LM-79-08 Test Report

for

GREEN CREATIVE LTD

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

LED lamp

Model: 5.5PLV/840/HYBM

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

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Report No.: HZ18100024h

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

Review by: April Zou

Engineer: April Zou

Nov. 02, 2018

Approved by: Zhang

Manager: Jim Zhang

Nov. 02, 2018

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: **5.5PLV/840/HYBM**

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
117.1	653.4	5.58	0.9782

CCT (K)	CRI	Stabilization Time (Light & Power)
3938	83.2	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	: Oct. 30, 2018
Date of Test	: Oct. 30, 2018
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)	
Name	: LED lamp
Model	: 5.5PLV/840/HYBM
Electrical Ratings	: 120-277V, 50/60Hz, 5.5W
Product Description	: 4000K
Manufacturer	: GREEN CREATIVE LTD
Address	: 756 North Zhongshan Rd., Unit B301 Zhabei District, Shanghai

TEST RESULTS

Test ambient temperature was 25.0℃.

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	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.048	0.023
Power Factor	0.9782	0.8991
Test Power (W)	5.58	5.71
THD A%	16.80	24.76
Luminous Efficacy (lm/W)	117.1	114.4
Total Luminous Flux (lm)	653.4	653.4
Color Rendering Index (CRI)	83.2	
R9	10.7	
Correlated Color Temperature (CCT)(K)	3938	
Chromaticity Chroma x	0.3846	
Chromaticity Chroma y	0.3837	
Chromaticity Chroma u	0.2251	
Chromaticity Chroma v	0.3368	
Duv	0.0020	
Chromaticity Chroma u ’	0.2251	
Chromaticity Chroma v’	0.5052	

Special Color Rendering Indices	
R1	81.1
R2	88.2
R3	94.3
R4	82.8
R5	81.3
R6	84.3
R7	87
R8	65.9
R9	10.7
R10	72.4
R11	81.9
R12	64.7
R13	82.7
R14	96.8
Rf	83
Rg	96

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 24.9℃.

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)	0.048
Power Factor	0.9790
Test Power (W)	5.59
Luminous Efficacy (lm/W)	119.1
Total Luminous Flux (lm)	666.0
Beam Angle (°)	107.2
Center Beam Candle Power (cd)	238
Spacing Criteria	1.23 (0°-180°)/ 1.23 (90°-270°)
Zonal Lumens in the 0°-60°Zone	77.79%
Zonal Lumens in the 60°-90°Zone	20.96%
Zonal Lumens in the 90°-120°Zone	1.18%
Zonal Lumens in the 120°-180°Zone	0.08%

