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Goniophotometer Measurement 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 : GO1409010102

Product Name : LED Bay Light

Model No : GL-BL60-CW

Sample No : 14090101-2

Test Specification : IESNA LM-79-08, Approved Method: Electrical and
Photometric Measurements of Solid-State Lighting
Products.

Test Date : 2014-9-3

Issue Date : 2014-9-3

- Note: 1. The test results of this report relate only to the tested sample identified in this report.
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Tested By:

Reviewed By:

Alex Sung

Donald Chang

Project Engineer

Team Leader

Great One Global Certification Co., Ltd.

Product: GL-BL60-CW

Manufacturer: GlacialTech Inc.

Sample No.: 14090101-2

Tested By: Alex Sung

Date: 9-3-2014

Reviewed By: David Yuan

Test Condition

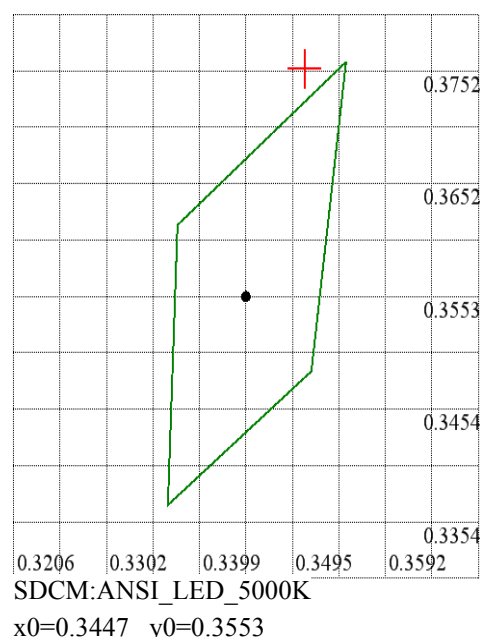
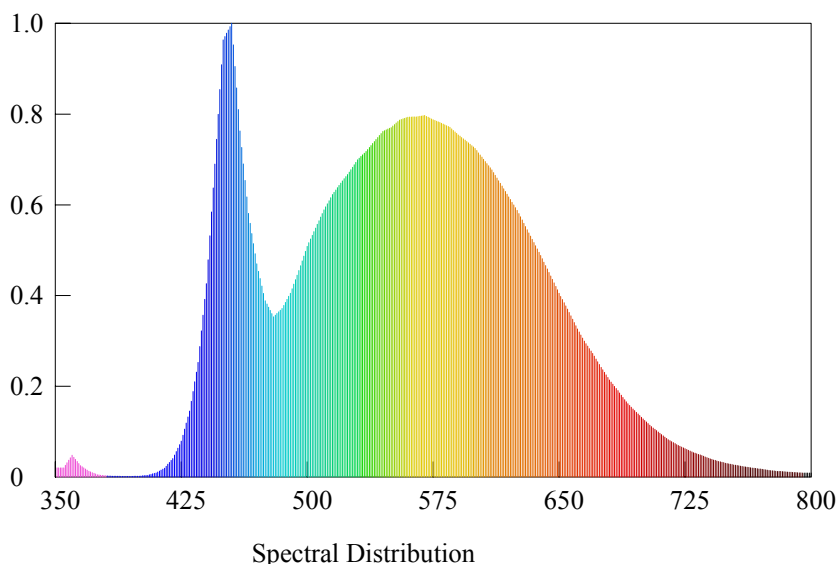
Temperature: 25.5°C

Spectrum Range: 350-800 nm

RH: 60.0%

Scan Step: 5 nm

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.3508$ $y=0.3754$ $u'=0.2063$ $v'=0.4966$

Correlated Color Temperature: 4883 K

Dominant Wavelength: 567.0 nm(E)

