



廣益全球驗證有限公司

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Goniophotometer Measurement Report For Luminaires

Applicant : KWO GER METAL TECHNOLOGY INC.

Applicant Add : 3-5, Wulin St, Shulin City, Taipei county, Taiwan

Report No : GO1103230501

Product Name : LED Courtyard Lamp

Model No : KG70B

Sample No : 11032305-1

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

Test Date: 2011-3-31

Issue Date: 2011-3-31

- 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:

Roy Kao

Sean Kao

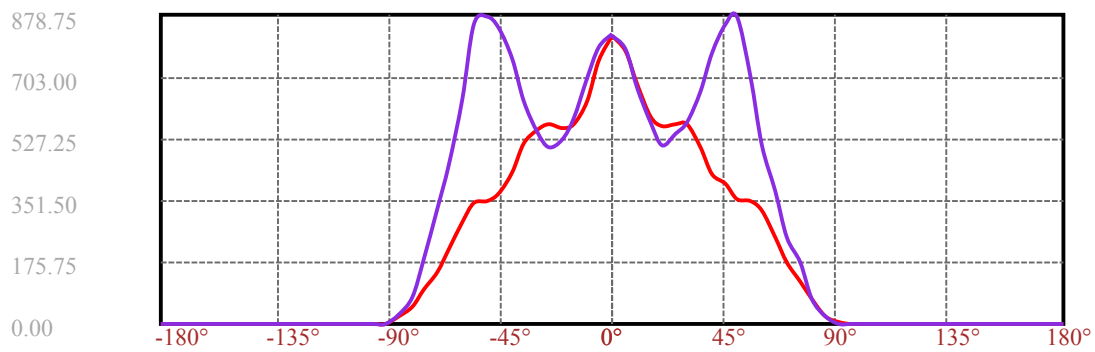
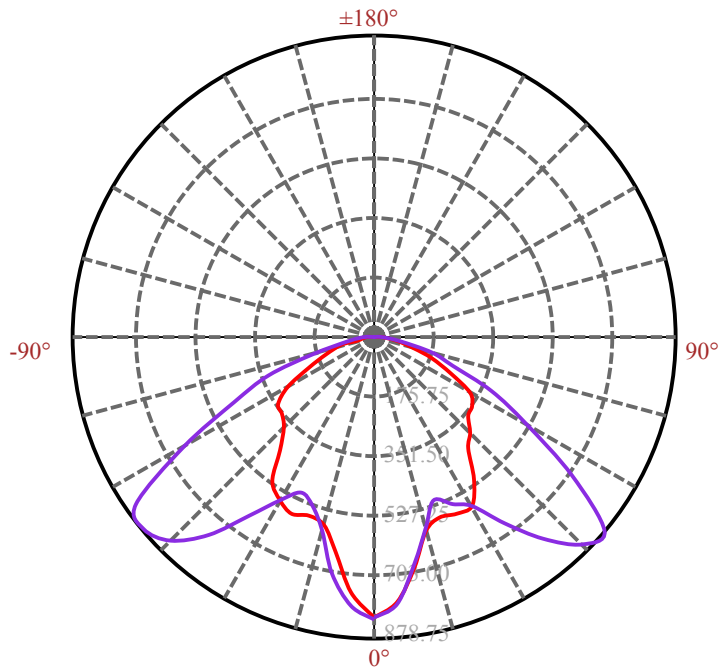
Roy Kao

