

## **LM-79-08 Test Report**

for

### **GREEN CREATIVE LTD**

756 North Zhongshan Rd., Unit B301 Zhabei District, Shanghai

### **Downlight**

**Model: 18DL6DIM/930**

### **Laboratory: Leading Testing Laboratories**

**NVLAP CODE: 200960-0**

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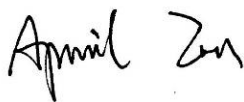
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Report No.: HZ17080054h

The laboratory that conducted the testing detailed in this report has been accredited for SSL by NVLAP.

Review by:



Engineer: April Zou  
Sep. 01, 2017

Approved by:



Manager: Jim Zhang  
Sep. 01, 2017

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

## Test Summary

Sample Tested: 18DL6DIM/930

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
88.4	1546.0	17.49	0.9123
CCT (K)	CRI	Stabilization Time (Light & Power)	
2960	93.0	60	

Table 1: Executive Data Summary

Note: The above results are recorded/ derived from measurements made using an Integrating Sphere.

### Test specifications:

**Date of Receipt** : Aug. 29, 2017

**Date of Test** : Aug. 30, 2017

**Test item** : Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters

**Reference Standard** : IESNA LM-79-2008 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

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## Sample Photos



Figure 1- Overview of the sample

### Equipment Under Test (EUT)

<b>Name</b>	: Downlight
<b>Model</b>	: 18DL6DIM/930
<b>Electrical Ratings</b>	: 120V, 60Hz, 18W
<b>Product Description</b>	: 3000K
<b>Manufacturer</b>	: GREEN CREATIVE LTD
<b>Address</b>	: 756 North Zhongshan Rd., Unit B301 Zhabei District, Shanghai

## TEST RESULTS

Test ambient temperature was 25.0°C.

Base orientation was light down. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 60 minutes, and the total operating time including stabilization was 70 minutes.

### Sphere-Spectroradiometer Method

Parameter	Result
Test Voltage (V)	120.0
Voltage frequency (Hz)	60
Test Current (A)	0.160
Power Factor	0.9123
Test Power (W)	17.49
THD A%	37.39
Luminous Efficacy (lm/W)	88.4
Total Luminous Flux (lm)	1546.0
Color Rendering Index (CRI)	93
R9	58.9
Correlated Color Temperature (CCT)(K)	2960
Chromaticity Chroma x	0.4388
Chromaticity Chroma y	0.4032
Chromaticity Chroma u	0.2521
Chromaticity Chroma v	0.3476
Duv	0.0008
Chromaticity Chroma u'	0.2521
Chromaticity Chroma v'	0.5213

Special Color Rendering Indices	
R1	93.6
R2	98
R3	98
R4	92.4
R5	93.5
R6	96.8
R7	90.7
R8	80.8
R9	58.9
R10	94.5
R11	93.6
R12	83.2
R13	95
R14	99.9
Rf	90
Rg	98

Table 2: Test data per Sphere-Spectroradiometer Method

Note: According to CIE 1976 (u',v') diagram,  $u' = u = 4x/(-2x+12y+3)$ ,  $v' = 3v/2 = 9y/(-2x+12y+3)$ .

## Goniophotometer Method

Test ambient temperature was 24.6°C.

The photometric distance is 2.47m.

Luminous data was taken at 0.5°vertical intervals and 10°horizontal intervals.

Parameter	Result
Test Voltage (V)	120.0
Voltage frequency (Hz)	60
Test Current (A)	0.163
Power Factor	0.9148
Test Power (W)	17.87
Luminous Efficacy (lm/W)	87.8
Total Luminous Flux (lm)	1569.2
Beam Angle (°)	98.5
Center Beam Candle Power (cd)	672
Spacing Criteria	1.19 (0°-180°)/ 1.20 (90°-270°)
Zonal Lumens in the 0°-60°Zone	86.08%
Zonal Lumens in the 60°-90°Zone	13.82%
Zonal Lumens in the 90°-120°Zone	0.02%
Zonal Lumens in the 120°-180°Zone	0.08%