Chromaticity Difference: 0.0093Duv

Purity: 0.1792

Color Ratio: $K_r=32.6\%$ $K_g=56.1\%$ $K_b=11.3\%$

Peak Wavelength: 453.2 nm

Bandwidth: 26.4nm

Color Tolerance: 0.0 SDCM

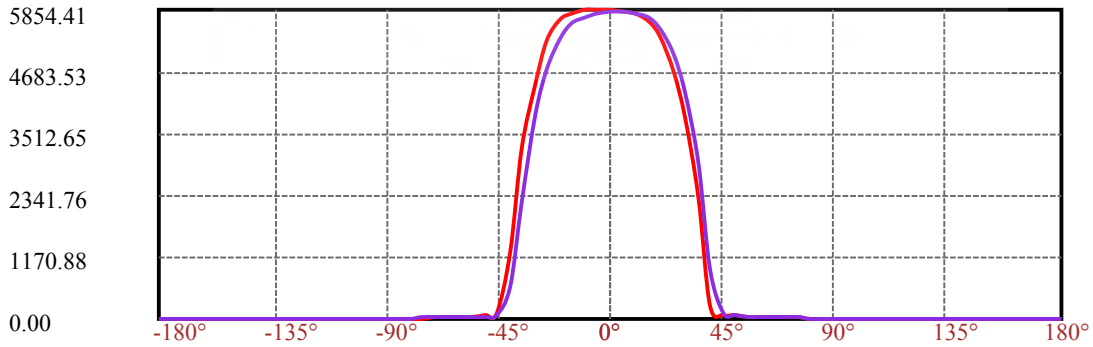
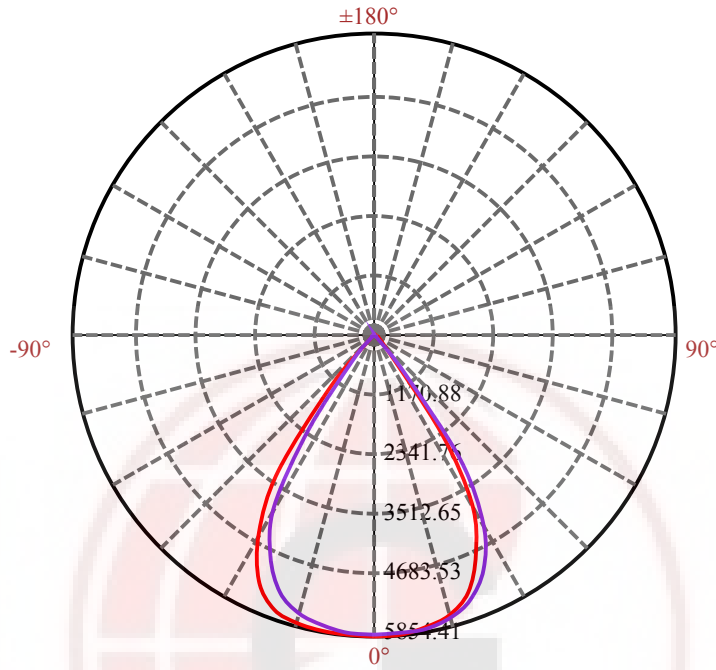
Rendering Index: $R_a=81.6$

Radiant Flux: 15.949 W

R1=78 R2=87 R3=94 R4=79 R5=78 R6=81 R7=89 R8=67

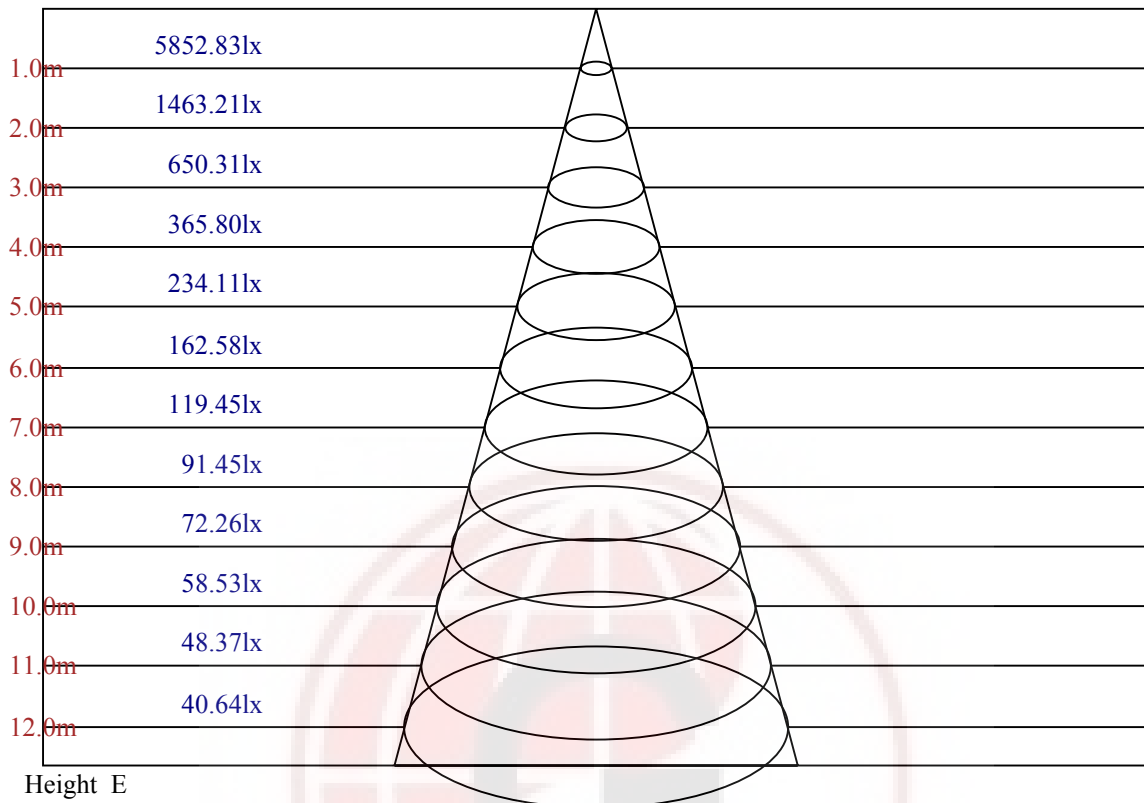
R9=7 R10=69 R11=76 R12=54 R13=81 R14=96 R15=72

Light Distribution Curve [Unit: cd]

