

## 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/ED37/840/277V/EX39**

### Laboratory: Leading Testing Laboratories

**NVLAP CODE: 200960-0**

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Report No.: HZ25100017a

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/ED37/840/277V/EX39**

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
186.0	15001.7	80.66	0.9955
CCT (K)	CRI	Stabilization Time (Light & Power)	
4137	83.0	50	

Table 1: Executive Data Summary

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

### Test specifications:

<b>Date of Receipt</b>	: Oct. 21, 2025
<b>Date of Test</b>	: Oct. 27, 2025
<b>Test item</b>	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
<b>Reference Standard</b>	: 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)

<b>Name</b>	: LED Lamp
<b>Model</b>	: 80FHIDDIM/ED37/840/277V/EX39
<b>Electrical Ratings</b>	: 120-277V, 50/60Hz, 80W
<b>Product Description</b>	: 4000K
<b>Manufacturer</b>	: GREEN CREATIVE LTD
<b>Address</b>	: 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)	0.675	0.298
Power Factor	0.9955	0.9668
Test Power (W)	80.66	79.71
THD A%	8.19	7.36
Luminous Efficacy (lm/W)	186.0	188.4
Total Luminous Flux (lm)	15001.7	15019.8
Color Rendering Index (CRI)	83.0	
R9	10	
Correlated Color Temperature (CCT)(K)	4137	
Chromaticity Chroma x	0.3754	
Chromaticity Chroma y	0.3769	
Chromaticity Chroma u	0.2218	
Chromaticity Chroma v	0.3339	
Duv	0.0016	
Chromaticity Chroma u'	0.2218	
Chromaticity Chroma v'	0.5009	

Special Color Rendering Indices	
R1	81.7
R2	91.1
R3	95.6
R4	79
R5	80.6
R6	86.4
R7	85.4
R8	64.5
R9	10
R10	77.2
R11	77
R12	58.3
R13	84.5
R14	98

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)	0.676
Power Factor	0.9954
Power (W)	80.69
Luminous Efficacy (lm/W)	186.3
Total Luminous Flux (lm)	15032.4
Beam Angle ( ° )	351.6 (0°-180°) / 352.1 (90°-270°)
Center Beam Candle Power (cd)	88.1
Maximum Beam Candle Power (cd)	1635 (At: C=202.5, Gamma=82.5)
Spacing Criteria	5.67 (0°-180°) / 5.59 (90°-270°)
Zonal Lumens in the 0 °-60 °Zone	20.96%
Zonal Lumens in the 60 °-90 °Zone	30.82%
Zonal Lumens in the 90 °-120 °Zone	29.91%
Zonal Lumens in the 120 °-180 °Zone	18.31%