Table 3: Test data per Goniophotometer Method

Spectral Power Distribution - Sphere Spectroradiometer Method

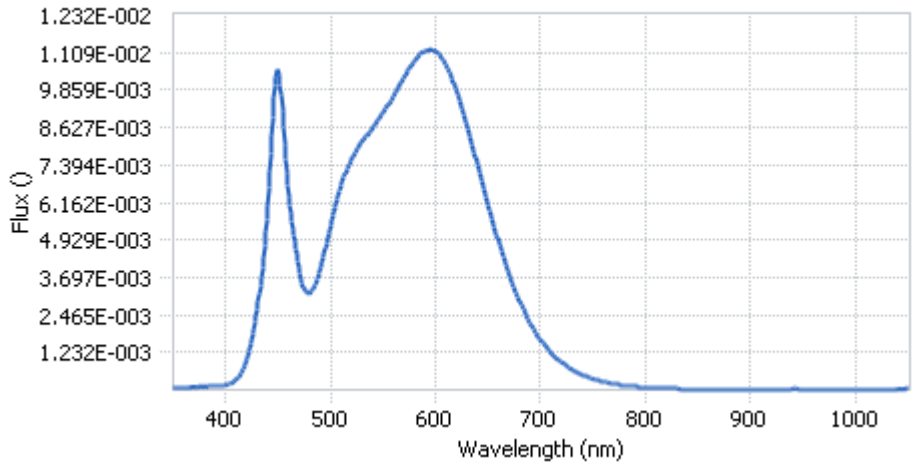
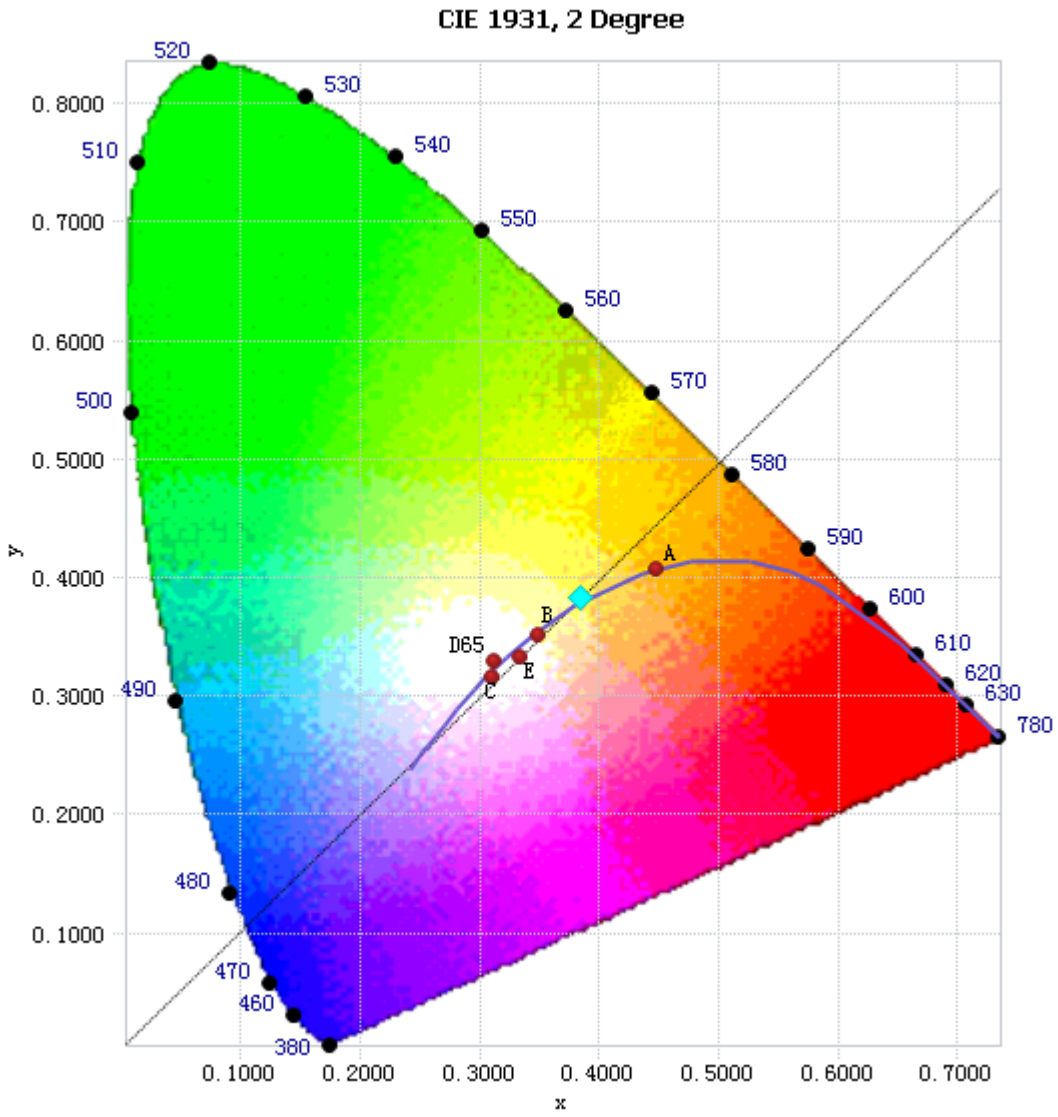


