



LM-79-08 Test Report

for

GREEN CREATIVE LTD

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

T5HO

Model: 14.5T5HO/3F/830/DIR

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

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Report No.: HZ18030016a

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

Review by:

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Engineer: April Zou
Mar. 12, 2018

Approved by:



Jim Zhang

Manager: Jim Zhang
Mar. 12, 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: 14.5T5HO/3F/830/DIR

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
114.4	2002.0	17.50	0.9876
CCT (K)	CRI	Stabilization Time (Light & Power)	
2917	82.9	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 : Mar. 08, 2018

Date of Test : Mar. 09, 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

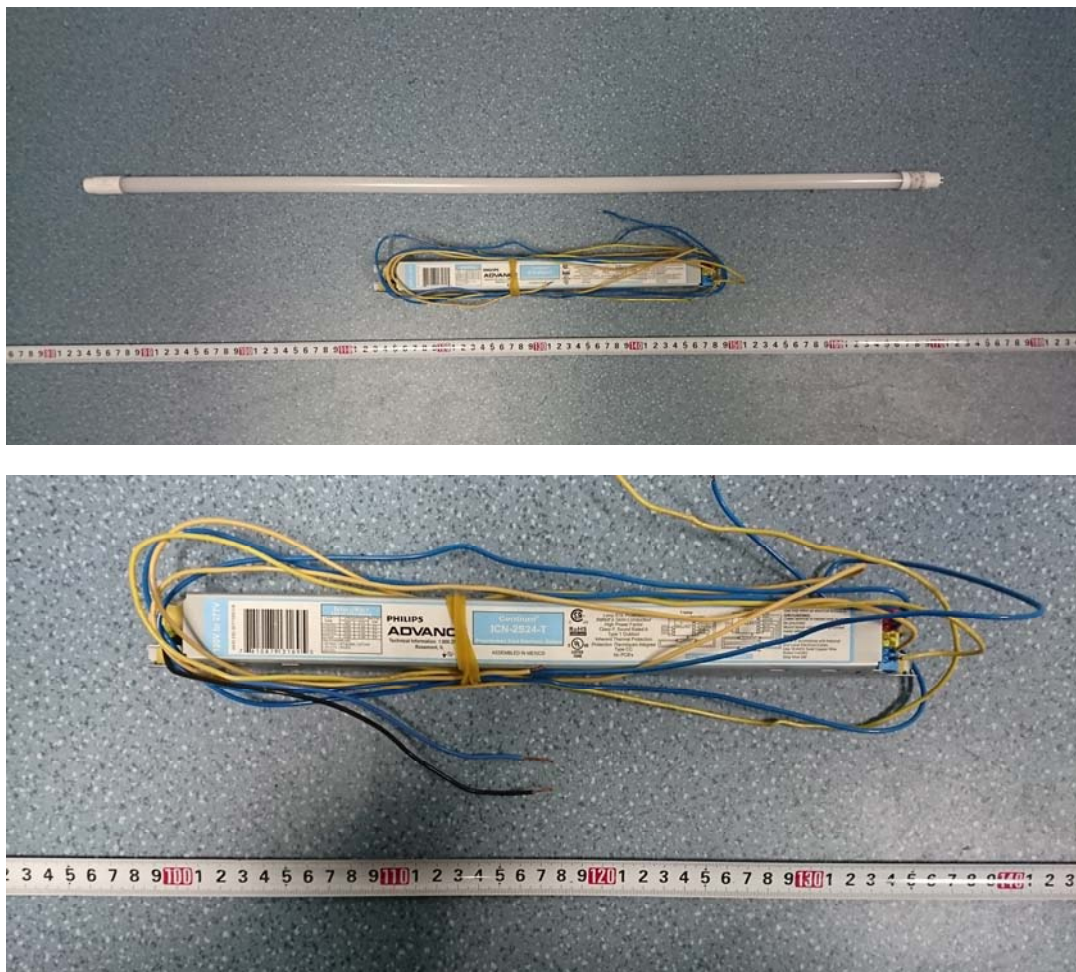


Figure 1- Overview of the sample

Equipment Under Test (EUT)