Table 3: Test data per Goniophotometer Method

## Spectral Power Distribution - Sphere Spectroradiometer Method

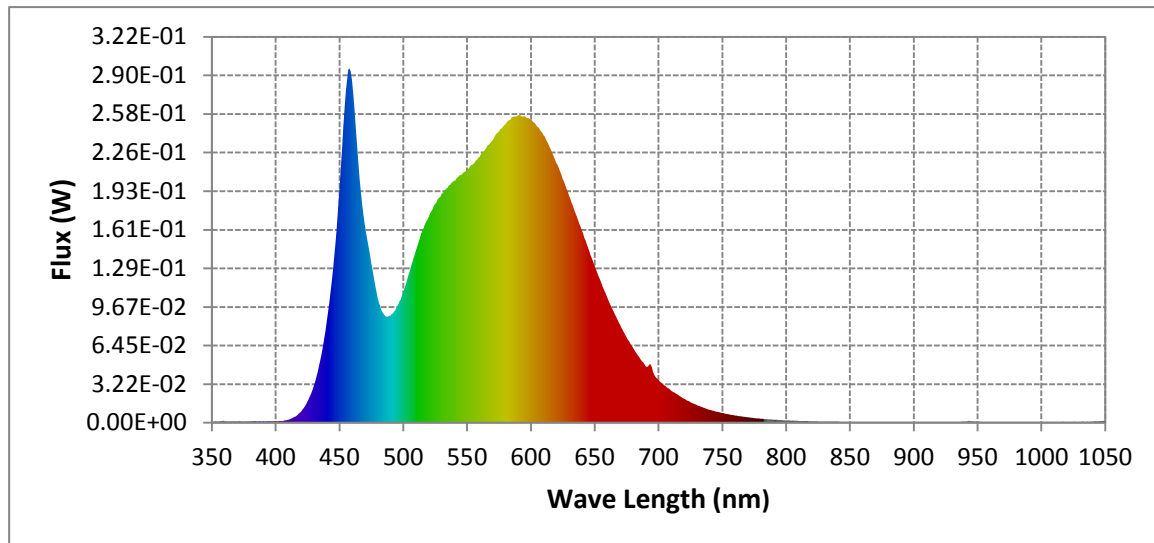
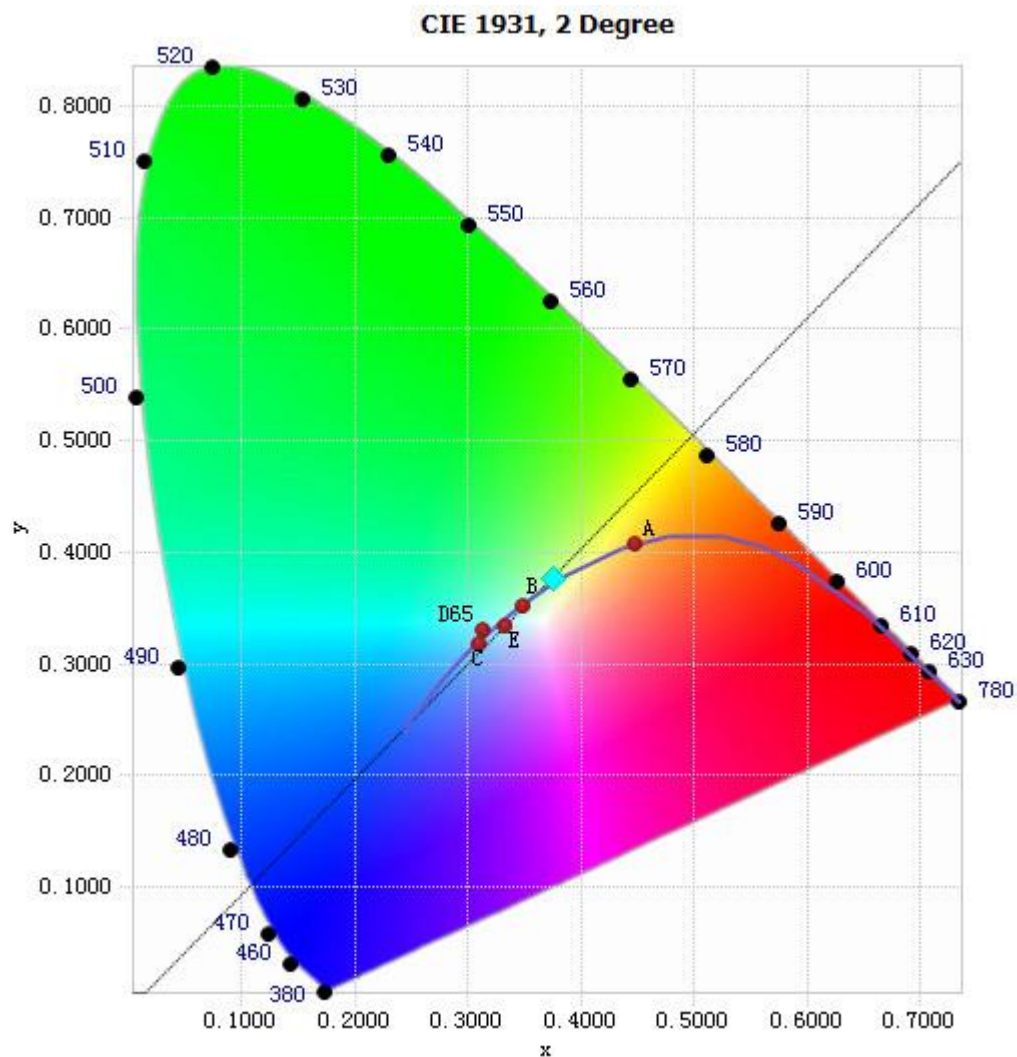