Table 3: Test data per Goniophotometer Method

## Spectral Power Distribution - Sphere Spectroradiometer Method

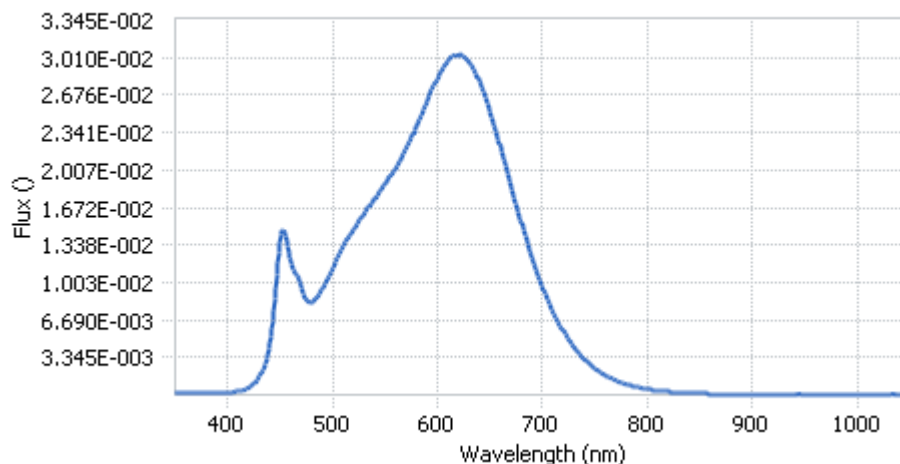
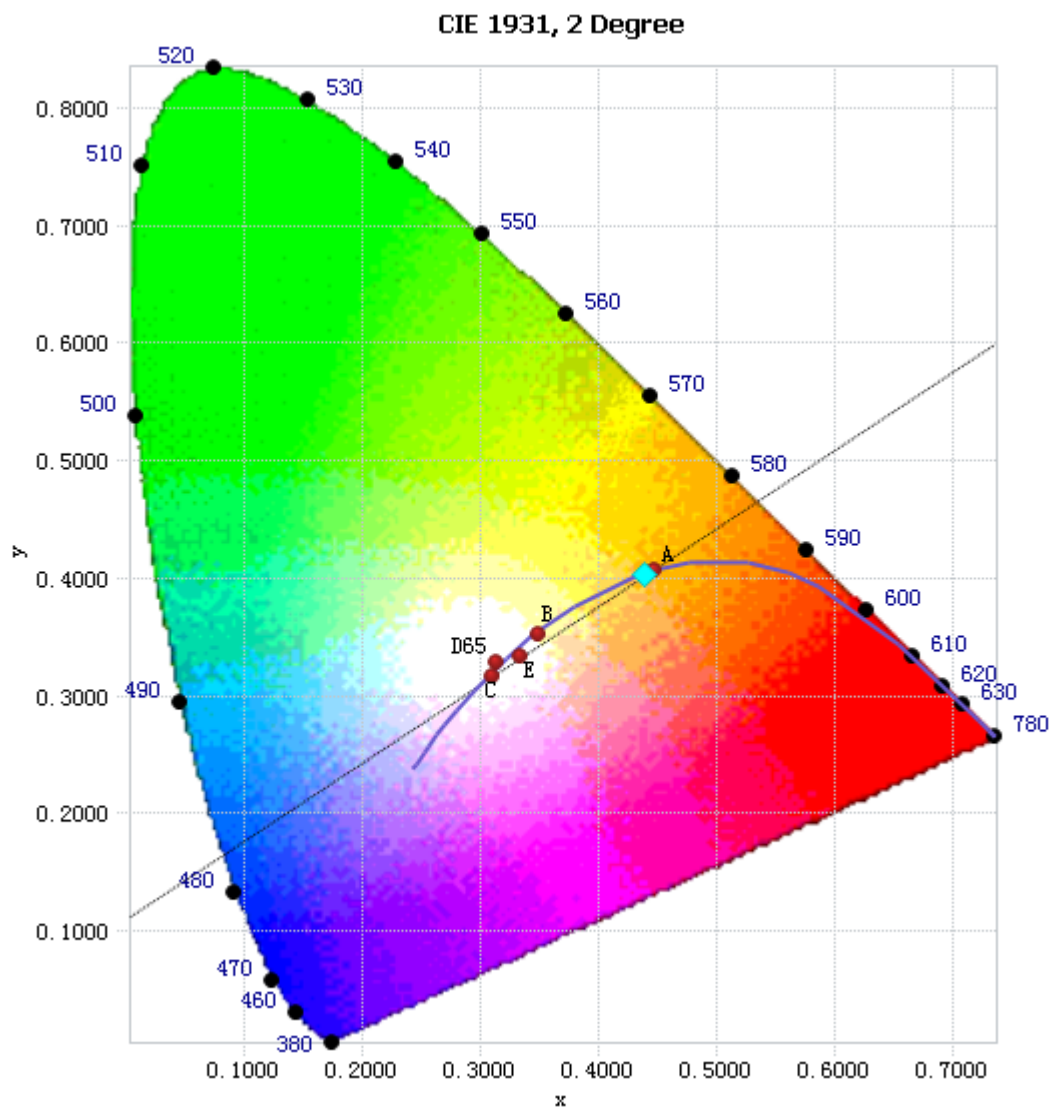


