

# 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: SLFTG3/6/9CCT5S/DUALDIM**

<b>Report Type:</b>	Electrical and Photometric tests including: Luminous Flux, Power Factor, Chromaticity, Luminous Intensity Distribution, THD
<b>Reviewed By:</b>	Ezer Pan <i>Ezer Pan</i>
<b>Report Number:</b>	2502T63509E-EE
<b>Test Date:</b>	2025-06-17
<b>Report Date:</b>	2025-06-25
<b>Approved by:</b>	Blake Zhang / EE Engineer
<b>Prepared By:</b>	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
<b>Test Location 1:</b>	Test facility was located at No.12, Pulong East 1 <sup>st</sup> Road, Tangxia Town, Dongguan, Guangdong, China.
<b>Test Location 2:</b>	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<sup>#</sup>

### General Information:

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

Model Tested: SLFTG3/6/9CCT5S/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: 10W/13.5W/17W  
Nominal CCT: 2700K/3000K/3500K/4000K/5000K  
Nominal Lumen Output: 2700K:1500lm  
3000K:1580lm  
3500K:1700lm  
4000K:1700lm  
5000K:1700lm

## 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.

$4\pi$  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 ( $\gamma$ ) 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 ( $\gamma$ ) 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**

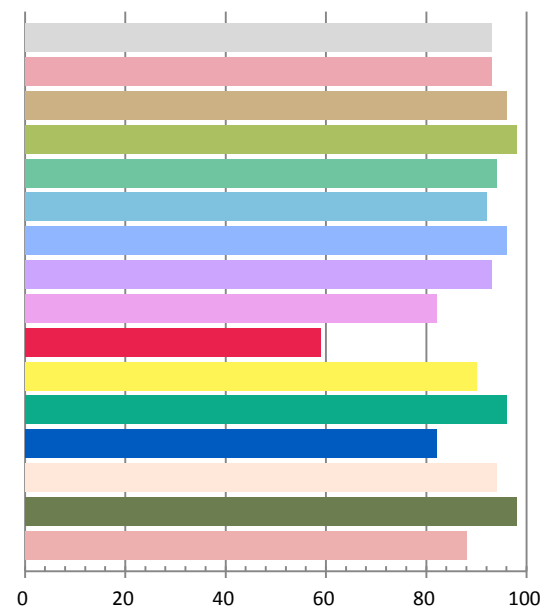
### Photometric and Electrical Measurement Result

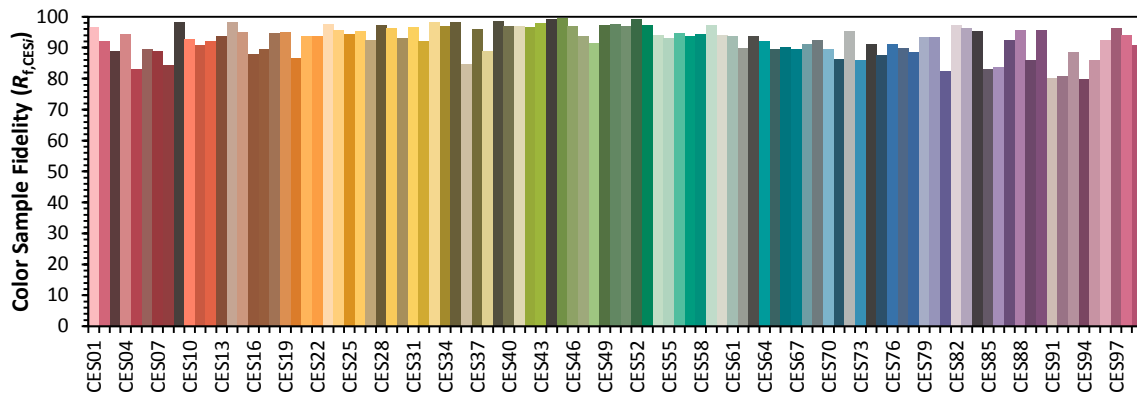
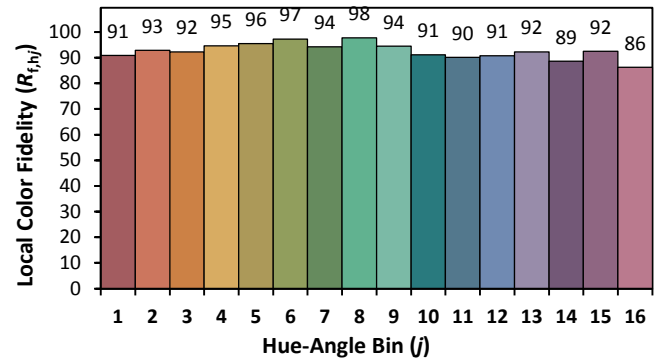
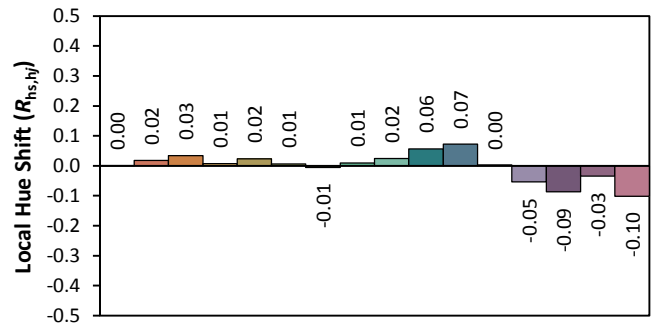
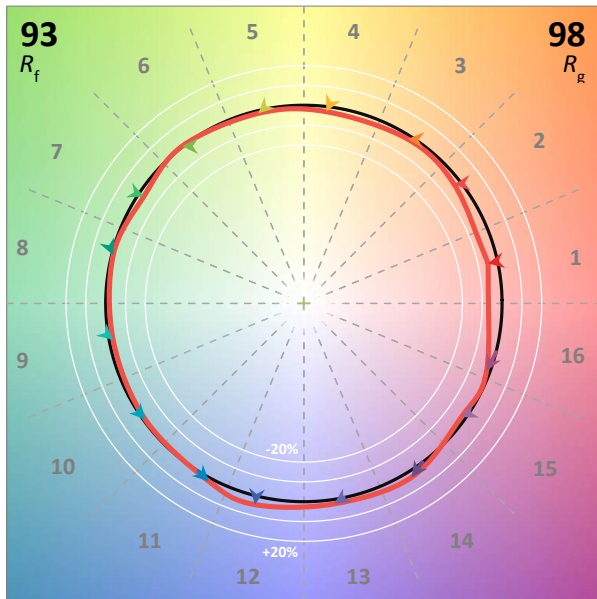
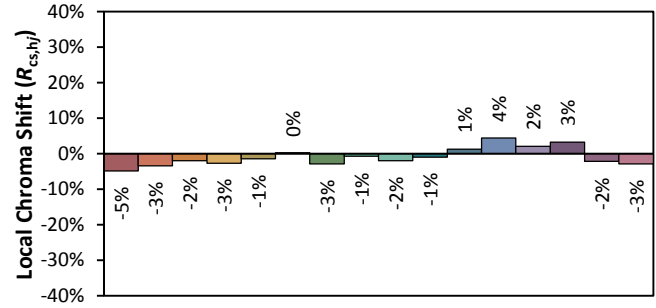
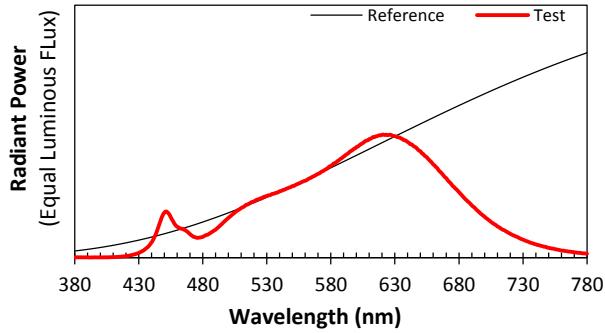
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.1	60	0.1424	16.78	0.9812	1742	103.82

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
6.0698	2761	0.00216	0.4586	0.4162	0.2592	0.5293

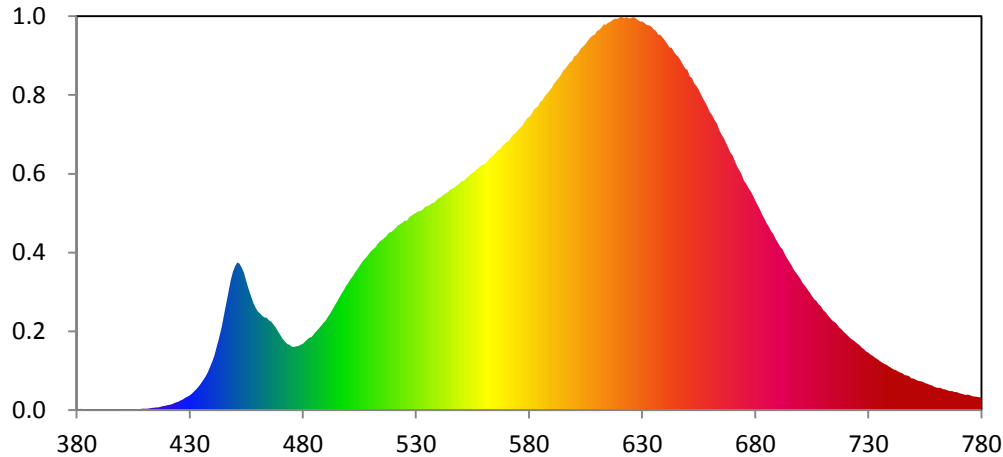
### Color Rendering Index

<b>Ra</b>			
<b>93.0</b>			
<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
93	96	98	94
<b>R5</b>	<b>R6</b>	<b>R7</b>	<b>R8</b>
92	96	93	82
<b>R9</b>	<b>R10</b>	<b>R11</b>	<b>R12</b>
59	90	96	82
<b>R13</b>	<b>R14</b>	<b>R15</b>	
94	98	88	





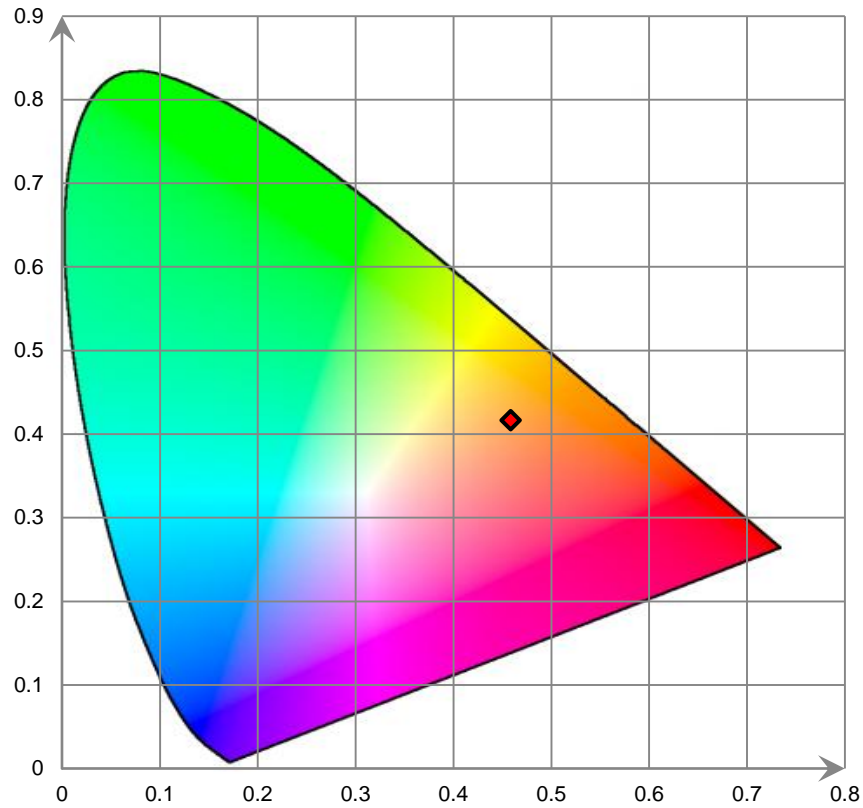
### Relative Spectral Power Distribution



