

ANSI/IES LM-79-19

MEASUREMENT AND TEST REPORT

For

GREEN CREATIVE LTD.

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

Test Model: SLFTG3/9.5/9CCT5S/DUALDIM

Report Type:	Electrical and Photometric tests including: Luminous Flux, Power Factor, Chromaticity, Luminous Intensity Distribution, THD
Reviewed By:	Ezer Pan <i>Ezer Pan</i>
Report Number:	2502T63513E-EE
Test Date:	2025-06-17
Report Date:	2025-06-25
Approved by:	Blake Zhang / EE Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5F (B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D Shihua Road, Futian Free Trade Zone Shenzhen 518038 China Tel: +86-755-33320018 Fax: +86-755-33320008
Test Location 1:	Test facility was located at No.12, Pulong East 1 st Road, Tangxia Town, Dongguan, Guangdong, China.
Test Location 2:	Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.(Shenzhen). This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, or any agency of the U.S. Government. *This report contains data that are not covered by the NVLAP accreditation.

1. Product Description[#]

General Information:

One test sample was in good condition and received on 2025-06-05, and used for testing.

Model Tested: SLFTG3/9.5/9CCT5S/DUALDIM
Manufacturer: GREEN CREATIVE LTD.
Product Designation: Downlight
Burning Time Before Test: 0hour(For New Products)

Rated Values:

Rated Voltage/Frequency: AC 120-277V 50/60Hz
Rated Power: 24W/32W/40W
Nominal CCT: 2700K/3000K/3500K/4000K/5000K
Nominal Lumen Output: 2700K:3600lm
3000K:3700lm
3500K:4000lm
4000K:4000lm
5000K:4000lm

2. Standards Used

- ANSI/IES LM-79-19: Approved method :Optical and Electrical Measurements of Solid-State Lighting Products
- ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting
- *IES TM-30-18: IES Method for Evaluating Light Source Color Rendition (This method is not in NVLAP accreditation scope)

3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
1.5m temperature integrating sphere	SENSING	SPR-600	S09008	2024-07-25	2025-07-24
High-precision rapid spectral analysis system	EVERFINE	HAAS-2000	M112048CA1361125	2024-07-25	2025-07-24
Digital power meter	YOKOGAWA	WT310	13398	2024-07-25	2025-07-24
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11060010	2024-07-25	2025-07-24
thermometer	SENSING	N/A	N/A	2024-07-25	2025-07-24
Standard Light Source	EVERFINE	D204	N/A	2023-05-12	2026-05-11
Precision frequency power supply	ALL Power	APW-105N	970613	2024-07-25	2025-07-24
AC POWER SUPPLY	EVERFINE	VPS1030 PWM	1012017	2024-08-30	2025-08-29
Digital CC&CV DC Power Supply	EVERFINE	WY12010	1009009	2024-08-30	2025-08-29
Digital power meter	YOKOGAWA	WT-210	91J926132	2024-08-30	2025-08-29
full-field speed goniophotometer	EVERFINE	GO-R5000	YG108492N10120001	2024-07-25	2025-07-24

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
wireless remote thermohygrometer	N/A	AOK-5017B	N/A	2024-09-06	2025-09-05
Standard Light Source	EVERFINE	D908	N/A	2023-05-12	2026-05-11

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

4. Test Method

Product was tested with no seasoning. All stabilization and measurements were made in compliance with ANSI/IES LM-79-19. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$ during measurement. And relative humidity is maintained between 10% and 65%. The air flow around the SSL product is less than 0.2m/s.

Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, Spectroradiometer, and integrating sphere. The integrating sphere system is calibrated by standard spectrum light source before measurement.

4π geometry was used during measurement. The product was operated in its intended orientation in application and was recorded in this report.

The uncertainty of the light output (luminous flux) measurements is $U=2.1\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=22\text{K}$ ($K=2$), at the 95% confidence level. The uncertainty of the CRI is $U=2.1$ ($K=2$), at the 95% confidence level.

The uncertainty of power meter AC current $U=0.39\%$ of rdg, AC Voltage $U=0.25\%$ of rdg, Power $U=0.42\%$ ($K=2$), at the 95% confidence level.

Goniophotometer System

The goniophotometer system is calibrated by standard light source before measurement.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report. For luminous intensity distribution, The vertical angle (γ) test intervals were set no more than 2.5 degree, The horizontal angle (C plane) test intervals were set no more than 22.5 degree. For color spatial uniformity, The vertical angle (γ) test intervals were set no more than 90 degree, The horizontal angle (C plane) test intervals were set no more than 10 degree

The uncertainty of the luminous intensity is $U=2.00\%$ ($K=2$), at the 95% confidence level.

Fidelity Index and Gamut Index Calculation

The R_i , R_g was calculated according to IES TM-30-18 by using calculation tools. The calculation was based on the measured SPD from 380nm to 780nm with 1nm intervals. All the colors in this report is for reference only.

5. Test Result

[Integrating Sphere System]

Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

The diameter of the sphere: **1.5M**

The coating reflectance of sphere: **98%**

The Stabilization time: **30 minutes**

Total operating time for integrating sphere test: **1.0 hour**

Test orientation: **Downward**

Test CCT:**2700K**

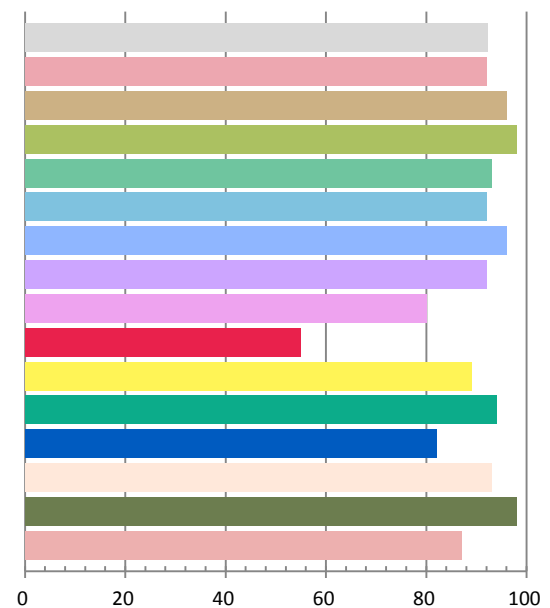
Photometric and Electrical Measurement Result

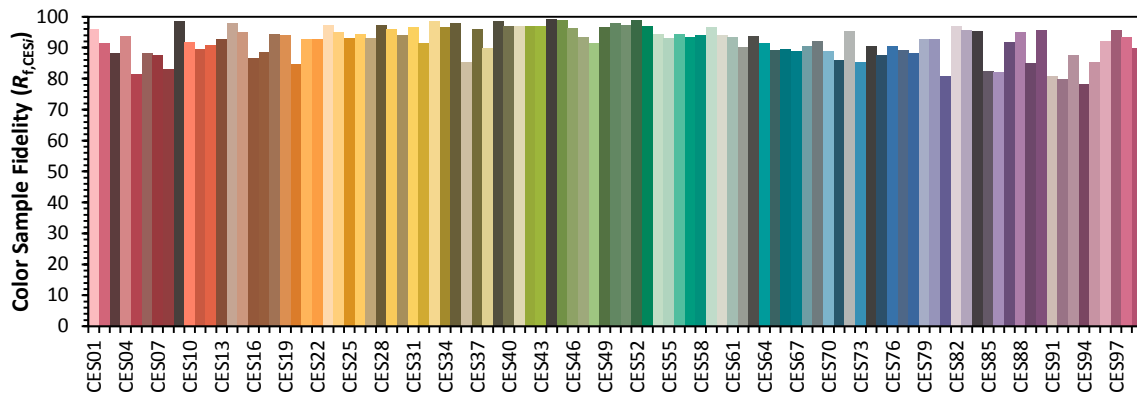
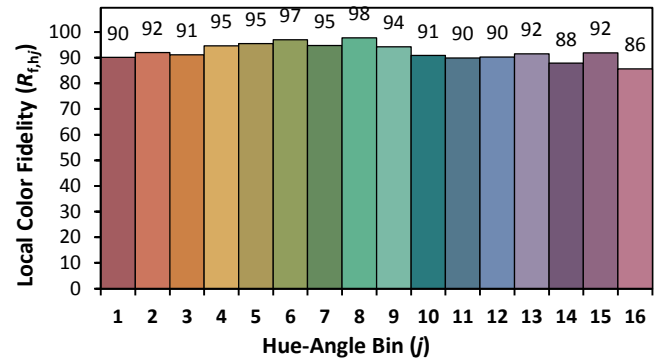
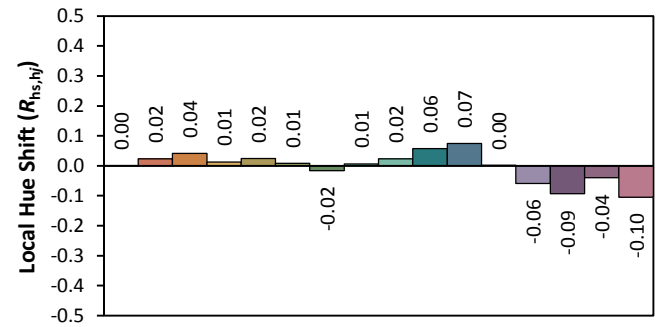
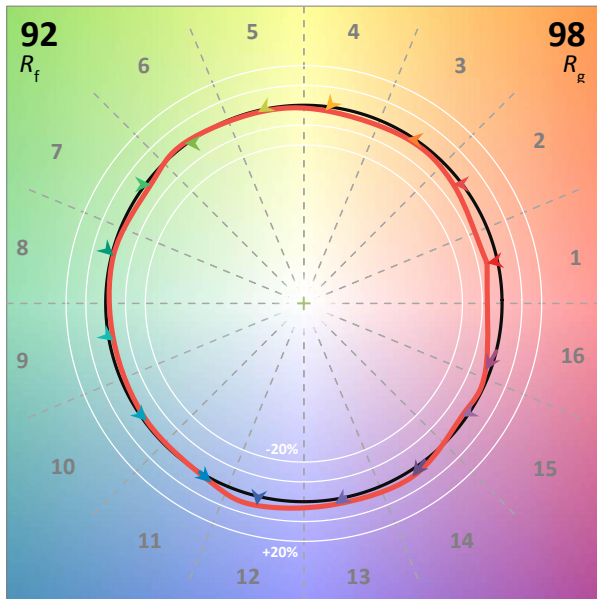
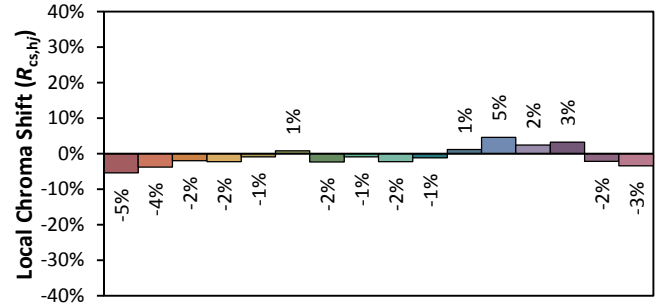
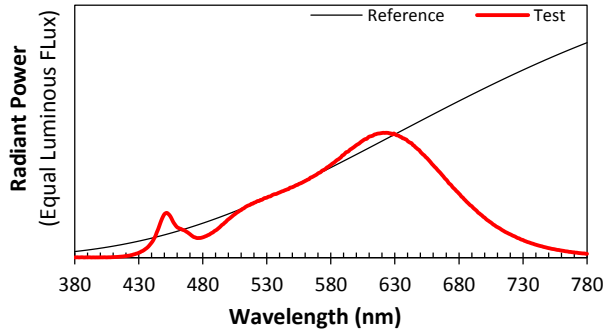
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.3213	38.13	0.9888	3976.3	104.29

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
13.794	2707	0.00168	0.4622	0.4157	0.2617	0.5296