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.23E-03	485	9.04E-02	590	2.57E-01	695	4.63E-02
385	1.12E-03	490	8.94E-02	595	2.56E-01	700	3.59E-02
390	1.16E-03	495	9.66E-02	600	2.54E-01	705	3.10E-02
395	1.11E-03	500	1.09E-01	605	2.47E-01	710	2.69E-02
400	1.14E-03	505	1.26E-01	610	2.40E-01	715	2.36E-02
405	1.56E-03	510	1.44E-01	615	2.30E-01	720	2.02E-02
410	2.59E-03	515	1.60E-01	620	2.17E-01	725	1.73E-02
415	5.00E-03	520	1.72E-01	625	2.04E-01	730	1.49E-02
420	9.29E-03	525	1.83E-01	630	1.90E-01	735	1.27E-02
425	1.78E-02	530	1.91E-01	635	1.75E-01	740	1.09E-02
430	3.12E-02	535	1.96E-01	640	1.61E-01	745	9.33E-03
435	5.22E-02	540	2.02E-01	645	1.46E-01	750	8.20E-03
440	8.40E-02	545	2.07E-01	650	1.31E-01	755	7.09E-03
445	1.28E-01	550	2.11E-01	655	1.17E-01	760	6.10E-03
450	1.95E-01	555	2.16E-01	660	1.04E-01	765	5.27E-03
455	2.77E-01	560	2.22E-01	665	9.25E-02	770	4.56E-03
460	2.86E-01	565	2.29E-01	670	8.16E-02	775	3.96E-03
465	2.17E-01	570	2.36E-01	675	7.14E-02	780	3.41E-03
470	1.66E-01	575	2.43E-01	680	6.26E-02		
475	1.34E-01	580	2.49E-01	685	5.46E-02		
480	1.05E-01	585	2.55E-01	690	4.75E-02		

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

## Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3754, 0.3769)

