

LM-79-19 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 Lamp

Model: 80FHIDDIM/ED37/850/277V/EX39

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.ltlqa.com

Report No.: HZ25100017b

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

Review by:

Wei Fei

Engineer: Wei Fei
Oct. 27, 2025

Approve by:



April Zou

1 Manager: April Zou
Oct. 27, 2025

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: **80FHIDDIM/ED37/850/277V/EX39**

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
183.7	15048.3	81.93	0.9953
CCT (K)	CRI	Stabilization Time (Light & Power)	
5060	83.1	50	

Table 1: Executive Data Summary

Note: The above results are recorded/ derived from measurements made using an Integrating Sphere.

Test specifications:

Date of Receipt	: Oct. 21, 2025
Date of Test	: Oct. 27, 2025
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	: IESNA LM-79-2019 Approved Method: 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 Lamp
Model	: 80FHIDDIM/ED37/850/277V/EX39
Electrical Ratings	: 120-277V, 50/60Hz, 80W
Product Description	: 5000K
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 base up. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 50 minutes, and the total operating time including stabilization was 55 minutes.

Sphere-Spectroradiometer Method

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.686	0.301
Power Factor	0.9953	0.9687
Test Power (W)	81.93	80.85
THD A%	8.57	8.49
Luminous Efficacy (lm/W)	183.7	185.7
Total Luminous Flux (lm)	15048.3	15014.4
Color Rendering Index (CRI)	83.1	
R9	10.3	
Correlated Color Temperature (CCT)(K)	5060	
Chromaticity Chroma x	0.3435	
Chromaticity Chroma y	0.3525	
Chromaticity Chroma u	0.2100	
Chromaticity Chroma v	0.3232	
Duv	0.0011	
Chromaticity Chroma u'	0.2100	
Chromaticity Chroma v'	0.4849	

Special Color Rendering Indices	
R1	82
R2	90.9
R3	93.7
R4	79.5
R5	81.2
R6	84.9
R7	85.9
R8	66.6
R9	10.3
R10	75.7
R11	77.2
R12	58.8
R13	84.9
R14	96.9

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 24.8 °C.

The photometric distance is 2.47 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)	0.686
Power Factor	0.9953
Power (W)	81.95
Luminous Efficacy (lm/W)	183.7
Total Luminous Flux (lm)	15057.8
Beam Angle (°)	350.4 (0°-180°) / 351.4 (90°-270°)
Center Beam Candle Power (cd)	97.9
Maximum Beam Candle Power (cd)	1566 (At: C=135.0, Gamma=82.5)
Spacing Criteria	5.39 (0°-180°) / 5.39 (90°-270°)
Zonal Lumens in the 0°-60° Zone	20.89%
Zonal Lumens in the 60°-90° Zone	30.82%
Zonal Lumens in the 90°-120° Zone	29.98%
Zonal Lumens in the 120°-180° Zone	18.31%

