

LM-79-08 Test Report

for

GREEN CREATIVE LTD

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

LED Tube System

Model: 9.5T5HE/2F/835/EXT/A2

(LED tube model: 9.5T5HE/2F/835/EXT 2pcs and LED driver model: 15T8T5HEDRIVER/2CH 1pcs)

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

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Report No.: HZ18080024as

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

Review by:



Engineer: April Zou

Aug. 29, 2018

Approved by:



Manager: Jim Zhang

Aug. 29, 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: **9.5T5HE/2F/835/EXT/A2**

Luminous Efficacy (Lumens /Watt)	Luminous Flux per lamp (Lumens)	Power (Watts)/2	Power Factor
128.4	1472.0	11.47	0.9948
CCT (K)	CRI	Stabilization Time (Light & Power)	
3303	82.4	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 : Jul. 30, 2018

Date of Test : Aug. 03, 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

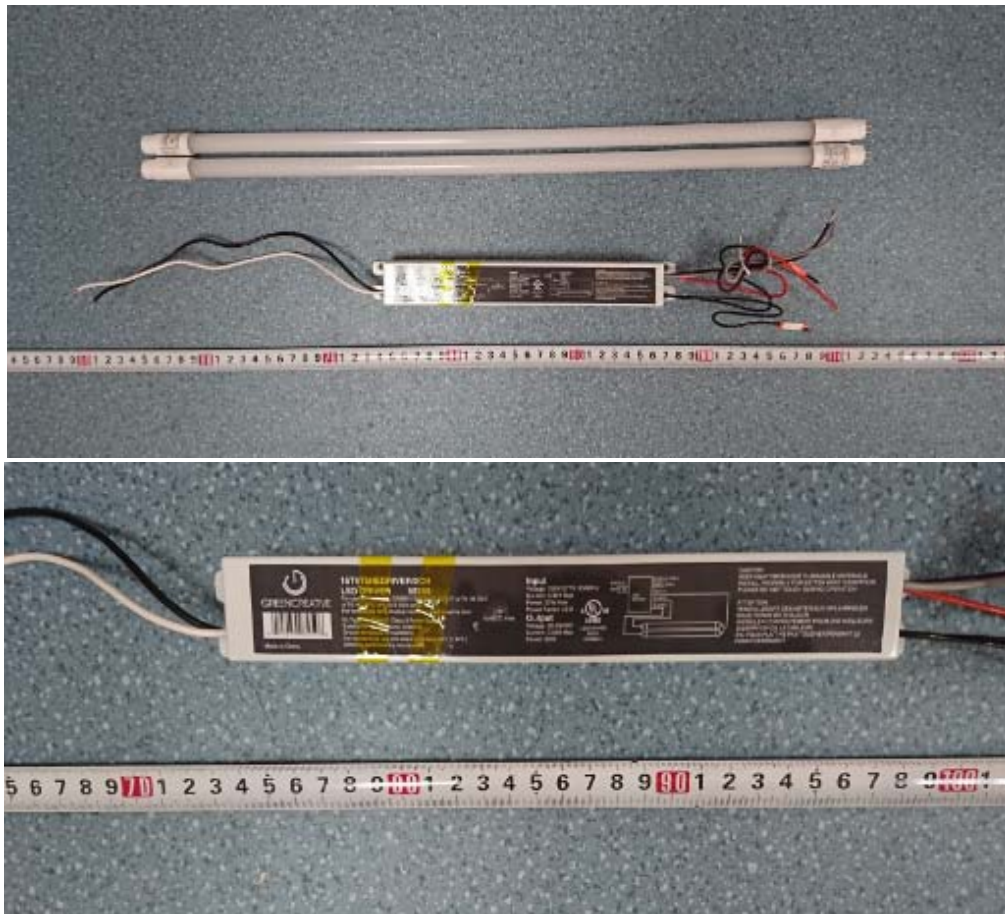


Figure 1- Overview of the sample

Equipment Under Test (EUT)

Name	: LED Tube System
Model	: 9.5T5HE/2F/835/EXT/A2
Electrical Ratings	: 120-277V, 50/60Hz
Product Description	: 3500K LED tube model: 9.5T5HE/2F/835/EXT 2 LED tubes supplied by a LED driver: 15T8T5HEDRIVER/2CH
Manufacturer	: GREEN CREATIVE LTD
Address	: 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	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.192	0.092
Power Factor	0.9948	0.9361
Test Power (W)/2	11.47	11.87
THD A%	3.67	11.58
Luminous Efficacy (lm/W)	128.4	124.1
Luminous Flux per lamp (lm)	1472.0	1472.0
Color Rendering Index (CRI)	82.4	
R9	2	
Correlated Color Temperature (CCT)(K)	3303	
Chromaticity Chroma x	0.4162	
Chromaticity Chroma y	0.3950	
Chromaticity Chroma u	0.2411	
Chromaticity Chroma v	0.3431	
Duv	0.0004	
Chromaticity Chroma u'	0.2411	
Chromaticity Chroma v'	0.5146	

