

LM-79-08 TEST REPORT

for

GREEN CREATIVE LTD

Room 3603, Level 36, Tower 1, Enterprise Square Five, 38 Wang Chiu Road, Kowloon Bay, KL,
Hong Kong

LED Tube

Model: 10T8/4F/835/DEB/C

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

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Report No.: HZ20070023b

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

Review by:



Engineer: April Zou

Aug. 03, 2020

Approved by:



Manager: Jim Zhang

Aug. 03, 2020

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: 10T8/4F/835/DEB/C

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
163.7	1707.3	10.43	0.9784
CCT (K)	CRI	Stabilization Time (Light & Power)	
3459	83.4	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. 22, 2020
Date of Test	: Jul. 24, 2020
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 ANSI/IES TM-30-18 IES Method for Evaluating Light Source Color Rendition

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SAMPLE PHOTO



Figure 1- Overview of the sample

Equipment Under Test(EUT)

Name	: LED Tube
Model	: 10T8/4F/835/DEB/C
Electrical Ratings	: 120-277V, 50/60Hz, 10W
Product Description	: 3500K
Manufacturer	: GREEN CREATIVE LTD
Address	: Room 3603, Level 36, Tower 1, Enterprise Square Five, 38 Wang Chiu Road, Kowloon Bay, KL, Hong Kong

TEST RESULTS

Test ambient temperature was 26.0 °C.

Base orientation was horizontal. 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 65 minutes.

Sphere-Spectroradiometer Method

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.089	0.042
Power Factor	0.9784	0.9098
Test Power (W)	10.43	10.56
THD A%	18.58	20.62
Luminous Efficacy (lm/W)	163.7	161.1
Total Luminous Flux (lm)	1707.3	1701.3
Color Rendering Index (CRI)	83.4	
R9	8.7	
Correlated Color Temperature (CCT)(K)	3459	
Chromaticity Chroma x	0.4076	
Chromaticity Chroma y	0.3922	
Chromaticity Chroma u	0.2366	
Chromaticity Chroma v	0.3415	
Duv	0.0002	
Chromaticity Chroma u'	0.2366	
Chromaticity Chroma v'	0.5122	

Special Color Rendering Indices	
R1	81.9
R2	91.1
R3	96.4
R4	81.7
R5	82.1
R6	88.3
R7	84.3
R8	61.8
R9	8.7
R10	79.3
R11	81.2
R12	67.4
R13	84.2
R14	98.6

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 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)	0.089
Power Factor	0.9786
Power (W)	10.45
Luminous Efficacy (lm/W)	162.4
Total Luminous Flux (lm)	1697.5
Beam Angle (°)	107.4 (0°-180°) / 174.1 (90°-270°)
Center Beam Candle Power (cd)	337
Maximum Beam Candle Power (cd)	338.3 (At: C=270.0, Gamma=4.5)
Spacing Criteria	1.22 (0°-180°) / 1.38 (90°-270°)
Zonal Lumens in the 0 °-60 °Zone	47.95%
Zonal Lumens in the 60 °-90 °Zone	26.04%
Zonal Lumens in the 90 °-120 °Zone	15.25%
Zonal Lumens in the 120 °-180 °Zone	10.76%