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	2.17E-04	485	8.73E-03	590	2.62E-02	695	1.09E-02
385	1.92E-04	490	9.40E-03	595	2.73E-02	700	9.60E-03
390	1.96E-04	495	1.03E-02	600	2.83E-02	705	8.42E-03
395	2.29E-04	500	1.13E-02	605	2.92E-02	710	7.35E-03
400	2.29E-04	505	1.23E-02	610	2.98E-02	715	6.45E-03
405	2.65E-04	510	1.32E-02	615	3.02E-02	720	5.65E-03
410	3.28E-04	515	1.41E-02	620	3.03E-02	725	4.89E-03
415	4.39E-04	520	1.49E-02	625	3.02E-02	730	4.27E-03
420	6.37E-04	525	1.55E-02	630	2.97E-02	735	3.69E-03
425	9.95E-04	530	1.62E-02	635	2.90E-02	740	3.15E-03
430	1.58E-03	535	1.68E-02	640	2.79E-02	745	2.73E-03
435	2.63E-03	540	1.75E-02	645	2.66E-02	750	2.34E-03
440	4.61E-03	545	1.82E-02	650	2.53E-02	755	2.02E-03
445	8.54E-03	550	1.88E-02	655	2.37E-02	760	1.73E-03
450	1.35E-02	555	1.95E-02	660	2.21E-02	765	1.48E-03
455	1.42E-02	560	2.02E-02	665	2.03E-02	770	1.29E-03
460	1.19E-02	565	2.10E-02	670	1.86E-02	775	1.09E-03
465	1.08E-02	570	2.20E-02	675	1.69E-02	780	9.28E-04
470	9.77E-03	575	2.29E-02	680	1.53E-02		
475	8.43E-03	580	2.40E-02	685	1.37E-02		
480	8.30E-03	585	2.51E-02	690	1.22E-02		

Table 4: Spectral Power Distribution Numerical Data per Sphere - Spectroradiometer Method

## Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.4388, 0.4032)

Chart 2: Chromaticity Diagram per Sphere - Spectroradiometer Method

Note: The location on the diagram of the tristimulus coordinates are indicated by the blue diamond.