Name	: T5HO
Model	: 14.5T5HO/3F/830/DIR
Electrical Ratings	: 120-277V, 60Hz, 14.5W
Product Description	: 3000K LED Tubes supplied by a ballast: ICN-2S24-T
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)	0.148	0.070
Power Factor	0.9876	0.9333
Test Power (W)	17.50	18.20
THD A%	13.55	11.40
Luminous Efficacy (lm/W)	114.4	110.6
Total Luminous Flux (lm)	2002.0	2013.0
Color Rendering Index (CRI)	82.9	
R9	8.2	
Correlated Color Temperature (CCT)(K)	2917	
Chromaticity Chroma x	0.4414	
Chromaticity Chroma y	0.4032	
Chromaticity Chroma u	0.2538	
Chromaticity Chroma v	0.3478	
Duv	0.0013	
Chromaticity Chroma u'	0.2538	
Chromaticity Chroma v'	0.5217	

Special Color Rendering Indices	
R1	82.1
R2	93.3
R3	93.7
R4	80.1
R5	82.6
R6	92.4
R7	81.0
R8	57.9
R9	8.2
R10	84.9
R11	80.0
R12	75.7
R13	85.0
R14	97.3
Rf	83
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 24.9°C.

The photometric distance is 30 m.

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)	0.149
Power Factor	0.9880
Test Power (W)	17.69
Luminous Efficacy (lm/W)	114.2
Total Luminous Flux (lm)	2020.5
Beam Angle (°)	123.6
Center Beam Candle Power (cd)	525
Spacing Criteria	1.23 (0°-180°)/ 1.32 (90°-270°)
Zonal Lumens in the 0°-60°Zone	60.96%
Zonal Lumens in the 60°-90°Zone	27.00%
Zonal Lumens in the 90°-120°Zone	9.25%
Zonal Lumens in the 120°-180°Zone	2.79%

