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## **Optical Report For Luminaires**

Applicant : GlacialTech Inc.

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

Report No : GO1302270201

Product Name : LED Panel Light

Model No : GL-PL0606-CW

Sample No : 13022702-1

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 : 2013-3-8

Issue Date : 2013-3-12

- 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:

Scott Huang

Donald Chang

Project Engineer

Project Engineer

# Great One Global Certification Co., Ltd.

Product: LED Panel Light, GL-PL0606-CW

Manufacturer: GlacialTech Inc.

Sample No.: 13022702-1

Tested By: Scott Huang

Date:3-8-2013

Reviewed By: Donald Chang

## Test Condition

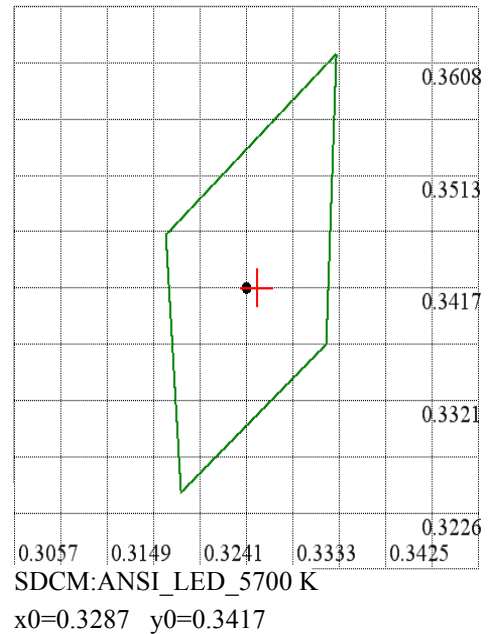
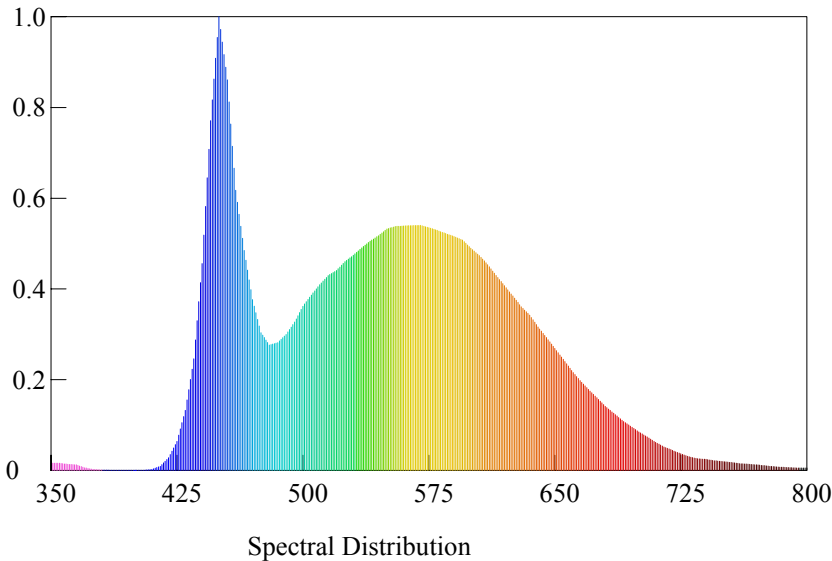
Temperature: 24.9 °C

Spectrum Range: 350 nm-800 nm

RH:52%

Scan Step: 5 nm

## Spectroradiometric Parameters



Chromaticity Coordinates:  $x=0.3297$   $y=0.3417$   $u'=0.2047$   $v'=0.4774$

Correlated Color Temperature: 5624 K

Dominant Wavelength: 526.0 nm(E)