Sean Kao

Project Engineer

Project Engineer

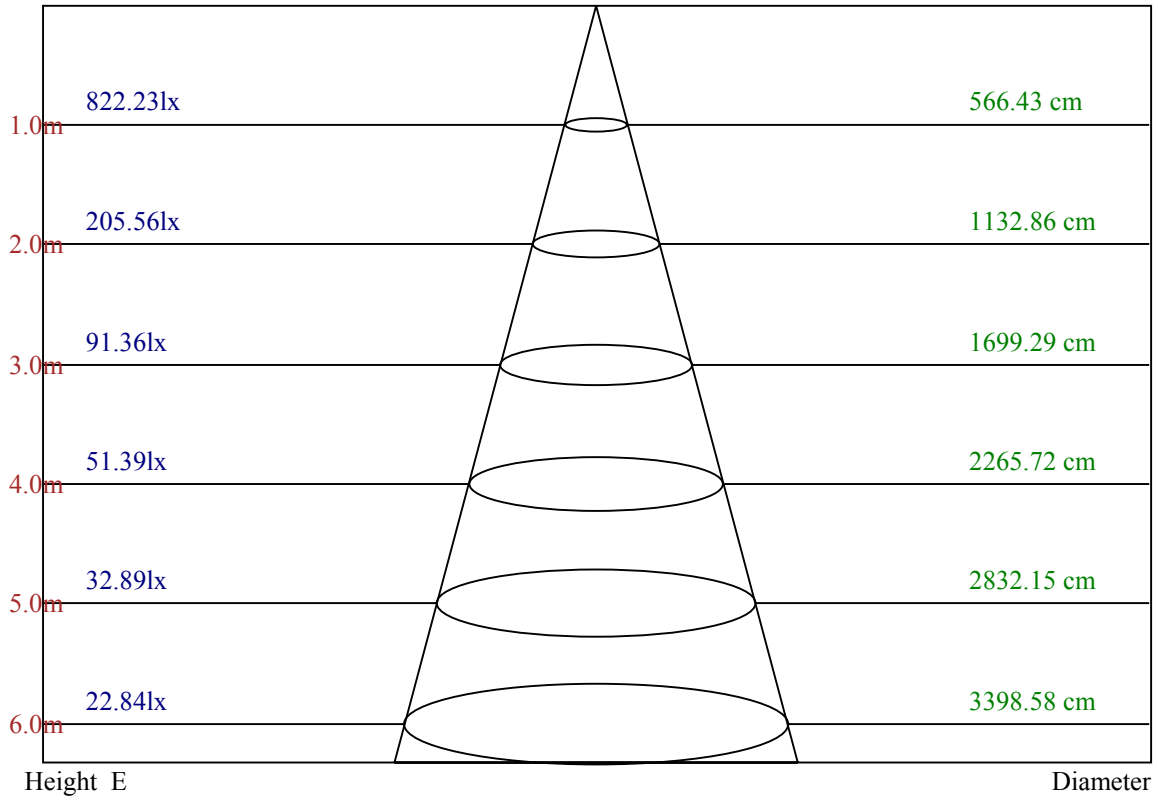
Light Distribution Curve [Unit: cd]