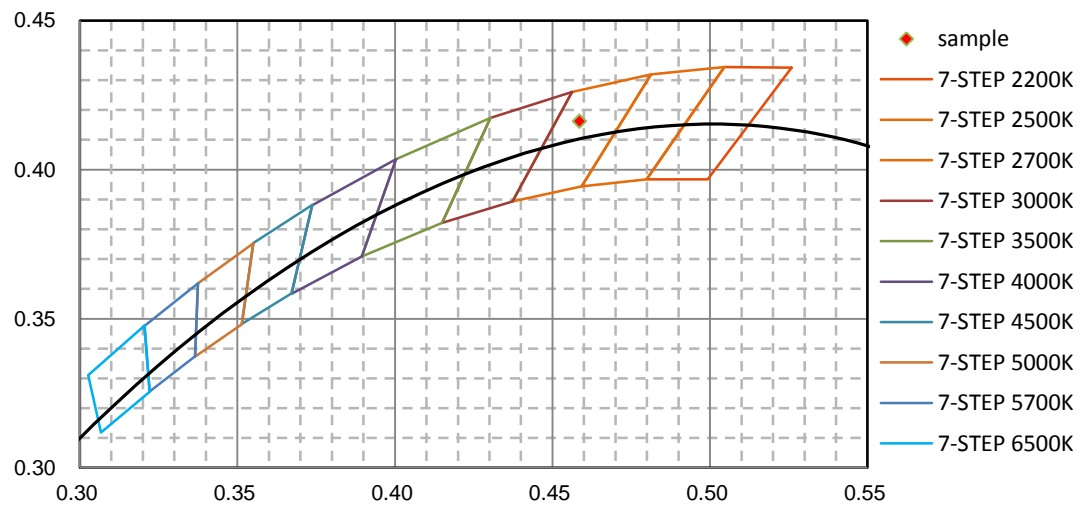
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	3.029E-02	421	4.827E-01	462	8.909E+00	503	1.302E+01	544	2.060E+01
381	3.689E-02	422	5.479E-01	463	8.754E+00	504	1.332E+01	545	2.082E+01
382	1.134E-01	423	6.266E-01	464	8.725E+00	505	1.365E+01	546	2.098E+01
383	3.659E-02	424	7.230E-01	465	8.489E+00	506	1.396E+01	547	2.111E+01
384	7.742E-02	425	7.920E-01	466	8.364E+00	507	1.426E+01	548	2.129E+01
385	6.157E-02	426	8.987E-01	467	8.087E+00	508	1.446E+01	549	2.141E+01
386	6.411E-02	427	9.978E-01	468	7.816E+00	509	1.474E+01	550	2.167E+01
387	6.147E-02	428	1.135E+00	469	7.444E+00	510	1.500E+01	551	2.167E+01
388	5.569E-02	429	1.266E+00	470	7.113E+00	511	1.522E+01	552	2.191E+01
389	5.578E-02	430	1.395E+00	471	6.760E+00	512	1.539E+01	553	2.211E+01
390	6.927E-02	431	1.583E+00	472	6.508E+00	513	1.572E+01	554	2.230E+01
391	3.786E-02	432	1.792E+00	473	6.235E+00	514	1.599E+01	555	2.245E+01
392	1.083E-02	433	2.002E+00	474	6.177E+00	515	1.609E+01	556	2.261E+01
393	4.391E-02	434	2.246E+00	475	6.010E+00	516	1.631E+01	557	2.284E+01
394	4.018E-02	435	2.537E+00	476	5.970E+00	517	1.651E+01	558	2.299E+01
395	5.754E-02	436	2.861E+00	477	6.046E+00	518	1.679E+01	559	2.318E+01
396	7.366E-02	437	3.175E+00	478	6.066E+00	519	1.685E+01	560	2.328E+01
397	4.762E-02	438	3.580E+00	479	6.181E+00	520	1.704E+01	561	2.344E+01
398	5.476E-02	439	4.092E+00	480	6.261E+00	521	1.724E+01	562	2.371E+01
399	4.602E-02	440	4.607E+00	481	6.500E+00	522	1.750E+01	563	2.396E+01
400	7.420E-02	441	5.219E+00	482	6.695E+00	523	1.760E+01	564	2.410E+01
401	4.146E-02	442	6.036E+00	483	6.852E+00	524	1.773E+01	565	2.432E+01
402	7.659E-02	443	6.807E+00	484	6.955E+00	525	1.794E+01	566	2.455E+01
403	5.445E-02	444	7.804E+00	485	7.225E+00	526	1.791E+01	567	2.469E+01
404	7.866E-02	445	8.934E+00	486	7.470E+00	527	1.825E+01	568	2.495E+01
405	6.298E-02	446	1.004E+01	487	7.715E+00	528	1.841E+01	569	2.516E+01
406	7.528E-02	447	1.113E+01	488	7.968E+00	529	1.855E+01	570	2.537E+01
407	8.466E-02	448	1.221E+01	489	8.241E+00	530	1.867E+01	571	2.550E+01
408	9.680E-02	449	1.306E+01	490	8.446E+00	531	1.884E+01	572	2.581E+01
409	1.177E-01	450	1.361E+01	491	8.814E+00	532	1.887E+01	573	2.608E+01
410	1.258E-01	451	1.396E+01	492	9.139E+00	533	1.901E+01	574	2.623E+01
411	1.304E-01	452	1.386E+01	493	9.499E+00	534	1.925E+01	575	2.649E+01
412	1.569E-01	453	1.347E+01	494	9.870E+00	535	1.932E+01	576	2.675E+01
413	1.702E-01	454	1.297E+01	495	1.022E+01	536	1.942E+01	577	2.694E+01
414	1.946E-01	455	1.221E+01	496	1.060E+01	537	1.959E+01	578	2.731E+01
415	2.288E-01	456	1.149E+01	497	1.098E+01	538	1.965E+01	579	2.761E+01
416	2.482E-01	457	1.086E+01	498	1.132E+01	539	1.985E+01	580	2.776E+01
417	3.087E-01	458	1.015E+01	499	1.169E+01	540	2.008E+01	581	2.802E+01
418	3.459E-01	459	9.694E+00	500	1.200E+01	541	2.016E+01	582	2.842E+01
419	3.829E-01	460	9.326E+00	501	1.235E+01	542	2.033E+01	583	2.863E+01
420	4.486E-01	461	9.169E+00	502	1.268E+01	543	2.051E+01	584	2.877E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.919E+01	626	3.722E+01	667	2.533E+01	708	9.988E+00	749	3.011E+00
586	2.939E+01	627	3.715E+01	668	2.485E+01	709	9.818E+00	750	2.960E+00
587	2.974E+01	628	3.696E+01	669	2.439E+01	710	9.444E+00	751	2.855E+00
588	3.000E+01	629	3.682E+01	670	2.409E+01	711	9.260E+00	752	2.769E+00
589	3.027E+01	630	3.679E+01	671	2.356E+01	712	8.995E+00	753	2.718E+00
590	3.057E+01	631	3.668E+01	672	2.308E+01	713	8.737E+00	754	2.676E+00
591	3.091E+01	632	3.647E+01	673	2.272E+01	714	8.474E+00	755	2.531E+00
592	3.120E+01	633	3.643E+01	674	2.231E+01	715	8.335E+00	756	2.478E+00
593	3.144E+01	634	3.631E+01	675	2.174E+01	716	8.143E+00	757	2.387E+00
594	3.175E+01	635	3.605E+01	676	2.145E+01	717	7.859E+00	758	2.322E+00
595	3.213E+01	636	3.592E+01	677	2.101E+01	718	7.675E+00	759	2.220E+00
596	3.234E+01	637	3.557E+01	678	2.067E+01	719	7.420E+00	760	2.135E+00
597	3.261E+01	638	3.553E+01	679	2.028E+01	720	7.221E+00	761	2.086E+00
598	3.294E+01	639	3.529E+01	680	1.984E+01	721	7.003E+00	762	2.082E+00
599	3.308E+01	640	3.500E+01	681	1.940E+01	722	6.801E+00	763	1.954E+00
600	3.349E+01	641	3.473E+01	682	1.900E+01	723	6.647E+00	764	1.940E+00
601	3.363E+01	642	3.435E+01	683	1.853E+01	724	6.475E+00	765	1.844E+00
602	3.394E+01	643	3.432E+01	684	1.812E+01	725	6.303E+00	766	1.796E+00
603	3.425E+01	644	3.397E+01	685	1.769E+01	726	6.147E+00	767	1.798E+00
604	3.448E+01	645	3.365E+01	686	1.737E+01	727	5.922E+00	768	1.686E+00
605	3.471E+01	646	3.348E+01	687	1.696E+01	728	5.747E+00	769	1.685E+00
606	3.503E+01	647	3.315E+01	688	1.667E+01	729	5.557E+00	770	1.593E+00
607	3.529E+01	648	3.270E+01	689	1.623E+01	730	5.433E+00	771	1.552E+00
608	3.549E+01	649	3.236E+01	690	1.585E+01	731	5.255E+00	772	1.491E+00
609	3.556E+01	650	3.220E+01	691	1.544E+01	732	5.113E+00	773	1.412E+00
610	3.589E+01	651	3.160E+01	692	1.521E+01	733	4.944E+00	774	1.448E+00
611	3.601E+01	652	3.144E+01	693	1.477E+01	734	4.815E+00	775	1.386E+00
612	3.624E+01	653	3.092E+01	694	1.437E+01	735	4.639E+00	776	1.310E+00
613	3.654E+01	654	3.067E+01	695	1.404E+01	736	4.491E+00	777	1.276E+00
614	3.650E+01	655	3.034E+01	696	1.370E+01	737	4.371E+00	778	1.252E+00
615	3.670E+01	656	2.990E+01	697	1.329E+01	738	4.260E+00	779	1.217E+00
616	3.678E+01	657	2.947E+01	698	1.301E+01	739	4.114E+00	780	1.160E+00
617	3.695E+01	658	2.912E+01	699	1.269E+01	740	3.996E+00		
618	3.707E+01	659	2.870E+01	700	1.239E+01	741	3.859E+00		
619	3.704E+01	660	2.819E+01	701	1.202E+01	742	3.776E+00		
620	3.721E+01	661	2.792E+01	702	1.176E+01	743	3.674E+00		
621	3.725E+01	662	2.744E+01	703	1.145E+01	744	3.554E+00		
622	3.712E+01	663	2.713E+01	704	1.114E+01	745	3.487E+00		
623	3.724E+01	664	2.653E+01	705	1.084E+01	746	3.303E+00		
624	3.711E+01	665	2.611E+01	706	1.050E+01	747	3.284E+00		
625	3.712E+01	666	2.576E+01	707	1.031E+01	748	3.198E+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**

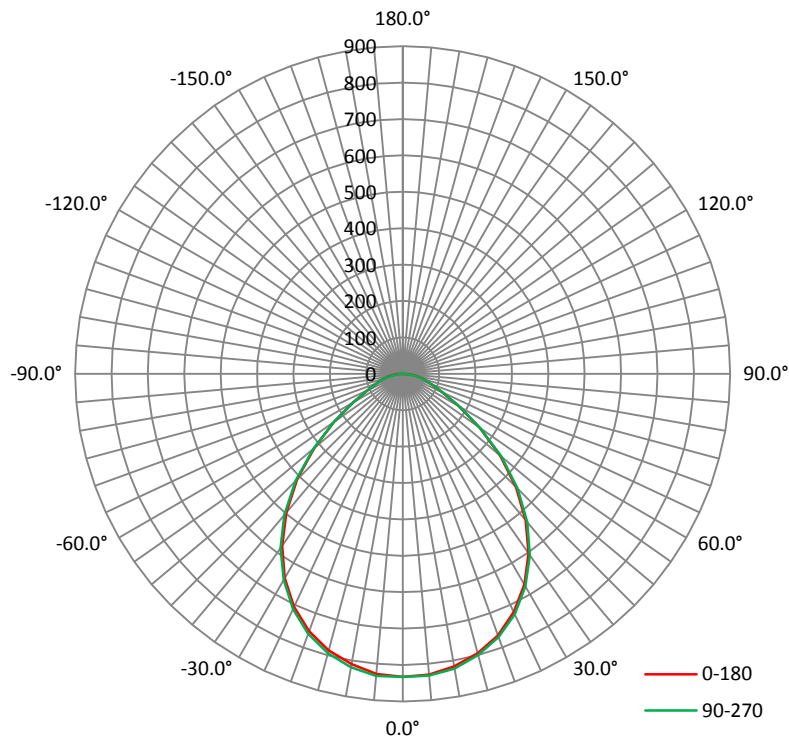
## Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.02	60	0.1426	16.790	0.9810

## Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	$I_{max}$ (cd)	S/MH (C0/180)	S/MH (C90/270)
1744.87	103.92	840.7	1.20	1.21

## Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% $I_{max}$ ):	90.9	90.6	91.4	90.9	91.0
Field Angle (10% $I_{max}$ ):	138.4	138.3	138.2	138.4	138.3

**Luminous Intensity (cd) Distribution Data**

$\begin{matrix} \text{C} \\ \backslash \\ \text{Y} \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	833	833	833	833	833	833	833	833
1°	833	838	838	837	836	836	835	834
2°	832	830	832	839	837	836	836	835
3°	831	829	828	837	837	835	834	833
4°	829	827	826	833	836	834	833	832
5°	828	826	823	829	834	832	831	829
6°	826	823	821	825	831	829	828	827
7°	823	820	818	821	828	827	826	825
8°	817	816	815	817	825	823	823	823
9°	814	813	811	813	822	820	820	819
10°	810	809	806	809	819	817	817	816
11°	807	805	802	804	814	813	813	812
12°	802	800	798	800	809	808	808	809
13°	796	795	793	794	804	803	803	803
14°	792	790	788	789	799	797	797	798
15°	786	784	781	783	794	792	792	792
16°	780	778	775	777	787	786	787	787
17°	775	772	769	770	782	780	781	781
18°	768	764	762	763	775	774	775	775
19°	760	758	754	756	768	767	768	768
20°	752	750	747	748	760	759	760	761
21°	744	741	739	740	752	751	753	755
22°	736	733	730	731	743	743	745	746
23°	727	724	720	721	734	733	736	737
24°	716	714	710	711	724	723	726	728
25°	707	702	699	700	713	712	715	718
26°	695	691	688	689	702	702	705	708
27°	684	680	676	678	692	691	695	697
28°	672	669	664	666	679	679	683	686
29°	660	656	652	653	667	667	671	674
30°	648	643	639	641	654	654	658	661
31°	635	629	626	627	641	641	646	649
32°	620	617	613	614	627	628	633	636
33°	607	602	598	600	614	614	619	623
34°	592	588	583	586	599	600	606	609
35°	577	574	569	571	584	585	591	594
36°	563	559	554	556	569	570	576	580
37°	548	543	538	540	554	555	561	565
38°	531	527	523	524	538	539	546	550
39°	514	510	505	507	521	523	530	534
40°	498	493	488	491	505	506	514	518
41°	481	477	471	474	487	490	497	502
42°	464	459	454	456	470	472	480	485
43°	445	441	436	438	452	454	462	468
44°	427	423	418	420	434	436	445	450
45°	409	404	399	402	416	418	426	432
46°	391	386	382	384	397	399	408	414
47°	372	368	363	365	378	381	389	395
48°	354	349	345	346	359	362	370	377

## 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°	335	331	327	328	340	343	352	358
50°	317	313	308	310	321	324	333	340
51°	298	295	290	292	303	305	314	321
52°	281	277	272	273	284	287	296	302
53°	263	260	254	255	265	268	277	283
54°	246	243	237	238	248	250	258	265
55°	229	226	221	221	230	233	241	248
56°	213	210	205	205	213	216	224	230
57°	198	195	189	189	197	200	207	214
58°	183	180	174	175	183	184	191	197
59°	169	166	161	161	168	170	177	182
60°	157	153	149	148	155	156	163	168
61°	145	141	137	136	143	144	151	155
62°	134	130	126	125	130	133	140	143
63°	124	120	117	116	121	123	129	132
64°	115	112	109	108	113	114	118	122
65°	107	104	101	100	104	106	109	113
66°	100	97	95	93	97	99	101	105
67°	93	90	88	87	90	92	95	98
68°	87	84	82	81	84	86	88	91
69°	81	79	77	77	79	80	82	85
70°	76	75	73	73	75	76	77	80
71°	72	71	70	69	71	72	73	75
72°	69	67	66	65	67	68	70	72
73°	65	64	62	62	64	64	66	68
74°	61	60	58	58	60	60	62	64
75°	57	56	54	54	56	56	58	60
76°	53	52	50	50	52	52	54	56
77°	50	48	46	46	48	48	50	52
78°	46	44	42	42	44	44	46	48
79°	41	40	38	37	39	40	42	44
80°	37	36	34	33	35	35	38	40
81°	33	32	29	29	30	31	34	35
82°	29	28	25	24	26	26	29	31
83°	25	23	21	20	21	22	25	27
84°	21	19	16	15	16	17	20	22
85°	16	15	12	10	11	12	15	18
86°	12	10	8	6	6	7	10	13
87°	7	6	5	3	2	5	5	8
88°	4	3	2	1	1	2	1	5
89°	0	1	0	0	0	0	0	3
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	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°	1	1	0	0	0	0	0	0
131°	1	1	1	0	0	0	0	0
132°	1	1	1	1	0	0	0	0
133°	1	1	1	1	0	0	0	0
134°	1	1	1	1	0	0	0	0
135°	1	1	1	1	0	0	0	0
136°	1	1	1	1	0	0	0	0
137°	1	1	1	1	0	0	0	0
138°	1	1	1	1	0	0	0	0
139°	1	1	1	1	0	0	0	0
140°	1	1	1	1	0	0	0	0
141°	1	1	1	1	0	0	0	0
142°	1	1	1	1	0	0	0	0
143°	1	1	1	1	0	0	0	0
144°	1	1	1	1	0	0	0	0
145°	1	1	1	1	0	0	0	0
146°	1	1	1	1	0	0	0	0

### Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
147°	1	1	1	1	0	0	0	0
148°	1	1	1	1	0	0	0	0
149°	1	1	1	1	0	0	0	0
150°	1	1	1	1	0	0	0	0
151°	1	1	1	1	0	0	0	0
152°	1	1	1	1	0	0	0	0
153°	1	1	1	1	0	0	0	0
154°	1	1	1	1	0	0	0	0
155°	2	1	1	1	1	0	0	0
156°	2	2	1	1	1	1	1	1
157°	2	2	2	1	1	1	1	1
158°	2	2	2	1	1	1	1	1
159°	2	2	2	1	1	1	1	1
160°	2	2	2	1	1	1	1	1
161°	2	2	2	1	1	1	1	1
162°	2	2	2	1	1	1	1	1
163°	2	2	2	1	1	1	1	1
164°	2	2	2	1	1	1	1	1
165°	2	2	2	1	1	1	1	1
166°	2	2	2	1	1	1	1	1
167°	2	2	1	1	1	1	1	1
168°	2	1	1	1	1	1	1	1
169°	1	1	1	1	1	1	1	1
170°	1	1	1	1	1	1	1	1
171°	1	1	1	1	1	1	1	1
172°	1	1	1	1	1	1	1	1
173°	1	1	1	1	1	1	1	1
174°	1	1	1	1	1	1	1	1
175°	1	1	1	1	1	1	1	1
176°	1	1	1	1	1	1	1	1
177°	1	1	1	1	1	1	1	1
178°	1	1	1	1	1	1	1	1
179°	1	1	1	1	1	1	1	1
180°	1	1	1	1	1	1	1	1