Table 3: Test data per Goniophotometer Method

Spectral Power Distribution - Sphere Spectroradiometer Method

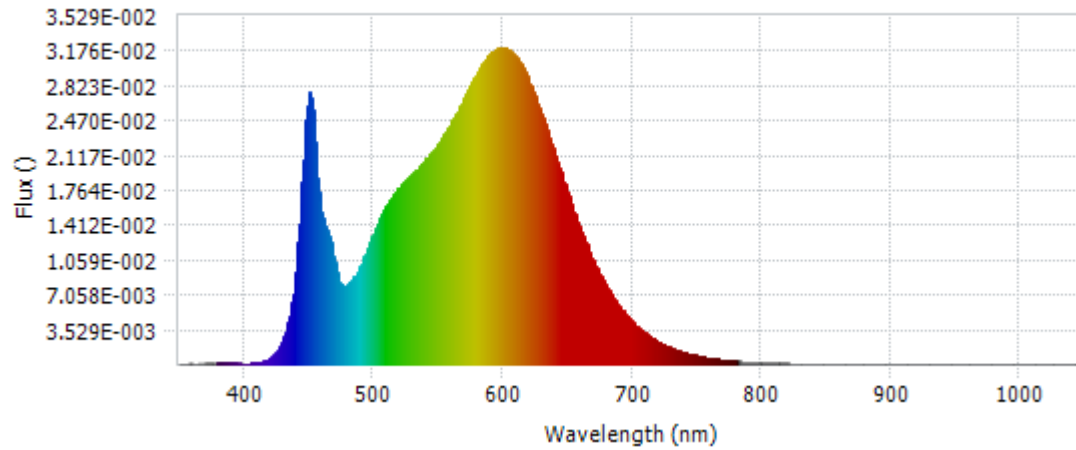
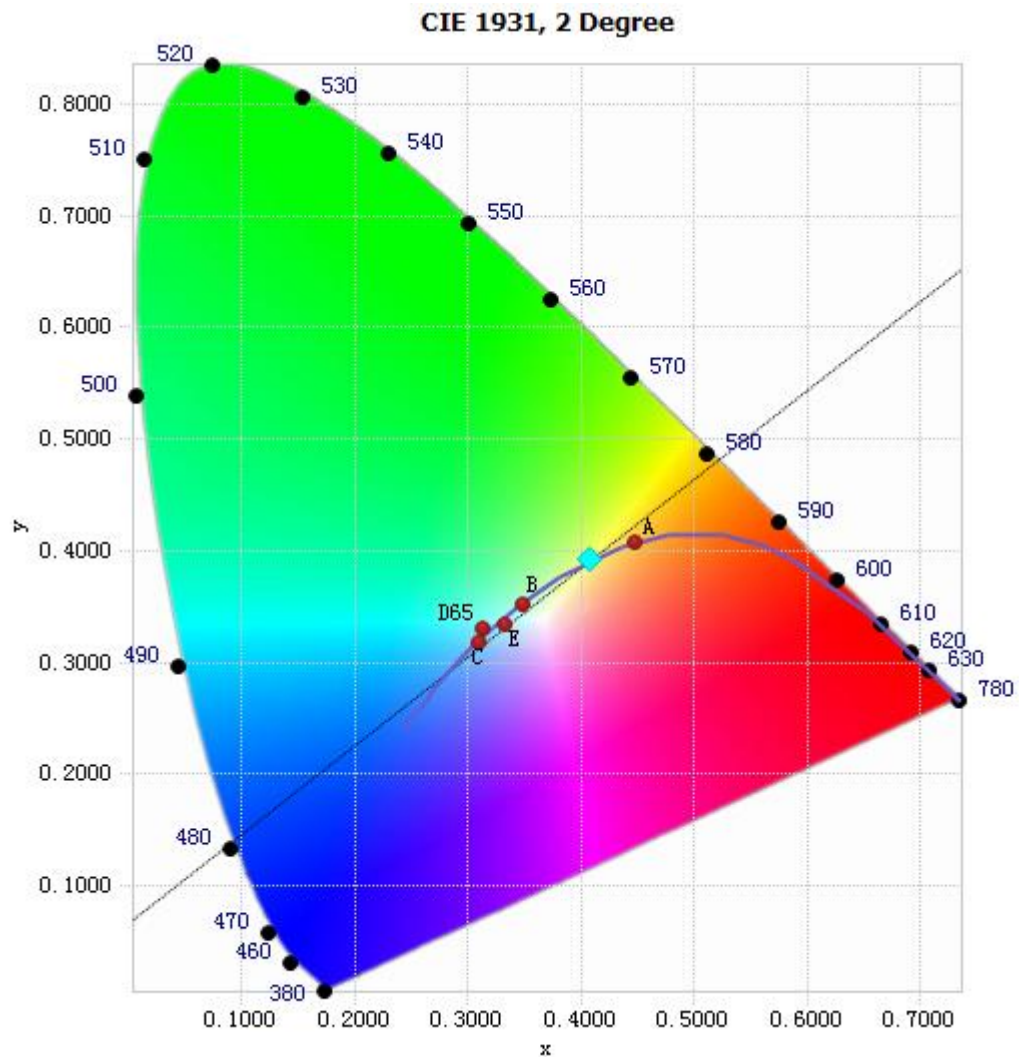