Special Color Rendering Indices	
R1	81.2
R2	91.9
R3	95.2
R4	79.9
R5	81.5
R6	89.7
R7	81.9
R8	57.8
R9	2
R10	81.1
R11	79.4
R12	69.4
R13	84.1
R14	98.1
Rf	82
Rg	94

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 25.0°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)	0.192
Power Factor	0.9948
Test Power (W)/2	11.48
Luminous Efficacy (lm/W)	126.6
Luminous Flux per lamp (lm)	1453.7
Beam Angle (°)	116.6
Center Beam Candle Power (cd)	410
Spacing Criteria	1.20 (0°-180°)/ 1.32 (90°-270°)
Zonal Lumens in the 0°-60°Zone	64.04%
Zonal Lumens in the 60°-90°Zone	25.72%
Zonal Lumens in the 90°-120°Zone	7.76%
Zonal Lumens in the 120°-180°Zone	2.49%

Table 3: Test data per Goniophotometer Method

Spectral Power Distribution - Sphere Spectroradiometer Method

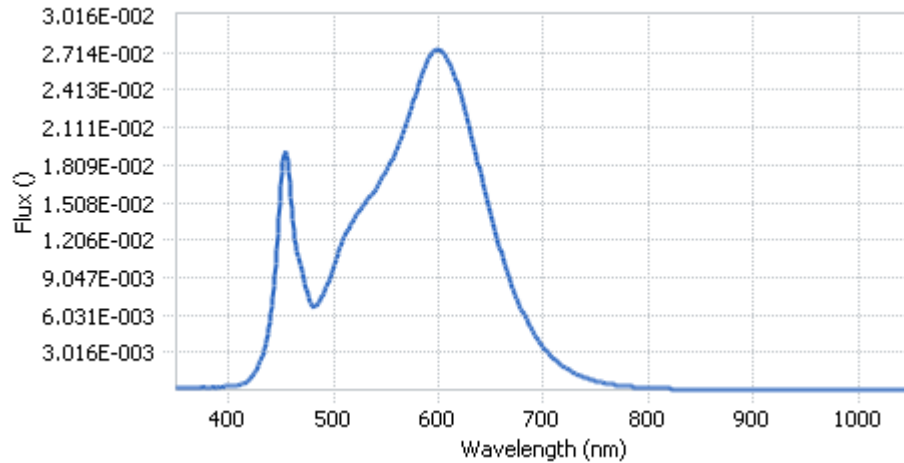
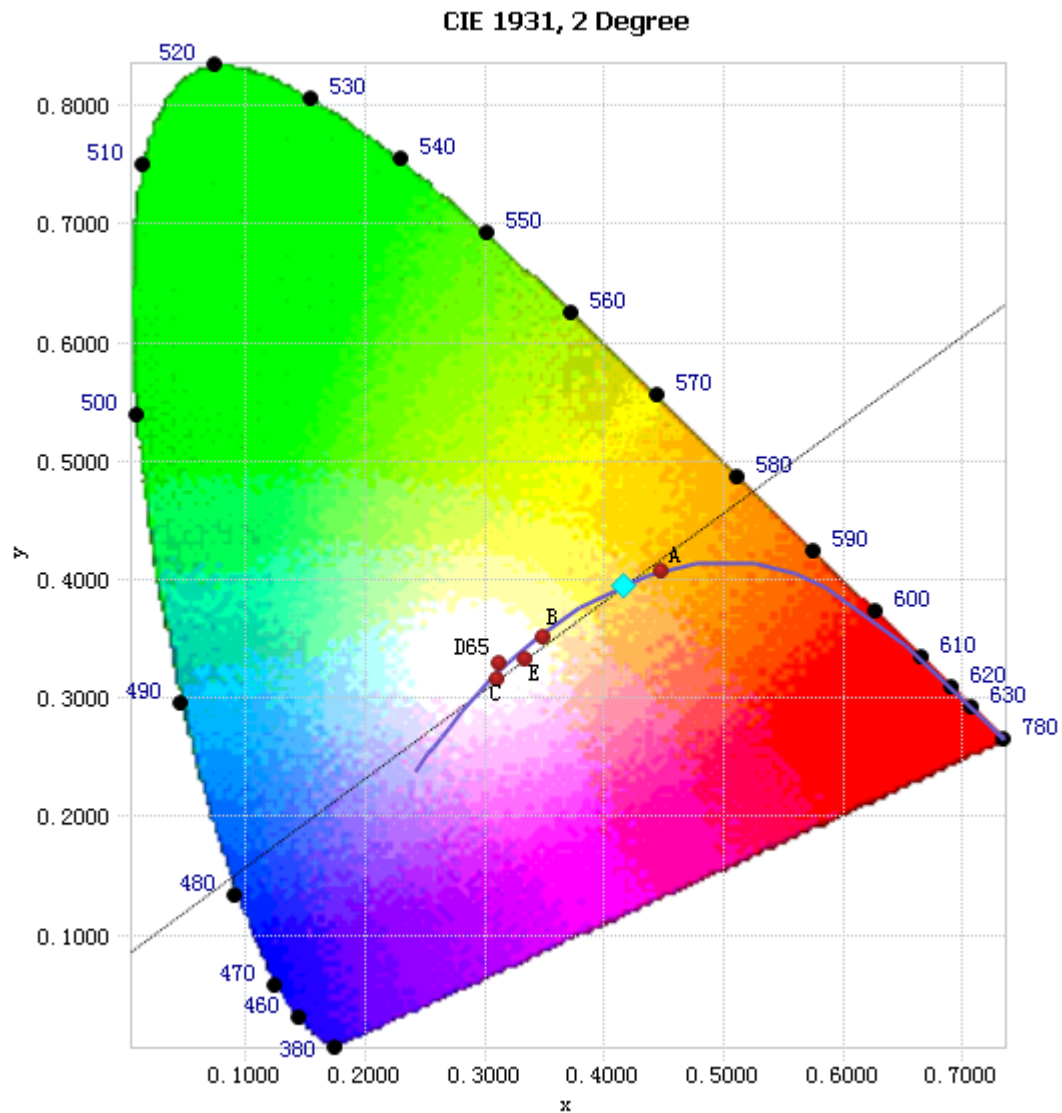