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

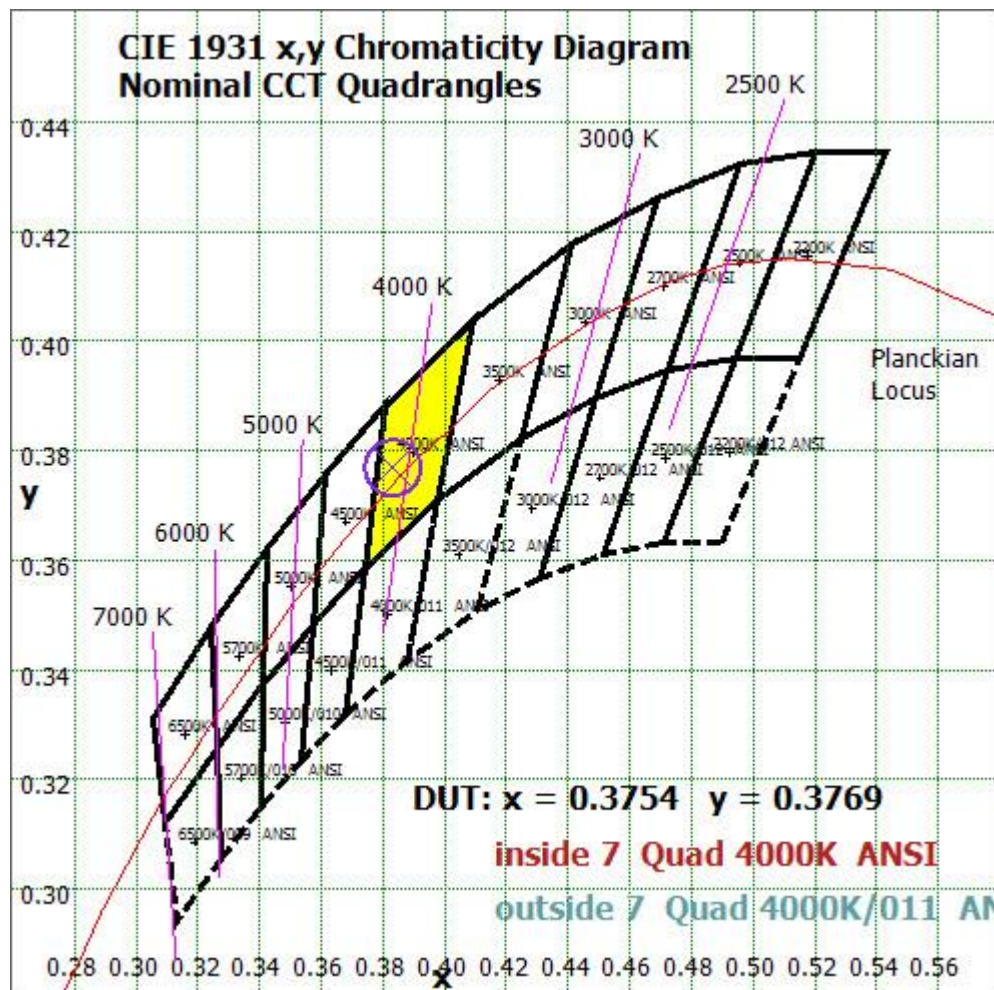


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

## Color Rendition Report – Sphere Spectroradiometer Method

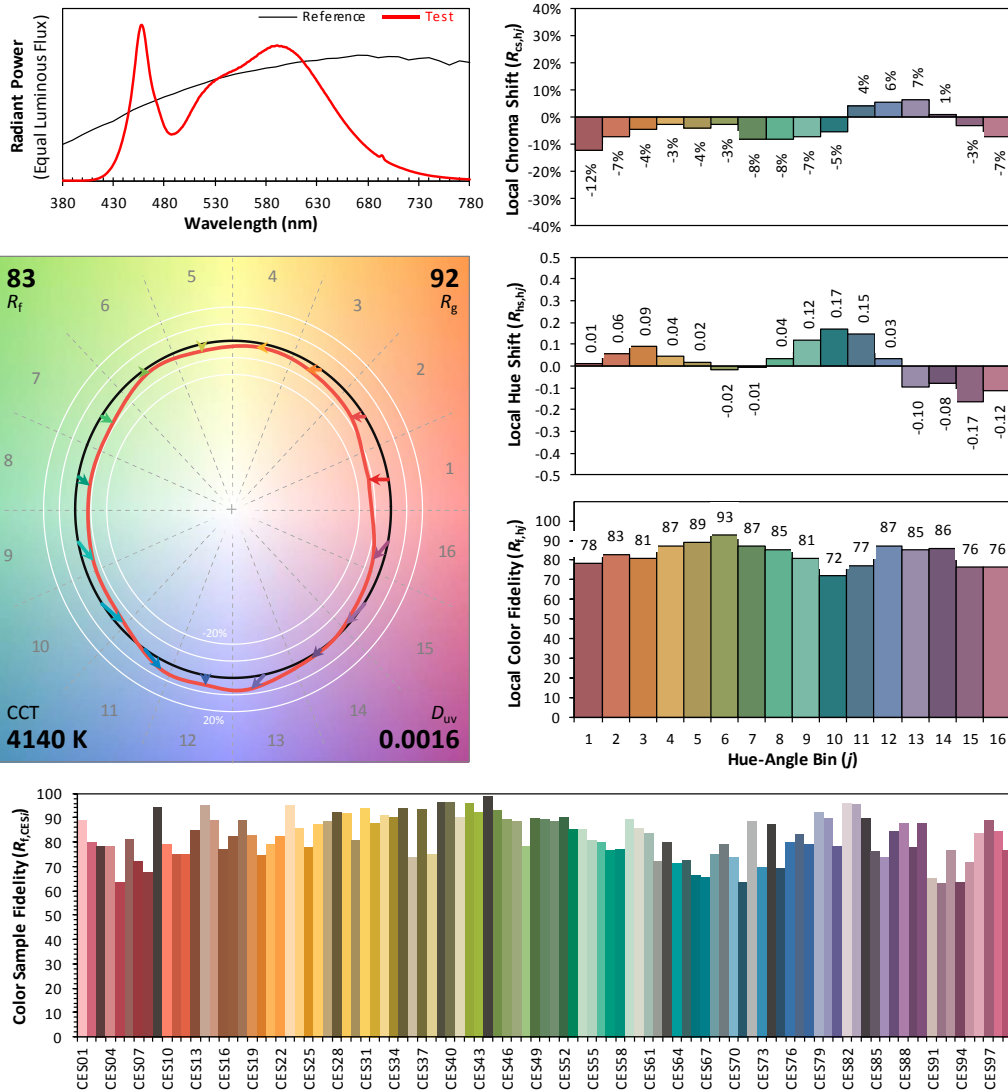
## ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/10/27

