

LM-79-08 TEST REPORT

for

IDEAL INDUSTRIES LIGHTING LLC, DBA CREE LIGHTING

4401 SILICON DRIVE, DURHAM, NC 27703, USA

LED Tube

Model: C-T836-A-25W-50K-B1

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

3rd Floor, Bld. 2, NO. 96 Longchuanwu Rd Qianjiang Economy Dev. Zone, YuhangDist,
Hangzhou, Zhejiang Province, China 311100

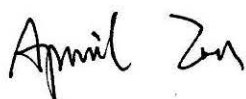
Tel: +86571 86376106

www.ledtestlab.com

Report No.: HZ22030014f

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

Review by:



Engineer: April Zou

Mar. 04, 2022

Approved by:



Manager: Jim Zhang

Mar. 04, 2022

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: **C-T836-A-25W-50K-B1**

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
138.7	1668.4	12.03	0.9868
CCT (K)	CRI	Stabilization Time (Light & Power)	
4944	82.2	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 : Nov. 30, 2021

Date of Test : Dec. 01, 2021

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

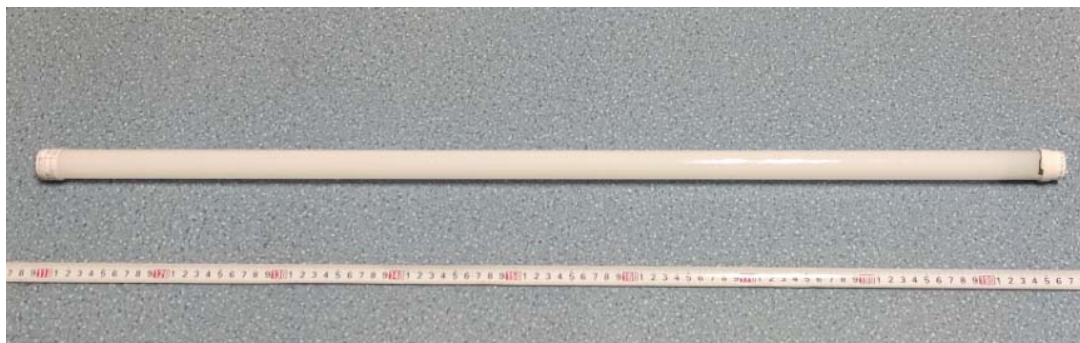


Figure 1- Overview of the sample

Equipment Under Test(EUT)

Name	: LED Tube
Model	: C-T836-A-25W-50K-B1
Electrical Ratings	: 120-277V, 50/60Hz, 12W
Product Description	: 5000K Manufacturer of light source: Bridgelux Inc. Model of LED light source: BXVN-50E-11L-3DV-000-00-00-0

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)	0.102	0.048
Power Factor	0.9868	0.9305
Test Power (W)	12.03	12.25
THD A%	15.12	19.84
Luminous Efficacy (lm/W)	138.7	137.6
Total Luminous Flux (lm)	1668.4	1685.2
Color Rendering Index (CRI)	82.2	
R9	9.3	
Correlated Color Temperature (CCT)(K)	4944	
Chromaticity Chroma x	0.3469	
Chromaticity Chroma y	0.3558	
Chromaticity Chroma u	0.2110	
Chromaticity Chroma v	0.3246	
Duv	0.0014	
Chromaticity Chroma u'	0.2110	
Chromaticity Chroma v'	0.4870	

Special Color Rendering Indices	
R1	80.7
R2	85.6
R3	89.9
R4	83.5
R5	81.6
R6	80.8
R7	86.8
R8	68.9
R9	9.3
R10	66.5
R11	83.4
R12	62.9
R13	81.5
R14	94.5

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 25.8°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)	0.103
Power Factor	0.9822
Power (W)	12.09
Luminous Efficacy (lm/W)	136.9
Total Luminous Flux (lm)	1655.7
Beam Angle (°)	112.5 (0°-180°) / 240.0 (90°-270°)
Center Beam Candle Power (cd)	259
Maximum Beam Candle Power (cd)	259.2 (At: C=100.0, Gamma=2.0)
Spacing Criteria	1.26 (0°-180°) / 1.44 (90°-270°)
Zonal Lumens in the 0°-60°Zone	40.64%
Zonal Lumens in the 60°-90°Zone	26.32%
Zonal Lumens in the 90°-120°Zone	18.34%
Zonal Lumens in the 120°-180°Zone	14.71%