Luminous Flux: 3706.811 lm

Purity:0.0171

Chromaticity Difference: +0.00157 Duv

Peak Wavelength: 450.6 nm

Color Ratio:  $K_r=32.1\%$   $K_g=55.8\%$   $K_b=12.2\%$

Color Tolerance: 0.0 SDCM

Bandwidth:23.3 nm

Radiant Flux: 12.034 W

Rendering Index:  $R_a=84.6$

$R_1=83$   $R_2=89$   $R_3=92$   $R_4=84$   $R_5=83$   $R_6=83$   $R_7=89$   $R_8=73$

$R_9=21$   $R_{10}=73$   $R_{11}=82$   $R_{12}=62$   $R_{13}=85$   $R_{14}=95$   $R_{15}=80$

## Electric Parameters

Voltage: 230.05 V

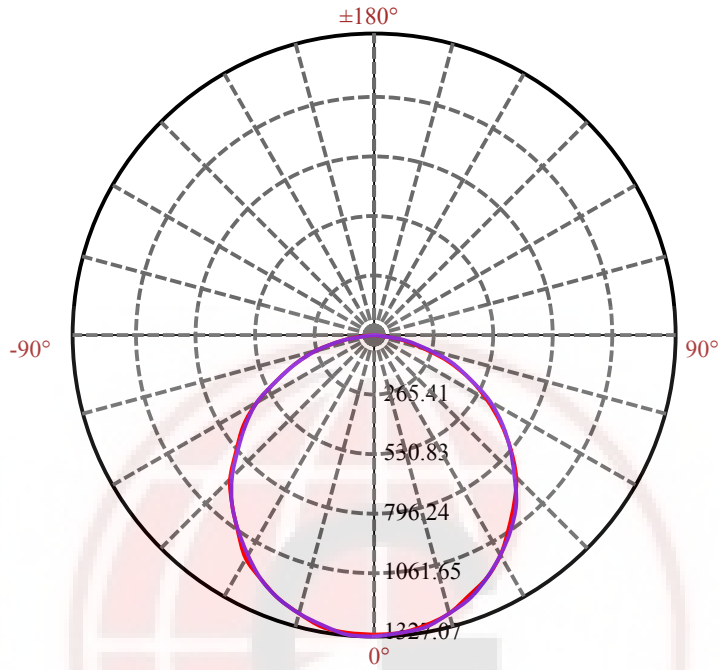
Current: 0.222 A

Power Factor: 0.938

Power: 48.01 W

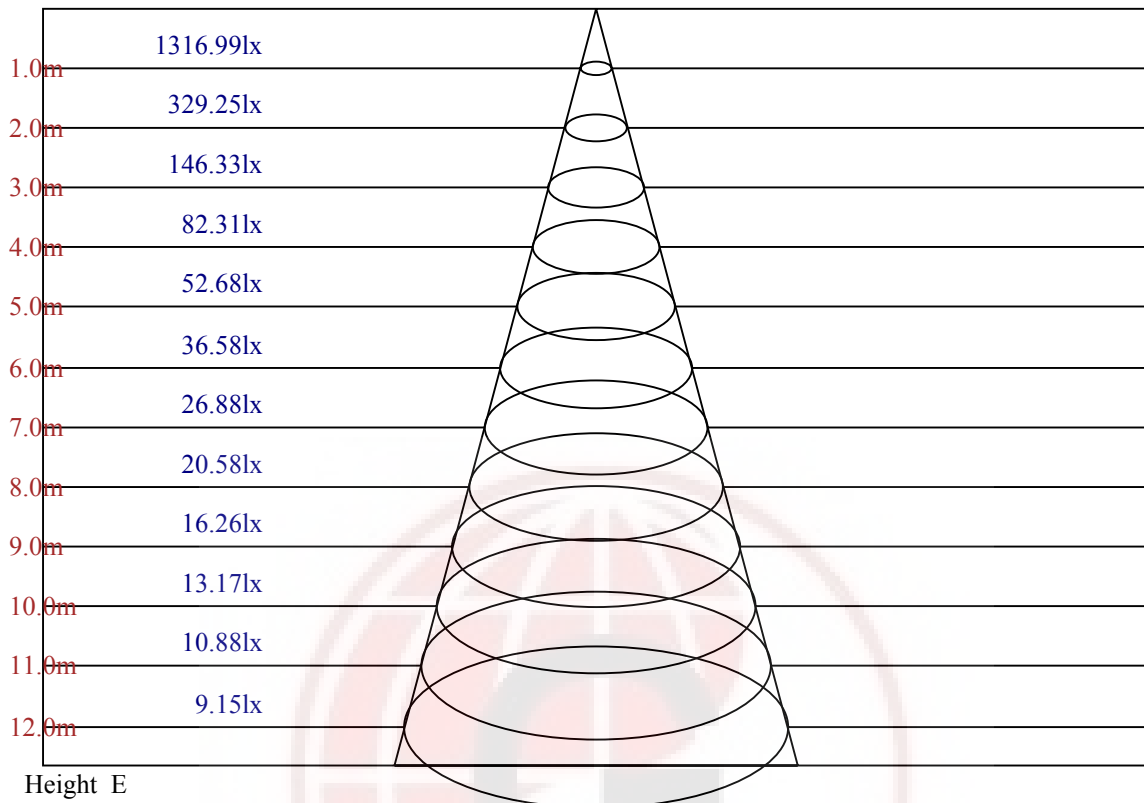
Luminous Efficacy: 77.21 lm/W

Light Distribution Curve [Unit: cd]