**Luminous Intensity (cd) Distribution Data (cont.)**

C Y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	833	833	833	833	833	833	833	833
1°	834	834	833	833	832	832	836	838
2°	834	833	832	831	831	838	839	835
3°	832	832	832	831	832	841	836	834
4°	831	831	831	830	833	838	834	831
5°	829	829	829	828	832	836	832	830
6°	828	828	827	826	832	834	830	828
7°	827	826	825	824	830	832	828	825
8°	824	823	822	822	828	828	825	822
9°	819	819	820	819	825	825	821	819
10°	816	816	817	816	822	821	817	816
11°	813	813	814	812	818	817	813	811
12°	809	809	809	808	814	813	809	806
13°	804	805	805	804	810	809	804	801
14°	801	799	801	800	805	804	799	796
15°	795	795	796	795	800	798	794	790
16°	789	789	791	789	795	793	788	784
17°	784	783	784	784	789	787	782	778
18°	777	778	779	778	783	781	776	773
19°	772	772	773	771	776	774	770	766
20°	766	765	766	765	771	768	762	759
21°	757	758	759	758	763	760	754	750
22°	749	750	752	750	756	752	746	742
23°	741	742	743	743	747	744	738	734
24°	732	733	735	734	738	734	728	723
25°	722	724	726	725	728	725	718	712
26°	712	713	717	715	719	715	708	702
27°	702	702	706	705	708	705	697	691
28°	691	692	696	694	697	693	686	680
29°	679	681	684	683	686	682	674	668
30°	668	669	673	672	675	670	661	655
31°	655	657	661	660	662	657	649	642
32°	642	645	648	648	650	645	636	630
33°	629	631	636	635	636	631	622	616
34°	615	618	622	621	622	618	609	602
35°	602	604	608	608	609	604	595	587
36°	588	590	594	594	594	589	580	572
37°	573	576	580	580	579	575	565	557
38°	557	560	566	565	564	559	549	541
39°	541	545	550	550	549	543	533	525
40°	526	529	534	534	533	527	516	509
41°	510	513	518	518	516	511	500	492
42°	494	497	501	501	499	494	483	475
43°	475	479	485	484	482	477	465	457
44°	458	462	468	467	464	459	447	439
45°	441	444	450	449	447	441	429	421
46°	424	426	432	431	428	422	411	402
47°	405	409	414	413	410	404	392	384
48°	386	391	396	395	391	385	374	365

**Luminous Intensity (cd) Distribution Data (cont.)**

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
49°	368	372	377	376	372	366	355	346
50°	349	353	359	358	354	348	336	327
51°	331	335	340	339	335	329	317	309
52°	313	317	322	321	316	310	299	291
53°	294	299	303	302	297	291	280	273
54°	276	281	285	284	278	273	263	255
55°	258	263	268	266	260	255	245	238
56°	240	245	251	249	243	238	228	222
57°	224	229	234	232	226	221	212	206
58°	207	212	218	215	210	205	197	191
59°	192	196	202	200	194	190	182	177
60°	177	182	187	185	180	176	168	164
61°	163	167	172	171	166	163	156	152
62°	151	154	159	158	153	151	144	140
63°	140	142	148	146	142	140	134	129
64°	129	132	136	135	131	129	124	120
65°	118	122	125	125	122	119	115	111
66°	109	113	116	116	113	111	107	104
67°	102	105	108	108	105	103	100	97
68°	95	98	100	100	98	96	94	90
69°	88	91	93	93	91	90	88	84
70°	82	85	87	87	84	84	82	79
71°	77	80	81	81	79	79	77	75
72°	73	75	76	76	75	74	73	71
73°	70	72	73	72	71	70	69	68
74°	66	68	69	68	67	67	65	64
75°	62	64	65	65	63	63	61	60
76°	59	60	61	61	59	59	57	56
77°	55	56	57	56	55	54	53	52
78°	51	52	53	52	50	50	49	48
79°	46	48	48	47	46	46	45	44
80°	42	44	44	43	41	41	40	40
81°	38	39	40	38	37	37	36	36
82°	34	35	35	34	32	32	32	32
83°	30	31	30	29	27	28	27	27
84°	25	26	26	24	22	23	22	23
85°	21	22	21	19	17	18	18	18
86°	15	17	16	14	12	13	13	14
87°	10	12	10	9	6	8	9	9
88°	5	6	5	5	3	4	5	5
89°	0	3	1	2	0	1	2	2
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 (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	1	1	1
132°	0	0	0	0	1	1	1	1
133°	0	0	0	0	1	1	1	1
134°	0	0	0	0	1	1	1	1
135°	0	0	0	0	1	1	1	1
136°	0	0	0	0	1	1	1	1
137°	0	0	0	0	1	1	1	1
138°	0	0	0	0	1	1	1	1
139°	0	0	0	0	1	1	1	1
140°	0	0	0	0	1	1	1	1
141°	0	0	0	0	1	1	1	1
142°	0	0	0	0	1	1	1	1
143°	0	0	0	0	1	1	1	1
144°	0	0	0	0	1	1	1	1
145°	0	0	0	0	1	1	1	1
146°	0	0	0	0	1	1	1	1



Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
147°	0	0	0	0	1	1	1	1
148°	0	0	0	0	1	1	1	1
149°	0	0	0	0	1	1	1	1
150°	0	0	0	0	1	1	1	1
151°	0	0	0	1	1	1	1	1
152°	0	0	0	1	1	1	1	1
153°	0	0	0	1	1	1	1	1
154°	0	0	0	1	1	1	1	1
155°	0	0	0	1	1	1	1	1
156°	0	0	1	1	1	1	1	2
157°	0	1	1	1	1	1	2	2
158°	0	1	1	1	1	2	2	2
159°	1	1	1	1	1	2	2	2
160°	1	1	1	1	1	2	2	2
161°	1	1	1	1	1	2	2	2
162°	1	1	1	1	1	2	2	2
163°	1	1	1	1	1	2	2	2
164°	1	1	1	1	1	2	2	2
165°	1	1	1	1	1	1	2	2
166°	1	1	1	1	1	1	1	2
167°	1	1	1	1	1	1	1	2
168°	1	1	1	1	1	1	1	1
169°	1	1	1	1	1	1	1	1
170°	1	1	1	1	1	1	1	1
171°	1	1	1	1	1	1	1	1
172°	1	1	1	1	1	1	1	1
173°	1	1	1	1	1	1	1	1
174°	1	1	1	1	1	1	1	1
175°	1	1	1	1	1	1	1	1
176°	1	1	1	1	1	1	1	1
177°	1	1	1	1	1	1	1	1
178°	1	1	1	1	1	1	1	1
179°	1	1	1	1	1	1	1	1
180°	1	1	1	1	1	1	1	1

### Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	19.9	1.14
5-10	58.8	3.37
10-15	95.3	5.47
15-20	127.9	7.32
20-25	154.8	8.88
25-30	174.0	9.97
30-35	184.1	10.55
35-40	184.5	10.57
40-45	174.2	9.99
45-50	153.6	8.80
50-55	125.3	7.18
55-60	94.0	5.39
60-65	66.9	3.83
65-70	48.0	2.75
70-75	36.3	2.08
75-80	26.5	1.52
80-85	15.1	0.87
85-90	3.4	0.19
90-95	0.0	0.01
95-100	0.0	0.00
100-105	0.0	0.00
105-110	0.1	0.00
110-115	0.1	0.01
115-120	0.1	0.00
120-125	0.1	0.01
125-130	0.1	0.01
130-135	0.2	0.00
135-140	0.2	0.02
140-145	0.2	0.01
145-150	0.2	0.01
150-155	0.2	0.01
155-160	0.2	0.02
160-165	0.2	0.01
165-170	0.1	0.00
170-175	0.1	0.01
175-180	0.0	0.00

Deg	Flux (lm)	%
0-5	19.9	1.14
0-10	78.7	4.51
0-15	174.1	9.98
0-20	302.0	17.30
0-25	456.8	26.18
0-30	630.8	36.15
0-35	814.9	46.70
0-40	999.4	57.27
0-45	1173.5	67.26
0-50	1327.2	76.06
0-55	1452.4	83.24
0-60	1546.5	88.63
0-65	1613.3	92.46
0-70	1661.3	95.21
0-75	1697.6	97.29
0-80	1724.1	98.81
0-85	1739.2	99.68
0-90	1742.7	99.87
0-95	1742.7	99.88
0-100	1742.7	99.88
0-105	1742.8	99.88
0-110	1742.8	99.88
0-115	1742.9	99.89
0-120	1743.0	99.89
0-125	1743.1	99.90
0-130	1743.2	99.91
0-135	1743.4	99.91
0-140	1743.6	99.93
0-145	1743.8	99.94
0-150	1744.0	99.95
0-155	1744.2	99.96
0-160	1744.5	99.98
0-165	1744.6	99.99
0-170	1744.8	99.99
0-175	1744.8	100.00
0-180	1744.9	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**

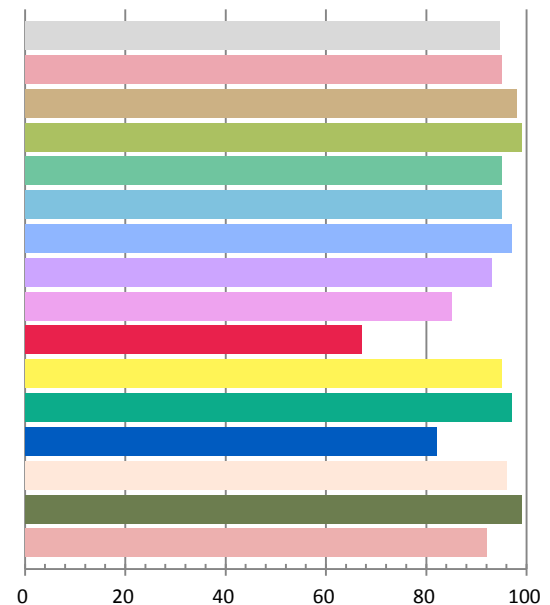
## Photometric and Electrical Measurement Result

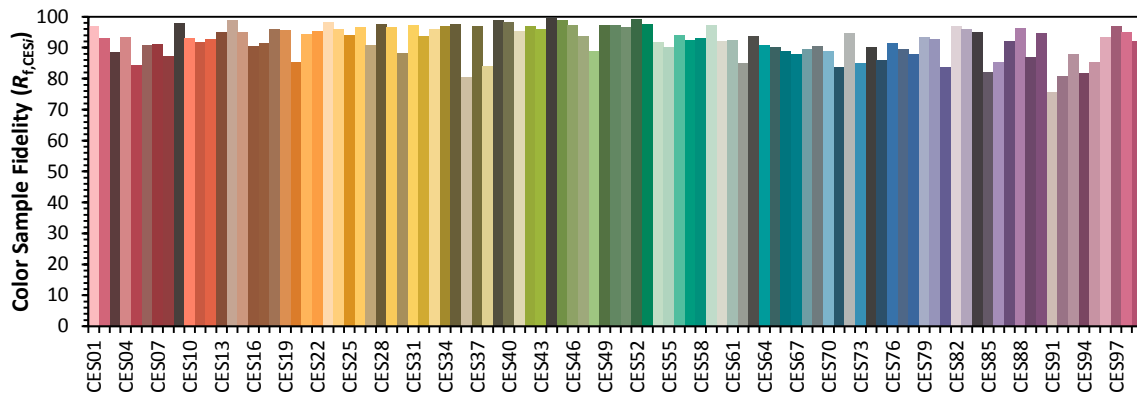
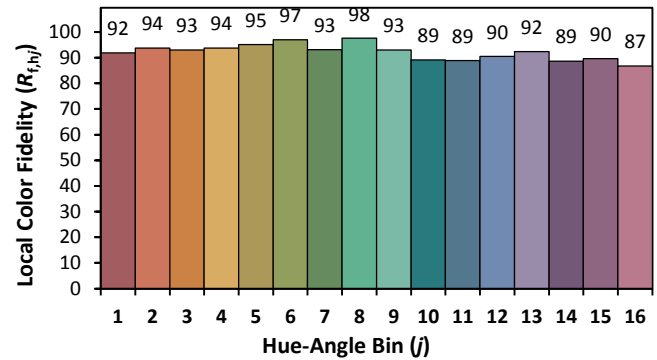
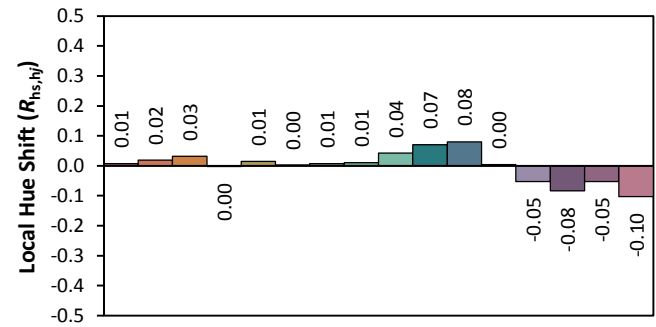
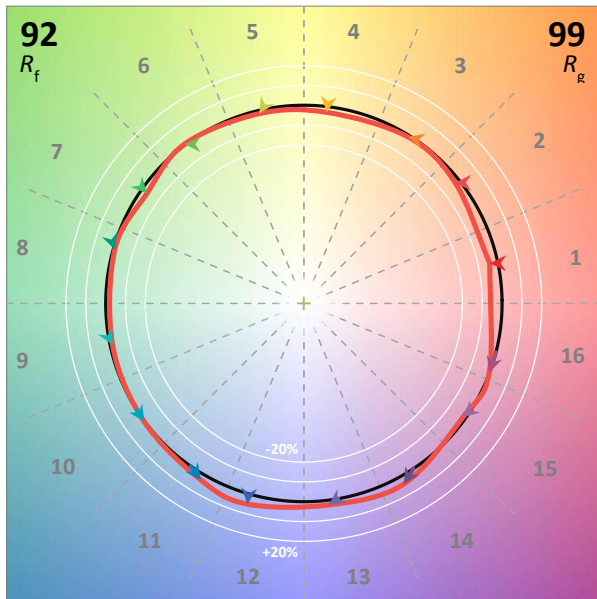
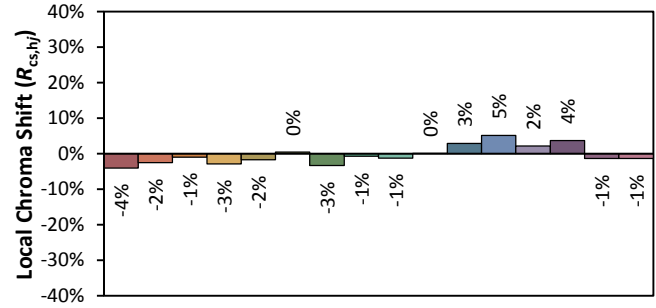
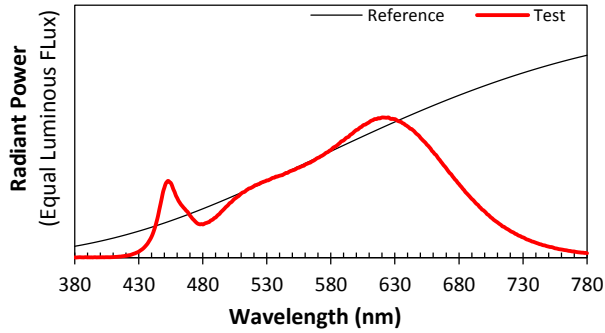
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.1	60	0.1396	16.48	0.9826	1769.1	107.35

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
6.194	2997	-0.00067	0.4362	0.4021	0.2509	0.5205

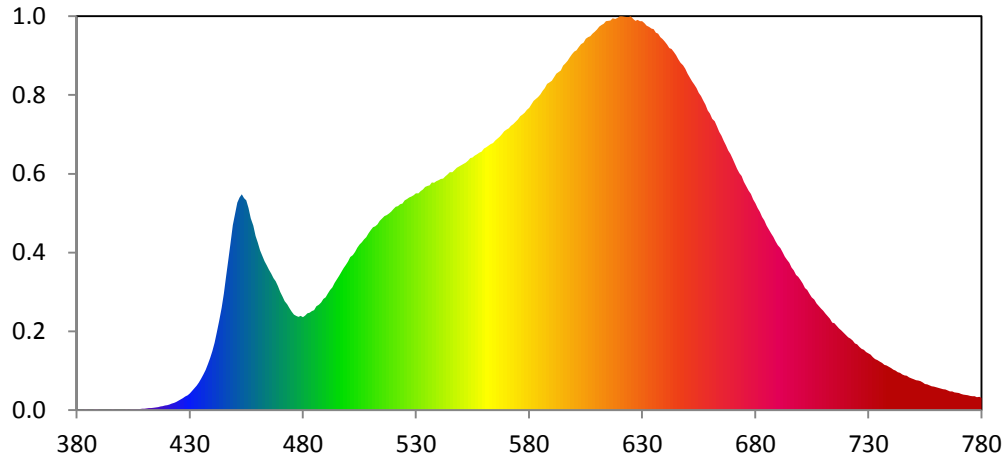
## Color Rendering Index

<b>Ra</b>			
<b>94.7</b>			
<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
95	98	99	95
<b>R5</b>	<b>R6</b>	<b>R7</b>	<b>R8</b>
95	97	93	85
<b>R9</b>	<b>R10</b>	<b>R11</b>	<b>R12</b>
67	95	97	82
<b>R13</b>	<b>R14</b>	<b>R15</b>	
96	99	92	