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.11E-04	485	3.45E-03	590	1.11E-02	695	1.91E-03
385	1.11E-04	490	3.94E-03	595	1.12E-02	700	1.65E-03
390	1.26E-04	495	4.65E-03	600	1.11E-02	705	1.42E-03
395	1.41E-04	500	5.44E-03	605	1.10E-02	710	1.22E-03
400	1.68E-04	505	6.14E-03	610	1.07E-02	715	1.05E-03
405	2.19E-04	510	6.71E-03	615	1.03E-02	720	9.08E-04
410	3.38E-04	515	7.23E-03	620	9.82E-03	725	7.85E-04
415	5.85E-04	520	7.65E-03	625	9.26E-03	730	6.72E-04
420	1.01E-03	525	7.89E-03	630	8.68E-03	735	5.74E-04
425	1.68E-03	530	8.17E-03	635	8.07E-03	740	4.94E-04
430	2.67E-03	535	8.39E-03	640	7.40E-03	745	4.22E-04
435	4.02E-03	540	8.64E-03	645	6.74E-03	750	3.64E-04
440	6.10E-03	545	8.89E-03	650	6.09E-03	755	3.13E-04
445	8.99E-03	550	9.12E-03	655	5.47E-03	760	2.69E-04
450	1.05E-02	555	9.39E-03	660	4.88E-03	765	2.32E-04
455	8.67E-03	560	9.68E-03	665	4.33E-03	770	2.01E-04
460	6.33E-03	565	9.96E-03	670	3.80E-03	775	1.74E-04
465	5.09E-03	570	1.03E-02	675	3.35E-03	780	1.49E-04
470	4.02E-03	575	1.06E-02	680	2.92E-03		
475	3.31E-03	580	1.08E-02	685	2.54E-03		
480	3.17E-03	585	1.11E-02	690	2.21E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3846, 0.3837)