Table 3: Test data per Goniophotometer Method

Spectral Power Distribution - Sphere Spectroradiometer Method

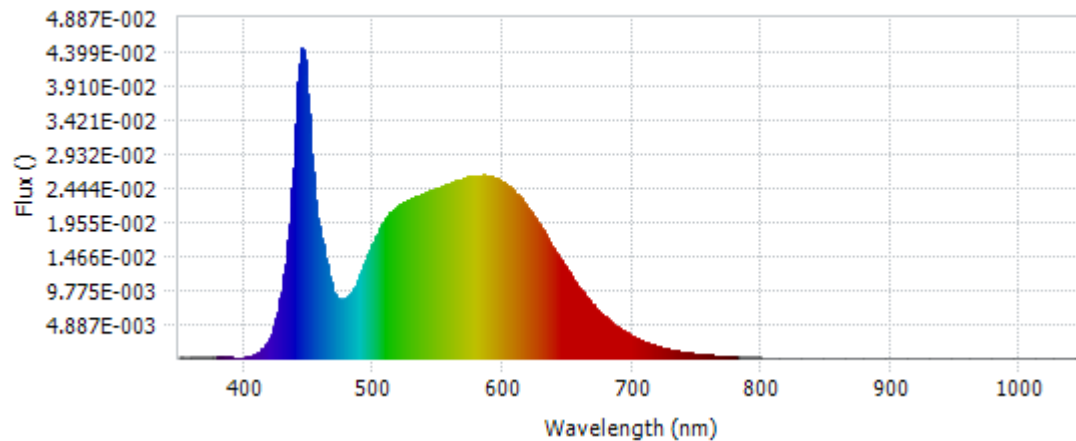
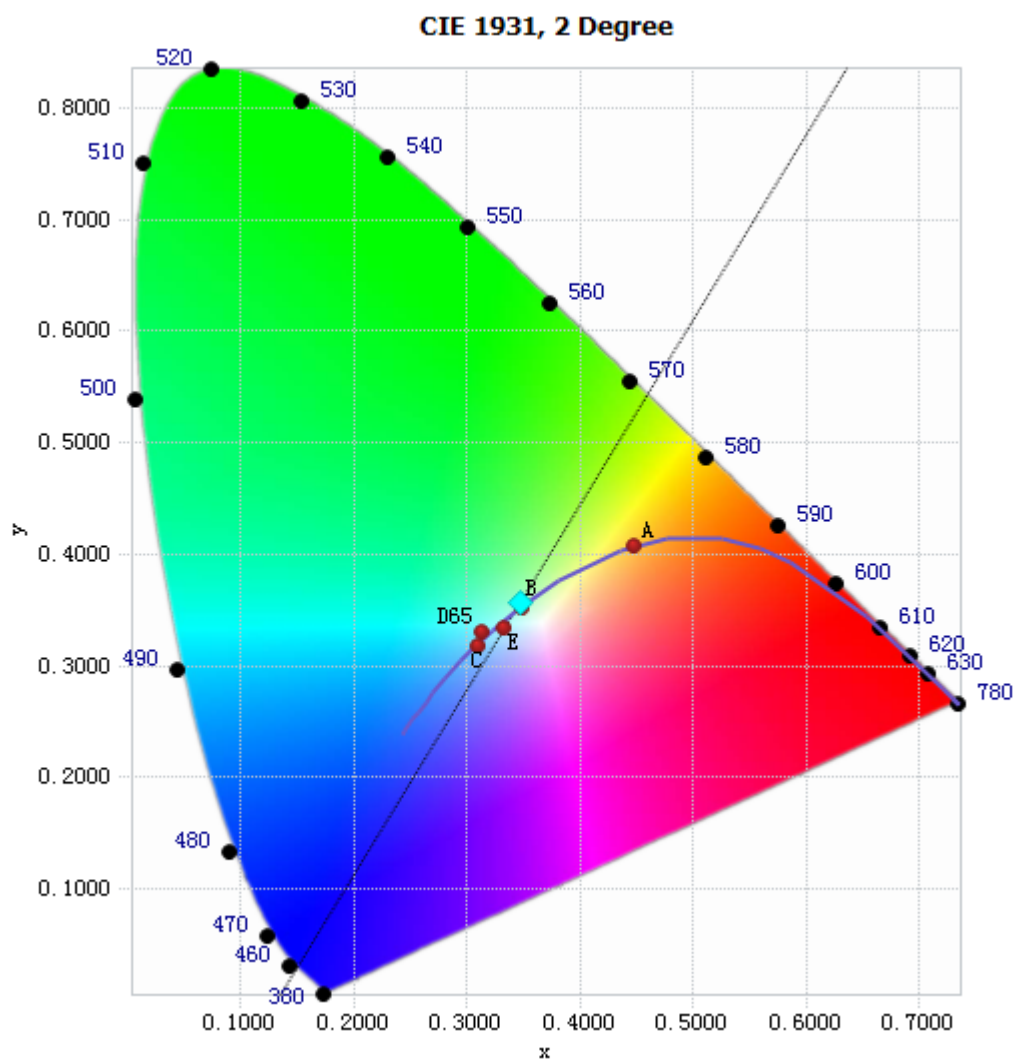