Table 3: Test data per Goniophotometer Method

Spectral Power Distribution - Sphere Spectroradiometer Method

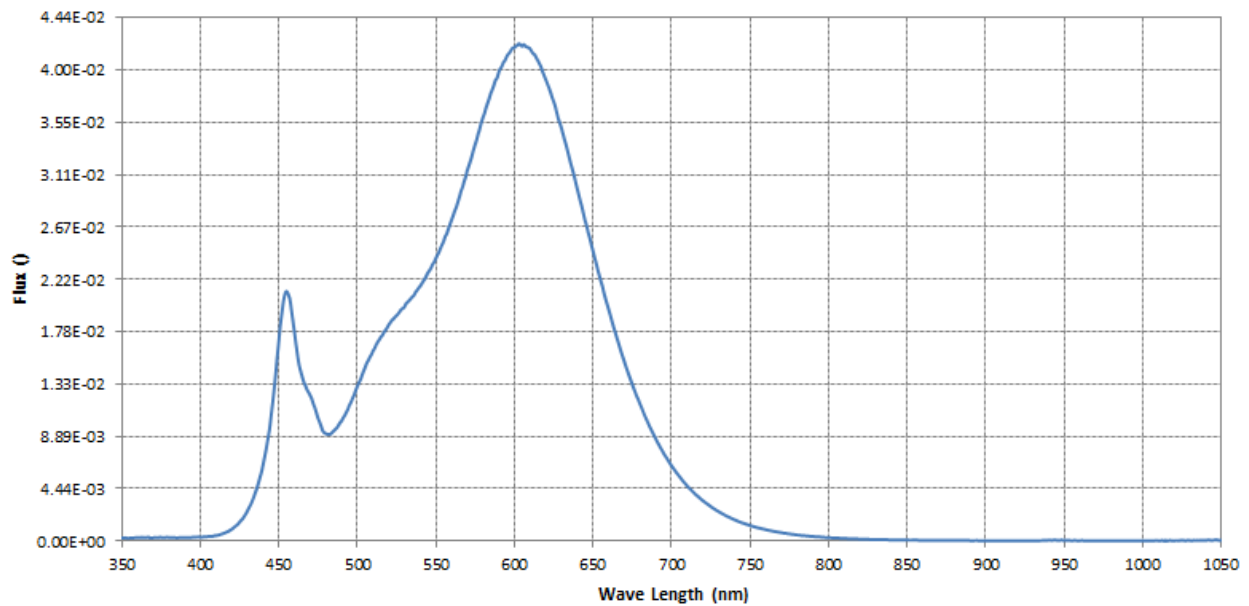


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	2.97E-04	485	9.35E-03	590	3.98E-02	695	7.46E-03
385	2.67E-04	490	1.02E-02	595	4.11E-02	700	6.41E-03
390	3.04E-04	495	1.15E-02	600	4.19E-02	705	5.50E-03
395	3.18E-04	500	1.31E-02	605	4.20E-02	710	4.68E-03
400	3.29E-04	505	1.47E-02	610	4.18E-02	715	4.01E-03
405	3.83E-04	510	1.61E-02	615	4.08E-02	720	3.43E-03
410	4.51E-04	515	1.73E-02	620	3.92E-02	725	2.93E-03
415	6.54E-04	520	1.83E-02	625	3.73E-02	730	2.51E-03
420	9.91E-04	525	1.91E-02	630	3.50E-02	735	2.13E-03
425	1.59E-03	530	1.99E-02	635	3.25E-02	740	1.82E-03
430	2.55E-03	535	2.07E-02	640	2.99E-02	745	1.55E-03
435	4.07E-03	540	2.16E-02	645	2.72E-02	750	1.32E-03
440	6.46E-03	545	2.28E-02	650	2.47E-02	755	1.13E-03
445	1.04E-02	550	2.40E-02	655	2.21E-02	760	9.72E-04
450	1.68E-02	555	2.54E-02	660	1.97E-02	765	8.33E-04
455	2.12E-02	560	2.72E-02	665	1.74E-02	770	7.15E-04
460	1.77E-02	565	2.92E-02	670	1.53E-02	775	6.13E-04
465	1.39E-02	570	3.14E-02	675	1.33E-02	780	5.22E-04
470	1.24E-02	575	3.36E-02	680	1.16E-02		
475	1.04E-02	580	3.59E-02	685	1.01E-02		
480	9.11E-03	585	3.80E-02	690	8.69E-03		

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

The diagram is a CIE 1931, 2 Degree color space plot. The x-axis is labeled 'x' and ranges from 0.1000 to 0.7000. The y-axis is labeled 'y' and ranges from 0.1000 to 0.8000. The plot shows the visible spectrum as a curved boundary, with wavelengths labeled in nanometers (nm) at various points: 380, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, and 780. The interior of the plot is filled with a color gradient corresponding to the visible spectrum. A black line represents the line of equal energy, and a blue curve represents the locus of constant saturation. Several points are marked on the locus of constant saturation: A (cyan), B (red), C (red), D65 (red), E (red), and F (red).