Model: 80FHIDDIM/ED37/840/277V/EX39



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

$x$  0.3754  
 $y$  0.3769  
 $u'$  0.2218  
 $v'$  0.5009

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	15.035	0.10%
10- 20	116.113	0.77%
20- 30	322.309	2.14%
30- 40	601.639	4.00%
40- 50	904.283	6.02%
50- 60	1190.834	7.92%
60- 70	1424.554	9.48%
70- 80	1573.95	10.47%
80- 90	1634.997	10.88%
90-100	1618.16	10.76%
100-110	1527.544	10.16%
110-120	1350.183	8.98%
120-130	1102.808	7.34%
130-140	817.343	5.44%
140-150	514.351	3.42%
150-160	239.751	1.59%
160-170	70.958	0.47%
170-180	7.626	0.05%
Total	15032.4	100%

$\gamma(^{\circ})$	Lumens	% Total
0-130	13382.409	89.02%
130-180	1650.029	10.98%
0-180	15032.4	100%

Table 5: Zonal Lumen

## Illuminance Plots- Goniophotometer Method

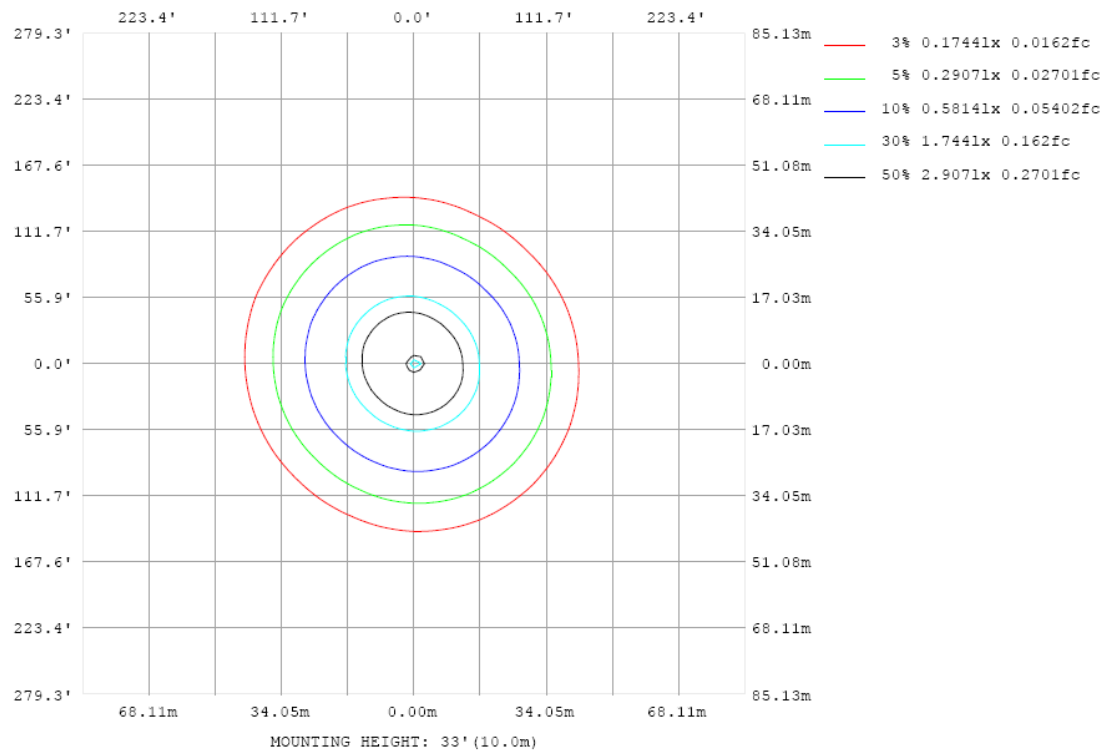


Chart 5: Illuminance Plot (Footcandles)