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.20E-04	485	8.84E-03	590	3.14E-02	695	5.09E-03
385	1.19E-04	490	9.92E-03	595	3.19E-02	700	4.36E-03
390	1.14E-04	495	1.15E-02	600	3.21E-02	705	3.72E-03
395	1.09E-04	500	1.33E-02	605	3.19E-02	710	3.18E-03
400	9.67E-05	505	1.48E-02	610	3.12E-02	715	2.71E-03
405	1.14E-04	510	1.60E-02	615	3.02E-02	720	2.33E-03
410	1.74E-04	515	1.71E-02	620	2.87E-02	725	1.99E-03
415	3.27E-04	520	1.79E-02	625	2.72E-02	730	1.69E-03
420	6.26E-04	525	1.86E-02	630	2.54E-02	735	1.44E-03
425	1.25E-03	530	1.92E-02	635	2.34E-02	740	1.22E-03
430	2.49E-03	535	1.99E-02	640	2.14E-02	745	1.05E-03
435	4.84E-03	540	2.06E-02	645	1.94E-02	750	8.95E-04
440	9.37E-03	545	2.15E-02	650	1.74E-02	755	7.60E-04
445	1.84E-02	550	2.23E-02	655	1.55E-02	760	6.58E-04
450	2.71E-02	555	2.34E-02	660	1.37E-02	765	5.61E-04
455	2.25E-02	560	2.44E-02	665	1.21E-02	770	4.81E-04
460	1.55E-02	565	2.56E-02	670	1.05E-02	775	4.13E-04
465	1.33E-02	570	2.69E-02	675	9.18E-03	780	3.54E-04
470	1.04E-02	575	2.82E-02	680	7.95E-03		
475	8.18E-03	580	2.94E-02	685	6.88E-03		
480	8.12E-03	585	3.06E-02	690	5.92E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.4076, 0.3922)

