

ANSI/IES LM-79-19

MEASUREMENT AND TEST REPORT

For

LEDVANCE LLC

200 Ballardvale Street Wilmington, MA 01887

Test Model:
SLMWPKC3A/S030UNHD8SC2/BZP

Report Type:	Electrical and Photometric tests including: Luminous Flux, Power Factor, Chromaticity, Luminous Intensity Distribution
Reviewed By:	Hexy He <i>Hexy He</i>
Report Number:	DG3220929-44626E-EE
Test Date:	2022-10-14 to 2022-12-14
Report Date:	2022-12-16
Approved by:	Bill Xiong / EE Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5/F(B-West) -7/F, the 3rd Phase of Wan Li Industrial Building D, Shihua Road, Futian Free Trade Zone Shenzhen, Guangdong, China. Tel: +86-755-33320018 Fax: +86-755-33320008
Test Facility:	Test facility was located at No.12, Pulong East 1 st Road, Tangxia Town, 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.

1. Product Description#

General Information:

One test sample was in good condition and received on 2022-09-29, and used for testing. All tests and evaluations were performed at the least efficient white light setting.

Model Tested:	SLMWPKC3A/S030UNHD8SC2/BZP
Manufacturer:	LEDVANCE LLC
Brand Name:	LEDVANCE
Product Designation:	Dual Selectable Slim Wallpack
Burning Time Before Test:	0hour(For New Products)

Rated Values:

Rated Voltage/Frequency:	120-347 V AC 50/60Hz		
Rated Power:	10W/20W/30W		
Nominal CCT:	3000K	4000K	5000K
Nominal Lumen Output:	1250lm/2500lm/3800lm	1400lm/2800lm/4200lm	1400lm/2800lm/4200lm

Family Declaration

LEDVANCE LLC declares that there are some differences between multiple models and tested model. Details as below:

Tested Model	Multiple Models	Variations	Details
SLMWPKC3A/S030UNH D8SC2/BZP	SLMWPKC3A/S030UN HD8SC2/XX/YYY	Enclosure color &Accessory	"XX" represents enclosure color, it can be any two digits for color ,BZ - bronze; WH - white; BL - black; GR - gray; "YYY" represents Accessory , it can be D for motion/daylight sensor; P for photocell

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	2022-09-27	2023-09-26
High-precision rapid spectral analysis system	EVERFINE	HAAS-2000	M112048CA1361125	2022-09-27	2023-09-26
Digital power meter	YOKOGAWA	WT310	13398	2022-01-05	2023-01-04
Programmable Precision DC Power Supply	EVERFINE	WY5015	11060010	2022-01-05	2023-01-04

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
thermometer	SENSING	NA	NA	2022-01-10	2023-01-09
Standard Light Source	EVERFINE	D204	N/A	2021-10-15	2023-10-14
Precision frequency power supply	ALL Power	APW-105N	970613	2022-01-05	2023-01-04
AC POWER SUPPLY	EVERFINE	VPS1030 PWM	1012017	2022-01-06	2023-01-05
Digital CC&CV DC Power Supply	EVERFINE	WY12010	1009009	2022-01-06	2023-01-05
Digital power meter	YOKOGAWA	WT-210	91j926132	2022-01-06	2023-01-05
full-field speed goniophotometer	EVERFINE	GO-R5000	YG108492N10120001	2021-10-26	2022-10-25
wireless remote thermohygrometer	N/A	433MHz	N/A	2022-01-10	2023-01-09
Standard Light Source	EVERFINE	D908	1012003	2021-10-15	2023-10-14

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_f , 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]

The Stabilization time: **30 minutes**

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

Test orientation: **Downward**

Test CCT: **3000K**

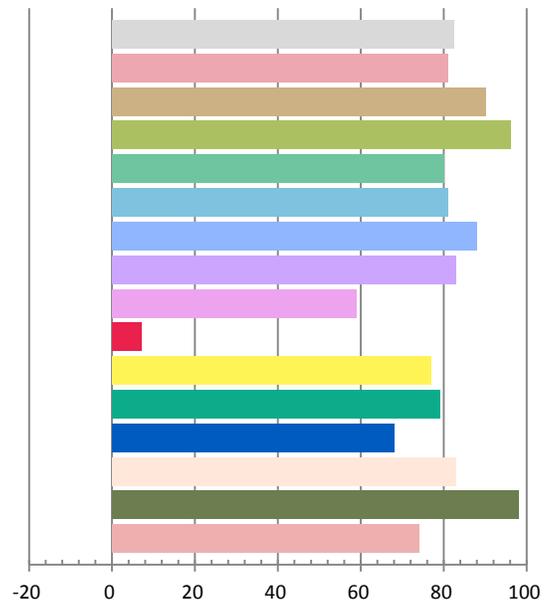
Photometric and Electrical Measurement Result