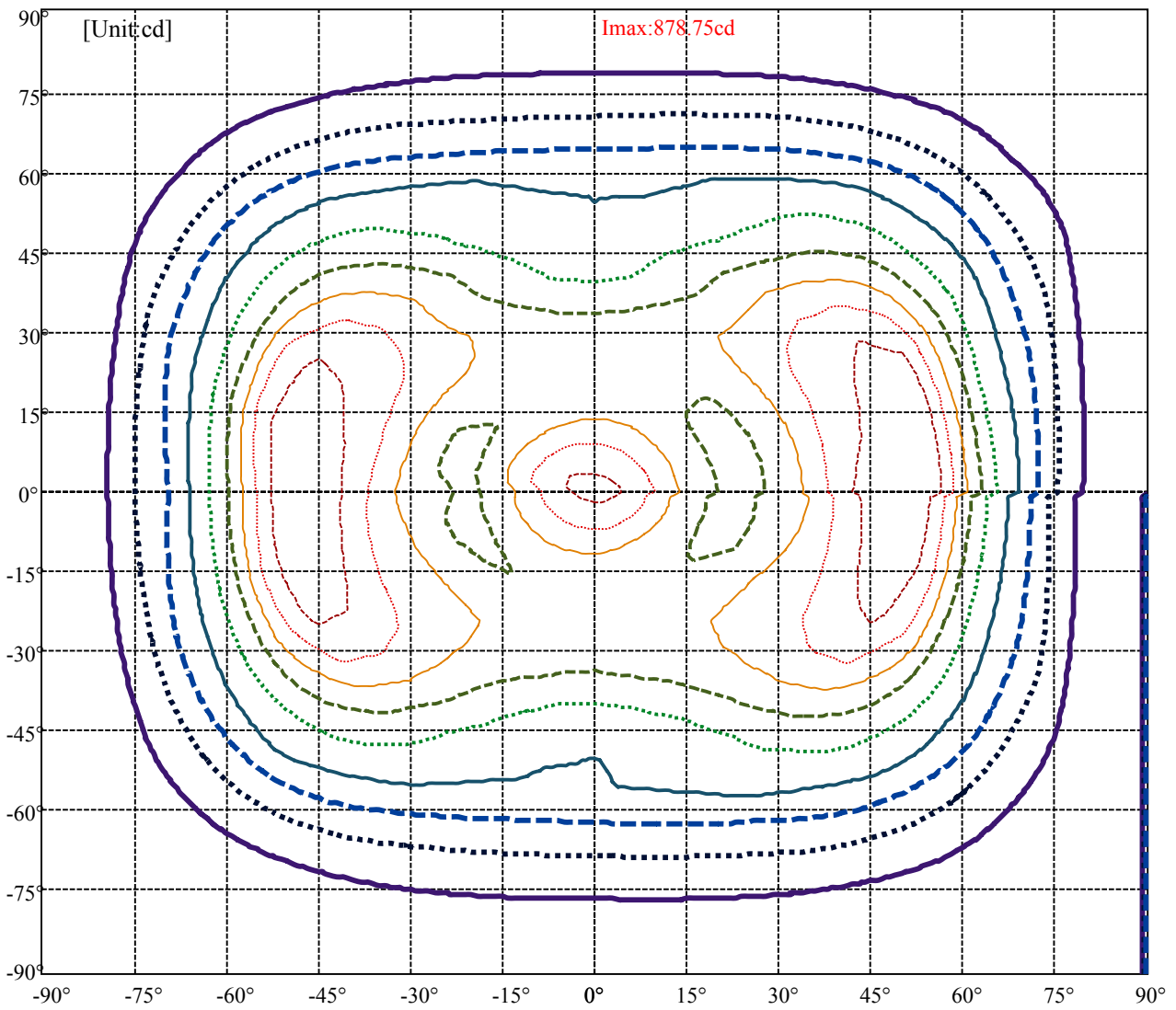
C0/C180: —

C90/C270: —

Lux distance Curve



ISO-Intensity(V-H)



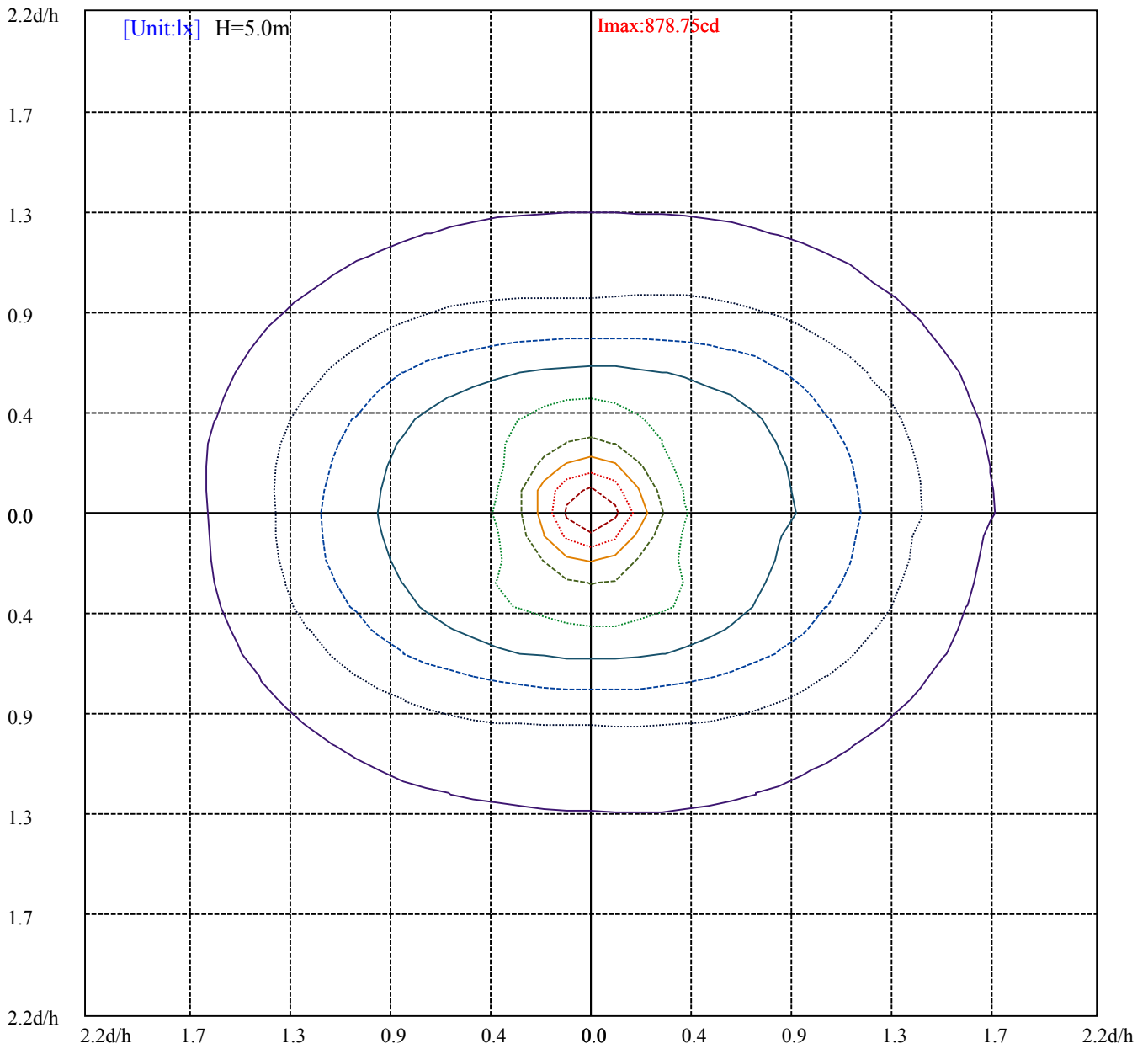
(10%Imax) 87.6965	—
(20%Imax) 175.393	⋯
(30%Imax) 263.09	- - -
(40%Imax) 350.786	—
(50%Imax) 438.483	⋯
(60%Imax) 526.179	- - -
(70%Imax) 613.876	—
(80%Imax) 701.572	⋯
(90%Imax) 789.269	- - -