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

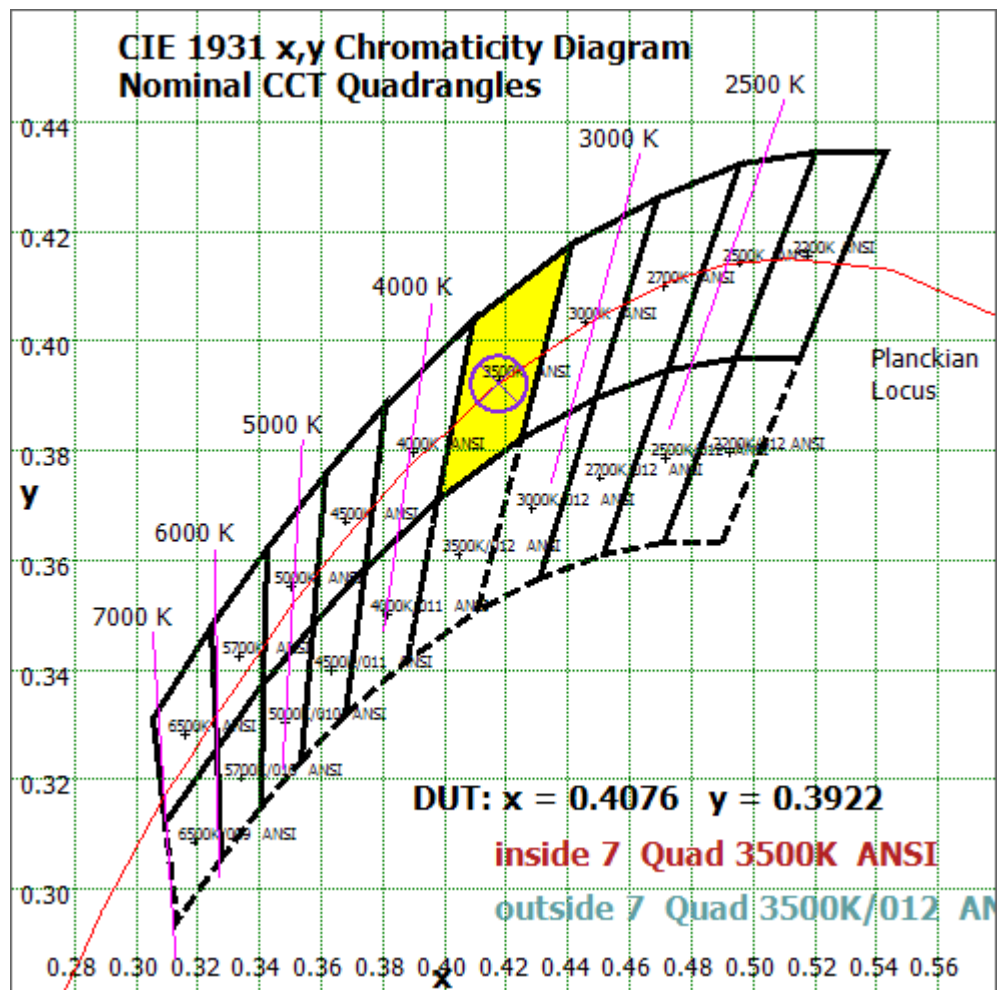
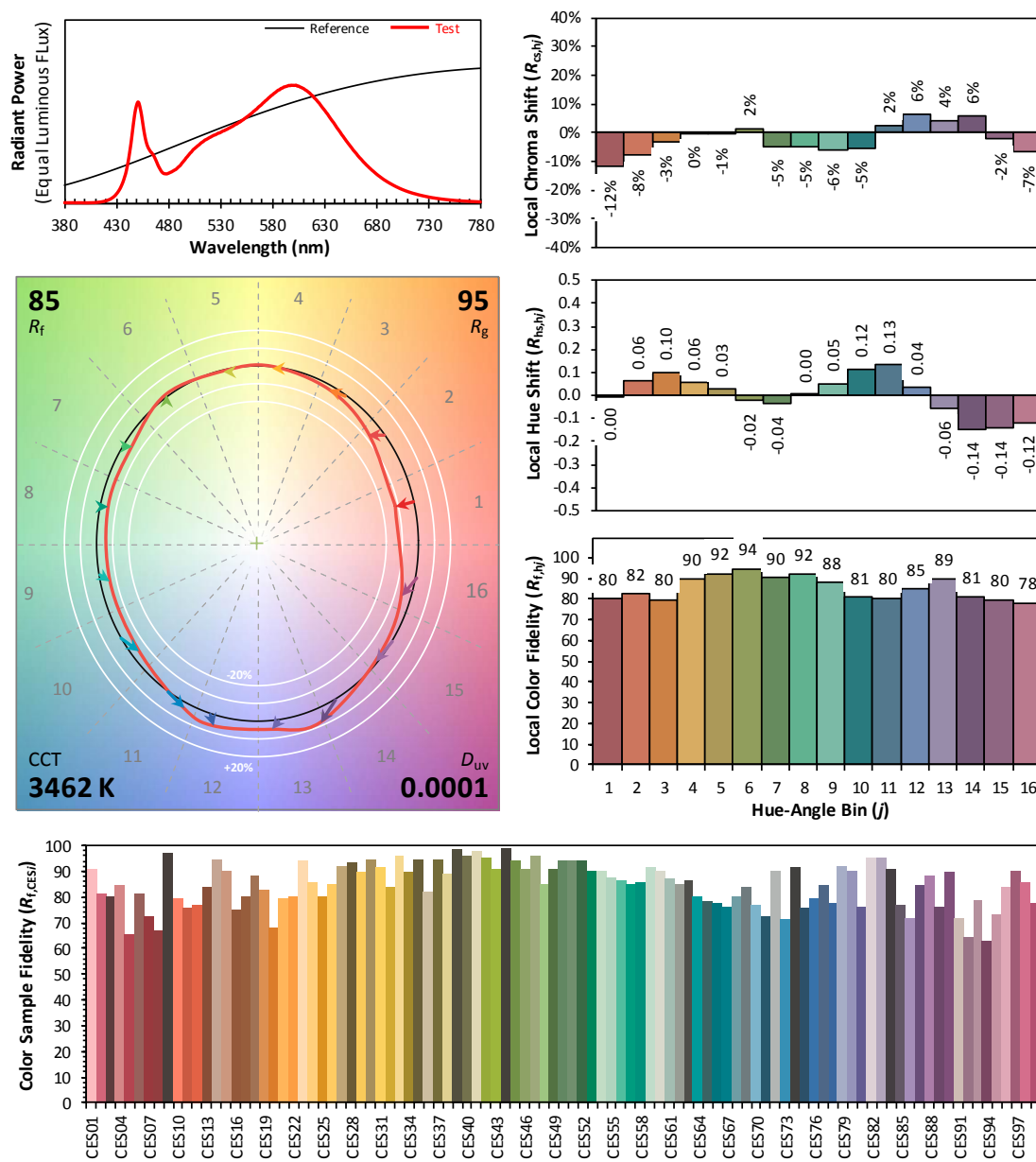


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4076
y	0.3922
u'	0.2366
v'	0.5122

Chart 4: Full Report Created with the IES TM-30 Calculator

Note: The values in this diagram might be a little different from the values in Table 2 due to rounding.

Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	31.953	1.88%
10- 20	92.019	5.42%
20- 30	141.094	8.31%
30- 40	173.969	10.25%
40- 50	188.571	11.11%
50- 60	186.269	10.97%
60- 70	170.955	10.07%
70- 80	147.878	8.71%
80- 90	123.252	7.26%
90-100	102.77	6.05%
100-110	85.494	5.04%
110-120	70.587	4.16%
120-130	57.816	3.41%
130-140	46.525	2.74%
140-150	35.77	2.11%
150-160	24.854	1.46%
160-170	13.625	0.80%
170-180	4.052	0.24%
Total	1697.5	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	813.875	47.95%
60- 90	442.085	26.04%
0-90	1255.96	73.99%
90- 180	441.493	26.01%
0- 180	1697.5	100%