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.98E-04	485	1.00E-02	590	2.61E-02	695	3.74E-03
385	1.37E-04	490	1.21E-02	595	2.58E-02	700	3.21E-03
390	1.66E-04	495	1.45E-02	600	2.54E-02	705	2.74E-03
395	1.35E-04	500	1.68E-02	605	2.46E-02	710	2.34E-03
400	1.55E-04	505	1.87E-02	610	2.37E-02	715	2.00E-03
405	3.17E-04	510	2.02E-02	615	2.27E-02	720	1.72E-03
410	7.16E-04	515	2.14E-02	620	2.14E-02	725	1.47E-03
415	1.50E-03	520	2.20E-02	625	2.01E-02	730	1.25E-03
420	3.01E-03	525	2.25E-02	630	1.86E-02	735	1.05E-03
425	5.89E-03	530	2.30E-02	635	1.71E-02	740	9.10E-04
430	1.08E-02	535	2.33E-02	640	1.56E-02	745	7.74E-04
435	1.93E-02	540	2.37E-02	645	1.41E-02	750	6.55E-04
440	3.36E-02	545	2.41E-02	650	1.26E-02	755	5.66E-04
445	4.44E-02	550	2.44E-02	655	1.12E-02	760	4.75E-04
450	3.50E-02	555	2.49E-02	660	9.90E-03	765	4.20E-04
455	2.28E-02	560	2.51E-02	665	8.73E-03	770	3.54E-04
460	1.73E-02	565	2.56E-02	670	7.64E-03	775	3.07E-04
465	1.25E-02	570	2.58E-02	675	6.68E-03	780	2.62E-04
470	9.26E-03	575	2.61E-02	680	5.78E-03		
475	8.43E-03	580	2.62E-02	685	5.02E-03		
480	8.81E-03	585	2.63E-02	690	4.33E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3469, 0.3558)

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

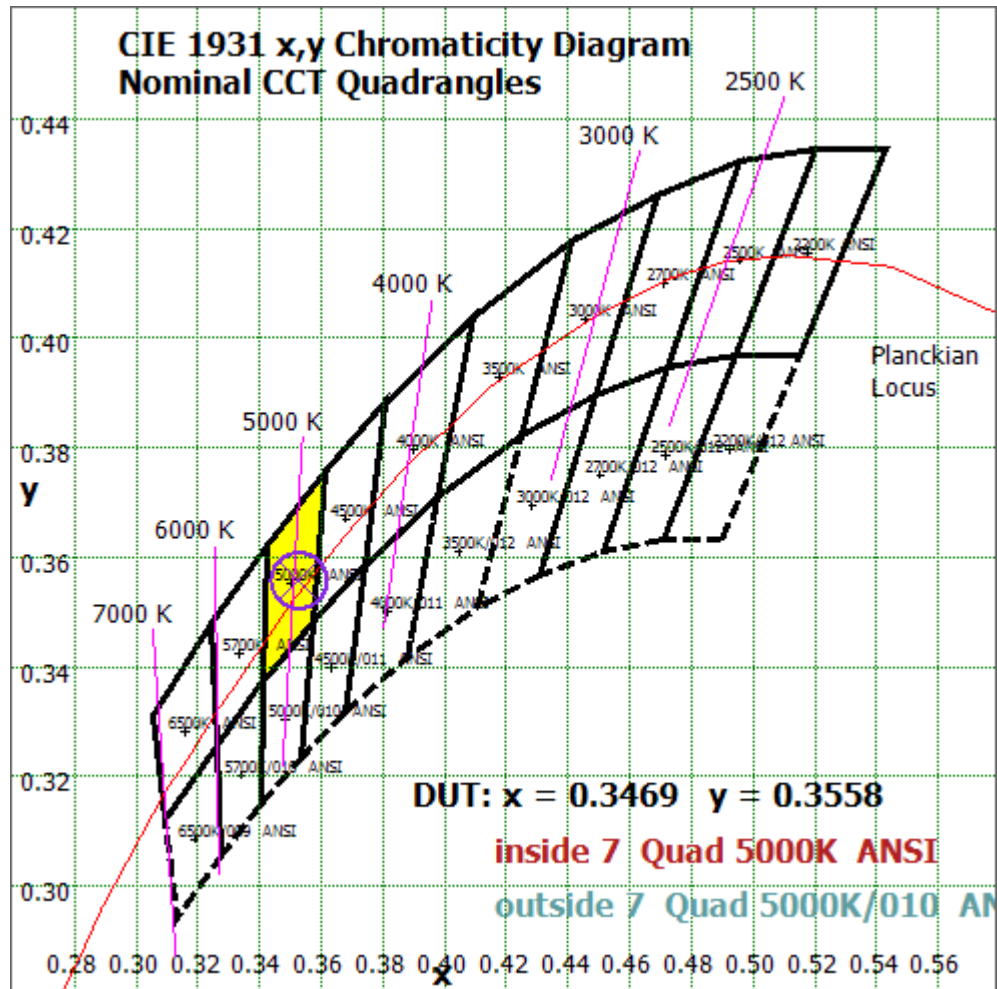


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method

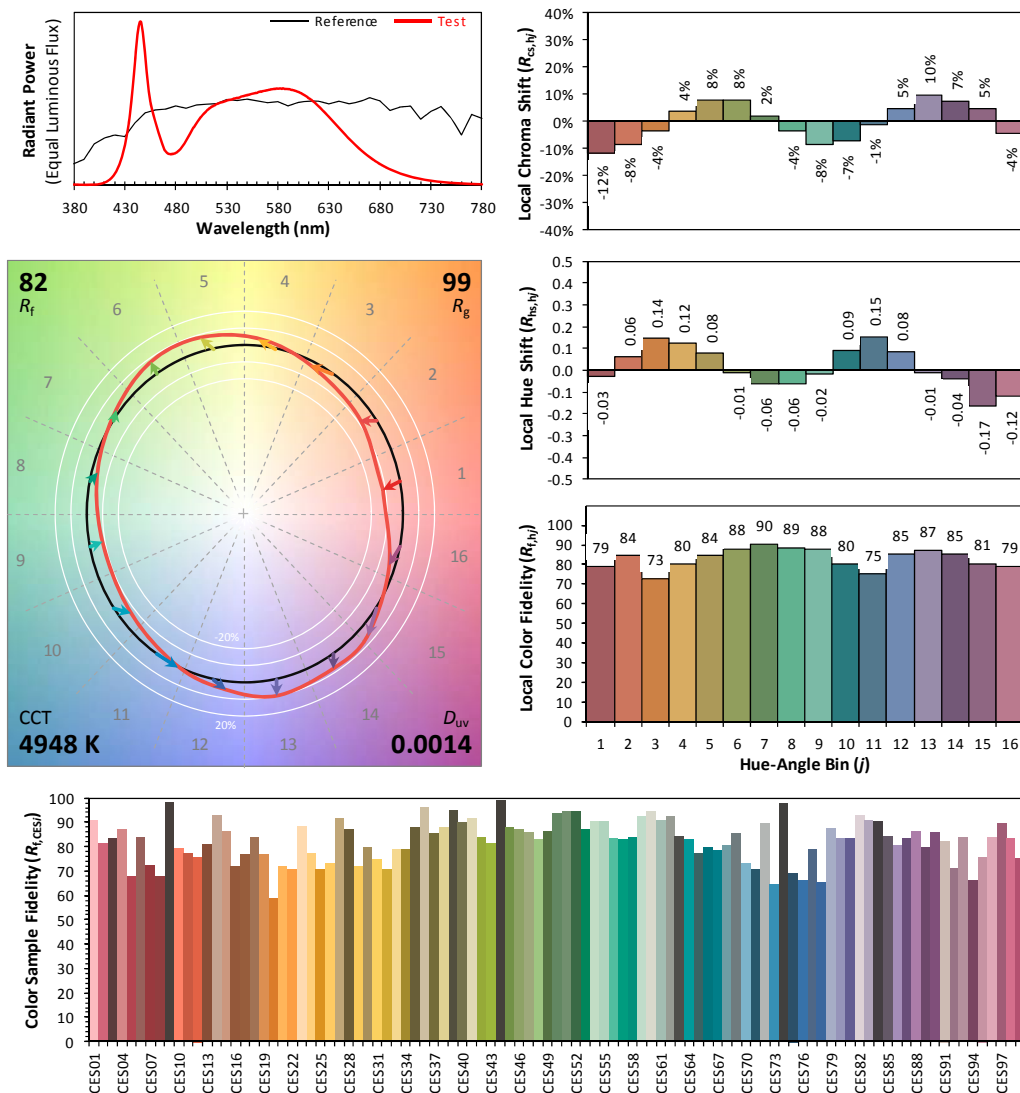
ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: IDEAL INDUSTRIES LIGHTING LLC,
DBA CREE LIGHTING

Date: 2021/12/01

Model: C-T836-A-25W-50K-B1



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

x 0.3469
 y 0.3558
 u' 0.2110
 v' 0.4870

CIE 13.3-1995
(CRI)
 R_a 82
 R_g 9

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

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.

Prepared by: Leading Testing Laboratories
3rd Floor, Bld. 2, NO. 96 Longchuanwu Rd Qianjiang Economy Dev. Zone, YuhangDist,
Hangzhou, Zhejiang Province, China 311100
Tel: +86 571 86376106 www.ledtestlab.com

Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	24.563	1.48%
10- 20	71.332	4.31%
20- 30	111.392	6.73%
30- 40	141.346	8.54%
40- 50	159.269	9.62%
50- 60	164.93	9.96%
60- 70	159.514	9.63%
70- 80	146.225	8.83%
80- 90	129.996	7.85%
90-100	115.364	6.97%
100-110	101.072	6.10%
110-120	87.17	5.26%
120-130	74.133	4.48%
130-140	61.581	3.72%
140-150	48.488	2.93%
150-160	34.643	2.09%
160-170	19.365	1.17%
170-180	5.276	0.32%
Total	1655.7	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	672.832	40.64%
60- 90	435.735	26.32%
0-90	1108.57	66.96%
90- 180	547.092	33.04%
0- 180	1655.7	100%

Table 5: Zonal Lumen

Illuminance Plots- Goniophotometer Method

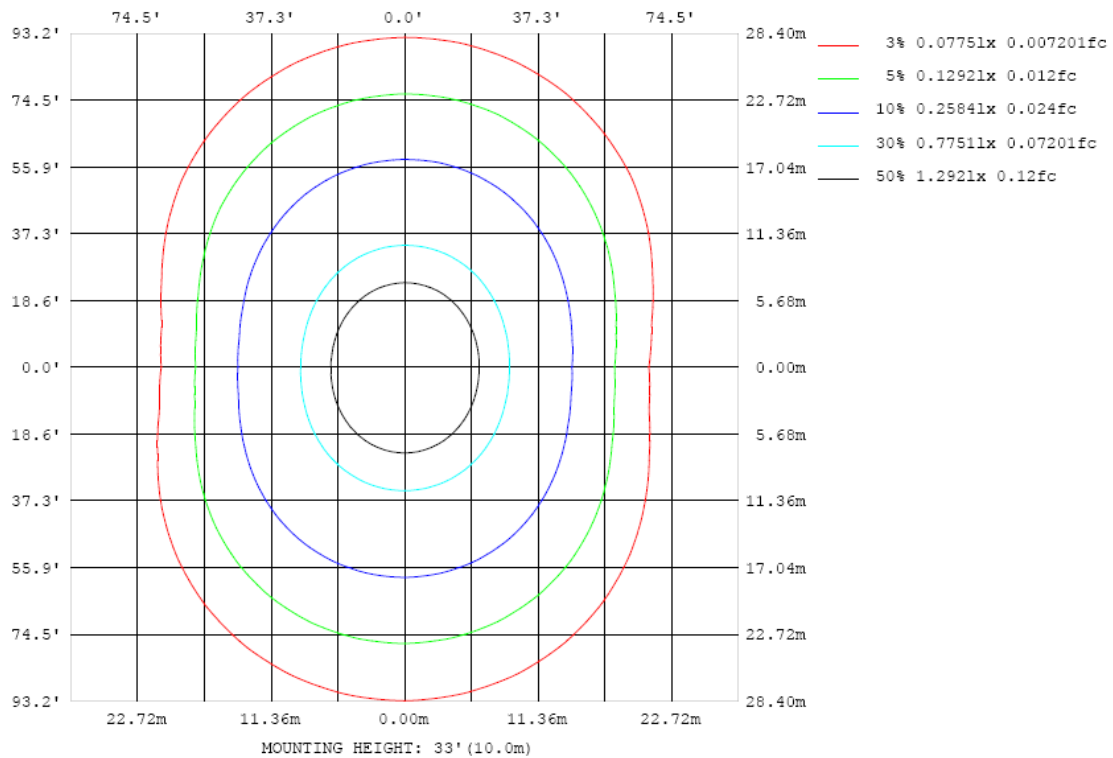


Chart 5: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots- Goniophotometer Method

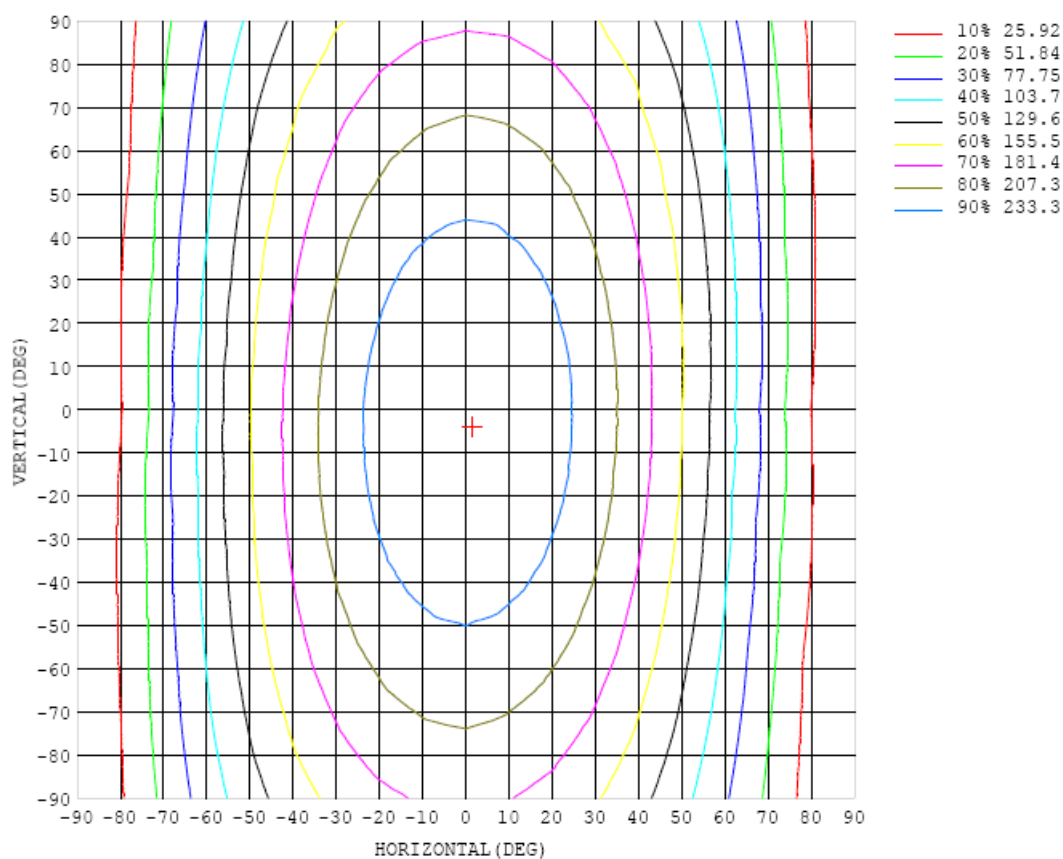


Chart 6: Isocandela Plot

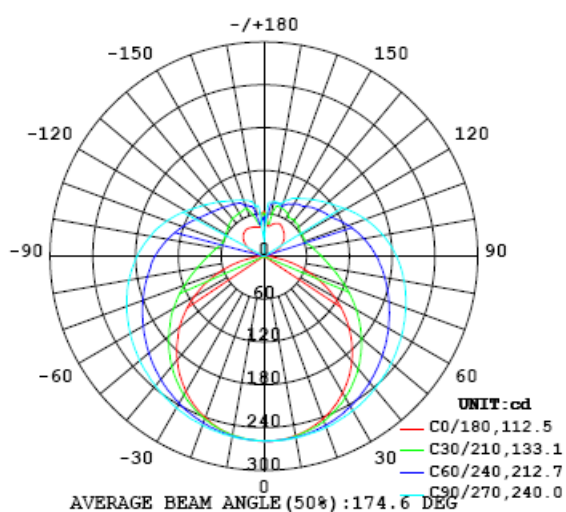


Chart 7: Polar Candela Distribution

Luminous Intensity Data- Goniophotometer Method

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259
5	258	258	258	259	258	259	258	259	259	259	259	259	258	258	257	258	258	257	258
10	255	255	256	256	256	257	258	258	258	258	258	257	257	257	255	255	255	254	254
15	250	250	251	251	253	255	255	257	256	257	257	256	255	253	252	250	250	249	249
20	242	242	244	246	248	250	252	254	255	255	255	254	252	250	247	244	243	241	241
25	233	233	235	238	241	245	248	250	252	253	252	251	248	244	240	237	234	231	231
30	221	222	225	229	234	239	243	246	249	249	249	247	243	238	233	228	223	220	219
35	208	209	212	218	225	231	237	242	245	246	246	243	238	231	224	217	211	207	205
40	192	194	199	206	214	223	231	237	241	242	241	237	231	223	215	205	198	192	189
45	175	177	183	193	204	215	224	231	236	238	237	232	225	216	205	193	183	175	172
50	156	158	167	179	192	206	217	225	231	233	232	227	218	208	194	180	167	157	155
55	136	139	150	164	181	196	209	219	226	228	227	221	211	199	183	166	151	138	134
60	114	118	132	150	169	187	202	213	220	223	221	215	204	190	172	153	134	118	113
65	91.8	97.0	114	135	157	178	194	207	215	218	216	209	198	182	162	140	117	98.1	90.7
70	68.7	75.6	95.9	121	146	169	187	200	208	212	210	203	190	173	152	127	101	77.8	67.1
75	46.9	55.5	79.5	108	136	160	179	193	202	206	204	197	183	165	142	115	86.0	59.4	45.9
80	25.7	36.7	66.0	97.5	127	153	172	187	196	200	198	190	177	158	134	105	73.3	42.5	23.6
85	8.88	22.4	54.9	88.1	119	145	165	180	189	193	191	183	170	151	126	96.6	64.1	30.0	7.52
90	1.33	14.9	47.5	80.8	111	138	158	173	182	186	184	176	163	144	119	89.8	57.2	23.3	0.95
95	2.24	12.2	42.5	74.6	105	130	151	165	174	178	176	169	155	137	112	83.7	52.4	20.3	2.35
100	5.84	14.3	38.3	70.0	97.8	123	143	157	166	170	168	160	147	129	106	78.6	48.7	20.6	6.24
105	10.7	19.0	38.0	64.4	91.5	115	134	148	157	161	159	152	140	122	100.0	73.4	46.3	23.9	11.4
110	16.4	23.6	39.7	62.0	85.0	108	126	139	148	152	150	143	131	115	93.7	69.9	47.6	29.2	16.8
115	21.9	28.3	41.2	61.7	80.7	100	117	131	139	142	141	134	123	108	88.4	69.2	48.9	32.9	22.4
120	27.2	36.1	45.1	62.1	78.8	95.5	109	121	129	133	132	126	116	102	85.2	68.4	50.7	36.6	28.0
125	32.3	41.2	48.2	61.4	77.2	92.1	105	114	120	123	123	118	109	96.7	82.5	67.7	53.9	42.6	33.2
130	36.9	45.3	50.8	63.8	75.7	89.6	101	109	114	116	115	111	103	92.2	80.5	69.0	54.7	46.3	37.8
135	40.5	49.7	51.8	65.4	75.1	86.5	96.4	103	108	110	109	105	97.6	88.5	78.9	69.9	58.1	51.7	41.1
140	43.8	53.7	58.1	66.6	75.2	83.6	91.0	97.8	102	104	103	99.4	92.9	84.5	78.1	68.6	60.2	56.0	43.3
145	46.4	57.8	62.4	65.2	73.7	82.2	87.9	91.9	95.5	98.5	97.6	93.8	89.3	83.2	76.1	69.6	62.9	59.6	44.9
150	49.3	60.9	65.2	67.6	72.1	79.1	84.9	89.1	92.6	93.7	92.4	90.2	86.8	79.6	74.3	70.0	65.4	62.6	44.8
155	50.6	61.3	68.2	70.5	72.6	75.5	80.7	84.3	86.9	88.2	87.2	84.5	81.0	76.2	73.3	70.3	68.2	65.5	44.3
160	48.8	52.1	68.9	72.0	74.2	75.8	74.0	78.0	79.7	80.7	80.2	78.1	76.1	74.4	71.8	72.7	67.5	62.1	43.6
165	46.4	45.3	56.1	73.1	74.2	75.3	77.0	78.1	78.3	77.9	77.8	77.2	76.6	71.9	70.2	61.5	57.1	50.7	42.5
170	42.9	42.0	42.7	51.4	68.8	74.1	75.0	76.2	76.7	76.9	77.1	75.6	67.9	58.4	53.3	49.6	46.1	42.1	41.3
175	50.2	49.8	48.7	47.5	52.7	52.3	55.1	65.2	73.1	75.5	63.0	42.2	40.7	47.7	47.0	49.2	47.3	47.6	49.5
180	62.1	61.7	60.8	58.7	55.3	49.1	45.9	38.4	41.7	3.68	25.3	40.0	43.8	49.9	53.5	58.1	60.0	61.0	62.1

Table 6: Luminous Intensity Data

C (DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259		
5	258	258	257	257	258	258	258	258	258	258	258	258	258	258	257	258	258		
10	254	254	254	254	255	255	256	256	256	257	256	256	256	255	255	255	254		
15	248	249	249	250	251	252	253	254	254	255	254	254	253	252	251	250	250		
20	240	241	242	244	247	248	250	251	252	252	251	250	248	246	245	243	242		
25	231	232	234	237	240	243	246	248	249	249	248	245	243	240	237	235	233		
30	219	221	224	229	234	238	242	244	245	245	243	240	236	232	227	224	222		
35	205	208	213	220	226	232	237	240	241	241	239	235	229	223	217	212	209		
40	190	195	201	209	218	225	231	235	237	236	233	228	221	213	205	199	194		
45	173	179	188	198	209	218	226	230	232	232	228	221	213	203	193	184	177		
50	156	163	174	187	200	211	219	225	227	227	222	215	205	192	179	168	160		
55	137	147	160	175	191	203	213	220	222	221	216	208	196	181	166	153	142		
60	116	129	146	164	181	196	207	214	217	216	210	200	186	170	153	136	121		
65	94.9	111	132	154	172	188	200	208	211	210	203	193	178	160	140	118	101		
70	73.5	93.8	119	143	164	181	194	202	205	204	197	185	169	150	126	102	79.9		
75	53.1	77.6	106	133	156	173	187	196	199	197	190	178	161	140	114	86.2	60.3		
80	35.1	63.8	95.1	124	148	166	180	189	192	191	183	171	154	131	103	72.9	42.7		
85	21.6	53.1	85.9	116	141	159	173	182	185	184	176	163	146	123	94.1	62.0	29.3		
90	14.7	46.0	78.7	108	133	153	166	174	178	176	169	157	139	115	86.3	54.3	21.7		
95	12.2	41.2	72.5	101	126	145	159	167	170	168	161	149	131	108	79.7	48.7	18.1		
100	14.8	37.5	67.2	94.7	118	137	151	159	162	160	154	141	123	101	73.8	44.2	18.4		
105	19.4	38.0	62.8	88.5	111	129	143	151	154	152	145	133	116	93.9	68.4	42.2	21.7		
110	25.1	40.3	60.7	83.2	104	121	134	142	145	143	136	125	108	87.8	64.6	43.6	26.5		
115	30.1	43.8	61.0	79.4	98.1	114	126	133	136	134	128	116	101	82.8	63.9	45.6	32.2		
120	35.6	47.7	61.7	77.7	93.0	107	117	124	127	125	119	109	95.4	80.3	63.9	48.5	37.5		
125	40.9	51.8	63.3	76.4	89.4	101	110	116	118	117	111	103	91.6	78.5	64.5	52.4	42.6		
130	46.7	55.3	65.0	76.0	86.7	96.0	104	109	111	110	105	98.0	88.5	77.3	65.7	56.3	45.9		
135	51.2	58.1	67.1	75.9	84.6	92.2	98.5	103	105	104	100	94.0	86.2	76.8	67.5	59.9	50.8		
140	54.3	61.3	69.2	76.0	83.0	89.2	94.0	97.4	99.2	98.5	95.2	90.4	84.3	76.9	69.6	62.8	53.9		
145	58.2	62.6	68.6	76.1	81.6	86.4	90.4	93.1	94.1	93.7	91.3	87.5	82.7	77.2	71.2	64.7	56.7		
150	60.4	65.7	69.8	74.3	80.6	84.1	87.2	89.0	89.9	89.9	88.1	85.0	81.5	77.4	72.2	66.3	61.1		
155	62.1	68.0	70.5	74.1	75.2	82.1	84.3	85.9	86.5	86.5	85.2	83.3	80.9	77.4	72.1	69.2	63.7		
160	53.3	65.8	71.2	73.6	73.8	75.1	81.7	83.0	83.6	83.8	83.0	81.6	79.6	76.8	73.5	70.4	62.5		
165	45.6	54.1	60.0	63.2	72.1	72.5	74.1	77.5	80.5	80.6	80.2	79.2	78.0	76.6	74.2	71.8	53.2		
170	41.9	44.7	47.5	48.9	51.6	56.0	67.3	72.4	71.3	78.1	77.8	77.0	76.6	75.4	70.6	55.2	43.9		
175	49.3	49.1	47.6	51.0	47.2	48.5	41.3	40.1	51.5	69.7	67.7	64.6	57.5	52.8	52.9	48.8	47.7		
180	62.0	61.7	60.6	58.6	55.3	50.6	46.2	39.8	34.2	9.20	28.3	39.9	45.5	49.3	53.8	57.6	59.9		

Table 7: Luminous Intensity Data

EQUIPMENT LIST

Test Equipment	Model	Equipment No.	Calibration Date	Calibration Due date
Goniophotometer system	GO-R5000	HZTE011-01	Aug. 05, 2021	Aug. 04, 2022
Digital Power Meter	PF2010A	HZTE028-01	Aug. 05, 2021	Aug. 04, 2022
AC Power Supply	DPS1060	HZTE001-06	Aug. 05, 2021	Aug. 04, 2022
DC Power Supply	WY12010	HZTE004-03	Aug. 05, 2021	Aug. 04, 2022
Temperature recorder	JM624U	HZTE018-08	Aug. 05, 2021	Aug. 04, 2022
Temperature and humidity recorder	JR900	HZTE018-01	Aug. 05, 2021	Aug. 04, 2022
Standard source	D908	HZTE012-01	Aug. 05, 2021	Aug. 04, 2022
Integrate Sphere system	3M	HZTE015-04	Aug. 05, 2021	Aug. 04, 2022
Digital Power Meter	WT210	HZTE008-01	Aug. 05, 2021	Aug. 04, 2022
AC Power Supply	PCR 500L	HZTE001-07	Aug. 05, 2021	Aug. 04, 2022
DC Power Supply	IT6154	HZTE004-04	Aug. 05, 2021	Aug. 04, 2022
Standard source	SCL-1400	HZTE012-02	Aug. 05, 2021	Aug. 04, 2022
Temperature and humidity recorder	JR900	HZTE018-02	Aug. 05, 2021	Aug. 04, 2022
Temperature Meter	TES1310	HZTE017-01	Aug. 05, 2021	Aug. 04, 2022

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

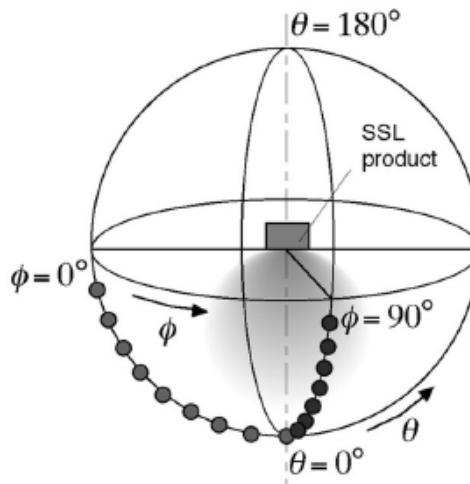
The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as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