LM-79-08 Test Report

for

Revolution Lighting Technologies, Inc.

2280 Ward Ave. Simi Valley, CA 93065

LED Tube

Model: 203100-111

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

3rd Floor, Bld. 2, NO. 96 Longchuanwu Rd Qianjiang Economy Dev. Zone, Yuhang Dist,
Hangzhou, Zhejiang Province, China 311100
Tel: +86 571 86376106
www.ledtestlab.com

Report No.: HZ18110016e

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. 21, 2018

Approved by:

Manager: Jim Zhang
Nov. 21, 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: **203100-111**

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
125.3	1474.0	11.76	0.9799

CCT (K)	CRI	Stabilization Time (Light & Power)
3059	82.5	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	: Nov. 12, 2018
Date of Test	: Nov. 13, 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

TABLE OF CONTENT

Sample Photo

Figure 1- Overview of the sample

Equipment Under Test (EUT)	
Name	: LED Tube
Model	: 203100-111
Electrical Ratings	: 120-277V, 60Hz
Product Description	: 3000K
Manufacturer	: Revolution Lighting Technologies, Inc.
Address	: 2280 Ward Ave. Simi Valley, CA 93065

TEST RESULTS

Test ambient temperature was 25.2℃.

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)	0.100	0.046
Power Factor	0.9799	0.9417
Test Power (W)	11.76	12.12
THD A%	18.39	23.09
Luminous Efficacy (lm/W)	125.3	121.7
Total Luminous Flux (lm)	1474.0	1475.0
Color Rendering Index (CRI)	82.5	
R9	5.7	
Correlated Color Temperature (CCT)(K)	3059	
Chromaticity Chroma x	0.4321	
Chromaticity Chroma y	0.4013	
Chromaticity Chroma u	0.2486	
Chromaticity Chroma v	0.3464	
Duv	0.0004	
Chromaticity Chroma u ’	0.2486	
Chromaticity Chroma v’	0.5196	

Special Color Rendering Indices	
R1	80.8
R2	90.9
R3	96.2
R4	80.5
R5	81.2
R6	89
R7	82.5
R8	58.6
R9	5.7
R10	79.4
R11	80.1
R12	71.5
R13	83.3
R14	98.5

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 24.7 ℃.

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)	0.100
Power Factor	0.9811
Power (W)	11.78
Luminous Efficacy (lm/W)	123.8
Total Luminous Flux (lm)	1457.8
Beam Angle (°)	104.0（0^o-180^o）/127.5(90^o-270^o)
Center Beam Candle Power (cd)	416
Maximum Beam Candle Power (cd)	416.4 (At: C=330.0, Gamma=1.0)
Spacing Criteria	1.21（0^o-180^o）/1.30(90^o-270^o)
Zonal Lumens in the 0°-60°Zone	64.75%
Zonal Lumens in the 60°-90°Zone	25.33%
Zonal Lumens in the 90°-120°Zone	7.50%
Zonal Lumens in the 120°-180°Zone	2.42%