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

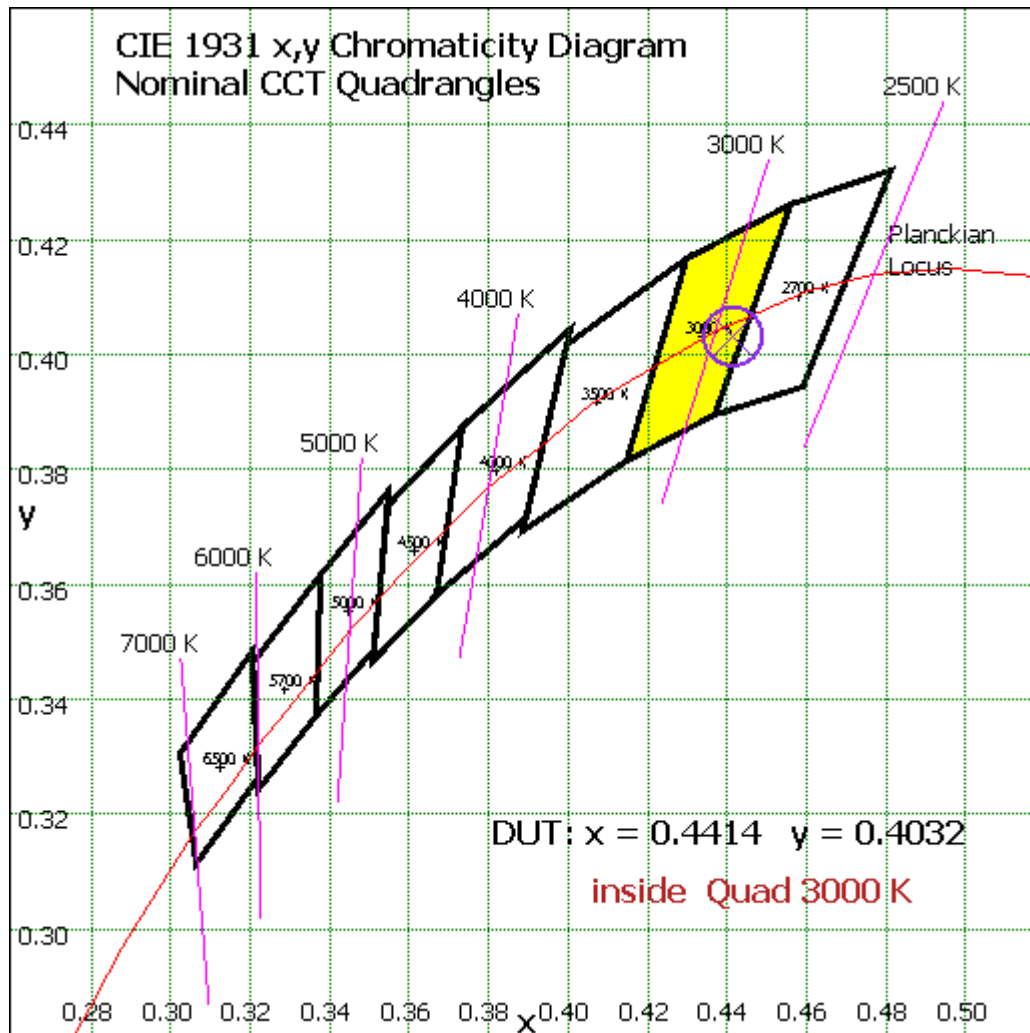


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	49.742	2.46%
10- 20	142.856	7.07%
20- 30	217.938	10.79%
30- 40	266.324	13.18%
40- 50	283.778	14.04%
50- 60	271.04	13.41%
60- 70	233.864	11.57%
70- 80	182.138	9.01%
80- 90	129.578	6.41%
90-100	89.276	4.42%
100-110	59.543	2.95%
110-120	38.025	1.88%
120-130	24.34	1.20%
130-140	15.152	0.75%
140-150	9.017	0.45%
150-160	4.959	0.25%
160-170	2.335	0.12%
170-180	0.592	0.03%
Total	2020.5	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	1231.678	60.96%
60- 90	545.58	27.00%
0-90	1777.258	87.96%
90- 180	243.239	12.04%
0- 180	2020.5	100%