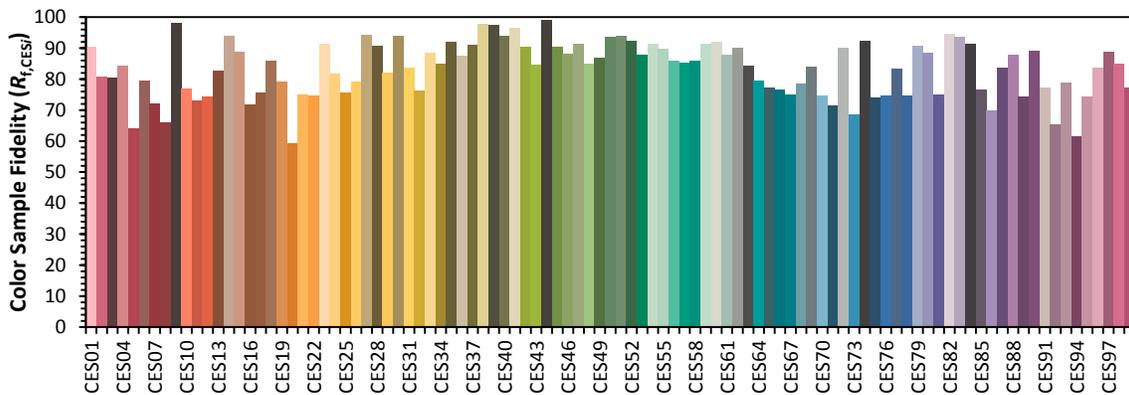
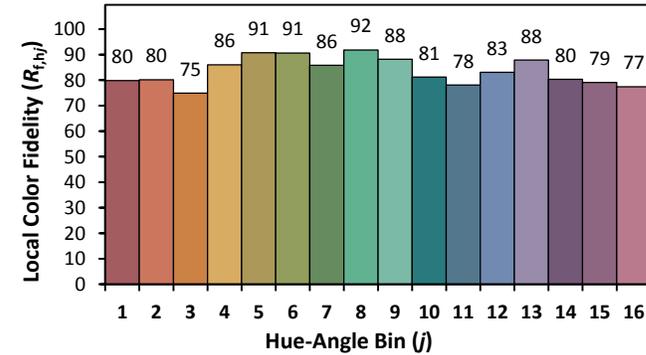
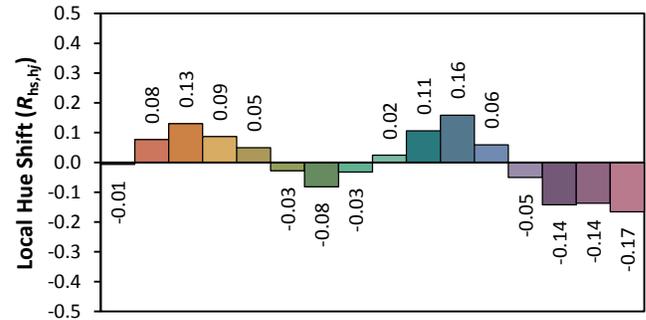
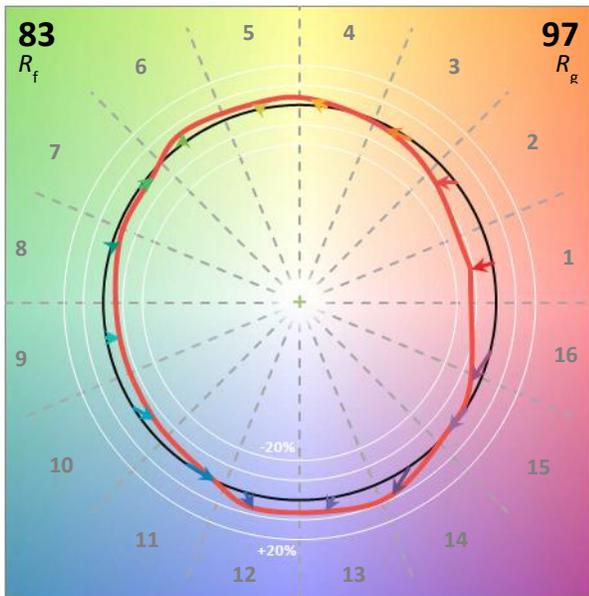
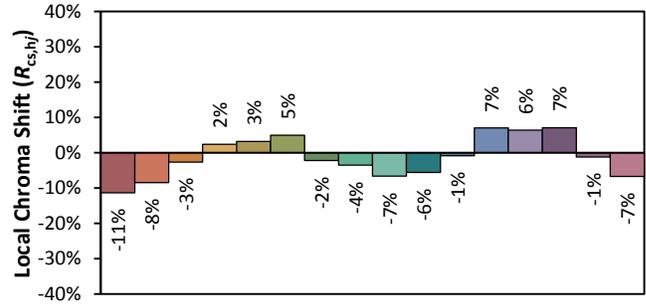
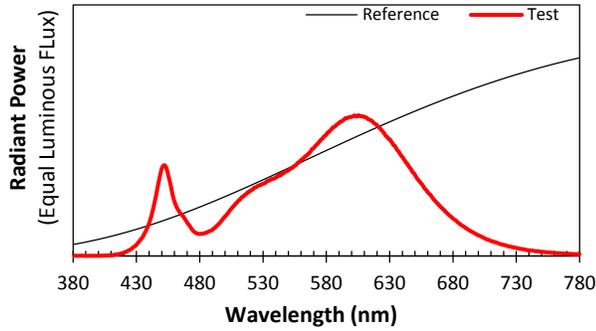
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.2541	30.33	0.9945	3979	131.2

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
12.089	3016	-0.00190	0.4331	0.3980	0.2507	0.5184

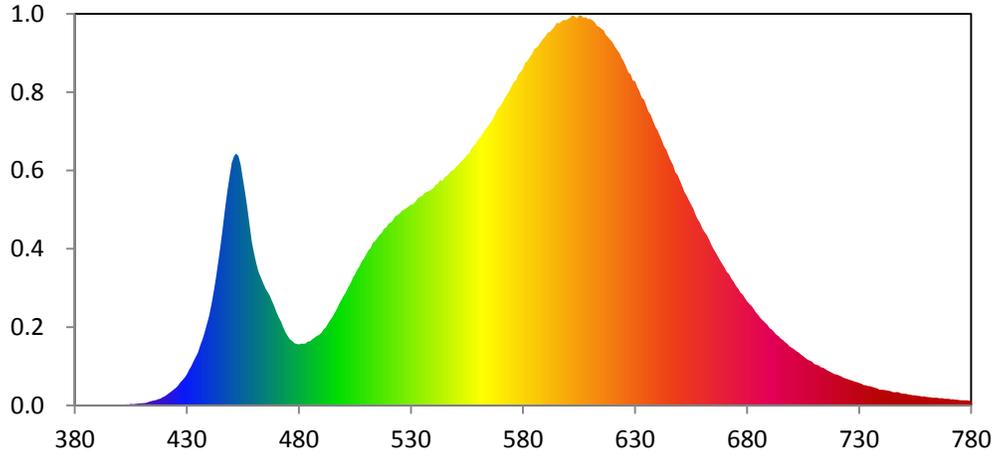
Color Rendering Index

Ra			
82.3			
R1	R2	R3	R4
81	90	96	80
R5	R6	R7	R8
81	88	83	59
R9	R10	R11	R12
7	77	79	68
R13	R14	R15	
83	98	74	





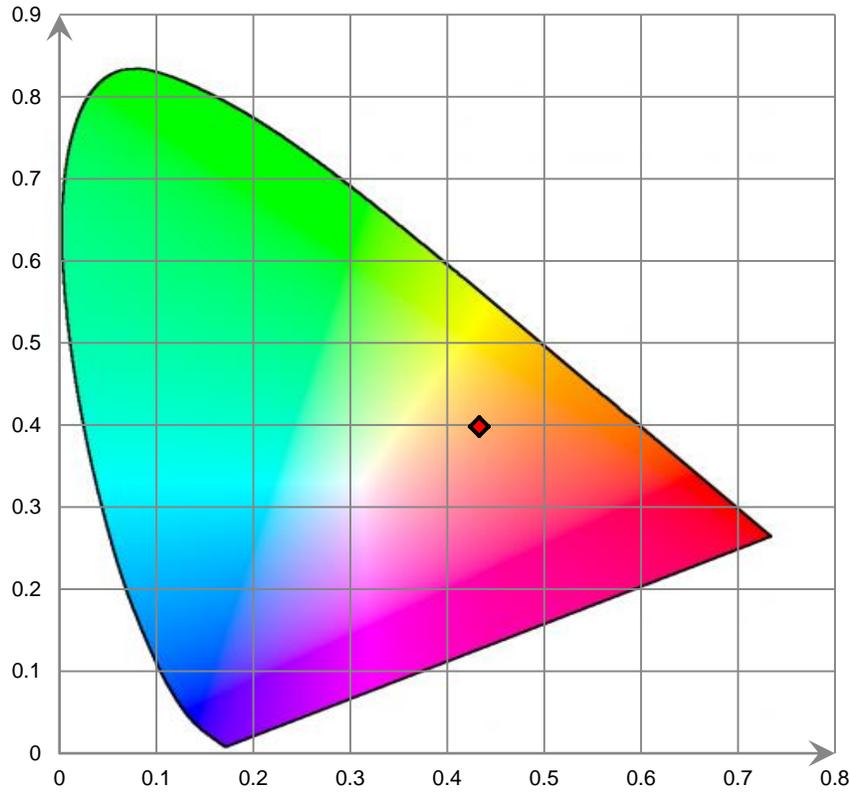
Relative Spectral Power Distribution



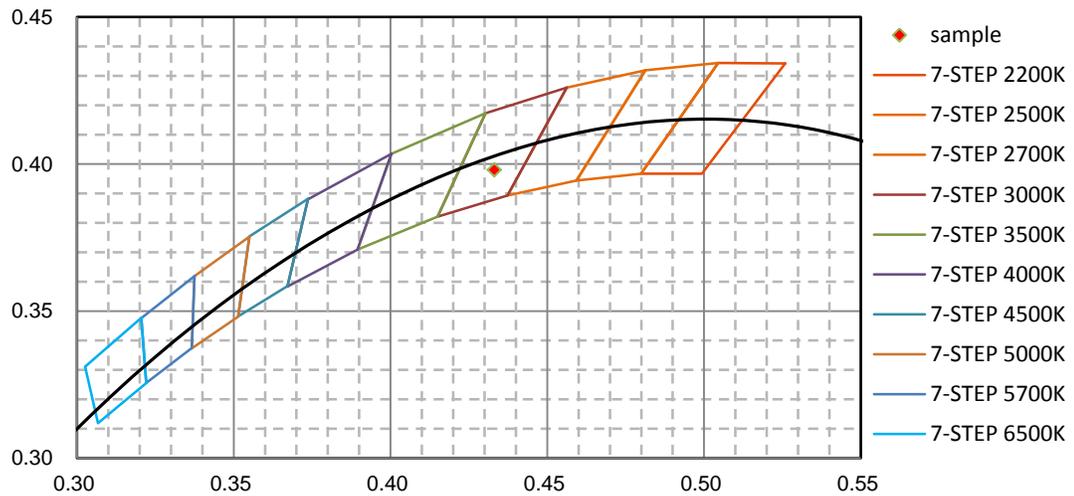
nm	mW								
380	0.000E+00	421	2.198E+00	462	2.794E+01	503	2.555E+01	544	4.686E+01
381	1.244E-01	422	2.535E+00	463	2.671E+01	504	2.666E+01	545	4.770E+01
382	1.954E-01	423	2.906E+00	464	2.560E+01	505	2.744E+01	546	4.797E+01
383	7.661E-02	424	3.273E+00	465	2.451E+01	506	2.839E+01	547	4.851E+01
384	1.393E-01	425	3.668E+00	466	2.375E+01	507	2.910E+01	548	4.904E+01
385	1.767E-01	426	4.101E+00	467	2.292E+01	508	3.006E+01	549	4.926E+01
386	1.891E-01	427	4.777E+00	468	2.182E+01	509	3.073E+01	550	4.978E+01
387	1.994E-01	428	5.298E+00	469	2.074E+01	510	3.157E+01	551	5.023E+01
388	1.659E-01	429	5.806E+00	470	1.950E+01	511	3.242E+01	552	5.079E+01
389	6.788E-02	430	6.496E+00	471	1.843E+01	512	3.290E+01	553	5.125E+01
390	1.863E-01	431	7.449E+00	472	1.755E+01	513	3.404E+01	554	5.172E+01
391	1.188E-02	432	8.236E+00	473	1.637E+01	514	3.434E+01	555	5.237E+01
392	1.051E-01	433	9.255E+00	474	1.534E+01	515	3.502E+01	556	5.271E+01
393	1.256E-01	434	1.018E+01	475	1.452E+01	516	3.569E+01	557	5.377E+01
394	1.267E-01	435	1.109E+01	476	1.379E+01	517	3.612E+01	558	5.424E+01
395	1.033E-01	436	1.267E+01	477	1.347E+01	518	3.699E+01	559	5.481E+01
396	1.399E-01	437	1.388E+01	478	1.298E+01	519	3.721E+01	560	5.567E+01
397	1.392E-01	438	1.546E+01	479	1.286E+01	520	3.803E+01	561	5.611E+01
398	1.191E-01	439	1.716E+01	480	1.276E+01	521	3.824E+01	562	5.680E+01
399	1.495E-01	440	1.892E+01	481	1.292E+01	522	3.875E+01	563	5.761E+01
400	9.105E-02	441	2.124E+01	482	1.289E+01	523	3.956E+01	564	5.814E+01
401	1.662E-01	442	2.388E+01	483	1.297E+01	524	3.979E+01	565	5.873E+01
402	9.631E-02	443	2.679E+01	484	1.336E+01	525	4.013E+01	566	5.945E+01
403	2.205E-01	444	3.001E+01	485	1.343E+01	526	4.071E+01	567	6.021E+01
404	2.087E-01	445	3.338E+01	486	1.383E+01	527	4.096E+01	568	6.128E+01
405	3.179E-01	446	3.705E+01	487	1.420E+01	528	4.126E+01	569	6.220E+01
406	2.654E-01	447	4.095E+01	488	1.451E+01	529	4.158E+01	570	6.257E+01
407	3.366E-01	448	4.454E+01	489	1.478E+01	530	4.202E+01	571	6.356E+01
408	3.803E-01	449	4.783E+01	490	1.520E+01	531	4.205E+01	572	6.434E+01
409	4.144E-01	450	5.075E+01	491	1.590E+01	532	4.261E+01	573	6.507E+01
410	4.699E-01	451	5.209E+01	492	1.637E+01	533	4.325E+01	574	6.586E+01
411	5.027E-01	452	5.268E+01	493	1.715E+01	534	4.366E+01	575	6.684E+01
412	6.095E-01	453	5.209E+01	494	1.791E+01	535	4.375E+01	576	6.762E+01
413	7.430E-01	454	5.030E+01	495	1.852E+01	536	4.439E+01	577	6.811E+01
414	9.044E-01	455	4.730E+01	496	1.942E+01	537	4.465E+01	578	6.925E+01
415	1.013E+00	456	4.444E+01	497	2.026E+01	538	4.478E+01	579	6.975E+01
416	1.097E+00	457	4.123E+01	498	2.128E+01	539	4.511E+01	580	7.048E+01
417	1.286E+00	458	3.767E+01	499	2.210E+01	540	4.540E+01	581	7.162E+01
418	1.400E+00	459	3.416E+01	500	2.297E+01	541	4.612E+01	582	7.199E+01
419	1.654E+00	460	3.177E+01	501	2.371E+01	542	4.632E+01	583	7.284E+01
420	1.893E+00	461	2.970E+01	502	2.467E+01	543	4.715E+01	584	7.348E+01

nm	mW								
585	7.452E+01	626	7.077E+01	667	3.108E+01	708	9.362E+00	749	2.497E+00
586	7.479E+01	627	6.959E+01	668	3.027E+01	709	9.127E+00	750	2.466E+00
587	7.527E+01	628	6.922E+01	669	2.948E+01	710	8.639E+00	751	2.406E+00
588	7.608E+01	629	6.792E+01	670	2.876E+01	711	8.498E+00	752	2.285E+00
589	7.666E+01	630	6.776E+01	671	2.787E+01	712	8.347E+00	753	2.228E+00
590	7.719E+01	631	6.657E+01	672	2.741E+01	713	7.962E+00	754	2.134E+00
591	7.794E+01	632	6.565E+01	673	2.653E+01	714	7.886E+00	755	2.108E+00
592	7.806E+01	633	6.434E+01	674	2.587E+01	715	7.577E+00	756	2.035E+00
593	7.858E+01	634	6.393E+01	675	2.502E+01	716	7.287E+00	757	1.984E+00
594	7.914E+01	635	6.267E+01	676	2.443E+01	717	7.031E+00	758	1.863E+00
595	7.997E+01	636	6.141E+01	677	2.356E+01	718	6.782E+00	759	1.893E+00
596	7.988E+01	637	6.072E+01	678	2.317E+01	719	6.552E+00	760	1.775E+00
597	8.022E+01	638	5.942E+01	679	2.245E+01	720	6.449E+00	761	1.709E+00
598	8.057E+01	639	5.833E+01	680	2.173E+01	721	6.285E+00	762	1.685E+00
599	8.055E+01	640	5.749E+01	681	2.120E+01	722	6.073E+00	763	1.577E+00
600	8.077E+01	641	5.644E+01	682	2.078E+01	723	5.768E+00	764	1.624E+00
601	8.106E+01	642	5.532E+01	683	2.010E+01	724	5.654E+00	765	1.584E+00
602	8.154E+01	643	5.408E+01	684	1.942E+01	725	5.468E+00	766	1.497E+00
603	8.133E+01	644	5.342E+01	685	1.888E+01	726	5.328E+00	767	1.529E+00
604	8.089E+01	645	5.215E+01	686	1.825E+01	727	5.173E+00	768	1.400E+00
605	8.154E+01	646	5.112E+01	687	1.779E+01	728	4.982E+00	769	1.381E+00
606	8.151E+01	647	5.023E+01	688	1.731E+01	729	4.892E+00	770	1.387E+00
607	8.101E+01	648	4.874E+01	689	1.689E+01	730	4.678E+00	771	1.270E+00
608	8.115E+01	649	4.818E+01	690	1.616E+01	731	4.548E+00	772	1.298E+00
609	8.076E+01	650	4.699E+01	691	1.585E+01	732	4.265E+00	773	1.178E+00
610	8.078E+01	651	4.586E+01	692	1.535E+01	733	4.206E+00	774	1.183E+00
611	8.047E+01	652	4.463E+01	693	1.480E+01	734	4.049E+00	775	1.109E+00
612	8.007E+01	653	4.386E+01	694	1.450E+01	735	4.005E+00	776	1.086E+00
613	7.932E+01	654	4.289E+01	695	1.397E+01	736	3.858E+00	777	1.061E+00
614	7.910E+01	655	4.199E+01	696	1.365E+01	737	3.688E+00	778	1.081E+00
615	7.873E+01	656	4.114E+01	697	1.320E+01	738	3.575E+00	779	9.891E-01
616	7.837E+01	657	3.988E+01	698	1.288E+01	739	3.277E+00	780	9.988E-01
617	7.746E+01	658	3.887E+01	699	1.231E+01	740	3.302E+00		
618	7.697E+01	659	3.818E+01	700	1.207E+01	741	3.262E+00		
619	7.636E+01	660	3.705E+01	701	1.174E+01	742	3.140E+00		
620	7.588E+01	661	3.627E+01	702	1.138E+01	743	3.090E+00		
621	7.501E+01	662	3.565E+01	703	1.106E+01	744	2.979E+00		
622	7.432E+01	663	3.469E+01	704	1.062E+01	745	2.798E+00		
623	7.365E+01	664	3.359E+01	705	1.029E+01	746	2.745E+00		
624	7.263E+01	665	3.268E+01	706	9.910E+00	747	2.809E+00		
625	7.184E+01	666	3.192E+01	707	9.564E+00	748	2.658E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



[Goniophotometer System]