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	2.43E-04	485	6.94E-03	590	2.65E-02	695	4.00E-03
385	2.26E-04	490	7.65E-03	595	2.72E-02	700	3.42E-03
390	2.34E-04	495	8.67E-03	600	2.73E-02	705	2.92E-03
395	2.62E-04	500	9.94E-03	605	2.70E-02	710	2.49E-03
400	2.71E-04	505	1.12E-02	610	2.63E-02	715	2.13E-03
405	3.13E-04	510	1.22E-02	615	2.54E-02	720	1.82E-03
410	4.04E-04	515	1.32E-02	620	2.40E-02	725	1.56E-03
415	5.49E-04	520	1.39E-02	625	2.25E-02	730	1.33E-03
420	8.69E-04	525	1.45E-02	630	2.09E-02	735	1.13E-03
425	1.41E-03	530	1.50E-02	635	1.92E-02	740	9.68E-04
430	2.29E-03	535	1.56E-02	640	1.74E-02	745	8.23E-04
435	3.74E-03	540	1.62E-02	645	1.57E-02	750	7.09E-04
440	6.08E-03	545	1.69E-02	650	1.40E-02	755	6.07E-04
445	1.02E-02	550	1.76E-02	655	1.24E-02	760	5.22E-04
450	1.64E-02	555	1.84E-02	660	1.10E-02	765	4.47E-04
455	1.89E-02	560	1.94E-02	665	9.58E-03	770	3.86E-04
460	1.46E-02	565	2.04E-02	670	8.31E-03	775	3.30E-04
465	1.12E-02	570	2.16E-02	675	7.24E-03	780	2.88E-04
470	9.61E-03	575	2.29E-02	680	6.27E-03		
475	7.74E-03	580	2.43E-02	685	5.43E-03		
480	6.72E-03	585	2.56E-02	690	4.66E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.4162, 0.3950)