Table 5: Zonal Lumen Data

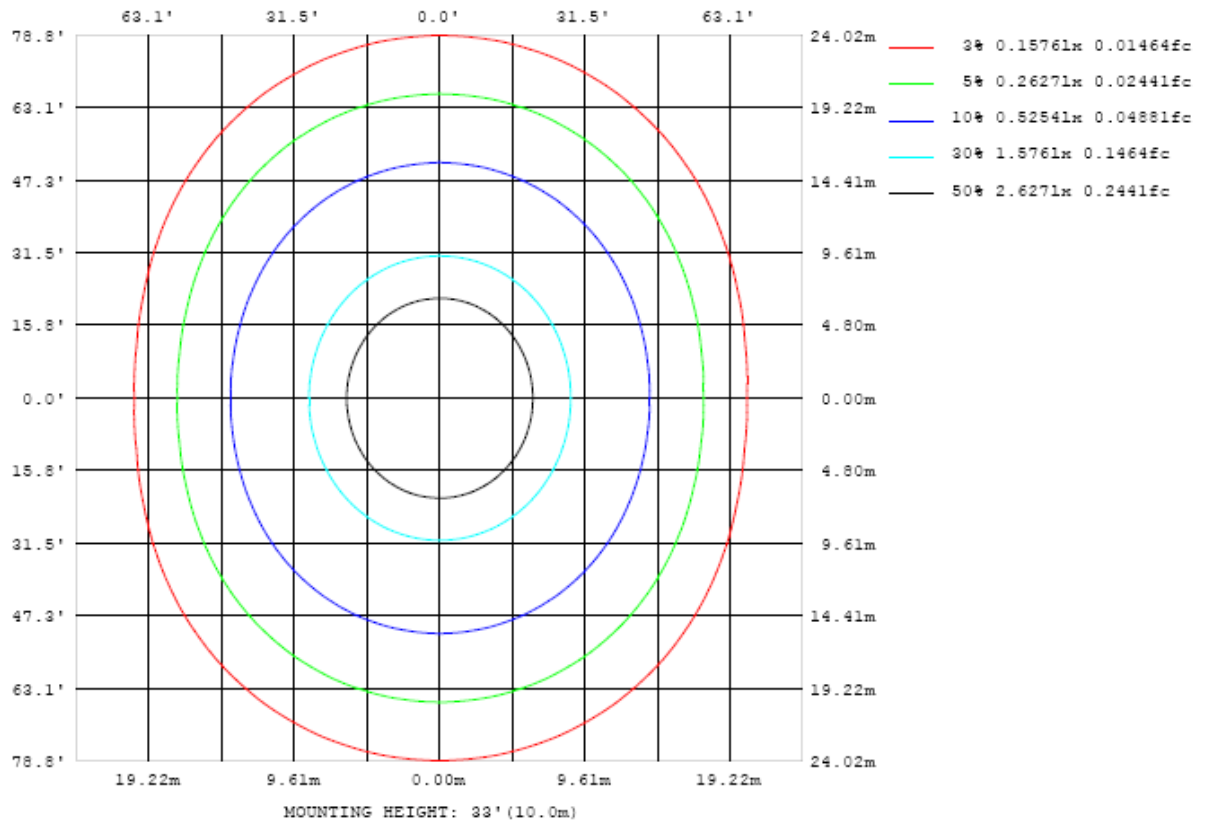


Chart 4: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots- Goniophotometer Method