Table 5: Zonal Lumen

Illuminance Plots- Goniophotometer Method

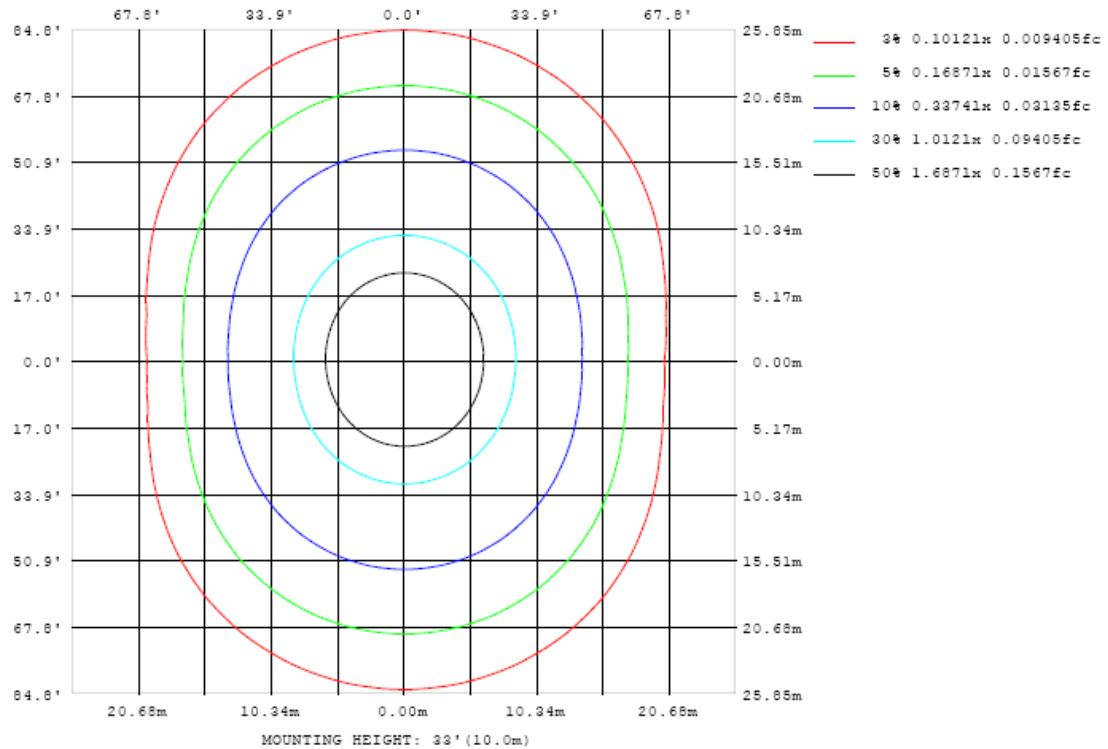


Chart 5: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots- Goniophotometer Method