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

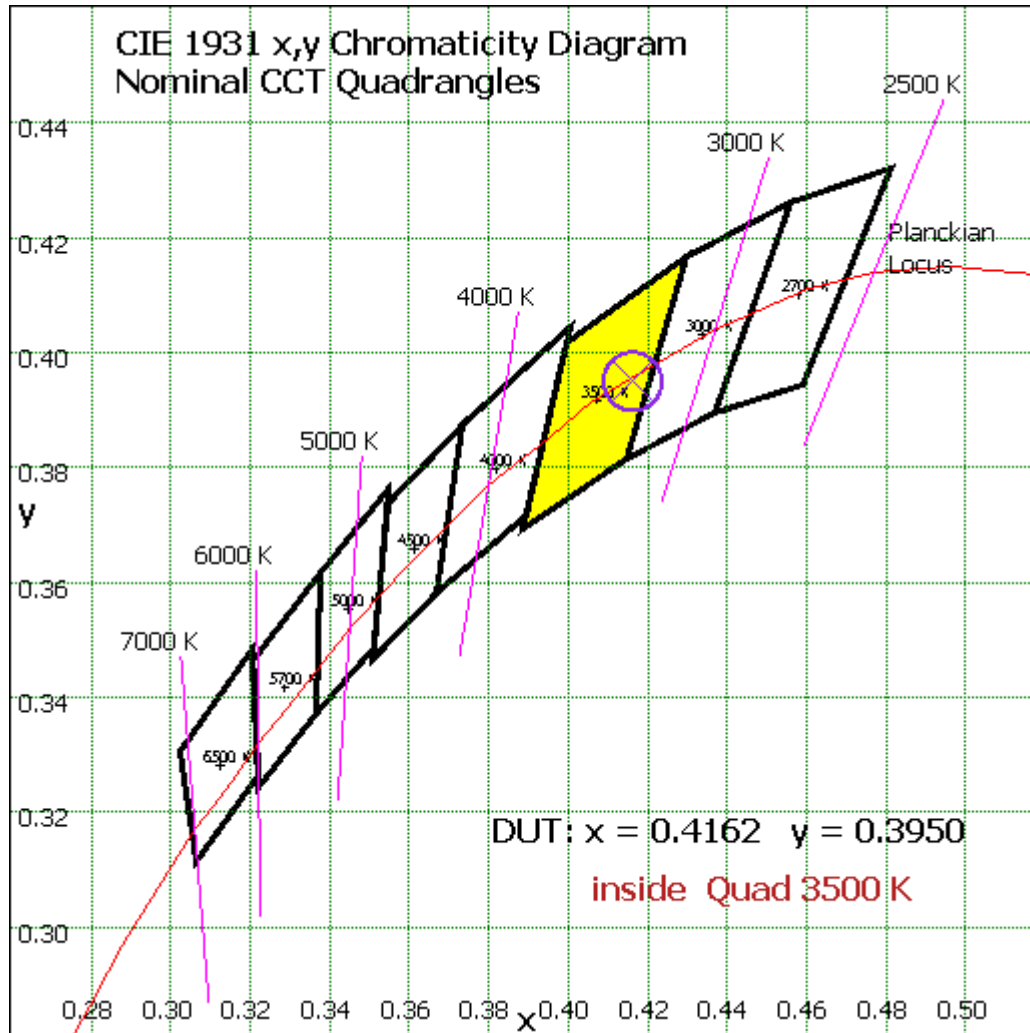


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	38.781	2.67%
10- 20	111.003	7.64%
20- 30	168.058	11.56%
30- 40	202.807	13.95%
40- 50	212.259	14.60%
50- 60	197.961	13.62%
60- 70	165.663	11.40%
70- 80	124.109	8.54%
80- 90	84.109	5.79%
90-100	55.164	3.79%
100-110	35.505	2.44%
110-120	22.116	1.52%
120-130	14.46	0.99%
130-140	9.553	0.66%
140-150	6.079	0.42%
150-160	3.648	0.25%
160-170	1.883	0.13%
170-180	0.51	0.04%
Total	1453.7	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	930.869	64.04%
60- 90	373.881	25.72%
0-90	1304.75	89.76%
90- 180	148.918	10.24%
0- 180	1453.7	100%