Table 3: Test data per Goniophotometer Method

Spectral Power Distribution - Sphere Spectroradiometer Method

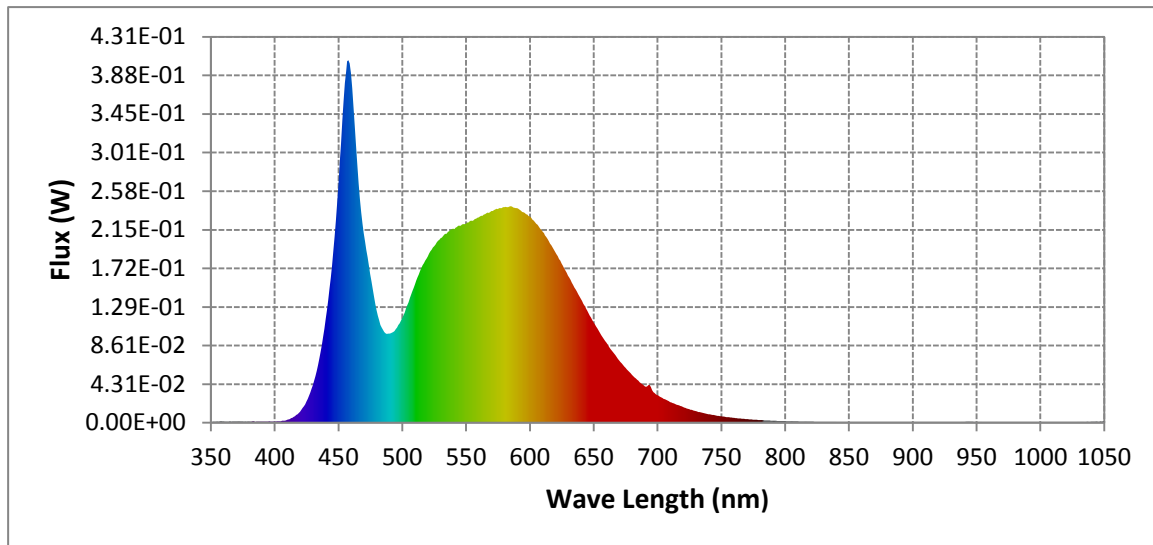
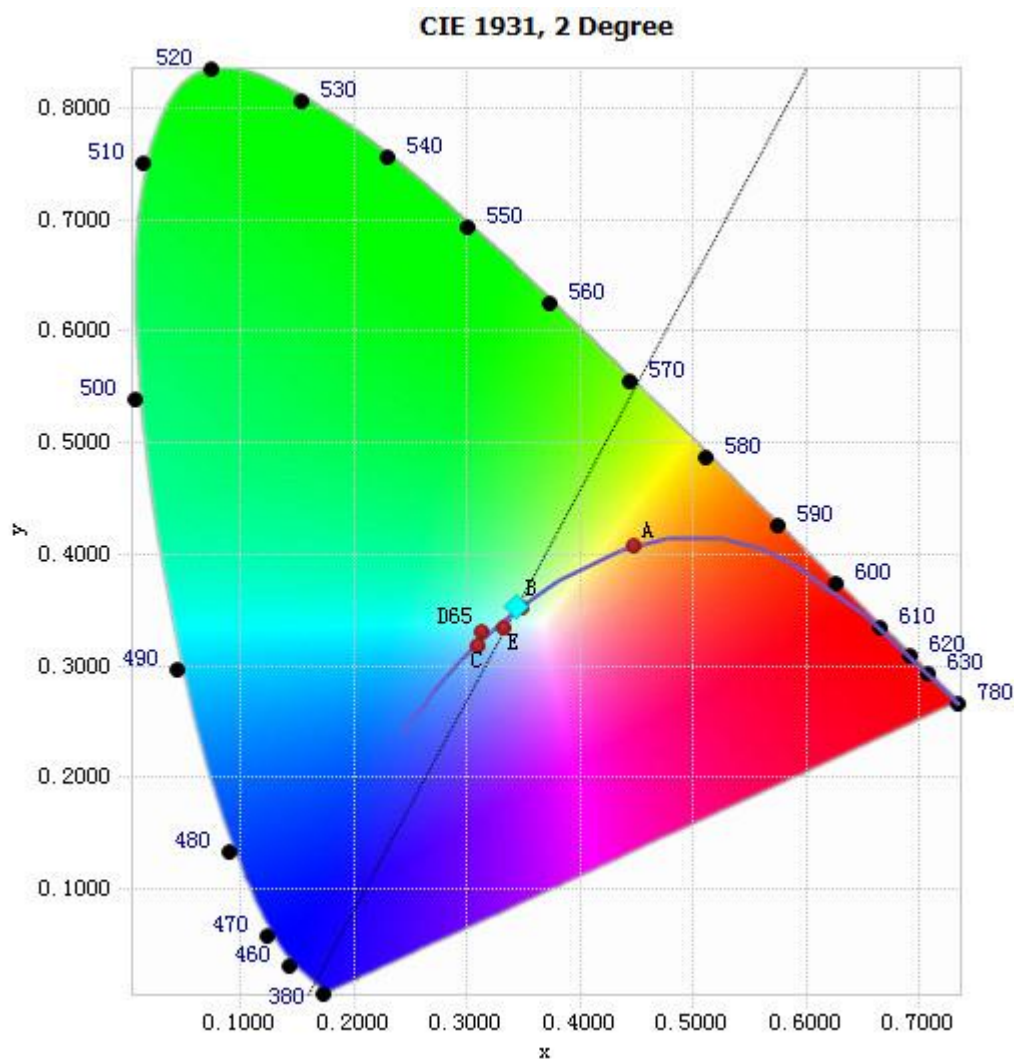


