-47.0	229.3	10.0	340.0	1.82	61.81
47.0-48.0	223.6	9.9	349.9	1.81	63.62
48.0-49.0	217.8	9.8	359.7	1.79	65.41
49.0-50.0	211.7	9.7	369.4	1.77	67.17
50.0-51.0	205.1	9.5	379.0	1.74	68.91
51.0-52.0	198.2	9.4	388.3	1.70	70.61
52.0-53.0	191.1	9.1	397.5	1.66	72.27
53.0-54.0	183.6	8.9	406.4	1.62	73.89
54.0-55.0	175.9	8.6	415.0	1.57	75.46
55.0-56.0	167.8	8.3	423.4	1.52	76.98
56.0-57.0	159.5	8.0	431.4	1.46	78.43
57.0-58.0	151.0	7.7	439.1	1.40	79.83
58.0-59.0	142.4	7.3	446.4	1.33	81.16
59.0-60.0	133.8	7.0	453.3	1.26	82.43
60.0-61.0	125.2	6.6	459.9	1.19	83.62
61.0-62.0	116.6	6.2	466.1	1.12	84.75
62.0-63.0	108.3	5.8	471.9	1.05	85.80
63.0-64.0	100.2	5.4	477.3	0.98	86.78
64.0-65.0	92.5	5.0	482.3	0.92	87.70
65.0-66.0	85.2	4.7	487.0	0.85	88.55
66.0-67.0	78.3	4.3	491.4	0.79	89.34
67.0-68.0	71.9	4.0	495.4	0.73	90.07
68.0-69.0	66.0	3.7	499.1	0.67	90.74
69.0-70.0	60.6	3.4	502.5	0.62	91.36
70.0-71.0	55.7	3.2	505.6	0.58	91.94
71.0-72.0	51.2	2.9	508.6	0.53	92.47

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Zonal Lumen (Continue 2)

Gamma [°]	Imean [cd/klm]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
72.0-73.0	47.2	2.7	511.3	0.49	92.96
73.0-74.0	43.5	2.5	513.8	0.46	93.42
74.0-75.0	40.4	2.3	516.2	0.43	93.85
75.0-76.0	37.6	2.2	518.3	0.40	94.25
76.0-77.0	35.1	2.1	520.4	0.37	94.62
77.0-78.0	32.9	1.9	522.3	0.35	94.97
78.0-79.0	30.9	1.8	524.2	0.33	95.30
79.0-80.0	29.1	1.7	525.9	0.31	95.62
80.0-81.0	27.6	1.6	527.5	0.30	95.91
81.0-82.0	26.2	1.6	529.1	0.28	96.20
82.0-83.0	24.9	1.5	530.6	0.27	96.47
83.0-84.0	23.8	1.4	532.0	0.26	96.73
84.0-85.0	22.7	1.4	533.4	0.25	96.98
85.0-86.0	21.8	1.3	534.7	0.24	97.21
86.0-87.0	21.0	1.3	535.9	0.23	97.44
87.0-88.0	20.1	1.2	537.2	0.22	97.66
88.0-89.0	19.4	1.2	538.3	0.21	97.88
89.0-90.0	18.7	1.1	539.5	0.21	98.08

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Color Properties

Average Color Nonuniformity:Δu'=-0.2642,Δv'=-0.5294,Δu'v'=0.591689

Maximum Color Nonuniformity:Δu'=-0.0004,Δv'=0.0002,Δu'v'=0.000418

Color Distribution Datas: (u',v') Average Color(u',v'):(0.2643,0.5294)

G\C	0.0	90.0	180.0	270.0
0.0	0.2642,0.5294	0.2642,0.5294	0.2642,0.5294	0.2642,0.5294
30.0	0.2644,0.5294	0.2639,0.5296	0.2643,0.5294	0.2646,0.5293