The Stabilization time: **30 minutes**

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

Test orientation: **Downward**

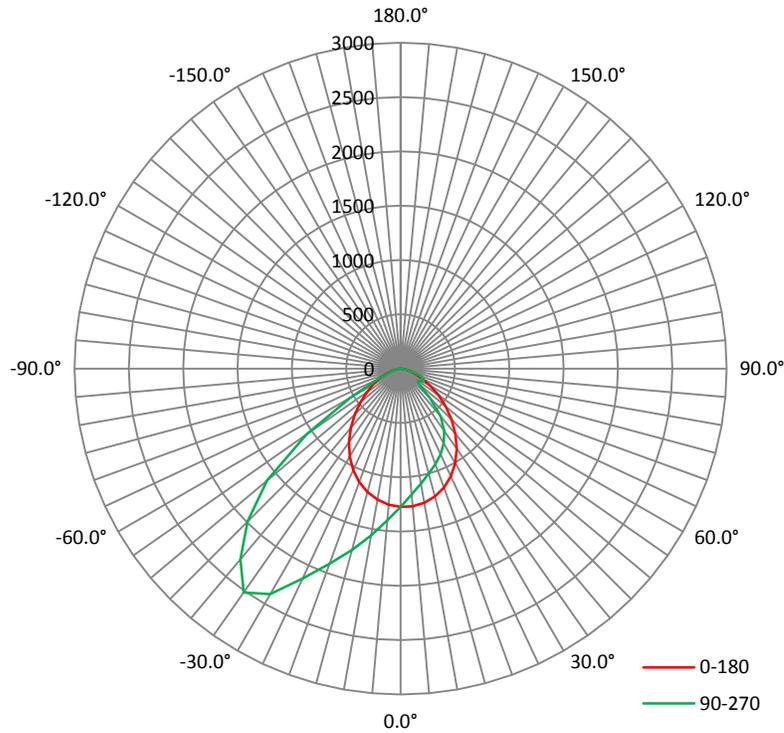
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.9	60	0.2541	30.34	0.9953

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
3984.37	131.32	2523	1.18	0.95

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	89.1	76.8	53.7	67.2	71.7
Field Angle (10% I _{max}):	143.6	130.8	112.5	124.6	127.9

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	1274	1274	1274	1274	1274	1274	1274	1274
1°	1272	1282	1288	1294	1297	1295	1293	1285
2°	1269	1290	1301	1315	1321	1317	1310	1296
3°	1266	1293	1315	1335	1345	1339	1326	1303
4°	1262	1296	1332	1359	1372	1365	1342	1310
5°	1258	1299	1349	1385	1402	1392	1362	1317
6°	1252	1304	1366	1412	1432	1421	1382	1325
7°	1247	1308	1383	1438	1463	1450	1404	1334
8°	1240	1313	1400	1464	1494	1480	1424	1343
9°	1231	1316	1417	1492	1527	1510	1444	1351
10°	1224	1320	1433	1520	1560	1541	1466	1359
11°	1217	1323	1450	1548	1593	1572	1487	1367
12°	1208	1326	1467	1577	1627	1603	1509	1374
13°	1197	1328	1484	1607	1661	1634	1531	1381
14°	1188	1329	1501	1635	1694	1665	1553	1388
15°	1176	1331	1518	1664	1729	1696	1575	1394
16°	1164	1331	1536	1693	1764	1730	1599	1401
17°	1152	1330	1553	1723	1800	1763	1621	1406
18°	1139	1330	1569	1753	1837	1796	1644	1412
19°	1125	1328	1587	1784	1873	1830	1666	1417
20°	1111	1327	1604	1816	1912	1867	1690	1423
21°	1097	1325	1622	1849	1952	1903	1713	1427
22°	1081	1323	1641	1884	1994	1942	1738	1433
23°	1065	1320	1658	1921	2038	1984	1765	1437
24°	1048	1316	1679	1958	2083	2025	1792	1442
25°	1031	1312	1699	2001	2133	2070	1822	1445
26°	1013	1309	1720	2043	2183	2119	1853	1451
27°	995	1305	1745	2088	2235	2169	1887	1456
28°	976	1301	1769	2136	2290	2222	1924	1462
29°	956	1295	1797	2186	2344	2275	1962	1468
30°	936	1290	1826	2237	2398	2329	2006	1475
31°	915	1286	1860	2288	2446	2380	2051	1482
32°	894	1281	1894	2333	2486	2427	2097	1491
33°	872	1277	1929	2377	2512	2464	2143	1500
34°	850	1272	1966	2409	2523	2486	2186	1513
35°	827	1268	2004	2428	2516	2491	2227	1526
36°	805	1264	2037	2436	2492	2481	2256	1540
37°	782	1260	2068	2425	2454	2457	2278	1555
38°	758	1257	2093	2403	2405	2420	2290	1572
39°	735	1254	2110	2373	2350	2373	2290	1588
40°	711	1251	2121	2334	2292	2322	2281	1602
41°	688	1249	2123	2288	2230	2267	2262	1614
42°	665	1245	2118	2243	2174	2216	2239	1624
43°	641	1241	2106	2197	2114	2164	2211	1629
44°	617	1236	2090	2151	2053	2110	2183	1630
45°	594	1228	2071	2106	1990	2055	2157	1624
46°	571	1219	2056	2056	1922	1994	2132	1616
47°	548	1205	2040	2003	1851	1930	2104	1602
48°	525	1190	2026	1944	1772	1861	2076	1586
49°	502	1171	2012	1879	1689	1784	2042	1569

