



ACCREDITED
Testing Laboratory

TL-1235

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Report No.: AOC250923006ER

Test Report

Applicant : Euro Lighting Ltd.
Address : Room 2607, 26/F, CC Wu Building, No. 302-308 Hennessy Road, Wan Chai, Hong Kong

Description of the submitted sample(s):

Sample Name : LED Dimmable Bulkhead
Model/Type : MG1212 9W
Trademark : EURO
Ratings : 220-240VAC, 50/60Hz, 9W
Test Item : LM-79-19
State of Sample(s) : Normal
Sample Quantity : 10 PCS
Up-shine Lighting Co., Ltd.
Factory : 2-5 Floor, 2nd Building, Runheng Industrial Zone, Fuyuan 1st Road,
West Fuyong Sub-district, Bao'an, Shenzhen, 518103 China
Sample Received Date : 2025-09-23
Sample tested Date : 2025-09-23
Test Standard : LM-79-19
Test Laboratory : Shenzhen AOCE Electronic Technology Service Co., Ltd
Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial
Testing location : Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Remark : The tested sample(s) and the sample information are provided by the client.

Compiled by: *Bill Hu*

Approved by:

Robin Liu

Robin Liu
Lab Supervisor
2025-11-05

Date :

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Summary of Result

Test Item	Test Result	
	Luminous Flux (lm)	Luminous Efficacy (lm/W)
Integrating Sphere Test (Sample No: S01)	1009.881	108.589
Integrating Sphere Test (Sample No: S02)	1005.348	108.102
Integrating Sphere Test (Sample No: S03)	994.461	108.094
Integrating Sphere Test (Sample No: S04)	1018.416	109.507
Integrating Sphere Test (Sample No: S05)	1005.875	109.334
Integrating Sphere Test (Sample No: S06)	1006.537	109.406
Integrating Sphere Test (Sample No: S07)	994.892	106.978
Integrating Sphere Test (Sample No: S08)	995.656	107.06
Integrating Sphere Test (Sample No: S09)	990.9	104.305
Integrating Sphere Test (Sample No: S10)	1020.31	117.277
Goniophotometer Test (Sample No: S01)	1043.65	113.44
Goniophotometer Test (Sample No: S02)	1042.62	114.57
Goniophotometer Test (Sample No: S03)	1031.99	113.41
Goniophotometer Test (Sample No: S04)	1045.42	113.63
Goniophotometer Test (Sample No: S05)	1048.18	115.18
Goniophotometer Test (Sample No: S06)	1033.2	113.54
Goniophotometer Test (Sample No: S07)	1020.78	112.17
Goniophotometer Test (Sample No: S08)	1025.25	111.44
Goniophotometer Test (Sample No: S09)	1016.89	109.34

Goniophotometer Test (Sample No: S10)	1100.87	119.66
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1 Test Condition

1.1 Air Temperature

The ambient temperature in which measurements are being taken shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the SSL product and at the same height as the SSL product. The temperature sensor shall be shielded from direct optical radiation from the SSL product and optical radiation from any other source. If measurements are performed at other than this recommended temperature, this is a non-standard condition and shall be noted in the test report.

1.2 Thermal Conditions for Mounting SSL Products

The method of mounting can be the primary path for heat flow away from the device and can affect measurement results significantly. The SSL product under test shall be mounted to the measuring instrument so that heat conduction through supporting objects causes negligible cooling effects. If the SSL product under test is provided with a support structure that is designated to be used as a component of the luminaire thermal management system, the product shall be tested with the support structure attached. Any such support structure included in the measurement shall be reported.

1.3 Air Movement

The incidence of air movements on the surface of a SSL product under test may substantially affect electrical and photometric values. Air flow around the SSL product being tested should be such that normal convective air flow induced by device under test is not affected.

1.4 Waveshape of AC Power Supply

The AC power supply, while operating the SSL product, shall have a sinusoidal voltage waveshape at the prescribed frequency typically 50/60 Hz or 50 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

1.5 Voltage Regulation

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ± 0.2 percent under load.

1.6 Seasoning

For the purpose of rating new SSL products, SSL products shall be tested with no seasoning.

1.7 Stabilization

Before measurements are taken, the SSL product under test shall be operated long enough to reach stabilization and temperature equilibrium. The time required for stabilization depends on the type of SSL products under test. The stabilization time typically ranges from 30 min to 2 or more hours for large SSL products.

1.8 Operating Orientation

The SSL product under test shall be evaluated in the operating orientation recommended by the manufacturer for an intended use of the SSL product. Stabilization and photometric measurements of SSL products shall be done in such operating orientation.

2 Test Method

2.1 Integrating Sphere Measurement

The integrating sphere system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to the National Primary Standard.

The 4π geometry was used to measure total luminous, luminous efficacy, chromaticity coordinates, correlated color temperature, and color rendering index, the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm. The product was operated in its intended orientation and was recorded in the report.

2.2 Goniophotometer Measurement

The goniophotometer system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous efficacy, luminous intensity distribution, and color angular uniformity, which were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. The product was operated in its intended orientation and was recorded in the report.

2.3 Electrical Measurement

According to ANSI C82.77-2002, the measurement was made using a digital power meter and power supply, the SSL product under test was operated at rated voltage and stabilized enough before measurement. The total harmonic distortion of current and power factor can be calculated from the digital power meter. The digital power meter was calibrated regularly and traced to National Primary Standard

3 Test Result

3.1 Integrating Sphere

Sample No: S01					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.956	9.3

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
1009.881	3.072	4242	+0.00193	108.589

Ra	SDCM	X	y	u'	v'
84.3	4.09	0.3715	0.3750	0.2199	0.4995

R1	R2	R3	R4	R5
83	90	96	84	83
R6	R7	R8	R9	R10
86	87	66	11	77
R11	R12	R13	R14	R15
84	64	85	98	76

Sample No: S02					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.952	9.3

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
1005.348	3.063	4230	+0.00155	108.102

Ra	SDCM	X	y	u'	v'
84.5	3.92	0.3717	0.3744	0.2203	0.4993

R1	R2	R3	R4	R5
83	90	96	84	83
R6	R7	R8	R9	R10
86	87	67	12	77
R11	R12	R13	R14	R15
84	64	85	98	76

Sample No: S03					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.041	0.954	9.2

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
994.461	3.031	4240	+0.00148	108.094

Ra	SDCM	X	y	u'	v'
84.5	4.1	0.3713	0.3740	0.2202	0.4990

R1	R2	R3	R4	R5
83	90	96	84	83
R6	R7	R8	R9	R10
87	87	66	12	77
R11	R12	R13	R14	R15
84	64	85	98	76

Sample No: S04					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.1	50	0.042	0.957	9.3

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
1018.416	3.104	4247	+0.00155	109.507

Ra	SDCM	X	y	u'	v'
84.4	4.25	0.3710	0.3739	0.2200	0.4989

R1	R2	R3	R4	R5
83	90	96	84	83
R6	R7	R8	R9	R10
86	87	66	12	77
R11	R12	R13	R14	R15
84	64	85	98	76

Sample No: S05					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.1	50	0.042	0.955	9.2

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
1005.875	3.059	4230	+0.00179	109.334

Ra	SDCM	X	y	u'	v'
84.2	3.93	0.3718	0.3750	0.2202	0.4995

R1	R2	R3	R4	R5
80	90	96	84	83
R6	R7	R8	R9	R10
86	87	66	11	77
R11	R12	R13	R14	R15
84	64	85	98	76

Sample No: S06					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.1	50	0.042	0.955	9.2

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
1006.537	3.70	4220	+0.00218	109.406

Ra	SDCM	X	y	u'	v'
84.0	3.7	0.3725	0.3762	0.2201	0.5002

R1	R2	R3	R4	R5
80	90	96	84	82
R6	R7	R8	R9	R10
86	87	66	10	76
R11	R12	R13	R14	R15
83	63	85	98	76

Sample No: S07					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.954	9.3

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
994.892	3.02	4192	+0.00182	106.978

Ra	SDCM	X	y	u'	v'
84.3	3.18	0.3734	0.3761	0.2207	0.5003

R1	R2	R3	R4	R5
82	90	96	84	83
R6	R7	R8	R9	R10
86	87	66	11	77
R11	R12	R13	R14	R15
84	64	85	98	76

Sample No: S08					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.955	9.3

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
995.656	3.025	4225	+0.00201	107.06

Ra	SDCM	X	y	u'	v'
84.2	3.80	0.3722	0.3757	0.2201	0.4999

R1	R2	R3	R4	R5
82	90	96	84	83
R6	R7	R8	R9	R10
86	87	66	11	77
R11	R12	R13	R14	R15
83	63	85	98	76

Sample No: S09					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.1	50	0.043	0.957	9.5

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
990.9	3.013	4192	+0.00158	104.305

Ra	SDCM	X	y	u'	v'
84.3	3.17	0.3733	0.3755	0.2209	0.5

R1	R2	R3	R4	R5
83	90	96	84	83
R6	R7	R8	R9	R10
86	87	66	11	77
R11	R12	R13	R14	R15
84	64	85	98	76

Sample No: S10					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.9	50.3%	Face down	10	3	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.894	8.7

Luminous Flux (lm)	Radiant Flux (W)	CCT (K)	Duv	Luminous Efficacy (lm/W)
1020.31	3.105	4235	+0.00173	117.277

Ra	SDCM	X	y	u'	v'
84.3	4.0	0.3716	0.3747	0.2201	0.4994

R1	R2	R3	R4	R5
82	90	96	84	83
R6	R7	R8	R9	R10
86	87	66	11	77
R11	R12	R13	R14	R15
83	63	85	98	76

Spectral Distribution & Chromaticity Diagram

Tel: (86)755-85277785

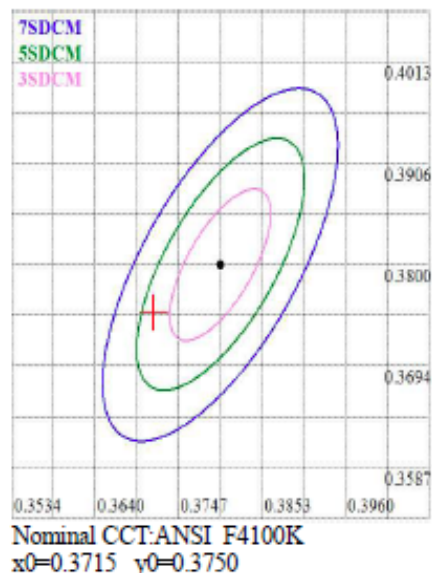
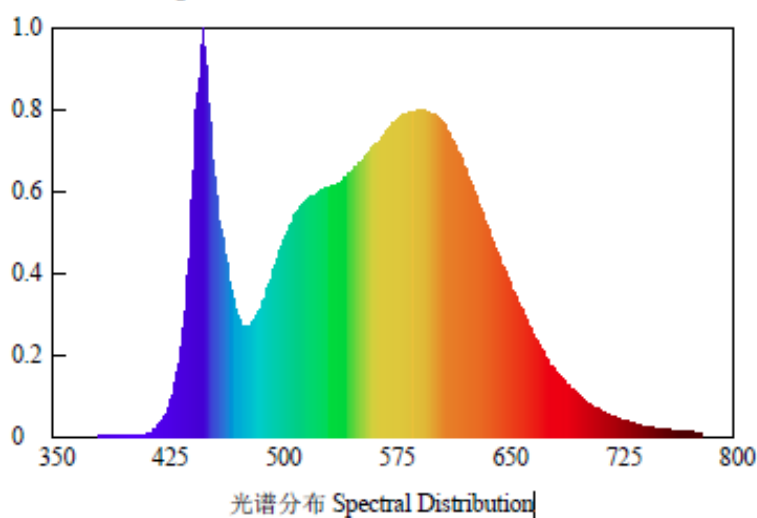
Fax: (86)755-23705230

E-mail: postmaster@aoc-cert.com

Website: [Http://www.aoc-cert.com](http://www.aoc-cert.com)

Sample No: S01

光色参数 Spectroradiometric Parameters

色品坐标 Chromaticity Coordinates: $x=0.3715$ $y=0.3750$ $u'=0.2199$ $v'=0.4995$

相关色温 Correlated Color Temperature: 4242 K

主波长 Dominant Wavelength: 575.0 nm(E)

显色指数 Rendering Index: $R_a=84.3$

峰值波长 Peak Wavelength: 449.8 nm

色纯度 Purity: 0.2398

谱线带宽 Bandwidth: 21.1nm

光通量 Luminous Flux: 1009.881 lm

辐射通量 Radiant Flux: 3.072 W

色比 Color Ratio: $K_r=36.9\%$ $K_g=52.5\%$ $K_b=10.5\%$

色容差 Color Tolerance(SDCM): 4.0944

色偏差 Chromaticity Difference: +0.00193Duv

R1=83 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=66

R9=11 R10=77 R11=84 R12=64 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.042 A