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Candlepower Table

Unit: cd/klm

G\C	C0.0	C45.0	C90.0	C135.0	C180.0	C225.0	C270.0	C315.0	C360.0	
G0.0	417.8	423.7	420.2	415.6	417.8	423.7	420.2	415.6	417.8	
G1.0	418.7	424.6	420.7	414.8	416.6	422.4	419.6	415.9	418.7	
G2.0	419.5	425.7	420.7	414.2	415.1	421.1	418.8	415.9	419.5	
G3.0	420.2	427.1	421.2	413.2	413.8	419.7	417.9	415.8	420.2	
G4.0	421.0	428.1	420.7	412.2	412.4	418.8	416.7	415.4	421.0	
G5.0	421.9	428.2	420.5	410.8	410.7	416.9	415.0	414.7	421.9	
G6.0	423.5	428.6	420.8	409.3	408.7	414.9	413.1	414.4	423.5	
G7.0	423.3	429.1	419.9	407.2	406.4	413.2	411.4	413.2	423.3	
G8.0	421.6	429.3	418.8	405.1	404.3	411.0	409.4	411.6	421.6	
G9.0	420.9	429.0	417.5	402.8	401.6	408.1	406.9	409.7	420.9	
G10.0	420.1	428.6	416.2	400.2	398.4	405.5	404.1	407.9	420.1	
G11.0	419.3	427.9	414.5	397.3	395.6	402.0	401.2	405.8	419.3	
G12.0	418.1	426.7	412.3	394.1	392.1	398.3	397.7	402.9	418.1	
G13.0	416.7	425.2	410.0	391.1	388.6	394.1	394.0	400.1	416.7	
G14.0	414.5	422.8	407.0	386.9	384.6	389.4	390.0	396.8	414.5	
G15.0	412.1	420.1	403.7	383.1	380.4	384.4	385.2	393.2	412.1	
G16.0	409.3	416.9	400.1	378.9	375.8	379.0	380.6	389.5	409.3	
G17.0	406.1	412.8	396.2	374.6	371.1	373.5	375.9	385.5	406.1	
G18.0	402.4	409.1	392.5	369.8	366.0	367.7	370.5	381.1	402.4	
G19.0	398.4	404.2	388.3	365.4	360.7	361.7	364.7	376.5	398.4	
G20.0	393.8	399.0	383.1	360.1	355.4	355.9	359.7	371.4	393.8	
G21.0	389.1	393.1	378.1	355.0	349.4	349.7	353.9	366.2	389.1	
G22.0	383.8	387.7	372.8	349.6	343.2	343.3	348.1	361.4	383.8	
G23.0	378.3	381.9	367.6	344.1	337.2	337.5	342.1	355.4	378.3	
G24.0	373.1	376.4	361.6	338.7	331.5	331.7	336.4	349.9	373.1	
G25.0	367.2	370.3	356.1	332.9	325.2	325.6	330.3	344.1	367.2	
G26.0	360.6	364.3	349.9	327.3	319.3	320.1	324.9	338.3	360.6	
G27.0	354.6	358.0	344.6	320.8	313.3	314.5	319.0	332.1	354.6	
G28.0	348.1	352.1	338.6	315.0	307.1	308.9	313.3	325.7	348.1	
G29.0	342.0	346.3	333.1	309.5	301.3	303.3	307.9	319.2	342.0	
G30.0	335.5	340.2	327.0	303.6	295.3	298.1	302.7	312.7	335.5	
G31.0	329.6	334.4	321.5	297.8	289.7	292.9	297.5	306.5	329.6	
G32.0	323.4	329.1	316.2	292.4	284.1	288.1	292.0	300.5	323.4	
G33.0	317.8	323.7	310.5	287.0	278.7	283.3	287.1	294.4	317.8	
G34.0	312.0	317.9	305.0	281.6	273.2	278.7	282.4	287.9	312.0	
G35.0	306.3	312.5	299.8	276.4	267.9	274.6	277.8	282.2	306.3	
G36.0	300.7	307.2	294.6	271.1	262.6	270.5	273.2	276.7	300.7	

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Candlepower Table (Continue 1)