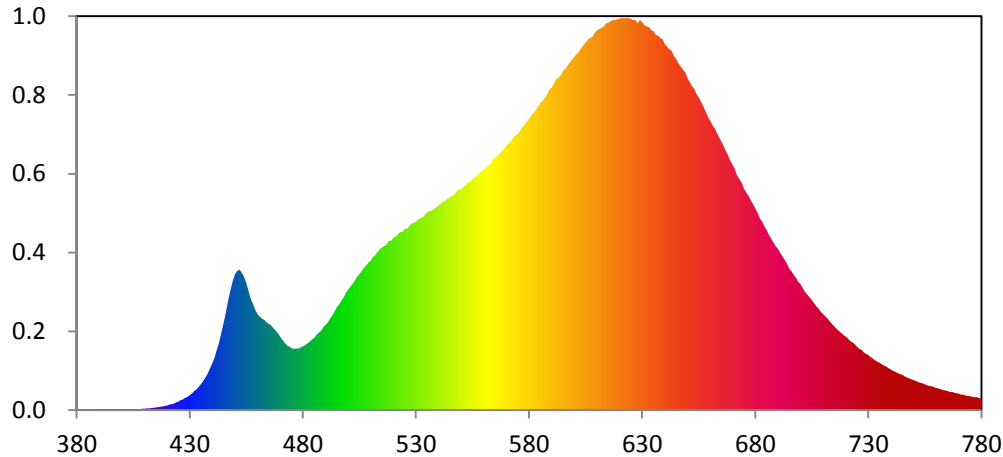
Color Rendering Index

Ra			
92.3			
R1	R2	R3	R4
92	96	98	93
R5	R6	R7	R8
92	96	92	80
R9	R10	R11	R12
55	89	94	82
R13	R14	R15	
93	98	87	





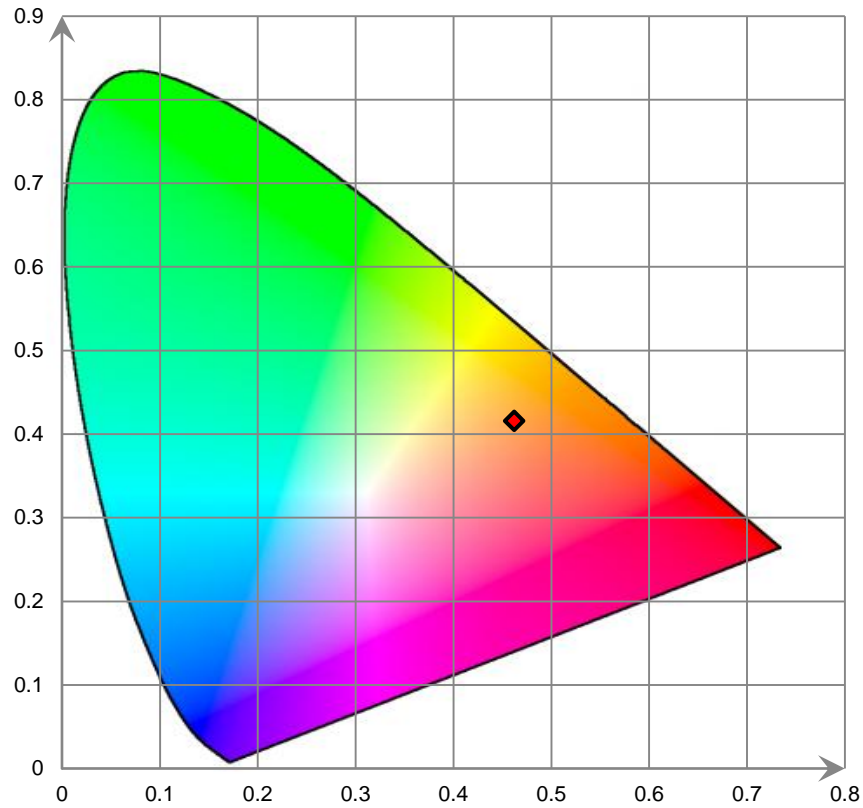
Relative Spectral Power Distribution



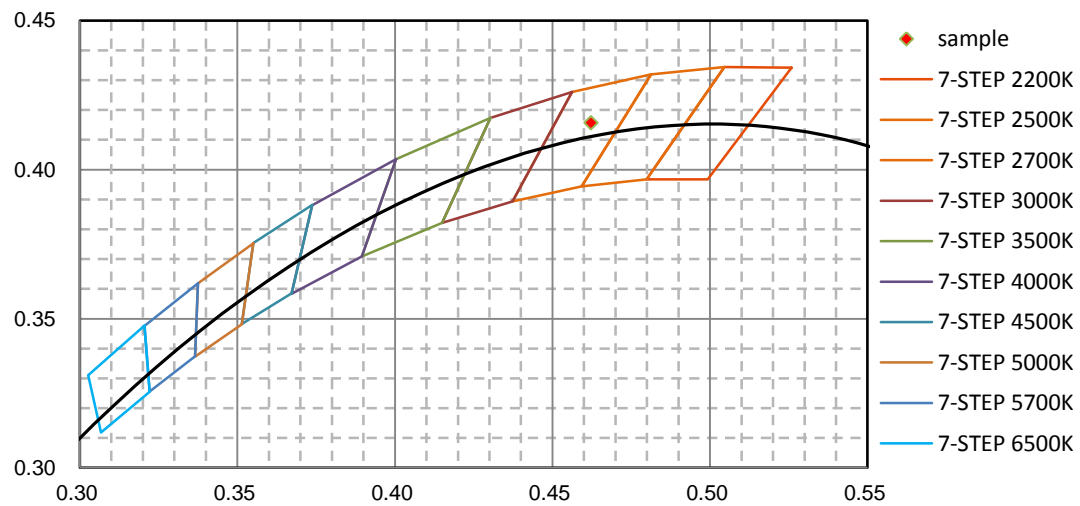
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.110E-01	421	1.177E+00	462	2.004E+01	503	2.858E+01	544	4.653E+01
381	1.100E-01	422	1.278E+00	463	1.978E+01	504	2.935E+01	545	4.682E+01
382	1.920E-01	423	1.416E+00	464	1.925E+01	505	2.996E+01	546	4.718E+01
383	1.004E-01	424	1.662E+00	465	1.898E+01	506	3.066E+01	547	4.738E+01
384	1.135E-01	425	1.836E+00	466	1.862E+01	507	3.130E+01	548	4.828E+01
385	1.733E-01	426	2.168E+00	467	1.799E+01	508	3.183E+01	549	4.844E+01
386	1.903E-01	427	2.343E+00	468	1.748E+01	509	3.250E+01	550	4.869E+01
387	7.549E-02	428	2.691E+00	469	1.683E+01	510	3.289E+01	551	4.909E+01
388	8.618E-02	429	2.886E+00	470	1.616E+01	511	3.367E+01	552	4.958E+01
389	1.441E-01	430	3.296E+00	471	1.541E+01	512	3.403E+01	553	5.008E+01
390	1.175E-01	431	3.678E+00	472	1.476E+01	513	3.477E+01	554	5.028E+01
391	1.684E-01	432	4.198E+00	473	1.418E+01	514	3.535E+01	555	5.090E+01
392	1.462E-01	433	4.582E+00	474	1.395E+01	515	3.581E+01	556	5.123E+01
393	5.898E-02	434	5.138E+00	475	1.358E+01	516	3.616E+01	557	5.159E+01
394	1.076E-01	435	5.801E+00	476	1.346E+01	517	3.647E+01	558	5.205E+01
395	1.085E-01	436	6.419E+00	477	1.353E+01	518	3.721E+01	559	5.252E+01
396	8.209E-02	437	7.183E+00	478	1.354E+01	519	3.724E+01	560	5.300E+01
397	1.041E-01	438	8.123E+00	479	1.373E+01	520	3.793E+01	561	5.346E+01
398	8.890E-02	439	9.203E+00	480	1.399E+01	521	3.816E+01	562	5.395E+01
399	1.267E-01	440	1.030E+01	481	1.429E+01	522	3.870E+01	563	5.427E+01
400	1.353E-01	441	1.155E+01	482	1.468E+01	523	3.915E+01	564	5.523E+01
401	1.464E-01	442	1.321E+01	483	1.502E+01	524	3.914E+01	565	5.553E+01
402	1.272E-01	443	1.486E+01	484	1.551E+01	525	3.985E+01	566	5.598E+01
403	1.887E-01	444	1.726E+01	485	1.584E+01	526	3.989E+01	567	5.649E+01
404	1.508E-01	445	1.934E+01	486	1.647E+01	527	4.044E+01	568	5.696E+01
405	1.165E-01	446	2.177E+01	487	1.701E+01	528	4.105E+01	569	5.748E+01
406	1.587E-01	447	2.428E+01	488	1.746E+01	529	4.123E+01	570	5.823E+01
407	1.844E-01	448	2.652E+01	489	1.824E+01	530	4.144E+01	571	5.865E+01
408	1.757E-01	449	2.844E+01	490	1.876E+01	531	4.198E+01	572	5.907E+01
409	2.660E-01	450	2.996E+01	491	1.932E+01	532	4.220E+01	573	5.996E+01
410	2.698E-01	451	3.066E+01	492	2.010E+01	533	4.242E+01	574	6.043E+01
411	3.372E-01	452	3.087E+01	493	2.082E+01	534	4.307E+01	575	6.085E+01
412	3.543E-01	453	3.022E+01	494	2.170E+01	535	4.352E+01	576	6.149E+01
413	4.054E-01	454	2.932E+01	495	2.258E+01	536	4.383E+01	577	6.234E+01
414	4.587E-01	455	2.799E+01	496	2.314E+01	537	4.391E+01	578	6.274E+01
415	5.541E-01	456	2.623E+01	497	2.401E+01	538	4.424E+01	579	6.347E+01
416	6.115E-01	457	2.446E+01	498	2.472E+01	539	4.470E+01	580	6.408E+01
417	6.945E-01	458	2.317E+01	499	2.571E+01	540	4.503E+01	581	6.487E+01
418	7.595E-01	459	2.194E+01	500	2.645E+01	541	4.543E+01	582	6.541E+01
419	9.385E-01	460	2.097E+01	501	2.710E+01	542	4.583E+01	583	6.605E+01
420	1.007E+00	461	2.047E+01	502	2.783E+01	543	4.606E+01	584	6.688E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	6.756E+01	626	8.583E+01	667	5.697E+01	708	2.226E+01	749	6.737E+00
586	6.804E+01	627	8.586E+01	668	5.597E+01	709	2.153E+01	750	6.528E+00
587	6.875E+01	628	8.510E+01	669	5.478E+01	710	2.108E+01	751	6.367E+00
588	6.947E+01	629	8.587E+01	670	5.397E+01	711	2.058E+01	752	6.117E+00
589	7.064E+01	630	8.537E+01	671	5.297E+01	712	2.010E+01	753	5.949E+00
590	7.102E+01	631	8.473E+01	672	5.158E+01	713	1.945E+01	754	5.840E+00
591	7.196E+01	632	8.450E+01	673	5.083E+01	714	1.887E+01	755	5.658E+00
592	7.286E+01	633	8.423E+01	674	5.003E+01	715	1.837E+01	756	5.443E+00
593	7.312E+01	634	8.360E+01	675	4.878E+01	716	1.781E+01	757	5.254E+00
594	7.369E+01	635	8.335E+01	676	4.790E+01	717	1.737E+01	758	5.217E+00
595	7.466E+01	636	8.253E+01	677	4.710E+01	718	1.695E+01	759	4.999E+00
596	7.517E+01	637	8.241E+01	678	4.605E+01	719	1.648E+01	760	4.849E+00
597	7.579E+01	638	8.185E+01	679	4.529E+01	720	1.610E+01	761	4.706E+00
598	7.641E+01	639	8.157E+01	680	4.429E+01	721	1.567E+01	762	4.570E+00
599	7.712E+01	640	8.054E+01	681	4.340E+01	722	1.517E+01	763	4.355E+00
600	7.781E+01	641	7.993E+01	682	4.216E+01	723	1.484E+01	764	4.283E+00
601	7.834E+01	642	7.939E+01	683	4.150E+01	724	1.444E+01	765	4.170E+00
602	7.885E+01	643	7.911E+01	684	4.041E+01	725	1.389E+01	766	3.935E+00
603	7.962E+01	644	7.789E+01	685	3.958E+01	726	1.347E+01	767	3.910E+00
604	8.031E+01	645	7.734E+01	686	3.859E+01	727	1.325E+01	768	3.760E+00
605	8.092E+01	646	7.635E+01	687	3.779E+01	728	1.271E+01	769	3.626E+00
606	8.155E+01	647	7.565E+01	688	3.690E+01	729	1.235E+01	770	3.593E+00
607	8.195E+01	648	7.486E+01	689	3.607E+01	730	1.213E+01	771	3.369E+00
608	8.212E+01	649	7.430E+01	690	3.552E+01	731	1.161E+01	772	3.397E+00
609	8.301E+01	650	7.306E+01	691	3.451E+01	732	1.131E+01	773	3.188E+00
610	8.363E+01	651	7.213E+01	692	3.371E+01	733	1.093E+01	774	3.079E+00
611	8.386E+01	652	7.127E+01	693	3.296E+01	734	1.062E+01	775	3.003E+00
612	8.409E+01	653	7.063E+01	694	3.217E+01	735	1.038E+01	776	2.896E+00
613	8.442E+01	654	6.955E+01	695	3.109E+01	736	1.003E+01	777	2.839E+00
614	8.510E+01	655	6.882E+01	696	3.051E+01	737	9.737E+00	778	2.823E+00
615	8.525E+01	656	6.785E+01	697	2.974E+01	738	9.501E+00	779	2.623E+00
616	8.559E+01	657	6.687E+01	698	2.911E+01	739	9.155E+00	780	2.608E+00
617	8.578E+01	658	6.581E+01	699	2.819E+01	740	8.885E+00		
618	8.585E+01	659	6.467E+01	700	2.766E+01	741	8.622E+00		
619	8.601E+01	660	6.378E+01	701	2.677E+01	742	8.364E+00		
620	8.616E+01	661	6.277E+01	702	2.601E+01	743	8.114E+00		
621	8.630E+01	662	6.197E+01	703	2.544E+01	744	7.895E+00		
622	8.620E+01	663	6.091E+01	704	2.478E+01	745	7.708E+00		
623	8.629E+01	664	5.992E+01	705	2.423E+01	746	7.376E+00		
624	8.625E+01	665	5.904E+01	706	2.346E+01	747	7.196E+00		
625	8.617E+01	666	5.804E+01	707	2.274E+01	748	6.974E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



[Goniophotometer System]

Test facility was located at No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The photometric distance: **2.519m**

The Stabilization time: **30 minutes**

Total operating time for luminous intensity distribution: **1.0 hour**

Test orientation: **Downward**

Test CCT:**2700K**

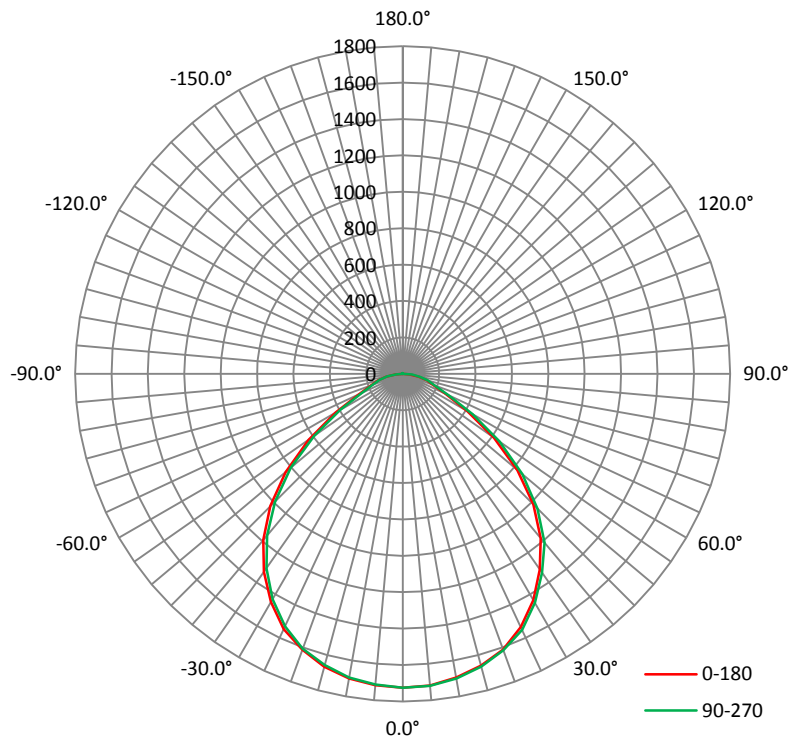
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.08	60	0.3210	38.110	0.9887

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I_{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
3975.06	104.30	1729	1.24	1.25

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I_{max}):	98.4	98.3	98.3	98.4	98.4
Field Angle (10% I_{max}):	142.1	142.1	142.1	142.2	142.1

Luminous Intensity (cd) Distribution Data

C Y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	1725	1725	1725	1725	1725	1725	1725	1725
1°	1725	1725	1722	1724	1724	1724	1724	1727
2°	1726	1726	1722	1725	1723	1722	1716	1725
3°	1724	1723	1721	1722	1721	1721	1722	1724
4°	1720	1724	1719	1724	1718	1722	1718	1722
5°	1718	1722	1716	1720	1715	1717	1713	1719
6°	1715	1716	1713	1716	1712	1714	1711	1717
7°	1710	1713	1710	1708	1711	1707	1708	1710
8°	1708	1709	1704	1708	1708	1704	1704	1707
9°	1704	1704	1699	1705	1699	1698	1698	1703
10°	1700	1700	1693	1701	1695	1692	1691	1694
11°	1694	1693	1689	1695	1687	1686	1684	1688
12°	1689	1687	1681	1683	1682	1680	1678	1680
13°	1683	1680	1674	1674	1674	1671	1670	1674
14°	1674	1672	1666	1666	1667	1664	1662	1665
15°	1667	1665	1657	1661	1657	1653	1651	1655
16°	1657	1656	1648	1653	1648	1645	1643	1648
17°	1647	1646	1639	1643	1639	1636	1633	1634
18°	1638	1634	1630	1630	1627	1625	1623	1625
19°	1626	1625	1617	1619	1617	1614	1612	1615
20°	1614	1613	1608	1606	1607	1602	1602	1603
21°	1605	1603	1595	1597	1593	1590	1588	1591
22°	1593	1592	1582	1587	1580	1578	1573	1578
23°	1579	1577	1569	1572	1564	1560	1558	1564
24°	1565	1562	1553	1554	1548	1545	1541	1546
25°	1548	1545	1539	1534	1530	1527	1523	1526
26°	1529	1527	1518	1517	1511	1507	1504	1509
27°	1511	1511	1501	1499	1491	1487	1485	1490
28°	1492	1490	1479	1482	1472	1469	1465	1469
29°	1472	1469	1460	1459	1452	1448	1443	1447
30°	1448	1447	1440	1435	1429	1424	1420	1424
31°	1426	1425	1416	1412	1406	1401	1398	1402
32°	1403	1402	1392	1389	1383	1377	1374	1378
33°	1380	1380	1366	1368	1357	1353	1349	1354
34°	1355	1352	1343	1342	1333	1328	1323	1328
35°	1329	1328	1317	1315	1305	1302	1296	1302
36°	1304	1302	1290	1287	1278	1276	1269	1276
37°	1277	1275	1264	1261	1250	1250	1242	1251
38°	1249	1249	1235	1237	1220	1224	1215	1225
39°	1220	1224	1205	1212	1191	1199	1182	1200
40°	1192	1199	1176	1188	1159	1170	1152	1170
41°	1163	1169	1146	1155	1128	1137	1120	1136
42°	1128	1137	1114	1123	1096	1104	1087	1103
43°	1096	1104	1080	1088	1062	1072	1054	1069
44°	1063	1070	1045	1052	1028	1036	1019	1035
45°	1028	1034	1011	1016	992	1001	984	999
46°	992	998	976	980	955	963	947	962
47°	955	961	938	943	918	925	909	924
48°	918	923	901	905	879	885	870	884

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \text{C} \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
49°	877	884	861	865	841	846	830	845
50°	839	843	821	824	802	805	791	804
51°	799	801	781	782	761	764	750	763
52°	758	759	738	741	719	723	708	720
53°	715	717	697	700	677	681	667	678
54°	675	675	655	656	636	638	627	637
55°	631	632	612	612	595	596	587	595
56°	586	588	571	569	554	555	546	553
57°	546	546	530	527	513	513	506	512
58°	507	503	489	486	473	473	467	471
59°	467	462	449	445	433	434	429	434
60°	426	423	409	407	395	397	391	397
61°	389	384	373	370	360	360	357	361
62°	352	349	337	335	326	327	324	328
63°	320	317	306	304	296	297	294	299
64°	292	287	280	277	271	270	269	272
65°	265	262	253	253	246	247	245	249
66°	244	240	233	231	226	226	225	228
67°	223	221	215	213	209	209	208	211
68°	207	205	200	198	196	194	194	196
69°	193	192	187	186	183	183	182	183
70°	184	183	179	179	175	175	174	175
71°	176	175	171	170	167	167	166	167
72°	167	166	163	162	159	159	158	159
73°	159	158	154	154	151	150	149	151
74°	150	149	146	144	142	141	141	141
75°	141	140	136	135	133	132	131	132
76°	131	130	127	126	124	123	123	123
77°	122	121	118	117	115	114	113	113
78°	113	111	109	108	106	105	104	104
79°	103	101	99	99	96	96	94	95
80°	93	92	90	89	87	87	85	85
81°	83	82	80	79	77	77	75	75
82°	73	71	70	70	68	67	65	65
83°	62	61	59	60	58	58	55	55
84°	51	50	48	50	48	48	45	45
85°	39	39	38	40	38	38	34	34
86°	28	28	27	29	28	28	24	24
87°	16	19	16	20	18	19	14	14
88°	5	9	6	10	4	9	4	3
89°	3	1	3	0	2	0	2	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data