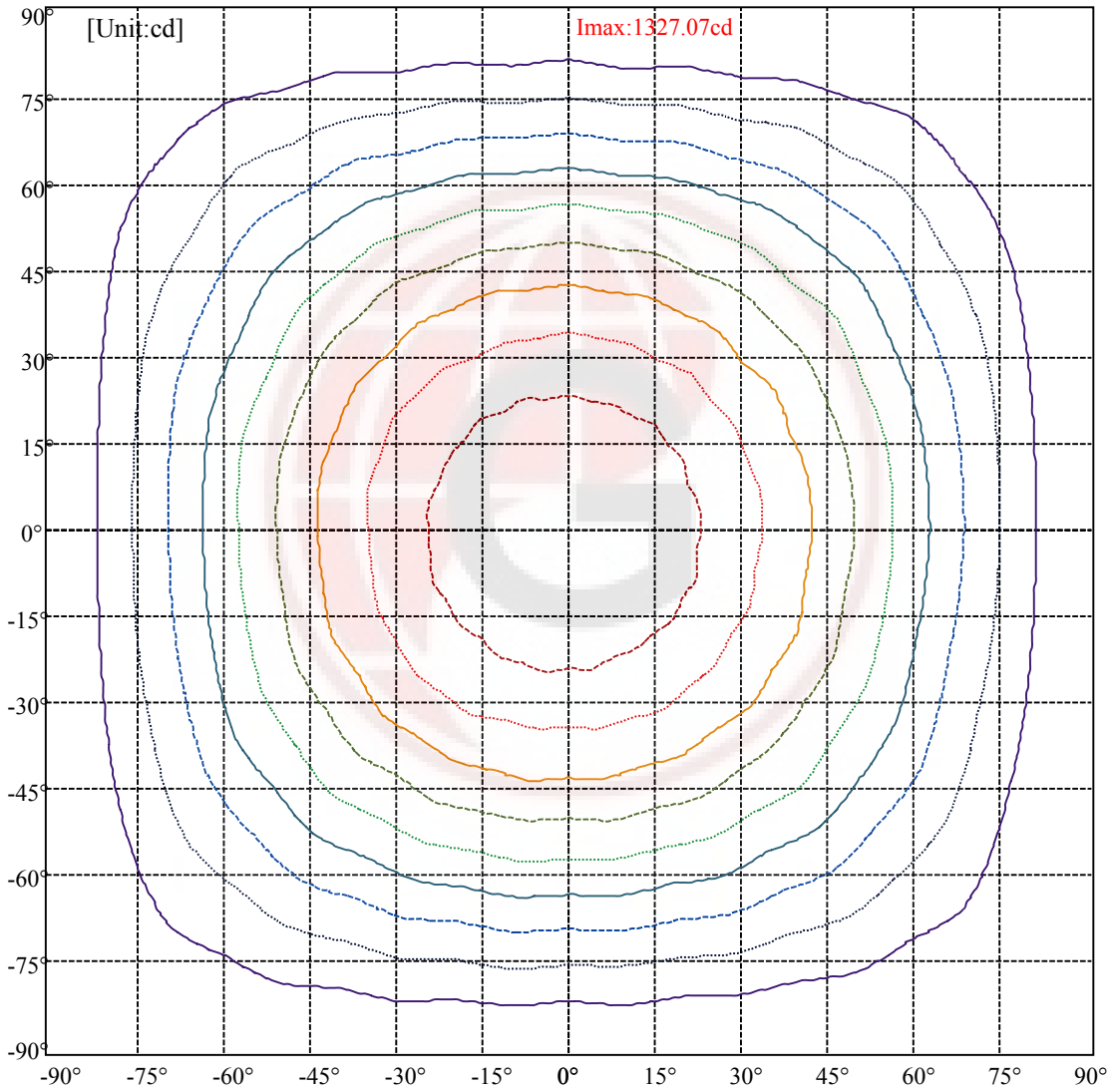


C0/C180: ————  
C90/C270: ————

Lux distance Curve



ISO-Intensity(V-H)