Table 5: Zonal Lumen Data

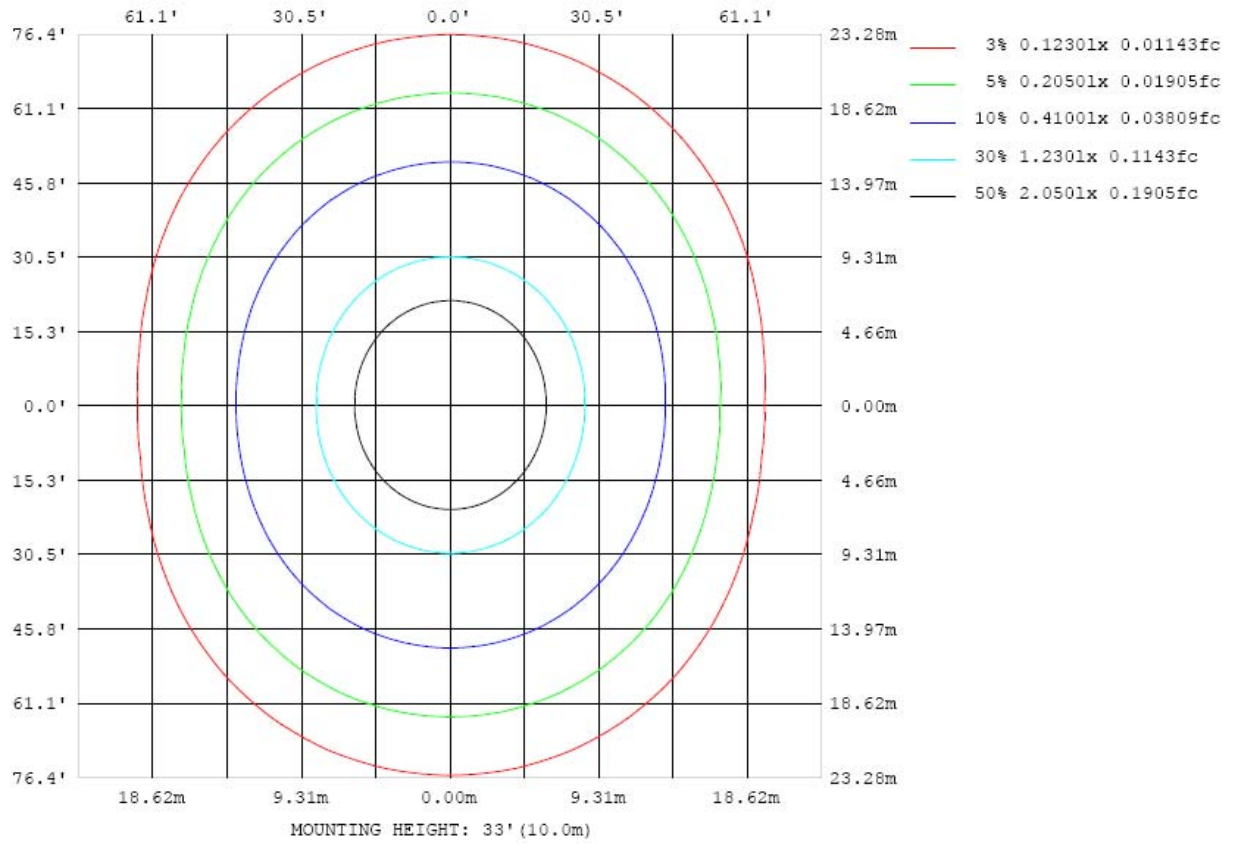


Chart 4: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots- Goniophotometer Method