C γ	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	1	1	1	1	1	1
115°	1	1	1	1	1	1	1	1
116°	1	1	1	1	1	1	1	1
117°	1	1	1	1	1	1	1	1
118°	1	1	1	1	1	1	1	1
119°	1	1	1	1	1	1	1	1
120°	1	1	1	1	1	1	1	1
121°	1	1	1	1	1	1	1	1
122°	1	1	1	1	1	1	1	1
123°	1	1	1	1	1	1	1	1
124°	1	1	1	1	1	1	1	1
125°	1	1	1	1	1	1	1	1
126°	1	1	1	1	1	1	1	1
127°	1	1	1	1	1	1	1	1
128°	1	1	1	1	1	1	1	1
129°	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1
131°	1	1	1	1	1	1	1	1
132°	1	1	1	1	1	1	1	1
133°	1	1	1	1	1	1	1	1
134°	1	1	1	1	1	1	1	1
135°	1	1	1	1	2	2	1	1
136°	1	2	2	2	2	2	2	1
137°	2	2	2	2	2	2	2	2
138°	2	2	2	2	2	2	2	2
139°	2	2	2	2	2	2	2	2
140°	2	2	2	2	2	2	2	2
141°	2	2	2	2	2	2	2	2
142°	2	2	2	2	2	2	2	2
143°	2	2	2	2	2	2	2	2
144°	2	2	2	2	2	2	2	2
145°	2	2	2	3	3	3	2	2
146°	2	2	3	3	3	3	2	2

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \text{C} \\ \diagdown \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
147°	2	2	3	3	3	3	3	2
148°	2	3	3	3	3	3	3	3
149°	2	3	3	3	3	3	3	3
150°	3	3	3	3	3	3	3	3
151°	3	3	3	3	3	3	3	3
152°	3	3	3	3	3	3	3	3
153°	3	3	3	3	3	3	3	3
154°	3	3	3	3	3	3	3	3
155°	3	3	3	3	3	3	3	3
156°	3	3	3	3	3	3	3	3
157°	3	3	3	3	3	3	3	3
158°	3	3	3	3	3	3	3	3
159°	3	3	3	3	3	3	3	3
160°	3	3	3	3	3	3	3	3
161°	3	3	3	3	3	3	3	3
162°	3	3	3	3	3	3	3	3
163°	3	3	3	3	3	3	3	3
164°	3	3	3	3	3	3	3	3
165°	3	3	3	3	3	3	3	3
166°	3	3	3	3	3	3	3	3
167°	3	3	3	3	3	3	3	3
168°	3	3	3	3	3	3	3	3
169°	3	3	3	3	3	3	3	3
170°	3	3	3	3	3	3	3	3
171°	3	3	3	3	3	3	3	3
172°	3	3	3	3	3	3	3	3
173°	3	3	3	3	3	3	3	3
174°	3	3	3	3	3	3	3	3
175°	3	3	3	3	3	3	3	3
176°	3	3	3	3	3	3	3	3
177°	3	3	3	3	3	3	3	3
178°	3	3	3	2	2	3	3	3
179°	3	3	2	2	2	2	3	3
180°	3	2	2	2	2	2	2	2

Luminous Intensity (cd) Distribution Data (cont.)

C Y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	1725	1725	1725	1725	1725	1725	1725	1725
1°	1725	1724	1725	1729	1722	1724	1725	1728
2°	1726	1725	1723	1725	1724	1725	1724	1728
3°	1722	1724	1720	1723	1722	1722	1721	1728
4°	1719	1721	1721	1722	1722	1721	1722	1726
5°	1719	1716	1718	1720	1720	1719	1720	1721
6°	1715	1714	1713	1720	1717	1716	1718	1719
7°	1711	1710	1709	1716	1712	1716	1714	1718
8°	1706	1707	1706	1712	1709	1712	1709	1714
9°	1700	1702	1700	1706	1705	1705	1706	1709
10°	1694	1696	1696	1700	1701	1700	1699	1705
11°	1689	1690	1689	1693	1695	1695	1692	1698
12°	1684	1682	1682	1687	1688	1690	1689	1691
13°	1676	1676	1675	1680	1680	1683	1683	1684
14°	1668	1667	1667	1676	1672	1675	1675	1680
15°	1660	1662	1659	1669	1666	1668	1666	1671
16°	1649	1652	1650	1660	1659	1659	1661	1662
17°	1638	1639	1640	1647	1647	1650	1651	1651
18°	1628	1630	1631	1630	1636	1640	1640	1642
19°	1619	1619	1620	1627	1628	1630	1631	1632
20°	1612	1608	1610	1618	1617	1621	1620	1623
21°	1595	1597	1598	1607	1607	1609	1609	1613
22°	1581	1583	1587	1596	1594	1595	1598	1600
23°	1567	1570	1572	1581	1581	1585	1585	1588
24°	1554	1555	1558	1563	1568	1569	1571	1573
25°	1535	1539	1541	1549	1552	1555	1555	1558
26°	1515	1519	1524	1532	1534	1540	1539	1541
27°	1497	1501	1507	1515	1516	1519	1521	1521
28°	1477	1481	1485	1495	1499	1500	1502	1501
29°	1454	1460	1463	1473	1476	1478	1481	1483
30°	1436	1437	1443	1451	1452	1457	1459	1460
31°	1413	1415	1421	1428	1431	1436	1437	1438
32°	1388	1391	1397	1406	1409	1412	1415	1416
33°	1364	1369	1375	1381	1385	1388	1392	1392
34°	1338	1343	1349	1361	1361	1364	1369	1370
35°	1313	1317	1325	1335	1336	1340	1345	1343
36°	1286	1292	1298	1307	1312	1314	1318	1318
37°	1260	1264	1272	1279	1285	1288	1292	1290
38°	1233	1235	1246	1251	1259	1260	1267	1262
39°	1207	1206	1221	1220	1236	1231	1243	1236
40°	1181	1175	1196	1193	1213	1201	1219	1206
41°	1150	1145	1167	1165	1181	1171	1188	1175
42°	1118	1114	1133	1132	1150	1140	1155	1143
43°	1084	1079	1100	1096	1117	1108	1123	1112
44°	1051	1047	1066	1063	1084	1074	1091	1079
45°	1016	1011	1029	1028	1048	1041	1058	1046
46°	979	975	995	994	1013	1005	1022	1010
47°	942	937	957	958	976	969	985	973
48°	904	899	919	918	938	932	947	936

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} \text{C} \\ \backslash \\ \gamma \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
49°	863	860	878	880	898	894	908	898
50°	823	820	838	838	859	854	870	859
51°	782	780	797	800	817	814	831	819
52°	739	737	757	758	776	774	789	778
53°	696	695	716	716	734	733	747	736
54°	654	655	672	676	690	691	704	696
55°	612	612	630	634	649	649	663	653
56°	570	572	588	593	606	609	620	612
57°	530	533	546	552	564	568	578	571
58°	489	493	505	511	524	528	536	530
59°	450	452	465	471	484	488	495	489
60°	412	414	426	432	444	447	455	449
61°	376	378	389	395	406	409	415	409
62°	342	344	353	359	369	372	378	372
63°	311	313	322	326	336	338	344	338
64°	283	285	294	296	306	307	311	306
65°	259	260	267	270	278	280	283	279
66°	237	239	244	248	254	255	258	254
67°	219	220	225	227	233	234	236	233
68°	202	203	208	210	215	215	218	215
69°	189	190	194	195	200	200	202	199
70°	178	179	182	184	187	188	189	187
71°	171	172	175	176	179	179	181	179
72°	162	164	167	168	171	171	173	171
73°	154	155	159	161	162	163	164	163
74°	146	147	151	152	154	154	156	155
75°	136	138	141	143	145	146	147	146
76°	127	129	132	134	136	137	137	137
77°	118	120	123	125	127	128	128	127
78°	109	111	114	116	118	119	119	118
79°	99	101	105	107	109	110	110	108
80°	89	92	96	98	100	100	101	99
81°	80	82	86	89	90	91	91	89
82°	70	72	76	79	81	81	81	79
83°	60	62	67	69	71	72	71	68
84°	49	51	56	60	62	62	61	57
85°	39	40	46	49	52	52	51	47
86°	28	29	36	39	42	42	41	36
87°	19	19	25	29	33	32	30	24
88°	10	8	17	19	22	21	20	13
89°	1	5	8	4	11	7	10	8
90°	0	3	0	2	0	4	0	4
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data (cont.)

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	0
118°	0	0	0	0	0	0	0	0
119°	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0
121°	0	0	0	0	0	0	0	0
122°	0	0	0	0	0	0	0	0
123°	0	0	0	0	0	0	0	0
124°	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0
126°	0	0	0	0	0	0	0	0
127°	0	0	0	0	0	0	0	0
128°	0	0	0	0	0	0	0	0
129°	0	0	0	0	0	0	0	0
130°	0	0	0	0	0	0	0	0
131°	0	0	0	0	0	0	0	0
132°	0	0	0	0	0	0	0	0
133°	1	0	0	0	0	0	0	0
134°	1	1	0	1	0	0	0	0
135°	1	1	1	1	1	1	0	1
136°	1	1	1	1	1	1	1	1
137°	1	1	1	1	1	1	1	1
138°	1	1	1	1	1	1	1	1
139°	1	1	1	1	1	1	1	1
140°	1	1	1	1	1	1	1	1
141°	1	1	1	1	1	1	1	1
142°	1	1	1	1	1	1	1	1
143°	1	1	1	1	1	1	1	1
144°	1	1	1	1	1	1	1	1
145°	1	1	1	1	1	1	1	1
146°	1	1	1	1	1	1	1	1

Luminous Intensity (cd) Distribution Data (cont.)

C γ	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
147°	1	1	1	1	1	1	1	1
148°	1	1	1	1	1	1	1	1
149°	1	1	1	1	1	1	1	1
150°	1	1	1	1	1	1	1	1
151°	1	1	1	1	1	1	1	1
152°	1	1	1	1	1	1	1	1
153°	1	1	1	1	1	1	1	1
154°	1	1	1	1	1	1	1	1
155°	1	1	1	1	1	1	1	1
156°	1	1	1	1	1	1	1	1
157°	1	1	1	1	1	1	1	1
158°	1	1	1	1	1	1	1	1
159°	1	1	1	1	1	1	1	1
160°	1	1	1	1	1	1	1	1
161°	1	1	1	1	1	1	1	1
162°	1	1	1	1	1	1	1	1
163°	1	1	1	1	1	1	1	2
164°	1	1	1	1	1	1	1	2
165°	2	1	2	1	1	1	2	2
166°	2	2	2	2	1	1	2	2
167°	2	2	2	2	1	1	2	2
168°	2	2	2	2	1	2	2	2
169°	2	2	2	2	2	2	2	2
170°	2	2	2	2	2	2	2	2
171°	2	2	2	2	2	2	2	2
172°	2	2	2	2	2	2	2	2
173°	2	2	2	2	2	2	2	2
174°	2	2	2	2	2	2	2	2
175°	2	2	2	2	2	2	2	2
176°	2	2	2	2	2	2	2	2
177°	2	2	2	2	2	2	2	2
178°	2	2	2	2	2	2	2	2
179°	2	2	2	2	2	2	2	2
180°	3	2	2	2	2	2	2	2

Zonal Lumen Density Measurement

Deg	Flux (lm)	%	Deg	Flux (lm)	%
0-5	41.2	1.04	0-5	41.2	1.04
5-10	122.2	3.07	0-10	163.4	4.11
10-15	199.2	5.01	0-15	362.6	9.12
15-20	269.7	6.79	0-20	632.3	15.91
20-25	330.9	8.32	0-25	963.2	24.23
25-30	377.7	9.50	0-30	1340.9	33.73
30-35	407.0	10.24	0-35	1747.8	43.97
35-40	418.3	10.52	0-40	2166.2	54.49
40-45	409.1	10.30	0-45	2575.3	64.79
45-50	374.5	9.42	0-50	2949.8	74.21
50-55	315.8	7.94	0-55	3265.6	82.15
55-60	240.0	6.04	0-60	3505.6	88.19
60-65	162.7	4.09	0-65	3668.4	92.28
65-70	109.1	2.75	0-70	3777.5	95.03
70-75	83.9	2.11	0-75	3861.4	97.14
75-80	62.0	1.56	0-80	3923.4	98.70
80-85	36.8	0.93	0-85	3960.2	99.63
85-90	9.9	0.24	0-90	3970.1	99.87
90-95	0.1	0.01	0-95	3970.2	99.88
95-100	0.1	0.00	0-100	3970.3	99.88
100-105	0.1	0.00	0-105	3970.4	99.88
105-110	0.1	0.01	0-110	3970.5	99.89
110-115	0.2	0.00	0-115	3970.7	99.89
115-120	0.2	0.01	0-120	3970.9	99.90
120-125	0.2	0.00	0-125	3971.1	99.90
125-130	0.3	0.01	0-130	3971.4	99.91
130-135	0.4	0.01	0-135	3971.8	99.92
135-140	0.4	0.01	0-140	3972.2	99.93
140-145	0.5	0.01	0-145	3972.7	99.94
145-150	0.5	0.01	0-150	3973.2	99.95
150-155	0.5	0.02	0-155	3973.7	99.97
155-160	0.5	0.01	0-160	3974.2	99.98
160-165	0.4	0.01	0-165	3974.5	99.99
165-170	0.3	0.00	0-170	3974.8	99.99
170-175	0.2	0.01	0-175	3975.0	100.00
175-180	0.1	0.00	0-180	3975.1	100.00

[Integrating Sphere System]

Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

The diameter of the sphere: **1.5M**

The coating reflectance of sphere: **98%**

The Stabilization time: **30 minutes**

Total operating time for integrating sphere test: **1.0 hour**

Test orientation: **Downward**

Test CCT: **3000K**

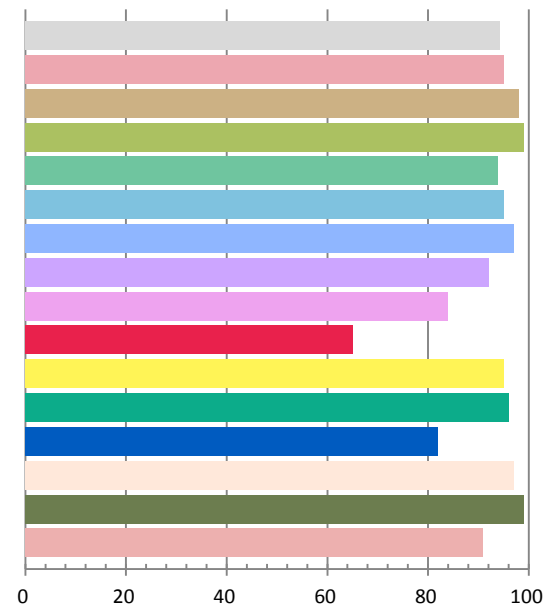
Photometric and Electrical Measurement Result