### Nominal CCT Quadrangles – Sphere Spectroradiometer Method

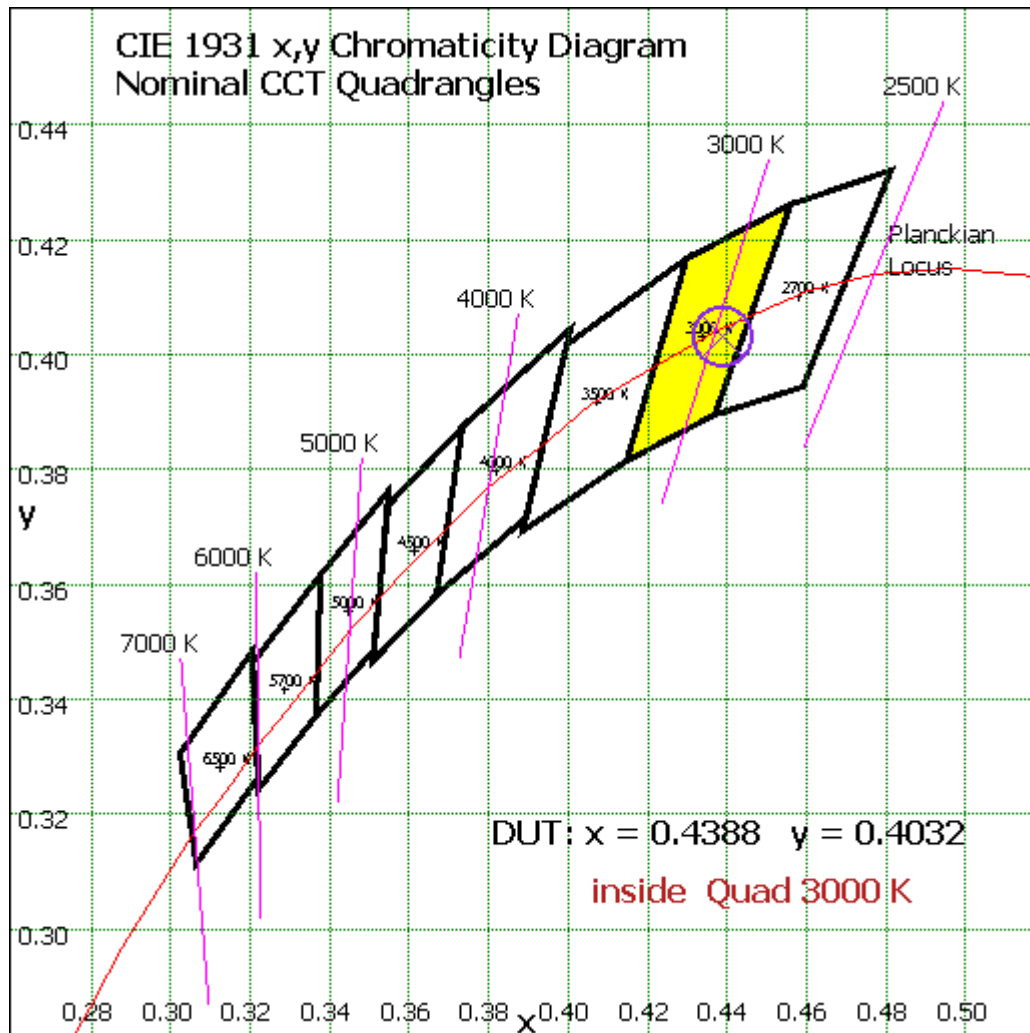


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

### Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	63.419	4.04%
10- 20	179.18	11.42%
20- 30	264.758	16.87%
30- 40	307.323	19.58%
40- 50	298.094	19.00%
50- 60	237.992	15.17%
60- 70	148.776	9.48%
70- 80	57.988	3.70%
80- 90	10.076	0.64%
90-100	0.045	0.00%
100-110	0.089	0.01%
110-120	0.148	0.01%
120-130	0.212	0.01%
130-140	0.286	0.02%
140-150	0.315	0.02%
150-160	0.268	0.02%
160-170	0.177	0.01%
170-180	0.062	0.00%
Total	1569.2	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	1350.766	86.08%
60- 90	216.84	13.82%
0-90	1567.606	99.90%
90- 180	1.602	0.10%
0- 180	1569.2	100%