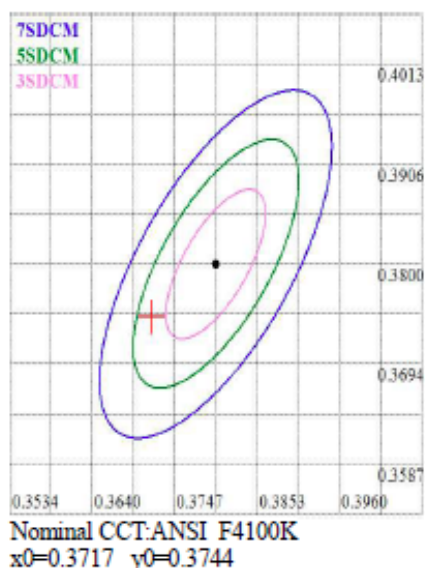
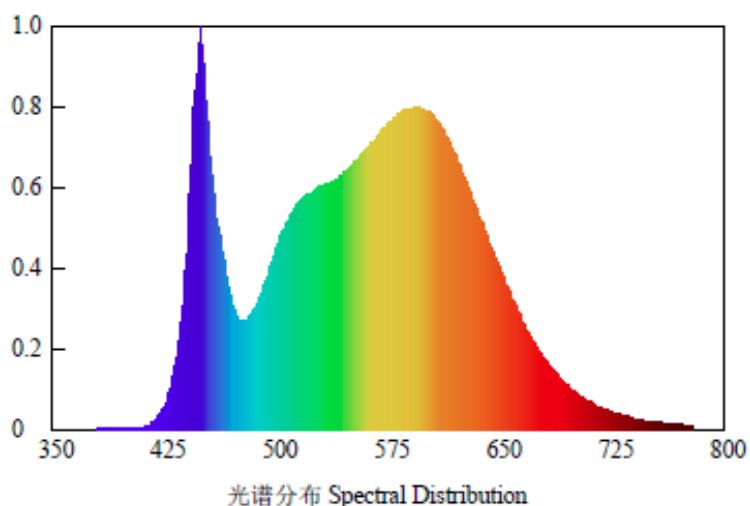
功率因数 Power Factor: 0.956

功率 Power: 9.3 W

发光效率 Luminous Efficacy: 108.589 lm/W

Sample No: S02

光色参数 Spectroradiometric Parameters

色品坐标 Chromaticity Coordinates: $x=0.3717$ $y=0.3744$ $u'=0.2203$ $v'=0.4993$

相关色温 Correlated Color Temperature: 4230 K

主波长 Dominant Wavelength: 576.0 nm(E)

显色指数 Rendering Index: $R_a=84.5$

峰值波长 Peak Wavelength: 449.8 nm

色纯度 Purity: 0.2391

谱线带宽 Bandwidth: 21.1nm

光通量 Luminous Flux: 1005.348 lm

辐射通量 Radiant Flux: 3.063 W

色比 Color Ratio: $K_r=37.1\%$ $K_g=52.4\%$ $K_b=10.5\%$

色容差 Color Tolerance(SDCM): 3.9216

色偏差 Chromaticity Difference: +0.00155Duv

R1=83 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=67

R9=12 R10=77 R11=84 R12=64 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.042 A

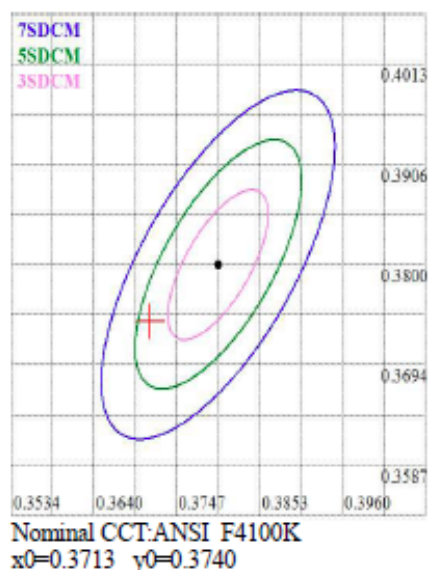
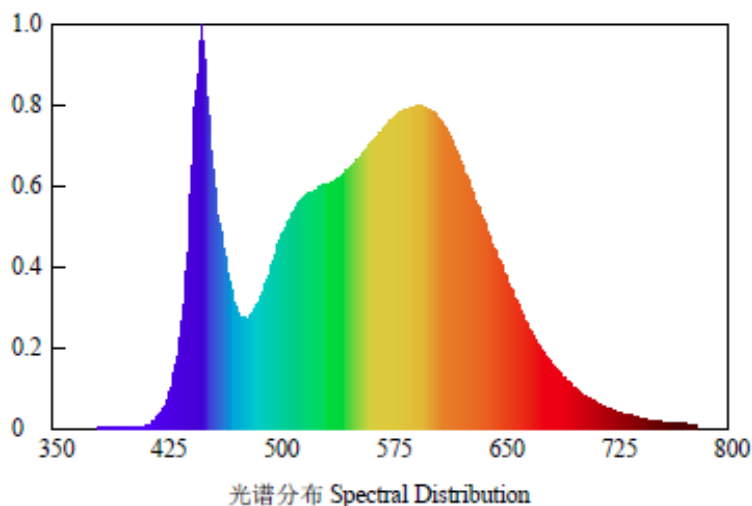
功率因数 Power Factor: 0.952

功率 Power: 9.3 W

发光效率 Luminous Efficacy: 108.102 lm/W

Sample No: S03

光色参数 Spectroradiometric Parameters

色品坐标 Chromaticity Coordinates: $x=0.3713$ $y=0.3740$ $u'=0.2202$ $v'=0.499$

相关色温 Correlated Color Temperature: 4240 K

主波长 Dominant Wavelength: 576.0 nm(E)

显色指数 Rendering Index: $R_a=84.5$

峰值波长 Peak Wavelength: 449.9 nm

色纯度 Purity: 0.2367

谱线带宽 Bandwidth: 21.1nm

光通量 Luminous Flux: 994.461 lm

辐射通量 Radiant Flux: 3.031 W

色比 Color Ratio: $K_r=37.0\%$ $K_g=52.4\%$ $K_b=10.5\%$

色容差 Color Tolerance(SDCM): 4.1002

色偏差 Chromaticity Difference: +0.00148Duv

R1=83 R2=90 R3=96 R4=84 R5=83 R6=87 R7=87 R8=66

R9=12 R10=77 R11=84 R12=64 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.041 A

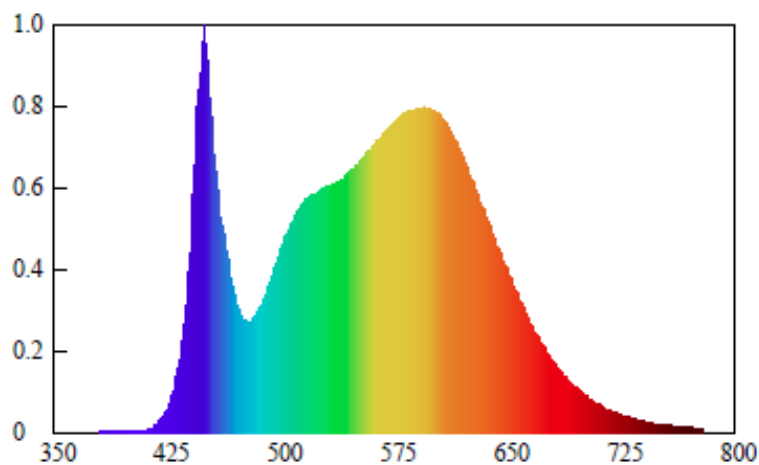
功率因数 Power Factor: 0.954

功率 Power: 9.2 W

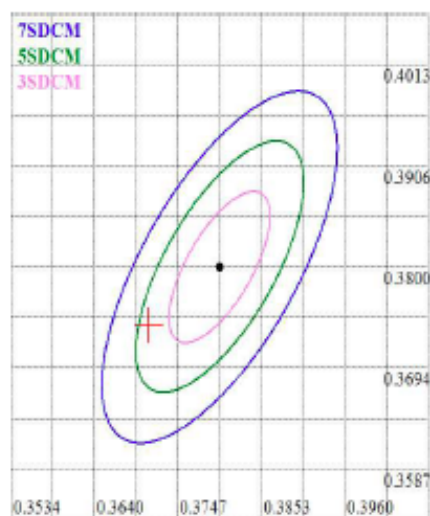
发光效率 Luminous Efficacy: 108.094 lm/W

Sample No: S04

光色参数 Spectroradiometric Parameters



光谱分布 Spectral Distribution



Nominal CCT:ANSI F4100K

x0=0.3710 y0=0.3739

色品坐标 Chromaticity Coordinates: $x=0.3710$ $y=0.3739$ $u'=0.22$ $v'=0.4989$

相关色温 Correlated Color Temperature: 4247 K

主波长 Dominant Wavelength: 576.0 nm(E)

显色指数 Rendering Index: $R_a=84.4$

峰值波长 Peak Wavelength: 449.8 nm

色纯度 Purity: 0.2355

谱线带宽 Bandwidth: 21.2nm

光通量 Luminous Flux: 1018.416 lm

辐射通量 Radiant Flux: 3.104 W

色比 Color Ratio: $K_r=37.0\%$ $K_g=52.5\%$ $K_b=10.5\%$

色容差 Color Tolerance(SDCM): 4.25

色偏差 Chromaticity Difference: +0.00155Duv

R1=83 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=66

R9=12 R10=77 R11=84 R12=64 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.1 V

电流 Current: 0.042 A

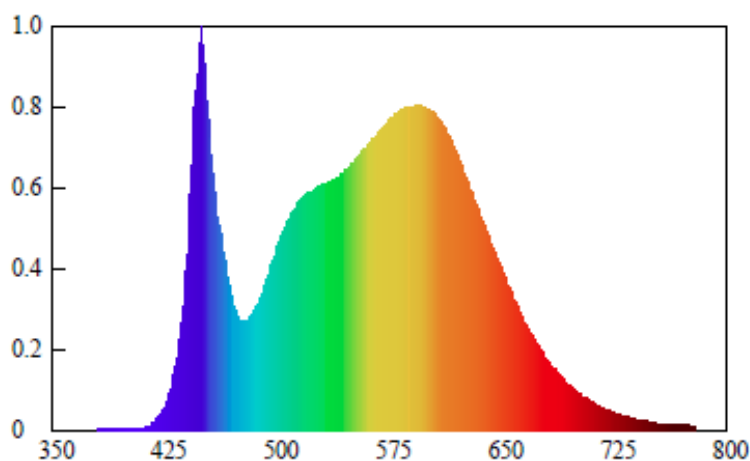
功率因数 Power Factor: 0.957

功率 Power: 9.3 W

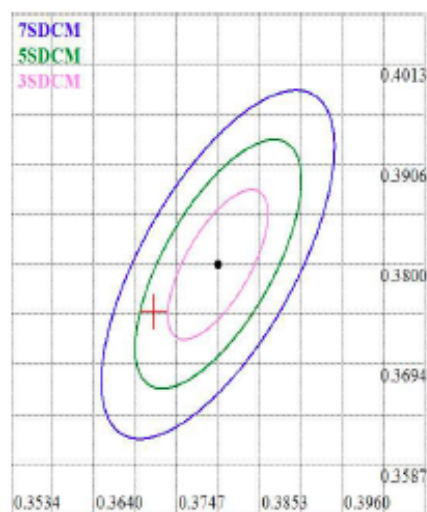
发光效率 Luminous Efficacy: 109.507 lm/W

Sample No: S05

光色参数 Spectroradiometric Parameters



光谱分布 Spectral Distribution



Nominal CCT: ANSI F4100K

x0=0.3718 y0=0.3750

色品坐标 Chromaticity Coordinates: x=0.3718 y=0.3750 u'=0.2202 v'=0.4995

相关色温 Correlated Color Temperature: 4230 K

主波长 Dominant Wavelength: 576.0 nm(E)

显色指数 Rendering Index: Ra=84.2

峰值波长 Peak Wavelength: 449.8 nm

色纯度 Purity: 0.2412

谱线带宽 Bandwidth: 21.1nm

光通量 Luminous Flux: 1005.875 lm

辐射通量 Radiant Flux: 3.059 W

色比 Color Ratio: Kr=37.0% Kg=52.5% Kb=10.5%

色容差 Color Tolerance(SDCM): 3.9281

色偏差 Chromaticity Difference: +0.00179Duv

R1=82 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=66

R9=11 R10=77 R11=84 R12=64 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.1 V

电流 Current: 0.042 A

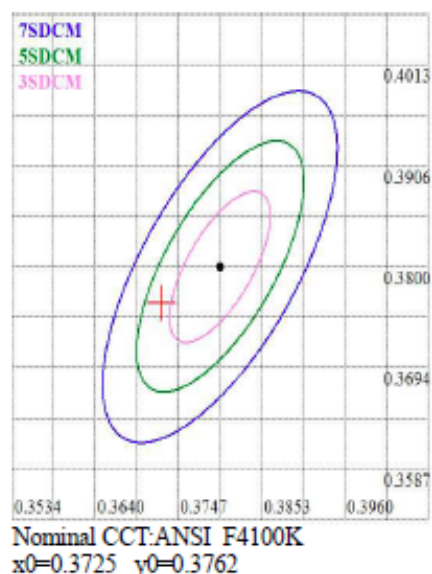
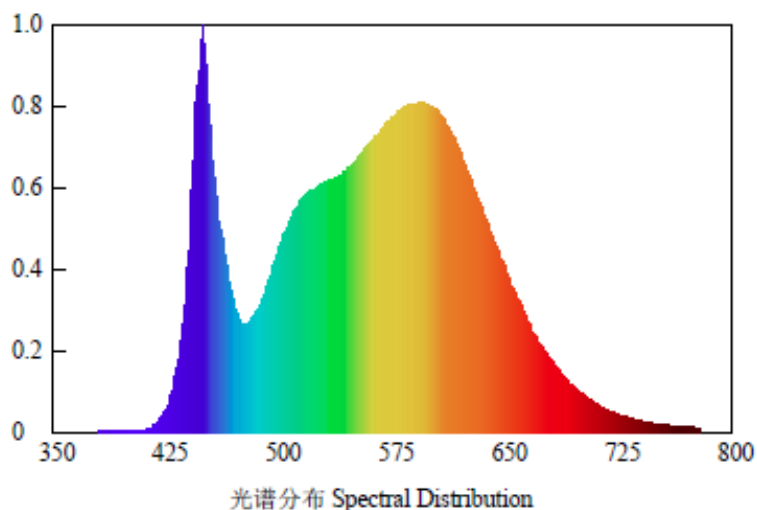
功率因数 Power Factor: 0.955

功率 Power: 9.2 W

发光效率 Luminous Efficacy: 109.334 lm/W

Sample No: S06

光色参数 Spectroradiometric Parameters

色品坐标 Chromaticity Coordinates: $x=0.3725$ $y=0.3762$ $u'=0.2201$ $v'=0.5002$

相关色温 Correlated Color Temperature: 4220 K

主波长 Dominant Wavelength: 575.0 nm(E)

显色指数 Rendering Index: $R_a=84.0$

峰值波长 Peak Wavelength: 449.7 nm

色纯度 Purity: 0.2464

谱线带宽 Bandwidth: 21.3nm

光通量 Luminous Flux: 1006.537 lm

辐射通量 Radiant Flux: 3.053 W

色比 Color Ratio: $K_r=37.0\%$ $K_g=52.6\%$ $K_b=10.4\%$

色容差 Color Tolerance(SDCM): 3.7038

色偏差 Chromaticity Difference: +0.00218Duv

R1=82 R2=90 R3=96 R4=84 R5=82 R6=86 R7=87 R8=66

R9=10 R10=76 R11=83 R12=63 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.042 A

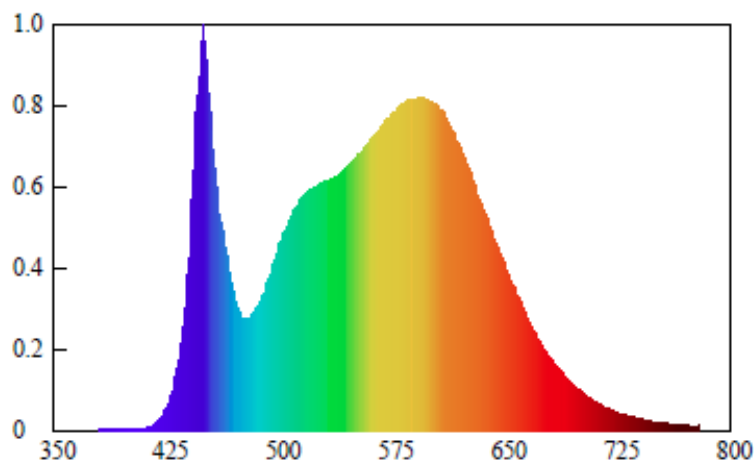
功率因数 Power Factor: 0.955

功率 Power: 9.2 W

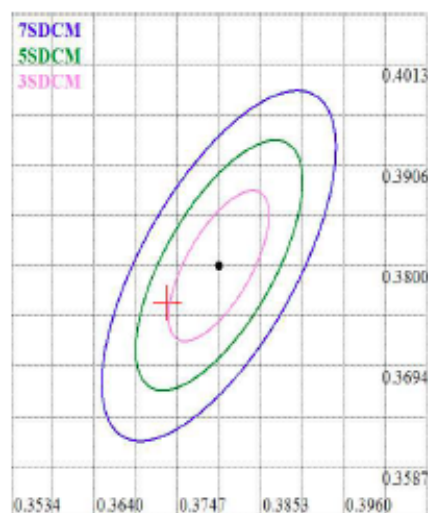
发光效率 Luminous Efficacy: 109.406 lm/W

Sample No: S07

光色参数 Spectroradiometric Parameters



光谱分布 Spectral Distribution



Nominal CCT: ANSI F4100K

x0=0.3734 y0=0.3761

色品坐标 Chromaticity Coordinates: $x=0.3734$ $y=0.3761$ $u'=0.2207$ $v'=0.5003$

相关色温 Correlated Color Temperature: 4192 K

主波长 Dominant Wavelength: 576.0 nm(E)

显色指数 Rendering Index: $R_a=84.3$

峰值波长 Peak Wavelength: 450.0 nm

色纯度 Purity: 0.2493

谱线带宽 Bandwidth: 22nm

光通量 Luminous Flux: 994.892 lm

辐射通量 Radiant Flux: 3.021 W

色比 Color Ratio: $K_r=37.2\%$ $K_g=52.4\%$ $K_b=10.4\%$

色容差 Color Tolerance(SDCM): 3.1769

色偏差 Chromaticity Difference: +0.00182Duv

R1=82 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=66

R9=11 R10=77 R11=84 R12=64 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.042 A

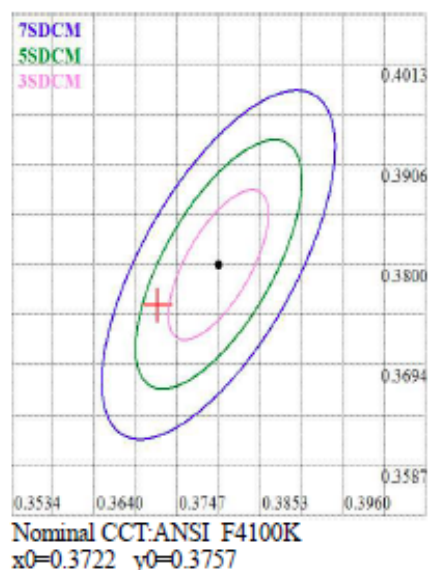
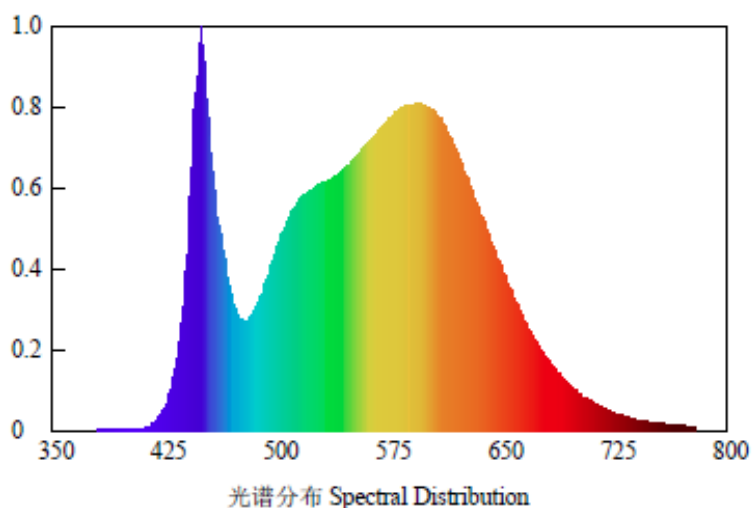
功率因数 Power Factor: 0.954

功率 Power: 9.3 W

发光效率 Luminous Efficacy: 106.978 lm/W

Sample No: S08

光色参数 Spectroradiometric Parameters

色品坐标 Chromaticity Coordinates: $x=0.3722$ $y=0.3757$ $u'=0.2201$ $v'=0.4999$

相关色温 Correlated Color Temperature: 4225 K

主波长 Dominant Wavelength: 575.0 nm(E)

显色指数 Rendering Index: $R_a=84.2$

峰值波长 Peak Wavelength: 449.9 nm

色纯度 Purity: 0.2440

谱线带宽 Bandwidth: 21.1nm

光通量 Luminous Flux: 995.656 lm

辐射通量 Radiant Flux: 3.025 W

色比 Color Ratio: $K_r=37.0\%$ $K_g=52.5\%$ $K_b=10.5\%$

色容差 Color Tolerance(SDCM): 3.797

色偏差 Chromaticity Difference: +0.00201Duv

R1=82 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=66

R9=11 R10=77 R11=83 R12=63 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.042 A

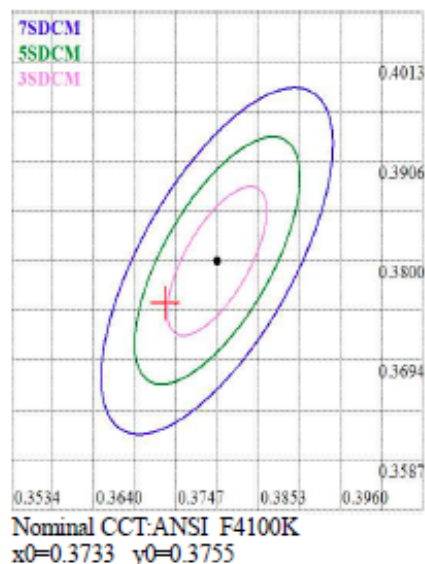
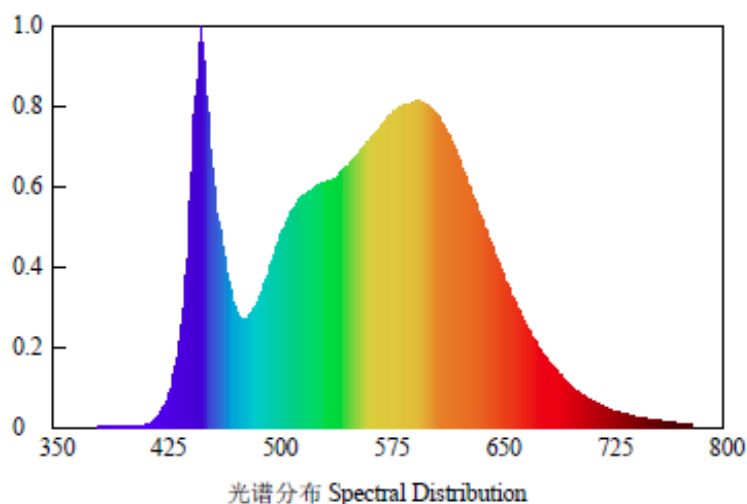
功率因数 Power Factor: 0.955

功率 Power: 9.3 W

发光效率 Luminous Efficacy: 107.06 lm/W

Sample No: S09

光色参数 Spectroradiometric Parameters

色品坐标 Chromaticity Coordinates: $x=0.3733$ $y=0.3755$ $u'=0.2209$ $v'=0.5$

相关色温 Correlated Color Temperature: 4192 K

主波长 Dominant Wavelength: 576.0 nm(E)

显色指数 Rendering Index: $R_a=84.3$

峰值波长 Peak Wavelength: 450.0 nm

色纯度 Purity: 0.2471

谱线带宽 Bandwidth: 20.9nm

光通量 Luminous Flux: 990.900 lm

辐射通量 Radiant Flux: 3.013 W

色比 Color Ratio: $K_r=37.2\%$ $K_g=52.4\%$ $K_b=10.4\%$

色容差 Color Tolerance(SDCM): 3.1673

色偏差 Chromaticity Difference: +0.00158Duv

R1=83 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=66

R9=11 R10=77 R11=84 R12=64 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.1 V

电流 Current: 0.043 A

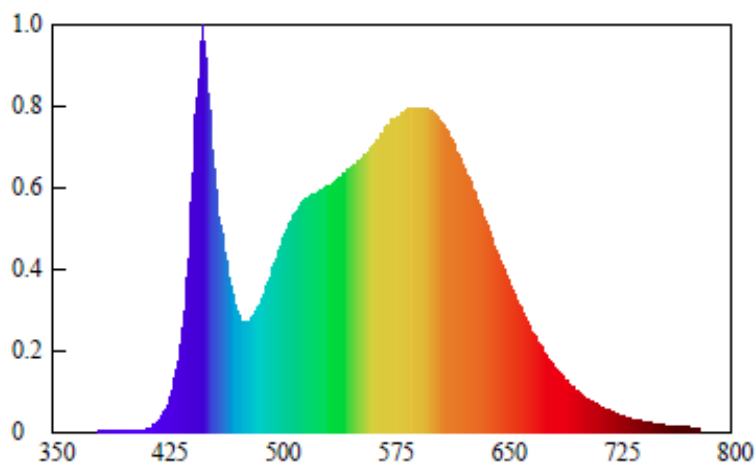
功率因数 Power Factor: 0.957

功率 Power: 9.5 W

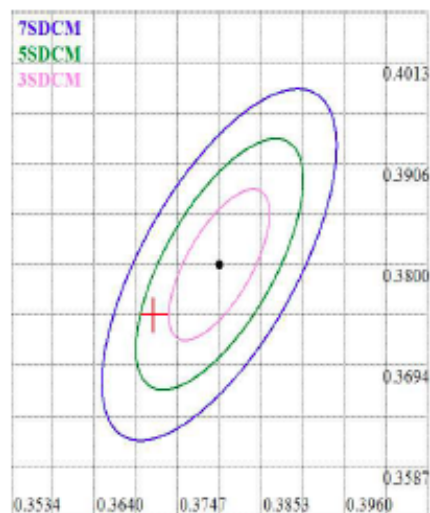
发光效率 Luminous Efficacy: 104.305 lm/W

Sample No: S10

光色参数 Spectroradiometric Parameters



光谱分布 Spectral Distribution



Nominal CCT: ANSI F4100K

x0=0.3716 y0=0.3747

色品坐标 Chromaticity Coordinates: $x=0.3716$ $y=0.3747$ $u'=0.2201$ $v'=0.4994$

相关色温 Correlated Color Temperature: 4235 K

主波长 Dominant Wavelength: 576.0 nm(E)

显色指数 Rendering Index: $R_a=84.3$

峰值波长 Peak Wavelength: 450.1 nm

色纯度 Purity: 0.2397

谱线带宽 Bandwidth: 20.9nm

光通量 Luminous Flux: 1020.310 lm

辐射通量 Radiant Flux: 3.105 W

色比 Color Ratio: $K_r=37.0\%$ $K_g=52.5\%$ $K_b=10.5\%$

色容差 Color Tolerance(SDCM): 4.0039

色偏差 Chromaticity Difference: +0.00173Duv

R1=82 R2=90 R3=96 R4=84 R5=83 R6=86 R7=87 R8=66

R9=11 R10=77 R11=83 R12=63 R13=85 R14=98 R15=76

电参数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.042 A

功率因数 Power Factor: 0.894

功率 Power: 8.7 W

发光效率 Luminous Efficacy: 117.277 lm/W

3.2. Goniophotometer

Sample No: S01					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.951	9.2

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1043.65	233.331	168.2*278.8	117.8*154.2	113.44

Photometric Results

Lumens(lm): 1043.65
 Efficiency(%): 105.42%
 Lumens(lm)/Power(W): 113.44
 Central intensity(cd): 230.602
 Maximum intensity(cd): 233.331
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=117.8
 [C90/270]Total=154.2
 Field angle(10%Imax): [C0/180]Total=168.2
 [C90/270]Total=278.8
 Maximum s/h(1/2): C0_180=1.28 C90_270=1.38
 Maximum s/h(1/4): C0_180=1.40 C90_270=1.54
 Up flux rate of lamp(%): 15.24%
 Down flux rate of lamp(%): 90.18%
 Up flux rate of LUM(%): 14.46%
 Down flux rate of LUM(%): 85.54%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.697%

Sample No: S02					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.1	50	0.042	0.950	9.1

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1042.62	232.819	168.1*279.3	117.6*154.5	114.57

Photometric Results

Lumens(lm): 1042.62
 Efficiency(%): 105.31%
 Lumens(lm)/Power(W): 114.57
 Central intensity(cd): 230.090
 Maximum intensity(cd): 232.819
 Angle of maximum intensity: $C=270.0$ $\gamma=10.0$
 Beam Angle(50%Imax): [C0/180]Total=117.6
 [C90/270]Total=154.5
 Field angle(10%Imax): [C0/180]Total=168.1
 [C90/270]Total=279.3
 Maximum s/h(1/2): C0_180=1.28 C90_270=1.39
 Maximum s/h(1/4): C0_180=1.40 C90_270=1.54
 Up flux rate of lamp(%): 15.25%
 Down flux rate of lamp(%): 90.06%
 Up flux rate of LUM(%): 14.48%
 Down flux rate of LUM(%): 85.52%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.672%

Sample No: S03					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.041	0.95	9.1

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1031.99	228.214	168.3*280.2	117.7*155.6	113.41

Photometric Results

Lumens(lm): 1031.99
 Efficiency(%): 104.24%
 Lumens(lm)/Power(W): 113.41
 Central intensity(cd): 226.338
 Maximum intensity(cd): 228.214
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=117.7
 [C90/270]Total=155.6
 Field angle(10%Imax): [C0/180]Total=168.3
 [C90/270]Total=280.2
 Maximum s/h(1/2): C0_180=1.28 C90_270=1.39
 Maximum s/h(1/4): C0_180=1.40 C90_270=1.55
 Up flux rate of lamp(%): 15.30%
 Down flux rate of lamp(%): 88.94%
 Up flux rate of LUM(%): 14.68%
 Down flux rate of LUM(%): 85.32%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.396%

Sample No: S04					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.1	50	0.042	0.950	9.2

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1045.42	232.478	168.4*279.2	117.7*155.2	113.63

Photometric Results

Lumens(lm): 1045.42
 Efficiency(%): 105.60%
 Lumens(lm)/Power(W): 113.63
 Central intensity(cd): 230.261
 Maximum intensity(cd): 232.478
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=117.7
 [C90/270]Total=155.2
 Field angle(10%Imax): [C0/180]Total=168.4
 [C90/270]Total=279.2
 Maximum s/h(1/2): C0_180=1.27 C90_270=1.38
 Maximum s/h(1/4): C0_180=1.39 C90_270=1.54
 Up flux rate of lamp(%): 15.40%
 Down flux rate of lamp(%): 90.20%
 Up flux rate of LUM(%): 14.58%
 Down flux rate of LUM(%): 85.42%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.505%

Sample No: S05					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.949	9.1

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1048.18	232.137	279.8*169.7	118.0*155.3	115.18

Photometric Results

Lumens(lm): 1048.18
 Efficiency(%): 105.88%
 Lumens(lm)/Power(W): 115.18
 Central intensity(cd): 230.261
 Maximum intensity(cd): 232.137
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=118.0
 [C90/270]Total=155.3
 Field angle(10%Imax): [C0/180]Total=169.7
 [C90/270]Total=279.8
 Maximum s/h(1/2): C0_180=1.28 C90_270=1.39
 Maximum s/h(1/4): C0_180=1.40 C90_270=1.55
 Up flux rate of lamp(%): 15.48%
 Down flux rate of lamp(%): 90.40%
 Up flux rate of LUM(%): 14.62%
 Down flux rate of LUM(%): 85.38%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.458%

Sample No: S06					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
229.9	50	0.042	0.95	9.1

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1033.20	230.431	167.9*278.9	117.6*154.6	113.54

Photometric Results

Lumens(lm): 1033.20
 Efficiency(%): 104.36%
 Lumens(lm)/Power(W): 113.54
 Central intensity(cd): 227.702
 Maximum intensity(cd): 230.431
 Angle of maximum intensity: C=90.0 γ =15.0
 Beam Angle(50%Imax): [C0/180]Total=117.6
 [C90/270]Total=154.6
 Field angle(10%Imax): [C0/180]Total=167.9
 [C90/270]Total=278.9
 Maximum s/h(1/2): C0_180=1.28 C90_270=1.46
 Maximum s/h(1/4): C0_180=1.40 C90_270=1.61
 Up flux rate of lamp(%): 15.23%
 Down flux rate of lamp(%): 89.14%
 Up flux rate of LUM(%): 14.59%
 Down flux rate of LUM(%): 85.41%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.534%

Sample No: S07					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
230.0	50	0.042	0.949	9.1

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1020.78	225.315	168.3*279.8	118.0*156.1	112.17

Photometric Results

Lumens(lm): 1020.78
 Efficiency(%): 103.11%
 Lumens(lm)/Power(W): 112.17
 Central intensity(cd): 223.097
 Maximum intensity(cd): 225.315
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=118.0
 [C90/270]Total=156.1
 Field angle(10%Imax): [C0/180]Total=168.3
 [C90/270]Total=279.8
 Maximum s/h(1/2): C0_180=1.27 C90_270=1.39
 Maximum s/h(1/4): C0_180=1.39 C90_270=1.55
 Up flux rate of lamp(%): 15.16%
 Down flux rate of lamp(%): 87.95%
 Up flux rate of LUM(%): 14.70%
 Down flux rate of LUM(%): 85.30%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.336%

Sample No: S08					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
229.9	50	0.042	0.951	9.2

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1025.25	229.92	167.5*278.1	117.5*153.7	111.44

Photometric Results

Lumens(lm): 1025.25
 Efficiency(%): 103.56%
 Lumens(lm)/Power(W): 111.44
 Central intensity(cd): 226.679
 Maximum intensity(cd): 229.920
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=117.5
 [C90/270]Total=153.7
 Field angle(10%Imax): [C0/180]Total=167.5
 [C90/270]Total=278.1
 Maximum s/h(1/2): C0_180=1.27 C90_270=1.37
 Maximum s/h(1/4): C0_180=1.39 C90_270=1.53
 Up flux rate of lamp(%): 14.94%
 Down flux rate of lamp(%): 88.62%
 Up flux rate of LUM(%): 14.43%
 Down flux rate of LUM(%): 85.57%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.745%

Sample No: S09					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
229.9	50	0.042	0.951	9.3

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1016.89	226.509	167.7*279.2	117.6*154.6	109.34

Photometric Results

Lumens(lm): 1016.89
 Efficiency(%): 102.72%
 Lumens(lm)/Power(W): 109.34
 Central intensity(cd): 223.950
 Maximum intensity(cd): 226.509
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=117.6
 [C90/270]Total=154.6
 Field angle(10%Imax): [C0/180]Total=167.7
 [C90/270]Total=279.2
 Maximum s/h(1/2): C0_180=1.27 C90_270=1.38
 Maximum s/h(1/4): C0_180=1.39 C90_270=1.54
 Up flux rate of lamp(%): 14.92%
 Down flux rate of lamp(%): 87.79%
 Up flux rate of LUM(%): 14.53%
 Down flux rate of LUM(%): 85.47%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.601%

Sample No: S10					
Temperature (°C)	Test Humidity	Orientation	Stabilization Time(min)	Test Time(min)	Number of hours operated prior to measurement
24.8	49.7%	Face forward	15	35	0

Input Voltage (V)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
229.9	50	0.042	0.951	9.2

Luminous Flux (lm)	CBCP (cd)	Field Angle (10%)	Beam Angle (50%)	Luminous Efficacy (lm/W)
1100.87	245.441	167.3*279.4	117.4*154.8	119.66

Photometric Results

Lumens(lm): 1100.87
 Efficiency(%): 111.20%
 Lumens(lm)/Power(W): 119.66
 Central intensity(cd): 243.224
 Maximum intensity(cd): 245.441
 Angle of maximum intensity: C=270.0 γ =10.0
 Beam Angle(50%Imax): [C0/180]Total=117.4
 [C90/270]Total=154.8
 Field angle(10%Imax): [C0/180]Total=167.3
 [C90/270]Total=279.4
 Maximum s/h(1/2): C0_180=1.27 C90_270=1.39
 Maximum s/h(1/4): C0_180=1.39 C90_270=1.54
 Up flux rate of lamp(%): 16.12%
 Down flux rate of lamp(%): 95.08%
 Up flux rate of LUM(%): 14.50%
 Down flux rate of LUM(%): 85.50%
 CIE Type : Semidirect lighting
 Output flux ratio in π solid angle : 56.674%

4.1. Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	231.085	.000	.000	.000%	.000%
5.0	230.545	5.519	5.519	.557%	.557%
10.0	228.982	16.439	21.957	1.660%	2.218%
15.0	226.423	27.014	48.972	2.729%	4.947%
20.0	222.486	36.996	85.968	3.737%	8.684%
25.0	216.886	46.082	132.050	4.655%	13.338%
30.0	210.035	54.027	186.077	5.457%	18.796%
35.0	201.549	60.609	246.686	6.122%	24.918%
40.0	191.785	65.625	312.311	6.629%	31.547%
45.0	180.797	68.987	381.297	6.968%	38.515%
50.0	168.531	70.587	451.884	7.130%	45.645%
55.0	155.355	70.424	522.308	7.113%	52.758%
60.0	141.269	68.564	590.872	6.926%	59.684%
65.0	126.416	65.075	655.947	6.573%	66.257%
70.0	111.037	60.125	716.071	6.073%	72.330%
75.0	95.459	53.975	770.046	5.452%	77.782%
80.0	80.563	47.099	817.144	4.757%	82.540%
85.0	67.188	40.147	857.292	4.055%	86.595%
90.0	58.191	34.330	891.621	3.468%	90.063%
95.0	52.789	30.387	922.009	3.069%	93.132%
100.0	47.076	27.136	949.144	2.741%	95.873%
105.0	36.373	22.328	971.473	2.255%	98.129%
110.0	28.186	16.875	988.347	1.704%	99.833%
115.0	19.046	11.959	1000.307	1.208%	101.041%
120.0	12.011	7.550	1007.857	.763%	101.804%
125.0	17.199	6.752	1014.608	.682%	102.486%
130.0	18.321	7.723	1022.331	.780%	103.266%
135.0	15.081	6.749	1029.081	.682%	103.948%
140.0	12.295	5.069	1034.150	.512%	104.460%
145.0	8.642	3.493	1037.643	.353%	104.812%
150.0	4.605	1.951	1039.594	.197%	105.009%
155.0	3.525	1.029	1040.622	.104%	105.113%
160.0	3.383	.725	1041.347	.073%	105.187%
165.0	3.340	.554	1041.901	.056%	105.243%
170.0	3.326	.395	1042.296	.040%	105.283%
175.0	3.354	.239	1042.535	.024%	105.307%
180.0	3.440	.081	1042.617	.008%	105.315%

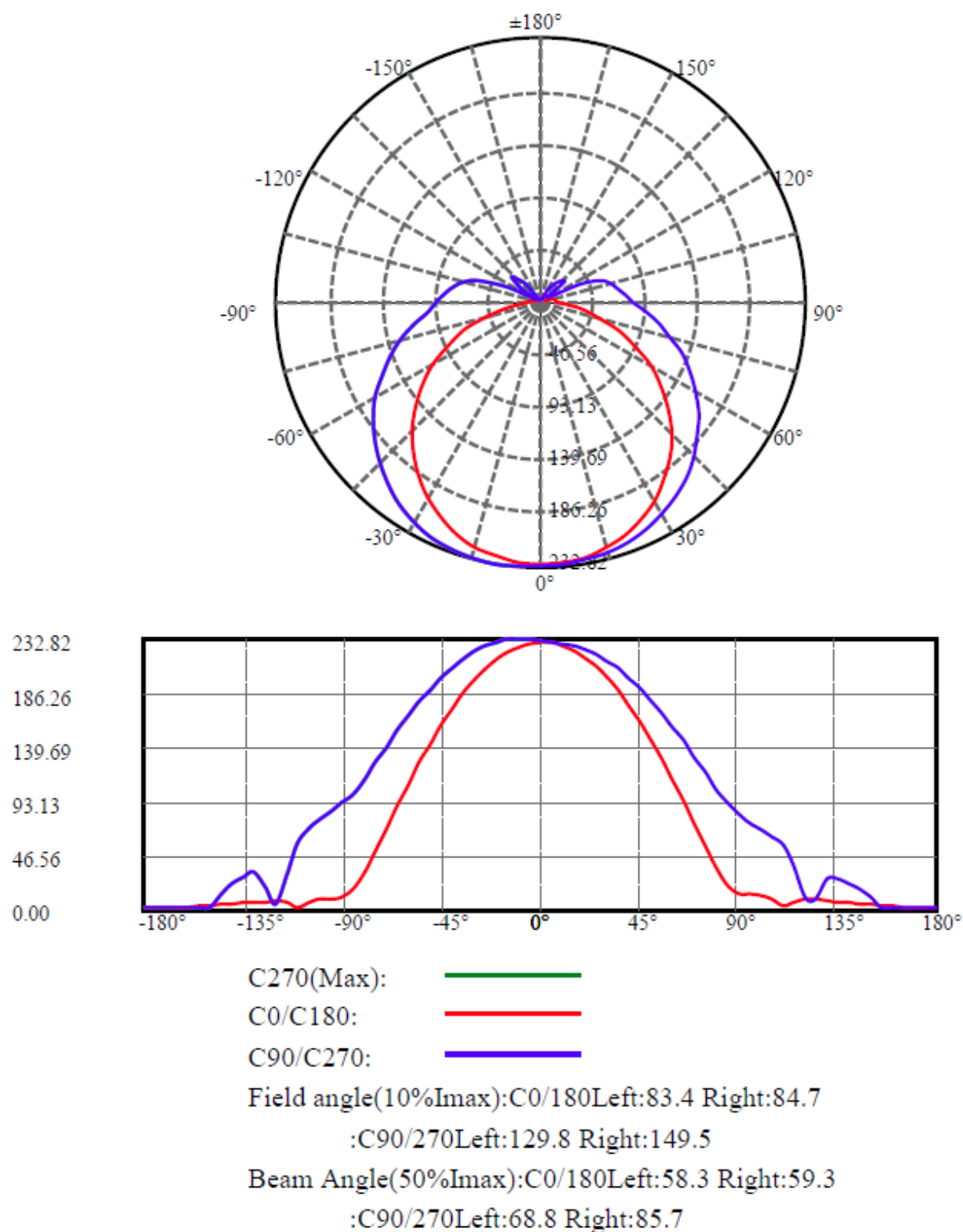
4.2. Zonal flux distribution table**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-30	186.08	18.80%	17.85%
0-40	312.31	31.55%	29.95%
0-60	590.87	59.68%	56.67%
0-90	891.62	90.06%	85.52%
0-120	1007.86	101.80%	96.67%
0-180	1042.62	105.31%	100.00%
60-90	369.31	37.30%	35.42%
90-120	150.56	15.21%	14.44%
90-130	165.04	16.67%	15.83%
90-150	182.30	18.41%	17.49%
90-180	185.24	18.71%	17.77%
0-82.11	834.09	84.25%	80.00%

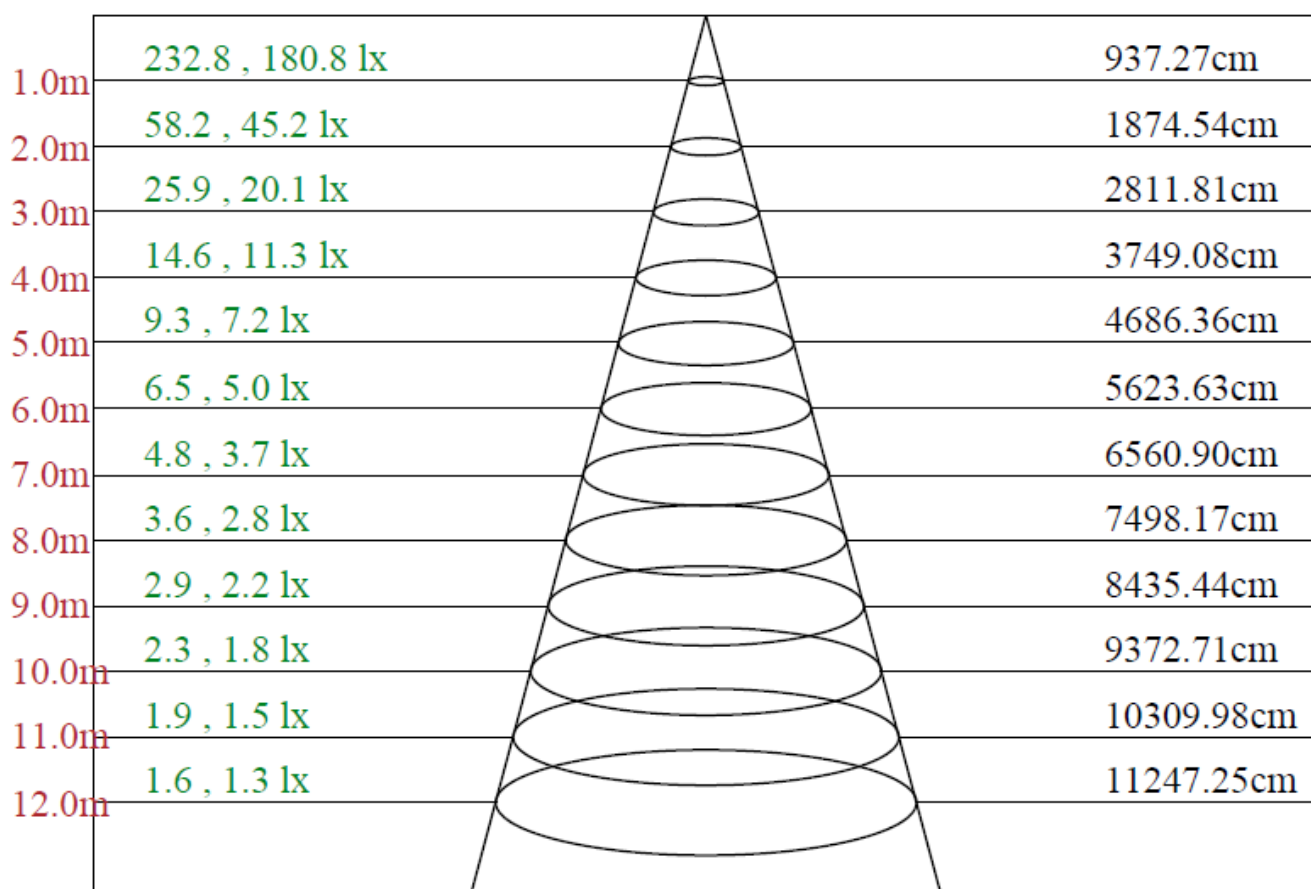
ZONAL LUMEN SUMMARY

0-10	21.96
10-20	64.01
20-30	100.11
30-40	126.23
40-50	139.57
50-60	138.99
60-70	125.20
70-80	101.07
80-90	74.48
90-100	57.52
100-110	39.20
110-120	19.51
120-130	14.47
130-140	11.82
140-150	5.44
150-160	1.75
160-170	0.95
170-180	0.24

4.3. Light Distribution Curve

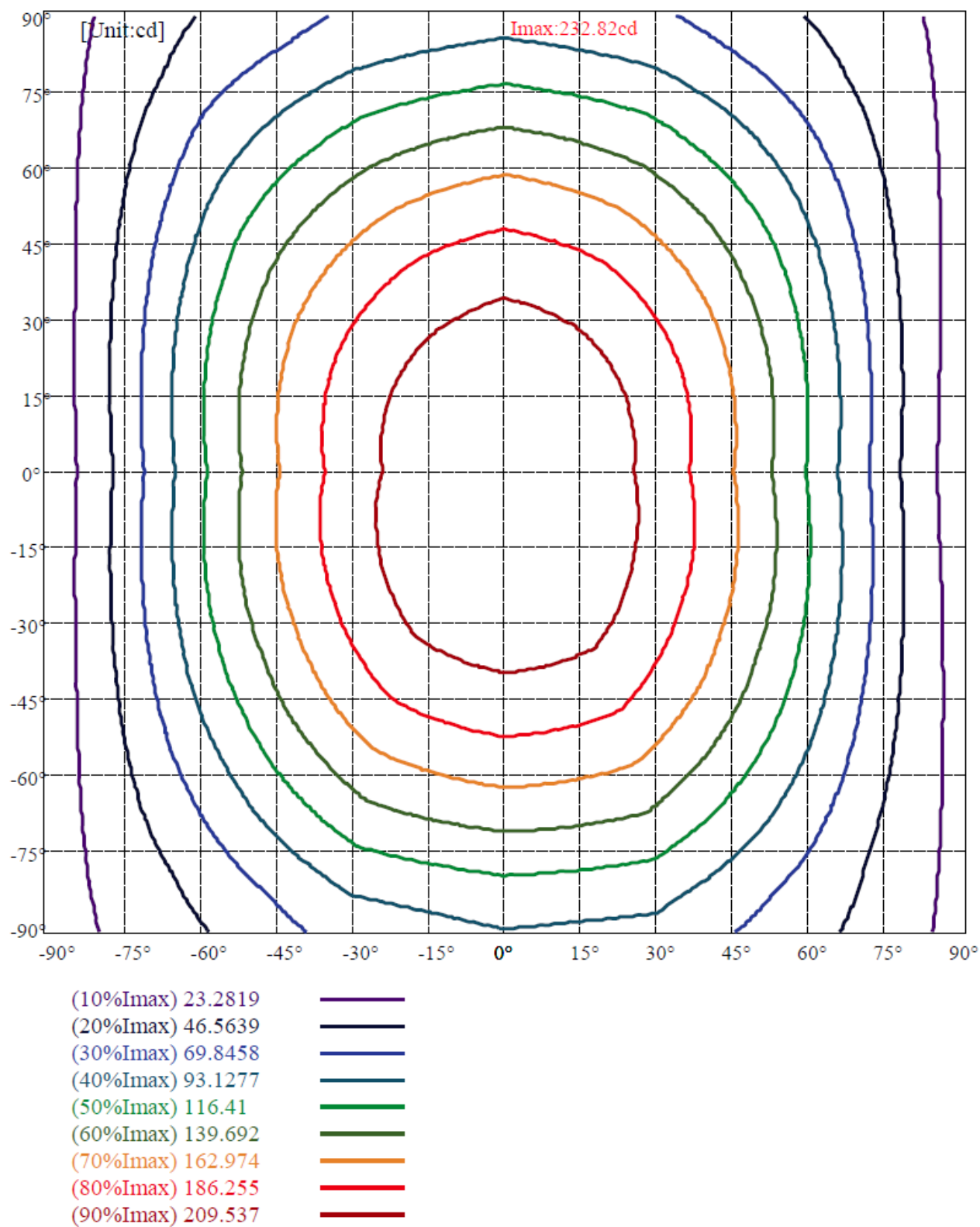


4.4. Lux distance Curve

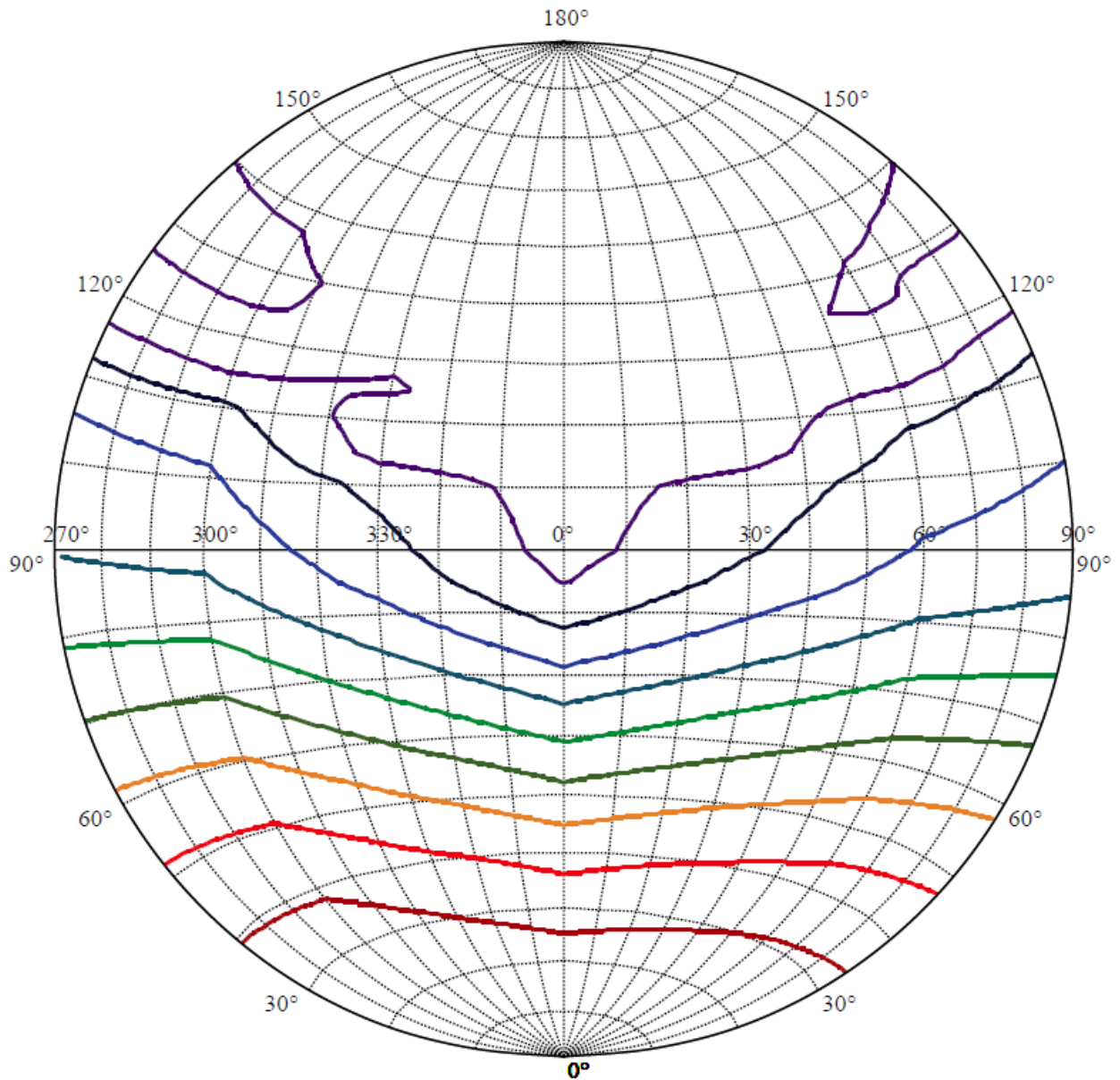


Max , Ave Beam angle of C270plane155.51

4.5. ISO-Intensity(V-H)



4.6. ISO candela diagram on circular web



House

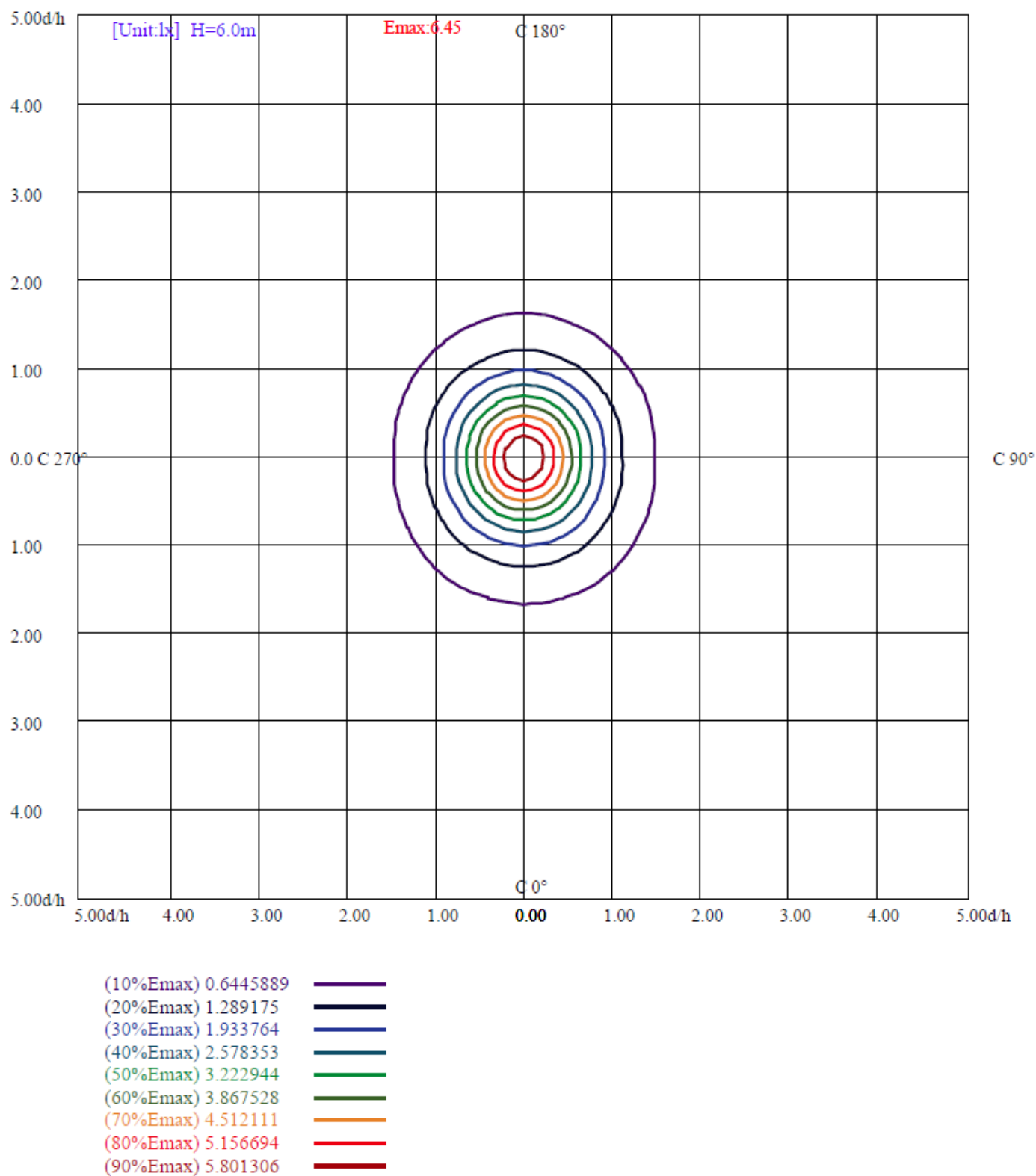
[Unit:cd]

Road

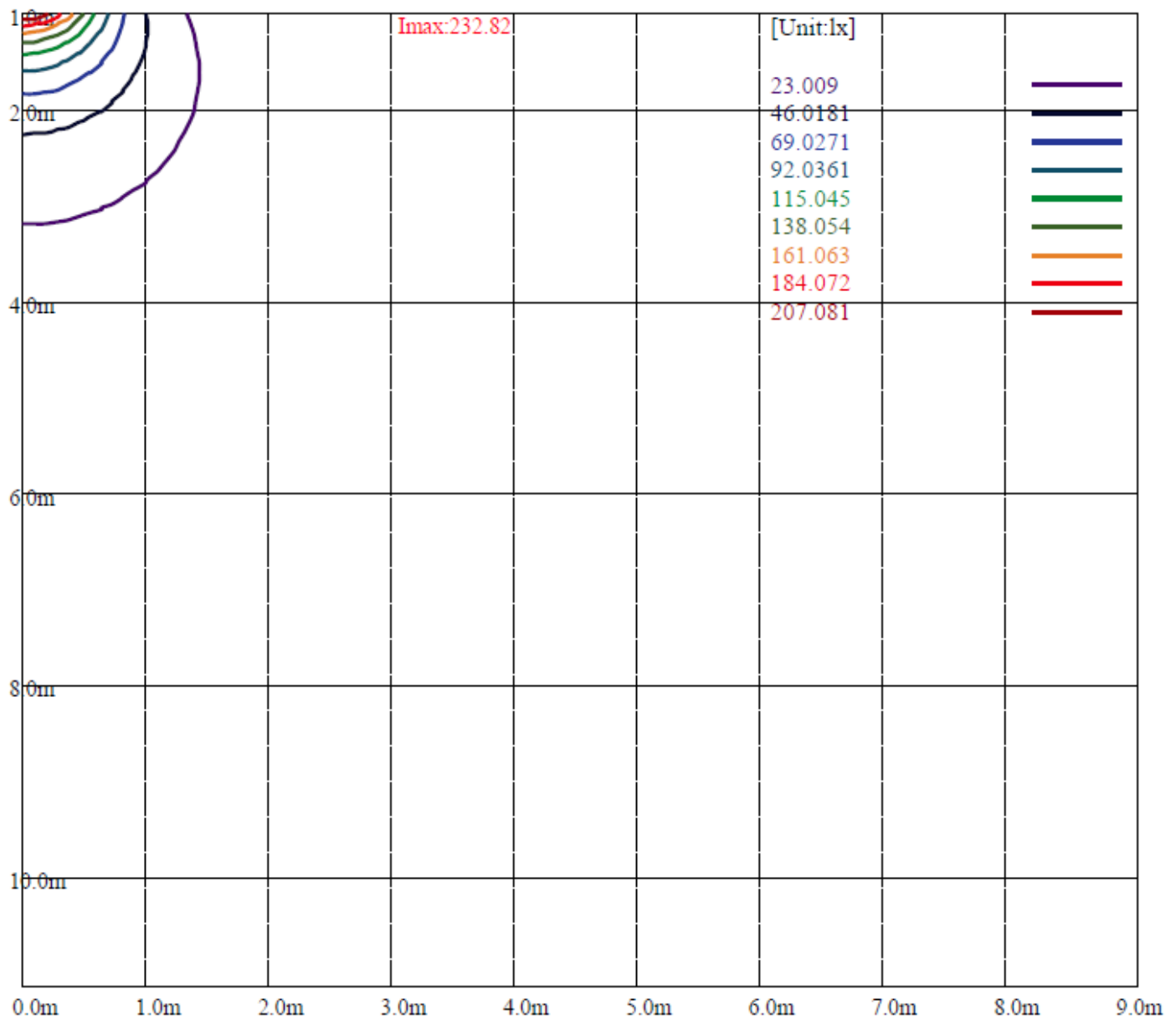
I_{max}:232.82
 (10%I_{max}) 23.2819
 (20%I_{max}) 46.5639
 (30%I_{max}) 69.8458
 (40%I_{max}) 93.1277
 (50%I_{max}) 116.41
 (60%I_{max}) 139.692
 (70%I_{max}) 162.974
 (80%I_{max}) 186.255
 (90%I_{max}) 209.537



4.7. ISO illuminance diagram



4.8. Space ISO Lux diagram



4.9. Luminance Limiting Curve(no luminous side)

Luminance Table

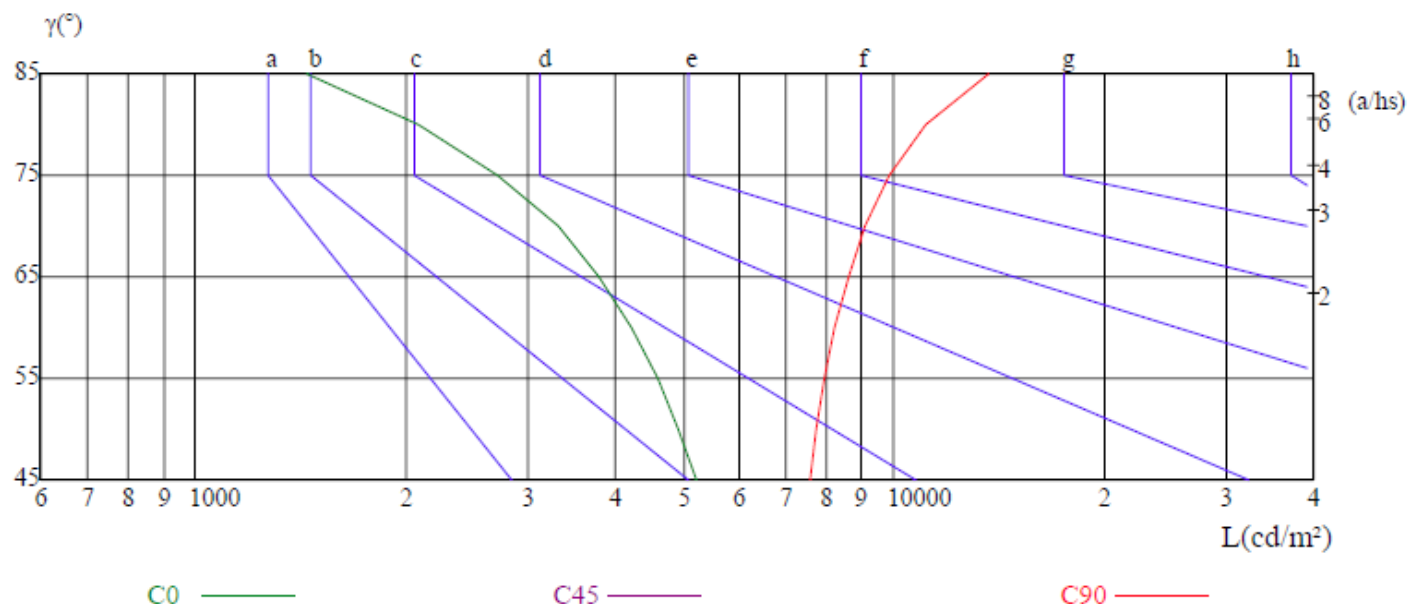
γ	45	50	55	60	65	70	75	80	85
C0	5213	4917	4602	4216	3793	3311	2711	2080	1438
C45	0	0	0	0	0	0	0	0	0
C90	7597	7763	7951	8229	8600	9096	9837	11130	13711