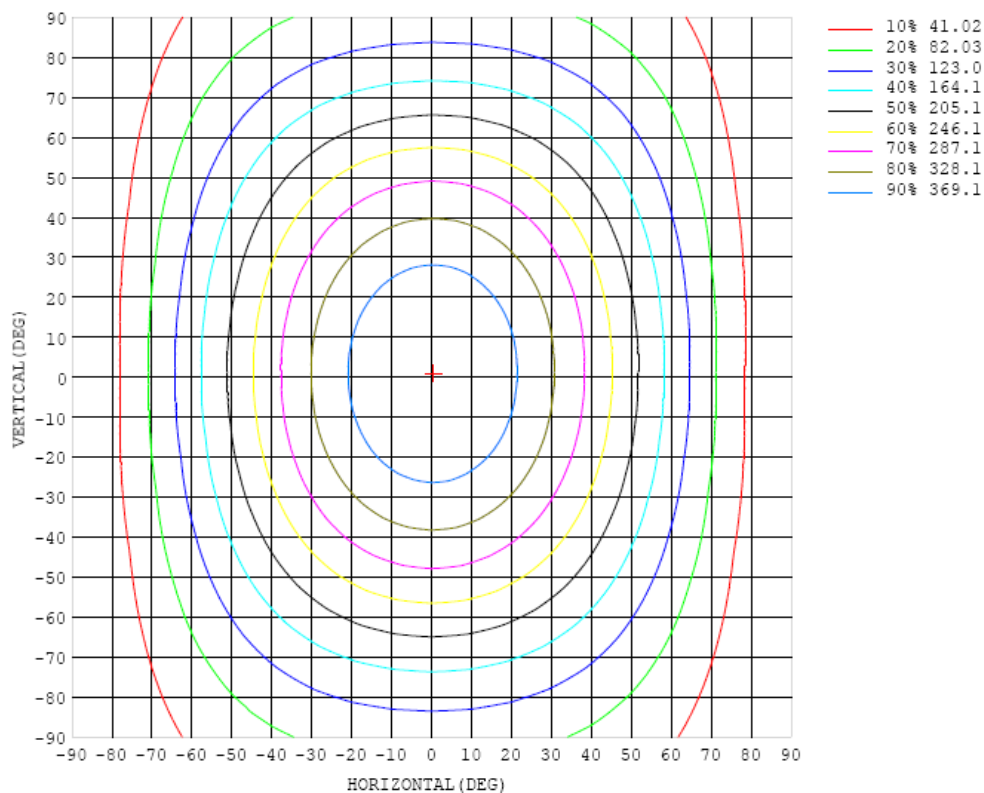


Chart 5: Isocandela Plot

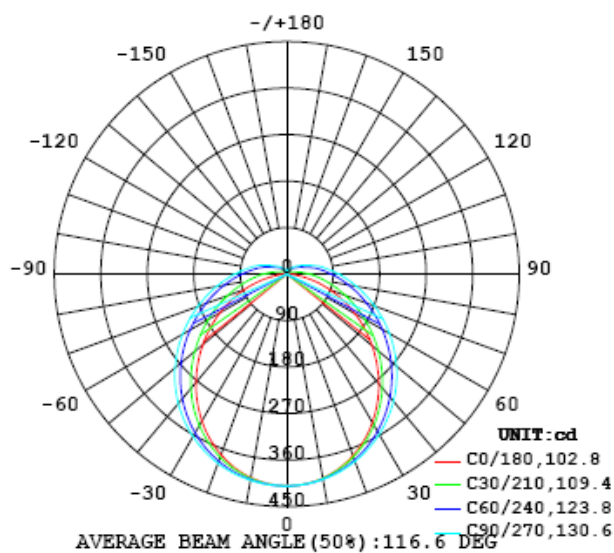


Chart 6: Polar Candela Distribution

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	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
5	408	408	408	408	408	408	408	408	408	408	408	408	408	408	408	407	407	407	407
10	401	401	401	402	402	402	403	403	404	404	403	403	402	402	401	401	400	400	400
15	390	390	390	391	392	393	395	396	396	396	396	395	394	392	391	390	389	389	388
20	374	374	375	377	379	381	383	385	386	386	385	384	382	380	377	375	373	372	372
25	355	355	356	359	362	365	368	371	373	373	372	370	368	364	361	357	354	353	352
30	332	332	334	338	342	347	351	355	357	358	357	354	351	346	341	336	332	329	329
35	305	306	309	314	320	326	332	337	340	341	339	336	331	325	318	312	306	303	302
40	277	278	282	288	295	303	311	317	320	321	320	316	310	302	294	285	279	275	273
45	247	248	253	260	269	279	288	295	299	300	298	294	287	278	268	258	250	244	243
50	216	217	223	231	242	254	263	271	276	277	275	271	263	252	241	229	220	213	212
55	184	186	192	203	215	227	238	247	252	254	252	247	238	227	214	201	190	182	180
60	152	154	162	174	188	202	213	222	228	229	227	222	213	201	187	173	160	151	149
65	120	123	133	147	162	176	189	198	203	205	203	198	188	176	161	146	131	120	117
70	89.0	92.7	105	121	137	152	165	174	180	181	179	174	165	152	137	120	104	90.5	86.6
75	59.7	64.8	79.1	96.8	114	130	142	151	157	158	157	151	142	130	114	96.8	78.6	63.4	57.2
80	32.6	39.6	57.2	76.0	93.7	109	121	130	135	137	135	130	122	109	94.1	76.3	57.6	39.3	30.6
85	11.2	20.3	39.0	58.6	75.9	91.0	103	111	116	118	116	112	103	91.4	76.7	59.4	40.0	21.0	10.00
90	0.45	8.86	25.8	44.3	61.4	75.4	86.5	94.6	99.3	101	99.3	94.9	87.1	75.9	62.3	45.4	27.1	9.98	0.21