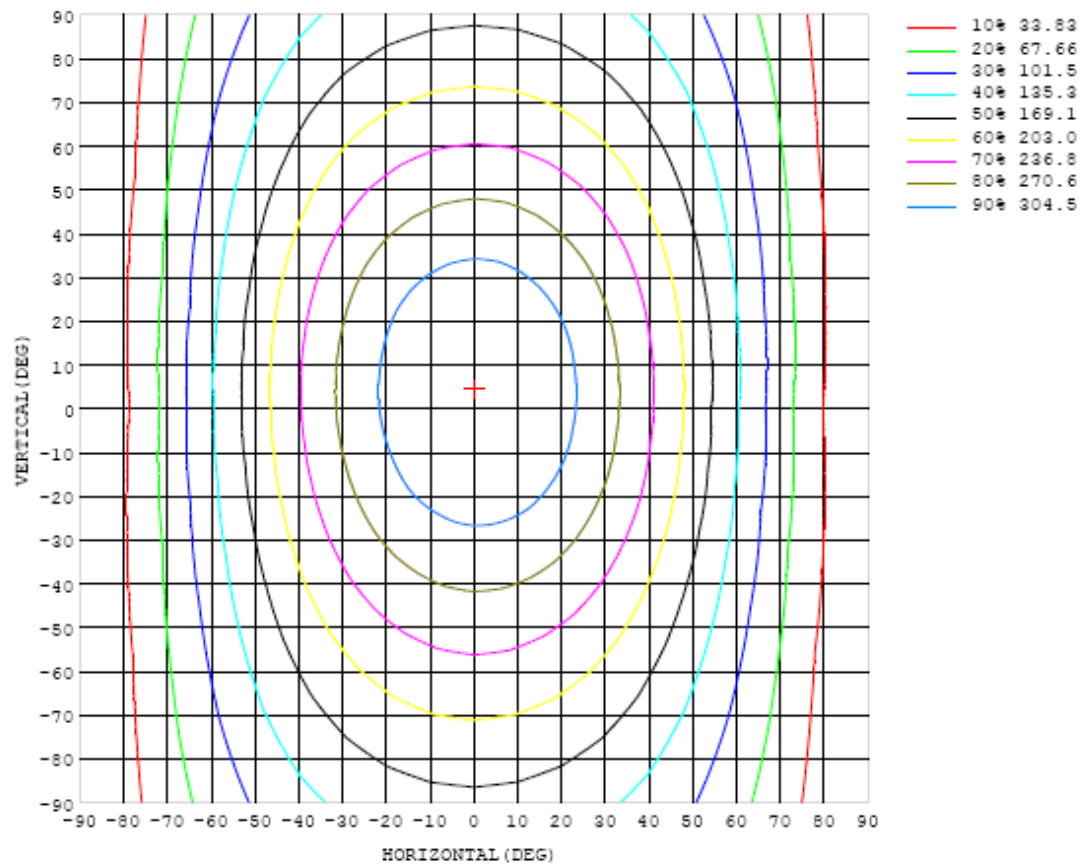


Chart 6: Isocandela Plot

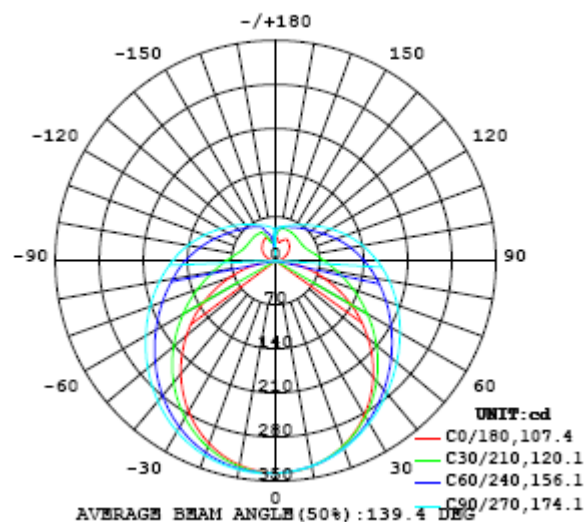


Chart 7: Polar Candela Distribution

Luminous Intensity Data- Goniophotometer Method

Table--1

UNIT: cd

C (DEG) y (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337
5	336	335	335	336	335	335	335	335	335	335	335	335	334	335	335	335	335	335	335
10	332	331	331	331	331	331	331	331	331	331	330	330	330	329	329	329	329	330	330
15	324	323	323	324	324	324	325	325	325	325	324	324	323	322	321	320	320	320	321
20	313	312	313	313	314	315	316	317	317	317	316	315	314	312	310	309	308	308	309
25	299	298	299	301	302	304	306	307	308	308	307	305	303	301	298	295	294	293	294
30	282	282	283	286	288	292	294	296	297	297	296	294	291	288	283	280	277	276	276
35	263	263	265	268	273	277	281	284	286	286	285	282	278	273	267	262	258	256	256
40	241	241	245	250	256	262	268	272	274	275	273	269	264	258	251	243	237	234	234
45	217	218	223	230	238	247	254	259	262	263	261	257	251	243	233	224	216	211	210
50	192	193	200	209	220	231	240	246	250	251	249	244	237	227	216	204	193	186	185
55	165	167	176	189	202	215	226	233	238	240	237	232	223	212	198	184	170	161	159
60	138	141	153	168	185	200	212	221	226	228	226	220	210	198	182	165	148	135	132
65	110	115	130	149	168	185	199	209	215	217	214	208	198	184	166	146	126	110	105
70	82.9	89.6	108	131	153	172	187	197	203	206	203	196	186	171	152	129	106	85.7	77.8
75	57.1	65.9	88.3	114	138	159	174	185	192	194	192	185	174	158	138	114	87.5	63.5	51.9
80	32.9	45.0	71.5	99.9	125	147	163	174	181	183	181	174	163	147	126	101	72.1	44.3	28.3
85	12.0	28.4	58.5	87.7	114	135	152	163	170	172	170	163	152	136	115	89.3	60.4	29.8	8.61
90	0.47	18.6	48.7	77.7	103	125	141	152	159	162	159	153	142	126	105	79.8	51.5	21.7	0.31