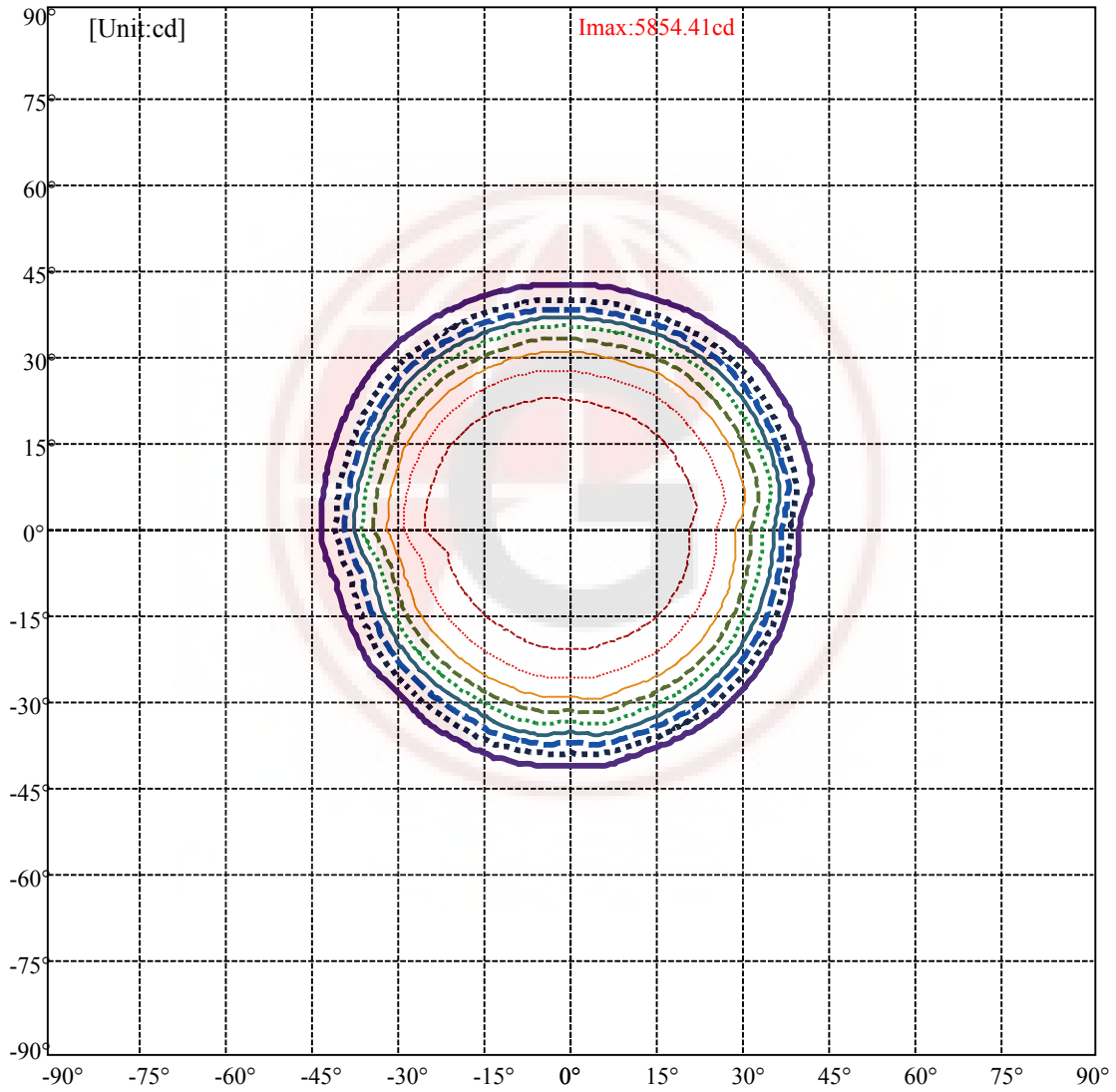


C0/C180: ————
C90/C270: ————

Lux distance Curve



ISO-Intensity(V-H)