95	0.41	3.48	16.6	33.2	49.0	62.5	72.8	80.0	84.5	85.9	84.5	80.5	73.1	63.2	49.9	34.4	17.9	4.73	0.41
100	0.58	2.42	10.5	23.8	38.2	50.9	60.8	67.9	72.0	73.0	72.1	68.3	61.4	51.6	39.2	25.0	12.2	3.23	0.57
105	0.90	1.99	7.98	17.4	28.6	39.8	49.2	56.0	60.1	61.4	60.2	56.4	49.8	40.6	30.0	19.2	9.24	2.75	0.90
110	1.35	2.30	6.51	14.1	22.8	31.4	38.9	44.7	48.3	49.6	48.5	45.2	39.8	32.8	24.2	15.3	7.75	2.78	1.35
115	1.81	2.73	5.70	11.6	18.9	26.0	32.2	36.9	39.8	40.9	40.1	37.5	33.0	27.0	20.0	12.8	6.96	3.14	1.79
120	2.31	3.04	5.40	10.0	15.8	21.8	26.9	30.9	33.4	34.3	33.6	31.4	27.7	22.6	16.9	11.0	6.14	3.33	2.27
125	2.85	3.30	5.22	8.81	13.5	18.4	22.7	26.0	28.1	28.9	28.3	26.4	23.2	19.1	14.5	9.74	5.78	3.60	2.66
130	3.39	3.81	5.26	7.78	11.7	15.7	19.2	22.0	23.7	24.4	23.8	22.3	19.7	16.2	12.5	8.66	5.55	3.82	3.09
135	3.95	4.19	5.40	7.32	10.2	13.4	16.5	18.6	20.1	20.6	20.2	18.9	16.8	14.0	10.7	7.58	5.67	4.08	3.63
140	4.48	4.54	5.37	6.62	9.10	11.2	13.8	15.8	17.0	17.4	17.1	16.0	14.1	11.7	9.36	7.12	5.61	4.23	4.15
145	4.96	4.76	5.18	5.62	8.19	9.79	11.4	12.5	13.8	14.4	13.9	12.6	11.7	10.1	8.11	6.60	5.45	4.20	4.62
150	5.45	4.65	5.73	5.54	5.90	8.51	9.70	10.7	11.1	11.3	11.2	11.0	10.0	8.66	7.26	6.25	5.51	4.20	5.13
155	5.88	4.51	5.52	5.61	6.06	6.46	8.63	9.22	9.65	10.0	9.92	9.29	8.69	6.84	6.10	5.93	4.92	4.14	5.61
160	6.34	5.00	5.05	5.64	6.15	6.84	7.37	7.91	8.15	8.09	7.76	6.84	6.02	6.14	6.07	4.97	4.32	4.33	5.63
165	6.56	5.48	4.38	4.84	5.30	6.13	7.03	7.31	7.37	7.14	6.94	6.96	6.37	5.11	4.53	3.89	3.87	3.95	5.64
170	6.13	5.03	4.45	4.22	4.29	4.28	4.25	5.29	6.65	7.06	4.53	3.82	3.84	3.76	3.75	3.81	3.82	4.11	4.86
175	5.74	4.61	4.16	4.12	4.14	4.14	4.36	4.87	4.86	1.59	5.14	4.67	4.23	3.67	3.57	3.61	3.72	3.78	3.93
180	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52