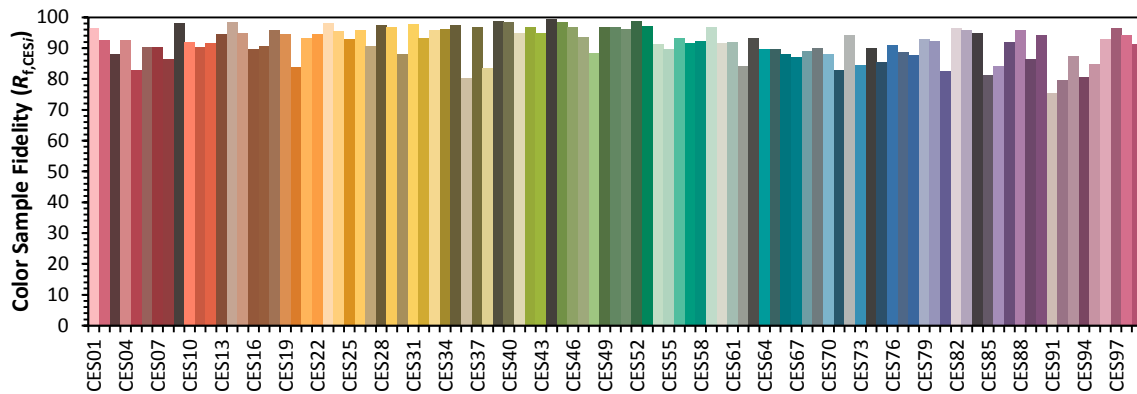
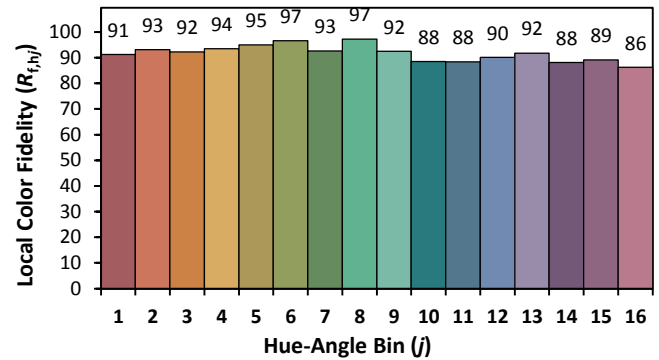
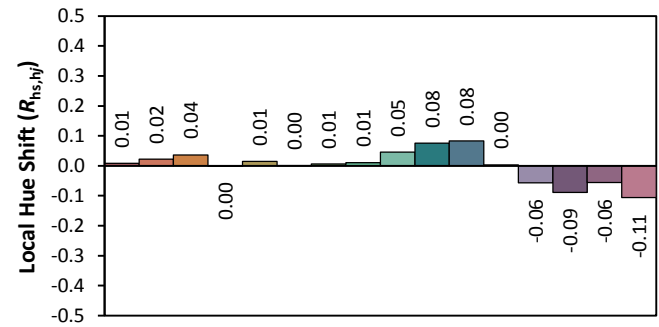
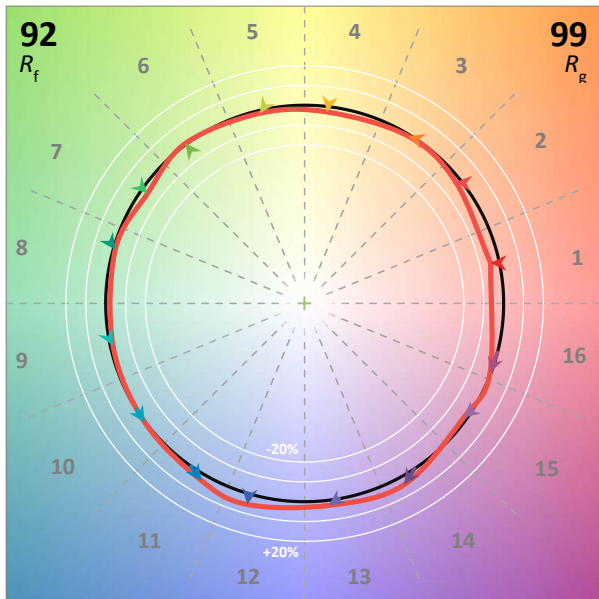
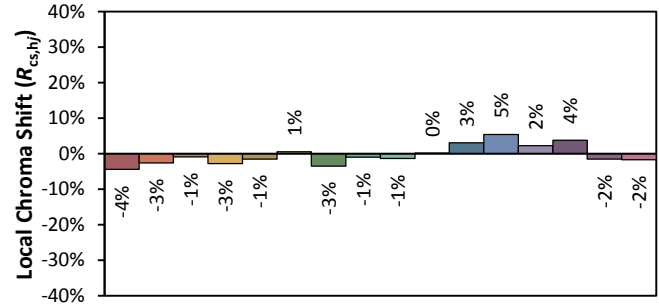
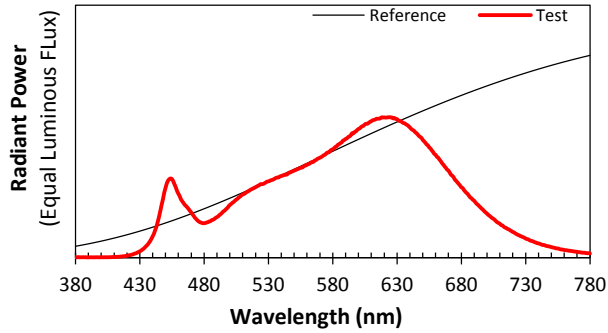
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.3184	37.76	0.9886	4094.5	108.43

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
14.257	2997	-0.00152	0.4349	0.3996	0.2512	0.5193

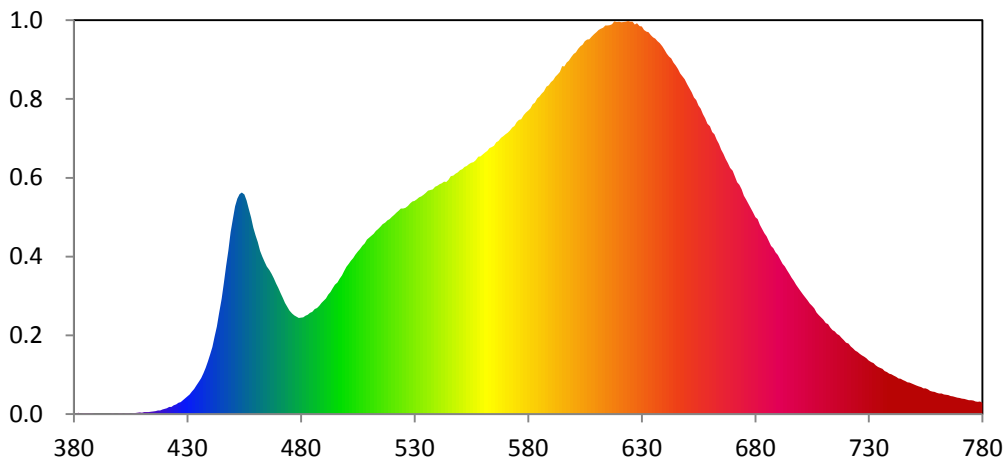
Color Rendering Index

Ra			
94.2			
R1	R2	R3	R4
95	98	99	94
R5	R6	R7	R8
95	97	92	84
R9	R10	R11	R12
65	95	96	82
R13	R14	R15	
97	99	91	





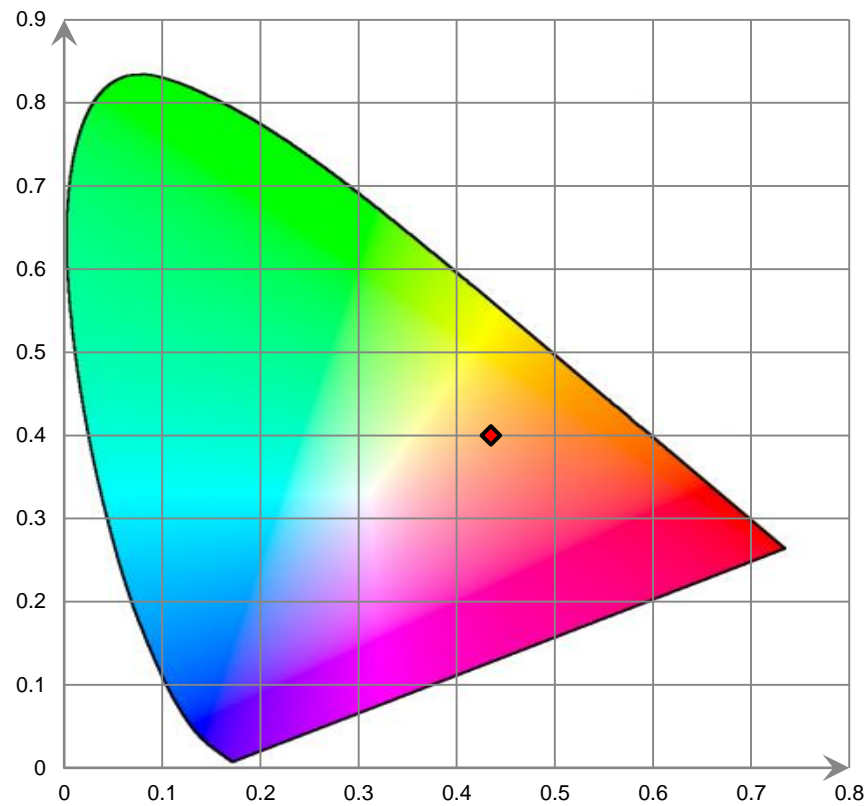
Relative Spectral Power Distribution



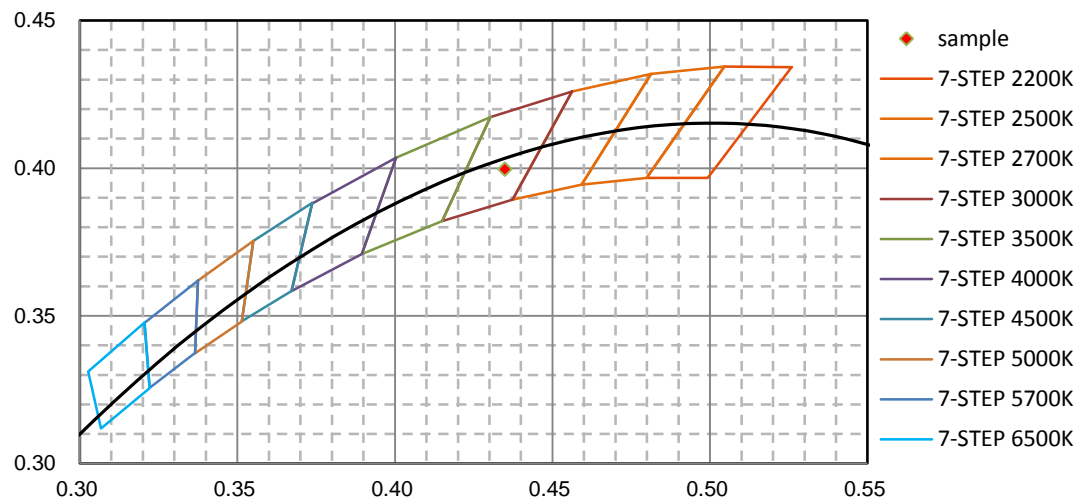
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	2.503E-01	421	1.195E+00	462	3.459E+01	503	3.301E+01	544	4.917E+01
381	1.059E-01	422	1.449E+00	463	3.341E+01	504	3.378E+01	545	4.966E+01
382	2.691E-01	423	1.505E+00	464	3.232E+01	505	3.439E+01	546	5.038E+01
383	1.445E-01	424	1.794E+00	465	3.126E+01	506	3.495E+01	547	5.051E+01
384	1.644E-01	425	2.000E+00	466	3.053E+01	507	3.568E+01	548	5.094E+01
385	1.800E-01	426	2.353E+00	467	2.969E+01	508	3.619E+01	549	5.121E+01
386	1.938E-01	427	2.528E+00	468	2.874E+01	509	3.695E+01	550	5.167E+01
387	1.633E-01	428	2.927E+00	469	2.769E+01	510	3.737E+01	551	5.189E+01
388	1.832E-01	429	3.309E+00	470	2.675E+01	511	3.776E+01	552	5.234E+01
389	9.329E-02	430	3.700E+00	471	2.563E+01	512	3.823E+01	553	5.258E+01
390	9.131E-02	431	4.133E+00	472	2.462E+01	513	3.882E+01	554	5.295E+01
391	1.286E-01	432	4.765E+00	473	2.350E+01	514	3.920E+01	555	5.322E+01
392	1.607E-01	433	5.285E+00	474	2.274E+01	515	3.966E+01	556	5.340E+01
393	1.424E-01	434	6.061E+00	475	2.190E+01	516	4.021E+01	557	5.376E+01
394	1.236E-01	435	6.850E+00	476	2.132E+01	517	4.058E+01	558	5.454E+01
395	1.408E-01	436	7.611E+00	477	2.088E+01	518	4.103E+01	559	5.464E+01
396	1.626E-01	437	8.637E+00	478	2.065E+01	519	4.134E+01	560	5.505E+01
397	1.688E-01	438	9.772E+00	479	2.037E+01	520	4.181E+01	561	5.545E+01
398	1.507E-01	439	1.110E+01	480	2.042E+01	521	4.220E+01	562	5.574E+01
399	1.211E-01	440	1.261E+01	481	2.050E+01	522	4.264E+01	563	5.639E+01
400	1.949E-01	441	1.417E+01	482	2.083E+01	523	4.306E+01	564	5.660E+01
401	1.903E-01	442	1.644E+01	483	2.101E+01	524	4.358E+01	565	5.683E+01
402	1.485E-01	443	1.851E+01	484	2.143E+01	525	4.357E+01	566	5.761E+01
403	1.916E-01	444	2.136E+01	485	2.161E+01	526	4.372E+01	567	5.788E+01
404	1.710E-01	445	2.439E+01	486	2.226E+01	527	4.410E+01	568	5.854E+01
405	1.553E-01	446	2.782E+01	487	2.246E+01	528	4.462E+01	569	5.889E+01
406	1.895E-01	447	3.144E+01	488	2.295E+01	529	4.507E+01	570	5.927E+01
407	2.243E-01	448	3.466E+01	489	2.354E+01	530	4.520E+01	571	5.963E+01
408	2.427E-01	449	3.851E+01	490	2.403E+01	531	4.553E+01	572	6.013E+01
409	3.145E-01	450	4.133E+01	491	2.451E+01	532	4.590E+01	573	6.074E+01
410	2.598E-01	451	4.402E+01	492	2.529E+01	533	4.611E+01	574	6.104E+01
411	3.691E-01	452	4.563E+01	493	2.583E+01	534	4.644E+01	575	6.185E+01
412	4.007E-01	453	4.659E+01	494	2.663E+01	535	4.688E+01	576	6.235E+01
413	4.161E-01	454	4.693E+01	495	2.738E+01	536	4.732E+01	577	6.248E+01
414	4.692E-01	455	4.656E+01	496	2.789E+01	537	4.752E+01	578	6.335E+01
415	5.580E-01	456	4.526E+01	497	2.870E+01	538	4.760E+01	579	6.390E+01
416	6.327E-01	457	4.340E+01	498	2.940E+01	539	4.817E+01	580	6.432E+01
417	7.532E-01	458	4.164E+01	499	3.034E+01	540	4.838E+01	581	6.477E+01
418	7.668E-01	459	3.946E+01	500	3.119E+01	541	4.869E+01	582	6.564E+01
419	9.612E-01	460	3.787E+01	501	3.179E+01	542	4.888E+01	583	6.603E+01
420	1.097E+00	461	3.645E+01	502	3.249E+01	543	4.927E+01	584	6.688E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	6.733E+01	626	8.315E+01	667	5.410E+01	708	2.093E+01	749	6.420E+00
586	6.789E+01	627	8.254E+01	668	5.321E+01	709	2.049E+01	750	6.203E+00
587	6.842E+01	628	8.285E+01	669	5.216E+01	710	2.002E+01	751	6.009E+00
588	6.938E+01	629	8.225E+01	670	5.158E+01	711	1.923E+01	752	5.810E+00
589	6.970E+01	630	8.218E+01	671	5.037E+01	712	1.904E+01	753	5.668E+00
590	7.037E+01	631	8.140E+01	672	4.912E+01	713	1.831E+01	754	5.420E+00
591	7.075E+01	632	8.105E+01	673	4.857E+01	714	1.778E+01	755	5.393E+00
592	7.152E+01	633	8.095E+01	674	4.764E+01	715	1.752E+01	756	5.183E+00
593	7.195E+01	634	8.030E+01	675	4.627E+01	716	1.694E+01	757	4.902E+00
594	7.255E+01	635	7.985E+01	676	4.547E+01	717	1.667E+01	758	4.780E+00
595	7.376E+01	636	7.961E+01	677	4.457E+01	718	1.613E+01	759	4.689E+00
596	7.367E+01	637	7.905E+01	678	4.368E+01	719	1.569E+01	760	4.493E+00
597	7.452E+01	638	7.863E+01	679	4.277E+01	720	1.515E+01	761	4.349E+00
598	7.488E+01	639	7.797E+01	680	4.170E+01	721	1.493E+01	762	4.325E+00
599	7.570E+01	640	7.723E+01	681	4.129E+01	722	1.428E+01	763	4.121E+00
600	7.631E+01	641	7.639E+01	682	4.011E+01	723	1.391E+01	764	4.044E+00
601	7.669E+01	642	7.577E+01	683	3.920E+01	724	1.345E+01	765	3.963E+00
602	7.741E+01	643	7.539E+01	684	3.835E+01	725	1.314E+01	766	3.819E+00
603	7.794E+01	644	7.448E+01	685	3.768E+01	726	1.275E+01	767	3.710E+00
604	7.826E+01	645	7.388E+01	686	3.661E+01	727	1.242E+01	768	3.576E+00
605	7.904E+01	646	7.313E+01	687	3.564E+01	728	1.212E+01	769	3.453E+00
606	7.941E+01	647	7.219E+01	688	3.513E+01	729	1.178E+01	770	3.414E+00
607	7.941E+01	648	7.160E+01	689	3.424E+01	730	1.130E+01	771	3.230E+00
608	8.000E+01	649	7.098E+01	690	3.371E+01	731	1.098E+01	772	3.179E+00
609	8.053E+01	650	6.985E+01	691	3.271E+01	732	1.080E+01	773	3.014E+00
610	8.096E+01	651	6.901E+01	692	3.184E+01	733	1.029E+01	774	2.885E+00
611	8.143E+01	652	6.818E+01	693	3.124E+01	734	9.982E+00	775	2.888E+00
612	8.169E+01	653	6.710E+01	694	3.043E+01	735	9.783E+00	776	2.815E+00
613	8.191E+01	654	6.659E+01	695	2.969E+01	736	9.529E+00	777	2.648E+00
614	8.235E+01	655	6.539E+01	696	2.889E+01	737	9.103E+00	778	2.580E+00
615	8.239E+01	656	6.474E+01	697	2.824E+01	738	8.880E+00	779	2.615E+00
616	8.246E+01	657	6.360E+01	698	2.738E+01	739	8.539E+00	780	2.400E+00
617	8.262E+01	658	6.269E+01	699	2.672E+01	740	8.385E+00		
618	8.323E+01	659	6.150E+01	700	2.604E+01	741	8.163E+00		
619	8.313E+01	660	6.097E+01	701	2.530E+01	742	7.838E+00		
620	8.319E+01	661	5.980E+01	702	2.472E+01	743	7.502E+00		
621	8.307E+01	662	5.929E+01	703	2.406E+01	744	7.466E+00		
622	8.313E+01	663	5.814E+01	704	2.343E+01	745	7.197E+00		
623	8.321E+01	664	5.723E+01	705	2.296E+01	746	6.955E+00		
624	8.333E+01	665	5.604E+01	706	2.236E+01	747	6.739E+00		
625	8.319E+01	666	5.514E+01	707	2.153E+01	748	6.645E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