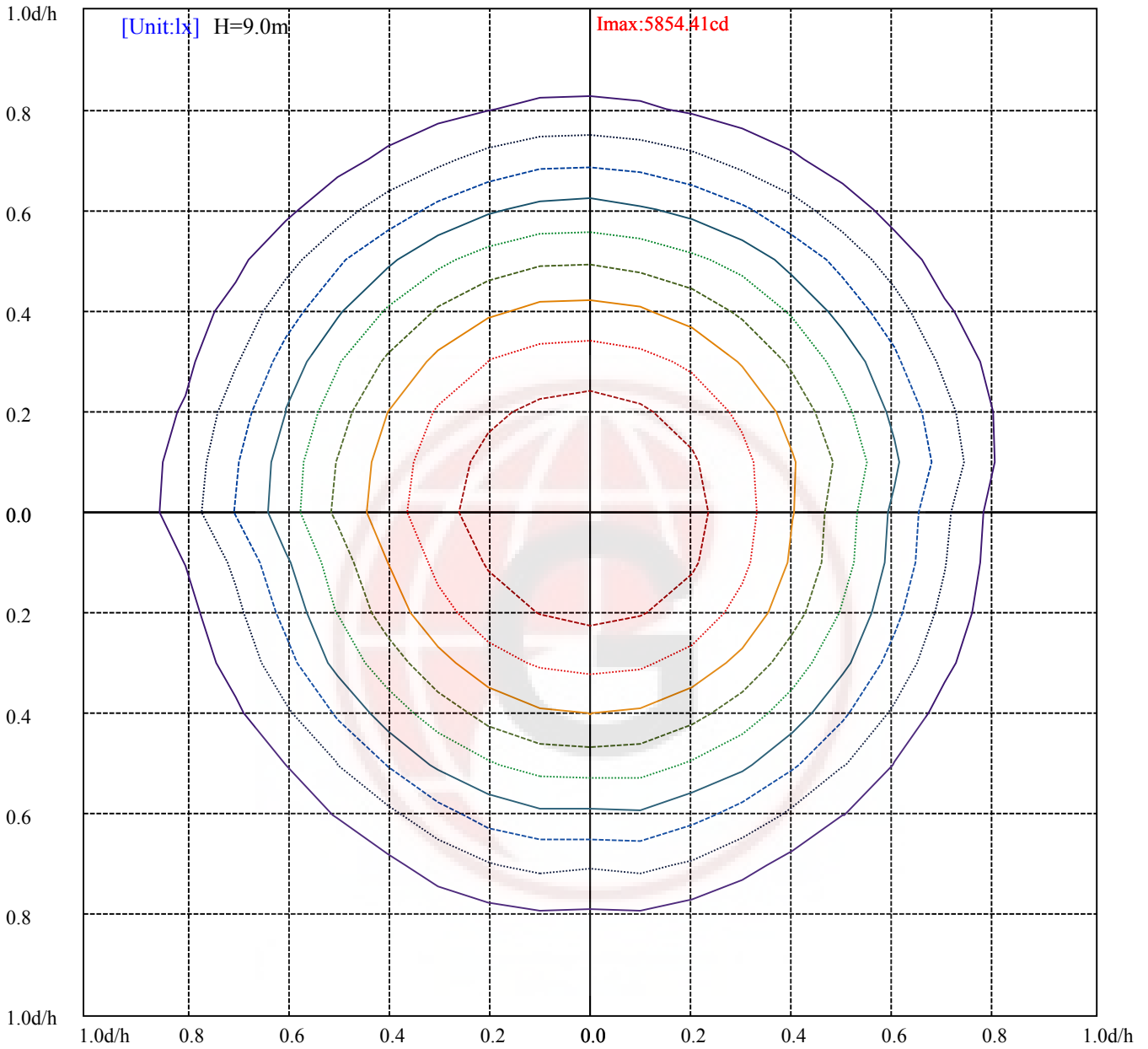
(10%Imax)	585.441	———
(20%Imax)	1170.88
(30%Imax)	1756.32	- - - - -
(40%Imax)	2341.76	———
(50%Imax)	2927.21
(60%Imax)	3512.65	- - - - -
(70%Imax)	4098.09	———
(80%Imax)	4683.53
(90%Imax)	5268.97	- - - - -

Equipment: HW-1015
Temperature(°C): 25.4

Date: 2014/9/3
Humidity(%): 60.6%

Operator: Alex Sung
Distance(m): 8.90

ISO illuminance diagram



- (10%Emax) 7.183667
- (20%Emax) 14.36728
- (30%Emax) 21.55099
- (40%Emax) 28.73469
- (50%Emax) 35.91827
- (60%Emax) 43.10197
- (70%Emax) 50.28568
- (80%Emax) 57.46926
- (90%Emax) 64.65296