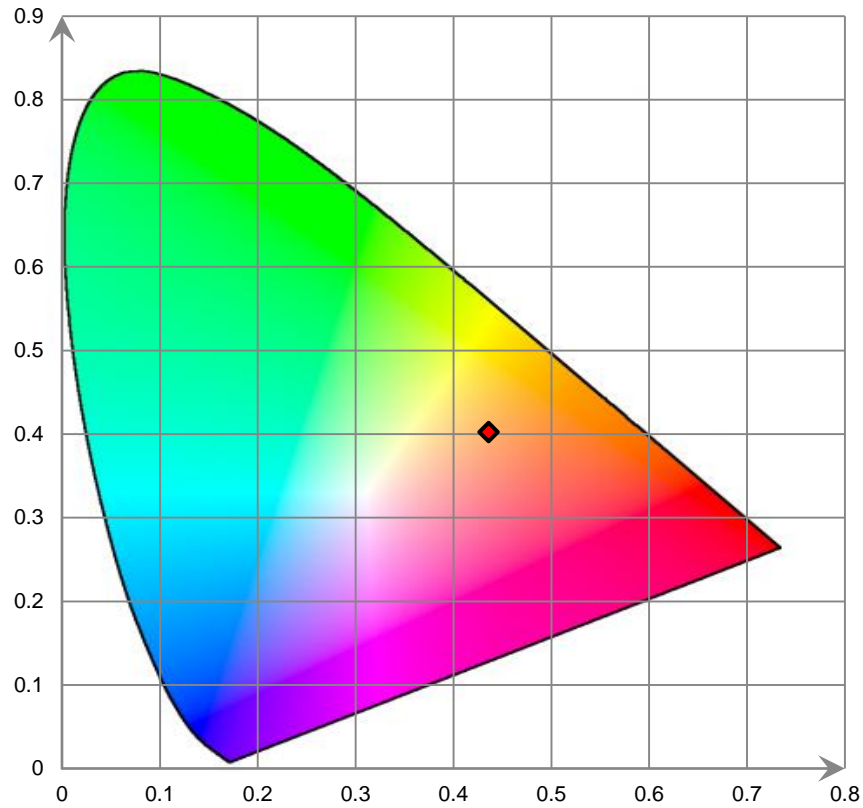
### Relative Spectral Power Distribution



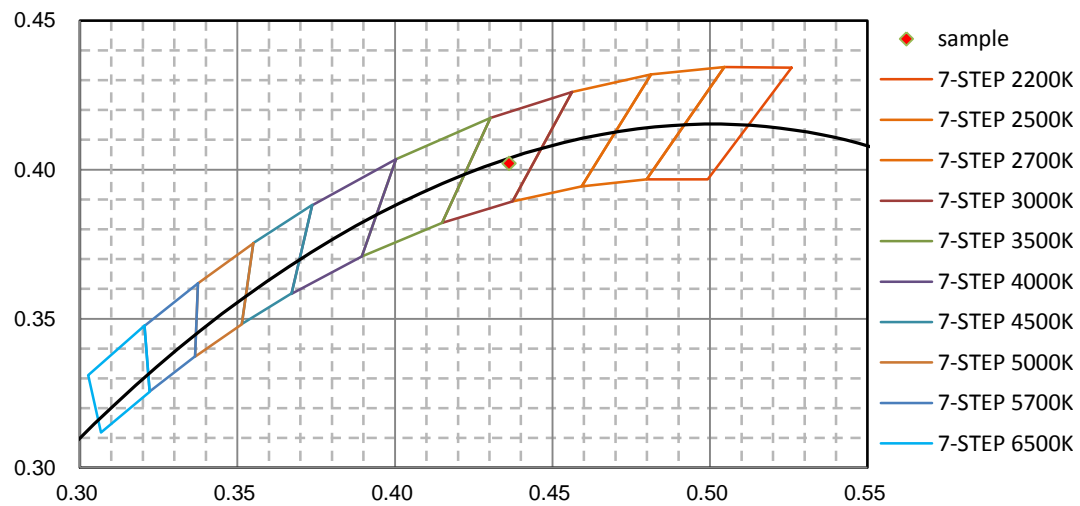
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	6.558E-02	421	5.034E-01	462	1.408E+01	503	1.444E+01	544	2.150E+01
381	0.000E+00	422	5.803E-01	463	1.358E+01	504	1.482E+01	545	2.171E+01
382	4.364E-02	423	6.323E-01	464	1.320E+01	505	1.510E+01	546	2.169E+01
383	5.869E-02	424	7.194E-01	465	1.279E+01	506	1.532E+01	547	2.191E+01
384	9.099E-02	425	8.421E-01	466	1.245E+01	507	1.558E+01	548	2.211E+01
385	5.557E-02	426	9.680E-01	467	1.204E+01	508	1.578E+01	549	2.223E+01
386	5.076E-02	427	1.070E+00	468	1.175E+01	509	1.611E+01	550	2.235E+01
387	3.384E-02	428	1.218E+00	469	1.130E+01	510	1.641E+01	551	2.245E+01
388	8.006E-02	429	1.350E+00	470	1.079E+01	511	1.667E+01	552	2.258E+01
389	7.453E-02	430	1.516E+00	471	1.037E+01	512	1.677E+01	553	2.277E+01
390	4.632E-02	431	1.748E+00	472	9.946E+00	513	1.695E+01	554	2.300E+01
391	5.959E-02	432	1.972E+00	473	9.627E+00	514	1.726E+01	555	2.304E+01
392	4.473E-02	433	2.206E+00	474	9.279E+00	515	1.747E+01	556	2.321E+01
393	5.352E-02	434	2.507E+00	475	8.962E+00	516	1.771E+01	557	2.335E+01
394	3.054E-02	435	2.853E+00	476	8.704E+00	517	1.778E+01	558	2.349E+01
395	6.515E-02	436	3.228E+00	477	8.580E+00	518	1.793E+01	559	2.357E+01
396	8.240E-02	437	3.644E+00	478	8.507E+00	519	1.811E+01	560	2.385E+01
397	4.271E-02	438	4.186E+00	479	8.601E+00	520	1.833E+01	561	2.399E+01
398	5.771E-02	439	4.722E+00	480	8.479E+00	521	1.856E+01	562	2.413E+01
399	6.128E-02	440	5.362E+00	481	8.626E+00	522	1.861E+01	563	2.427E+01
400	6.771E-02	441	6.140E+00	482	8.812E+00	523	1.879E+01	564	2.437E+01
401	6.936E-02	442	7.087E+00	483	8.887E+00	524	1.885E+01	565	2.461E+01
402	7.433E-02	443	8.104E+00	484	9.033E+00	525	1.912E+01	566	2.477E+01
403	5.841E-02	444	9.320E+00	485	9.114E+00	526	1.924E+01	567	2.495E+01
404	8.566E-02	445	1.062E+01	486	9.450E+00	527	1.939E+01	568	2.518E+01
405	8.139E-02	446	1.222E+01	487	9.610E+00	528	1.949E+01	569	2.543E+01
406	8.550E-02	447	1.372E+01	488	9.804E+00	529	1.961E+01	570	2.558E+01
407	7.339E-02	448	1.528E+01	489	1.013E+01	530	1.979E+01	571	2.571E+01
408	8.306E-02	449	1.687E+01	490	1.027E+01	531	1.979E+01	572	2.595E+01
409	9.979E-02	450	1.792E+01	491	1.062E+01	532	1.997E+01	573	2.609E+01
410	1.074E-01	451	1.892E+01	492	1.094E+01	533	2.012E+01	574	2.630E+01
411	1.395E-01	452	1.940E+01	493	1.118E+01	534	2.035E+01	575	2.652E+01
412	1.671E-01	453	1.967E+01	494	1.160E+01	535	2.046E+01	576	2.681E+01
413	1.794E-01	454	1.935E+01	495	1.192E+01	536	2.050E+01	577	2.696E+01
414	2.100E-01	455	1.912E+01	496	1.224E+01	537	2.077E+01	578	2.713E+01
415	2.447E-01	456	1.843E+01	497	1.258E+01	538	2.074E+01	579	2.742E+01
416	2.514E-01	457	1.751E+01	498	1.295E+01	539	2.088E+01	580	2.757E+01
417	3.205E-01	458	1.681E+01	499	1.322E+01	540	2.098E+01	581	2.790E+01
418	3.477E-01	459	1.589E+01	500	1.355E+01	541	2.108E+01	582	2.821E+01
419	4.106E-01	460	1.527E+01	501	1.396E+01	542	2.112E+01	583	2.838E+01
420	4.458E-01	461	1.459E+01	502	1.414E+01	543	2.132E+01	584	2.856E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.880E+01	626	3.571E+01	667	2.416E+01	708	9.495E+00	749	2.884E+00
586	2.911E+01	627	3.553E+01	668	2.370E+01	709	9.254E+00	750	2.809E+00
587	2.938E+01	628	3.561E+01	669	2.335E+01	710	9.049E+00	751	2.717E+00
588	2.975E+01	629	3.551E+01	670	2.294E+01	711	8.779E+00	752	2.697E+00
589	2.990E+01	630	3.551E+01	671	2.246E+01	712	8.541E+00	753	2.630E+00
590	3.006E+01	631	3.533E+01	672	2.201E+01	713	8.320E+00	754	2.504E+00
591	3.037E+01	632	3.508E+01	673	2.162E+01	714	7.985E+00	755	2.376E+00
592	3.069E+01	633	3.496E+01	674	2.134E+01	715	7.908E+00	756	2.334E+00
593	3.084E+01	634	3.483E+01	675	2.084E+01	716	7.680E+00	757	2.256E+00
594	3.101E+01	635	3.475E+01	676	2.044E+01	717	7.442E+00	758	2.163E+00
595	3.142E+01	636	3.444E+01	677	2.000E+01	718	7.282E+00	759	2.121E+00
596	3.163E+01	637	3.435E+01	678	1.970E+01	719	7.078E+00	760	2.069E+00
597	3.186E+01	638	3.403E+01	679	1.921E+01	720	6.846E+00	761	2.017E+00
598	3.219E+01	639	3.386E+01	680	1.888E+01	721	6.636E+00	762	1.942E+00
599	3.248E+01	640	3.361E+01	681	1.844E+01	722	6.514E+00	763	1.894E+00
600	3.272E+01	641	3.336E+01	682	1.809E+01	723	6.339E+00	764	1.857E+00
601	3.282E+01	642	3.303E+01	683	1.763E+01	724	6.082E+00	765	1.771E+00
602	3.312E+01	643	3.297E+01	684	1.730E+01	725	5.989E+00	766	1.703E+00
603	3.339E+01	644	3.268E+01	685	1.681E+01	726	5.740E+00	767	1.680E+00
604	3.354E+01	645	3.241E+01	686	1.649E+01	727	5.585E+00	768	1.595E+00
605	3.387E+01	646	3.202E+01	687	1.614E+01	728	5.484E+00	769	1.565E+00
606	3.404E+01	647	3.170E+01	688	1.579E+01	729	5.276E+00	770	1.554E+00
607	3.412E+01	648	3.146E+01	689	1.541E+01	730	5.172E+00	771	1.465E+00
608	3.435E+01	649	3.115E+01	690	1.504E+01	731	5.041E+00	772	1.415E+00
609	3.452E+01	650	3.070E+01	691	1.477E+01	732	4.821E+00	773	1.356E+00
610	3.473E+01	651	3.035E+01	692	1.441E+01	733	4.645E+00	774	1.330E+00
611	3.499E+01	652	3.001E+01	693	1.401E+01	734	4.557E+00	775	1.286E+00
612	3.515E+01	653	2.971E+01	694	1.370E+01	735	4.411E+00	776	1.249E+00
613	3.526E+01	654	2.938E+01	695	1.345E+01	736	4.296E+00	777	1.245E+00
614	3.549E+01	655	2.894E+01	696	1.300E+01	737	4.116E+00	778	1.177E+00
615	3.552E+01	656	2.866E+01	697	1.272E+01	738	4.055E+00	779	1.184E+00
616	3.555E+01	657	2.826E+01	698	1.232E+01	739	3.936E+00	780	1.110E+00
617	3.576E+01	658	2.787E+01	699	1.214E+01	740	3.811E+00		
618	3.568E+01	659	2.733E+01	700	1.185E+01	741	3.689E+00		
619	3.580E+01	660	2.704E+01	701	1.154E+01	742	3.577E+00		
620	3.593E+01	661	2.658E+01	702	1.112E+01	743	3.435E+00		
621	3.592E+01	662	2.634E+01	703	1.094E+01	744	3.385E+00		
622	3.590E+01	663	2.589E+01	704	1.061E+01	745	3.240E+00		
623	3.586E+01	664	2.539E+01	705	1.028E+01	746	3.145E+00		
624	3.587E+01	665	2.503E+01	706	1.006E+01	747	3.115E+00		
625	3.594E+01	666	2.456E+01	707	9.726E+00	748	2.982E+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**

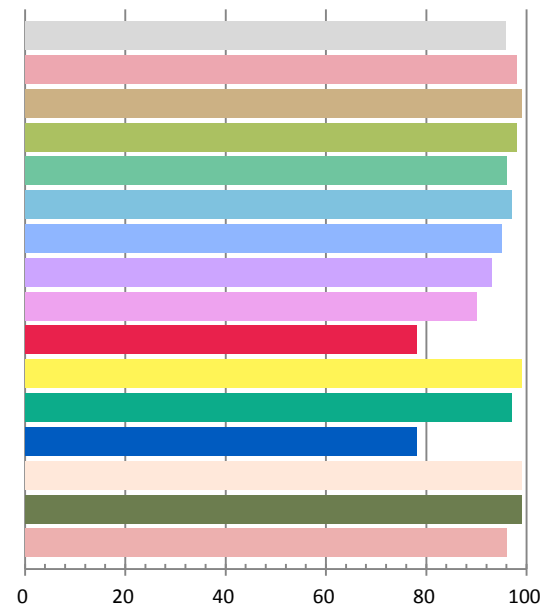
## Photometric and Electrical Measurement Result

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.1381	16.26	0.9815	1807.8	111.18

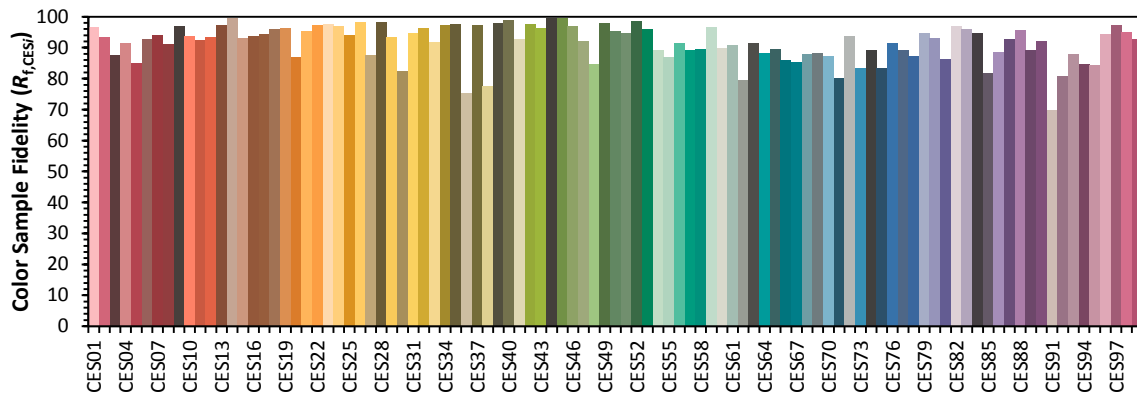
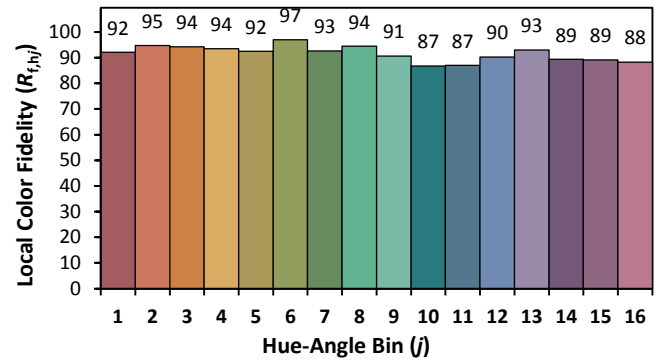
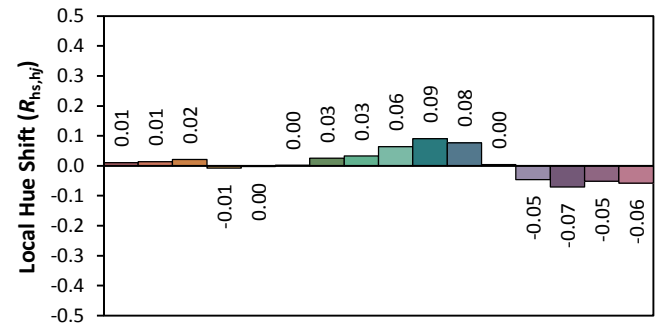
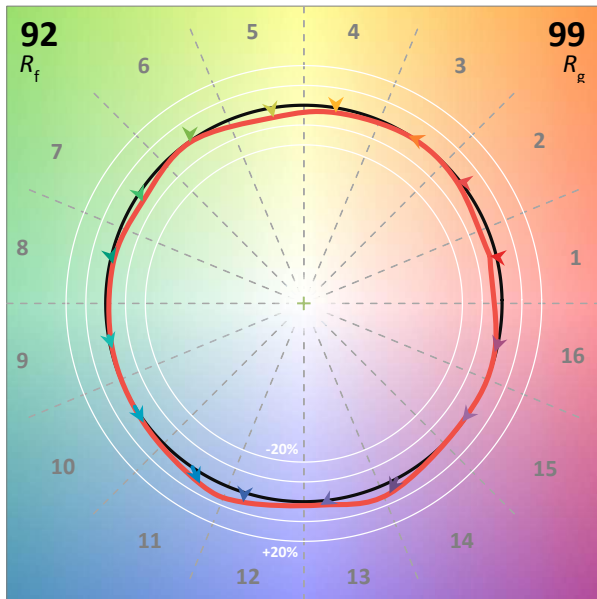
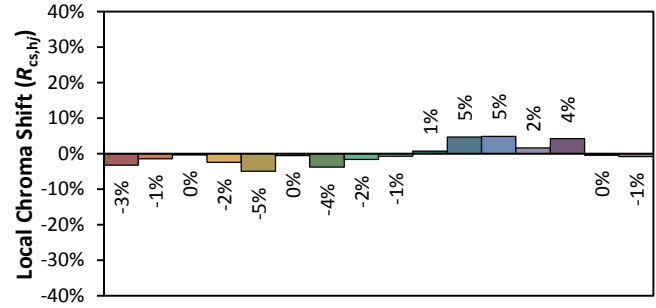
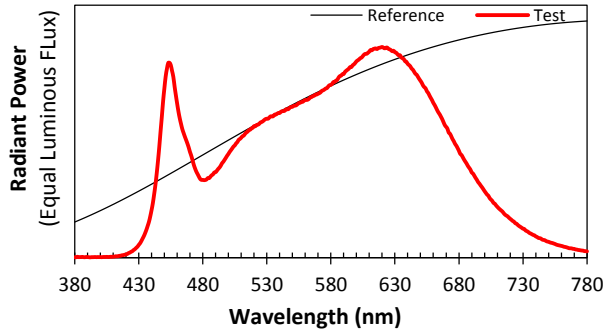
Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
6.3475	3540	-0.00320	0.3999	0.3808	0.2363	0.5063

## Color Rendering Index

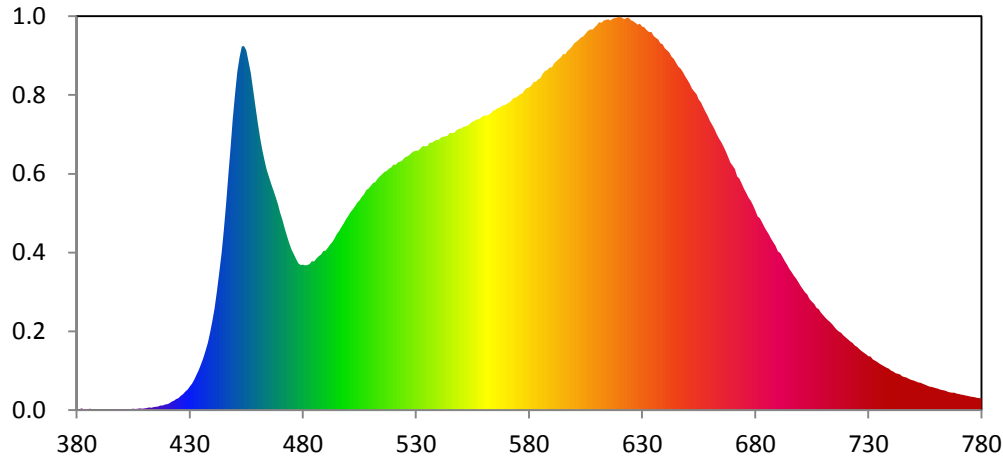
<b>Ra</b>			
<b>95.8</b>			
<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
98	99	98	96
<b>R5</b>	<b>R6</b>	<b>R7</b>	<b>R8</b>
97	95	93	90
<b>R9</b>	<b>R10</b>	<b>R11</b>	<b>R12</b>
78	99	97	78
<b>R13</b>	<b>R14</b>	<b>R15</b>	
99	99	96	







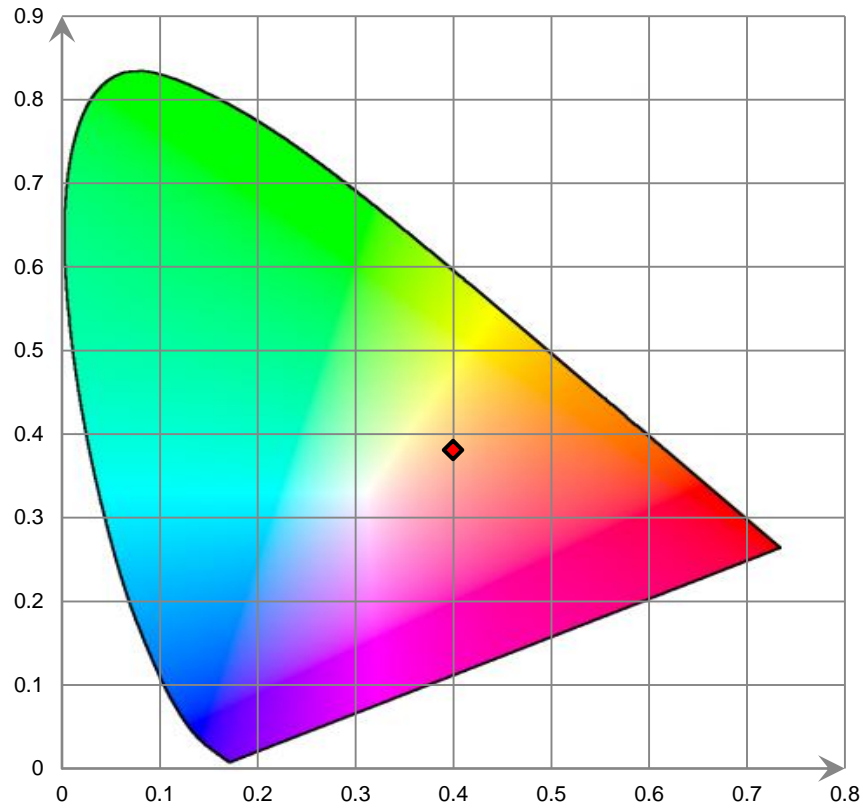
### Relative Spectral Power Distribution



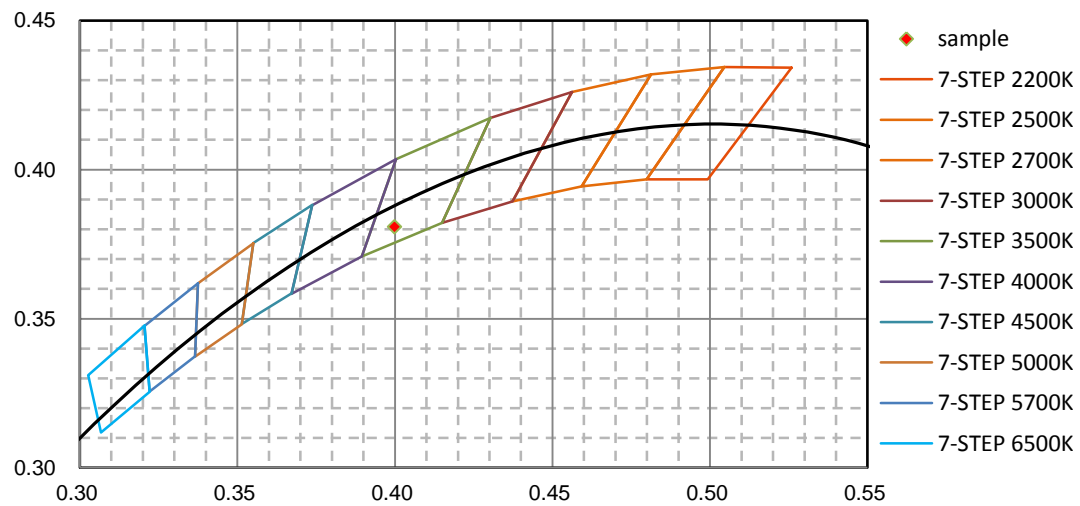
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	5.365E-02	421	5.636E-01	462	2.190E+01	503	1.717E+01	544	2.309E+01
381	3.646E-02	422	6.977E-01	463	2.102E+01	504	1.746E+01	545	2.332E+01
382	1.296E-01	423	7.785E-01	464	2.020E+01	505	1.764E+01	546	2.331E+01
383	6.506E-02	424	9.067E-01	465	1.959E+01	506	1.795E+01	547	2.336E+01
384	7.573E-02	425	1.001E+00	466	1.901E+01	507	1.816E+01	548	2.358E+01
385	7.428E-02	426	1.181E+00	467	1.847E+01	508	1.851E+01	549	2.367E+01
386	1.024E-01	427	1.321E+00	468	1.792E+01	509	1.865E+01	550	2.371E+01
387	6.022E-02	428	1.527E+00	469	1.731E+01	510	1.885E+01	551	2.385E+01
388	5.452E-02	429	1.717E+00	470	1.660E+01	511	1.908E+01	552	2.389E+01
389	8.804E-02	430	1.994E+00	471	1.600E+01	512	1.918E+01	553	2.395E+01
390	7.890E-02	431	2.245E+00	472	1.529E+01	513	1.946E+01	554	2.412E+01
391	5.710E-02	432	2.593E+00	473	1.456E+01	514	1.966E+01	555	2.428E+01
392	2.964E-02	433	2.992E+00	474	1.398E+01	515	1.981E+01	556	2.434E+01
393	6.067E-02	434	3.383E+00	475	1.348E+01	516	2.003E+01	557	2.446E+01
394	6.068E-02	435	3.864E+00	476	1.310E+01	517	2.011E+01	558	2.449E+01
395	6.632E-02	436	4.392E+00	477	1.270E+01	518	2.031E+01	559	2.465E+01
396	8.127E-02	437	5.007E+00	478	1.235E+01	519	2.041E+01	560	2.477E+01
397	5.743E-02	438	5.650E+00	479	1.221E+01	520	2.067E+01	561	2.478E+01
398	7.801E-02	439	6.503E+00	480	1.221E+01	521	2.064E+01	562	2.483E+01
399	6.562E-02	440	7.481E+00	481	1.217E+01	522	2.085E+01	563	2.498E+01
400	7.730E-02	441	8.565E+00	482	1.220E+01	523	2.089E+01	564	2.518E+01
401	5.619E-02	442	9.947E+00	483	1.229E+01	524	2.102E+01	565	2.525E+01
402	8.196E-02	443	1.144E+01	484	1.251E+01	525	2.124E+01	566	2.539E+01
403	9.069E-02	444	1.321E+01	485	1.249E+01	526	2.132E+01	567	2.545E+01
404	8.858E-02	445	1.519E+01	486	1.274E+01	527	2.145E+01	568	2.562E+01
405	1.061E-01	446	1.737E+01	487	1.295E+01	528	2.163E+01	569	2.564E+01
406	8.763E-02	447	1.980E+01	488	1.309E+01	529	2.177E+01	570	2.576E+01
407	9.514E-02	448	2.212E+01	489	1.339E+01	530	2.183E+01	571	2.585E+01
408	1.195E-01	449	2.459E+01	490	1.342E+01	531	2.183E+01	572	2.599E+01
409	1.158E-01	450	2.661E+01	491	1.366E+01	532	2.203E+01	573	2.622E+01
410	1.424E-01	451	2.847E+01	492	1.393E+01	533	2.221E+01	574	2.630E+01
411	1.483E-01	452	2.969E+01	493	1.415E+01	534	2.219E+01	575	2.643E+01
412	2.032E-01	453	3.060E+01	494	1.444E+01	535	2.222E+01	576	2.659E+01
413	1.875E-01	454	3.062E+01	495	1.482E+01	536	2.248E+01	577	2.665E+01
414	2.311E-01	455	3.026E+01	496	1.506E+01	537	2.248E+01	578	2.692E+01
415	2.697E-01	456	2.934E+01	497	1.537E+01	538	2.261E+01	579	2.710E+01
416	2.992E-01	457	2.840E+01	498	1.568E+01	539	2.273E+01	580	2.716E+01
417	3.618E-01	458	2.686E+01	499	1.601E+01	540	2.272E+01	581	2.731E+01
418	3.809E-01	459	2.548E+01	500	1.629E+01	541	2.292E+01	582	2.761E+01
419	4.448E-01	460	2.417E+01	501	1.662E+01	542	2.301E+01	583	2.763E+01
420	4.912E-01	461	2.294E+01	502	1.689E+01	543	2.303E+01	584	2.782E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.794E+01	626	3.273E+01	667	2.174E+01	708	8.470E+00	749	2.520E+00
586	2.829E+01	627	3.260E+01	668	2.127E+01	709	8.197E+00	750	2.474E+00
587	2.853E+01	628	3.244E+01	669	2.082E+01	710	7.975E+00	751	2.388E+00
588	2.860E+01	629	3.252E+01	670	2.055E+01	711	7.757E+00	752	2.322E+00
589	2.883E+01	630	3.228E+01	671	2.027E+01	712	7.573E+00	753	2.281E+00
590	2.886E+01	631	3.221E+01	672	1.966E+01	713	7.397E+00	754	2.206E+00
591	2.918E+01	632	3.198E+01	673	1.947E+01	714	7.226E+00	755	2.136E+00
592	2.937E+01	633	3.180E+01	674	1.907E+01	715	6.964E+00	756	2.040E+00
593	2.953E+01	634	3.181E+01	675	1.863E+01	716	6.748E+00	757	1.973E+00
594	2.969E+01	635	3.148E+01	676	1.829E+01	717	6.606E+00	758	1.925E+00
595	2.995E+01	636	3.133E+01	677	1.787E+01	718	6.480E+00	759	1.878E+00
596	2.995E+01	637	3.119E+01	678	1.758E+01	719	6.275E+00	760	1.830E+00
597	3.023E+01	638	3.086E+01	679	1.720E+01	720	6.098E+00	761	1.780E+00
598	3.038E+01	639	3.078E+01	680	1.679E+01	721	5.933E+00	762	1.698E+00
599	3.060E+01	640	3.045E+01	681	1.631E+01	722	5.755E+00	763	1.667E+00
600	3.086E+01	641	3.027E+01	682	1.613E+01	723	5.638E+00	764	1.609E+00
601	3.101E+01	642	3.007E+01	683	1.577E+01	724	5.400E+00	765	1.545E+00
602	3.116E+01	643	2.973E+01	684	1.540E+01	725	5.312E+00	766	1.469E+00
603	3.135E+01	644	2.954E+01	685	1.508E+01	726	5.113E+00	767	1.457E+00
604	3.145E+01	645	2.922E+01	686	1.477E+01	727	4.951E+00	768	1.439E+00
605	3.169E+01	646	2.890E+01	687	1.440E+01	728	4.822E+00	769	1.372E+00
606	3.192E+01	647	2.874E+01	688	1.411E+01	729	4.686E+00	770	1.357E+00
607	3.203E+01	648	2.841E+01	689	1.381E+01	730	4.535E+00	771	1.281E+00
608	3.204E+01	649	2.808E+01	690	1.337E+01	731	4.497E+00	772	1.254E+00
609	3.221E+01	650	2.778E+01	691	1.320E+01	732	4.261E+00	773	1.196E+00
610	3.239E+01	651	2.746E+01	692	1.287E+01	733	4.157E+00	774	1.174E+00
611	3.264E+01	652	2.705E+01	693	1.252E+01	734	4.040E+00	775	1.132E+00
612	3.258E+01	653	2.679E+01	694	1.222E+01	735	3.872E+00	776	1.104E+00
613	3.278E+01	654	2.659E+01	695	1.186E+01	736	3.775E+00	777	1.080E+00
614	3.284E+01	655	2.614E+01	696	1.162E+01	737	3.664E+00	778	1.010E+00
615	3.289E+01	656	2.588E+01	697	1.132E+01	738	3.551E+00	779	1.003E+00
616	3.278E+01	657	2.548E+01	698	1.106E+01	739	3.483E+00	780	9.707E-01
617	3.294E+01	658	2.510E+01	699	1.076E+01	740	3.322E+00		
618	3.299E+01	659	2.475E+01	700	1.045E+01	741	3.234E+00		
619	3.304E+01	660	2.432E+01	701	1.017E+01	742	3.090E+00		
620	3.311E+01	661	2.399E+01	702	9.898E+00	743	3.048E+00		
621	3.301E+01	662	2.360E+01	703	9.713E+00	744	2.986E+00		
622	3.289E+01	663	2.318E+01	704	9.348E+00	745	2.829E+00		
623	3.299E+01	664	2.281E+01	705	9.115E+00	746	2.773E+00		
624	3.302E+01	665	2.251E+01	706	8.914E+00	747	2.728E+00		
625	3.281E+01	666	2.213E+01	707	8.586E+00	748	2.606E+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**

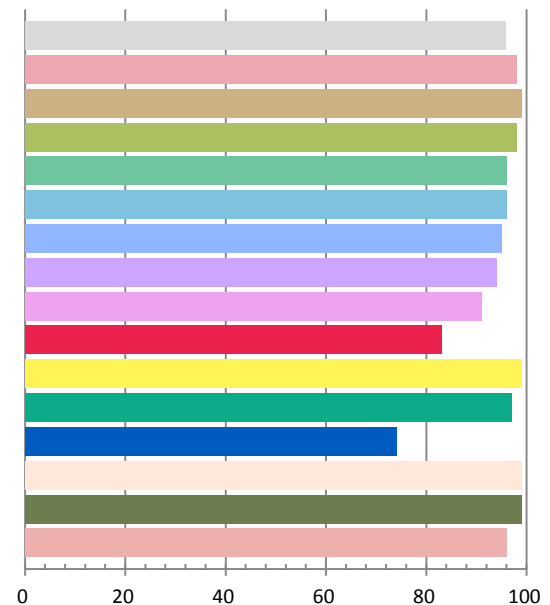
## Photometric and Electrical Measurement Result

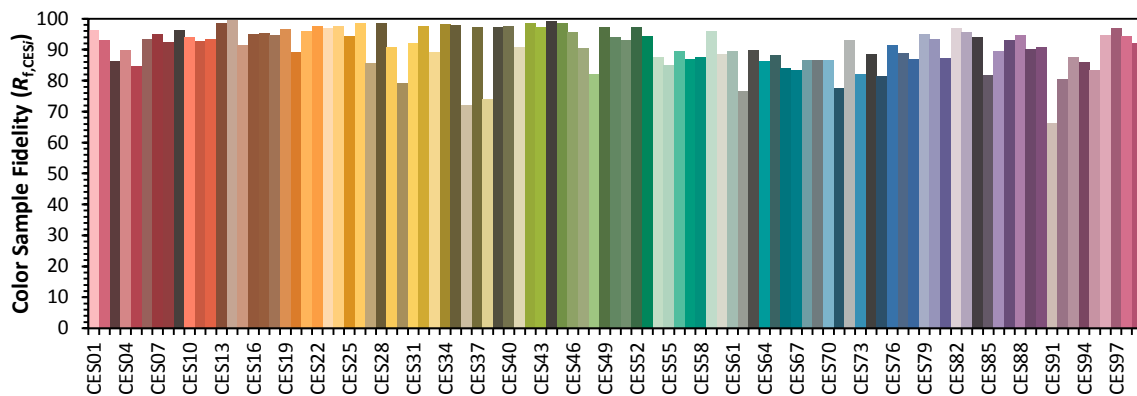
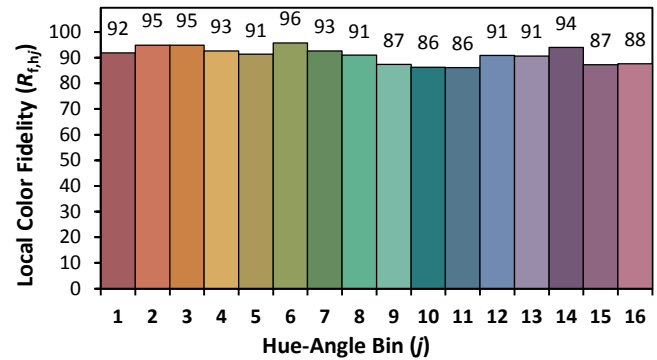
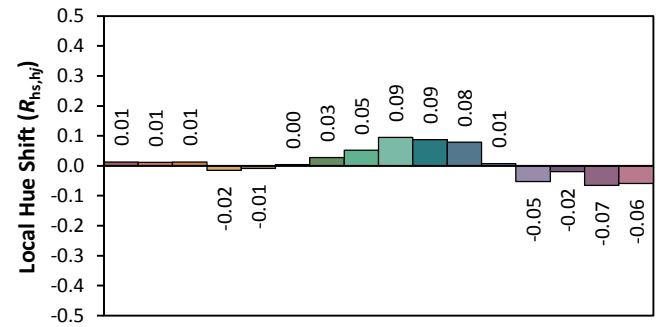
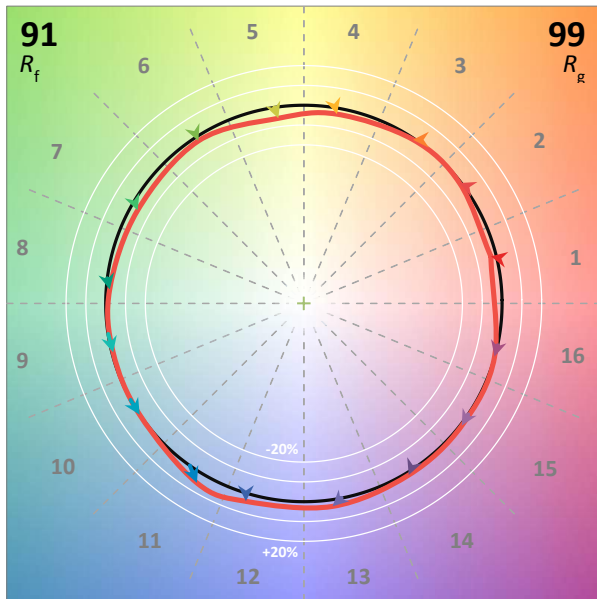
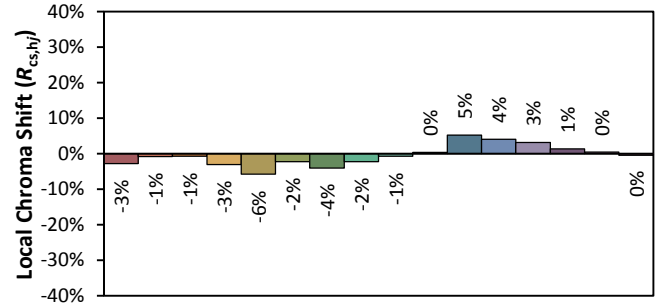
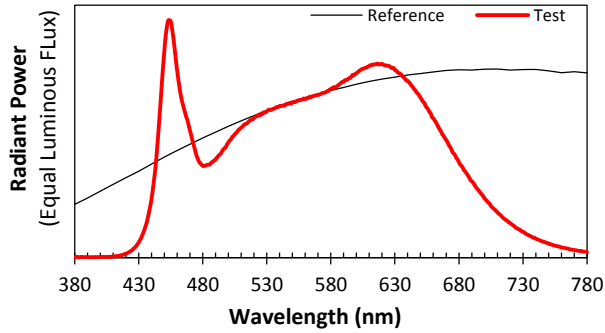
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.1396	16.45	0.9822	1811.9	110.15

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
6.3594	4033	-0.00316	0.3769	0.3679	0.2263	0.4971

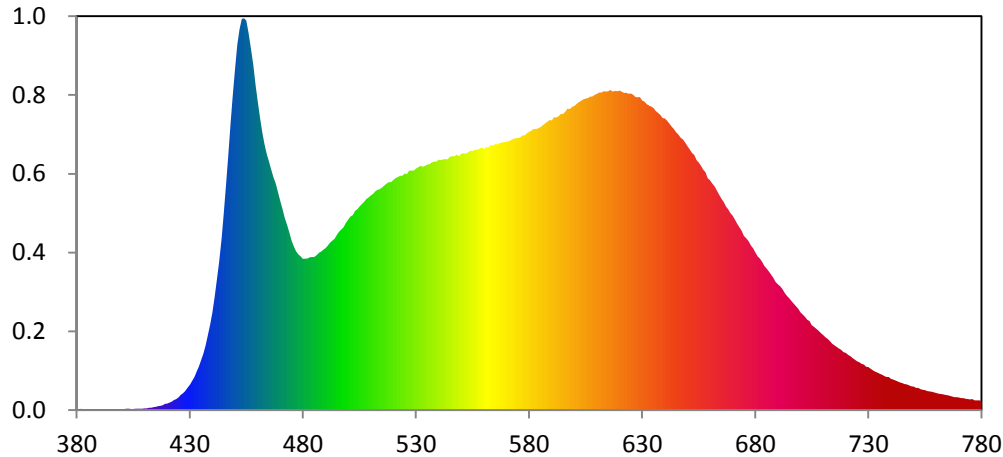
## Color Rendering Index

<b>Ra</b>			
<b>95.8</b>			
<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
98	99	98	96
<b>R5</b>	<b>R6</b>	<b>R7</b>	<b>R8</b>
96	95	94	91
<b>R9</b>	<b>R10</b>	<b>R11</b>	<b>R12</b>
83	99	97	74
<b>R13</b>	<b>R14</b>	<b>R15</b>	
99	99	96	





### Relative Spectral Power Distribution

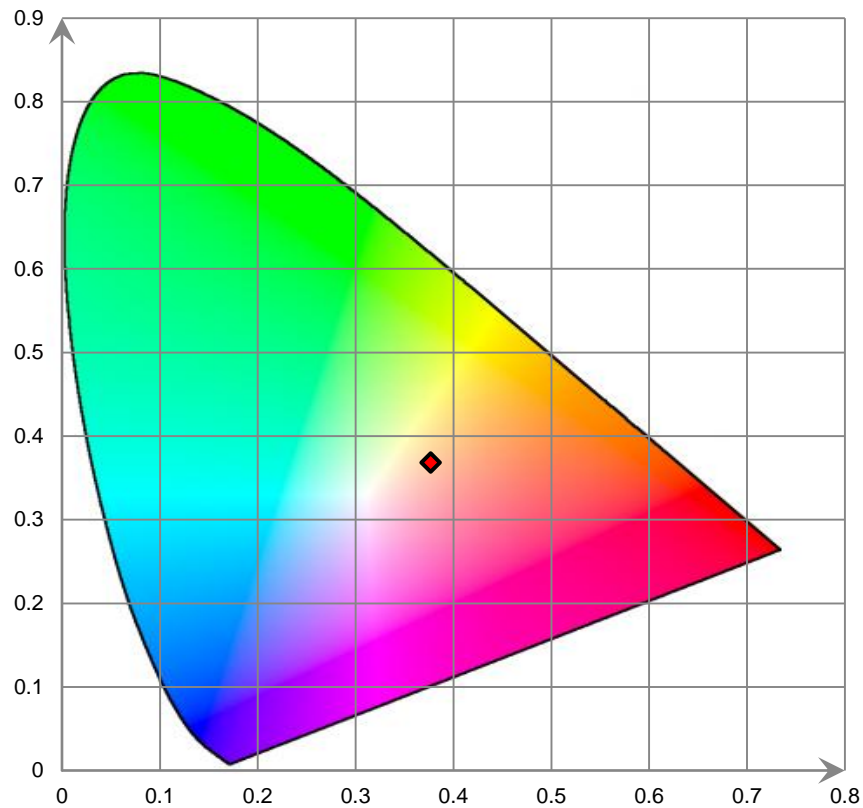


nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	9.626E-02	421	7.011E-01	462	2.654E+01	503	1.900E+01	544	2.394E+01
381	6.152E-02	422	8.049E-01	463	2.537E+01	504	1.917E+01	545	2.418E+01
382	1.266E-01	423	9.321E-01	464	2.445E+01	505	1.945E+01	546	2.424E+01
383	3.338E-02	424	1.049E+00	465	2.372E+01	506	1.965E+01	547	2.423E+01
384	6.533E-02	425	1.204E+00	466	2.296E+01	507	1.988E+01	548	2.439E+01
385	9.610E-02	426	1.417E+00	467	2.222E+01	508	2.014E+01	549	2.425E+01
386	9.580E-02	427	1.600E+00	468	2.166E+01	509	2.031E+01	550	2.448E+01
387	6.272E-02	428	1.815E+00	469	2.082E+01	510	2.048E+01	551	2.451E+01
388	6.897E-02	429	2.127E+00	470	2.000E+01	511	2.065E+01	552	2.448E+01
389	9.239E-02	430	2.404E+00	471	1.922E+01	512	2.088E+01	553	2.462E+01
390	7.815E-02	431	2.771E+00	472	1.837E+01	513	2.103E+01	554	2.476E+01
391	6.325E-02	432	3.161E+00	473	1.764E+01	514	2.108E+01	555	2.473E+01
392	5.852E-02	433	3.661E+00	474	1.691E+01	515	2.126E+01	556	2.486E+01
393	5.115E-02	434	4.161E+00	475	1.613E+01	516	2.147E+01	557	2.486E+01
394	7.410E-02	435	4.770E+00	476	1.560E+01	517	2.164E+01	558	2.496E+01
395	5.053E-02	436	5.370E+00	477	1.514E+01	518	2.175E+01	559	2.508E+01
396	8.014E-02	437	6.187E+00	478	1.485E+01	519	2.177E+01	560	2.495E+01
397	5.524E-02	438	7.164E+00	479	1.466E+01	520	2.199E+01	561	2.510E+01
398	8.734E-02	439	8.131E+00	480	1.442E+01	521	2.217E+01	562	2.511E+01
399	7.711E-02	440	9.294E+00	481	1.445E+01	522	2.227E+01	563	2.530E+01
400	9.237E-02	441	1.075E+01	482	1.446E+01	523	2.237E+01	564	2.524E+01
401	8.623E-02	442	1.240E+01	483	1.458E+01	524	2.236E+01	565	2.540E+01
402	1.145E-01	443	1.409E+01	484	1.463E+01	525	2.259E+01	566	2.539E+01
403	1.046E-01	444	1.639E+01	485	1.463E+01	526	2.253E+01	567	2.550E+01
404	8.974E-02	445	1.893E+01	486	1.477E+01	527	2.286E+01	568	2.556E+01
405	9.464E-02	446	2.163E+01	487	1.502E+01	528	2.285E+01	569	2.559E+01
406	1.063E-01	447	2.442E+01	488	1.514E+01	529	2.287E+01	570	2.562E+01
407	1.105E-01	448	2.738E+01	489	1.531E+01	530	2.304E+01	571	2.567E+01
408	1.233E-01	449	3.014E+01	490	1.547E+01	531	2.322E+01	572	2.577E+01
409	1.304E-01	450	3.262E+01	491	1.573E+01	532	2.333E+01	573	2.590E+01
410	1.523E-01	451	3.492E+01	492	1.599E+01	533	2.324E+01	574	2.594E+01
411	1.568E-01	452	3.638E+01	493	1.618E+01	534	2.334E+01	575	2.599E+01
412	2.264E-01	453	3.736E+01	494	1.636E+01	535	2.346E+01	576	2.604E+01
413	2.226E-01	454	3.741E+01	495	1.673E+01	536	2.348E+01	577	2.623E+01
414	2.584E-01	455	3.721E+01	496	1.704E+01	537	2.365E+01	578	2.623E+01
415	2.950E-01	456	3.604E+01	497	1.723E+01	538	2.372E+01	579	2.646E+01
416	3.578E-01	457	3.464E+01	498	1.744E+01	539	2.373E+01	580	2.657E+01
417	3.958E-01	458	3.296E+01	499	1.786E+01	540	2.390E+01	581	2.668E+01
418	4.516E-01	459	3.108E+01	500	1.814E+01	541	2.388E+01	582	2.684E+01
419	5.664E-01	460	2.944E+01	501	1.845E+01	542	2.393E+01	583	2.685E+01
420	5.993E-01	461	2.792E+01	502	1.863E+01	543	2.398E+01	584	2.689E+01

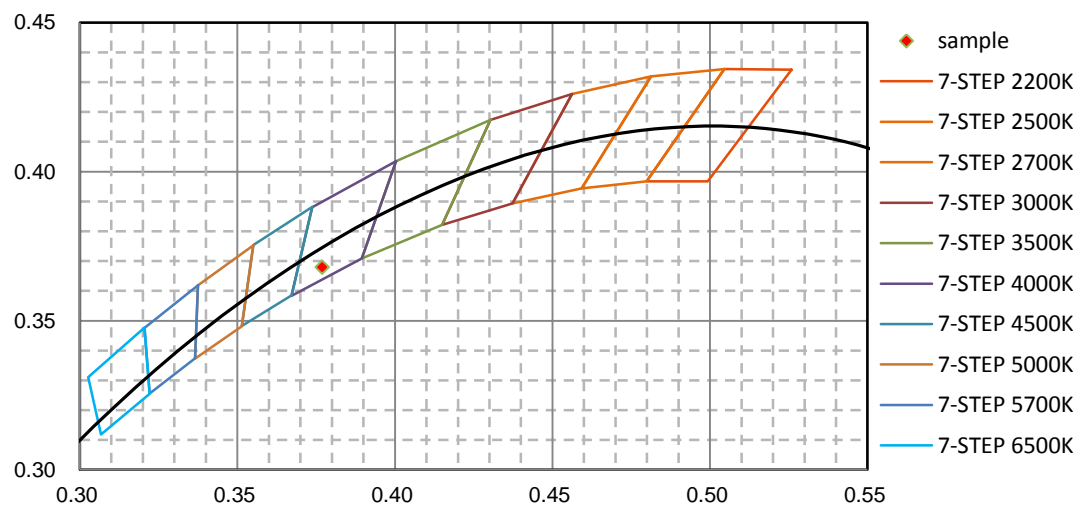
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.703E+01	626	3.011E+01	667	1.944E+01	708	7.562E+00	749	2.268E+00
586	2.719E+01	627	2.991E+01	668	1.917E+01	709	7.336E+00	750	2.229E+00
587	2.736E+01	628	2.988E+01	669	1.881E+01	710	7.146E+00	751	2.092E+00
588	2.752E+01	629	2.989E+01	670	1.855E+01	711	6.922E+00	752	2.094E+00
589	2.770E+01	630	2.956E+01	671	1.820E+01	712	6.778E+00	753	1.991E+00
590	2.767E+01	631	2.948E+01	672	1.778E+01	713	6.580E+00	754	1.933E+00
591	2.796E+01	632	2.922E+01	673	1.746E+01	714	6.340E+00	755	1.883E+00
592	2.795E+01	633	2.908E+01	674	1.713E+01	715	6.167E+00	756	1.813E+00
593	2.807E+01	634	2.897E+01	675	1.662E+01	716	6.025E+00	757	1.776E+00
594	2.826E+01	635	2.883E+01	676	1.640E+01	717	5.882E+00	758	1.744E+00
595	2.828E+01	636	2.857E+01	677	1.612E+01	718	5.750E+00	759	1.665E+00
596	2.849E+01	637	2.837E+01	678	1.570E+01	719	5.544E+00	760	1.607E+00
597	2.879E+01	638	2.818E+01	679	1.544E+01	720	5.445E+00	761	1.547E+00
598	2.874E+01	639	2.789E+01	680	1.504E+01	721	5.249E+00	762	1.525E+00
599	2.895E+01	640	2.785E+01	681	1.467E+01	722	5.121E+00	763	1.483E+00
600	2.904E+01	641	2.763E+01	682	1.445E+01	723	4.960E+00	764	1.434E+00
601	2.923E+01	642	2.737E+01	683	1.415E+01	724	4.804E+00	765	1.413E+00
602	2.940E+01	643	2.709E+01	684	1.375E+01	725	4.632E+00	766	1.336E+00
603	2.953E+01	644	2.686E+01	685	1.352E+01	726	4.545E+00	767	1.283E+00
604	2.968E+01	645	2.654E+01	686	1.324E+01	727	4.402E+00	768	1.235E+00
605	2.975E+01	646	2.633E+01	687	1.294E+01	728	4.322E+00	769	1.222E+00
606	2.981E+01	647	2.601E+01	688	1.262E+01	729	4.139E+00	770	1.190E+00
607	2.992E+01	648	2.583E+01	689	1.222E+01	730	4.082E+00	771	1.134E+00
608	2.996E+01	649	2.552E+01	690	1.203E+01	731	3.938E+00	772	1.129E+00
609	3.010E+01	650	2.519E+01	691	1.181E+01	732	3.778E+00	773	1.064E+00
610	3.021E+01	651	2.489E+01	692	1.151E+01	733	3.663E+00	774	1.046E+00
611	3.033E+01	652	2.454E+01	693	1.116E+01	734	3.560E+00	775	1.019E+00
612	3.031E+01	653	2.437E+01	694	1.090E+01	735	3.456E+00	776	1.027E+00
613	3.045E+01	654	2.387E+01	695	1.068E+01	736	3.374E+00	777	9.147E-01
614	3.042E+01	655	2.362E+01	696	1.039E+01	737	3.236E+00	778	9.205E-01
615	3.046E+01	656	2.333E+01	697	1.015E+01	738	3.142E+00	779	9.162E-01
616	3.057E+01	657	2.294E+01	698	9.904E+00	739	3.134E+00	780	8.426E-01
617	3.041E+01	658	2.270E+01	699	9.657E+00	740	2.950E+00		
618	3.049E+01	659	2.212E+01	700	9.324E+00	741	2.909E+00		
619	3.044E+01	660	2.195E+01	701	9.103E+00	742	2.808E+00		
620	3.052E+01	661	2.163E+01	702	8.891E+00	743	2.718E+00		
621	3.040E+01	662	2.133E+01	703	8.627E+00	744	2.631E+00		
622	3.030E+01	663	2.093E+01	704	8.488E+00	745	2.559E+00		
623	3.030E+01	664	2.054E+01	705	8.113E+00	746	2.485E+00		
624	3.021E+01	665	2.019E+01	706	7.928E+00	747	2.440E+00		
625	3.022E+01	666	1.987E+01	707	7.720E+00	748	2.345E+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**

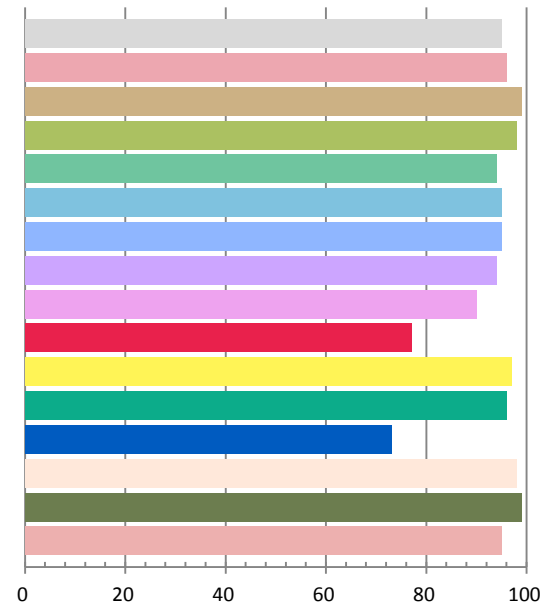
## Photometric and Electrical Measurement Result

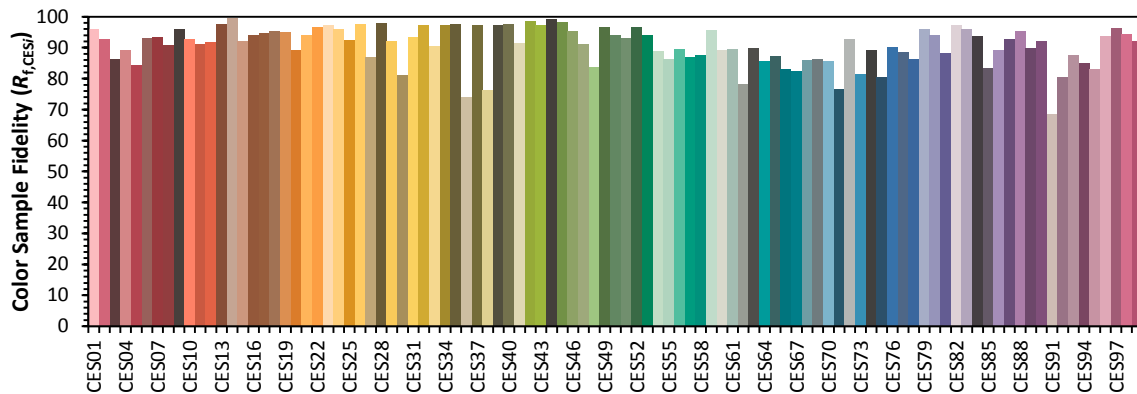
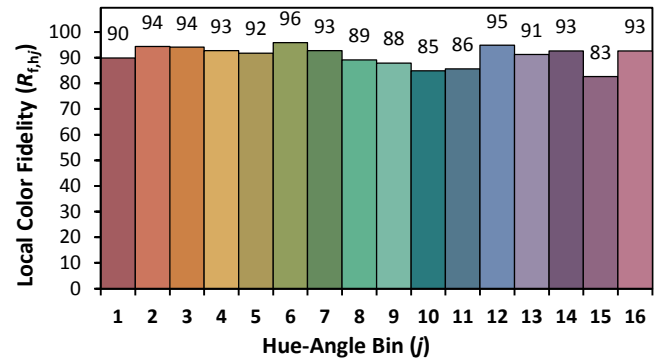
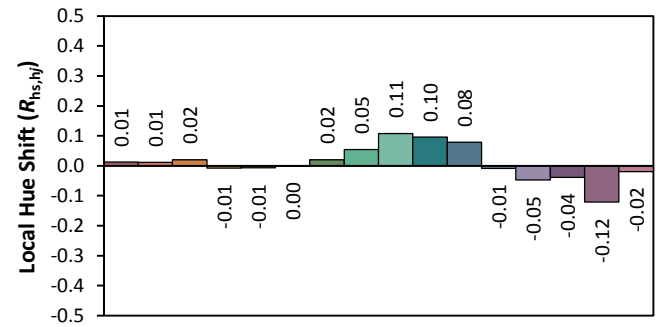
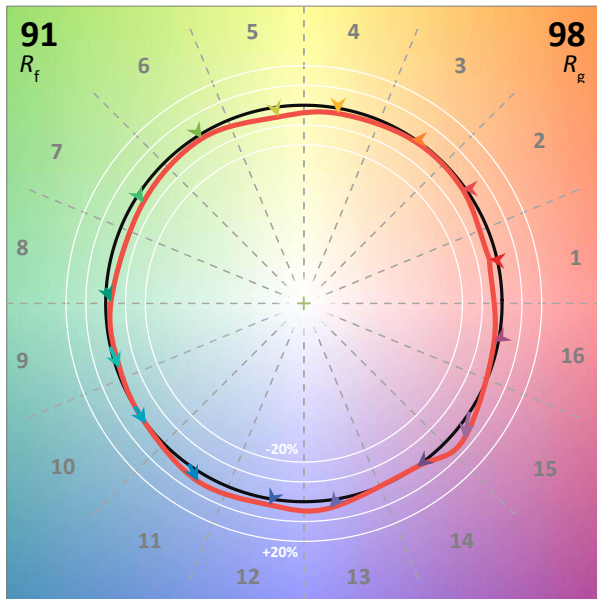
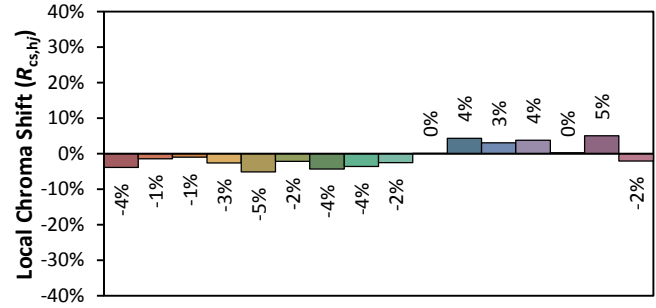
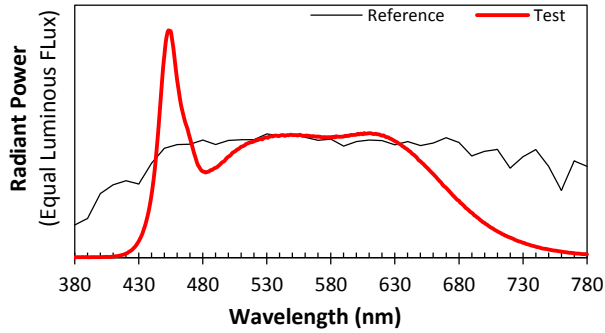
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
119.9	60	0.1422	16.76	0.9828	1784	106.44

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
6.2243	5166	0.00049	0.3407	0.3490	0.2094	0.4827

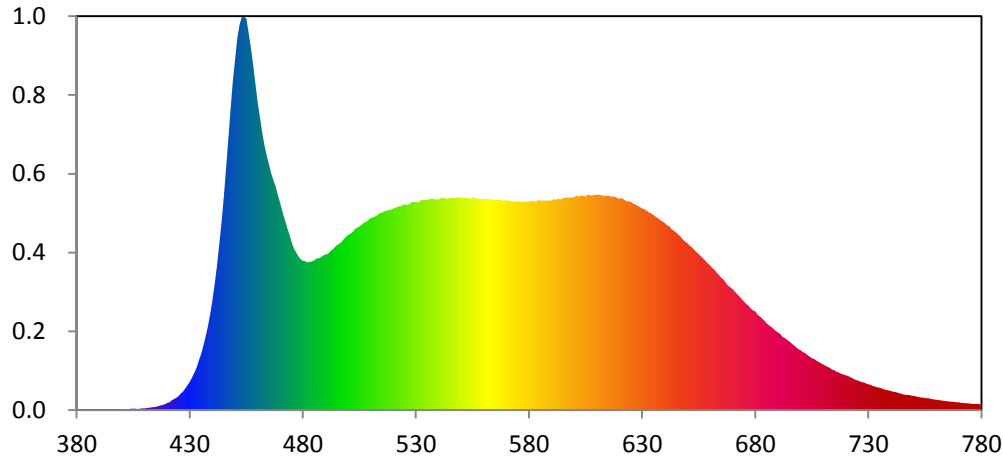
## Color Rendering Index

<b>Ra</b>			
<b>95.0</b>			
<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
96	99	98	94
<b>R5</b>	<b>R6</b>	<b>R7</b>	<b>R8</b>
95	95	94	90
<b>R9</b>	<b>R10</b>	<b>R11</b>	<b>R12</b>
77	97	96	73
<b>R13</b>	<b>R14</b>	<b>R15</b>	
98	99	95	