Table 3: Test data per Goniophotometer Method

Spectral Power Distribution - Sphere Spectroradiometer Method

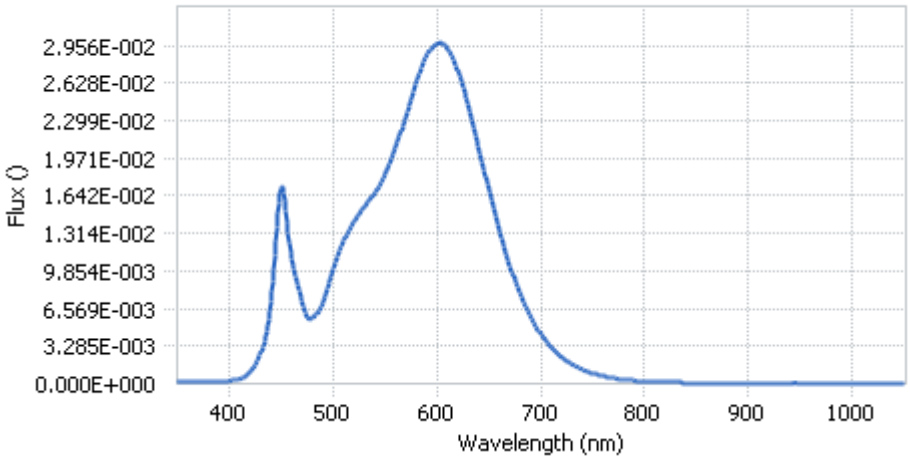
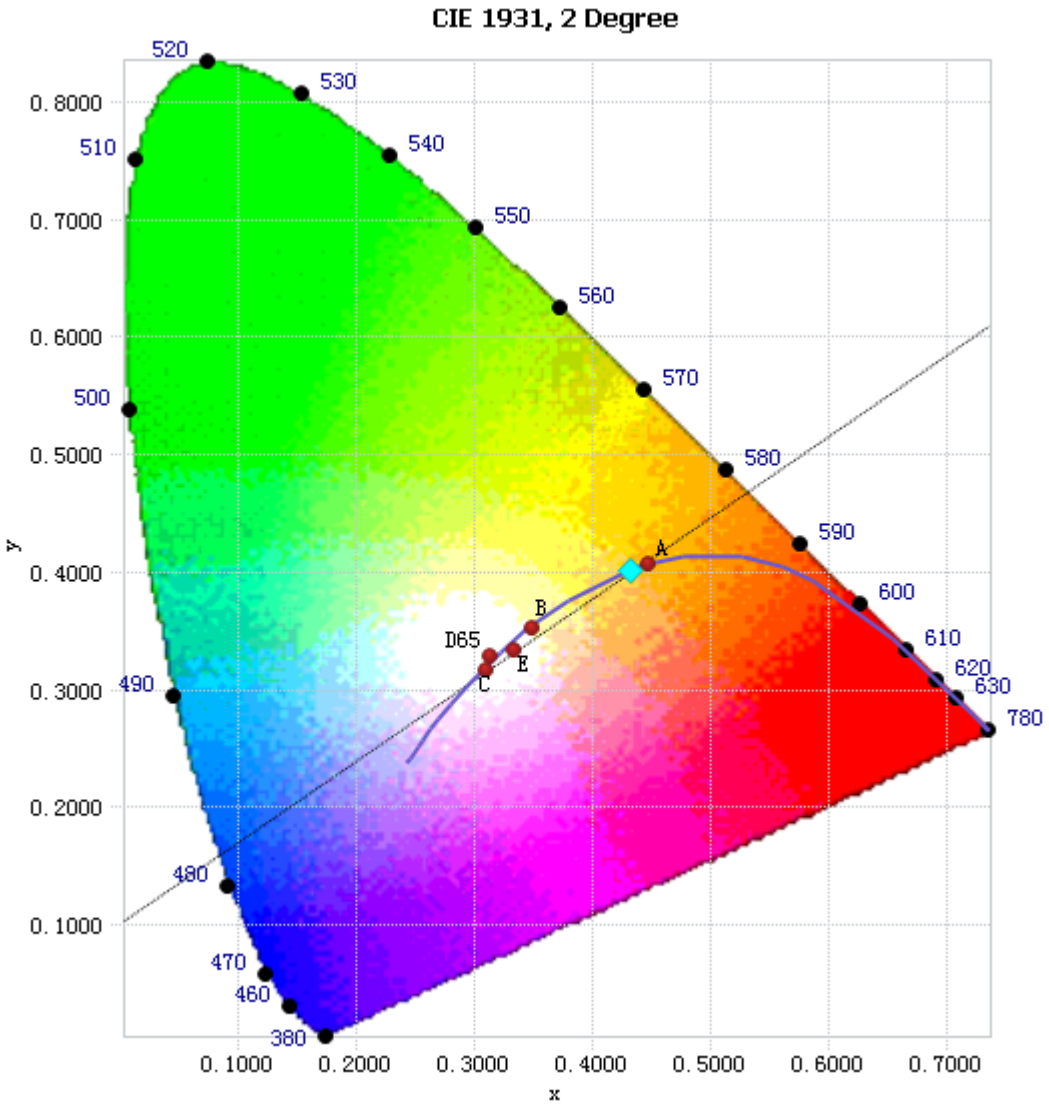