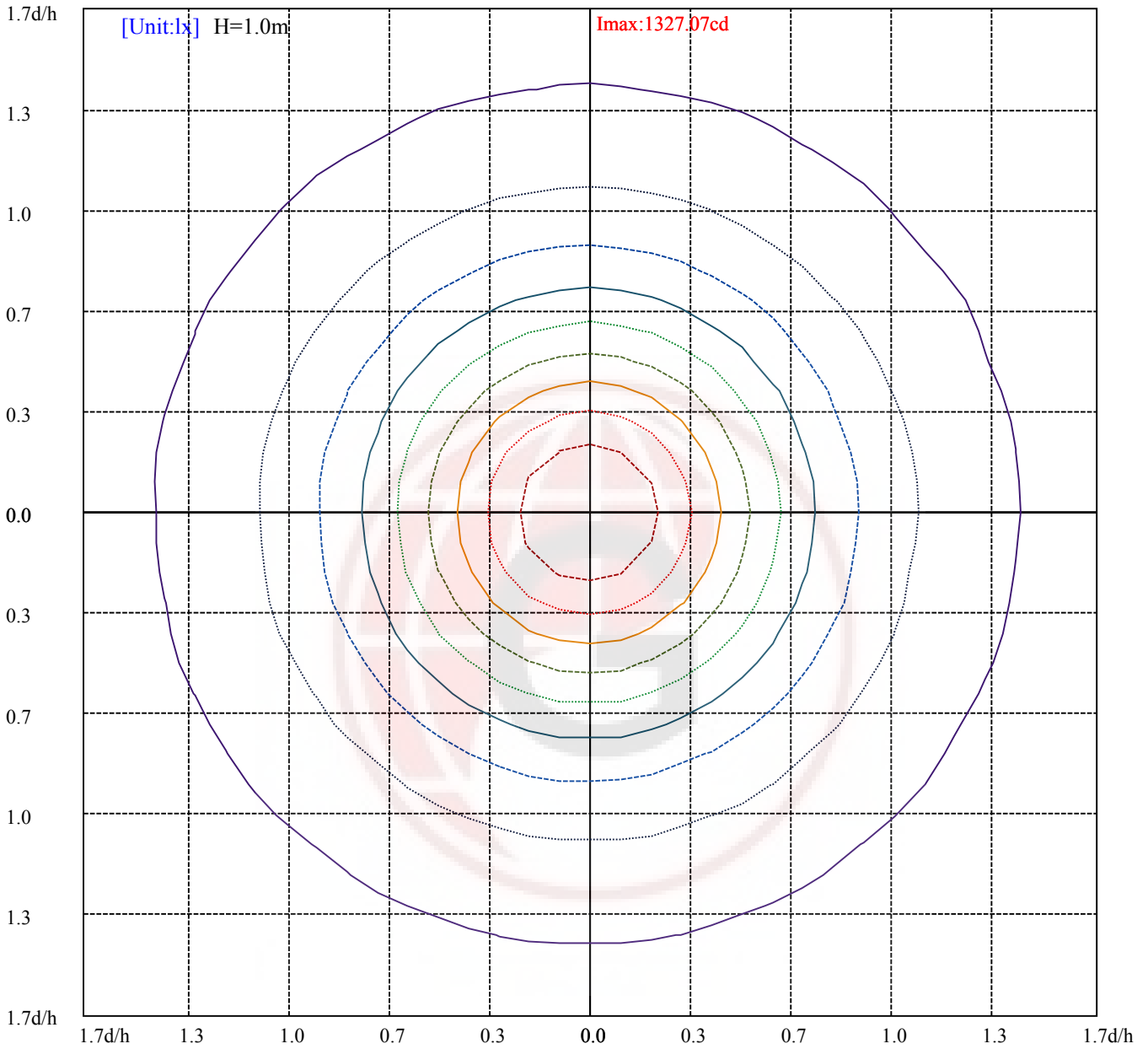
(10%Imax) 132.707	—————
(20%Imax) 265.413	.....
(30%Imax) 398.12	- - - - -
(40%Imax) 530.827	—————
(50%Imax) 663.533	.....
(60%Imax) 796.24	- - - - -
(70%Imax) 928.947	—————
(80%Imax) 1061.65	.....
(90%Imax) 1194.36	- - - - -