Equipment: HW-1015
Temperature(°C): 25.4

Date: 2014/9/3
Humidity(%): 60.6%

Operator: Alex Sung
Distance(m): 8.90

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	5852.83	5828.27	5773.62	5654.01	5334.00	4705.07	3800.50	2300.26	261.71
10.0	5815.60	5810.05	5770.45	5680.15	5463.91	4983.10	4262.29	2994.93	982.20
20.0	5817.18	5807.68	5767.28	5668.27	5446.48	4965.67	4244.86	2956.91	951.31
30.0	5817.18	5810.85	5767.28	5664.31	5432.22	4949.83	4217.93	2990.97	925.17
40.0	5818.77	5813.22	5769.66	5656.39	5452.82	4960.13	4194.17	2965.62	965.57
50.0	5818.77	5812.43	5768.07	5660.35	5441.73	4963.30	4233.77	2933.15	938.64
60.0	5818.77	5814.81	5770.45	5669.06	5469.45	4971.22	4226.65	2903.84	920.42
70.0	5820.35	5815.60	5768.07	5669.85	5458.36	4964.88	4174.37	2886.41	841.21
80.0	5822.73	5819.56	5774.41	5676.19	5473.41	4980.72	4192.59	2875.32	957.65
90.0	5824.31	5820.35	5783.91	5692.03	5489.25	5026.67	4273.38	2936.31	952.90
100.0	5825.10	5825.10	5791.84	5706.29	5520.94	5114.59	4343.88	3036.12	1034.48
110.0	5825.10	5829.06	5802.92	5726.09	5548.66	5120.13	4369.22	2967.21	1027.35
120.0	5828.27	5830.65	5808.47	5746.69	5579.55	5171.62	4389.03	2956.91	1019.43
130.0	5831.44	5836.98	5816.39	5764.11	5614.40	5216.77	4404.87	3090.77	1074.88
140.0	5829.86	5840.15	5827.48	5781.54	5651.63	5258.75	4446.06	3141.47	1178.65
150.0	5831.44	5839.36	5829.86	5787.08	5664.31	5288.06	4475.37	3108.20	1161.22
160.0	5837.78	5844.11	5829.86	5791.84	5665.10	5280.93	4512.59	3150.18	1142.21
170.0	5842.53	5844.91	5831.44	5793.42	5667.48	5300.73	4487.25	3191.37	1226.17
180.0	5852.83	5854.41	5838.57	5792.63	5660.35	5271.43	4451.60	3227.81	1254.69
190.0	5815.60	5803.72	5763.32	5674.60	5452.82	4850.82	4031.79	2250.36	735.46
200.0	5817.18	5797.38	5756.19	5656.39	5418.76	4869.83	3981.09	2271.74	648.25
210.0	5817.18	5793.42	5741.14	5631.83	5383.90	4793.00	3988.22	2294.71	663.07
220.0	5818.77	5787.87	5727.67	5608.86	5330.83	4743.89	3886.83	2248.77	501.08
230.0	5818.77	5790.25	5718.96	5595.39	5315.78	4728.04	3866.24	2150.55	626.23
240.0	5818.77	5787.87	5718.96	5588.27	5307.86	4720.12	3858.32	2171.15	625.28
250.0	5820.35	5789.46	5722.13	5590.64	5326.87	4764.48	3886.83	2512.54	682.87
260.0	5822.73	5790.25	5726.88	5593.02	5335.59	4783.49	3928.82	2530.76	680.18
270.0	5824.31	5790.25	5723.71	5593.81	5303.11	4720.92	3845.65	2229.76	624.81
280.0	5825.10	5794.21	5737.97	5607.28	5335.59	4754.98	4036.54	2526.80	690.71
290.0	5825.10	5796.59	5740.35	5607.28	5318.95	4724.08	3863.07	2363.63	492.53
300.0	5828.27	5802.92	5742.73	5617.57	5330.83	4709.03	3894.76	2277.29	436.45
310.0	5831.44	5804.51	5750.65	5636.58	5355.39	4747.06	3909.81	2281.25	481.36
320.0	5829.86	5803.72	5758.57	5646.09	5364.89	4720.92	3935.15	2320.85	359.69
330.0	5831.44	5806.88	5760.94	5658.76	5372.02	4737.55	3889.21	2295.51	316.84
340.0	5837.78	5814.81	5768.07	5661.14	5381.53	4732.80	3905.85	2280.46	403.26
350.0	5842.53	5819.56	5768.86	5649.26	5360.93	4728.84	3854.36	2322.44	237.63
360.0	5852.83	5828.27	5773.62	5654.01	5334.00	4705.07	3800.50	2300.26	261.71

GlacialTech Inc.

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	86.89	59.25	38.34	30.34	27.64	24.48	19.01	13.31	4.83
10.0	102.10	64.00	40.71	31.76	27.17	23.53	18.06	12.28	5.15
20.0	100.68	62.26	39.37	30.81	25.90	22.26	16.79	10.14	4.59
30.0	97.67	61.86	40.00	30.81	25.51	22.02	16.63	10.22	4.67
40.0	97.82	62.34	39.84	30.73	26.22	23.05	17.82	10.93	4.44
50.0	98.62	61.78	38.97	30.18	26.93	23.76	17.74	12.12	4.75
60.0	99.57	63.76	38.34	30.02	27.25	24.32	19.33	13.54	5.23
70.0	99.57	62.02	38.18	29.78	27.33	24.56	20.04	13.39	4.91
80.0	101.63	61.78	38.10	29.94	27.25	24.56	20.12	13.23	4.67
90.0	105.03	61.55	38.26	29.23	27.25	24.63	20.12	12.99	4.83
100.0	108.04	62.97	38.18	28.99	27.01	24.48	19.49	12.99	4.83
110.0	106.06	61.70	39.29	29.94	27.33	24.63	19.96	11.96	5.15
120.0	110.81	60.99	39.21	30.50	27.72	24.63	19.88	13.54	5.39
130.0	107.41	60.60	40.00	30.73	27.80	25.03	20.59	14.10	5.31
140.0	109.47	59.88	40.24	30.02	27.57	24.79	19.96	13.78	5.31
150.0	105.98	59.09	39.61	29.86	27.80	24.71	19.09	13.23	5.31
160.0	105.59	59.72	40.16	30.89	27.80	24.71	19.01	13.23	5.15
170.0	102.34	57.11	40.00	30.89	27.41	24.48	18.14	12.99	5.31
180.0	103.53	55.45	39.84	30.97	27.01	24.16	18.06	11.88	5.07
190.0	88.48	49.35	37.23	27.64	25.98	22.50	18.38	11.64	4.59
200.0	87.92	48.40	35.96	27.25	24.71	21.47	16.08	10.06	4.59
210.0	89.67	49.11	36.12	28.75	24.16	20.91	16.24	9.58	4.67
220.0	90.06	48.48	36.28	27.96	24.08	20.67	15.53	9.90	4.59
230.0	87.29	47.92	36.12	27.80	25.43	22.42	17.19	11.88	4.91
240.0	83.01	46.02	35.64	26.93	25.90	22.89	18.46	13.39	5.07
250.0	88.08	49.51	37.39	29.78	26.30	23.84	19.72	15.53	5.86
260.0	92.75	51.17	37.70	31.13	26.85	24.24	20.36	15.21	5.86
270.0	89.98	50.85	37.86	28.83	26.93	23.92	19.88	13.94	5.23
280.0	93.78	55.21	38.42	30.18	26.85	23.92	19.72	13.70	5.23
290.0	88.40	51.72	37.62	28.20	26.93	24.00	19.09	11.49	4.59
300.0	91.65	56.56	38.65	30.02	27.57	24.71	20.04	13.31	5.31
310.0	92.44	57.19	39.61	31.60	27.80	25.19	20.75	15.13	5.62
320.0	93.94	60.28	39.21	30.02	28.12	25.58	20.28	14.57	5.15
330.0	94.81	61.63	39.84	31.05	28.36	25.90	20.12	14.81	5.31
340.0	91.80	62.34	39.76	30.02	28.36	25.43	20.36	14.34	4.91
350.0	87.37	61.15	39.05	30.26	27.80	25.03	19.41	13.62	4.91
360.0	86.89	59.25	38.34	30.34	27.64	24.48	19.01	13.31	4.83