Table 5: Zonal Lumen Data

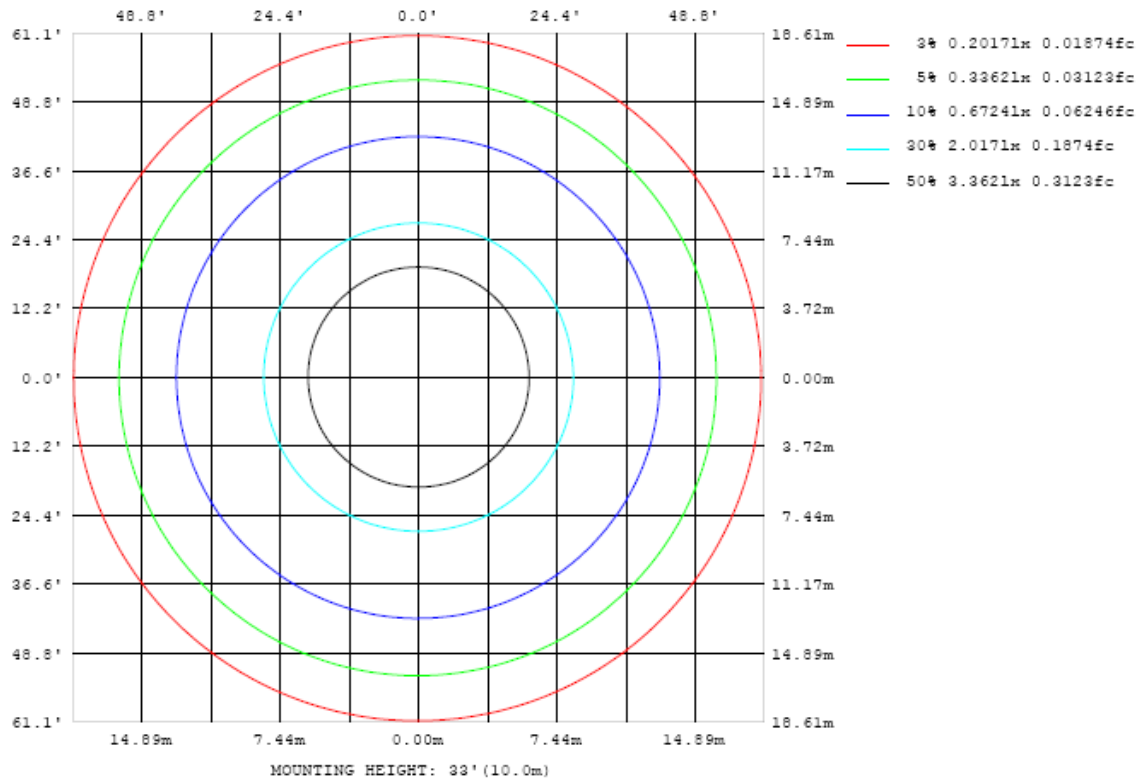


Chart 4: Illuminance Plot (Footcandles)