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

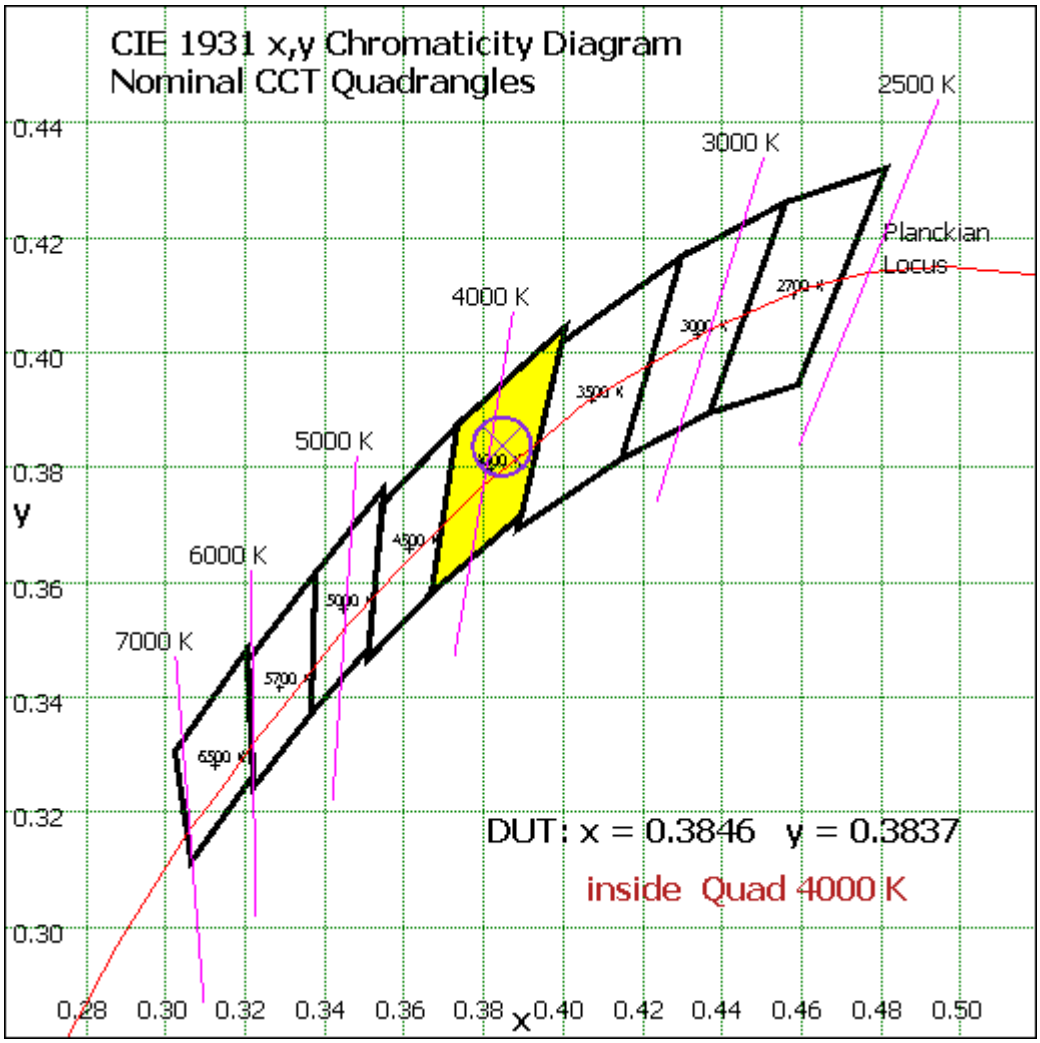


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Zonal Lumen Tabulation- Goniophotometer Method

γ(°)	Lumens	% Total
0- 10	22.518	3.38%
10- 20	64.445	9.68%
20- 30	97.161	14.59%
30- 40	115.536	17.35%
40- 50	116.823	17.54%
50- 60	101.527	15.25%
60- 70	74.605	11.20%
70- 80	44.484	6.68%
80- 90	20.478	3.08%
90-100	6.526	0.98%
100-110	1.172	0.18%
110-120	0.132	0.02%
120-130	0.092	0.01%
130-140	0.118	0.02%
140-150	0.128	0.02%
150-160	0.109	0.02%
160-170	0.072	0.01%
170-180	0.025	0.00%
Total	666.0	100%

γ(°)	Lumens	% Total
0- 60	518.01	77.79%
60- 90	139.567	20.96%
0-90	657.577	98.74%
90- 180	8.374	1.26%
0- 180	666.0	100%