95	2.05	14.5	42.0	69.8	94.4	115	131	142	149	151	149	142	132	116	96.4	72.1	45.2	18.1	2.48
100	5.39	14.7	37.4	63.1	86.1	106	121	132	138	141	139	132	122	107	88.5	66.1	41.0	18.1	5.93
105	9.12	16.9	35.1	57.6	78.7	97.2	112	122	128	130	128	123	113	99.1	81.3	60.8	38.6	20.1	9.96
110	12.9	20.3	34.7	53.5	72.2	89.2	103	112	118	120	118	113	104	91.2	75.0	56.7	38.3	23.1	14.1
115	16.8	24.1	35.4	51.2	67.6	82.1	94.3	103	108	110	109	104	95.7	84.2	70.2	54.3	38.9	26.8	17.9
120	20.9	27.9	36.8	49.8	63.6	76.1	86.8	94.6	99.6	101	100	95.6	88.3	78.0	66.2	52.8	40.1	30.4	21.9
125	24.6	31.5	38.8	49.2	60.7	71.4	80.2	87.1	91.6	93.3	92.1	88.1	81.7	73.1	63.2	52.1	41.6	33.8	25.1
130	27.7	34.9	41.0	49.1	58.7	67.7	74.9	80.7	84.4	85.9	84.9	81.6	76.3	69.5	60.9	51.7	43.3	36.9	28.1
135	31.1	38.1	43.2	49.4	57.1	64.7	71.2	75.3	78.5	79.7	78.9	76.1	71.7	66.2	59.2	51.7	45.1	40.0	30.5
140	33.6	40.6	45.3	50.1	56.0	62.1	67.1	70.3	73.3	74.3	73.6	71.3	68.2	63.5	57.8	51.8	46.7	43.1	32.9
145	36.0	42.7	47.2	50.9	55.3	59.9	64.0	67.1	69.2	69.8	69.7	67.8	64.9	61.1	56.7	52.2	48.2	45.7	35.5
150	37.8	45.0	48.8	51.6	54.9	58.2	61.2	63.6	65.3	66.0	65.6	64.2	62.0	59.1	55.8	52.6	49.6	46.9	37.3
155	37.5	46.5	50.2	52.2	54.5	56.8	59.0	60.7	61.9	62.4	62.1	61.1	59.5	57.5	55.3	52.7	50.1	47.3	39.2
160	34.6	47.2	51.0	52.7	54.3	55.8	57.2	58.3	59.1	59.4	59.2	58.6	57.6	56.3	54.4	52.0	48.2	43.9	38.6
165	32.0	42.8	51.8	52.8	54.0	54.9	55.7	56.4	56.9	57.1	57.0	56.6	56.0	55.2	52.6	47.0	42.1	38.6	34.3
170	29.9	39.8	48.9	51.9	52.9	53.9	54.4	54.8	55.1	55.2	55.2	55.1	53.9	49.7	44.6	39.5	37.6	36.3	34.1
175	34.7	38.0	42.7	47.0	49.5	51.6	52.9	53.3	53.4	53.4	53.9	52.2	46.4	39.3	33.8	33.9	36.1	36.0	36.1
180	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2