## Luminous Intensity Distribution Plots- Goniophotometer Method

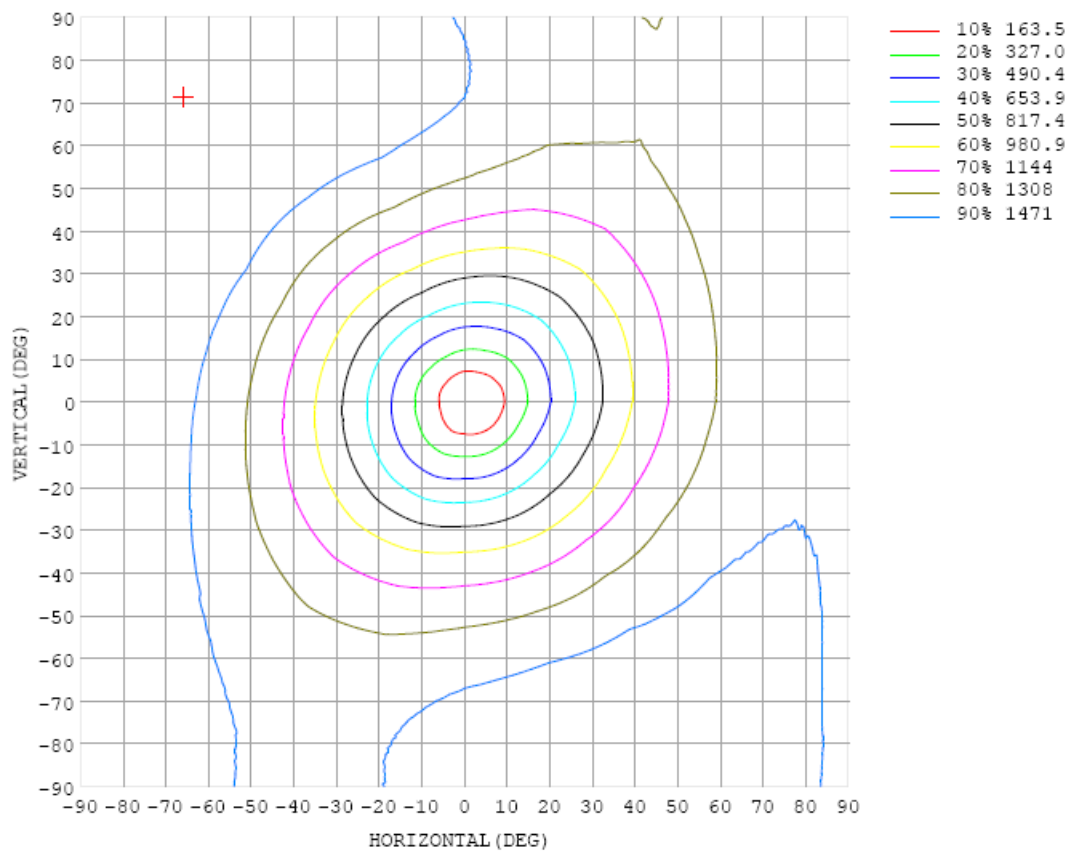


Chart 6: Isocandela Plot

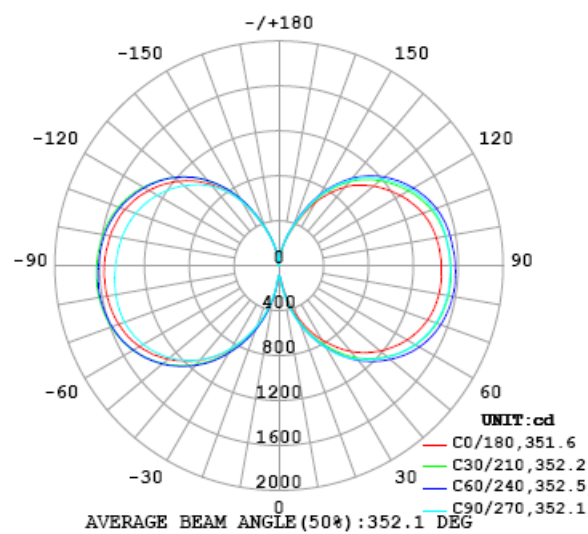


Chart 7: Polar Candela Distribution

## 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	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1			
5	101	104	100	101	103	102	117	133	134	124	123	116	112	110	106	102			
10	183	203	218	232	242	239	255	275	276	280	289	284	260	241	211	187			
15	331	371	384	388	399	384	393	418	430	437	446	438	411	387	348	332			
20	483	529	544	546	550	527	532	556	572	587	603	596	564	531	490	481			
25	628	680	701	699	698	671	672	696	718	737	754	751	708	666	628	623			
30	759	813	841	841	843	812	809	834	857	885	897	893	844	792	752	747			
35	881	945	973	978	978	943	931	953	983	1023	1038	1031	978	916	872	863			
40	995	1067	1098	1096	1086	1049	1033	1056	1097	1146	1158	1151	1090	1019	975	976			
45	1093	1170	1204	1198	1180	1138	1123	1152	1200	1256	1265	1255	1190	1107	1063	1071			
50	1180	1261	1297	1290	1266	1219	1205	1239	1294	1355	1360	1345	1274	1182	1140	1156			
55	1255	1340	1378	1370	1340	1288	1276	1316	1375	1436	1438	1419	1343	1243	1204	1228			
60	1320	1408	1446	1439	1405	1347	1334	1381	1439	1505	1501	1479	1398	1290	1254	1288			
65	1373	1460	1499	1493	1454	1393	1380	1428	1488	1556	1552	1525	1440	1325	1291	1336			
70	1411	1497	1536	1532	1492	1424	1412	1463	1523	1592	1587	1554	1465	1347	1313	1367			
75	1437	1522	1561	1560	1513	1444	1431	1484	1545	1617	1609	1570	1477	1356	1322	1385			
80	1448	1536	1575	1576	1527	1455	1443	1500	1558	1631	1620	1578	1477	1352	1319	1386			
85	1454	1539	1580	1578	1531	1460	1447	1507	1561	1632	1619	1575	1470	1344	1313	1384			