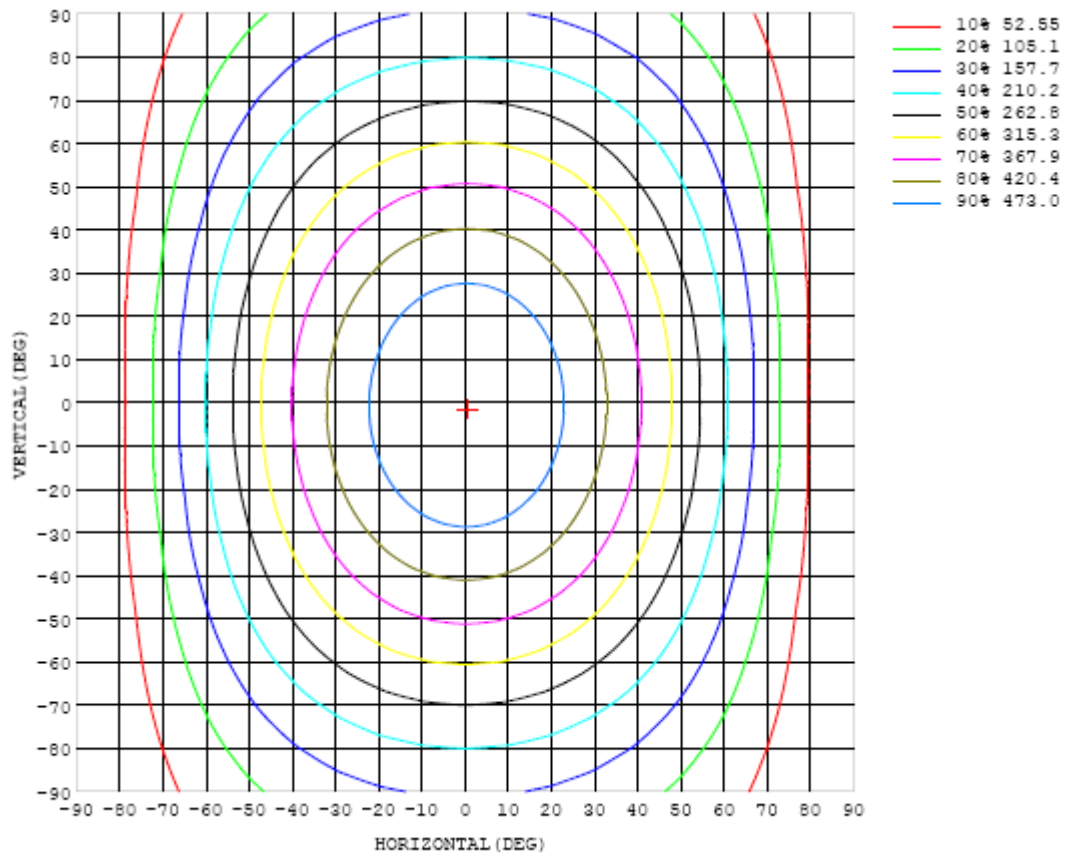


Chart 5: Isocandela Plot

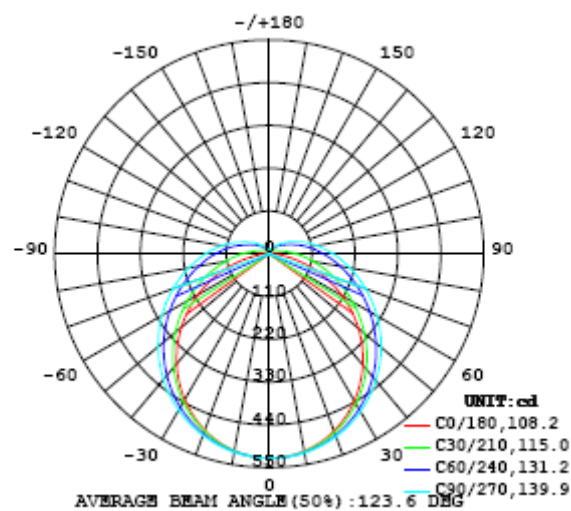


Chart 6: Polar Candela Distribution

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	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525
5	523	523	523	524	524	524	524	524	524	524	524	524	524	524	523	523	523	523	523
10	515	516	516	517	518	518	519	519	520	520	519	519	518	518	517	516	515	515	514
15	503	503	504	505	507	508	510	511	511	512	511	510	509	507	505	504	502	501	501
20	485	486	487	489	492	495	497	499	500	500	500	498	496	493	490	487	485	484	483
25	463	464	466	469	473	477	481	483	485	486	485	483	480	475	471	467	463	461	460
30	437	438	441	445	450	456	461	465	468	468	467	464	460	454	449	442	438	435	433
35	406	408	412	417	424	432	438	444	447	448	447	443	437	430	422	415	408	404	403
40	373	375	380	387	396	405	413	420	424	425	424	419	412	403	394	384	376	371	369
45	337	339	345	354	365	376	386	394	399	401	399	394	385	374	362	351	341	335	333
50	299	301	308	319	332	346	358	367	373	374	372	366	356	344	330	316	304	297	294
55	258	261	270	283	299	314	328	338	345	347	345	338	327	313	297	280	266	257	253
60	216	220	231	247	265	283	298	309	317	319	316	309	297	281	263	244	227	215	211
65	173	178	192	211	232	251	268	280	288	291	288	280	267	250	230	209	189	174	168
70	130	136	153	176	200	221	239	252	260	263	260	252	239	221	199	175	151	132	126
75	86.8	95.4	118	144	170	193	211	225	233	236	233	225	211	192	169	143	116	92.8	82.7
80	47.5	59.5	85.9	115	142	166	185	199	207	210	207	199	185	166	142	115	85.7	58.2	43.3
85	15.8	30.7	60.0	89.6	117	142	161	175	183	186	183	175	161	142	118	90.6	60.9	31.1	13.0
90	0.73	13.3	40.2	69.5	96.3	120	139	153	161	163	161	153	139	121	97.4	70.9	42.0	15.0	0.22