Equipment: GMS1800
 Temperature(°C): 25.0

Date: 2011/3/31
 Humidity(%): 50.0%

Operator: Roy Kao
 Distance(m): 13.59

ISO illuminance diagram



- (10%Emax) 3.279684
- (20%Emax) 6.55936
- (30%Emax) 9.83904
- (40%Emax) 13.11876
- (50%Emax) 16.39844
- (60%Emax) 19.67812
- (70%Emax) 22.9578
- (80%Emax) 26.23748
- (90%Emax) 29.51716

Equipment: GMS1800
 Temperature(°C): 25.0

Date: 2011/3/31
 Humidity(%): 50.0%

Operator: Roy Kao
 Distance(m): 13.59

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	818.35	775.14	684.27	587.31	560.90	565.15	565.70	504.57	426.08
10.0	817.80	776.24	685.56	586.57	563.30	568.47	568.29	512.14	436.97
20.0	817.80	777.91	689.26	584.54	558.87	569.02	576.60	539.66	475.57
30.0	817.98	781.97	693.13	583.80	550.56	567.18	593.03	583.80	531.72
40.0	818.35	784.37	697.57	584.54	538.18	558.87	608.55	626.09	598.20
50.0	818.54	788.06	702.00	592.29	526.92	544.83	615.93	664.51	673.74
60.0	818.54	790.10	707.36	598.76	518.42	530.24	609.10	685.01	735.43
70.0	818.91	789.36	714.56	604.11	515.46	520.27	597.65	686.67	762.58
80.0	819.09	786.03	709.76	603.56	517.68	516.57	586.02	685.93	779.57
90.0	819.28	780.31	673.19	574.75	506.60	538.37	570.50	661.18	770.15
100.0	821.86	772.55	672.45	577.70	504.01	526.36	600.98	648.26	757.04
110.0	821.31	763.87	664.88	571.98	502.72	529.87	609.29	651.58	743.00
120.0	820.57	755.19	660.08	567.55	508.45	544.09	621.84	657.67	723.05
130.0	820.20	749.65	654.17	564.22	517.50	554.99	623.69	644.93	673.59
140.0	819.65	746.32	651.95	564.22	526.18	561.27	615.38	618.89	604.85
150.0	819.28	743.74	646.96	561.64	534.86	564.22	594.51	581.40	533.01
160.0	818.91	743.37	641.24	561.82	542.06	565.88	571.43	543.72	477.05
170.0	818.54	744.29	636.99	562.74	548.71	567.55	554.80	519.71	438.45
180.0	818.35	746.32	634.03	565.88	555.36	569.58	552.03	514.36	429.95
190.0	817.80	749.28	631.63	567.36	559.05	573.27	558.50	525.99	448.24
200.0	817.80	752.97	630.53	564.96	556.10	576.78	570.69	551.11	487.76
210.0	817.98	756.48	627.20	558.68	549.82	575.67	592.11	585.09	546.31
220.0	818.35	760.36	633.66	551.66	539.66	571.79	613.16	619.81	609.29
230.0	818.54	762.58	640.87	545.75	526.92	556.83	619.26	642.16	664.88
240.0	818.54	767.38	648.62	547.05	514.91	536.15	613.16	646.78	699.04
250.0	818.91	772.18	656.01	553.33	507.52	518.60	597.10	635.88	711.79
260.0	819.09	776.06	662.66	559.05	508.26	509.00	579.18	621.48	719.73
270.0	822.23	784.56	697.01	586.20	526.36	503.09	547.60	632.93	752.05
280.0	821.86	782.34	686.86	580.11	522.48	500.14	550.92	638.10	749.46
290.0	821.31	780.68	682.79	576.78	518.97	500.69	558.31	643.08	737.09
300.0	820.57	778.28	677.99	574.75	518.79	508.63	570.13	653.98	726.75
310.0	820.20	775.69	676.88	574.38	524.51	521.01	582.69	648.62	686.30
320.0	819.65	774.77	677.81	577.70	529.50	533.75	590.45	624.80	616.67
330.0	819.28	773.66	679.28	583.98	535.41	544.65	588.23	589.52	546.86
340.0	818.91	773.66	679.47	585.28	545.38	554.25	577.70	547.97	487.02
350.0	818.54	774.21	683.53	586.20	554.43	561.27	569.21	517.50	443.25
360.0	818.35	775.14	684.27	587.31	560.90	565.15	565.70	504.57	426.08