Equipment: HW-1015
 Temperature(°C): 25.4

Date: 2014/9/3
 Humidity(%): 60.6%

Operator: Alex Sung
 Distance(m): 8.90

GlacialTech Inc.

Intensity data(cd)

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.63	0.40	0.48	0.48	0.55	0.48	0.40	0.55	0.63
10.0	1.03	0.40	0.48	0.40	0.55	0.55	0.63	0.63	0.95
20.0	0.71	0.63	0.40	0.63	0.55	0.63	0.63	0.71	0.87
30.0	0.95	0.48	0.55	0.63	0.63	0.55	0.55	0.55	0.79
40.0	0.71	0.55	0.63	0.48	0.55	0.48	0.55	0.71	0.87
50.0	0.63	0.48	0.55	0.63	0.55	0.55	0.63	0.71	0.87
60.0	0.63	0.55	0.55	0.55	0.55	0.55	0.55	0.63	0.87
70.0	0.63	0.48	0.55	0.55	0.48	0.48	0.63	0.63	0.87
80.0	0.71	0.63	0.48	0.63	0.71	0.55	0.55	0.63	0.87
90.0	0.63	0.55	0.63	0.63	0.55	0.55	0.55	0.55	0.87
100.0	0.87	0.55	0.71	0.55	0.55	0.63	0.55	0.63	0.95
110.0	0.87	0.71	0.55	0.55	0.48	0.55	0.55	0.71	0.95
120.0	0.79	0.63	0.48	0.48	0.63	0.55	0.55	0.63	0.87
130.0	0.79	0.55	0.48	0.55	0.55	0.63	0.55	0.71	0.87
140.0	1.03	0.55	0.55	0.55	0.48	0.63	0.55	0.63	0.79
150.0	0.79	0.55	0.48	0.63	0.55	0.63	0.63	0.63	0.87
160.0	0.87	0.63	0.63	0.55	0.55	0.63	0.63	0.63	0.87
170.0	0.87	0.55	0.48	0.55	0.63	0.55	0.48	0.71	0.95
180.0	0.95	0.48	0.55	0.55	0.55	0.55	0.63	0.63	0.79
190.0	0.79	0.48	0.55	0.55	0.48	0.55	0.55	0.55	0.63
200.0	0.95	0.48	0.55	0.48	0.40	0.48	0.55	0.55	0.71
210.0	0.87	0.48	0.48	0.55	0.48	0.55	0.48	0.48	0.71
220.0	0.87	0.55	0.48	0.55	0.55	0.40	0.48	0.55	0.71
230.0	0.87	0.55	0.55	0.48	0.48	0.48	0.55	0.55	0.71
240.0	0.87	0.55	0.48	0.48	0.48	0.48	0.55	0.48	0.63
250.0	1.19	0.55	0.48	0.48	0.48	0.55	0.48	0.55	0.71
260.0	1.11	0.55	0.55	0.48	0.48	0.48	0.48	0.48	0.63
270.0	0.71	0.55	0.55	0.48	0.48	0.63	0.55	0.55	0.71
280.0	0.87	0.55	0.48	0.48	0.55	0.55	0.48	0.48	0.63
290.0	0.71	0.48	0.55	0.48	0.55	0.55	0.55	0.55	0.71
300.0	0.95	0.48	0.55	0.55	0.48	0.48	0.40	0.55	0.63
310.0	1.03	0.40	0.48	0.55	0.48	0.55	0.48	0.63	0.71
320.0	0.71	0.48	0.48	0.48	0.48	0.48	0.55	0.71	0.71
330.0	0.87	0.48	0.55	0.48	0.55	0.40	0.55	0.63	0.71
340.0	0.79	0.48	0.55	0.55	0.48	0.55	0.48	0.63	0.63
350.0	0.87	0.48	0.55	0.48	0.48	0.55	0.55	0.63	0.71
360.0	0.63	0.40	0.48	0.48	0.55	0.48	0.40	0.55	0.63

Equipment: HW-1015
 Temperature(°C): 25.4

Date: 2014/9/3
 Humidity(%): 60.6%

Operator: Alex Sung
 Distance(m): 8.90

GlacialTech Inc.