[Integrating Sphere System]

Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

The diameter of the sphere: **1.5M**

The coating reflectance of sphere: **98%**

The Stabilization time: **30 minutes**

Total operating time for integrating sphere test: **1.0 hour**

Test orientation: **Downward**

Test CCT: **3500K**

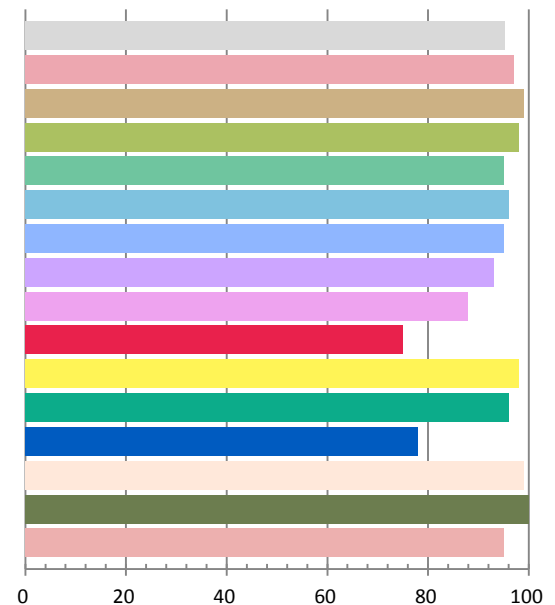
Photometric and Electrical Measurement Result

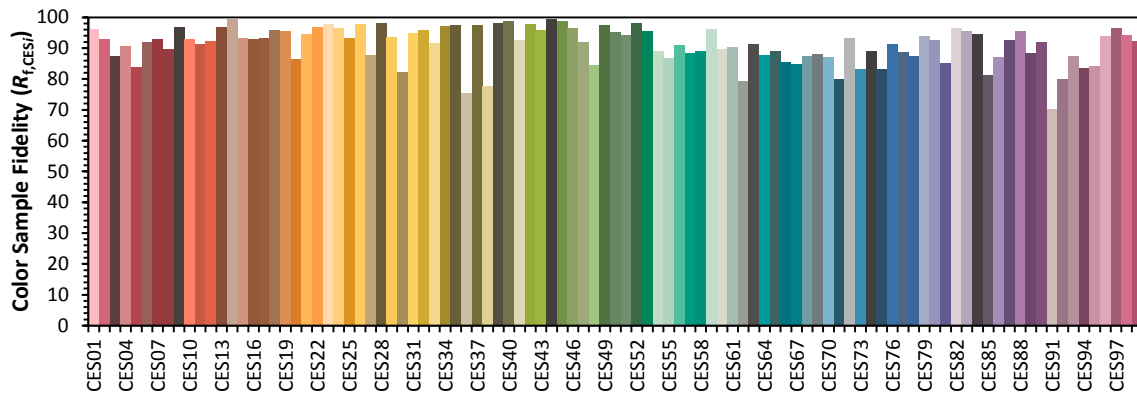
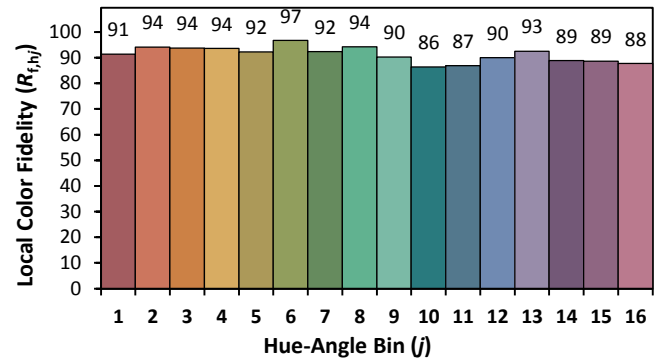
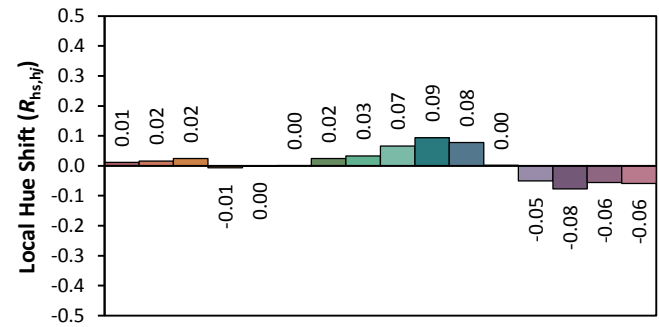
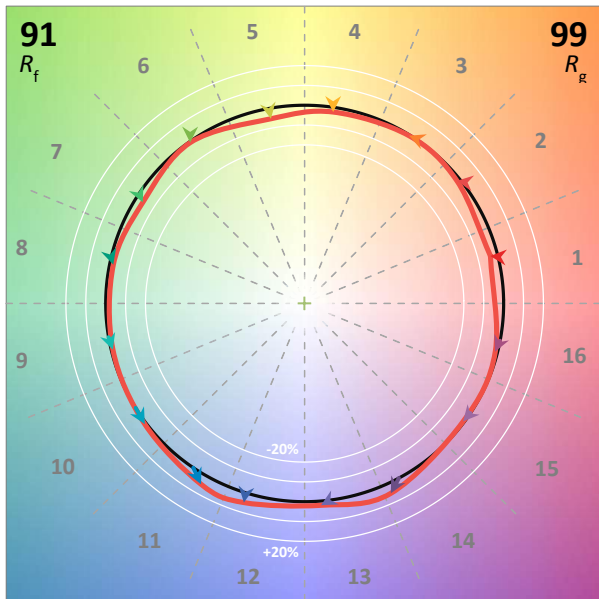
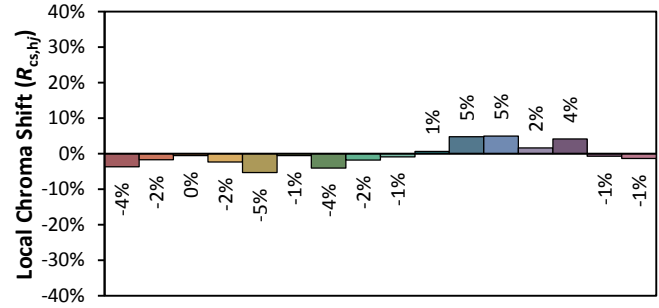
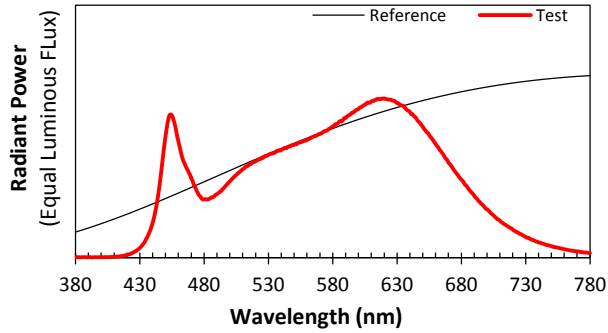
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.3137	37.21	0.9881	4189.3	112.59

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
14.596	3495	-0.00338	0.4021	0.3815	0.2374	0.5069