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.93E-04	485	6.21E-03	590	2.86E-02	695	5.06E-03
385	1.79E-04	490	7.10E-03	595	2.94E-02	700	4.35E-03
390	1.94E-04	495	8.44E-03	600	2.97E-02	705	3.73E-03
395	2.23E-04	500	9.92E-03	605	2.98E-02	710	3.18E-03
400	2.47E-04	505	1.13E-02	610	2.94E-02	715	2.72E-03
405	2.91E-04	510	1.24E-02	615	2.86E-02	720	2.32E-03
410	4.05E-04	515	1.34E-02	620	2.74E-02	725	1.99E-03
415	6.05E-04	520	1.42E-02	625	2.61E-02	730	1.69E-03
420	9.98E-04	525	1.47E-02	630	2.44E-02	735	1.44E-03
425	1.64E-03	530	1.54E-02	635	2.26E-02	740	1.23E-03
430	2.60E-03	535	1.60E-02	640	2.08E-02	745	1.05E-03
435	4.15E-03	540	1.67E-02	645	1.89E-02	750	8.95E-04
440	7.15E-03	545	1.74E-02	650	1.70E-02	755	7.67E-04
445	1.24E-02	550	1.83E-02	655	1.52E-02	760	6.56E-04
450	1.71E-02	555	1.93E-02	660	1.35E-02	765	5.61E-04
455	1.51E-02	560	2.05E-02	665	1.19E-02	770	4.84E-04
460	1.09E-02	565	2.19E-02	670	1.04E-02	775	4.14E-04
465	9.00E-03	570	2.34E-02	675	9.11E-03	780	3.57E-04
470	7.23E-03	575	2.48E-02	680	7.91E-03		
475	5.87E-03	580	2.63E-02	685	6.87E-03		
480	5.71E-03	585	2.76E-02	690	5.91E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.4321, 0.4013)

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

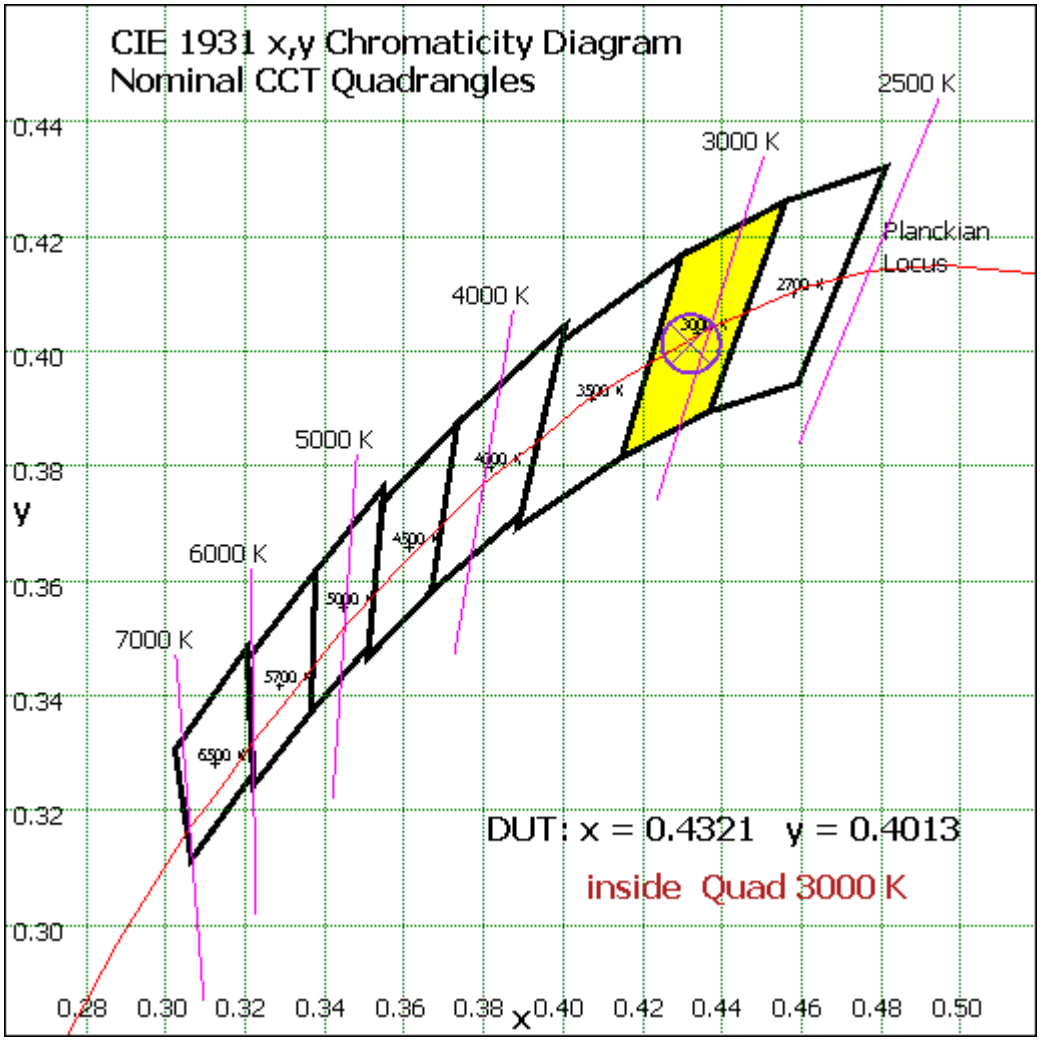


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

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

Zonal Lumen Tabulation- Goniophotometer Method

γ(°)	Lumens	% Total
0- 10	39.367	2.70%
10- 20	112.677	7.73%
20- 30	170.667	11.71%
30- 40	206.044	14.13%
40- 50	215.343	14.77%
50- 60	199.848	13.71%
60- 70	165.671	11.36%
70- 80	122.275	8.39%
80- 90	81.366	5.58%
90-100	52.779	3.62%
100-110	34.441	2.36%
110-120	22.098	1.52%
120-130	14.292	0.98%
130-140	9.308	0.64%
140-150	5.917	0.41%
150-160	3.543	0.24%
160-170	1.736	0.12%
170-180	0.467	0.03%
Total	1457.8	100%

γ(°)	Lumens	% Total
0- 60	943.946	64.75%
60- 90	369.312	25.33%
0-90	1313.258	90.08%
90- 180	144.581	9.92%
0- 180	1457.8	100%

Table 5: Zonal Lumen Data

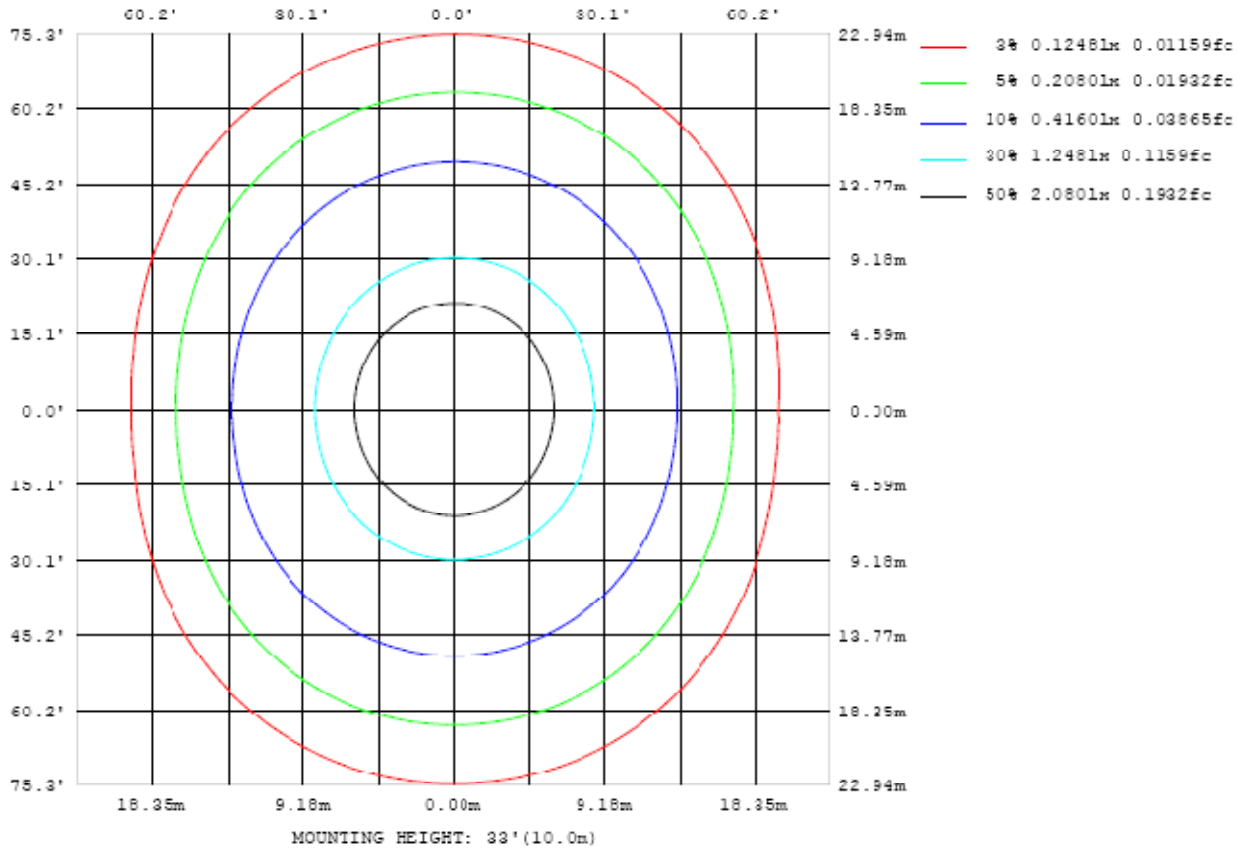


Chart 4: Beam Angle

Luminous Intensity Distribution Plots- Goniophotometer Method

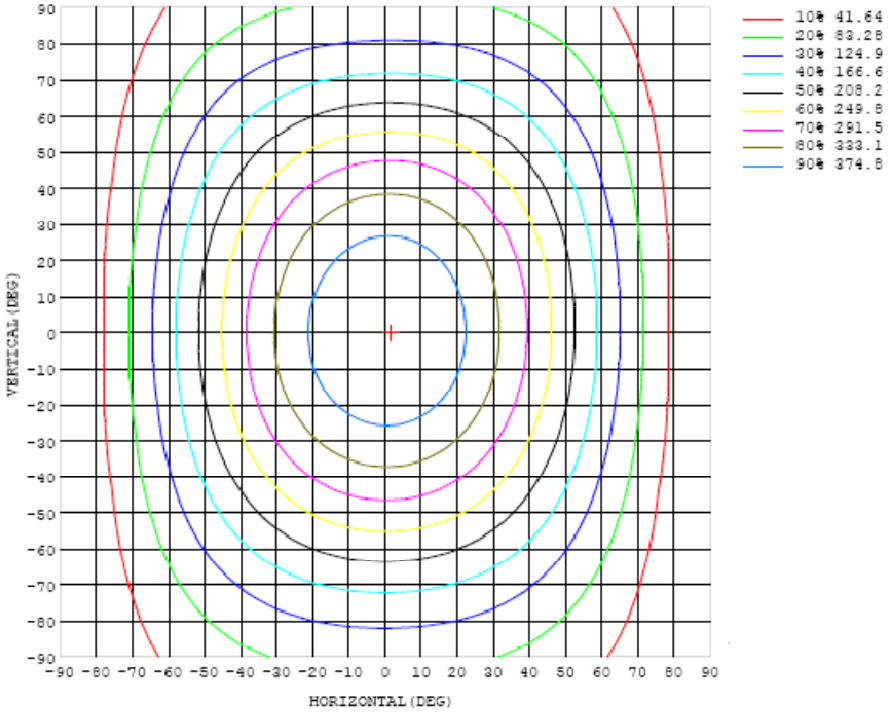


Chart 5: Illuminance Plot (Footcandles)

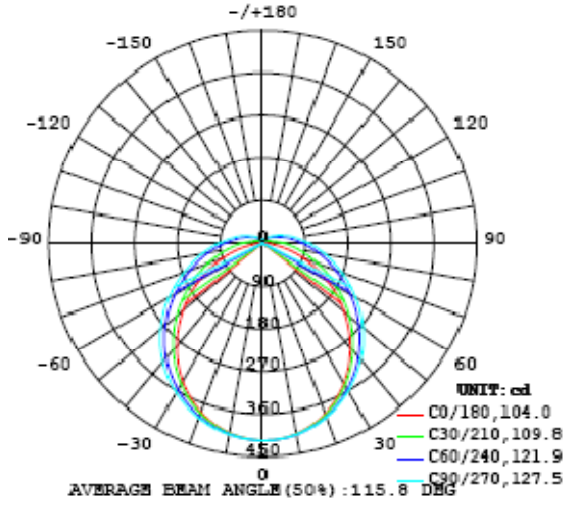


Chart 6: Polar Candela Distribution

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	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416
5	414	415	415	415	415	415	415	415	415	415	414	414	414	414	414	414	414	413	413
10	408	409	409	409	409	410	410	410	410	410	410	409	409	408	407	407	407	406	406
15	398	398	398	399	400	400	401	402	402	402	401	401	400	399	398	397	396	395	395
20	383	383	384	385	386	388	389	390	391	390	390	389	388	386	384	382	381	380	379
25	364	364	365	367	370	372	374	376	377	377	376	375	372	370	367	364	362	360	360
30	341	342	343	346	349	353	356	359	360	360	360	358	355	351	347	343	340	338	337
35	316	316	318	322	327	332	336	340	342	342	341	338	334	329	324	319	315	311	311
40	287	288	291	296	302	308	314	318	321	321	320	317	312	306	299	293	287	283	282
45	256	257	261	267	275	283	290	295	298	299	298	294	289	281	273	265	258	253	251
50	224	225	230	238	247	257	265	271	275	276	274	270	263	255	245	236	227	221	219
55	191	192	199	208	219	230	239	246	250	251	250	245	238	229	218	206	196	188	186
60	157	159	167	178	191	203	213	221	225	226	225	220	212	202	190	177	165	156	153
65	124	127	136	150	164	177	188	195	200	201	200	195	187	177	164	149	135	124	120
70	91.5	95.4	107	123	138	152	163	171	176	177	175	171	163	152	138	122	106	93.0	88.5
75	60.9	66.0	80.7	98.0	115	129	140	148	153	154	153	148	140	129	115	98.6	80.6	64.6	58.0
80	33.0	40.2	58.0	76.5	93.8	108	119	127	131	133	131	127	120	109	94.9	77.7	59.5	40.3	30.6
85	10.7	20.2	39.5	58.9	75.7	89.9	101	108	112	114	112	108	101	90.9	77.1	60.7	41.3	21.6	9.20
90	0.38	8.59	26.1	44.6	61.2	74.3	84.6	91.6	95.6	96.9	95.7	92.0	85.3	75.4	62.4	46.6	28.2	10.4	0.14
95	0.26	3.62	17.1	33.5	48.8	61.5	70.8	77.4	81.2	82.4	81.3	77.9	71.5	62.6	50.5	35.5	19.3	5.17	0.24
100	0.37	2.41	11.3	24.9	38.6	50.5	59.5	65.3	68.8	70.0	69.1	65.7	60.3	51.7	40.4	26.9	13.3	3.60	0.41
105	0.64	2.07	8.54	18.4	29.9	40.6	49.1	55.0	58.4	59.7	58.7	55.6	50.0	41.9	31.7	20.6	10.2	3.04	0.76
110	1.00	2.24	6.99	14.7	23.6	32.3	39.6	45.2	48.5	49.6	48.8	45.8	40.6	33.7	25.5	16.5	8.46	3.06	1.18
115	1.44	2.58	6.05	12.2	19.5	26.6	32.6	37.1	39.9	40.9	40.3	37.8	33.7	27.9	21.0	13.8	7.46	3.24	1.62
120	1.88	2.92	5.66	10.4	16.3	22.2	27.3	31.1	33.5	34.4	33.8	31.8	28.2	23.3	17.6	11.8	6.87	3.44	2.09
125	2.34	3.09	5.49	9.15	13.8	18.7	22.9	26.2	28.2	29.0	28.5	25.7	23.7	19.7	15.1	10.5	6.43	3.54	2.58
130	2.77	3.55	5.57	8.35	12.0	15.9	19.4	22.1	23.8	24.4	24.0	22.5	20.0	16.8	13.1	9.48	6.08	3.54	3.04
135	3.25	3.72	5.56	7.80	10.6	13.6	16.4	18.6	20.0	20.6	20.3	19.0	17.0	14.4	11.5	8.61	6.16	3.97	3.37
140	3.65	3.80	5.61	7.29	9.58	11.9	14.1	15.8	16.9	17.4	17.1	15.1	14.5	12.5	10.3	7.82	6.08	4.08	3.71
145	4.21	3.62	5.23	7.00	8.70	10.5	12.1	13.4	14.3	14.7	14.5	13.7	12.5	10.9	9.23	6.88	6.00	4.08	4.12
150	4.74	3.53	5.45	6.79	7.84	9.25	10.5	11.4	12.1	12.4	12.3	11.7	10.8	9.65	8.11	6.83	5.98	3.91	4.59
155	5.20	3.81	5.32	6.51	7.41	8.06	9.09	9.82	10.3	10.5	10.4	10.0	9.36	8.26	6.91	6.80	5.67	3.98	5.00
160	5.49	4.31	4.21	5.46	6.60	7.61	8.02	8.50	8.86	8.99	8.95	8.56	7.70	7.12	6.53	5.89	4.69	3.85	4.84
165	5.67	4.38	3.57	4.09	4.57	6.05	7.10	7.43	7.74	7.85	7.92	6.94	5.82	5.34	5.05	4.56	3.72	3.76	4.68
170	5.75	4.49	3.63	3.48	3.66	3.60	4.03	4.56	5.66	6.67	3.83	4.16	4.16	3.97	3.75	3.68	3.68	3.70	4.13
175	5.74	5.02	4.24	4.07	4.18	4.12	4.22	4.46	4.36	2.46	4.89	4.90	4.64	4.29	3.99	3.82	3.72	3.58	3.61
180	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84

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	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416		
5	413	413	413	414	414	414	414	414	414	414	415	415	414	414	415	415	415		
10	406	406	407	408	408	409	409	410	410	410	410	410	410	409	409	408	408		
15	395	396	397	397	399	400	401	402	402	403	403	402	401	400	400	398	398		
20	379	381	382	384	387	389	390	392	392	393	392	391	389	388	386	385	383		
25	361	362	365	368	371	374	377	379	380	380	379	377	375	372	369	367	365		
30	338	340	344	348	353	357	361	363	365	365	363	361	357	353	349	346	342		
35	312	315	320	326	332	338	342	345	347	347	345	342	337	331	326	321	317		
40	284	288	294	301	309	316	321	325	326	327	324	320	314	307	300	294	289		
45	253	258	266	275	284	292	298	302	304	304	302	297	290	281	273	265	259		
50	221	228	237	247	258	267	274	278	280	280	277	271	264	254	244	235	228		
55	189	196	207	219	231	240	248	252	254	254	251	245	236	226	214	203	195		
60	156	165	177	191	203	213	221	226	228	228	225	218	209	198	185	172	162		
65	125	135	149	163	176	187	195	200	202	202	198	192	182	170	156	142	131		
70	93.5	106	122	138	151	161	169	174	176	176	172	166	156	144	128	113	99.3		
75	64.6	79.8	97.2	114	127	138	145	150	152	151	148	142	133	119	103	85.8	69.9		
80	39.2	57.0	75.6	92.4	106	116	123	128	129	129	126	120	110	97.2	80.9	62.3	44.2		
85	19.9	38.8	57.5	74.0	87.2	97.0	104	108	109	109	106	100	91.0	78.2	62.1	43.3	24.0		
90	8.64	25.7	43.3	58.9	71.5	80.6	86.9	90.7	92.2	91.6	88.7	83.2	74.7	62.5	47.0	29.1	11.2		
95	3.80	17.1	32.6	46.9	58.5	67.1	72.9	76.4	77.8	77.2	74.4	69.2	61.0	49.7	35.5	19.6	5.31		
100	2.63	11.3	24.7	37.3	47.9	55.9	61.3	64.5	65.7	65.1	62.5	57.5	50.0	39.6	27.0	13.3	3.26		
105	2.34	8.45	18.4	29.7	39.3	46.6	51.7	54.7	55.8	55.1	52.6	48.0	41.0	31.6	20.3	9.53	2.72		
110	2.52	6.93	14.4	23.1	31.9	38.8	43.5	46.3	47.4	46.8	44.4	40.0	33.4	24.7	15.6	7.49	2.67		
115	2.79	6.15	11.9	18.8	25.5	31.4	36.1	38.8	39.9	39.2	36.8	32.5	26.6	19.7	12.6	6.41	2.85		
120	3.13	5.78	10.2	15.7	21.2	25.9	29.4	31.6	32.5	31.9	29.8	26.5	21.8	16.3	10.6	5.89	3.13		
125	3.49	5.57	9.03	13.3	17.8	21.6	24.6	26.4	27.1	26.6	24.9	22.1	18.3	13.7	9.20	5.62	3.44		
130	3.83	5.51	8.24	11.6	15.1	18.3	20.7	22.2	22.8	22.3	20.9	18.6	15.5	11.8	8.30	5.57	3.75		
135	4.17	5.49	7.60	10.2	12.9	15.5	17.5	18.8	19.2	18.9	17.7	15.8	13.2	10.4	7.69	5.58	4.17		
140	4.50	5.55	7.14	9.17	11.3	13.2	14.8	15.9	16.3	16.0	15.0	13.4	11.4	9.30	7.26	5.66	4.52		
145	4.80	5.65	6.84	8.35	9.95	11.4	12.6	13.4	13.6	13.4	12.7	11.5	10.1	8.44	6.93	5.74	4.86		
150	5.10	5.66	6.60	7.68	8.83	9.92	10.8	11.4	11.6	11.4	10.9	10.0	8.92	7.75	6.71	5.84	5.11		
155	5.37	5.76	6.19	7.10	7.94	8.67	9.28	9.70	9.85	9.73	9.34	8.74	8.01	7.26	6.55	5.87	5.45		
160	5.58	5.83	6.09	6.58	7.22	7.71	8.08	8.34	8.44	8.38	8.15	7.79	7.37	6.90	6.40	5.96	5.66		
165	5.19	5.74	6.00	6.18	6.49	6.94	7.21	7.36	7.43	7.42	7.31	7.12	6.88	6.58	6.26	6.06	5.94		
170	4.48	4.85	5.42	5.80	5.93	6.17	6.48	6.66	6.69	6.69	6.64	6.54	6.39	6.28	6.22	6.13	6.04		
175	3.78	4.00	4.34	4.84	5.40	5.60	5.66	5.94	6.23	6.28	6.25	6.24	6.20	6.12	6.06	6.07	6.06		
180	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84		

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

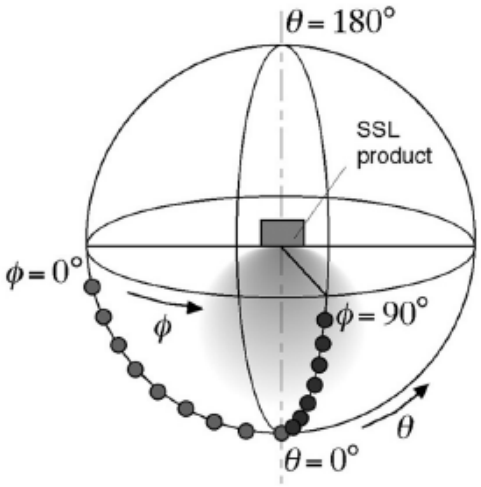
The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as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