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	0.87	1.03	1.27	1.43	1.58	1.58	1.74	1.90	2.14
10.0	1.19	1.50	1.82	2.14	2.30	2.46	2.61	2.53	2.38
20.0	1.11	1.43	1.74	2.06	2.38	2.46	2.46	2.53	2.38
30.0	1.11	1.50	1.82	2.14	2.30	2.46	2.46	2.46	2.38
40.0	1.11	1.50	1.74	2.14	2.30	2.38	2.38	2.46	2.30
50.0	1.03	1.35	1.74	1.98	2.30	2.46	2.46	2.53	2.38
60.0	1.03	1.43	1.74	2.06	2.30	2.46	2.38	2.46	2.30
70.0	1.11	1.43	1.66	2.06	2.22	2.53	2.46	2.46	2.30
80.0	1.11	1.43	1.66	2.06	2.30	2.38	2.38	2.46	2.30
90.0	1.11	1.50	1.66	1.98	2.22	2.30	2.38	2.46	2.30
100.0	1.19	1.43	1.82	2.14	2.22	2.30	2.46	2.53	2.30
110.0	1.27	1.43	1.74	2.06	2.22	2.38	2.46	2.46	2.38
120.0	1.11	1.50	1.82	2.14	2.22	2.38	2.38	2.53	2.46
130.0	1.03	1.50	1.90	2.06	2.30	2.46	2.53	2.61	2.38
140.0	1.19	1.50	1.82	2.06	2.30	2.38	2.46	2.46	2.38
150.0	1.19	1.50	1.90	2.14	2.38	2.38	2.53	2.61	2.38
160.0	1.11	1.50	1.82	2.06	2.38	2.38	2.61	2.53	2.53
170.0	1.19	1.43	1.90	2.14	2.30	2.46	2.46	2.53	2.38
180.0	1.19	1.50	1.74	2.14	2.30	2.46	2.53	2.61	2.46
190.0	0.87	0.95	1.27	1.43	1.58	1.74	1.82	1.90	2.14
200.0	0.87	1.03	1.19	1.35	1.58	1.66	1.74	1.90	2.06
210.0	0.95	0.95	1.11	1.43	1.43	1.58	1.82	1.82	2.14
220.0	0.79	1.03	1.11	1.27	1.43	1.66	1.74	1.90	2.06
230.0	0.87	1.11	1.19	1.35	1.50	1.66	1.82	1.82	2.06
240.0	0.79	0.95	1.19	1.43	1.50	1.74	1.66	1.82	2.06
250.0	0.79	0.95	1.19	1.27	1.58	1.66	1.82	1.74	2.06
260.0	0.79	1.03	1.19	1.43	1.58	1.58	1.74	1.90	2.06
270.0	0.87	1.03	1.19	1.43	1.50	1.66	1.82	1.90	2.14
280.0	0.87	1.03	1.35	1.50	1.58	1.74	1.82	1.98	2.14
290.0	0.87	1.03	1.35	1.50	1.66	1.82	1.82	1.90	2.22
300.0	0.79	1.19	1.19	1.50	1.58	1.74	1.90	2.06	2.22
310.0	0.79	1.11	1.27	1.58	1.66	1.74	1.90	2.06	2.22
320.0	0.87	1.11	1.35	1.50	1.58	1.74	1.90	2.06	2.22
330.0	0.87	1.11	1.27	1.50	1.58	1.82	1.82	2.06	2.14
340.0	0.87	1.11	1.35	1.58	1.58	1.66	1.82	2.06	2.22
350.0	0.87	1.19	1.27	1.50	1.58	1.74	1.82	1.98	2.22
360.0	0.87	1.03	1.27	1.43	1.58	1.58	1.74	1.90	2.14

Equipment: HW-1015
 Temperature(°C): 25.4

Date: 2014/9/3
 Humidity(%): 60.6%

Operator: Alex Sung
 Distance(m): 8.90

Intensity data(cd)

C/γ(°)	180.0
0.0	2.46
10.0	2.30
20.0	2.30
30.0	2.30
40.0	2.22
50.0	2.22
60.0	2.22
70.0	2.30
80.0	2.22
90.0	2.38
100.0	2.30
110.0	2.46
120.0	2.38
130.0	2.30
140.0	2.46
150.0	2.38
160.0	2.46
170.0	2.38
180.0	2.46
190.0	2.30
200.0	2.30
210.0	2.30
220.0	2.22
230.0	2.22
240.0	2.22
250.0	2.30
260.0	2.22
270.0	2.38
280.0	2.30
290.0	2.46
300.0	2.38
310.0	2.30
320.0	2.46
330.0	2.38
340.0	2.46
350.0	2.38
360.0	2.46





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 : 240.00 Vac / 50 Hz
- (2) Input Watt : 53.00 W
- (3) Input Current : 0.232 A
- (4) Total Luminous Flux Output : 6242.55 lm
- (5) Luminaire Efficacy : 117.78 lm/W
- (6) Central Intensity (cd) : 2852.826
- (7) Maximum Intensity(cd) : 5854.411
- (8) PF : 0.951
- (9) Beam angle : (C0-C180) 68.7 (C90-C270) 68.0
- (10) Correlated Color Temperature (CCT) : 4883 K
- (11) Color Rendering Index (CRI) : 81.6