## Luminous Intensity Distribution Plots- Goniophotometer Method

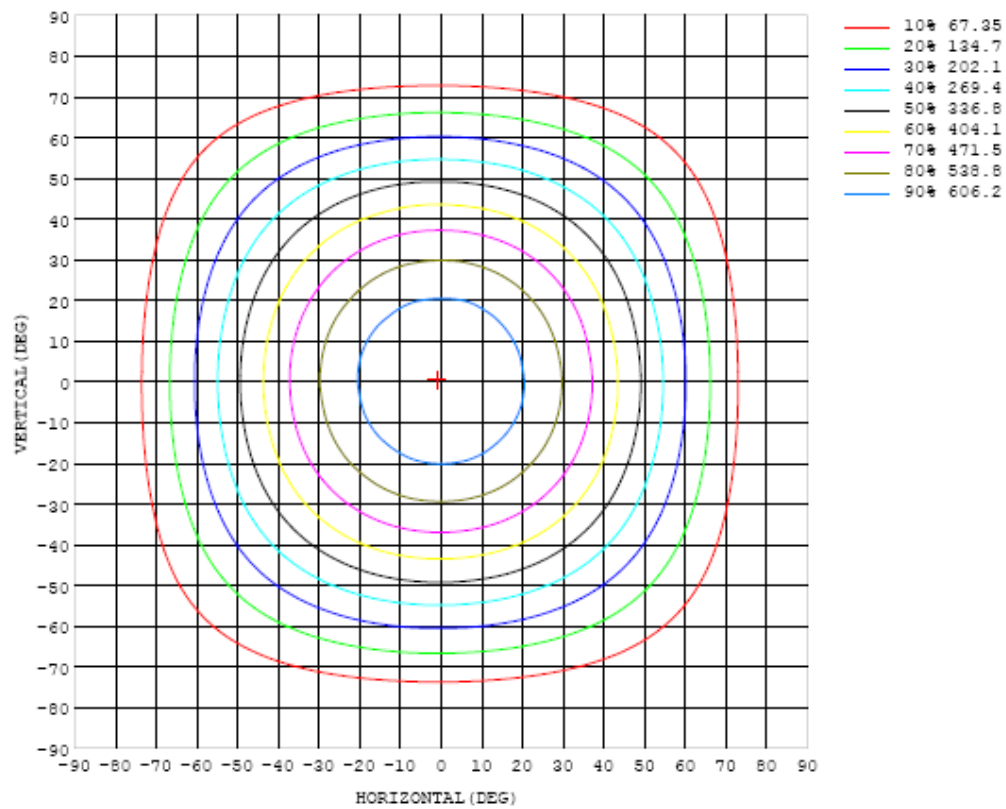


Chart 5: Isocandela Plot

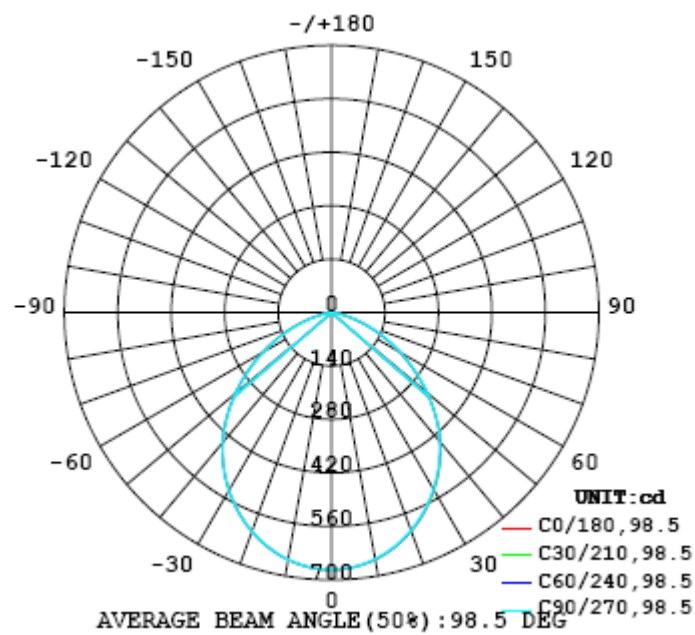


Chart 6: Polar Candela Distribution

## Luminous Intensity Data- Goniophotometer Method

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672
5	669	669	669	669	668	668	668	668	668	668	668	668	668	667	668	668	668	668	669
10	657	657	657	657	656	656	656	656	655	655	655	655	655	655	655	656	656	655	656
15	637	637	637	636	635	635	635	635	634	634	635	635	634	635	635	635	635	635	636
20	609	609	609	608	608	607	608	608	607	607	607	607	607	607	607	608	608	608	609
25	576	575	576	575	574	574	574	574	573	573	573	574	573	573	574	574	575	574	576
30	536	536	536	536	535	534	535	534	533	533	534	535	534	534	535	535	536	535	537
35	492	492	492	492	491	491	490	490	489	489	490	490	490	490	491	491	491	491	492
40	443	443	443	443	442	442	442	442	441	441	442	442	442	442	443	443	443	443	444
45	386	386	387	387	386	386	387	387	386	387	387	388	388	388	388	389	388	388	389
50	325	326	326	326	326	326	327	327	327	327	328	329	329	329	329	329	329	329	329
55	264	264	265	265	265	265	266	266	267	267	268	268	268	268	269	269	269	268	268
60	204	204	205	205	205	206	207	207	208	209	209	209	209	209	210	210	209	209	209
65	147	148	148	149	149	150	151	151	152	152	153	153	153	153	154	154	153	153	153
70	95.0	95.6	96.3	96.9	97.6	98.3	99.0	99.8	100	101	101	102	102	102	102	102	101	101	101
75	50.9	51.6	52.3	53.1	53.8	54.6	55.4	56.0	56.5	57.0	57.3	57.6	57.7	57.7	57.5	57.4	57.0	56.2	55.5
80	20.5	21.0	21.6	22.1	22.6	23.1	23.6	24.0	24.4	24.6	24.9	25.1	25.1	25.0	24.8	24.5	24.1	23.5	22.9
85	8.02	8.40	8.80	9.22	9.57	9.84	10.1	10.4	10.7	10.8	11.0	11.0	11.0	10.9	10.8	10.6	10.3	9.98	9.58
90	0.02	0.02	0.02	0.03	0.05	0.10	0.19	0.31	0.46	0.59	0.66	0.71	0.72	0.68	0.59	0.46	0.31	0.19	0.08
95	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04
100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06
105	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.09
110	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.12
115	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.16
120	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.19
125	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.25
130	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.32
135	0.33	0.34	0.34	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.41
140	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.50
145	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.58
150	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.63
155	0.49	0.49	0.49	0.49	0.49	0.50	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.66
160	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.52	0.68
165	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.68
170	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.68
175	0.65	0.65	0.65	0.65	0.65	0.66	0.66	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.66
180	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67