95	0.37	5.94	26.8	53.2	78.4	101	119	132	140	143	140	133	119	102	79.6	54.9	28.7	7.35	0.41
100	0.58	3.91	17.9	39.9	63.3	83.9	101	114	121	124	122	114	102	84.9	64.8	41.5	19.7	5.06	0.66
105	0.88	3.34	13.2	29.8	49.4	68.7	84.3	96.3	104	106	104	96.8	85.1	69.7	50.7	31.9	15.1	4.29	1.02
110	1.32	3.39	10.9	23.5	39.3	54.9	68.8	79.1	86.3	88.5	86.5	79.7	69.7	56.3	41.2	25.6	12.5	4.28	1.48
115	1.79	3.29	9.41	19.7	32.0	45.1	56.7	65.7	71.6	73.2	71.5	66.4	57.8	46.6	33.9	21.3	11.0	4.25	1.92
120	2.30	3.71	8.60	16.7	26.9	37.4	47.0	54.6	59.6	61.3	59.8	55.4	48.1	38.8	28.4	18.2	9.97	4.37	2.45
125	2.80	4.22	7.93	14.5	22.8	31.4	39.3	45.6	49.7	51.1	49.9	46.2	40.2	32.6	24.1	15.9	9.29	4.89	2.90
130	3.28	4.66	6.98	12.8	19.4	26.4	32.8	38.0	41.3	42.6	41.6	38.5	33.6	27.4	20.6	14.1	8.01	5.24	3.20
135	3.73	4.78	6.77	11.4	16.7	22.3	27.4	31.6	34.3	35.3	34.5	32.1	28.1	23.1	17.7	12.4	7.70	5.41	3.54
140	4.19	4.91	7.41	9.55	14.6	18.9	22.9	26.2	28.3	29.2	28.5	26.6	23.5	19.6	14.9	10.1	7.36	5.44	3.92
145	4.61	4.97	7.36	8.86	11.5	16.0	19.1	21.6	23.3	23.9	23.4	22.0	19.6	16.6	12.6	9.90	7.30	5.24	4.32
150	5.00	5.03	7.11	8.67	10.3	11.9	15.6	17.8	19.0	19.5	19.1	18.1	16.2	12.8	10.9	8.66	7.13	5.41	4.62
155	5.31	5.08	6.57	8.43	9.42	10.6	12.0	12.7	14.3	15.0	14.6	13.7	12.4	10.9	9.47	8.62	7.34	5.51	4.80
160	5.52	4.89	6.44	7.87	9.04	9.73	10.3	10.8	11.4	11.7	11.5	11.0	10.3	9.73	8.82	8.19	6.63	5.08	4.71
165	5.45	4.96	5.17	7.00	8.36	9.05	9.41	9.55	9.89	9.98	9.91	8.99	8.74	8.38	7.63	6.15	5.10	4.36	4.49
170	5.11	4.99	5.03	5.25	6.52	8.10	8.60	8.77	8.96	9.08	8.46	8.27	6.83	5.62	5.06	4.57	4.36	4.33	4.33
175	5.46	5.76	5.87	5.81	5.74	6.25	6.17	6.51	7.22	6.29	4.27	4.44	5.30	5.42	5.74	5.30	5.37	5.28	5.20
180	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85