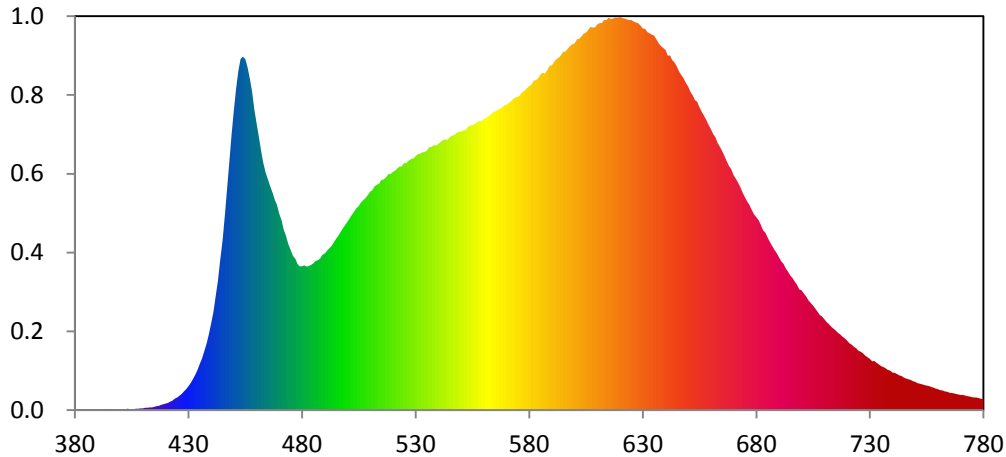
Color Rendering Index

Ra			
95.2			
R1	R2	R3	R4
97	99	98	95
R5	R6	R7	R8
96	95	93	88
R9	R10	R11	R12
75	98	96	78
R13	R14	R15	
99	100	95	





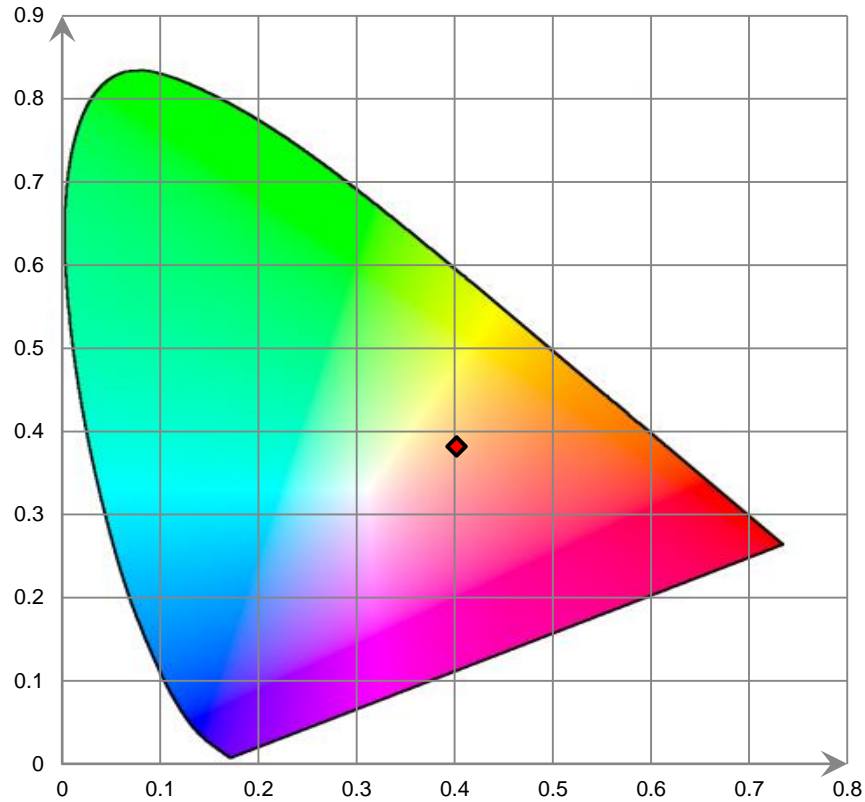
Relative Spectral Power Distribution



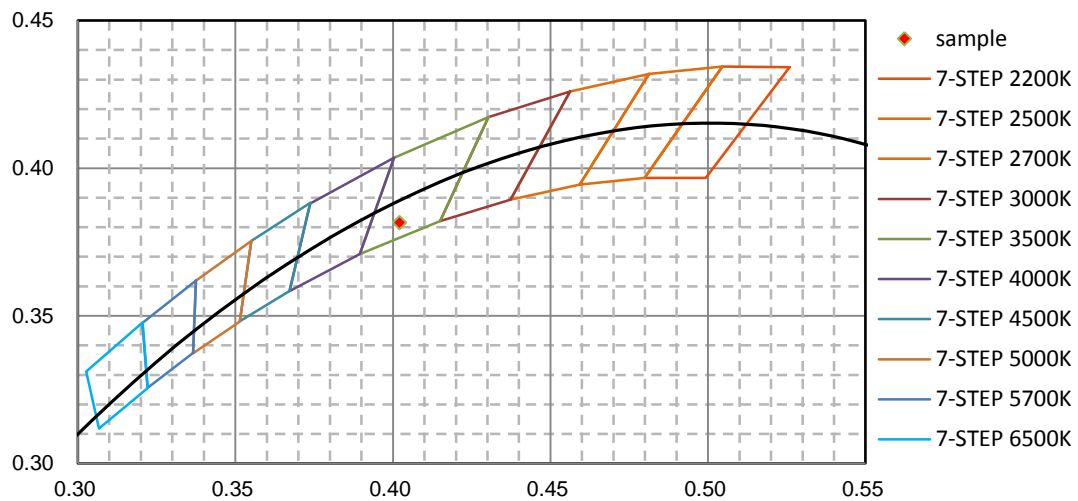
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.068E-01	421	1.367E+00	462	5.106E+01	503	3.899E+01	544	5.310E+01
381	1.648E-01	422	1.648E+00	463	4.857E+01	504	3.965E+01	545	5.364E+01
382	1.829E-01	423	1.808E+00	464	4.675E+01	505	4.010E+01	546	5.394E+01
383	1.598E-01	424	2.192E+00	465	4.543E+01	506	4.080E+01	547	5.403E+01
384	1.031E-01	425	2.468E+00	466	4.395E+01	507	4.127E+01	548	5.451E+01
385	1.633E-01	426	2.810E+00	467	4.275E+01	508	4.174E+01	549	5.468E+01
386	2.035E-01	427	3.151E+00	468	4.134E+01	509	4.230E+01	550	5.472E+01
387	1.607E-01	428	3.632E+00	469	4.029E+01	510	4.294E+01	551	5.496E+01
388	1.650E-01	429	4.090E+00	470	3.860E+01	511	4.322E+01	552	5.508E+01
389	1.088E-01	430	4.670E+00	471	3.730E+01	512	4.399E+01	553	5.562E+01
390	1.516E-01	431	5.309E+00	472	3.540E+01	513	4.432E+01	554	5.591E+01
391	1.693E-01	432	6.051E+00	473	3.425E+01	514	4.451E+01	555	5.596E+01
392	1.913E-01	433	6.829E+00	474	3.268E+01	515	4.527E+01	556	5.627E+01
393	1.819E-02	434	7.813E+00	475	3.156E+01	516	4.530E+01	557	5.652E+01
394	1.202E-01	435	9.120E+00	476	3.025E+01	517	4.584E+01	558	5.682E+01
395	1.746E-01	436	1.017E+01	477	2.975E+01	518	4.638E+01	559	5.678E+01
396	1.493E-01	437	1.166E+01	478	2.872E+01	519	4.639E+01	560	5.724E+01
397	1.551E-01	438	1.309E+01	479	2.826E+01	520	4.681E+01	561	5.738E+01
398	1.646E-01	439	1.488E+01	480	2.825E+01	521	4.708E+01	562	5.778E+01
399	1.418E-01	440	1.697E+01	481	2.842E+01	522	4.752E+01	563	5.811E+01
400	1.494E-01	441	1.919E+01	482	2.818E+01	523	4.787E+01	564	5.848E+01
401	1.890E-01	442	2.226E+01	483	2.831E+01	524	4.789E+01	565	5.872E+01
402	1.401E-01	443	2.531E+01	484	2.852E+01	525	4.858E+01	566	5.899E+01
403	2.222E-01	444	2.927E+01	485	2.885E+01	526	4.849E+01	567	5.913E+01
404	1.985E-01	445	3.345E+01	486	2.929E+01	527	4.910E+01	568	5.946E+01
405	1.998E-01	446	3.834E+01	487	2.942E+01	528	4.936E+01	569	5.991E+01
406	2.092E-01	447	4.360E+01	488	2.980E+01	529	4.947E+01	570	5.998E+01
407	2.197E-01	448	4.882E+01	489	3.053E+01	530	4.990E+01	571	6.036E+01
408	2.680E-01	449	5.426E+01	490	3.077E+01	531	5.028E+01	572	6.067E+01
409	3.300E-01	450	5.892E+01	491	3.125E+01	532	5.037E+01	573	6.118E+01
410	2.973E-01	451	6.321E+01	492	3.180E+01	533	5.066E+01	574	6.146E+01
411	4.082E-01	452	6.664E+01	493	3.224E+01	534	5.073E+01	575	6.156E+01
412	4.662E-01	453	6.904E+01	494	3.294E+01	535	5.099E+01	576	6.193E+01
413	5.035E-01	454	6.950E+01	495	3.359E+01	536	5.164E+01	577	6.248E+01
414	5.211E-01	455	6.899E+01	496	3.429E+01	537	5.174E+01	578	6.278E+01
415	6.392E-01	456	6.735E+01	497	3.503E+01	538	5.211E+01	579	6.330E+01
416	7.232E-01	457	6.512E+01	498	3.572E+01	539	5.196E+01	580	6.366E+01
417	8.004E-01	458	6.263E+01	499	3.639E+01	540	5.231E+01	581	6.401E+01
418	9.885E-01	459	5.909E+01	500	3.700E+01	541	5.265E+01	582	6.474E+01
419	1.101E+00	460	5.641E+01	501	3.769E+01	542	5.304E+01	583	6.485E+01
420	1.235E+00	461	5.381E+01	502	3.837E+01	543	5.322E+01	584	6.525E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	6.597E+01	626	7.643E+01	667	4.894E+01	708	1.867E+01	749	5.647E+00
586	6.633E+01	627	7.618E+01	668	4.800E+01	709	1.838E+01	750	5.559E+00
587	6.612E+01	628	7.609E+01	669	4.739E+01	710	1.789E+01	751	5.298E+00
588	6.687E+01	629	7.555E+01	670	4.612E+01	711	1.726E+01	752	5.144E+00
589	6.774E+01	630	7.504E+01	671	4.544E+01	712	1.687E+01	753	5.035E+00
590	6.778E+01	631	7.494E+01	672	4.466E+01	713	1.637E+01	754	4.918E+00
591	6.846E+01	632	7.429E+01	673	4.381E+01	714	1.601E+01	755	4.761E+00
592	6.897E+01	633	7.409E+01	674	4.271E+01	715	1.563E+01	756	4.683E+00
593	6.926E+01	634	7.381E+01	675	4.187E+01	716	1.518E+01	757	4.513E+00
594	6.971E+01	635	7.363E+01	676	4.104E+01	717	1.482E+01	758	4.368E+00
595	7.039E+01	636	7.295E+01	677	4.031E+01	718	1.442E+01	759	4.180E+00
596	7.047E+01	637	7.219E+01	678	3.937E+01	719	1.410E+01	760	4.079E+00
597	7.102E+01	638	7.159E+01	679	3.854E+01	720	1.364E+01	761	3.914E+00
598	7.157E+01	639	7.119E+01	680	3.787E+01	721	1.307E+01	762	3.833E+00
599	7.193E+01	640	7.080E+01	681	3.729E+01	722	1.281E+01	763	3.638E+00
600	7.213E+01	641	6.969E+01	682	3.634E+01	723	1.241E+01	764	3.571E+00
601	7.286E+01	642	6.971E+01	683	3.528E+01	724	1.217E+01	765	3.379E+00
602	7.303E+01	643	6.880E+01	684	3.485E+01	725	1.167E+01	766	3.356E+00
603	7.346E+01	644	6.832E+01	685	3.391E+01	726	1.143E+01	767	3.259E+00
604	7.400E+01	645	6.757E+01	686	3.306E+01	727	1.112E+01	768	3.113E+00
605	7.418E+01	646	6.658E+01	687	3.229E+01	728	1.069E+01	769	3.044E+00
606	7.472E+01	647	6.589E+01	688	3.151E+01	729	1.038E+01	770	2.973E+00
607	7.535E+01	648	6.525E+01	689	3.091E+01	730	1.005E+01	771	2.952E+00
608	7.519E+01	649	6.437E+01	690	3.008E+01	731	9.585E+00	772	2.812E+00
609	7.524E+01	650	6.357E+01	691	2.921E+01	732	9.625E+00	773	2.684E+00
610	7.585E+01	651	6.254E+01	692	2.870E+01	733	9.272E+00	774	2.633E+00
611	7.611E+01	652	6.185E+01	693	2.780E+01	734	8.910E+00	775	2.498E+00
612	7.609E+01	653	6.089E+01	694	2.721E+01	735	8.588E+00	776	2.434E+00
613	7.669E+01	654	6.057E+01	695	2.642E+01	736	8.432E+00	777	2.438E+00
614	7.667E+01	655	5.956E+01	696	2.591E+01	737	8.166E+00	778	2.344E+00
615	7.717E+01	656	5.865E+01	697	2.520E+01	738	7.857E+00	779	2.213E+00
616	7.691E+01	657	5.790E+01	698	2.458E+01	739	7.704E+00	780	2.135E+00
617	7.699E+01	658	5.705E+01	699	2.371E+01	740	7.343E+00		
618	7.721E+01	659	5.612E+01	700	2.351E+01	741	7.300E+00		
619	7.717E+01	660	5.519E+01	701	2.285E+01	742	7.030E+00		
620	7.728E+01	661	5.425E+01	702	2.227E+01	743	6.806E+00		
621	7.708E+01	662	5.362E+01	703	2.150E+01	744	6.674E+00		
622	7.696E+01	663	5.247E+01	704	2.102E+01	745	6.360E+00		
623	7.682E+01	664	5.172E+01	705	2.052E+01	746	6.185E+00		
624	7.664E+01	665	5.090E+01	706	1.993E+01	747	6.007E+00		
625	7.674E+01	666	4.996E+01	707	1.929E+01	748	5.932E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



[Integrating Sphere System]

Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

The diameter of the sphere: **1.5M**

The coating reflectance of sphere: **98%**

The Stabilization time: **30 minutes**

Total operating time for integrating sphere test: **1.0 hour**

Test orientation: **Downward**

Test CCT: **4000K**

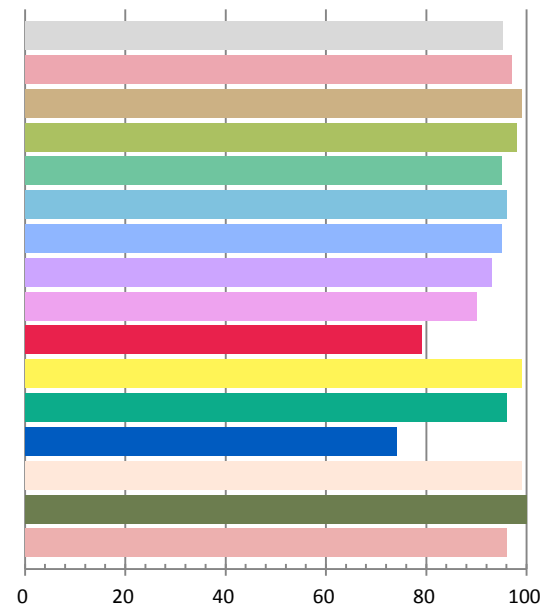
Photometric and Electrical Measurement Result

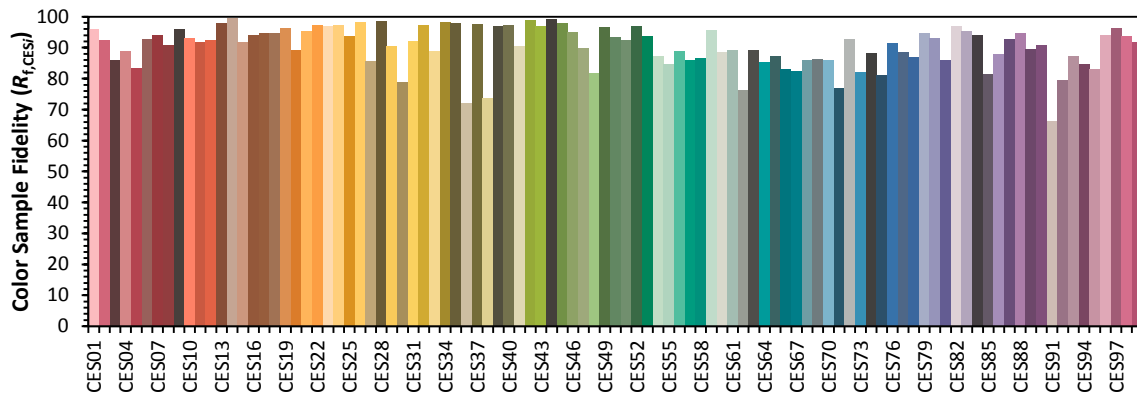
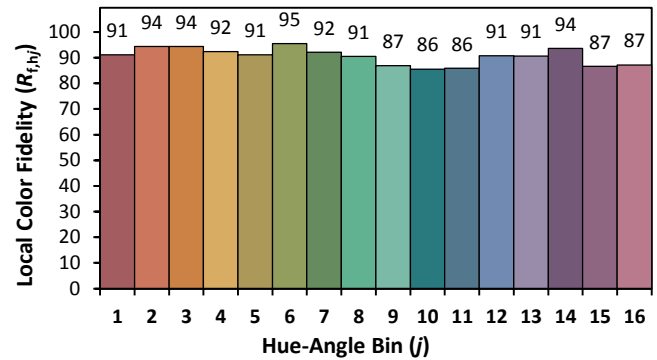
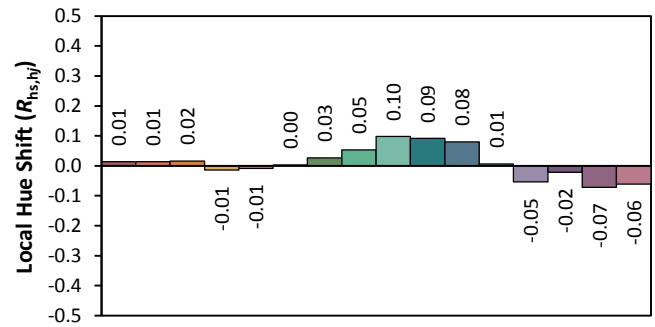
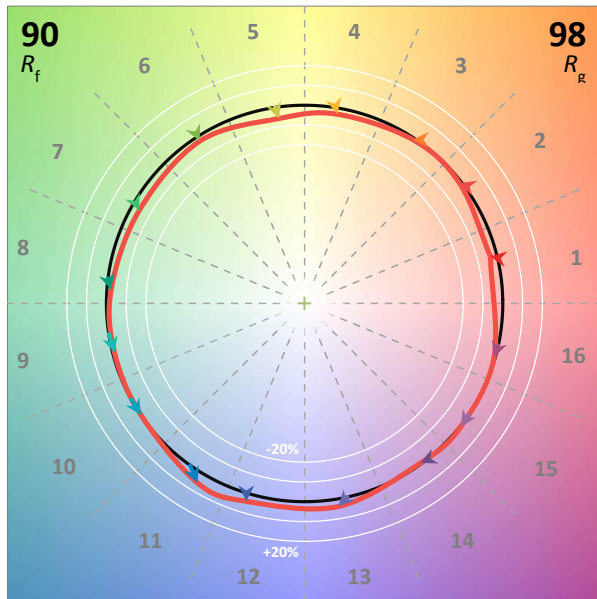
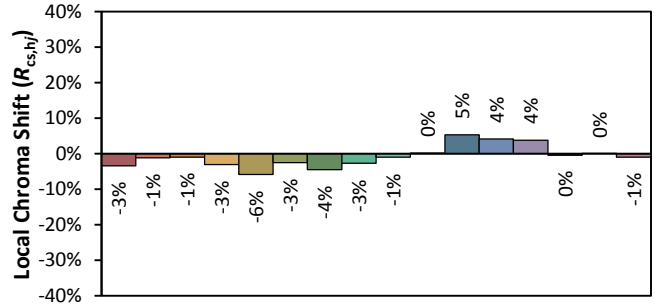
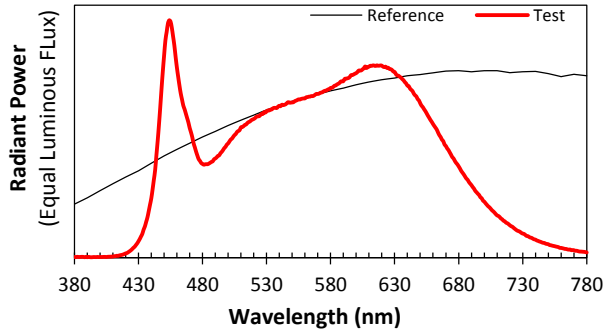
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
119.9	60	0.3188	37.8	0.9887	4199.6	111.1

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
14.595	4060	-0.00286	0.3760	0.3680	0.2257	0.4970