Table 5: Zonal Lumen Data

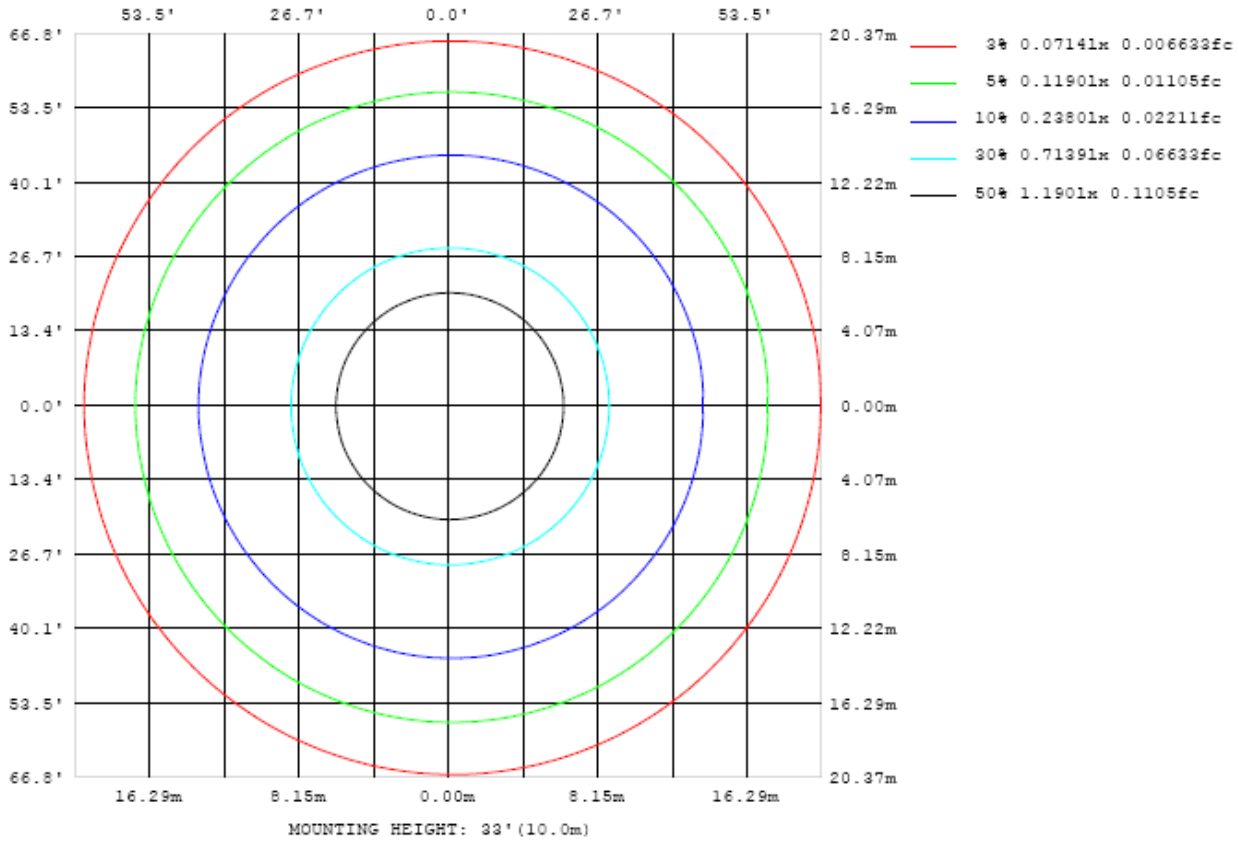


Chart 4: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots- Goniophotometer Method