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	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337		
5	335	336	336	337	337	337	338	338	338	338	338	338	337	337	337	337	337		
10	330	331	332	333	334	335	336	336	337	337	337	336	335	335	334	333	332		
15	322	323	325	327	329	331	332	333	334	334	333	332	331	329	328	326	325		
20	310	312	315	318	322	324	326	328	329	329	328	326	324	321	319	316	314		
25	296	299	303	307	312	316	319	321	322	322	320	318	314	311	307	303	301		
30	279	283	288	294	300	305	309	312	313	313	311	307	303	298	293	288	285		
35	259	264	271	279	287	293	298	301	303	302	300	295	290	283	276	270	266		
40	238	244	252	262	272	279	285	289	291	290	287	282	275	267	258	250	244		
45	214	222	232	244	255	265	272	276	278	278	273	267	259	249	238	228	221		
50	189	199	212	226	239	250	258	263	265	264	259	252	242	230	217	205	197		
55	164	175	191	207	222	235	244	249	252	250	245	237	226	212	196	182	171		
60	138	152	170	189	206	220	229	236	238	237	231	222	209	193	176	159	145		
65	112	129	151	171	190	205	216	223	225	223	217	207	193	176	156	136	119		
70	86.4	107	132	156	175	191	202	210	212	210	204	193	178	160	138	114	93.4		
75	62.8	87.8	115	141	162	178	190	197	200	198	191	180	164	145	121	93.9	69.5		
80	42.3	71.1	101	127	149	166	177	185	187	185	178	167	152	131	106	76.7	48.4		
85	27.0	58.2	88.6	115	138	155	166	173	175	173	166	156	140	119	92.8	62.9	32.1		
90	18.7	48.8	78.6	105	127	144	155	161	164	162	156	145	129	108	82.1	52.7	22.2		
95	15.2	42.1	70.2	95.3	116	133	144	151	153	151	144	134	118	97.8	73.1	45.0	17.4		
100	15.8	38.0	63.4	86.8	107	122	133	139	141	140	133	123	108	88.8	65.6	39.9	16.7		
105	18.1	36.5	58.2	79.5	97.8	112	122	128	131	129	123	113	98.9	81.0	59.7	37.3	18.3		
110	21.5	36.5	54.9	73.3	89.9	103	113	118	120	118	113	104	90.7	74.3	55.4	36.5	21.4		
115	25.0	37.7	52.9	68.7	83.0	94.9	104	109	111	109	104	95.2	83.5	69.0	52.7	36.9	24.8		
120	28.4	39.2	51.8	65.2	77.6	87.8	95.3	99.9	102	100	95.3	87.8	77.6	65.1	51.2	38.3	28.3		
125	31.4	41.1	51.3	62.5	73.1	82.0	88.4	92.4	93.7	92.4	88.3	81.8	72.9	62.1	50.4	40.3	31.4		
130	33.9	43.0	51.2	60.5	69.3	76.9	82.4	85.8	87.0	85.8	82.2	76.6	69.0	59.9	50.4	42.4	34.2		
135	35.3	44.4	51.2	58.9	66.2	72.5	77.2	80.0	81.0	80.0	76.9	72.1	65.8	58.3	50.7	44.4	36.6		
140	35.6	45.9	51.6	57.7	63.5	68.7	72.5	74.9	75.7	74.8	72.3	68.3	63.2	57.2	51.2	46.3	38.5		
145	34.7	46.6	50.9	55.6	61.4	65.3	68.4	70.3	70.9	70.3	68.2	65.0	61.0	56.3	51.8	47.5	38.9		
150	33.8	47.1	51.3	54.3	59.1	62.4	64.7	66.2	66.7	66.3	64.7	62.3	59.3	55.8	52.6	48.2	38.0		
155	30.5	40.4	48.9	51.7	55.4	59.6	61.5	62.6	63.1	62.8	61.8	60.1	58.0	55.5	53.5	45.7	34.3		
160	29.3	35.4	40.3	44.5	47.9	52.3	57.9	59.6	60.0	59.9	59.3	58.3	56.9	55.4	53.1	39.6	29.9		
165	29.4	29.9	31.6	34.9	37.4	45.1	52.2	56.8	57.5	57.6	57.2	56.8	56.2	55.5	47.8	30.8	28.4		
170	29.3	29.5	30.3	28.4	27.0	36.5	43.2	54.0	54.9	55.4	54.9	55.9	56.0	53.5	28.2	29.4	29.7		
175	37.5	37.0	38.9	39.0	39.2	26.9	18.1	37.3	52.4	53.0	56.2	47.4	23.7	38.6	37.5	35.5	32.6		
180	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2		

Table 7: Luminous Intensity Data

EQUIPMENT LIST

Test Equipment	Model	Equipment No.	Calibration Date	Calibration Due date
Goniophotometer system	GO-R5000	HZTE011-01	Aug. 02, 2019	Aug. 01, 2020
Digital Power Meter	PF2010A	HZTE028-01	Aug. 02, 2019	Aug. 01, 2020
AC Power Supply	DPS1060	HZTE001-06	Aug. 02, 2019	Aug. 01, 2020
DC Power Supply	WY12010	HZTE004-03	Aug. 02, 2019	Aug. 01, 2020
Temperature recorder	JM624U	HZTE018-08	Aug. 02, 2019	Aug. 01, 2020
Temperature and humidity recorder	JR900	HZTE018-01	Aug. 02, 2019	Aug. 01, 2020
Standard source	D908	HZTE012-01	Aug. 02, 2019	Aug. 01, 2020
Integrate Sphere system	3M	HZTE015-04	Aug. 02, 2019	Aug. 01, 2020
Digital Power Meter	WT210	HZTE008-01	Aug. 02, 2019	Aug. 01, 2020
AC Power Supply	PCR 500L	HZTE001-07	Aug. 02, 2019	Aug. 01, 2020
DC Power Supply	IT6154	HZTE004-04	Aug. 02, 2019	Aug. 01, 2020
Standard source	SCL-1400	HZTE012-02	Aug. 02, 2019	Aug. 01, 2020
Temperature and humidity recorder	JR900	HZTE018-02	Aug. 02, 2019	Aug. 01, 2020
Temperature Meter	TES1310	HZTE017-01	Aug. 02, 2019	Aug. 01, 2020

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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