Equipment: GMS1800
Temperature(°C): 25.0

Date: 2011/3/31
Humidity(%): 50.0%

Operator: Roy Kao
Distance(m): 13.59

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	398.19	355.89	349.80	321.54	245.82	176.01	119.86	70.74	21.05
10.0	404.47	362.91	357.93	331.33	247.30	175.64	118.75	69.26	19.76
20.0	440.85	388.03	373.44	345.37	258.56	179.89	123.56	69.07	18.65
30.0	502.54	443.81	398.00	367.71	277.22	191.34	128.54	68.52	17.91
40.0	580.47	516.76	446.21	400.96	310.83	216.82	132.24	67.23	16.99
50.0	672.82	608.18	518.23	437.53	355.34	245.64	138.15	66.12	16.07
60.0	755.56	724.53	610.58	480.00	388.77	275.55	146.64	66.67	17.73
70.0	794.71	817.61	720.84	518.97	400.03	297.72	159.94	64.27	17.36
80.0	814.29	857.51	764.98	545.20	395.97	300.86	186.72	79.97	16.99
90.0	853.81	875.42	702.00	508.63	373.99	246.74	173.05	72.40	22.90
100.0	841.99	873.02	719.91	506.05	373.99	276.29	153.85	57.25	25.49
110.0	810.78	821.31	679.10	481.85	376.58	259.12	126.33	49.31	24.38
120.0	761.10	717.88	575.30	449.35	370.12	231.41	115.06	47.46	24.56
130.0	664.14	593.03	493.67	413.33	320.25	203.90	107.67	45.80	21.98
140.0	561.27	490.35	433.28	368.82	273.52	180.99	104.72	46.17	21.79
150.0	481.85	419.61	386.74	329.30	240.65	162.34	103.61	46.91	21.98
160.0	420.35	376.03	355.16	300.30	223.10	153.29	100.29	47.10	21.98
170.0	383.60	355.52	341.86	285.53	213.68	149.78	98.07	47.65	23.09
180.0	372.33	349.61	344.63	289.41	211.47	149.23	96.04	48.39	23.82
190.0	386.37	360.14	360.33	300.12	219.22	154.77	99.73	51.34	26.23
200.0	426.08	384.34	381.75	326.53	236.59	163.08	105.46	51.16	28.26
210.0	489.61	435.13	407.05	357.37	256.53	178.41	114.14	53.93	27.70
220.0	569.21	508.08	444.73	393.20	295.13	201.86	120.60	56.33	29.92
230.0	661.74	603.01	509.37	431.25	342.04	226.06	129.47	59.10	31.40
240.0	743.37	720.10	594.88	471.88	383.41	256.53	140.36	62.61	33.61
250.0	781.05	814.11	711.23	518.05	396.34	286.82	150.34	62.61	33.80
260.0	803.58	859.17	770.52	544.46	387.85	295.50	182.47	77.01	35.83
270.0	840.33	873.21	849.75	638.10	451.56	330.04	184.13	76.09	25.49
280.0	797.48	875.61	833.31	611.13	418.32	323.20	212.58	103.98	24.01
290.0	778.65	838.11	790.28	579.55	433.28	326.90	185.98	84.03	24.38
300.0	755.74	768.30	667.83	522.67	398.74	309.35	174.72	84.22	25.49
310.0	697.20	648.26	558.87	466.52	388.95	274.63	161.23	80.89	25.49
320.0	606.52	541.14	477.23	426.26	339.83	237.51	148.67	78.86	24.93
330.0	525.99	459.50	414.44	384.15	297.53	213.50	138.33	76.83	24.19
340.0	460.24	402.44	374.55	347.03	271.12	193.92	128.91	73.14	24.75
350.0	413.33	367.53	352.94	325.24	255.05	183.03	123.00	70.55	22.90
360.0	398.19	355.89	349.80	321.54	245.82	176.01	119.86	70.74	21.05