2. Description of EUT Setup :

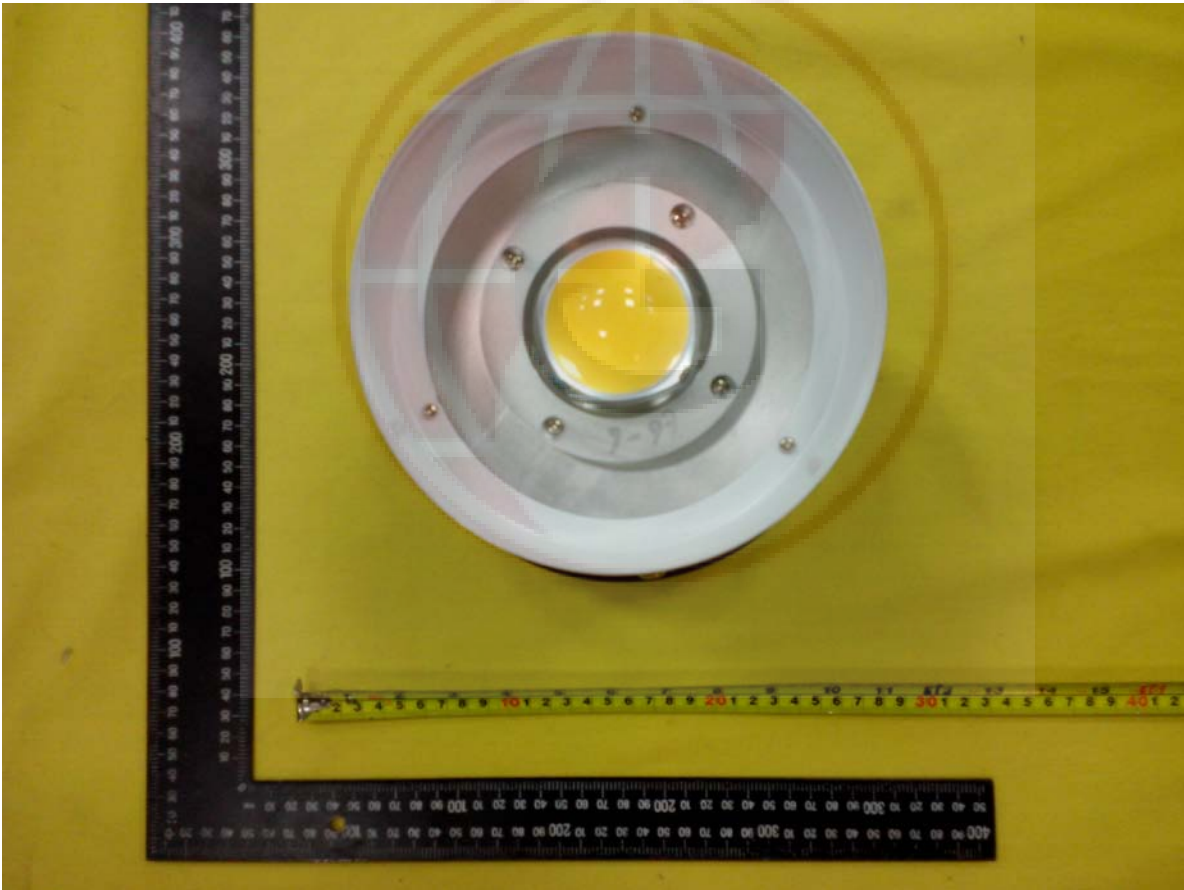
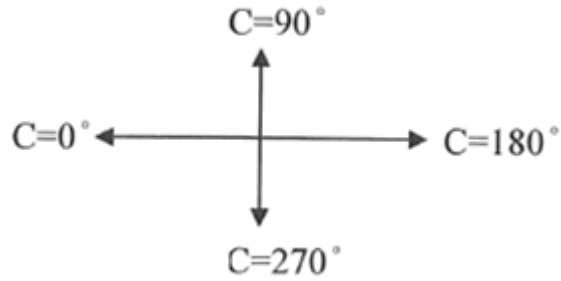
- (1) Operating Orientation : The light source is considered as horizontal
- (2) Light Source : LED
- (3) Stabilization time : 1 Hour
- (4) Environment Condition : Temperature: 25 ± 1 °C , Humidity: $60\pm 20\%$



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3. Photograph of EUT :





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4. Equipments List :

Equipment ID	Equipment Type	Cal. Date	Due Date	Range Used
L201	Integrating Sphere	N/A	N/A	
L202	Spetroradiometer	N/A	N/A	
L203	AC Power Source	N/A	N/A	
L204	Goniophotometer Photo Detector	N/A	N/A	
L218	Goniophotometer System	N/A	N/A	
L219	AC Power Source	N/A	N/A	AC 0~150VAC4.2A AC0~300VAC2.1A
L220	Power Meter	2014/8/25	2015/8/24	V : Auto (0~300Vac) A : Auto (0~20A)
L221	Luminous Intensity Lamp	2013/11/13	2014/11/12	
L222	Power Meter	2013/10/11	2014/10/10	V : Auto (0~300Vac) A : Auto (0~20A)
L244	Standard Light Source	2014/1/3	2015/1/2	