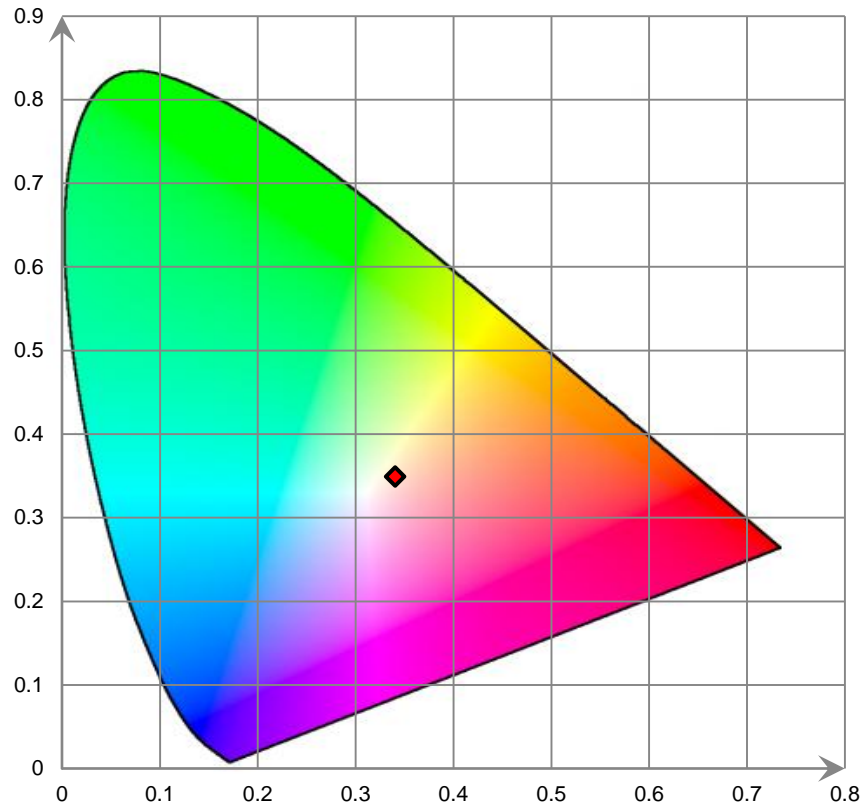
### Relative Spectral Power Distribution



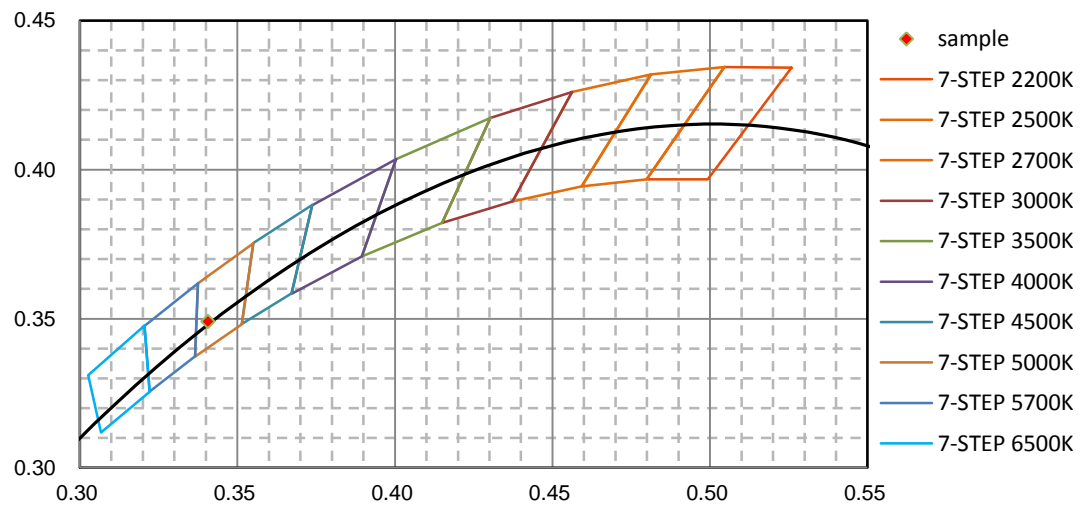
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	7.595E-02	421	9.238E-01	462	3.312E+01	503	2.162E+01	544	2.517E+01
381	4.668E-02	422	1.125E+00	463	3.157E+01	504	2.180E+01	545	2.528E+01
382	9.332E-02	423	1.285E+00	464	3.039E+01	505	2.195E+01	546	2.533E+01
383	7.338E-02	424	1.440E+00	465	2.929E+01	506	2.214E+01	547	2.529E+01
384	8.251E-02	425	1.651E+00	466	2.825E+01	507	2.237E+01	548	2.539E+01
385	6.846E-02	426	1.958E+00	467	2.741E+01	508	2.249E+01	549	2.540E+01
386	1.175E-01	427	2.194E+00	468	2.667E+01	509	2.269E+01	550	2.533E+01
387	7.545E-02	428	2.572E+00	469	2.563E+01	510	2.292E+01	551	2.534E+01
388	8.964E-02	429	2.957E+00	470	2.468E+01	511	2.300E+01	552	2.533E+01
389	1.005E-01	430	3.394E+00	471	2.370E+01	512	2.312E+01	553	2.534E+01
390	7.319E-02	431	3.897E+00	472	2.278E+01	513	2.329E+01	554	2.524E+01
391	5.956E-02	432	4.450E+00	473	2.174E+01	514	2.352E+01	555	2.536E+01
392	7.811E-02	433	5.087E+00	474	2.093E+01	515	2.359E+01	556	2.539E+01
393	8.247E-02	434	5.912E+00	475	2.003E+01	516	2.375E+01	557	2.527E+01
394	8.389E-02	435	6.678E+00	476	1.925E+01	517	2.380E+01	558	2.520E+01
395	8.837E-02	436	7.667E+00	477	1.881E+01	518	2.389E+01	559	2.520E+01
396	8.799E-02	437	8.731E+00	478	1.836E+01	519	2.391E+01	560	2.518E+01
397	8.675E-02	438	9.963E+00	479	1.801E+01	520	2.408E+01	561	2.526E+01
398	7.830E-02	439	1.140E+01	480	1.781E+01	521	2.415E+01	562	2.517E+01
399	7.807E-02	440	1.308E+01	481	1.776E+01	522	2.429E+01	563	2.519E+01
400	8.526E-02	441	1.494E+01	482	1.760E+01	523	2.431E+01	564	2.509E+01
401	1.014E-01	442	1.710E+01	483	1.768E+01	524	2.446E+01	565	2.511E+01
402	1.187E-01	443	1.957E+01	484	1.774E+01	525	2.456E+01	566	2.511E+01
403	1.141E-01	444	2.251E+01	485	1.786E+01	526	2.446E+01	567	2.508E+01
404	1.415E-01	445	2.553E+01	486	1.808E+01	527	2.456E+01	568	2.504E+01
405	1.304E-01	446	2.892E+01	487	1.810E+01	528	2.480E+01	569	2.498E+01
406	1.367E-01	447	3.242E+01	488	1.828E+01	529	2.482E+01	570	2.506E+01
407	1.167E-01	448	3.591E+01	489	1.845E+01	530	2.486E+01	571	2.498E+01
408	1.469E-01	449	3.929E+01	490	1.858E+01	531	2.478E+01	572	2.497E+01
409	1.695E-01	450	4.185E+01	491	1.867E+01	532	2.504E+01	573	2.488E+01
410	1.962E-01	451	4.443E+01	492	1.892E+01	533	2.509E+01	574	2.490E+01
411	2.260E-01	452	4.602E+01	493	1.914E+01	534	2.506E+01	575	2.491E+01
412	2.802E-01	453	4.695E+01	494	1.940E+01	535	2.507E+01	576	2.490E+01
413	2.875E-01	454	4.693E+01	495	1.967E+01	536	2.523E+01	577	2.482E+01
414	3.381E-01	455	4.678E+01	496	1.982E+01	537	2.522E+01	578	2.493E+01
415	3.964E-01	456	4.513E+01	497	2.001E+01	538	2.522E+01	579	2.485E+01
416	4.507E-01	457	4.339E+01	498	2.037E+01	539	2.511E+01	580	2.492E+01
417	5.394E-01	458	4.108E+01	499	2.065E+01	540	2.519E+01	581	2.491E+01
418	6.004E-01	459	3.880E+01	500	2.089E+01	541	2.530E+01	582	2.500E+01
419	6.948E-01	460	3.665E+01	501	2.102E+01	542	2.533E+01	583	2.485E+01
420	8.284E-01	461	3.490E+01	502	2.127E+01	543	2.532E+01	584	2.510E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.500E+01	626	2.464E+01	667	1.517E+01	708	5.730E+00	749	1.726E+00
586	2.501E+01	627	2.455E+01	668	1.484E+01	709	5.571E+00	750	1.670E+00
587	2.497E+01	628	2.439E+01	669	1.464E+01	710	5.428E+00	751	1.608E+00
588	2.501E+01	629	2.425E+01	670	1.442E+01	711	5.281E+00	752	1.566E+00
589	2.500E+01	630	2.408E+01	671	1.415E+01	712	5.142E+00	753	1.499E+00
590	2.504E+01	631	2.395E+01	672	1.385E+01	713	5.012E+00	754	1.469E+00
591	2.518E+01	632	2.381E+01	673	1.356E+01	714	4.827E+00	755	1.421E+00
592	2.512E+01	633	2.358E+01	674	1.327E+01	715	4.740E+00	756	1.407E+00
593	2.524E+01	634	2.346E+01	675	1.295E+01	716	4.550E+00	757	1.353E+00
594	2.515E+01	635	2.328E+01	676	1.269E+01	717	4.479E+00	758	1.313E+00
595	2.532E+01	636	2.303E+01	677	1.242E+01	718	4.315E+00	759	1.274E+00
596	2.537E+01	637	2.288E+01	678	1.212E+01	719	4.239E+00	760	1.227E+00
597	2.535E+01	638	2.266E+01	679	1.188E+01	720	4.117E+00	761	1.187E+00
598	2.538E+01	639	2.251E+01	680	1.176E+01	721	4.031E+00	762	1.146E+00
599	2.539E+01	640	2.231E+01	681	1.138E+01	722	3.911E+00	763	1.115E+00
600	2.542E+01	641	2.206E+01	682	1.117E+01	723	3.793E+00	764	1.075E+00
601	2.561E+01	642	2.192E+01	683	1.093E+01	724	3.632E+00	765	1.044E+00
602	2.547E+01	643	2.161E+01	684	1.068E+01	725	3.539E+00	766	9.730E-01
603	2.562E+01	644	2.139E+01	685	1.035E+01	726	3.421E+00	767	9.866E-01
604	2.560E+01	645	2.121E+01	686	1.014E+01	727	3.336E+00	768	9.576E-01
605	2.550E+01	646	2.096E+01	687	9.947E+00	728	3.266E+00	769	9.290E-01
606	2.575E+01	647	2.070E+01	688	9.688E+00	729	3.168E+00	770	9.114E-01
607	2.561E+01	648	2.034E+01	689	9.434E+00	730	3.043E+00	771	8.332E-01
608	2.564E+01	649	2.006E+01	690	9.268E+00	731	3.029E+00	772	8.324E-01
609	2.569E+01	650	1.992E+01	691	9.050E+00	732	2.871E+00	773	8.086E-01
610	2.573E+01	651	1.961E+01	692	8.722E+00	733	2.789E+00	774	8.087E-01
611	2.572E+01	652	1.943E+01	693	8.581E+00	734	2.723E+00	775	7.556E-01
612	2.565E+01	653	1.912E+01	694	8.349E+00	735	2.638E+00	776	7.288E-01
613	2.557E+01	654	1.886E+01	695	8.170E+00	736	2.538E+00	777	7.093E-01
614	2.555E+01	655	1.861E+01	696	7.937E+00	737	2.459E+00	778	7.113E-01
615	2.562E+01	656	1.835E+01	697	7.703E+00	738	2.398E+00	779	6.942E-01
616	2.551E+01	657	1.806E+01	698	7.499E+00	739	2.337E+00	780	6.477E-01
617	2.550E+01	658	1.779E+01	699	7.268E+00	740	2.242E+00		
618	2.544E+01	659	1.750E+01	700	7.160E+00	741	2.166E+00		
619	2.530E+01	660	1.727E+01	701	6.919E+00	742	2.137E+00		
620	2.522E+01	661	1.696E+01	702	6.789E+00	743	2.057E+00		
621	2.528E+01	662	1.671E+01	703	6.571E+00	744	1.966E+00		
622	2.512E+01	663	1.638E+01	704	6.391E+00	745	1.885E+00		
623	2.493E+01	664	1.609E+01	705	6.196E+00	746	1.849E+00		
624	2.491E+01	665	1.580E+01	706	6.086E+00	747	1.800E+00		
625	2.484E+01	666	1.554E+01	707	5.898E+00	748	1.793E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles

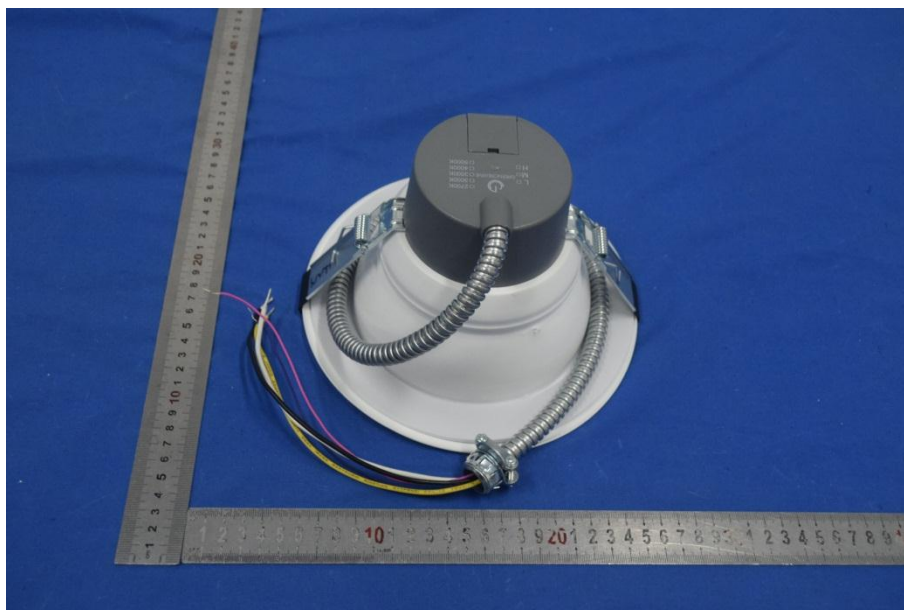
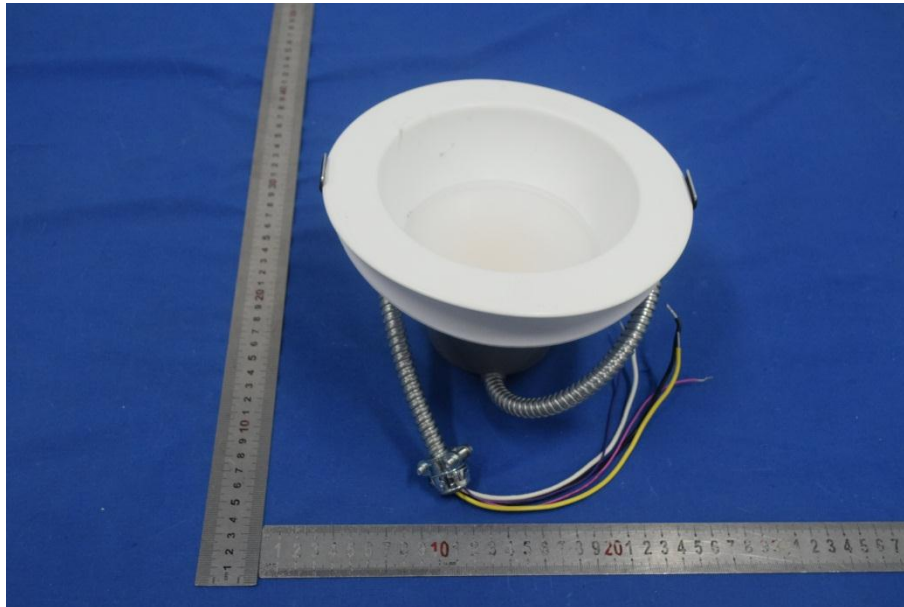


**[Additional Test]**

Test CCT: **2700K**

Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Total Harmonic Distortion:	120.0	60	11.92%

**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\*\*\*\*\*