90	1447	1531	1573	1575	1527	1460	1447	1509	1558	1626	1612	1567	1458	1332	1304	1372			
95	1441	1525	1564	1569	1523	1456	1443	1499	1548	1614	1600	1550	1443	1320	1294	1360			
100	1426	1509	1549	1556	1514	1447	1433	1483	1528	1594	1581	1530	1423	1303	1279	1338			
105	1402	1487	1529	1537	1497	1433	1415	1461	1501	1567	1552	1503	1397	1282	1258	1312			
110	1365	1450	1493	1504	1467	1404	1384	1421	1462	1524	1509	1462	1361	1250	1228	1276			
115	1312	1396	1444	1458	1420	1361	1339	1372	1408	1468	1454	1410	1313	1207	1187	1231			
120	1250	1333	1383	1398	1360	1304	1281	1307	1338	1396	1389	1345	1254	1155	1134	1175			
125	1179	1260	1311	1325	1285	1236	1214	1232	1262	1316	1311	1274	1186	1097	1072	1112			
130	1101	1176	1228	1238	1202	1158	1134	1143	1168	1223	1220	1187	1107	1030	1006	1042			
135	1013	1086	1132	1140	1111	1071	1042	1039	1065	1113	1115	1091	1020	953	931	965			
140	912	974	1017	1020	996	958	929	923	942	989	990	976	919	860	842	867			
145	786	842	880	883	862	830	798	789	808	846	847	843	801	744	734	760			
150	651	695	727	729	710	683	654	644	657	687	687	686	656	609	606	634			
155	494	527	558	554	533	517	493	481	492	515	515	516	495	460	460	485			
160	351	370	389	393	380	368	352	340	349	362	356	354	339	319	320	341			
165	237	249	261	265	259	250	235	220	224	236	229	229	224	211	212	227			
170	132	143	154	158	154	150	130	121	121	130	124	122	125	112	120	130			
175	58.9	63.9	71.7	72.7	67.4	67.0	54.9	49.2	48.9	54.8	51.9	50.5	52.0	43.1	37.9	50.3			
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.93	0.92	0.91	0.94	0.95	0.95	0.95			

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  $4\pi$ . 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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