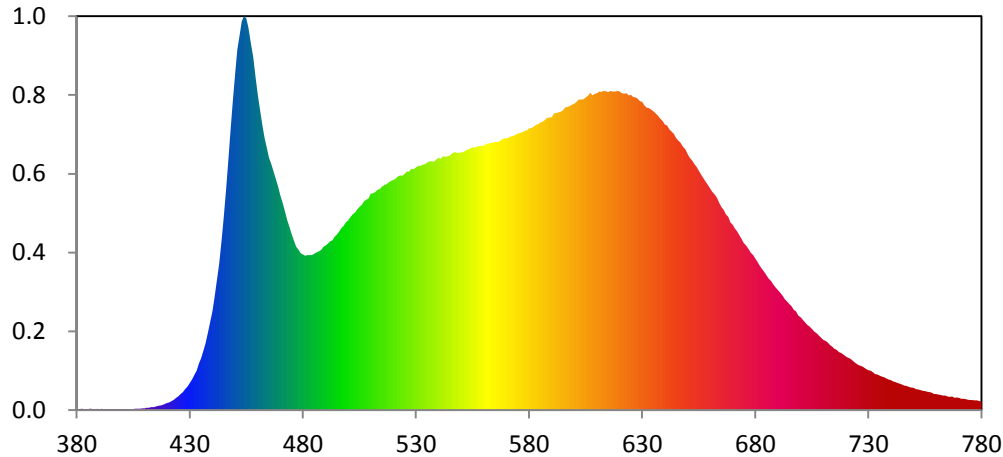
Color Rendering Index

Ra			
95.3			
R1	R2	R3	R4
97	99	98	95
R5	R6	R7	R8
96	95	93	90
R9	R10	R11	R12
79	99	96	74
R13	R14	R15	
99	100	96	





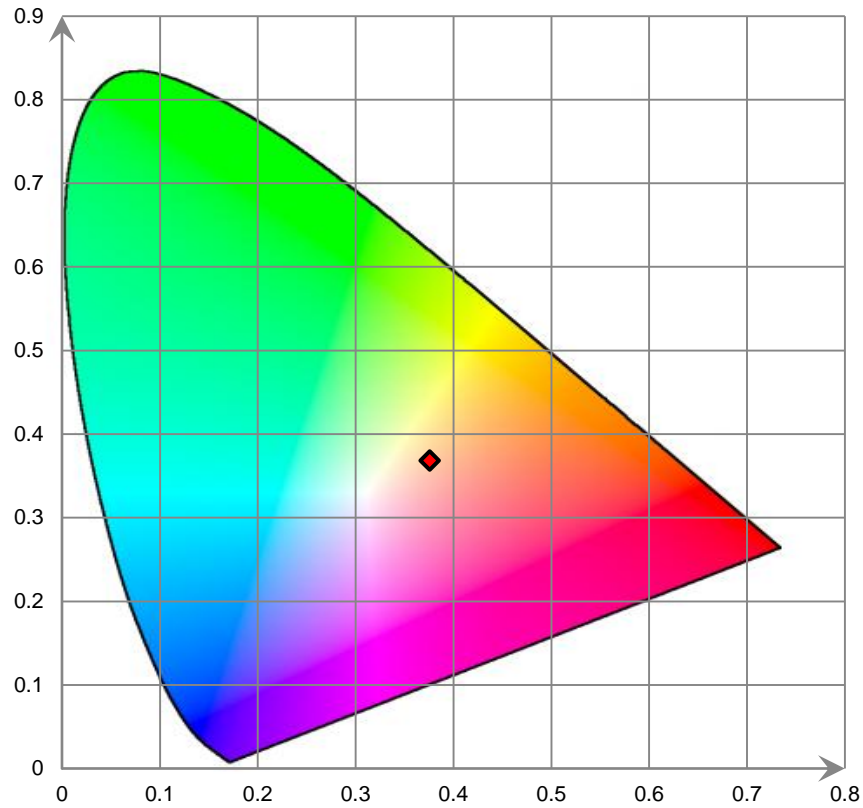
Relative Spectral Power Distribution



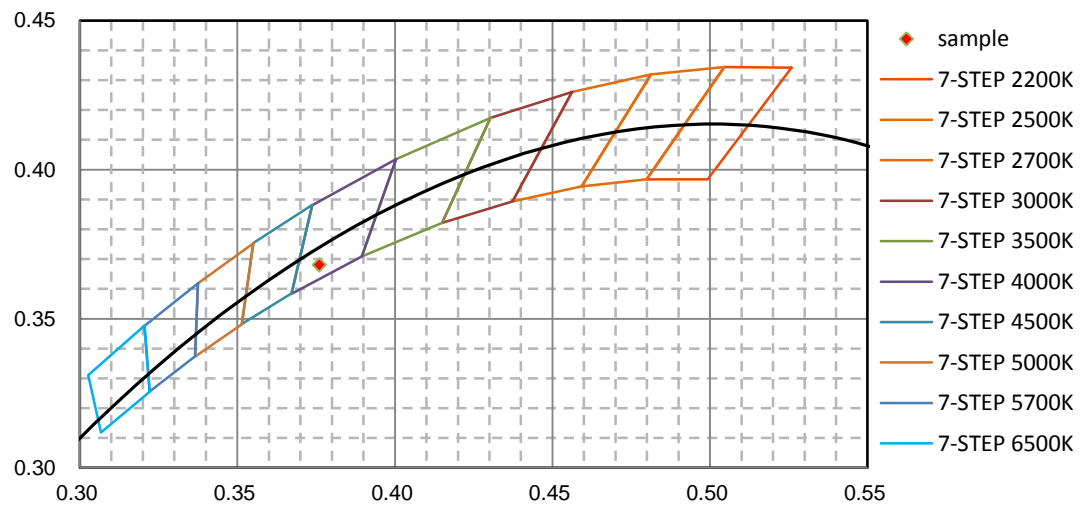
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	2.242E-01	421	1.653E+00	462	6.281E+01	503	4.345E+01	544	5.582E+01
381	1.402E-01	422	1.956E+00	463	5.993E+01	504	4.413E+01	545	5.601E+01
382	2.704E-01	423	2.276E+00	464	5.773E+01	505	4.473E+01	546	5.645E+01
383	2.136E-01	424	2.634E+00	465	5.551E+01	506	4.516E+01	547	5.678E+01
384	1.978E-01	425	3.047E+00	466	5.417E+01	507	4.589E+01	548	5.656E+01
385	2.323E-01	426	3.548E+00	467	5.255E+01	508	4.623E+01	549	5.660E+01
386	2.610E-01	427	3.944E+00	468	5.094E+01	509	4.655E+01	550	5.666E+01
387	2.198E-01	428	4.578E+00	469	4.932E+01	510	4.758E+01	551	5.674E+01
388	1.128E-01	429	5.188E+00	470	4.730E+01	511	4.768E+01	552	5.711E+01
389	2.537E-01	430	5.967E+00	471	4.572E+01	512	4.797E+01	553	5.731E+01
390	1.121E-01	431	6.781E+00	472	4.393E+01	513	4.843E+01	554	5.753E+01
391	2.484E-01	432	7.736E+00	473	4.176E+01	514	4.861E+01	555	5.778E+01
392	1.494E-01	433	8.666E+00	474	4.025E+01	515	4.913E+01	556	5.772E+01
393	1.040E-01	434	1.021E+01	475	3.863E+01	516	4.949E+01	557	5.794E+01
394	1.310E-01	435	1.137E+01	476	3.722E+01	517	4.971E+01	558	5.805E+01
395	1.813E-01	436	1.305E+01	477	3.594E+01	518	5.013E+01	559	5.813E+01
396	1.705E-01	437	1.469E+01	478	3.530E+01	519	5.040E+01	560	5.814E+01
397	1.607E-01	438	1.695E+01	479	3.453E+01	520	5.062E+01	561	5.855E+01
398	2.222E-01	439	1.930E+01	480	3.421E+01	521	5.094E+01	562	5.861E+01
399	1.653E-01	440	2.164E+01	481	3.392E+01	522	5.138E+01	563	5.877E+01
400	2.085E-01	441	2.488E+01	482	3.405E+01	523	5.162E+01	564	5.880E+01
401	1.933E-01	442	2.843E+01	483	3.411E+01	524	5.158E+01	565	5.899E+01
402	2.054E-01	443	3.197E+01	484	3.409E+01	525	5.197E+01	566	5.896E+01
403	2.380E-01	444	3.742E+01	485	3.434E+01	526	5.245E+01	567	5.916E+01
404	2.309E-01	445	4.271E+01	486	3.463E+01	527	5.243E+01	568	5.950E+01
405	1.911E-01	446	4.860E+01	487	3.494E+01	528	5.310E+01	569	5.978E+01
406	2.687E-01	447	5.496E+01	488	3.517E+01	529	5.293E+01	570	5.975E+01
407	3.053E-01	448	6.171E+01	489	3.590E+01	530	5.339E+01	571	5.989E+01
408	3.034E-01	449	6.803E+01	490	3.619E+01	531	5.373E+01	572	6.018E+01
409	3.491E-01	450	7.381E+01	491	3.659E+01	532	5.370E+01	573	6.028E+01
410	3.678E-01	451	7.926E+01	492	3.713E+01	533	5.402E+01	574	6.054E+01
411	4.926E-01	452	8.239E+01	493	3.733E+01	534	5.408E+01	575	6.081E+01
412	5.153E-01	453	8.553E+01	494	3.810E+01	535	5.450E+01	576	6.096E+01
413	6.398E-01	454	8.666E+01	495	3.860E+01	536	5.468E+01	577	6.111E+01
414	6.163E-01	455	8.622E+01	496	3.925E+01	537	5.468E+01	578	6.142E+01
415	7.662E-01	456	8.403E+01	497	3.998E+01	538	5.461E+01	579	6.152E+01
416	8.808E-01	457	8.082E+01	498	4.047E+01	539	5.511E+01	580	6.196E+01
417	9.779E-01	458	7.751E+01	499	4.125E+01	540	5.545E+01	581	6.200E+01
418	1.111E+00	459	7.326E+01	500	4.169E+01	541	5.526E+01	582	6.230E+01
419	1.302E+00	460	6.938E+01	501	4.239E+01	542	5.585E+01	583	6.275E+01
420	1.524E+00	461	6.602E+01	502	4.308E+01	543	5.569E+01	584	6.286E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	6.324E+01	626	6.889E+01	667	4.302E+01	708	1.641E+01	749	4.958E+00
586	6.347E+01	627	6.879E+01	668	4.251E+01	709	1.587E+01	750	4.863E+00
587	6.380E+01	628	6.849E+01	669	4.127E+01	710	1.541E+01	751	4.571E+00
588	6.432E+01	629	6.794E+01	670	4.076E+01	711	1.519E+01	752	4.488E+00
589	6.436E+01	630	6.781E+01	671	3.990E+01	712	1.482E+01	753	4.351E+00
590	6.442E+01	631	6.701E+01	672	3.930E+01	713	1.428E+01	754	4.246E+00
591	6.528E+01	632	6.654E+01	673	3.845E+01	714	1.397E+01	755	4.145E+00
592	6.531E+01	633	6.642E+01	674	3.762E+01	715	1.345E+01	756	4.015E+00
593	6.546E+01	634	6.604E+01	675	3.671E+01	716	1.324E+01	757	3.912E+00
594	6.560E+01	635	6.570E+01	676	3.620E+01	717	1.274E+01	758	3.787E+00
595	6.597E+01	636	6.518E+01	677	3.533E+01	718	1.254E+01	759	3.536E+00
596	6.664E+01	637	6.474E+01	678	3.460E+01	719	1.220E+01	760	3.527E+00
597	6.667E+01	638	6.408E+01	679	3.405E+01	720	1.178E+01	761	3.407E+00
598	6.689E+01	639	6.359E+01	680	3.332E+01	721	1.146E+01	762	3.295E+00
599	6.716E+01	640	6.281E+01	681	3.255E+01	722	1.123E+01	763	3.153E+00
600	6.738E+01	641	6.262E+01	682	3.166E+01	723	1.082E+01	764	3.132E+00
601	6.780E+01	642	6.175E+01	683	3.099E+01	724	1.044E+01	765	2.975E+00
602	6.832E+01	643	6.125E+01	684	3.034E+01	725	1.007E+01	766	2.889E+00
603	6.830E+01	644	6.078E+01	685	2.959E+01	726	9.779E+00	767	2.932E+00
604	6.837E+01	645	5.986E+01	686	2.886E+01	727	9.618E+00	768	2.676E+00
605	6.877E+01	646	5.926E+01	687	2.840E+01	728	9.362E+00	769	2.732E+00
606	6.914E+01	647	5.882E+01	688	2.760E+01	729	8.999E+00	770	2.668E+00
607	6.981E+01	648	5.788E+01	689	2.699E+01	730	8.755E+00	771	2.484E+00
608	6.923E+01	649	5.738E+01	690	2.643E+01	731	8.629E+00	772	2.489E+00
609	6.958E+01	650	5.635E+01	691	2.574E+01	732	8.289E+00	773	2.372E+00
610	6.973E+01	651	5.550E+01	692	2.515E+01	733	7.896E+00	774	2.227E+00
611	7.007E+01	652	5.495E+01	693	2.434E+01	734	7.835E+00	775	2.178E+00
612	7.000E+01	653	5.418E+01	694	2.384E+01	735	7.535E+00	776	2.168E+00
613	7.018E+01	654	5.349E+01	695	2.329E+01	736	7.298E+00	777	2.111E+00
614	7.014E+01	655	5.267E+01	696	2.282E+01	737	7.178E+00	778	2.081E+00
615	6.996E+01	656	5.181E+01	697	2.201E+01	738	6.879E+00	779	1.980E+00
616	7.021E+01	657	5.105E+01	698	2.166E+01	739	6.653E+00	780	1.853E+00
617	7.009E+01	658	5.024E+01	699	2.080E+01	740	6.540E+00		
618	7.008E+01	659	4.955E+01	700	2.043E+01	741	6.244E+00		
619	7.018E+01	660	4.876E+01	701	1.983E+01	742	6.090E+00		
620	7.009E+01	661	4.805E+01	702	1.929E+01	743	5.877E+00		
621	6.972E+01	662	4.738E+01	703	1.875E+01	744	5.739E+00		
622	6.958E+01	663	4.665E+01	704	1.837E+01	745	5.525E+00		
623	6.973E+01	664	4.558E+01	705	1.785E+01	746	5.375E+00		
624	6.924E+01	665	4.466E+01	706	1.728E+01	747	5.308E+00		
625	6.934E+01	666	4.398E+01	707	1.688E+01	748	5.057E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



[Integrating Sphere System]

Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

The diameter of the sphere: **1.5M**

The coating reflectance of sphere: **98%**

The Stabilization time: **30 minutes**

Total operating time for integrating sphere test: **1.0 hour**

Test orientation: **Downward**

Test CCT: **5000K**

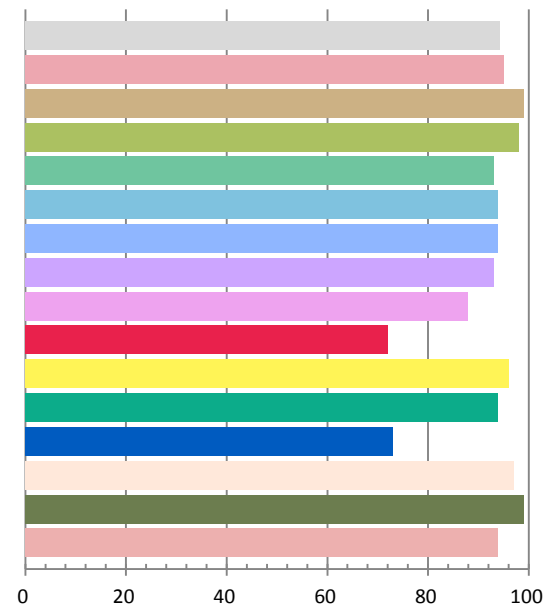
Photometric and Electrical Measurement Result

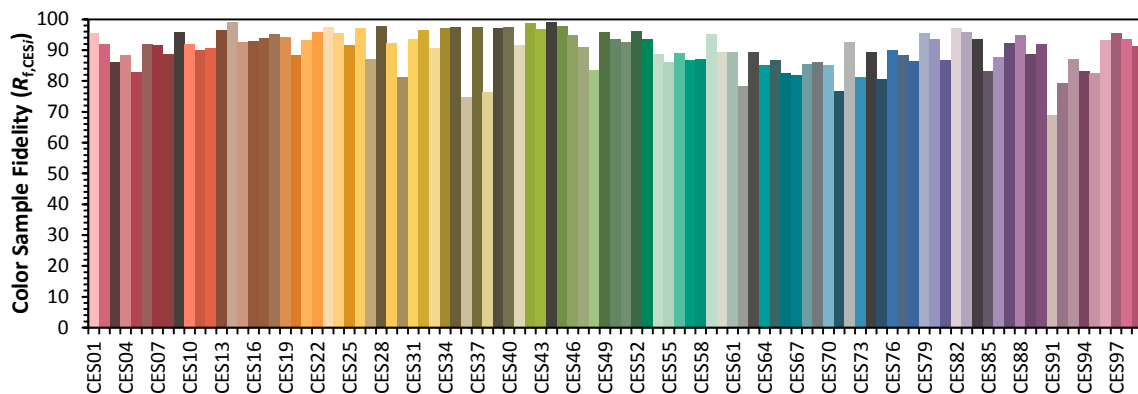
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.3213	38.1	0.9884	4128.6	108.37

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
14.237	5030	0.00073	0.3444	0.3525	0.2106	0.4850