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.45E-03	485	1.04E-01	590	2.39E-01	695	3.99E-02
385	1.06E-03	490	9.94E-02	595	2.35E-01	700	3.09E-02
390	1.34E-03	495	1.04E-01	600	2.30E-01	705	2.67E-02
395	1.31E-03	500	1.16E-01	605	2.22E-01	710	2.31E-02
400	1.35E-03	505	1.35E-01	610	2.13E-01	715	2.03E-02
405	1.78E-03	510	1.54E-01	615	2.03E-01	720	1.75E-02
410	3.22E-03	515	1.73E-01	620	1.90E-01	725	1.51E-02
415	6.42E-03	520	1.86E-01	625	1.78E-01	730	1.30E-02
420	1.23E-02	525	1.97E-01	630	1.64E-01	735	1.12E-02
425	2.37E-02	530	2.06E-01	635	1.51E-01	740	9.61E-03
430	4.18E-02	535	2.11E-01	640	1.38E-01	745	8.24E-03
435	7.11E-02	540	2.17E-01	645	1.25E-01	750	7.29E-03
440	1.15E-01	545	2.20E-01	650	1.12E-01	755	6.28E-03
445	1.76E-01	550	2.22E-01	655	1.00E-01	760	5.38E-03
450	2.66E-01	555	2.25E-01	660	8.95E-02	765	4.75E-03
455	3.79E-01	560	2.29E-01	665	7.92E-02	770	4.09E-03
460	3.90E-01	565	2.33E-01	670	6.96E-02	775	3.54E-03
465	2.87E-01	570	2.36E-01	675	6.11E-02	780	3.12E-03
470	2.11E-01	575	2.38E-01	680	5.33E-02		
475	1.66E-01	580	2.40E-01	685	4.69E-02		
480	1.26E-01	585	2.42E-01	690	4.09E-02		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3435, 0.3525)

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

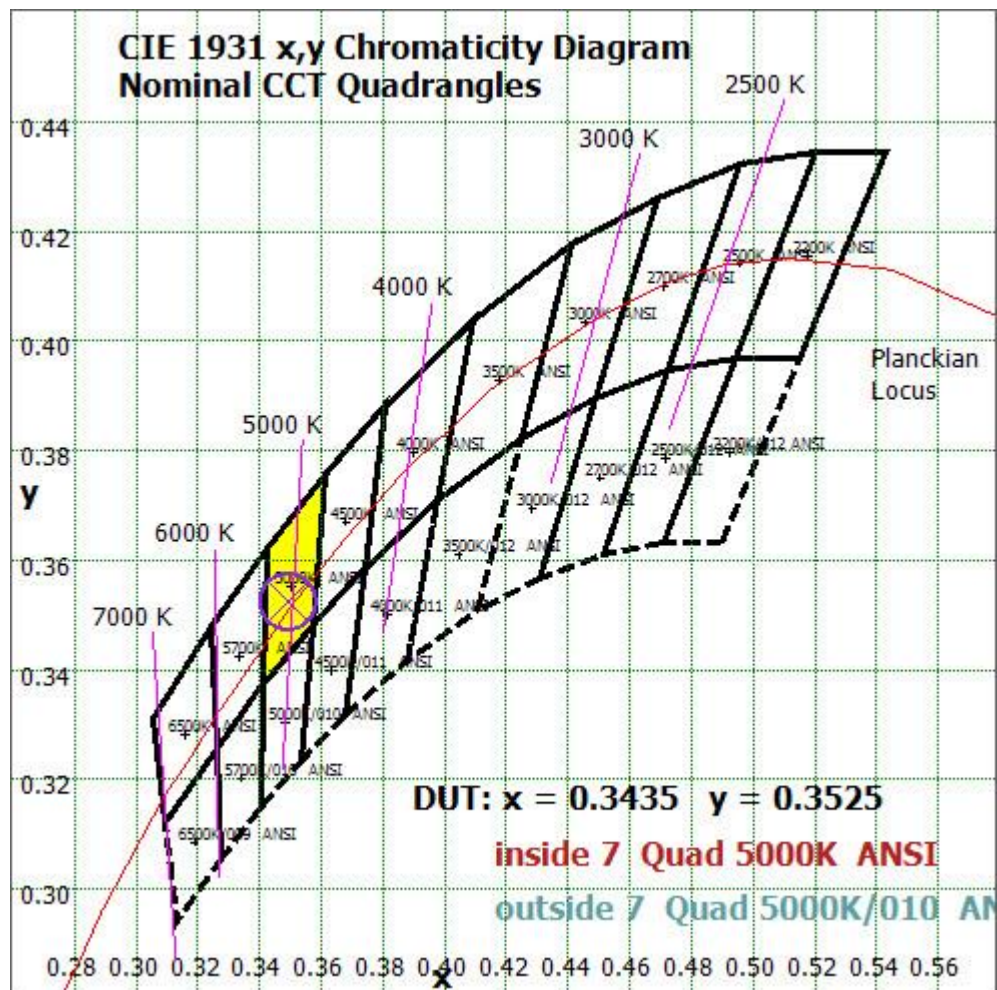


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method

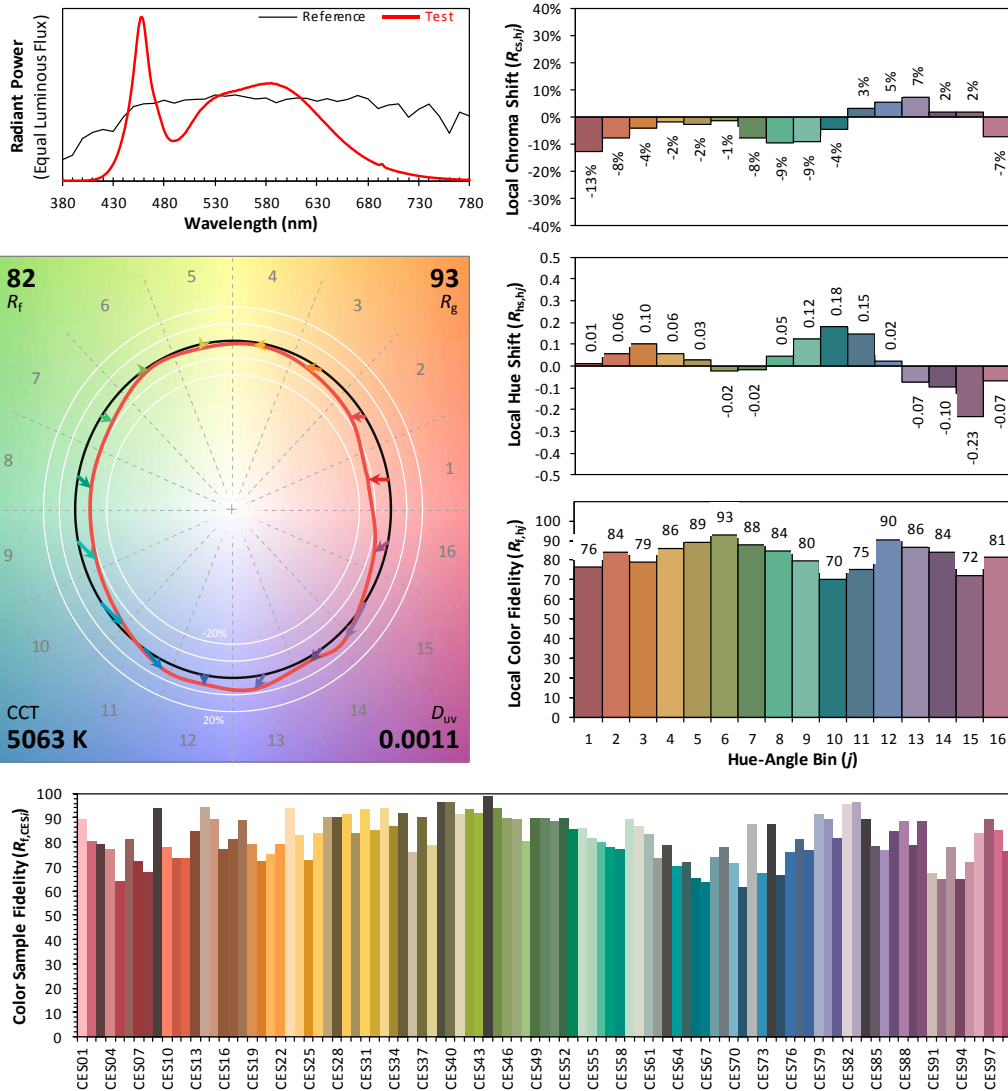
ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/10/27

Model: 80FHIDDIM/ED37/850/277V/EX39



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

x 0.3435
 y 0.3525
 u' 0.2100
 v' 0.4849

CIE 13.3-1995
(CRI)
 R_a 83
 R_g 10

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.

Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	15.936	0.11%
10- 20	117.031	0.78%
20- 30	322.906	2.14%
30- 40	600.729	3.99%
40- 50	901.322	5.99%
50- 60	1188.244	7.89%
60- 70	1423.963	9.46%
70- 80	1574.779	10.46%
80- 90	1641.425	10.90%
90-100	1626.863	10.80%
100-110	1532.786	10.18%
110-120	1354.828	9.00%
120-130	1104.652	7.34%
130-140	816.723	5.42%
140-150	516.322	3.43%
150-160	241.913	1.61%
160-170	70.245	0.47%
170-180	7.122	0.05%
Total	15057.8	100%

$\gamma(^{\circ})$	Lumens	% Total
0-130	13405.464	89.03%
130-180	1652.325	10.97%
0-180	15057.8	100%

Table 5: Zonal Lumen

Illuminance Plots- Goniophotometer Method

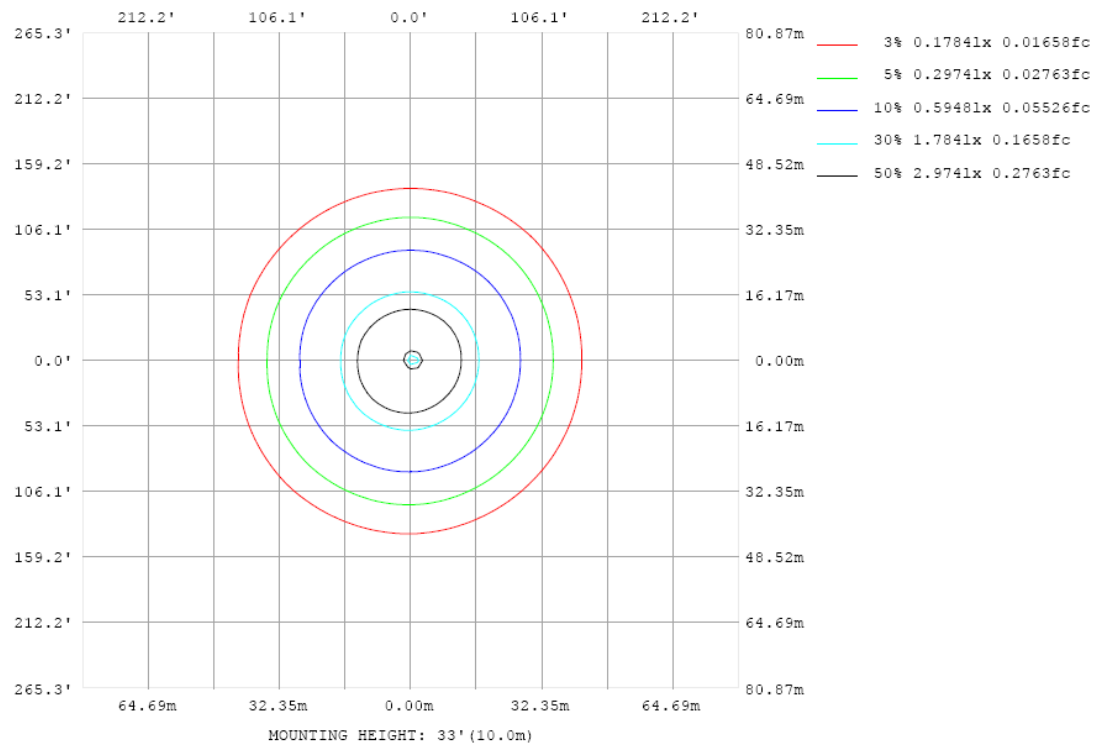


Chart 5: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots- Goniophotometer Method

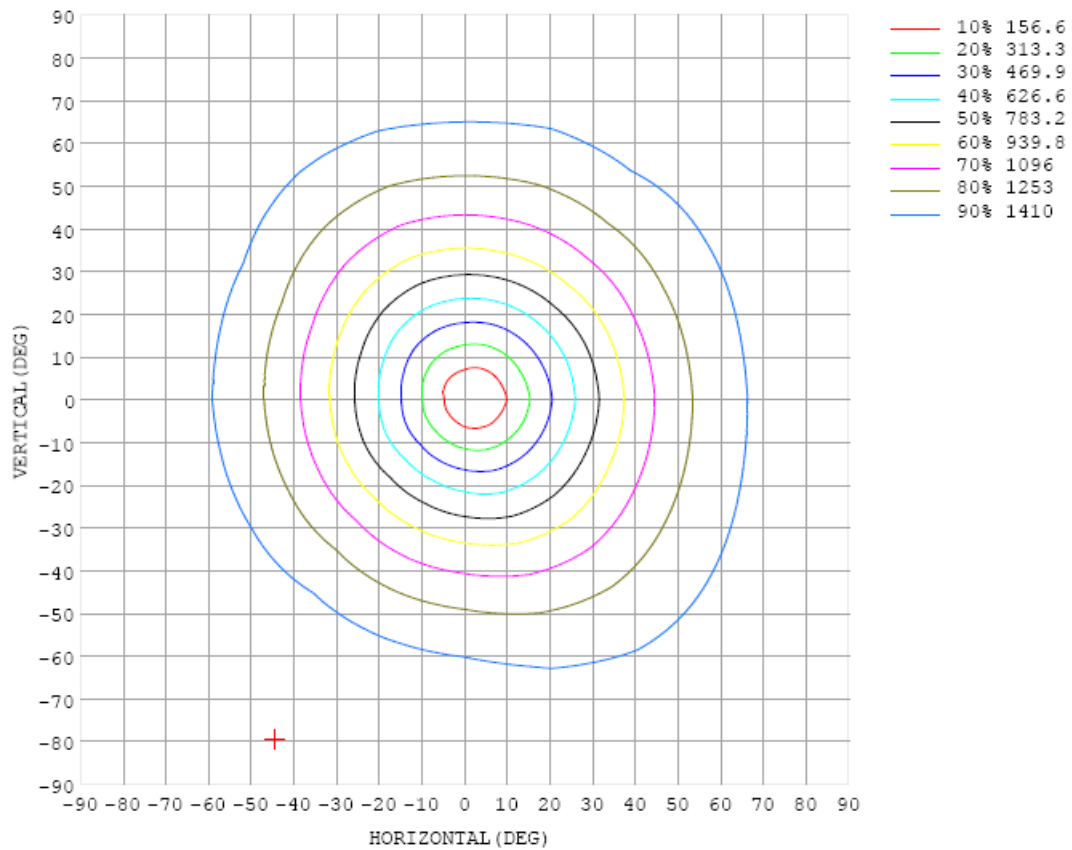


Chart 6: Isocandela Plot

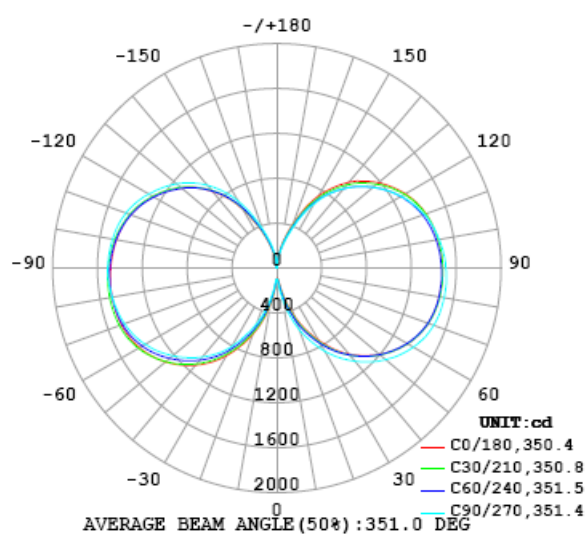


Chart 7: Polar Candela Distribution

Luminous Intensity Data- Goniophotometer Method

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9			
5	96.8	105	112	120	129	141	157	162	166	144	130	123	111	102	98.4	98.5			
10	159	185	205	233	270	298	316	316	316	297	272	253	231	206	188	175			
15	303	326	355	384	426	457	479	475	476	453	421	397	381	354	336	323			
20	453	478	505	535	582	620	639	626	623	600	564	540	526	505	490	474			
25	601	625	646	671	720	761	783	769	763	742	702	679	661	649	637	616			
30	741	762	776	803	855	895	919	913	900	877	840	811	804	795	786	758			
35	879	894	901	926	974	1010	1043	1037	1022	1002	964	934	930	928	926	900			
40	1000	1010	1010	1033	1082	1119	1157	1148	1129	1113	1071	1038	1033	1034	1039	1023			
45	1105	1113	1111	1131	1181	1217	1253	1243	1220	1210	1165	1132	1128	1131	1142	1130			
50	1197	1202	1199	1218	1268	1302	1338	1325	1299	1295	1250	1217	1214	1215	1232	1221			
55	1278	1279	1276	1297	1344	1375	1410	1396	1364	1368	1326	1295	1292	1292	1312	1302			
60	1347	1346	1342	1362	1407	1434	1468	1451	1417	1426	1388	1362	1357	1356	1381	1369			
65	1399	1399	1395	1412	1458	1479	1510	1492	1453	1469	1435	1412	1409	1408	1434	1421			
70	1437	1437	1434	1450	1490	1508	1540	1519	1476	1495	1466	1446	1446	1444	1471	1458			
75	1460	1462	1457	1471	1508	1523	1556	1535	1487	1509	1483	1470	1472	1469	1497	1480			
80	1471	1476	1469	1480	1516	1530	1565	1544	1494	1514	1493	1486	1491	1488	1513	1492			
85	1478	1481	1472	1482	1517	1529	1564	1544	1492	1513	1495	1495	1506	1501	1526	1498			
90	1478	1480	1468	1474	1508	1520	1556	1539	1484	1505	1490	1494	1509	1506	1530	1497			
95	1471	1474	1460	1461	1494	1505	1543	1527	1471	1490	1478	1485	1502	1502	1523	1488			
100	1458	1461	1444	1439	1471	1484	1525	1509	1454	1468	1457	1467	1489	1491	1510	1474			
105	1440	1442	1419	1411	1440	1454	1496	1483	1427	1437	1428	1442	1468	1475	1493	1454			
110	1414	1413	1385	1373	1400	1412	1455	1442	1389	1397	1386	1404	1434	1447	1463	1426			
115	1376	1371	1338	1322	1346	1360	1400	1388	1339	1344	1335	1350	1384	1403	1420	1386			
120	1324	1315	1278	1260	1281	1295	1331	1320	1273	1279	1267	1285	1320	1345	1363	1334			
125	1258	1246	1205	1186	1205	1224	1256	1244	1198	1204	1191	1207	1249	1274	1291	1265			
130	1184	1163	1121	1102	1121	1136	1167	1156	1111	1120	1108	1118	1168	1194	1211	1191			
135	1095	1073	1030	1011	1027	1042	1068	1058	1014	1017	1010	1023	1074	1102	1119	1104			
140	998	966	924	910	924	932	950	935	893	904	898	914	963	992	1013	1001			
145	875	845	809	797	806	803	813	794	761	774	774	792	835	865	889	880			
150	741	708	677	661	660	654	655	636	604	623	632	649	689	721	747	744			
155	580	552	526	508	502	487	485	463	436	455	468	486	520	550	579	578			
160	411	389	367	356	343	332	333	317	302	316	328	346	368	392	405	404			
165	277	256	241	230	222	210	209	200	186	200	211	224	246	263	273	274			
170	157	146	140	131	119	105	91.0	91.2	89.3	104	118	128	142	148	155	157			
175	63.8	64.2	63.5	59.0	53.1	41.3	33.5	32.4	38.3	47.2	55.6	58.2	59.3	55.0	41.9	51.5			
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.96	0.95	0.94	0.96	0.95	0.95	0.96			

Table 6: Luminous Intensity Data

EQUIPMENT LIST

Test Equipment	Model	Equipment No.	Calibration Date	Calibration Due date
Goniophotometer system	GO-R5000	HZTE011-01	Oct. 09, 2025	-
Digital Power Meter	PF2010A	HZTE028-01	Aug. 07, 2025	Aug. 06, 2026
AC Power Supply	DPS1060	HZTE001-06	Aug. 07, 2025	Aug. 06, 2026
DC Power Supply	WY12010	HZTE004-03	Aug. 07, 2025	Aug. 06, 2026
Temperature recorder	JM624U	HZTE018-08	Aug. 07, 2025	Aug. 06, 2026
Temperature and humidity recorder	JR900	HZTE018-01	Aug. 07, 2025	Aug. 06, 2026
Standard source	D908	HZTE012-01	Aug. 14, 2018	-
Integrate Sphere system	3M	HZTE015-04	Aug. 07, 2025	-
Digital Power Meter	WT210	HZTE008-01	Aug. 07, 2025	Aug. 06, 2026
AC Power Supply	PCR 500L	HZTE001-07	Aug. 07, 2025	Aug. 06, 2026
DC Power Supply	IT6154	HZTE004-04	Aug. 07, 2025	Aug. 06, 2026
Standard source	SCL-1400	HZTE012-06	Nov. 04, 2021	-
Temperature and humidity recorder	JR900	HZTE018-02	Aug. 07, 2025	Aug. 06, 2026
Temperature Meter	TES1310	HZTE017-01	Aug. 07, 2025	Aug. 06, 2026

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 3 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 20 min, taken 10 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 20 min, taken 10 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.

*** End of Report ***

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