Unit: cd/klm

G\C	C0.0	C45.0	C90.0	C135.0	C180.0	C225.0	C270.0	C315.0	C360.0	
G37.0	294.9	302.1	289.5	265.8	257.5	266.5	268.7	271.0	294.9	
G38.0	289.4	296.6	284.9	260.6	252.6	262.3	264.2	265.6	289.4	
G39.0	284.1	291.3	279.9	255.6	249.6	258.6	259.8	259.9	284.1	
G40.0	278.8	286.3	274.7	250.7	243.8	254.5	255.2	254.9	278.8	
G41.0	273.7	281.2	269.8	245.4	237.9	250.4	250.7	249.1	273.7	
G42.0	269.1	276.5	265.3	240.3	232.6	246.3	246.3	244.0	269.1	
G43.0	264.1	271.8	262.0	234.9	227.0	241.8	241.5	238.7	264.1	
G44.0	259.6	266.9	256.2	229.1	221.7	236.8	236.7	233.3	259.6	
G45.0	254.8	262.4	251.6	223.6	216.1	231.4	231.4	227.7	254.8	
G46.0	250.1	258.8	246.5	217.6	209.6	225.7	225.7	222.2	250.1	
G47.0	245.3	253.6	242.3	211.5	203.6	219.5	220.0	216.4	245.3	
G48.0	240.2	249.4	237.6	205.2	196.9	212.6	213.7	210.4	240.2	
G49.0	235.3	244.7	233.0	198.3	190.0	205.9	207.0	204.8	235.3	
G50.0	229.7	240.2	227.6	191.4	182.8	198.2	200.0	198.0	229.7	
G51.0	224.5	235.2	221.8	184.1	175.1	189.9	192.5	190.7	224.5	
G52.0	218.6	230.2	216.1	176.4	167.3	181.6	184.6	183.4	218.6	
G53.0	212.6	224.4	210.1	168.3	159.0	172.8	176.2	175.7	212.6	
G54.0	205.9	218.4	203.1	160.6	151.1	164.0	167.7	168.3	205.9	
G55.0	199.1	211.4	196.3	152.0	142.5	154.7	159.1	160.3	199.1	
G56.0	191.5	204.0	188.3	143.7	134.1	145.2	150.6	152.2	191.5	
G57.0	183.9	196.0	180.4	135.0	125.2	135.8	141.4	143.9	183.9	
G58.0	175.7	187.9	171.4	126.6	116.8	127.0	132.8	135.8	175.7	
G59.0	166.9	178.7	162.5	117.9	108.7	118.3	123.7	127.8	166.9	
G60.0	158.3	169.4	153.1	109.9	101.2	109.5	115.5	119.5	158.3	
G61.0	148.7	159.3	143.6	101.6	93.4	101.2	107.0	111.6	148.7	
G62.0	139.5	149.3	133.9	93.9	86.6	93.4	99.1	103.8	139.5	
G63.0	129.9	138.9	124.3	86.4	79.6	86.1	91.5	96.4	129.9	
G64.0	120.7	129.1	114.7	79.9	73.4	79.2	84.6	89.0	120.7	
G65.0	111.4	118.9	105.5	73.3	67.7	72.7	77.8	82.5	111.4	
G66.0	102.8	109.5	96.6	67.3	62.5	67.2	72.0	76.0	102.8	
G67.0	93.9	99.8	88.5	61.9	57.5	61.8	66.1	70.0	93.9	
G68.0	86.1	91.4	80.8	56.9	53.0	57.3	61.1	64.5	86.1	
G69.0	78.3	83.3	73.3	52.1	49.1	52.8	56.5	59.6	78.3	
G70.0	71.4	75.8	67.0	48.2	45.6	49.1	52.1	55.2	71.4	
G71.0	64.9	69.1	60.7	44.4	42.4	45.6	48.1	51.2	64.9	
G72.0	59.2	62.5	55.5	41.2	39.6	42.4	44.9	47.4	59.2	
G73.0	53.9	56.7	50.6	38.0	36.9	39.6	41.8	44.2	53.9	

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector:

Candlepower Table (Continue 2)

Unit: cd/klm

G\C	C0.0	C45.0	C90.0	C135.0	C180.0	C225.0	C270.0	C315.0	C360.0	
G74.0	49.4	51.9	46.3	35.2	34.7	37.2	38.9	41.2	49.4	
G75.0	45.4	47.4	42.7	32.8	32.7	34.9	36.5	38.6	45.4	
G76.0	41.8	43.7	39.3	30.9	30.9	32.9	34.3	36.3	41.8	
G77.0	38.5	40.4	36.2	28.9	29.3	31.1	32.3	34.3	38.5	
G78.0	35.8	37.4	33.7	27.4	27.8	29.6	30.7	32.3	35.8	
G79.0	33.2	34.7	31.3	25.8	26.5	28.2	29.1	30.8	33.2	
G80.0	31.1	32.4	29.5	24.4	25.3	26.7	27.7	29.3	31.1	
G81.0	29.2	30.6	27.7	23.1	24.2	25.5	26.5	28.0	29.2	
G82.0	27.3	28.6	26.1	22.2	22.9	24.5	25.4	26.7	27.3	
G83.0	26.0	27.1	24.6	20.9	22.1	23.5	24.5	25.5	26.0	
G84.0	24.6	25.7	23.3	20.1	21.4	22.7	23.5	24.6	24.6	
G85.0	23.5	24.5	22.2	19.1	20.7	21.7	22.7	23.5	23.5	
G86.0	22.6	23.4	21.2	18.3	19.9	20.9	21.9	22.8	22.6	
G87.0	21.5	22.3	20.0	17.7	19.4	20.4	21.1	22.0	21.5	
G88.0	20.6	21.4	19.2	17.0	18.4	19.6	20.4	21.3	20.6	
G89.0	19.9	20.4	18.4	16.4	17.9	19.0	19.8	20.6	19.9	
G90.0	19.2	19.7	17.7	15.9	17.4	18.4	19.1	19.9	19.2	

C Plane (°):0.0-360.0: 45.0
Test Lab: LISUN
Test Type: TYPE C
Temperature: 24.5°
Operator: Jacky

Gamma Plane (°):0.0-90.0:1.0
Test Device: LSG-2000CCD
Distance: 8.000 m
Humidity: 60%
Inspector: