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Optical Report For Luminaires

Applicant : GlacialTech Inc

Applicant Add : 9Fl., No.352, Sec.2, Jung Shan Rd., Jung He City, Taipei,
Taiwan, 235, R.O.C

Report No : GO11122701-3

Product Name : LED Flood light

Model No : GL-FL12-CW

Sample No : 11122701-3

Test Specification : IESNA LM-79-08, Approved Method: Electrical and
Photometric Measurements of Solid-State Lighting
Products. (Deviation - Type C Goniophotometer of
Rotating Luminaire)

Test Date : 2011-12-HE

Issue Date : 201G-€F-€G

- Note: 1. The test results of this report relate only to the tested sample identified in this report.
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3. The data in report cannot be used for advertisement, publication and promotion.

Tested By:

Reviewed By:

Chuck Lee

David Yuan

Project Engineer

Manager

Great One Global Certification Co.

Product: LED Spotlight
Manufacturer: GlacialTech Inc
Sample No.: GL-FL12-CW
Tested By: Nadia Chen

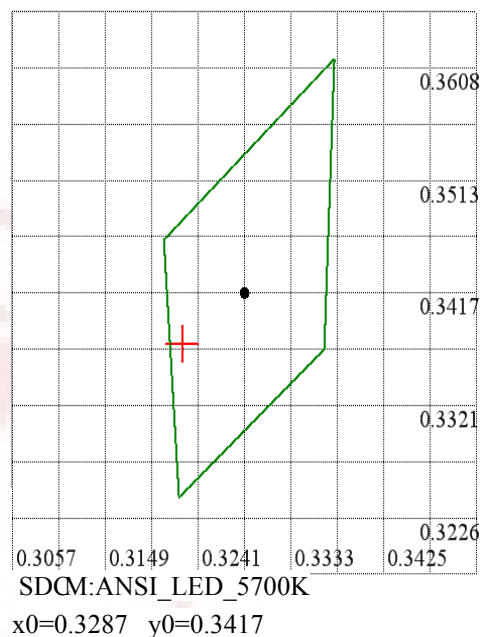
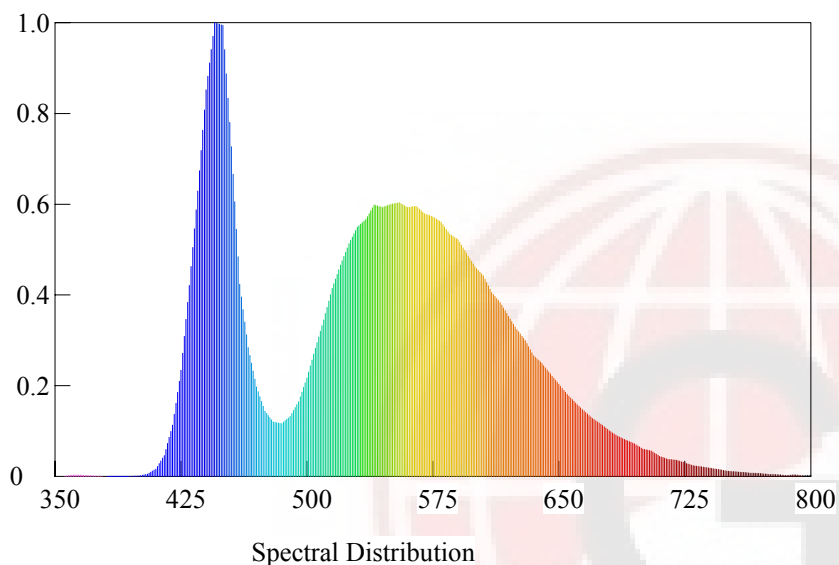
Date:12-29-2011
Reviewed By: Roy Kao

Test Condition

Temperature: 24.1°C
Spectrum Range: 350-800 nm

RH:59%
Scan Step: 5 nm

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.3225$ $y=0.3374$ $u'=0.2014$ $v'=0.4742$

Correlated Color Temperature: 5964 K

Dominant Wavelength: 496.0 nm(E)

Luminous Flux: 706.652 lm

Purity:0.0349

Chromaticity Difference: 0.0027Duv

Peak Wavelength: 447.3 nm

Color Ratio: $K_r=29.8\%$ $K_g=61.1\%$ $K_b=9.1\%$

Color Tolerance: 0.0 SDCM

Bandwidth:26.9nm

Radiant Flux: 2.213 W

Rendering Index: $R_a=70.6$

$R_1=69$ $R_2=74$ $R_3=75$ $R_4=73$ $R_5=70$ $R_6=64$ $R_7=79$ $R_8=61$

$R_9=-26$ $R_{10}=36$ $R_{11}=70$ $R_{12}=42$ $R_{13}=70$ $R_{14}=86$ $R_{15}=65$

Electric Parameters

Voltage: 120.2 V

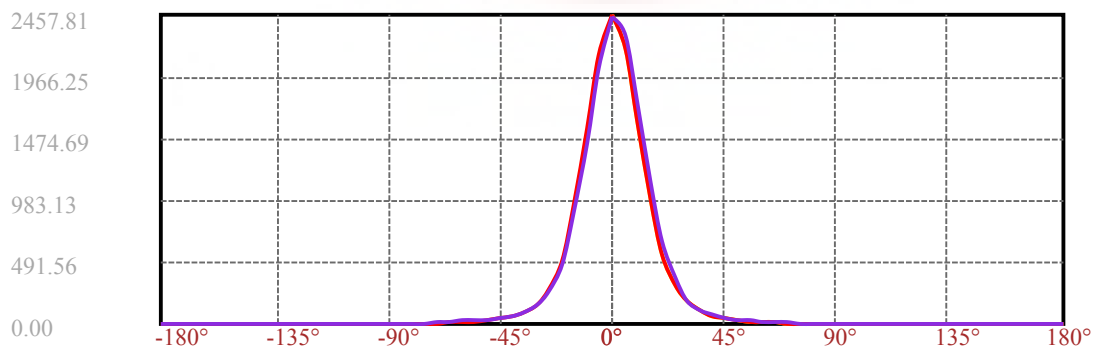
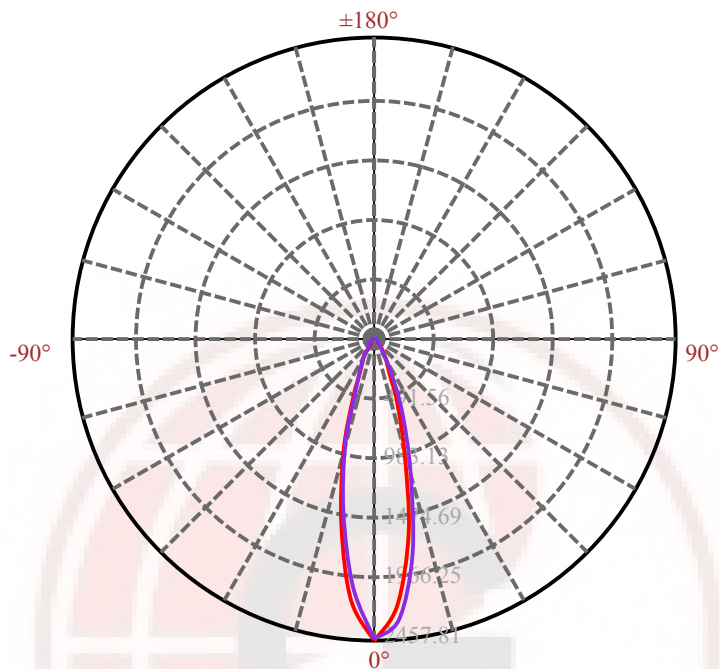
Current: 0.128 A

Power Factor: 0.859

Power: 13.205 W

Luminous Efficacy: 53.514 lm/W

Light Distribution Curve [Unit: cd]



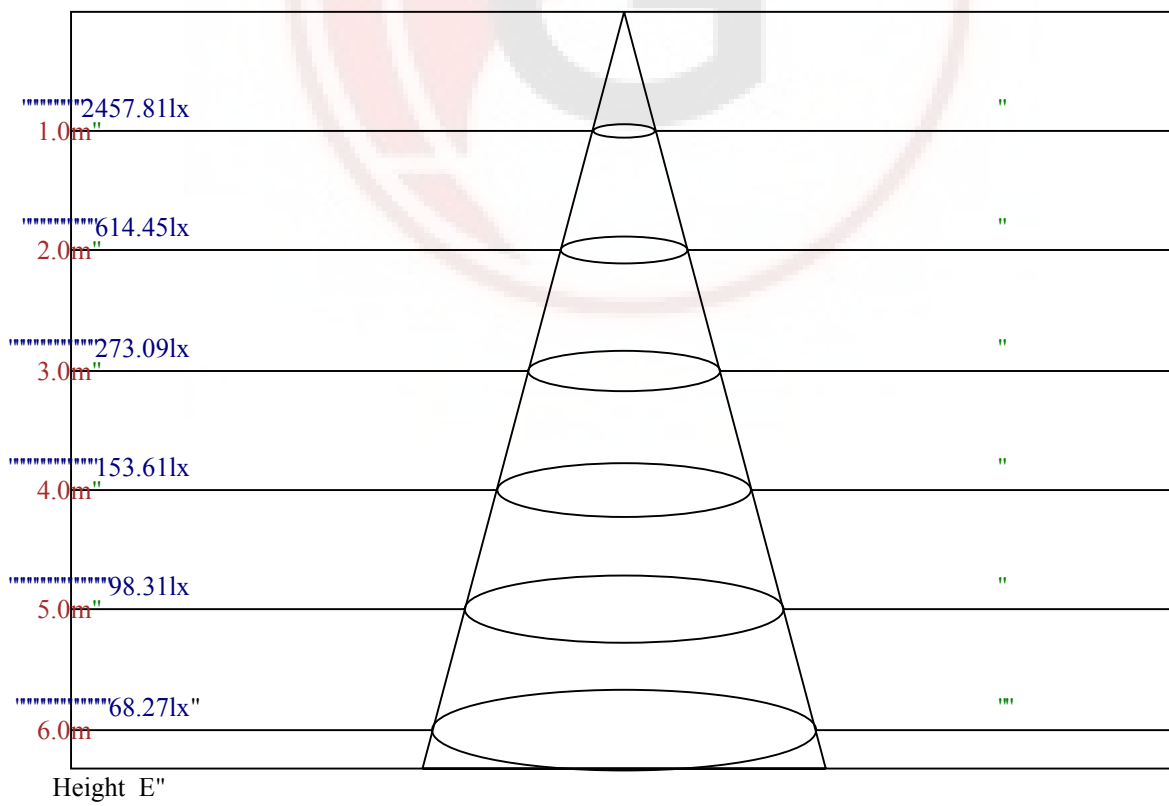
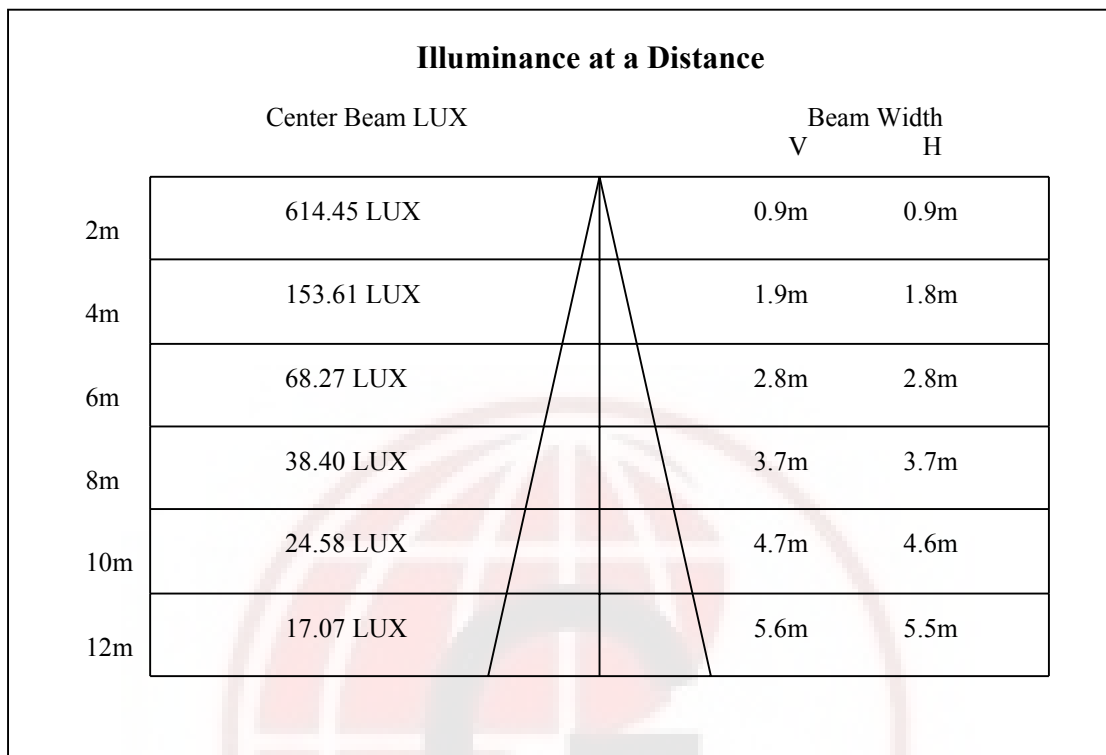
C0(Max): —
 C0/C180: —
 C90/C270: —

Equipment: GMS1800
 Temperature($^\circ\text{C}$): 24.1

Date: 2011/12/30
 Humidity(%): 64.0%

Operator: Nadia Chen
 Distance(m): 12.50

Lux distance Curve



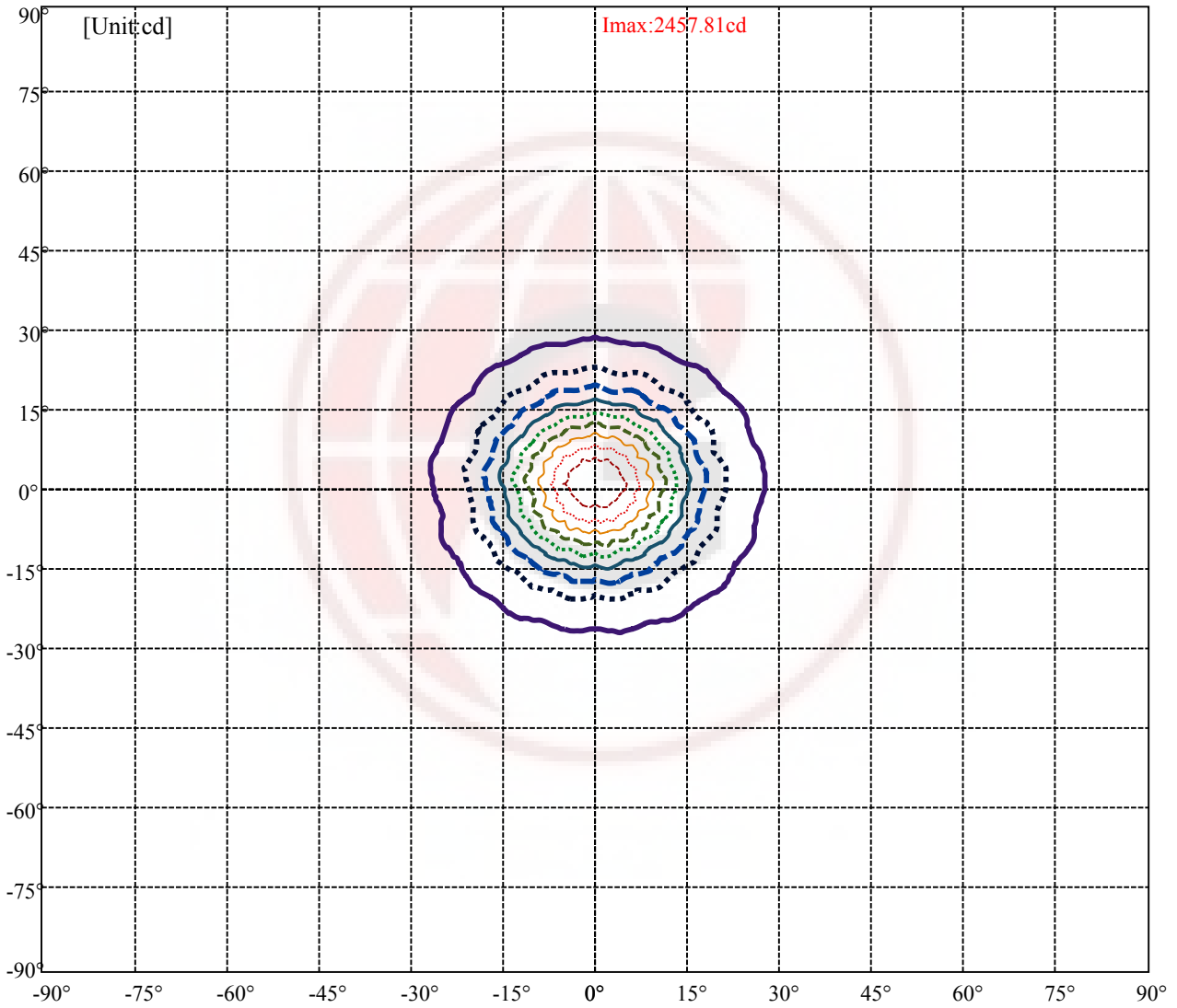
Equipment: GMS1800
 Temperature(°C): 24.1

Date: 2011/12/30
 Humidity(%): 64.0%

Operator: Nadia Chen
 Distance(m): 12.50

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ISO-Intensity(V-H)"



(10%Imax) 243.594	—
(20%Imax) 487.188	⋯
(30%Imax) 730.781	- · -
(40%Imax) 974.375	—
(50%Imax) 1217.97	⋯
(60%Imax) 1461.56	- · -
(70%Imax) 1705.16	—
(80%Imax) 1948.75	⋯
(90%Imax) 2192.34	- · -

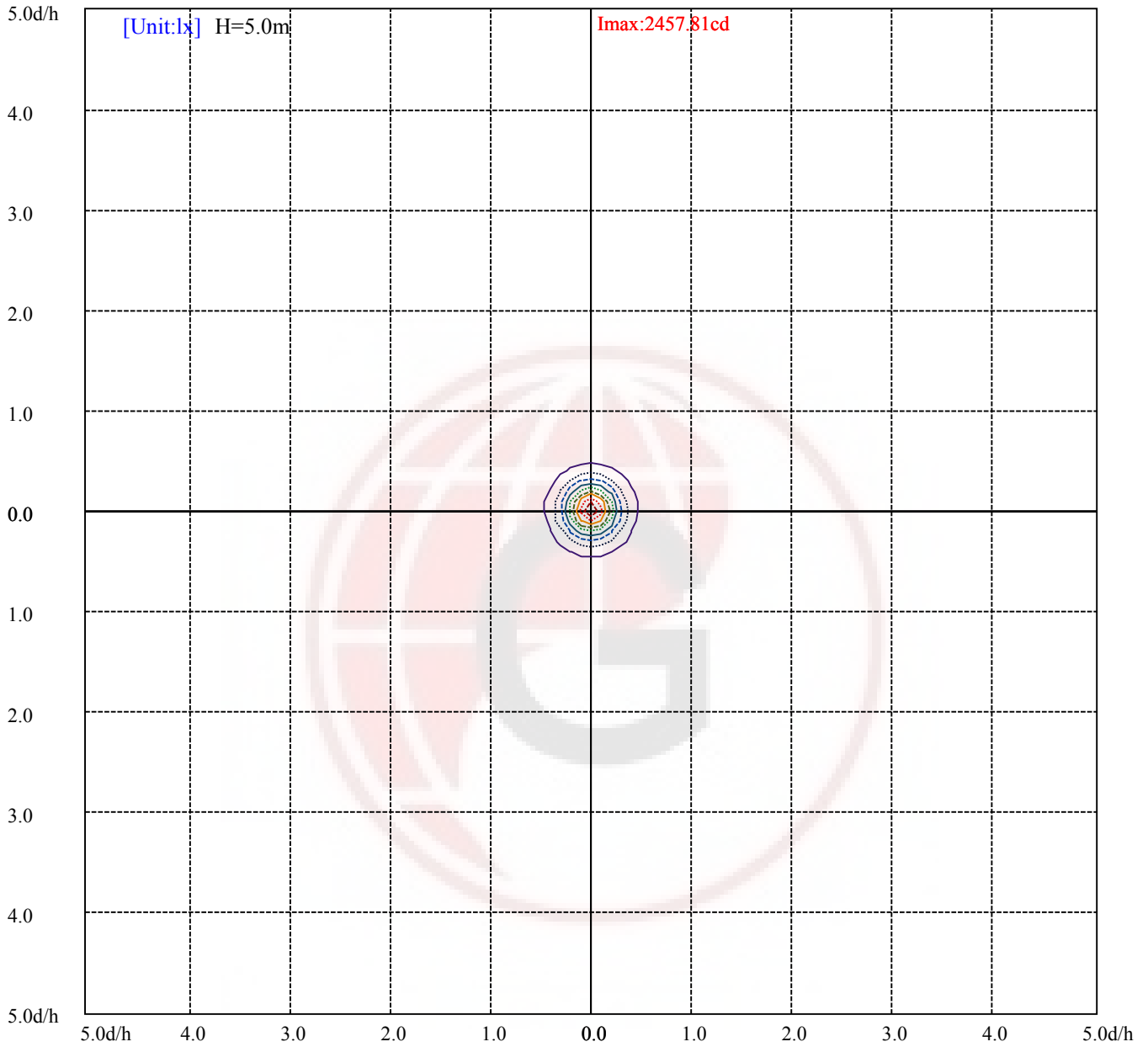
Equipment: GMS1800
Temperature(°C): 24.1

Date: 2011/12/30
Humidity(%): 64.0%

Operator: Nadia Chen
Distance(m): 12.50

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ISO illuminance diagram"



(10%Emax) 9.80932	———
(20%Emax) 19.61868
(30%Emax) 29.428	- - - - -
(40%Emax) 39.23736	———
(50%Emax) 49.0468
(60%Emax) 58.856	- - - - -
(70%Emax) 68.6652	———
(80%Emax) 78.4748
(90%Emax) 88.284	- - - - -

Equipment: GMS1800
Temperature(°C): 24.1

Date: 2011/12/30
Humidity(%): 64.0%

Operator: Nadia Chen
Distance(m): 12.50

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Intensity data(cd)"

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	2457.81	2190.63	1612.50	993.75	546.88	306.25	181.25	101.56	62.50
10.0	2448.44	2223.44	1659.38	1035.94	573.44	320.31	179.69	104.69	64.06
20.0	2454.69	2175.00	1565.63	982.81	501.56	290.63	168.75	93.75	62.50
30.0	2450.00	2259.38	1715.63	1051.56	598.44	334.38	184.38	107.81	73.44
40.0	2456.25	2154.69	1617.19	1021.88	540.63	304.69	175.00	101.56	67.19
50.0	2448.44	2284.38	1753.13	1087.50	621.88	343.75	185.94	107.81	71.88
60.0	2454.69	2223.44	1667.19	1045.31	576.56	304.69	171.88	98.44	62.50
70.0	2437.50	2307.81	1759.38	1132.81	681.25	348.44	184.38	109.38	67.19
80.0	2446.88	2237.50	1659.38	1081.25	567.19	317.19	173.44	96.88	60.94
90.0	2435.94	2292.19	1776.56	1131.25	664.06	359.38	184.38	106.25	68.75
100.0	2442.19	2215.63	1665.63	1064.06	595.31	320.31	170.31	95.31	62.50
110.0	2431.25	2309.38	1742.19	1129.69	681.25	346.88	185.94	101.56	64.06
120.0	2443.75	2187.50	1631.25	1054.69	564.06	307.81	168.75	92.19	59.38
130.0	2443.75	2260.94	1731.25	1079.69	618.75	339.06	173.44	98.44	64.06
140.0	2448.44	2182.81	1620.31	1006.25	548.44	281.25	159.38	92.19	57.81
150.0	2448.44	2250.00	1679.69	1059.38	600.00	314.06	167.19	100.00	62.50
160.0	2456.25	2139.06	1567.19	992.19	515.63	276.56	154.69	87.50	57.81
170.0	2448.44	2217.19	1659.38	1071.88	568.75	306.25	157.81	95.31	62.50
180.0	2457.81	2132.81	1550.00	950.00	509.38	276.56	150.00	87.50	56.25
190.0	2448.44	2085.94	1432.81	906.25	484.38	245.31	142.19	84.38	54.69
200.0	2454.69	2170.31	1565.63	959.38	532.81	282.81	153.13	90.63	60.94
210.0	2450.00	2056.25	1464.06	898.44	467.19	259.38	146.88	85.94	56.25
220.0	2456.25	2154.69	1573.44	932.81	526.56	282.81	157.81	95.31	62.50
230.0	2448.44	2045.31	1445.31	885.94	470.31	267.19	145.31	89.06	60.94
240.0	2454.69	2125.00	1540.63	939.06	520.31	290.63	168.75	96.88	62.50
250.0	2437.50	2050.00	1421.88	876.56	481.25	260.94	151.56	92.19	59.38
260.0	2446.88	2135.94	1521.88	932.81	534.38	287.50	160.94	98.44	64.06
270.0	2435.94	2026.56	1434.38	892.19	476.56	265.63	153.13	90.63	60.94
280.0	2442.19	2121.88	1542.19	975.00	528.13	292.19	170.31	98.44	65.63
290.0	2431.25	2054.69	1429.69	881.25	487.50	267.19	157.81	93.75	62.50
300.0	2443.75	2148.44	1604.69	935.94	535.94	296.88	173.44	107.81	68.75
310.0	2443.75	2057.81	1464.06	846.88	481.25	278.13	157.81	100.00	65.63
320.0	2448.44	2150.00	1573.44	956.25	526.56	303.13	178.13	109.38	70.31
330.0	2448.44	2093.75	1470.31	896.87	490.63	278.13	165.63	96.88	64.06
340.0	2456.25	2182.81	1604.69	956.25	542.19	306.25	171.88	106.25	70.31
350.0	2448.44	2101.56	1504.69	903.13	492.19	278.13	162.50	93.75	59.38
360.0	2457.81	2190.63	1612.50	993.75	546.88	306.25	181.25	101.56	62.50

Equipment: GMS1800
Temperature(°C): 24.1

Date: 2011/12/30
Humidity(%): 64.0%

Operator: Nadia Chen
Distance(m): 12.50

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Intensity data(cd)"

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	43.75	31.25	21.88	18.75	7.81	4.69	1.56	0.00	0.00
10.0	43.75	31.25	23.44	18.75	10.94	4.69	1.56	1.56	3.13
20.0	43.75	31.25	23.44	17.19	10.94	4.69	1.56	3.13	1.56
30.0	48.44	34.38	25.00	18.75	10.94	3.13	1.56	1.56	1.56
40.0	45.31	32.81	21.88	15.63	7.81	6.25	3.13	1.56	1.56
50.0	50.00	34.38	23.44	14.06	9.38	6.25	1.56	1.56	1.56
60.0	45.31	29.69	18.75	14.06	7.81	4.69	1.56	0.00	1.56
70.0	45.31	31.25	21.88	17.19	10.94	6.25	1.56	0.00	1.56
80.0	42.19	28.13	21.88	20.31	12.50	6.25	3.13	1.56	1.56
90.0	45.31	31.25	25.00	21.88	15.63	7.81	3.13	1.56	1.56
100.0	40.63	28.13	23.44	20.31	14.06	6.25	3.13	1.56	1.56
110.0	45.31	29.69	21.88	18.75	10.94	6.25	3.13	1.56	1.56
120.0	42.19	28.13	20.31	14.06	7.81	4.69	1.56	1.56	1.56
130.0	45.31	32.81	21.88	14.06	9.38	7.81	3.13	1.56	1.56
140.0	40.63	31.25	23.44	14.06	9.38	4.69	3.13	1.56	1.56
150.0	43.75	32.81	23.44	18.75	10.94	4.69	1.56	0.00	1.56
160.0	40.63	29.69	23.44	15.63	10.94	4.69	1.56	0.00	1.56
170.0	42.19	31.25	21.88	15.63	10.94	4.69	1.56	1.56	0.00
180.0	40.63	29.69	21.88	15.63	9.38	3.13	0.00	1.56	0.00
190.0	39.06	28.13	21.88	15.63	9.38	3.13	1.56	1.56	0.00
200.0	42.19	32.81	23.44	17.19	10.94	4.69	3.13	0.00	0.00
210.0	39.06	29.69	21.88	15.63	7.81	4.69	1.56	1.56	1.56
220.0	45.31	31.25	21.88	15.63	9.38	6.25	1.56	1.56	1.56
230.0	40.63	29.69	20.31	10.94	9.38	4.69	1.56	1.56	1.56
240.0	45.31	29.69	18.75	12.50	9.38	4.69	0.00	1.56	0.00
250.0	40.63	25.00	20.31	15.63	9.38	3.13	3.13	1.56	1.56
260.0	43.75	29.69	21.88	20.31	15.63	7.81	3.13	1.56	1.56
270.0	40.63	26.56	23.44	23.44	15.63	7.81	1.56	1.56	1.56
280.0	45.31	28.13	23.44	20.31	15.63	7.81	3.13	1.56	1.56
290.0	42.19	28.13	18.75	17.19	9.38	6.25	1.56	1.56	0.00
300.0	46.88	32.81	18.75	14.06	9.38	6.25	3.13	1.56	1.56
310.0	45.31	29.69	20.31	12.50	7.81	6.25	1.56	0.00	1.56
320.0	48.44	34.38	23.44	15.63	9.38	6.25	3.13	1.56	1.56
330.0	43.75	31.25	21.88	17.19	9.38	4.69	1.56	1.56	1.56
340.0	45.31	32.81	23.44	17.19	10.94	3.13	1.56	1.56	1.56
350.0	42.19	29.69	21.88	15.63	9.38	4.69	1.56	1.56	1.56
360.0	43.75	31.25	21.88	18.75	7.81	4.69	1.56	0.00	0.00

Equipment: GMS1800
Temperature(°C): 24.1

Date: 2011/12/30
Humidity(%): 64.0%

Operator: Nadia Chen
Distance(m): 12.50

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Intensity data(cd)"

C/\u03b3(\u00b0)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1.56	0.00	0.00	0.00	1.56	1.56	0.00	1.56	1.56
10.0	1.56	0.00	0.00	1.56	1.56	1.56	0.00	1.56	0.00
20.0	1.56	1.56	0.00	1.56	1.56	1.56	0.00	1.56	1.56
30.0	1.56	0.00	1.56	1.56	0.00	1.56	0.00	1.56	1.56
40.0	0.00	0.00	0.00	0.00	1.56	3.13	0.00	0.00	1.56
50.0	1.56	0.00	1.56	1.56	0.00	0.00	1.56	1.56	1.56
60.0	1.56	0.00	0.00	1.56	1.56	1.56	1.56	1.56	0.00
70.0	0.00	1.56	0.00	1.56	0.00	1.56	1.56	0.00	1.56
80.0	0.00	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
90.0	1.56	1.56	1.56	1.56	0.00	3.13	3.13	1.56	1.56
100.0	0.00	1.56	1.56	0.00	1.56	1.56	0.00	0.00	1.56
110.0	1.56	1.56	0.00	0.00	1.56	1.56	1.56	1.56	0.00
120.0	0.00	0.00	1.56	0.00	1.56	1.56	1.56	0.00	1.56
130.0	1.56	3.13	1.56	1.56	0.00	0.00	1.56	1.56	0.00
140.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
150.0	3.13	1.56	1.56	0.00	0.00	1.56	1.56	1.56	3.13
160.0	1.56	0.00	1.56	0.00	1.56	1.56	1.56	1.56	1.56
170.0	1.56	1.56	0.00	1.56	1.56	1.56	1.56	0.00	0.00
180.0	0.00	1.56	1.56	0.00	1.56	3.13	0.00	1.56	0.00
190.0	0.00	1.56	0.00	1.56	0.00	0.00	0.00	0.00	1.56
200.0	1.56	1.56	1.56	1.56	3.13	0.00	1.56	0.00	0.00
210.0	1.56	1.56	1.56	0.00	0.00	1.56	1.56	1.56	0.00
220.0	0.00	1.56	1.56	1.56	1.56	1.56	0.00	1.56	1.56
230.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
240.0	1.56	1.56	1.56	1.56	0.00	1.56	1.56	0.00	1.56
250.0	1.56	1.56	1.56	0.00	3.13	1.56	1.56	1.56	1.56
260.0	1.56	0.00	3.13	0.00	1.56	1.56	1.56	0.00	1.56
270.0	1.56	1.56	1.56	1.56	1.56	1.56	0.00	1.56	1.56
280.0	1.56	1.56	1.56	1.56	1.56	1.56	0.00	0.00	1.56
290.0	0.00	1.56	1.56	1.56	0.00	1.56	1.56	1.56	1.56
300.0	1.56	1.56	1.56	1.56	1.56	1.56	0.00	1.56	0.00
310.0	0.00	3.13	0.00	1.56	0.00	1.56	1.56	1.56	1.56
320.0	1.56	1.56	0.00	0.00	0.00	0.00	1.56	1.56	1.56
330.0	1.56	1.56	1.56	0.00	1.56	0.00	0.00	1.56	1.56
340.0	1.56	1.56	0.00	1.56	1.56	0.00	0.00	1.56	1.56
350.0	1.56	1.56	1.56	1.56	1.56	0.00	1.56	1.56	0.00
360.0	1.56	0.00	0.00	0.00	1.56	1.56	0.00	1.56	1.56

Equipment: GMS1800
Temperature(\u00b0C): 24.1

Date: 2011/12/30
Humidity(%): 64.0%

Operator: Nadia Chen
Distance(m): 12.50

"

Intensity data(cd)"

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
10.0	1.56	0.00	1.56	1.56	1.56	1.56	1.56	1.56	3.13
20.0	1.56	1.56	0.00	1.56	1.56	3.13	1.56	3.13	1.56
30.0	1.56	0.00	1.56	1.56	3.13	1.56	3.13	1.56	1.56
40.0	1.56	1.56	0.00	0.00	1.56	1.56	1.56	1.56	1.56
50.0	0.00	1.56	1.56	1.56	1.56	3.13	3.13	3.13	1.56
60.0	1.56	0.00	1.56	1.56	1.56	1.56	1.56	1.56	1.56
70.0	1.56	0.00	1.56	1.56	1.56	1.56	1.56	1.56	1.56
80.0	1.56	0.00	0.00	0.00	1.56	3.13	3.13	1.56	1.56
90.0	0.00	1.56	0.00	0.00	1.56	1.56	3.13	1.56	1.56
100.0	1.56	0.00	1.56	1.56	1.56	3.13	0.00	1.56	1.56
110.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
120.0	0.00	1.56	1.56	1.56	1.56	0.00	3.13	1.56	3.13
130.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	3.13
140.0	1.56	1.56	3.13	1.56	1.56	0.00	3.13	1.56	0.00
150.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
160.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	0.00	1.56
170.0	0.00	1.56	1.56	1.56	1.56	3.13	3.13	3.13	1.56
180.0	0.00	1.56	0.00	1.56	1.56	1.56	3.13	0.00	0.00
190.0	1.56	1.56	0.00	1.56	1.56	1.56	3.13	1.56	1.56
200.0	1.56	1.56	0.00	1.56	1.56	1.56	1.56	1.56	1.56
210.0	1.56	1.56	1.56	1.56	3.13	1.56	1.56	1.56	1.56
220.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
230.0	1.56	1.56	1.56	1.56	1.56	1.56	0.00	1.56	1.56
240.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
250.0	1.56	1.56	1.56	0.00	1.56	1.56	1.56	1.56	1.56
260.0	1.56	0.00	3.13	1.56	0.00	1.56	0.00	1.56	1.56
270.0	1.56	0.00	1.56	3.13	0.00	1.56	1.56	1.56	1.56
280.0	1.56	1.56	0.00	1.56	1.56	1.56	1.56	1.56	1.56
290.0	1.56	1.56	1.56	1.56	0.00	1.56	1.56	3.13	1.56
300.0	1.56	1.56	1.56	1.56	3.13	1.56	1.56	1.56	3.13
310.0	0.00	1.56	0.00	1.56	1.56	1.56	1.56	0.00	1.56
320.0	1.56	1.56	0.00	0.00	1.56	3.13	3.13	3.13	1.56
330.0	0.00	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
340.0	0.00	3.13	1.56	1.56	1.56	1.56	1.56	1.56	1.56
350.0	0.00	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
360.0	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56

Equipment: GMS1800
Temperature(°C): 24.1

Date: 2011/12/30
Humidity(%): 64.0%

Operator: Nadia Chen
Distance(m): 12.50

"

Intensity data(cd)"

C/γ(°)	180.0
0.0	1.56
10.0	1.56
20.0	1.56
30.0	1.56
40.0	1.56
50.0	1.56
60.0	3.13
70.0	0.00
80.0	1.56
90.0	1.56
100.0	1.56
110.0	1.56
120.0	1.56
130.0	3.13
140.0	3.13
150.0	1.56
160.0	1.56
170.0	1.56
180.0	1.56
190.0	1.56
200.0	1.56
210.0	1.56
220.0	1.56
230.0	1.56
240.0	3.13
250.0	0.00
260.0	1.56
270.0	1.56
280.0	1.56
290.0	1.56
300.0	1.56
310.0	3.13
320.0	3.13
330.0	1.56
340.0	1.56
350.0	1.56
360.0	1.56





廣益全球驗證有限公司
新北市中和區橋和路120號9樓之二
TEL: 886 - 2 - 2248.0810
Fax: 886 - 2 - 2248.0811

Great One Global Certification Co Ltd
9F-2, No.120, Qiaohe Rd., Zhonghe Dist.,
New Taipei City 235, Taiwan (R.O.C.)
Email: sales@go-safety.com.tw

1. Luminaire Specification :

- (1) Input Voltage/Frequency : 120.22 V ac / 60Hz
- (2) Input Watt : 12.9 W
- (3) Input Current : 0.122 A
- (4) Total Luminous Flux Output : 759.49 lm
- (5) Luminaire Efficacy : 58.88 lm/W
- (6) Central Intensity (cd): 2457.813
- (7) Maximum Intensity(cd): 2457.813
- (8) PF: 0.881
- (9) Beam angle: (C0-C180) 25.9 (C90-C270) 25.9

2. Description of EUT Setup :

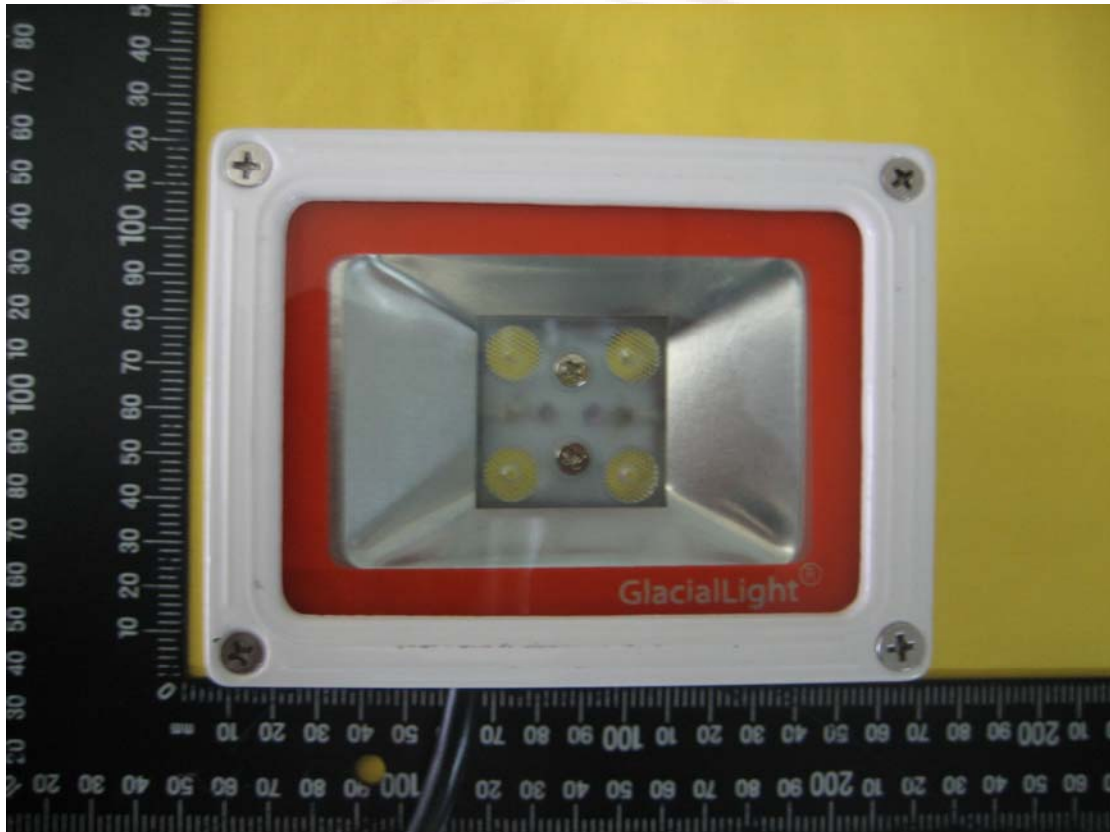
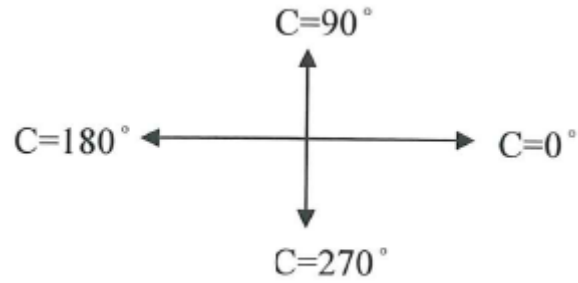
- (1) Operating Orientation : The light source is considered as horizontal.
- (2) Light Source : LED
- (3) Stabilization time : 1 Hour
- (4) Environment Condition : Temperature: 25 ± 1 °C , Humidity: $60 \pm 20\%$



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3. Photograph of EUT :





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4. Equipments List:

Equipment ID	Equipment Type	Manufacturer	Model #	Cal. Date	Due Date	Range Used
L201	2m Integrating Sphere	SENSING		N/A	N/A	
L202	Spectroradio meter	SENSING	SL300	N/A	N/A	
L203	AC Power Source	EXTECH ELECTRONICS	6190 N/A		N/A	AC 0~150VAC4.2A
L204	Gonio photometer-1980	SENSING	GMS1800	N/A	N/A	
L205	GMS-1800B Goniophotometer System	SENSING	2011/1	1/2	2013/11/1	
L219	AC Power Source	All Power Electrics Co	APW-150N	N/A	N/A	AC 0~150VAC4.2A
L220	Power Meter	Yokogawa	WT-210	2011/8/26	2012/8/25	
L221	Irradiance Standard Lamp	SENSING LSD10	03029	2011/5/23	2012/5/22	
L222	Power Meter	Yokogawa	WT-210	2011/10/13	2012/10/12	