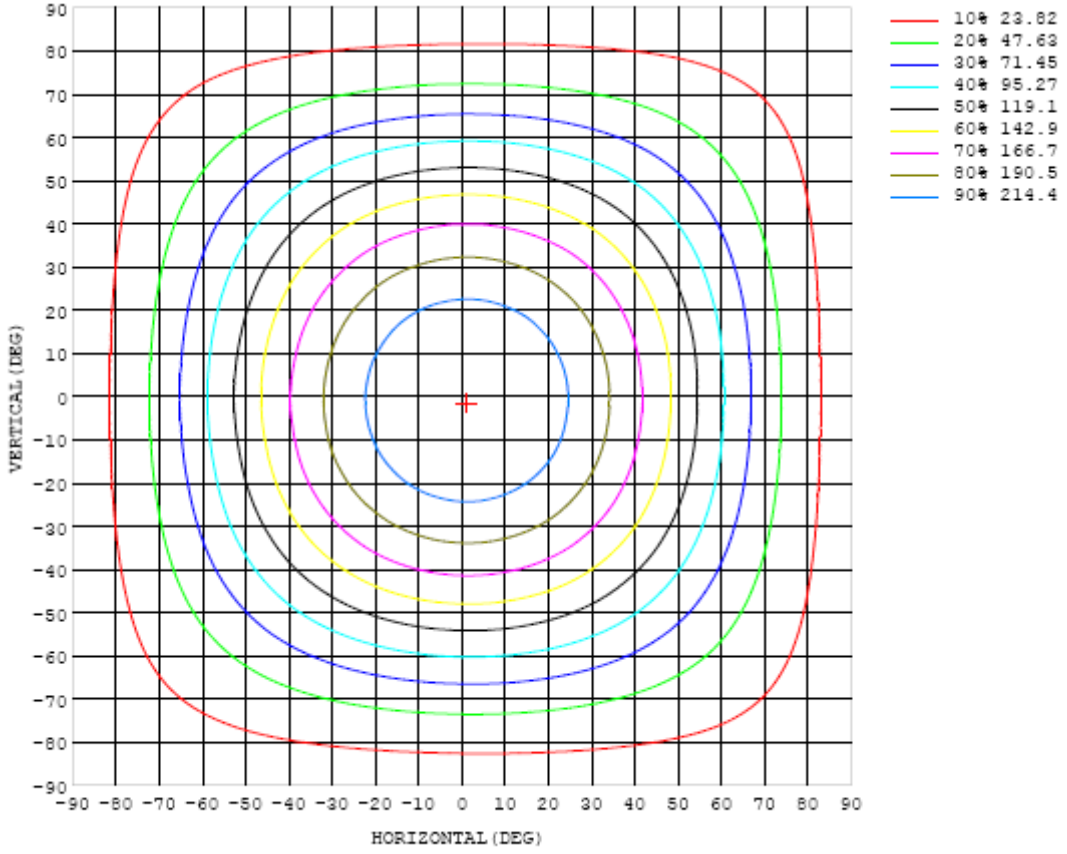


Chart 5: Isocandela Plot

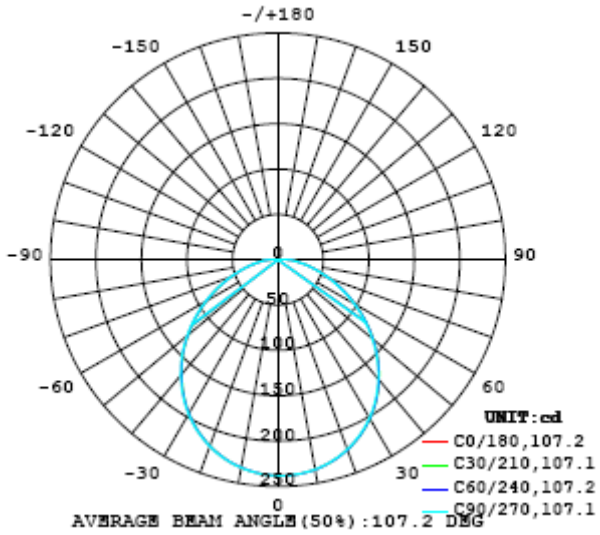


Chart 6: Polar Candela Distribution

Luminous Intensity Data- Goniophotometer Method

Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
5	237	237	238	238	237	238	238	237	237	237	237	237	237	237	237	237	237	237	237
10	235	235	235	235	235	235	235	235	235	235	235	234	234	234	234	233	233	233	233
15	230	230	230	230	230	230	230	230	230	229	229	229	229	228	228	228	227	227	227
20	223	223	223	223	223	223	223	223	223	222	222	222	221	221	220	220	220	219	219
25	213	213	214	214	214	214	214	213	213	213	212	212	212	211	210	210	209	209	209
30	202	202	202	202	202	202	202	202	202	201	200	200	199	199	198	198	197	197	196
35	188	188	189	189	189	189	188	188	188	187	187	186	185	184	184	183	183	182	182
40	172	173	173	173	173	173	173	172	172	171	171	170	169	168	168	167	167	166	166
45	155	155	156	156	156	156	155	155	154	154	153	152	152	151	150	149	149	148	149
50	136	137	137	137	137	137	137	136	136	135	134	134	133	132	131	130	130	129	130
55	117	117	117	118	117	117	117	117	116	116	115	114	113	112	112	111	110	110	110
60	97.5	97.8	98.0	98.1	97.9	97.8	97.6	97.1	96.7	96.1	95.4	94.5	93.8	92.9	92.3	91.7	91.4	90.9	91.2
65	78.3	78.5	78.7	78.8	78.7	78.5	78.2	77.9	77.6	77.0	76.3	75.6	74.9	74.2	73.7	73.0	72.6	72.2	72.5
70	60.4	60.7	60.8	60.8	60.6	60.4	60.3	59.9	59.6	59.2	58.6	58.0	57.4	56.9	56.3	55.9	55.5	55.1	55.1
75	44.1	44.2	44.4	44.3	44.2	44.0	43.9	43.6	43.4	43.0	42.5	42.0	41.7	41.1	40.7	40.4	40.2	39.8	39.7
80	30.5	30.6	30.7	30.6	30.5	30.3	30.2	30.1	29.9	29.6	29.2	28.8	28.5	28.1	27.8	27.6	27.4	27.1	27.1
85	19.7	19.7	19.8	19.7	19.7	19.6	19.5	19.4	19.2	19.0	18.8	18.4	18.2	17.9	17.7	17.5	17.4	17.2	17.2
90	11.7	11.7	11.7	11.7	11.7	11.7	11.6	11.5	11.4	11.3	11.1	10.9	10.7	10.5	10.3	10.1	10.0	9.88	9.81
95	6.12	6.15	6.20	6.22	6.29	6.24	6.21	6.16	6.07	5.95	5.78	5.65	5.52	5.38	5.25	5.13	5.03	4.94	4.97
100	2.68	2.70	2.75	2.79	2.82	2.86	2.86	2.82	2.74	2.66	2.57	2.48	2.41	2.34	2.26	2.18	2.12	2.08	2.11
105	0.96	0.96	0.99	1.03	1.06	1.09	1.10	1.08	1.04	0.99	0.94	0.90	0.88	0.84	0.81	0.78	0.75	0.73	0.75
110	0.28	0.28	0.29	0.31	0.33	0.35	0.36	0.36	0.34	0.33	0.33	0.32	0.32	0.30	0.28	0.26	0.24	0.23	0.25
115	0.07	0.06	0.06	0.07	0.08	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07
120	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09
125	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11
130	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.14
135	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.17
140	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.21
145	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.24
150	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.26
155	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.27
160	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.28
165	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.28
170	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.28