Equipment: GMS1800
Temperature(°C): 25.0

Date: 2011/3/31
Humidity(%): 50.0%

Operator: Roy Kao
Distance(m): 13.59

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	6.09	1.29	1.29	1.29	1.48	1.48	1.48	1.48	1.66
10.0	5.73	1.29	1.11	1.29	1.48	1.48	1.48	1.48	1.48
20.0	5.36	1.29	1.48	1.11	1.48	1.48	1.48	1.48	1.48
30.0	5.17	1.48	1.48	1.29	1.48	1.48	1.48	1.48	1.48
40.0	5.73	1.29	1.48	1.48	1.48	1.66	1.48	1.48	1.48
50.0	5.36	1.29	1.29	1.48	1.48	1.48	1.66	1.66	1.66
60.0	4.99	1.48	1.29	1.29	1.48	1.48	1.48	1.66	1.66
70.0	4.43	1.29	1.29	1.29	1.29	1.29	1.48	1.66	1.66
80.0	4.06	1.29	1.29	1.48	1.48	1.66	1.48	1.66	1.66
90.0	1.48	1.29	1.48	1.48	1.66	1.48	1.66	1.66	1.66
100.0	1.29	1.29	1.48	1.48	1.48	1.48	1.48	1.66	1.66
110.0	1.48	1.29	1.48	1.48	1.48	1.48	1.66	1.48	1.66
120.0	1.29	1.29	1.48	1.48	1.48	1.48	1.48	1.48	1.48
130.0	1.29	1.29	1.29	1.29	1.48	1.48	1.66	1.66	1.66
140.0	1.11	1.29	1.48	1.48	1.48	1.66	1.48	1.48	1.48
150.0	1.29	1.29	1.29	1.29	1.29	1.29	1.48	1.66	1.66
160.0	1.11	1.48	1.29	1.48	1.48	1.48	1.29	1.48	1.48
170.0	1.29	1.29	1.29	1.48	1.29	1.48	1.48	1.48	1.48
180.0	1.29	1.29	1.29	1.29	1.48	1.29	1.48	1.48	1.48
190.0	1.11	1.48	1.48	1.29	1.29	1.48	1.48	1.48	1.48
200.0	1.29	1.48	1.29	1.29	1.29	1.48	1.66	1.48	1.48
210.0	1.29	1.29	1.48	1.29	1.48	1.48	1.48	1.48	1.66
220.0	1.66	1.29	1.29	1.48	1.29	1.66	1.48	1.48	1.66
230.0	1.48	1.48	1.48	1.48	1.48	1.66	1.66	1.48	1.48
240.0	2.03	1.48	1.29	1.48	1.48	1.48	1.48	1.48	1.66
250.0	2.59	1.29	1.48	1.48	1.66	1.48	1.66	1.48	1.66
260.0	3.32	1.29	1.29	1.48	1.48	1.48	1.48	1.66	1.66
270.0	1.29	1.29	1.48	1.29	1.48	1.48	1.66	1.66	1.66
280.0	9.79	1.29	1.29	1.29	1.48	1.66	1.48	1.66	1.66
290.0	9.97	1.29	1.29	1.66	1.48	1.66	1.48	1.66	1.66
300.0	9.60	1.29	1.29	1.29	1.48	1.66	1.66	1.66	1.66
310.0	9.23	1.48	1.29	1.48	1.48	1.48	1.66	1.66	1.29
320.0	8.50	1.29	1.29	1.48	1.48	1.29	1.48	1.66	1.48
330.0	8.68	1.29	1.29	1.29	1.48	1.48	1.48	1.66	1.48
340.0	7.76	1.29	1.29	1.48	1.66	1.29	1.48	1.48	1.66
350.0	7.02	1.29	1.29	1.29	1.29	1.29	1.48	1.48	1.48
360.0	6.09	1.29	1.29	1.29	1.48	1.48	1.48	1.48	1.66