Equipment: HW-1015  
Temperature(°C): 25.0

Date: 2013/3/8  
Humidity(%): 47.0%

Operator: Scott Huang  
Distance(m): 12.65

ISO illuminance diagram



Equipment: HW-1015  
Temperature(°C): 25.0

Date: 2013/3/8  
Humidity(%): 47.0%

Operator: Scott Huang  
Distance(m): 12.65

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	1316.99	1319.23	1298.90	1267.70	1221.77	1170.57	1112.16	1037.59	956.77
10.0	1325.79	1311.22	1294.10	1268.66	1226.09	1168.96	1108.00	1041.91	961.26
20.0	1317.15	1311.70	1296.02	1260.02	1211.85	1163.84	1105.60	1026.06	944.45
30.0	1324.35	1316.99	1290.10	1259.86	1227.85	1170.72	1103.84	1038.07	963.98
40.0	1319.71	1317.95	1293.78	1254.90	1213.93	1169.28	1100.80	1023.82	936.61
50.0	1318.11	1320.19	1298.74	1260.18	1225.45	1176.33	1109.60	1044.15	960.46
60.0	1326.75	1316.19	1288.18	1263.06	1218.89	1165.92	1100.96	1024.30	952.93
70.0	1319.07	1312.98	1301.94	1266.26	1220.33	1175.69	1110.72	1040.63	961.10
80.0	1321.63	1307.54	1290.90	1268.18	1220.01	1162.88	1107.52	1036.47	951.01
90.0	1327.07	1312.34	1301.46	1267.22	1232.33	1172.81	1116.16	1048.95	966.70
100.0	1316.83	1312.34	1300.34	1265.30	1217.45	1173.77	1111.52	1033.91	956.13
110.0	1324.03	1320.19	1295.70	1264.18	1230.73	1183.53	1115.36	1045.11	975.66
120.0	1325.79	1319.07	1293.94	1265.14	1216.33	1178.25	1111.36	1034.23	965.58
130.0	1318.11	1316.83	1305.94	1276.02	1228.33	1188.49	1125.12	1054.23	977.58
140.0	1323.71	1310.42	1297.62	1274.10	1231.85	1176.17	1117.76	1051.51	965.74
150.0	1323.39	1313.63	1300.98	1279.54	1236.97	1183.05	1128.16	1065.59	980.14
160.0	1316.35	1311.70	1302.10	1274.26	1230.25	1179.37	1128.80	1053.43	969.90
170.0	1326.11	1317.15	1300.18	1283.70	1244.02	1189.29	1124.48	1066.07	991.02
180.0	1316.99	1318.59	1305.14	1270.74	1230.09	1186.09	1128.64	1052.15	975.50
190.0	1325.79	1322.11	1299.06	1271.38	1236.49	1185.13	1123.52	1052.63	979.34
200.0	1317.15	1321.95	1309.30	1278.58	1236.97	1194.89	1137.76	1063.35	988.30
210.0	1324.35	1316.19	1297.78	1280.02	1239.05	1183.53	1128.48	1057.43	982.06
220.0	1319.71	1314.11	1308.34	1283.06	1239.69	1189.77	1142.40	1069.27	986.86
230.0	1318.11	1314.11	1300.82	1278.10	1233.77	1179.21	1130.56	1059.51	974.22
240.0	1326.75	1316.19	1302.26	1273.46	1244.18	1192.49	1125.92	1068.31	992.62
250.0	1319.07	1316.83	1304.82	1271.22	1226.41	1187.53	1126.08	1048.63	976.78
260.0	1321.63	1319.39	1300.50	1270.58	1235.37	1192.01	1126.88	1054.71	988.14
270.0	1327.07	1319.55	1295.22	1270.10	1229.93	1180.97	1116.16	1043.67	974.38
280.0	1316.83	1317.31	1305.62	1274.10	1229.13	1188.97	1126.24	1054.07	979.34
290.0	1324.03	1311.22	1289.62	1271.38	1230.09	1172.33	1113.12	1046.55	965.26
300.0	1325.79	1310.58	1295.54	1271.54	1231.85	1176.01	1116.48	1056.15	972.46
310.0	1318.11	1311.38	1300.18	1264.66	1216.97	1172.65	1115.36	1036.63	957.73
320.0	1323.71	1320.35	1292.18	1264.98	1229.13	1177.61	1112.48	1042.23	972.78
330.0	1323.39	1318.27	1295.22	1257.46	1220.97	1171.53	1104.16	1027.50	953.89
340.0	1316.35	1319.87	1296.34	1262.74	1223.53	1180.65	1113.44	1039.51	975.66
350.0	1326.11	1314.75	1286.10	1259.22	1220.81	1163.04	1098.07	1029.27	954.05
360.0	1316.99	1319.23	1298.90	1267.70	1221.77	1170.57	1112.16	1037.59	956.77

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	879.48	778.99	678.02	578.00	462.31	354.45	246.91	138.58	56.01
10.0	875.80	777.71	683.46	576.88	460.38	355.41	252.52	138.26	55.69
20.0	865.72	764.43	662.01	561.36	444.06	334.29	227.87	121.78	42.25
30.0	871.00	774.67	688.10	574.32	459.58	346.77	242.43	137.94	50.73
40.0	862.68	762.67	652.25	559.44	445.98	329.01	224.51	123.38	39.21
50.0	876.44	774.35	675.78	577.84	459.26	348.21	243.87	134.58	51.85
60.0	862.20	759.31	666.81	562.80	442.78	334.45	217.79	121.78	41.61
70.0	876.12	782.03	680.26	573.20	464.07	354.77	240.83	137.94	55.05
80.0	863.32	771.95	669.05	561.52	444.06	337.65	229.79	117.46	42.73
90.0	878.36	785.87	686.66	580.88	468.39	356.53	249.48	148.82	55.69
100.0	872.12	774.83	672.41	567.60	456.70	344.69	232.67	130.58	48.97
110.0	886.84	786.19	692.74	592.24	473.35	363.41	258.60	147.38	61.61
120.0	878.20	775.15	679.94	579.76	459.74	350.13	244.83	135.06	52.01
130.0	894.21	800.27	705.70	593.68	484.71	379.73	260.52	155.70	65.13
140.0	879.80	788.91	688.42	581.36	470.31	357.49	249.32	144.18	56.01
150.0	900.61	802.19	706.98	602.80	485.99	380.53	271.08	159.06	72.65
160.0	894.05	799.31	693.70	580.08	483.27	367.25	247.87	153.78	63.53
170.0	904.45	808.11	717.38	607.77	494.95	389.33	276.04	167.86	79.53
180.0	898.21	799.79	696.74	598.64	474.47	370.61	263.08	146.90	66.89
190.0	895.01	795.79	697.70	598.80	484.39	369.49	264.52	158.10	66.57
200.0	912.13	817.23	712.42	616.57	510.15	389.81	282.12	169.78	81.13
210.0	887.80	796.91	705.54	595.92	482.79	377.01	264.04	156.98	70.41
220.0	912.61	815.31	716.10	624.09	501.03	393.98	278.92	171.06	83.05
230.0	894.85	788.43	700.42	596.40	479.75	374.45	264.84	153.46	68.33
240.0	901.41	811.95	714.34	610.33	499.27	387.41	280.36	171.38	78.25
250.0	893.25	796.11	697.38	593.36	483.43	362.45	259.24	154.74	64.49
260.0	902.69	802.19	709.86	611.45	493.99	384.21	279.08	165.62	76.97
270.0	885.56	785.71	693.06	592.08	474.31	364.37	259.88	148.50	63.05
280.0	897.73	802.83	702.50	600.08	491.43	380.53	267.88	162.26	79.05
290.0	876.92	784.43	686.34	581.04	468.87	357.17	250.60	145.14	57.13
300.0	888.12	798.99	698.34	593.20	491.91	372.53	263.88	152.66	67.53
310.0	865.56	779.31	678.18	571.12	462.63	353.49	240.35	137.94	55.37
320.0	883.96	783.63	693.70	594.96	473.03	366.61	255.08	149.62	64.33
330.0	871.00	766.19	669.21	572.40	453.82	342.93	239.23	131.06	49.29
340.0	878.04	783.79	680.42	576.56	472.23	356.69	245.31	147.70	58.41
350.0	861.24	763.79	672.09	562.96	448.22	329.17	231.87	128.82	43.69
360.0	879.48	778.99	678.02	578.00	462.31	354.45	246.91	138.58	56.01