175	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.27
180	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26

Table 6: Luminous Intensity Data

Table--2 UNIT: cd

γ (DEG) \ C (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238		
5	236	236	236	236	236	236	237	237	237	237	237	237	237	237	237	237	237		
10	233	233	233	233	233	233	233	233	233	233	233	234	234	234	234	235	235		
15	227	227	227	226	227	227	227	227	227	228	228	228	229	229	229	229	230		
20	218	219	219	218	218	219	219	219	219	220	220	220	221	222	222	222	222		
25	208	208	208	208	208	208	208	209	209	210	210	211	211	212	212	213	213		
30	196	196	196	195	196	196	196	196	197	197	198	198	199	200	200	201	202		
35	181	181	181	181	181	181	181	182	183	183	184	184	185	186	187	187	188		
40	165	165	165	164	165	165	165	166	166	167	167	168	169	170	171	171	172		
45	148	148	148	148	148	148	149	149	150	150	151	152	152	153	154	155	155		
50	129	129	129	129	129	130	130	130	131	131	132	133	134	135	135	136	137		
55	110	110	110	110	110	110	110	111	111	112	113	113	114	115	116	117	117		
60	90.8	90.5	90.4	90.5	90.8	91.0	91.2	91.7	92.2	92.7	93.3	94.1	95.1	96.0	96.6	97.3	98.0		
65	72.2	71.9	71.9	71.8	72.1	72.3	72.4	72.6	73.0	73.5	74.2	74.9	76.0	76.8	77.6	78.3	78.8		
70	54.8	54.4	54.4	54.4	54.5	54.7	54.8	55.1	55.5	55.9	56.3	57.0	57.9	58.6	59.3	59.8	60.4		
75	39.7	39.3	39.3	39.3	39.4	39.5	39.5	39.8	40.0	40.4	40.7	41.4	42.1	42.7	43.3	43.7	44.2		
80	26.9	26.8	26.7	26.8	26.9	27.0	27.0	27.2	27.3	27.6	27.9	28.4	29.0	29.4	29.8	30.3	30.5		
85	17.1	17.1	17.1	17.1	17.2	17.3	17.3	17.4	17.5	17.7	17.9	18.2	18.6	18.9	19.3	19.5	19.7		
90	9.79	9.80	9.84	9.90	10.00	10.1	10.1	10.2	10.2	10.3	10.5	10.7	10.9	11.2	11.3	11.5	11.6		
95	4.97	5.02	5.09	5.17	5.26	5.31	5.31	5.35	5.40	5.46	5.57	5.70	5.84	5.94	6.02	6.09	6.12		
100	2.12	2.16	2.22	2.29	2.36	2.39	2.41	2.42	2.44	2.48	2.53	2.61	2.67	2.72	2.74	2.75	2.73		
105	0.77	0.79	0.84	0.88	0.92	0.94	0.95	0.95	0.97	0.98	0.99	1.02	1.04	1.05	1.04	1.02	1.00		
110	0.26	0.29	0.32	0.34	0.36	0.36	0.36	0.36	0.36	0.36	0.37	0.38	0.38	0.38	0.37	0.34	0.32		
115	0.08	0.09	0.10	0.10	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.11	0.12	0.11	0.11	0.10	0.08		
120	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		
125	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11		
130	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.14		
135	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17		
140	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20		
145	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.23	0.23		
150	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26		
155	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		
160	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28		
165	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28		
170	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28		
175	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		
180	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26		