Intensity data(cd)

C/ γ ($^{\circ}$)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.48	1.48	1.66	1.48	1.66	1.66	1.85	1.66	1.66
10.0	1.48	1.66	1.48	1.66	1.66	1.48	1.66	1.66	1.66
20.0	1.48	1.48	1.48	1.66	1.66	1.66	1.66	1.85	1.66
30.0	1.66	1.48	1.48	1.48	1.85	1.66	1.66	1.85	1.66
40.0	1.48	1.48	1.66	1.48	1.66	1.66	1.66	1.66	1.66
50.0	1.66	1.66	1.48	1.85	1.66	1.66	1.66	1.66	1.66
60.0	1.66	1.66	1.48	1.66	1.66	1.66	1.66	1.85	1.66
70.0	1.48	1.66	1.66	1.48	1.66	1.66	1.66	1.85	1.66
80.0	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
90.0	1.85	1.66	1.66	1.48	1.66	1.66	1.85	1.66	1.66
100.0	1.85	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
110.0	1.66	1.66	1.85	1.66	1.66	1.66	1.66	1.66	1.66
120.0	1.66	1.66	1.66	1.66	1.66	1.48	1.66	1.66	1.66
130.0	1.48	1.66	1.66	1.48	1.48	1.66	1.66	1.66	1.66
140.0	1.48	1.48	1.66	1.66	1.66	1.48	1.66	1.66	1.66
150.0	1.48	1.48	1.66	1.66	1.66	1.66	1.48	1.85	1.66
160.0	1.48	1.48	1.48	1.66	1.66	1.66	1.66	1.66	1.66
170.0	1.66	1.48	1.66	1.66	1.85	1.66	1.66	1.66	1.66
180.0	1.48	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
190.0	1.66	1.48	1.66	1.48	1.48	1.66	1.66	1.66	1.66
200.0	1.66	1.48	1.48	1.66	1.66	1.66	1.66	1.66	1.66
210.0	1.48	1.48	1.66	1.66	1.48	1.66	1.66	1.66	1.66
220.0	1.66	1.48	1.66	1.66	1.66	1.66	1.66	1.66	1.66
230.0	1.66	1.48	1.66	1.66	1.66	1.66	1.48	1.66	1.66
240.0	1.48	1.48	1.66	1.66	1.66	1.66	1.66	1.66	1.66
250.0	1.48	1.48	1.66	1.66	1.48	1.66	1.66	1.48	1.66
260.0	1.66	1.66	1.48	1.66	1.66	1.66	1.85	1.85	1.66
270.0	1.66	1.66	1.66	1.66	1.48	1.66	1.48	1.48	1.66
280.0	1.48	1.66	1.66	1.85	1.66	1.66	1.66	1.66	1.66
290.0	1.66	1.66	1.48	1.66	1.66	1.66	1.48	1.66	1.85
300.0	1.66	1.66	1.66	1.66	1.66	1.85	1.66	1.66	1.66
310.0	1.66	1.66	1.48	1.66	1.66	1.66	1.66	1.66	1.66
320.0	1.48	1.66	1.66	1.48	1.66	1.66	1.48	1.85	1.66
330.0	1.48	1.48	1.66	1.48	1.66	1.66	1.48	1.66	1.48
340.0	1.48	1.66	1.48	1.66	1.48	1.66	1.66	1.66	1.48
350.0	1.48	1.48	1.48	1.66	1.48	1.66	1.85	1.66	1.66
360.0	1.48	1.48	1.66	1.48	1.66	1.66	1.85	1.66	1.66

Intensity data(cd)

C/γ(°)	180.0
0.0	1.66
10.0	1.66
20.0	1.66
30.0	1.66
40.0	1.48
50.0	1.48
60.0	1.66
70.0	1.66
80.0	1.66
90.0	0.00
100.0	1.66
110.0	1.66
120.0	1.66
130.0	1.48
140.0	1.66
150.0	1.66
160.0	1.48
170.0	1.85
180.0	1.66
190.0	1.66
200.0	1.66
210.0	1.66
220.0	1.48
230.0	1.48
240.0	1.66
250.0	1.66
260.0	1.66
270.0	1.66
280.0	1.66
290.0	1.66
300.0	1.66
310.0	1.48
320.0	1.66
330.0	1.66
340.0	1.48
350.0	1.85
360.0	1.66