Table 6: Luminous Intensity Data

Table--2

UNIT: cd

C (DEG) y (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672	672		
5	669	670	669	669	669	669	670	668	668	669	669	669	668	668	669	668	668		
10	657	658	657	656	656	657	657	657	656	656	657	656	656	656	656	656	655		
15	637	637	637	636	636	637	637	637	636	637	637	636	636	636	635	636	635		
20	610	609	611	610	610	610	610	609	609	610	610	609	609	608	608	609	607		
25	576	577	577	577	577	577	577	577	576	576	576	576	576	576	576	575	574		
30	537	538	538	538	538	538	539	538	538	538	537	537	537	537	536	536	535		
35	493	494	494	493	494	494	494	494	493	493	494	493	493	492	492	492	491		
40	444	446	445	445	444	445	445	444	443	444	443	443	443	442	442	442	442		
45	389	390	389	389	389	388	388	388	387	387	387	387	386	386	385	386	385		
50	329	329	329	329	329	328	328	328	327	326	326	326	325	325	326	325	324		
55	269	268	268	267	268	267	267	266	265	265	265	264	263	263	263	264	263		
60	209	209	208	208	207	206	206	206	205	204	203	204	204	203	203	203	203		
65	152	152	152	151	150	149	148	148	148	147	147	147	146	147	147	147	147		
70	100	99.2	98.4	97.3	96.9	96.4	95.2	94.9	94.0	93.8	93.6	93.3	93.2	93.3	93.7	94.0	94.3		
75	54.6	54.1	52.9	52.1	51.4	50.5	49.6	49.2	48.7	48.3	48.1	48.0	48.0	48.3	48.8	49.4	49.9		
80	22.4	21.9	21.3	20.9	20.3	19.9	19.4	19.1	18.8	18.7	18.6	18.6	18.6	18.9	19.2	19.5	19.9		
85	9.26	8.94	8.55	8.17	7.82	7.52	7.25	7.01	6.79	6.66	6.57	6.58	6.65	6.82	7.04	7.29	7.57		
90	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02		
95	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04		
100	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06		
105	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		
110	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13		
115	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16		
120	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20		
125	0.25	0.25	0.25	0.25	0.25	0.25	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25		
130	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32		
135	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.42	0.42	0.41	0.41		
140	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50		
145	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58		
150	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.63	0.63	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64		
155	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67		
160	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.68	0.69	0.68	0.69	0.69	0.69	0.69	0.69	0.69	0.69		
165	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.68	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69		
170	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68		
175	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67		
180	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67		