Table 7: Luminous Intensity Data

EQUIPMENT LIST

Test Equipment	Model	Equipment No.	Calibration Date	Calibration Due date
Goniophotometer system	GO-R5000	HZTE011-01	Aug. 14, 2018	Aug. 13, 2019
Digital Power Meter	PF2010A	HZTE028-01	Sep. 12, 2018	Sep. 11, 2019
AC Power Supply	DPS1060	HZTE001-06	Aug. 09, 2018	Aug. 08, 2019
DC Power Supply	WY12010	HZTE004-03	Aug. 09, 2018	Aug. 08, 2019
Temperature recorder	JM624U	HZTE018-08	Aug. 09, 2018	Aug. 08, 2019
Temperature and humidity recorder	JR900	HZTE018-01	Aug. 09, 2018	Aug. 08, 2019
Standard source	D908	HZTE012-01	Aug. 14, 2018	Aug. 13, 2019
Integrate Sphere system	2M	HZTE015-01	Aug. 16, 2018	Aug. 15, 2019
Digital Power Meter	WT210	HZTE008-01	Aug. 02, 2018	Aug. 01, 2019
AC Power Supply	PCR 500L	HZTE001-07	Aug. 09, 2018	Aug. 08, 2019
DC Power Supply	IT6154	HZTE004-04	Aug. 09, 2018	Aug. 08, 2019
Standard source	SCL-1400	HZTE012-02	Aug. 16, 2018	Aug. 15, 2019
Temperature and humidity recorder	JR900	HZTE018-02	Aug. 09, 2018	Aug. 08, 2019
Temperature Meter	TES1310	HZTE017-01	Aug. 09, 2018	Aug. 08, 2019

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 4π. 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 LED 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 expended 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 LED 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 expended uncertainty is 2.3% with a coverage factor k=2.

Color Characteristics Measurements

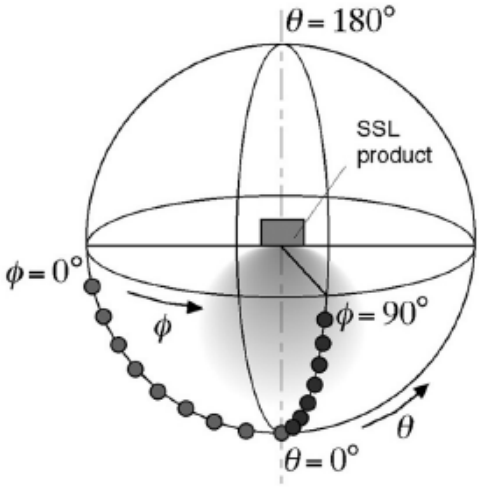
The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as 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°/180° and C=90°/270°) and at 10° 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, Δu'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 ***