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1. Luminaire Specification :

- (1) Input Voltage/Frequency : 110 V ac / 60Hz
- (2) Input Watt : 37.3 W
- (3) Input Current : 0.344 A
- (4) Total Luminous Flux Output : 2309.13 lm
- (5) Luminaire Efficacy : 61.907 lm/W
- (6) Central Intensity (cd): 822.232
- (7) Maximum Intensity(cd): 827.746
- (8) PF: 0.987
- (9) Beam angle: (C0-C180) 84.6 (C90-C270) 128.2

2. Description of EUT Setup :

- (1) Operating Orientation : The light source is considered as horizontal.
- (2) Light Source : LED
- (3) Stabilization time : 0.5 Hour
- (4) Environment Condition : Temperature: 25 ± 1 °C , Humidity: $55\pm 10\%$



廣益全球驗證有限公司

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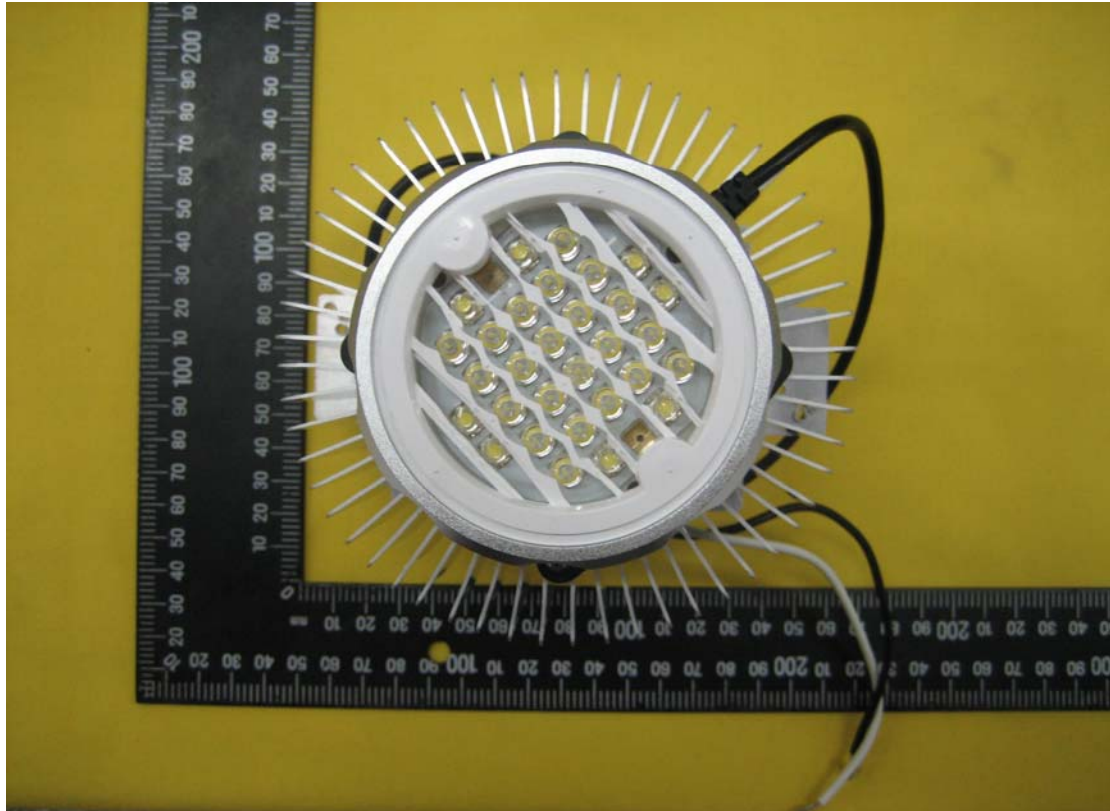
Great One Global Certification Co Ltd

4F., No.3, Aly.8, Siwei Ln., Zhongzheng Rd., Xindian City,

Taipei County 231, Taiwan(R.O.C)

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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
L204	Goniophotometer	SENSING	GMS1800	N/A	N/A
L205	GMS-1800B Goniophotometer System	SENSING		N/A	N/A
L206	AC Power Source	Twintex	TFC 500VA	N/A	N/A
L207	UI2008 Power Meter	SENSING	UI2008	2010/10/1	2011/10/1