L _横 (65)	L _纵 (65)	L45(65)	L _横 (75)	L _纵 (75)	L45(75)	L _横 (85)	L _纵 (85)	L45(85)
6899	11262	0	6506	15021	0	7331	35102	0

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

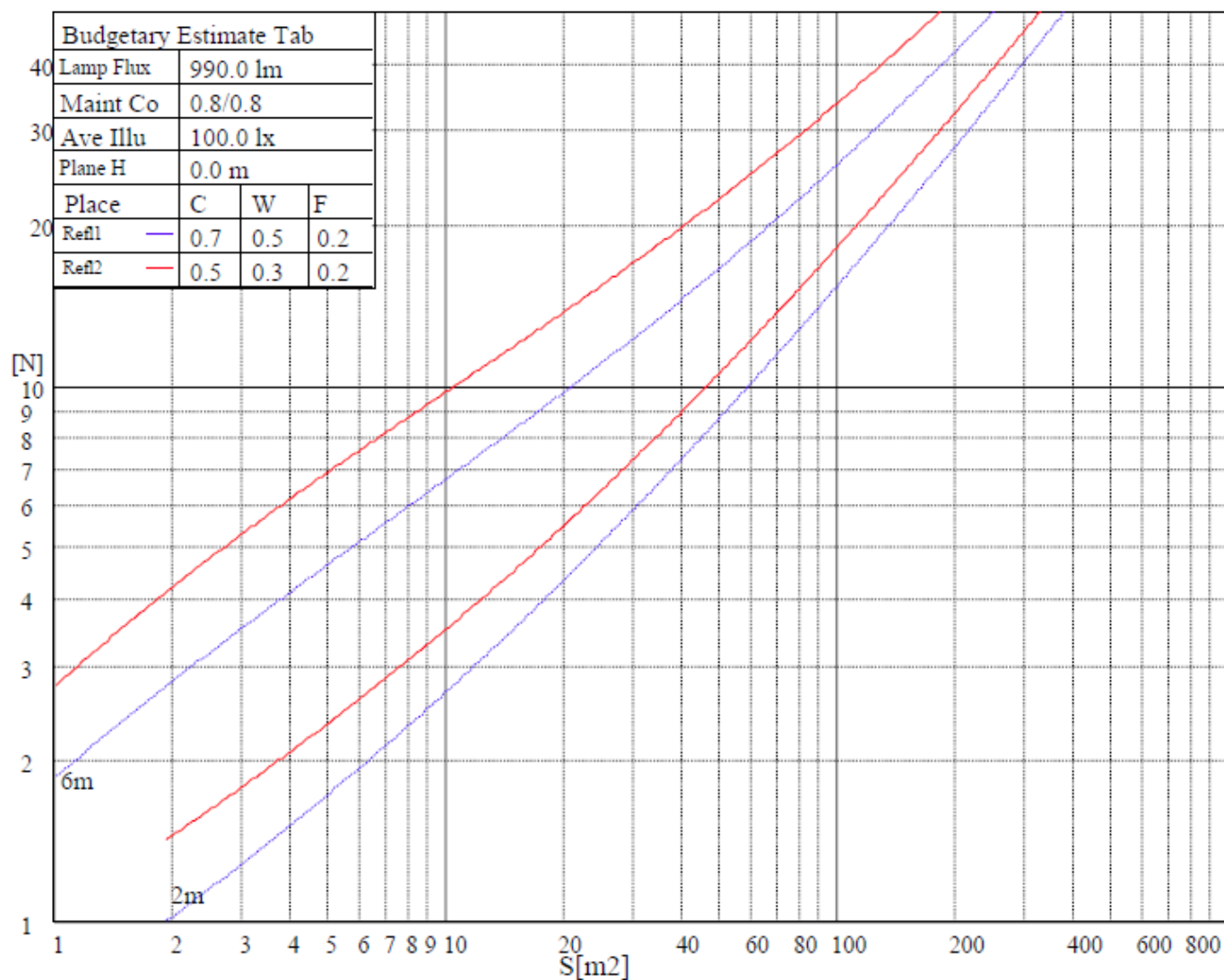
Luminance Limiting Curve



4.10. UGR Glare

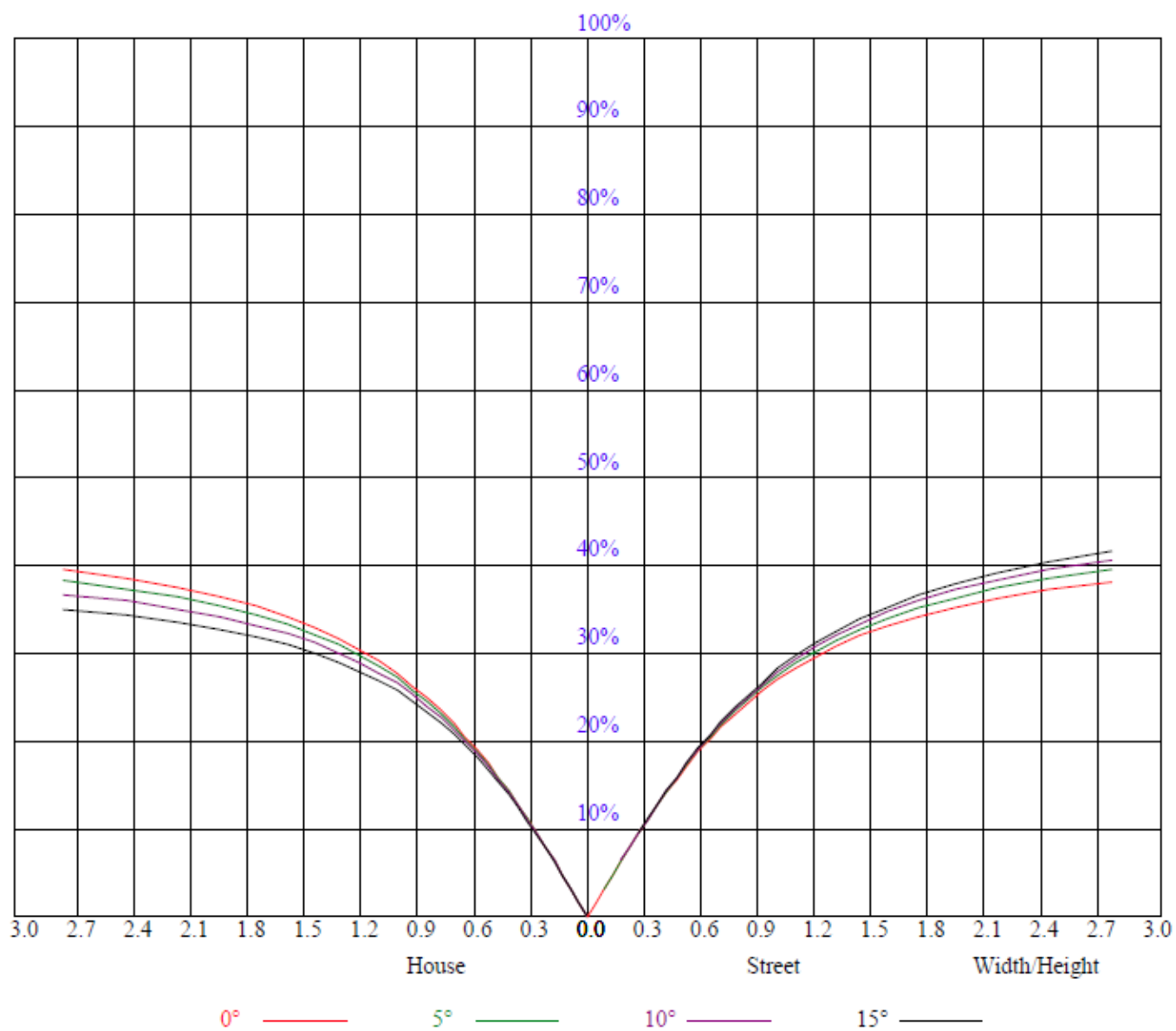
Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	16.4	18.0	16.9	18.5	19.0	16.7	18.3	17.2	18.8	19.3
	3H	17.8	19.3	18.3	19.8	20.4	18.4	20.0	18.9	20.4	21.0
	4H	18.3	19.8	18.8	20.3	20.9	19.1	20.6	19.6	21.1	21.7
	6H	18.7	20.1	19.2	20.6	21.2	19.6	21.0	20.2	21.6	22.1
	8H	18.8	20.1	19.4	20.7	21.3	19.8	21.2	20.4	21.7	22.3
	12H	19.0	20.3	19.5	20.8	21.4	20.1	21.4	20.6	21.9	22.6
4H	2H	17.2	18.6	17.7	19.1	19.7	17.4	18.9	17.9	19.4	20.0
	3H	18.9	20.2	19.4	20.7	21.3	19.5	20.8	20.0	21.3	21.9
	4H	16.4	18.0	16.9	18.5	19.0	16.7	18.3	17.2	18.8	19.3
	6H	20.0	21.1	20.6	21.7	22.3	20.9	22.0	21.5	22.6	23.2
	8H	20.2	21.3	20.8	21.9	22.5	21.2	22.2	21.7	22.8	23.5
	12H	20.4	21.4	21.0	22.0	22.6	21.5	22.4	22.1	23.1	23.7
8H	4H	20.3	21.3	20.9	21.9	22.6	21.0	22.0	21.5	22.6	23.3
	6H	21.0	22.6	21.6	22.5	23.2	21.8	23.4	22.4	23.3	24.0
	8H	21.3	22.2	21.9	22.8	23.5	22.2	23.1	22.8	23.7	24.4
	12H	21.7	22.5	22.3	23.7	23.8	22.7	23.5	23.3	24.7	24.9
12H	4H	20.5	21.5	21.1	22.1	22.8	21.1	22.1	21.7	22.7	23.4
	6H	23.0	22.2	21.9	22.8	23.5	23.8	22.9	22.7	23.5	24.2
	8H	21.7	22.5	22.3	23.2	23.9	22.6	23.4	23.2	24.0	24.7
Variation with the observer position at spacings:											
S = 1.0H		0.2/-1.1					0.2/-0.6				
S = 1.5H		0.4/-0.9					0.4/-0.6				
S = 2.0H		0.3/-0.6					0.4/-0.8				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		9.6					6.7				

4.11. Budgetary Estimate Table



4.12. Utilization factor table for indoor luminaire

RHOC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.22	1.22	1.22	1.17	1.17	1.17	1.09	1.09	1.09	1.01	1.01	1.01	0.93	0.93	0.93	0.90
1	1.02	0.96	0.91	0.98	0.93	0.88	0.90	0.86	0.82	0.84	0.80	0.77	0.77	0.75	0.72	0.69
2	0.87	0.79	0.72	0.84	0.76	0.70	0.77	0.71	0.66	0.71	0.66	0.62	0.66	0.62	0.58	0.55
3	0.75	0.66	0.58	0.72	0.64	0.57	0.67	0.60	0.54	0.62	0.56	0.51	0.57	0.52	0.48	0.45
4	0.66	0.56	0.48	0.64	0.54	0.47	0.59	0.51	0.45	0.55	0.48	0.43	0.51	0.45	0.40	0.38
5	0.59	0.49	0.41	0.56	0.47	0.40	0.52	0.44	0.38	0.49	0.42	0.36	0.45	0.39	0.35	0.32
6	0.52	0.43	0.35	0.51	0.41	0.35	0.47	0.39	0.33	0.44	0.37	0.32	0.41	0.35	0.30	0.28
7	0.47	0.38	0.31	0.46	0.37	0.30	0.43	0.35	0.29	0.40	0.33	0.28	0.37	0.31	0.27	0.24
8	0.43	0.34	0.27	0.42	0.33	0.27	0.39	0.31	0.26	0.36	0.30	0.25	0.34	0.28	0.24	0.21
9	0.39	0.30	0.24	0.38	0.30	0.24	0.36	0.28	0.23	0.33	0.27	0.22	0.31	0.25	0.21	0.19
10	0.36	0.28	0.22	0.35	0.27	0.21	0.33	0.26	0.21	0.31	0.24	0.20	0.29	0.23	0.19	0.17