Table 7: Luminous Intensity Data

## EQUIPMENT LIST

Test Equipment	Model	Equipment No.	Calibration Date	Calibration Due date
Goniophotometer system	GO-R5000	HZTE011-01	Aug. 23, 2017	Aug. 22, 2018
Digital Power Meter	PF2010A	HZTE028-01	Aug. 10, 2017	Aug. 09, 2018
AC Power Supply	DPS1060	HZTE001-06	Aug. 10, 2017	Aug. 09, 2018
DC Power Supply	WY12010	HZTE004-03	Aug. 10, 2017	Aug. 09, 2018
Temperature Meter	TES1310	HZTE017-01	Aug. 17, 2017	Aug. 16, 2018
Standard source	D908	HZTE012-01	Aug. 15, 2017	Aug. 14, 2018
Integrate Sphere system	2M	HZTE015-01	Aug. 23, 2017	Aug. 22, 2018
Digital Power Meter	WT210	HZTE008-01	Aug. 10, 2017	Aug. 09, 2018
AC Power Supply	PCR 500L	HZTE001-07	Aug. 10, 2017	Aug. 09, 2018
DC Power Supply	IT6154	HZTE004-04	Aug. 10, 2017	Aug. 09, 2018
Temperature and humidity recorder	JR900	HZTE018-01	Aug. 16, 2017	Aug. 15, 2018
Standard source	SCL-1400	HZTE012-02	Aug. 15, 2017	Aug. 14, 2018

Table 8: Test Equipment List

## TEST METHODS

### Seasoning of SSL Product

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

### Sphere-Spectroradiometer Method- Photometric and Electrical Measurements

A Labsphere Model CDS 2100 Spectroradiometer and Two Meter Sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit. The coating reflectance of each sphere is 98%. The measure geometry is  $4\pi$ . Self-absorption correction is conducted in testing. Bandwidth of spectroradiometer is 350nm-1050nm.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation.

The stabilization time typically ranges from 30 min (small integrated FA19 Lamps) to 2 or more hours for large SSL luminaires). It can be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 30 min, taken 15 minutes apart, is less than 0.5 %.

Electrical measurements including voltage, current, and power were measured using the Yokogawa Power Analyzer.

The standard reference of the integrated sphere system is halogen incandescent lamp, the intensity distribution type is omni-directional, and is traceable to the National Institute of Standards and Technology.

The uncertainty of integrating sphere system reported in this document is expanded uncertainty is 2.1% with a coverage factor  $k=2$ .



## **Goniophotometer Method**

### **Photometric and Electrical Measurements**

An EVERFINE Type C Model GO-R5000 Goniophotometer was used to measure the intensity at each angle of distribution for each sample. The photometric distance is 2.475m for near-field measurement or 30m for far-field measurement. Bandwidth of spectroradiometer is 380nm-780nm.

Ambient temperature was measured at the same height of the sample mounted on the Goniophotometer equipment. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation.

The stabilization time typically ranges from 30 min (small integrated FA19 Lamps) to 2 or more hours for large SSL luminaires). It can be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 30 min, taken 15 minutes apart, is less than 0.5 %.

Electrical measurements including voltage, current, and power were measured using the Everfine Digital Power Meter.

Some graphics were created with Photometric Plus software.

The standard reference of the Goniophotometer system is halogen incandescent lamp, the intensity distribution type is omni-directional, and is traceable to the National Institute of Metrology P.R. China.

The uncertainty of goniophotometer system reported in this document is expanded uncertainty is 2.3% with a coverage factor  $k=2$ .

### **Color Characteristics Measurements**

The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as values that are spatially average, weighted to intensity, over the angular range where light is intentionally emitted from the SSL product. The color characteristics measurements are using gonio-spectroradiometer.

### **Color Spatial Uniformity**

The characteristics of SSL products may be spatially non-uniform, the chromaticity coordinate shall be measured at two vertical planes ( $C=0^\circ/180^\circ$  and  $C=90^\circ/270^\circ$ ) and at  $10^\circ$  or less intervals for vertical angle until the light output dropped to below 10% of the peak intensity. The averaged weighted chromaticity coordinate was calculated from these points. The data was then analyzed to check for delta color differences of the  $u'$ ,  $v'$  chromaticity coordinates. The spatial non-uniformity of chromaticity,  $\Delta u'v'$ , is determined as the maximum



deviation (distance on the CIE ( $u'$ ,  $v'$ ) diagram) among all measured points from the spatially averaged chromaticity coordinate.

The geometry for the chromaticity measurement using gonio-spectroradiometer is shown as following.



\*\*\* End of Report \*\*\*

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