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	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525		
5	522	522	522	523	523	523	523	523	523	523	523	523	523	523	523	523	523		
10	514	514	515	515	516	517	517	517	518	518	517	517	517	516	516	516	515		
15	501	501	502	504	505	506	508	508	509	509	508	507	506	505	504	503	503		
20	483	484	486	488	490	493	495	496	497	497	496	494	492	490	488	486	485		
25	460	462	465	468	472	476	479	481	482	482	480	477	474	471	467	465	463		
30	434	436	440	445	451	456	460	463	464	464	462	458	453	448	443	440	437		
35	404	407	412	419	426	433	439	443	444	443	440	435	429	422	416	411	408		
40	370	375	382	390	400	408	415	420	422	421	417	411	403	394	386	379	375		
45	334	340	349	360	371	381	390	395	397	396	392	384	375	364	353	345	339		
50	296	303	314	327	340	353	363	369	372	371	365	356	345	332	319	309	301		
55	256	265	279	294	310	324	335	342	345	343	337	327	314	299	284	271	262		
60	215	226	242	261	278	294	306	314	318	315	309	298	283	266	248	232	221		
65	174	188	208	228	248	265	278	286	290	287	280	269	252	233	212	194	180		
70	132	151	173	197	218	237	250	259	262	260	252	240	223	202	179	157	139		
75	92.5	116	142	168	190	209	223	232	236	233	225	212	195	172	148	122	98.7		
80	56.8	84.4	113	141	164	183	198	206	209	207	199	186	169	146	119	90.1	62.6		
85	29.4	58.8	89.0	117	141	160	173	182	185	183	175	163	145	121	93.8	63.8	34.2		
90	13.3	39.7	68.7	95.7	119	138	152	160	163	161	154	140	123	99.6	72.9	43.7	16.4		
95	6.13	26.4	52.5	77.7	99.9	118	131	139	142	140	133	120	103	81.2	56.0	29.5	7.36		
100	3.95	18.0	38.5	62.1	83.0	100	113	120	123	121	114	102	85.7	65.2	41.8	19.6	4.54		
105	3.62	13.4	29.8	48.4	66.5	82.9	94.9	102	105	103	96.5	84.9	69.1	50.5	31.2	14.2	3.77		
110	3.75	10.9	23.8	39.0	54.1	67.1	77.1	83.8	86.4	84.5	78.2	68.3	55.4	40.3	24.7	11.2	3.81		
115	3.99	9.53	19.6	31.9	44.5	55.6	64.2	69.6	71.5	69.9	64.8	56.4	45.4	32.7	20.0	9.52	3.99		
120	4.33	8.80	16.5	26.5	36.8	46.2	53.5	58.0	59.7	58.3	53.9	46.7	37.5	26.9	16.5	8.71	4.32		
125	4.60	8.34	14.3	22.2	30.6	38.3	44.4	48.3	49.7	48.5	44.8	38.7	31.0	22.3	14.1	8.31	4.66		
130	4.93	8.01	12.7	18.8	25.4	31.8	36.8	40.0	41.2	40.2	37.0	32.0	25.7	18.8	12.6	8.06	5.12		
135	5.37	7.79	11.5	16.3	21.4	26.3	30.4	32.9	33.9	33.0	30.5	26.5	21.5	16.3	11.6	7.95	5.63		
140	5.85	7.78	10.5	14.2	18.2	21.9	25.0	27.0	27.7	27.0	25.0	22.0	18.2	14.2	10.7	7.92	6.15		
145	6.25	7.73	9.94	12.6	15.6	18.3	20.6	22.1	22.6	22.1	20.6	18.3	15.6	12.7	10.1	7.87	6.61		
150	6.47	7.73	9.40	10.9	13.5	15.4	17.1	18.1	18.5	18.1	17.1	15.5	13.5	11.4	9.57	7.95	7.09		
155	6.63	7.88	8.97	10.00	11.4	13.1	14.1	14.9	15.2	15.0	14.2	13.2	11.9	10.5	9.09	8.07	7.35		
160	6.13	7.57	8.38	9.20	10.0	11.1	11.9	12.4	12.6	12.5	12.1	11.5	10.7	9.67	8.80	8.22	7.36		
165	5.08	6.13	6.93	7.72	8.77	9.52	10.2	10.5	10.7	10.7	10.5	10.2	9.74	9.16	8.71	8.27	7.02		
170	4.56	4.94	5.28	5.69	6.35	7.26	8.25	9.12	9.23	9.26	9.20	9.08	8.96	8.80	8.48	7.25	5.77		
175	5.16	4.98	5.12	4.66	4.55	4.46	4.48	5.45	7.97	8.27	8.28	8.24	7.60	6.45	5.95	5.84	5.45		
180	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85		

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 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

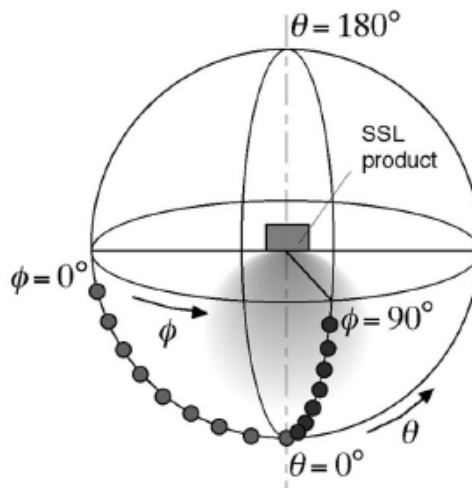
The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as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