4.13. Coefficient Utilization Curve

4.13. Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	C/γ(°)	180.0
0.0	230.09	229.41	227.19	223.10	217.47	210.13	200.58	189.33	176.87	0.0	3.41
30.0	232.31	231.45	229.07	225.66	220.37	213.72	205.70	196.66	185.57	30.0	3.41
60.0	231.80	230.43	228.38	226.00	222.42	217.47	211.16	203.31	194.61	60.0	3.41
90.0	231.28	230.09	228.56	226.68	223.95	219.69	214.57	207.92	199.73	90.0	3.58
120.0	230.60	229.07	227.19	224.63	220.88	215.59	209.28	201.27	192.57	120.0	3.41
150.0	230.43	229.24	226.68	222.93	217.98	211.33	203.82	194.44	183.70	150.0	3.41
180.0	230.09	229.07	226.17	221.90	215.42	207.23	197.68	186.08	173.63	180.0	3.41
210.0	232.31	231.63	229.75	226.34	221.56	214.91	207.06	197.68	186.43	210.0	3.41
240.0	231.80	232.14	231.80	230.77	228.21	223.78	218.32	211.33	203.14	240.0	3.41
270.0	231.28	232.14	232.82	232.14	230.43	226.85	222.24	215.93	208.26	270.0	3.58
300.0	230.60	231.45	231.45	230.77	229.07	225.66	220.71	214.23	206.72	300.0	3.41
330.0	230.43	230.43	228.73	226.17	222.07	216.27	209.28	200.41	190.18	330.0	3.41
360.0	230.09	229.41	227.19	223.10	217.47	210.13	200.58	189.33	176.87	360.0	3.41
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	162.55	147.03	130.65	112.40	93.81	74.88	55.09	37.18	22.00		
30.0	173.63	160.67	146.00	131.16	115.64	99.10	83.41	67.88	54.41		
60.0	184.72	173.46	161.69	149.24	135.43	122.12	108.14	93.98	81.70		
90.0	190.69	180.97	169.71	158.11	145.66	132.19	118.20	104.73	92.27		
120.0	182.67	171.42	159.82	147.37	133.89	120.42	106.77	92.79	80.68		
150.0	171.93	159.31	144.81	130.31	115.47	99.27	83.41	69.08	55.43		
180.0	159.31	143.27	126.73	109.16	89.89	70.78	51.00	33.43	18.25		
210.0	174.32	160.33	145.49	130.31	114.28	97.56	81.36	66.35	52.53		
240.0	193.59	182.67	171.42	158.11	144.98	131.50	116.84	102.68	89.55		
270.0	199.90	189.84	179.09	167.32	154.19	140.37	126.73	113.25	100.46		
300.0	198.02	187.62	176.53	164.42	151.46	137.99	123.83	109.33	96.54		
330.0	178.24	165.79	152.31	137.30	122.29	106.26	90.74	76.07	62.43		
360.0	162.55	147.03	130.65	112.40	93.81	74.88	55.09	37.18	22.00		
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0		
0.0	15.18	13.99	13.13	9.72	4.26	7.50	10.40	9.55	8.70		
30.0	44.18	38.89	32.75	12.45	11.26	19.61	16.54	13.99	10.57		
60.0	71.81	65.67	59.87	52.53	37.52	12.28	10.92	27.12	24.39		
90.0	81.87	75.90	69.93	64.13	56.12	39.40	11.77	9.89	27.63		
120.0	72.15	66.01	60.21	53.73	39.91	15.52	8.53	23.54	24.39		
150.0	45.88	40.25	34.97	19.96	5.80	21.15	16.89	14.16	11.09		
180.0	11.43	10.57	10.06	7.50	3.41	7.33	8.36	7.85	7.16		
210.0	43.66	37.87	27.97	6.65	19.61	17.74	13.82	9.04	5.12		
240.0	80.16	72.83	66.18	58.50	40.42	8.70	13.47	30.02	25.58		
270.0	91.93	85.11	77.95	71.13	58.33	31.55	5.12	19.96	33.77		
300.0	86.31	78.80	72.15	65.16	50.83	22.34	8.19	24.90	29.68		
330.0	53.73	47.59	39.74	15.01	10.75	25.41	20.13	16.37	11.77		
360.0	15.18	13.99	13.13	9.72	4.26	7.50	10.40	9.55	8.70		
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0		
0.0	7.85	6.99	6.14	5.29	4.26	3.75	3.41	3.24	3.07		
30.0	5.97	5.46	5.29	4.78	4.43	3.92	3.75	3.41	3.58		
60.0	20.98	17.06	11.60	3.75	3.41	3.41	3.41	3.58	3.41		
90.0	27.46	22.86	18.25	11.77	3.41	3.41	3.41	3.41	3.41		
120.0	20.64	16.89	11.09	3.58	3.41	3.41	3.41	3.41	3.41		
150.0	6.48	4.61	4.61	4.26	3.58	3.41	3.41	3.41	3.41		
180.0	6.65	6.14	5.63	4.78	3.92	3.58	3.41	3.41	3.41		
210.0	4.78	4.61	4.09	3.58	3.24	3.24	3.24	3.24	3.41		
240.0	21.49	15.52	5.29	2.90	3.07	3.07	3.24	3.24	3.41		
270.0	28.65	23.03	15.01	3.41	2.90	2.90	3.07	3.07	3.24		
300.0	24.90	19.79	12.28	3.07	2.90	2.90	3.07	3.24	3.24		
330.0	5.12	4.61	4.43	4.09	3.75	3.58	3.24	3.24	3.24		
360.0	7.85	6.99	6.14	5.29	4.26	3.75	3.41	3.24	3.07		

5.Test Equipment

Equipment Name	Manufacturer	Model No.	Equipment No.	Calibration Due Date
2m Integrating Sphere	SENSING	SL-300	AOC-S-126	2026-04-13
Horizontal Distribution Photometer	SENSING	GMS1800D	AOC-S-124	2026-04-13
Standard Lamp	SENSING	220V/150W	AOC-S-156	2026-06-05
Digital power meter	HENGHE	WT310E	AOC-S-012	2026-04-13
Digital power meter	SENSING	UI2008	AOC-S-123	2026-04-13
Digital power meter	SENSING	UI2021	AOC-S-123	2026-04-13
DC source	OYHS	OYHS-Z120V-50A	AOC-S-062	2026-04-13
Variable frequency power supply	WOSEN	BP6005	AOC-S-129	2026-04-13
Variable frequency power supply	AIPUSI	KDF-500	AOC-S-130	2026-04-13
Oscilloscope	TEKTRONIX	MDO3012	AOC-S-028	2026-04-13

Photo Document

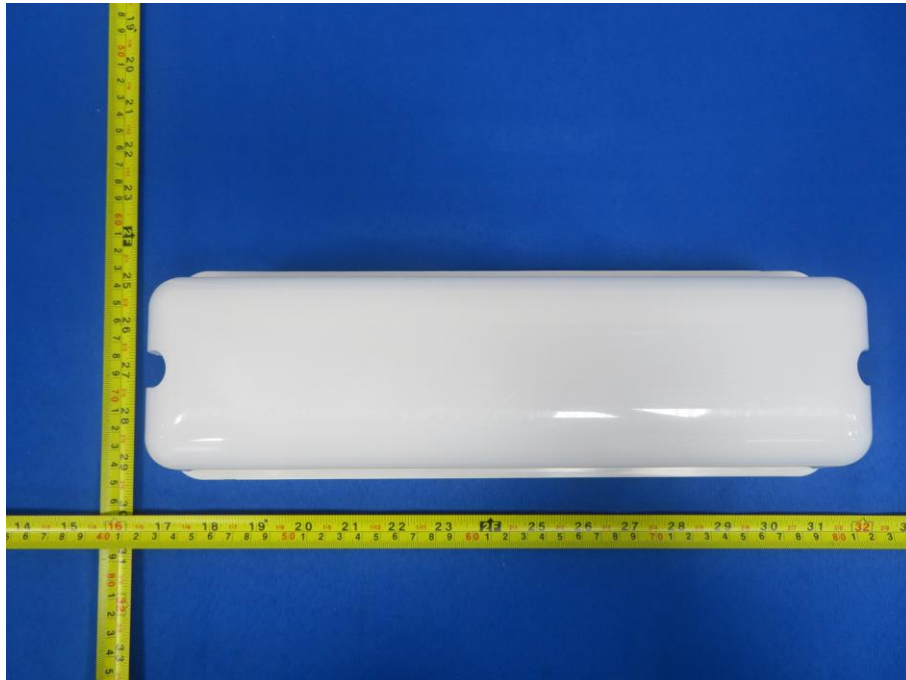


Fig.1



Fig.2

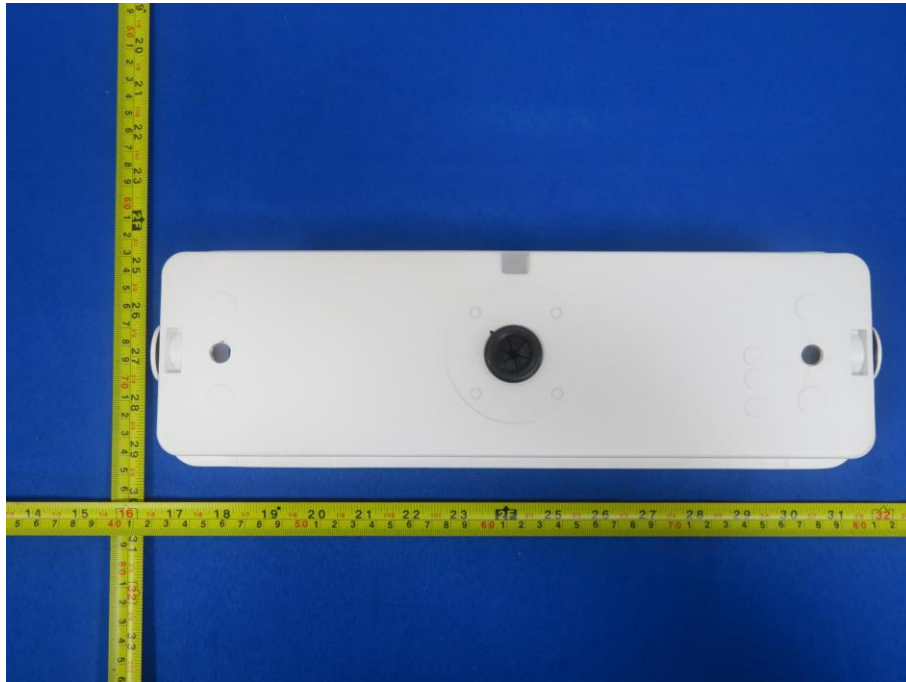


Fig.3



Fig.4



Fig.5



Fig.6

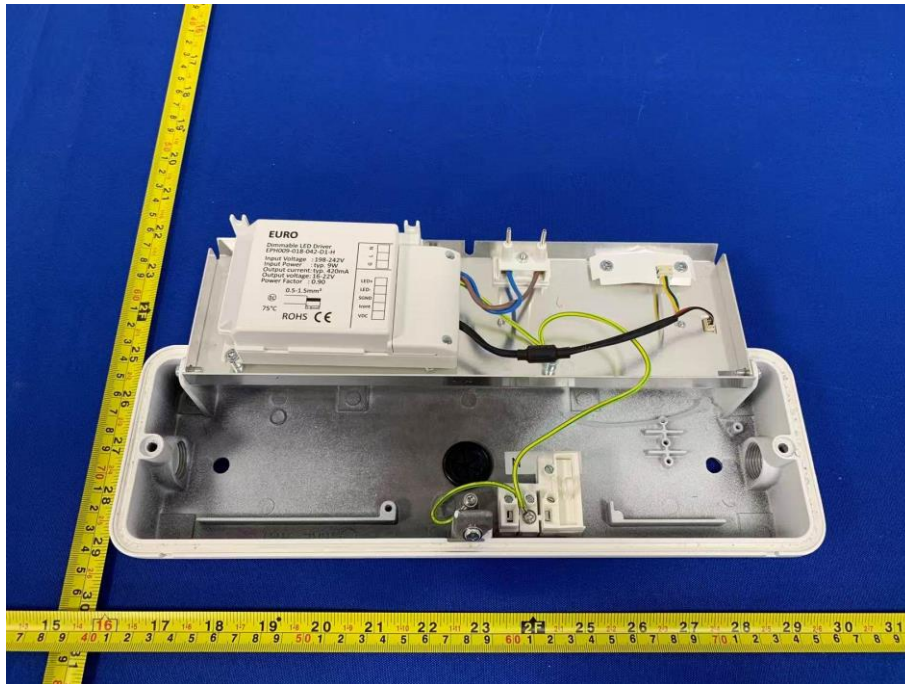


Fig.7

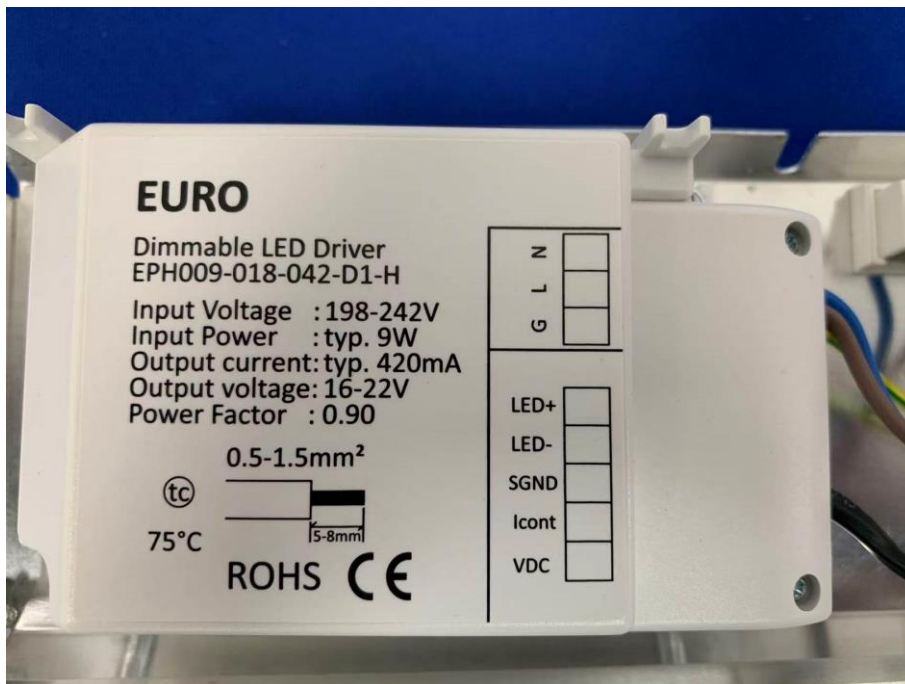


Fig.8

-- End of Report --

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