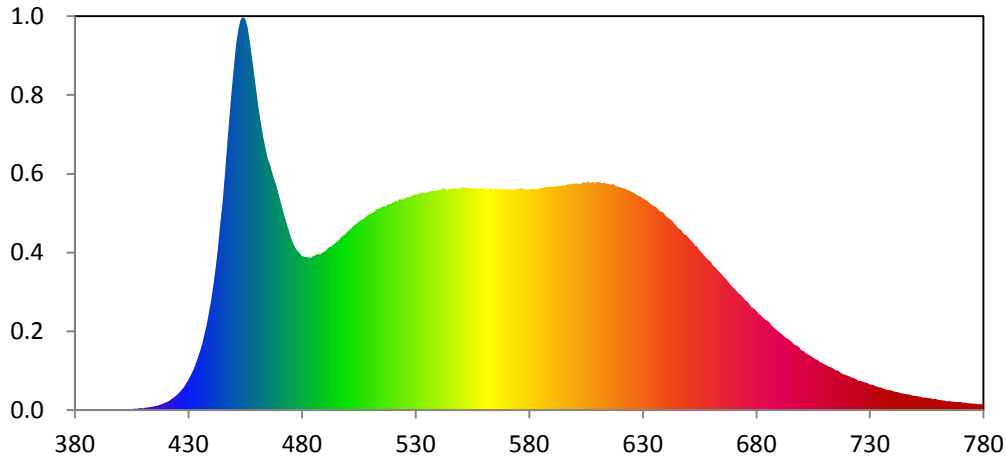
Color Rendering Index

Ra			
94.3			
R1	R2	R3	R4
95	99	98	93
R5	R6	R7	R8
94	94	93	88
R9	R10	R11	R12
72	96	94	73
R13	R14	R15	
97	99	94	





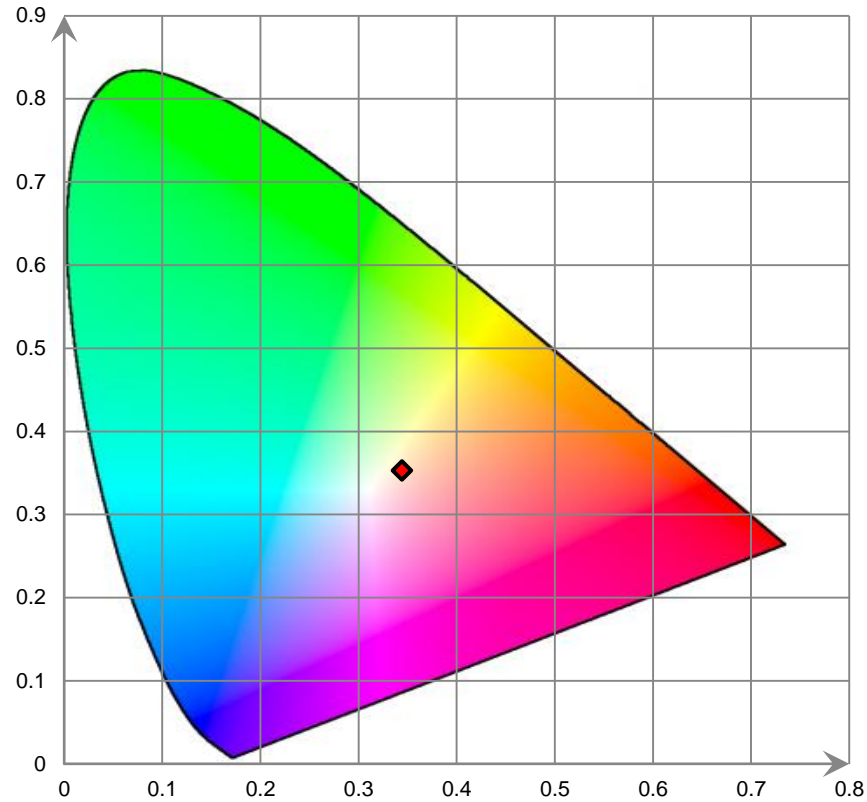
Relative Spectral Power Distribution



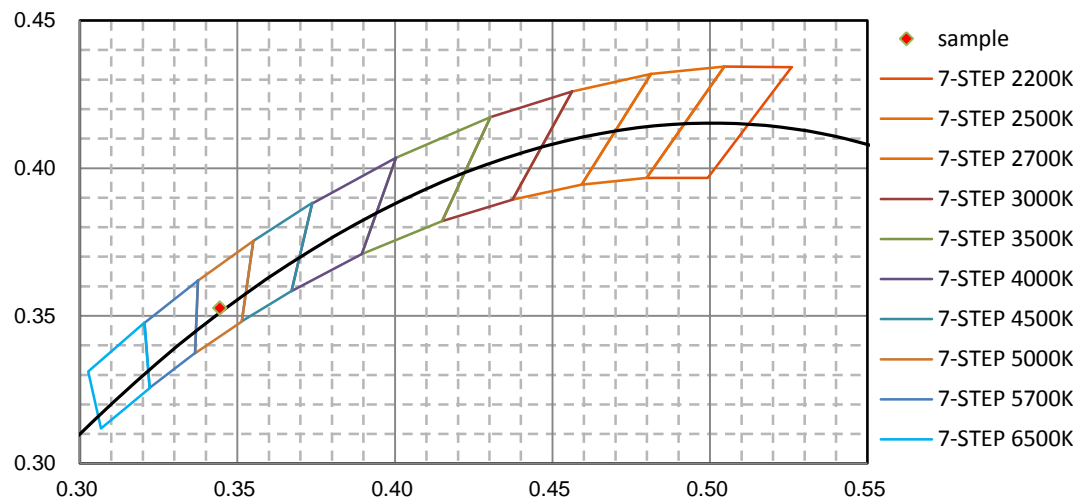
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	2.756E-01	421	2.228E+00	462	7.564E+01	503	4.877E+01	544	5.818E+01
381	2.236E-01	422	2.577E+00	463	7.207E+01	504	4.923E+01	545	5.845E+01
382	2.283E-01	423	3.038E+00	464	6.908E+01	505	4.976E+01	546	5.850E+01
383	2.589E-01	424	3.492E+00	465	6.640E+01	506	5.015E+01	547	5.859E+01
384	2.107E-01	425	4.053E+00	466	6.461E+01	507	5.052E+01	548	5.844E+01
385	2.318E-01	426	4.636E+00	467	6.231E+01	508	5.101E+01	549	5.850E+01
386	1.882E-01	427	5.319E+00	468	6.061E+01	509	5.156E+01	550	5.880E+01
387	1.907E-01	428	5.970E+00	469	5.875E+01	510	5.196E+01	551	5.876E+01
388	1.733E-01	429	7.034E+00	470	5.635E+01	511	5.213E+01	552	5.883E+01
389	2.325E-01	430	7.928E+00	471	5.426E+01	512	5.258E+01	553	5.876E+01
390	7.870E-02	431	9.087E+00	472	5.182E+01	513	5.312E+01	554	5.862E+01
391	2.232E-01	432	1.032E+01	473	4.984E+01	514	5.326E+01	555	5.847E+01
392	1.818E-01	433	1.174E+01	474	4.787E+01	515	5.364E+01	556	5.860E+01
393	1.035E-01	434	1.344E+01	475	4.601E+01	516	5.381E+01	557	5.871E+01
394	1.685E-01	435	1.547E+01	476	4.404E+01	517	5.389E+01	558	5.841E+01
395	2.130E-01	436	1.740E+01	477	4.288E+01	518	5.450E+01	559	5.873E+01
396	2.271E-01	437	1.996E+01	478	4.203E+01	519	5.447E+01	560	5.851E+01
397	2.007E-01	438	2.239E+01	479	4.147E+01	520	5.483E+01	561	5.841E+01
398	2.453E-01	439	2.571E+01	480	4.070E+01	521	5.524E+01	562	5.833E+01
399	1.842E-01	440	2.903E+01	481	4.049E+01	522	5.508E+01	563	5.875E+01
400	2.132E-01	441	3.295E+01	482	4.043E+01	523	5.579E+01	564	5.830E+01
401	2.233E-01	442	3.745E+01	483	4.023E+01	524	5.556E+01	565	5.840E+01
402	2.749E-01	443	4.252E+01	484	4.026E+01	525	5.581E+01	566	5.857E+01
403	2.654E-01	444	4.879E+01	485	4.068E+01	526	5.619E+01	567	5.844E+01
404	2.411E-01	445	5.510E+01	486	4.091E+01	527	5.625E+01	568	5.833E+01
405	2.714E-01	446	6.223E+01	487	4.126E+01	528	5.654E+01	569	5.844E+01
406	3.022E-01	447	6.990E+01	488	4.115E+01	529	5.684E+01	570	5.817E+01
407	3.544E-01	448	7.733E+01	489	4.161E+01	530	5.702E+01	571	5.845E+01
408	4.007E-01	449	8.437E+01	490	4.188E+01	531	5.698E+01	572	5.822E+01
409	4.649E-01	450	9.059E+01	491	4.235E+01	532	5.742E+01	573	5.832E+01
410	4.399E-01	451	9.668E+01	492	4.305E+01	533	5.745E+01	574	5.826E+01
411	5.838E-01	452	1.006E+02	493	4.324E+01	534	5.735E+01	575	5.844E+01
412	6.508E-01	453	1.031E+02	494	4.382E+01	535	5.745E+01	576	5.854E+01
413	7.208E-01	454	1.039E+02	495	4.429E+01	536	5.767E+01	577	5.859E+01
414	8.334E-01	455	1.034E+02	496	4.487E+01	537	5.791E+01	578	5.841E+01
415	9.947E-01	456	1.012E+02	497	4.551E+01	538	5.783E+01	579	5.824E+01
416	1.109E+00	457	9.741E+01	498	4.603E+01	539	5.802E+01	580	5.838E+01
417	1.282E+00	458	9.298E+01	499	4.648E+01	540	5.807E+01	581	5.842E+01
418	1.510E+00	459	8.841E+01	500	4.712E+01	541	5.813E+01	582	5.856E+01
419	1.694E+00	460	8.383E+01	501	4.762E+01	542	5.869E+01	583	5.829E+01
420	2.013E+00	461	7.945E+01	502	4.823E+01	543	5.843E+01	584	5.838E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	5.880E+01	626	5.745E+01	667	3.440E+01	708	1.264E+01	749	3.835E+00
586	5.859E+01	627	5.707E+01	668	3.366E+01	709	1.241E+01	750	3.702E+00
587	5.899E+01	628	5.671E+01	669	3.288E+01	710	1.206E+01	751	3.597E+00
588	5.885E+01	629	5.640E+01	670	3.222E+01	711	1.174E+01	752	3.508E+00
589	5.905E+01	630	5.596E+01	671	3.163E+01	712	1.139E+01	753	3.275E+00
590	5.897E+01	631	5.569E+01	672	3.089E+01	713	1.128E+01	754	3.307E+00
591	5.917E+01	632	5.532E+01	673	3.050E+01	714	1.090E+01	755	3.209E+00
592	5.911E+01	633	5.472E+01	674	2.989E+01	715	1.047E+01	756	3.097E+00
593	5.923E+01	634	5.420E+01	675	2.907E+01	716	1.041E+01	757	3.064E+00
594	5.925E+01	635	5.386E+01	676	2.866E+01	717	9.903E+00	758	2.855E+00
595	5.940E+01	636	5.366E+01	677	2.803E+01	718	9.592E+00	759	2.937E+00
596	5.935E+01	637	5.290E+01	678	2.719E+01	719	9.338E+00	760	2.721E+00
597	5.966E+01	638	5.247E+01	679	2.682E+01	720	9.114E+00	761	2.651E+00
598	5.965E+01	639	5.216E+01	680	2.619E+01	721	8.860E+00	762	2.558E+00
599	5.985E+01	640	5.134E+01	681	2.549E+01	722	8.567E+00	763	2.457E+00
600	5.981E+01	641	5.083E+01	682	2.502E+01	723	8.442E+00	764	2.270E+00
601	5.986E+01	642	5.042E+01	683	2.439E+01	724	8.156E+00	765	2.386E+00
602	5.973E+01	643	5.000E+01	684	2.388E+01	725	7.663E+00	766	2.230E+00
603	5.993E+01	644	4.923E+01	685	2.350E+01	726	7.649E+00	767	2.217E+00
604	6.024E+01	645	4.848E+01	686	2.297E+01	727	7.434E+00	768	2.107E+00
605	6.006E+01	646	4.789E+01	687	2.219E+01	728	7.260E+00	769	2.114E+00
606	6.041E+01	647	4.756E+01	688	2.175E+01	729	7.093E+00	770	2.069E+00
607	6.007E+01	648	4.662E+01	689	2.112E+01	730	6.768E+00	771	1.964E+00
608	6.025E+01	649	4.639E+01	690	2.066E+01	731	6.713E+00	772	1.902E+00
609	6.007E+01	650	4.567E+01	691	2.015E+01	732	6.391E+00	773	1.775E+00
610	6.035E+01	651	4.488E+01	692	1.963E+01	733	6.148E+00	774	1.745E+00
611	6.022E+01	652	4.438E+01	693	1.899E+01	734	6.041E+00	775	1.708E+00
612	5.993E+01	653	4.350E+01	694	1.874E+01	735	5.949E+00	776	1.662E+00
613	6.005E+01	654	4.316E+01	695	1.826E+01	736	5.651E+00	777	1.622E+00
614	5.980E+01	655	4.224E+01	696	1.779E+01	737	5.445E+00	778	1.527E+00
615	5.985E+01	656	4.164E+01	697	1.716E+01	738	5.267E+00	779	1.506E+00
616	5.957E+01	657	4.092E+01	698	1.697E+01	739	5.200E+00	780	1.501E+00
617	5.976E+01	658	4.017E+01	699	1.645E+01	740	5.040E+00		
618	5.935E+01	659	3.966E+01	700	1.576E+01	741	4.856E+00		
619	5.907E+01	660	3.906E+01	701	1.551E+01	742	4.704E+00		
620	5.888E+01	661	3.807E+01	702	1.494E+01	743	4.555E+00		
621	5.870E+01	662	3.773E+01	703	1.457E+01	744	4.357E+00		
622	5.851E+01	663	3.692E+01	704	1.427E+01	745	4.303E+00		
623	5.817E+01	664	3.638E+01	705	1.391E+01	746	4.140E+00		
624	5.800E+01	665	3.574E+01	706	1.345E+01	747	4.105E+00		
625	5.766E+01	666	3.499E+01	707	1.325E+01	748	3.959E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles

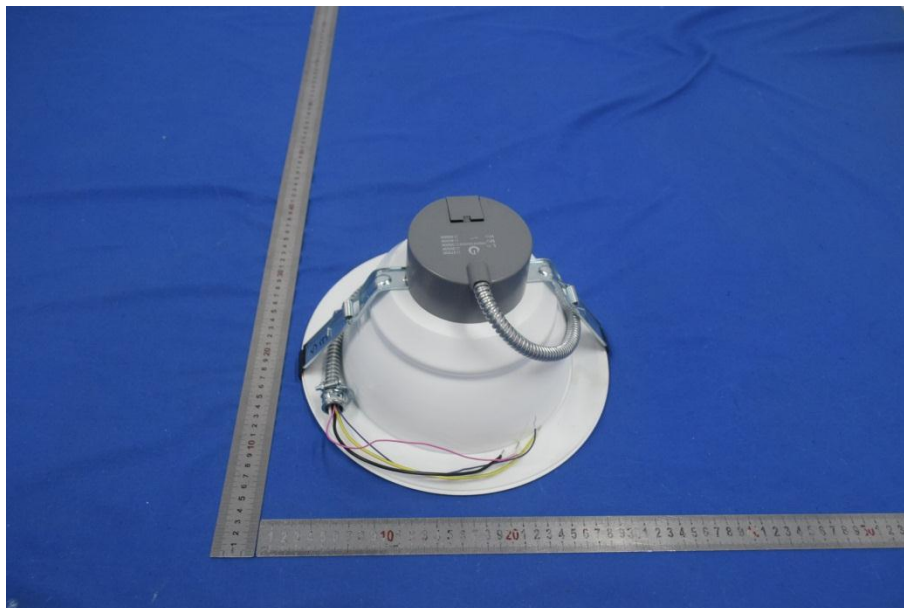
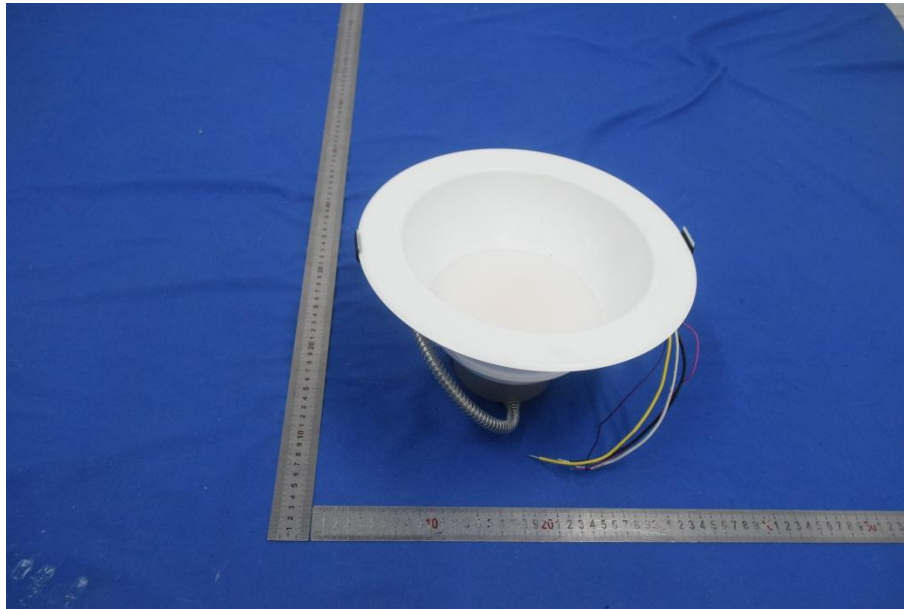


[Additional Test]

Test CCT:2700K

Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Total Harmonic Distortion:	120.1	60	11.90%

6. Product Photo



Directions

1. The information marked "superscript #" is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. This report includes some test methods are not in NVLAP accreditation scope marked *.
3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor $K=2$ with the 95% confidence interval.
6. This report cannot be reproduced except in full, without prior written approval of the Company.
7. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

*****END OF REPORT*****