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	0.16	0.32	0.32	0.48	0.48	0.48	0.48	0.64	0.64
10.0	0.48	0.32	0.48	0.32	0.32	0.64	0.48	0.48	0.64
20.0	0.32	0.32	0.32	0.48	0.48	0.48	0.64	0.64	0.64
30.0	0.32	0.32	0.32	0.48	0.48	0.64	0.48	0.64	0.64
40.0	0.32	0.32	0.48	0.48	0.64	0.64	0.48	0.64	0.64
50.0	0.48	0.48	0.32	0.64	0.48	0.48	0.64	0.64	0.80
60.0	0.32	0.48	0.32	0.48	0.48	0.48	0.64	0.48	0.80
70.0	0.32	0.48	0.32	0.48	0.32	0.48	0.48	0.64	0.48
80.0	0.32	0.32	0.32	0.32	0.48	0.64	0.48	0.64	0.64
90.0	0.32	0.16	0.32	0.48	0.48	0.48	0.64	0.64	0.64
100.0	0.16	0.32	0.32	0.48	0.48	0.48	0.48	0.64	0.64
110.0	3.52	0.32	0.32	0.48	0.32	0.48	0.48	0.48	0.64
120.0	0.32	0.32	0.32	0.48	0.32	0.48	0.48	0.64	0.64
130.0	2.72	0.32	0.32	0.32	0.48	0.48	0.48	0.64	0.64
140.0	0.32	0.16	0.32	0.32	0.48	0.48	0.64	0.48	0.48
150.0	6.24	0.32	0.32	0.32	0.48	0.48	0.48	0.48	0.64
160.0	0.48	0.32	0.48	0.48	0.48	0.48	0.48	0.64	0.64
170.0	7.52	0.16	0.48	0.48	0.48	0.64	0.80	0.48	0.64
180.0	2.72	0.32	0.32	0.32	0.48	0.48	0.64	0.48	0.64
190.0	2.88	0.32	0.16	0.32	0.48	0.64	0.48	0.64	0.64
200.0	10.88	0.32	0.32	0.32	0.32	0.48	0.48	0.48	0.48
210.0	2.88	0.32	0.48	0.48	0.48	0.64	0.48	0.64	0.64
220.0	9.76	0.16	0.32	0.48	0.32	0.48	0.64	0.48	0.64
230.0	4.00	0.48	0.32	0.32	0.32	0.48	0.48	0.64	0.64
240.0	10.24	0.32	0.32	0.32	0.32	0.48	0.48	0.64	0.64
250.0	2.08	0.32	0.32	0.32	0.32	0.48	0.64	0.48	0.64
260.0	9.44	0.32	0.32	0.48	0.48	0.64	0.48	0.64	0.64
270.0	0.32	0.16	0.16	0.32	0.32	0.48	0.64	0.48	0.48
280.0	5.44	0.32	0.48	0.32	0.48	0.32	0.48	0.48	0.48
290.0	0.32	0.32	0.32	0.32	0.48	0.64	0.64	0.48	0.80
300.0	3.84	0.32	0.32	0.48	0.48	0.48	0.48	0.48	0.64
310.0	0.32	0.32	0.32	0.32	0.48	0.48	0.48	0.48	0.64
320.0	0.64	0.32	0.32	0.48	0.48	0.48	0.64	0.48	0.48
330.0	0.32	0.16	0.32	0.48	0.48	0.48	0.48	0.48	0.64
340.0	0.48	0.32	0.16	0.48	0.32	0.48	0.48	0.64	0.64
350.0	0.16	0.16	0.48	0.32	0.32	0.48	0.48	0.48	0.64
360.0	0.16	0.32	0.32	0.48	0.48	0.48	0.48	0.64	0.64