Table 6: Luminous Intensity Data

Table--2

UNIT: cd

C (DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410		
5	408	408	408	408	409	409	409	409	409	409	409	409	409	408	408	408	408		
10	400	401	402	402	403	404	405	405	405	405	405	405	404	404	403	402	401		
15	389	390	391	393	395	396	397	399	399	399	398	397	396	395	393	391	390		
20	373	375	377	380	383	385	387	389	390	389	389	387	384	382	379	377	375		
25	354	356	360	364	368	372	375	377	378	377	376	373	370	366	362	359	356		
30	330	334	339	344	350	355	359	362	363	363	361	357	352	347	342	337	333		
35	304	308	315	322	329	336	341	345	346	345	343	338	332	325	318	312	308		
40	276	281	289	297	306	315	321	325	327	326	323	317	309	301	293	285	280		
45	246	252	261	271	282	292	299	304	305	305	301	294	285	275	265	257	250		
50	215	222	233	244	256	267	275	281	283	281	277	270	260	249	237	227	219		
55	184	192	204	217	230	242	251	256	258	257	252	244	234	221	208	197	188		
60	153	162	175	190	204	216	225	231	233	232	227	219	207	194	180	167	157		
65	122	133	148	164	178	191	200	206	208	207	202	193	182	168	153	138	126		
70	92.1	105	122	139	155	167	176	181	183	182	177	169	158	143	126	110	96.4		
75	64.1	80.0	98.4	116	132	144	153	158	160	159	155	146	134	120	102	84.1	68.2		
80	39.6	57.8	77.3	95.3	111	123	131	136	138	137	133	125	113	98.5	80.9	61.5	43.2		
85	20.8	39.9	59.6	77.3	92.1	104	112	116	118	117	113	105	94.4	80.1	62.7	43.1	23.7		
90	9.46	26.8	45.3	62.1	76.2	87.1	94.7	99.1	101	99.6	95.7	88.6	78.2	64.5	47.9	29.3	11.2		
95	4.05	17.7	34.2	49.7	62.8	72.9	80.0	84.1	85.5	84.6	80.9	74.2	64.5	51.8	36.4	19.7	4.98		
100	2.73	11.4	25.1	39.5	51.6	61.1	67.6	71.5	72.8	71.9	68.4	62.2	53.1	41.3	27.0	12.5	3.10		
105	2.69	8.50	18.3	29.6	41.5	50.7	57.0	60.6	61.9	61.0	57.7	51.8	43.0	31.4	19.5	9.06	2.78		
110	2.87	7.07	14.5	23.4	32.0	39.6	46.1	50.0	51.4	50.4	46.9	40.7	32.8	24.1	15.0	7.14	2.88		
115	3.18	6.52	12.2	19.2	26.1	32.1	36.6	39.4	40.4	39.6	36.9	32.5	26.6	19.6	12.3	6.41	3.15		
120	3.53	6.24	10.7	16.2	21.8	26.8	30.4	32.7	33.5	32.9	30.7	27.0	22.1	16.4	10.5	6.16	3.55		
125	3.84	6.06	9.57	13.9	18.5	22.5	25.6	27.6	28.3	27.7	25.9	22.8	18.8	13.9	9.40	6.10	3.96		
130	4.18	5.97	8.73	12.1	15.8	19.2	21.8	23.4	24.0	23.5	22.0	19.4	16.1	12.2	8.80	6.15	4.39		
135	4.63	6.08	8.26	10.9	13.8	16.5	18.6	19.9	20.4	20.0	18.8	16.7	13.9	11.0	8.40	6.28	4.83		
140	5.09	6.25	7.93	10.00	12.2	14.2	16.0	17.0	17.4	17.1	16.1	14.4	12.3	10.1	8.07	6.42	5.29		
145	5.53	6.43	7.69	9.26	10.9	12.5	13.7	14.5	14.8	14.5	13.8	12.5	11.0	9.36	7.83	6.60	5.73		
150	5.78	6.41	7.39	8.63	9.86	11.0	11.9	12.5	12.7	12.5	11.9	11.1	9.94	8.76	7.66	6.77	6.13		
155	6.00	6.54	7.14	8.06	9.00	9.76	10.4	10.8	11.0	10.9	10.5	9.86	9.11	8.30	7.56	6.95	6.49		
160	6.32	6.66	7.04	7.27	8.13	8.80	9.18	9.47	9.59	9.54	9.30	8.92	8.45	7.95	7.49	7.10	6.84		
165	6.65	6.76	7.01	7.17	7.16	7.75	8.27	8.44	8.52	8.52	8.41	8.21	7.96	7.70	7.44	7.24	7.03		
170	5.69	6.17	6.82	7.08	7.11	6.96	6.98	7.37	7.77	7.81	7.75	7.69	7.59	7.47	7.36	7.27	7.20		
175	4.29	4.68	5.13	5.82	6.55	6.82	6.78	6.65	6.59	6.79	7.00	7.16	7.32	7.31	7.25	7.22	6.79		
180	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52		

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 recorder	JM624U	HZTE018-08	Aug. 17, 2017	Aug. 16, 2018
Temperature and humidity recorder	JR900	HZTE018-01	Aug. 16, 2017	Aug. 15, 2018
Standard source	D908	HZTE012-01	Aug. 20, 2017	Aug. 19, 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
Standard source	SCL-1400	HZTE012-02	Aug. 20, 2017	Aug. 19, 2018
Temperature and humidity recorder	JR900	HZTE018-02	Aug. 16, 2017	Aug. 15, 2018
Temperature Meter	TES1310	HZTE017-01	Aug. 17, 2017	Aug. 16, 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 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 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 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 expanded uncertainty is 2.3% with a coverage factor $k=2$.

Color Characteristics Measurements

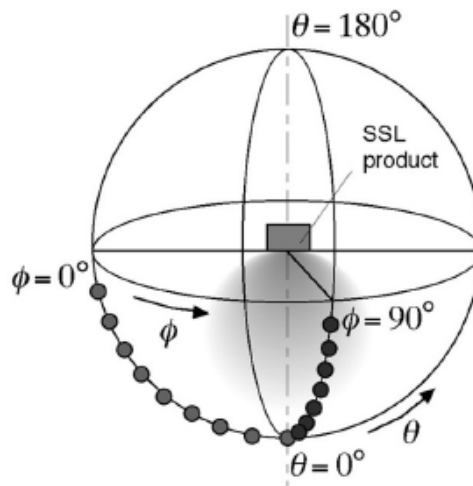
The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as 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° 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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