Equipment: HW-1015  
 Temperature(°C): 25.0

Date: 2013/3/8  
 Humidity(%): 47.0%

Operator: Scott Huang  
 Distance(m): 12.65

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	0.64	0.64	0.80	0.80	0.96	0.96	0.80	0.96	0.96
10.0	0.64	0.80	0.64	0.96	0.96	0.80	0.96	1.12	0.96
20.0	0.80	0.80	0.80	0.80	0.80	0.96	0.80	0.96	0.80
30.0	0.64	0.64	0.96	0.80	0.80	0.96	0.80	0.96	0.96
40.0	0.64	0.80	0.80	0.80	0.96	0.80	0.96	0.80	0.96
50.0	0.80	0.80	0.64	0.96	0.80	0.96	0.96	0.96	0.96
60.0	0.80	0.96	0.80	0.96	0.96	0.96	0.96	0.96	0.96
70.0	0.80	0.80	0.80	0.80	0.80	0.96	0.96	0.96	0.80
80.0	0.80	0.64	0.64	0.80	0.96	0.96	0.96	0.96	0.96
90.0	0.80	0.80	0.96	0.96	0.96	0.96	0.80	0.96	0.80
100.0	0.80	0.64	0.80	0.80	0.96	0.96	0.96	0.96	0.96
110.0	0.64	0.64	0.80	0.80	0.96	0.96	0.80	0.96	0.96
120.0	0.64	0.80	0.80	0.80	0.80	0.80	0.96	0.96	0.80
130.0	0.80	0.64	0.64	0.80	0.80	0.96	0.80	0.96	0.96
140.0	0.80	0.80	0.80	0.80	0.80	0.96	0.96	0.96	0.96
150.0	0.80	0.80	0.64	0.96	0.96	0.80	0.80	1.12	0.80
160.0	0.64	0.80	0.64	0.80	0.96	0.80	0.96	0.96	0.96
170.0	0.64	0.96	0.64	0.80	0.80	0.80	0.96	0.96	0.80
180.0	0.64	0.80	0.80	0.80	0.96	0.96	0.96	0.80	0.80
190.0	0.64	0.64	0.80	0.80	0.80	0.96	0.80	0.96	0.80
200.0	0.64	0.64	0.80	0.64	0.80	0.96	0.96	0.96	0.96
210.0	0.64	0.80	0.64	0.80	0.80	0.64	0.96	0.96	0.96
220.0	0.64	0.80	0.96	0.80	0.80	0.80	0.80	0.96	0.80
230.0	0.80	0.64	0.64	0.80	0.96	0.96	0.96	0.80	1.12
240.0	0.64	0.64	0.64	0.80	0.96	0.96	0.96	0.96	0.96
250.0	0.80	0.64	0.80	0.80	0.80	0.80	0.80	0.96	0.96
260.0	0.64	0.64	0.80	0.80	0.96	0.96	0.96	0.96	0.96
270.0	0.64	0.64	0.80	0.80	0.96	0.96	0.80	0.80	0.96
280.0	0.64	0.80	0.80	0.80	0.80	0.96	1.12	0.96	0.80
290.0	0.64	0.80	0.64	0.80	0.80	0.80	0.80	0.80	0.96
300.0	0.64	0.80	0.64	0.80	0.96	0.80	0.96	0.96	0.96
310.0	0.64	0.80	0.80	0.80	0.80	0.96	0.96	0.96	1.12
320.0	0.80	0.80	0.80	0.80	0.80	0.80	0.96	0.96	0.96
330.0	0.64	0.64	0.80	0.80	0.96	0.80	0.96	0.96	0.96
340.0	0.80	0.80	0.80	0.80	0.96	0.80	0.96	0.80	0.80
350.0	0.80	0.64	0.80	0.80	0.96	0.80	0.96	0.96	0.96
360.0	0.64	0.64	0.80	0.80	0.96	0.96	0.80	0.96	0.96

Equipment: HW-1015  
 Temperature(°C): 25.0

Date: 2013/3/8  
 Humidity(%): 47.0%

Operator: Scott Huang  
 Distance(m): 12.65

Intensity data(cd)

C/γ(°)	180.0
0.0	0.96
10.0	0.96
20.0	0.96
30.0	0.96
40.0	0.96
50.0	0.96
60.0	0.80
70.0	0.96
80.0	0.96
90.0	0.96
100.0	0.96
110.0	0.80
120.0	0.96
130.0	0.96
140.0	1.12
150.0	0.96
160.0	0.96
170.0	0.96
180.0	0.96
190.0	0.96
200.0	0.96
210.0	0.96
220.0	0.96
230.0	0.96
240.0	0.80
250.0	0.96
260.0	0.96
270.0	0.96
280.0	0.96
290.0	0.80
300.0	0.96
310.0	0.96
320.0	1.12
330.0	0.96
340.0	0.96
350.0	0.96
360.0	0.96





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9F-2, No.120, Qiaohe Rd., Zhonghe Dist.,  
New Taipei City 235, Taiwan (R.O.C.)  
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## 1. Luminaire Specification :

- (1) Input Voltage/Frequency : 230.01 V ac / 50Hz
- (2) Input Watt : 47.80 W
- (3) Input Current : 0.221 A
- (4) Total Luminous Flux Output : 3791.40 lm
- (5) Luminaire Efficacy : 79.32 lm/W
- (6) Central Intensity (cd) : 1316.985
- (7) Maximum Intensity(cd): 1327.067
- (8) PF : 0.938
- (9) Beam angle : (C0-C180) 112.9 (C90-C270) 112.6

## 2. Description of EUT Setup :

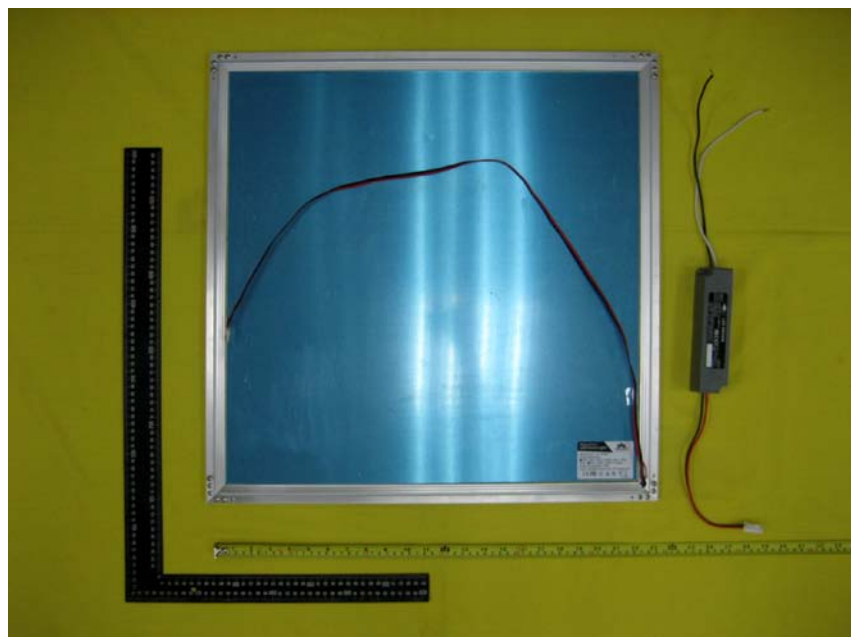
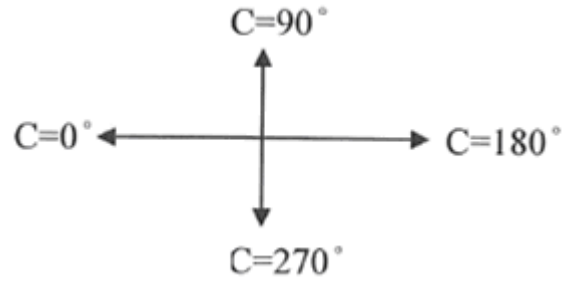
- (1) Operating Orientation : The light source is considered as horizontal
- (2) Light Source : LED
- (3) Stabilization time : 1 Hour
- (4) Environment Condition : Temperature:  $25\pm 1$  °C , Humidity:  $60\pm 20\%$



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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
L204	Goniophotometer Photo Detector	SENSING	HW-1015	2012/11/14	2013/11/13	
L205	Goniophotometer System	SENSING		N/A	N/A	
L206	AC Power Source	Twintex	TFC 500VA	N/A	N/A	
L207	Power Meter	SENSING	UI2008	2012/12/24	2013/12/23	V : Auto (0~300Vac) A : Auto (0~20A)
L201	Integrating Sphere	SENSING		N/A	N/A	
L202	Spetroradiometer	SENSING	SL300	N/A	N/A	
L203	AC Power Source	EXTECH ELECTRONICS	6190	N/A	N/A	
L210	Standard Lamp(100W)	SENSING	S01107	2013/01/11	2014/01/10	
L221	Irradiance Standard lamp	SENSING	LSD1003029	2012/05/30	2013/05/29	
L222	Power Meter	Yokogawa	WT-210	2012/10/12	2013/10/11	V : Auto (0~300Vac) A : Auto (0~20A)