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
50°	480	1147	1997	1809	1601	1703	2005	1550
51°	458	1122	1979	1729	1503	1609	1958	1537
52°	437	1095	1958	1645	1401	1513	1906	1525
53°	416	1066	1932	1547	1292	1404	1845	1514
54°	396	1038	1897	1443	1174	1291	1770	1505
55°	377	1010	1856	1332	1060	1176	1689	1495
56°	358	985	1804	1214	941	1051	1595	1485
57°	339	959	1741	1090	825	928	1486	1475
58°	322	933	1666	966	715	810	1372	1461
59°	305	908	1577	843	623	696	1245	1448
60°	289	881	1478	725	532	604	1116	1431
61°	273	855	1363	617	440	512	981	1409
62°	258	828	1240	526	369	420	847	1382
63°	243	799	1114	435	309	353	722	1346
64°	228	771	982	364	260	296	619	1302
65°	214	742	857	306	221	252	517	1248
66°	200	711	734	260	192	217	414	1183
67°	186	680	615	224	169	191	344	1105
68°	173	647	523	197	153	171	291	1020
69°	159	614	432	175	138	154	250	926
70°	147	581	361	156	124	137	218	827
71°	135	547	303	139	110	121	191	729
72°	123	509	258	122	98	106	168	634
73°	112	470	221	107	86	93	147	552
74°	102	428	189	93	76	81	128	471
75°	92	385	163	81	69	72	110	400
76°	83	342	140	70	64	65	95	338
77°	75	300	120	64	59	60	82	285
78°	67	260	103	58	54	55	72	239
79°	59	224	88	52	51	51	63	200
80°	51	190	76	48	49	48	56	165
81°	44	160	65	44	46	45	49	137
82°	37	134	57	41	44	43	43	112
83°	31	110	49	39	41	40	39	90
84°	25	90	41	36	38	38	34	72
85°	19	72	35	33	35	35	30	59
86°	14	58	30	30	31	31	27	46
87°	9	44	25	27	27	27	23	32
88°	6	30	21	24	24	23	19	23
89°	3	20	16	20	20	19	15	15
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
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data

C \ y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
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°	0	0	0	0	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	0	0	0	0	0	0	0	0
139°	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0
141°	0	0	0	0	0	0	0	0
142°	0	0	0	0	0	0	0	0
143°	0	0	0	0	0	0	0	0
144°	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0
146°	0	0	0	0	0	0	0	0
147°	0	0	0	0	0	0	0	0
148°	0	0	0	0	0	0	0	0
149°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data

C \ y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
150°	0	0	0	0	0	0	0	0
151°	0	0	0	0	0	0	0	0
152°	0	0	0	0	0	0	0	0
153°	0	0	0	0	0	0	0	0
154°	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0
156°	0	0	0	0	0	0	0	0
157°	0	0	0	0	0	0	0	0
158°	0	0	0	0	0	0	0	0
159°	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0
161°	0	0	0	0	0	0	0	0
162°	0	0	0	0	0	0	0	0
163°	0	0	0	0	0	0	0	0
164°	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0
166°	0	0	0	0	0	0	0	0
167°	0	0	0	0	0	0	0	0
168°	0	0	0	0	0	0	0	0
169°	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0
171°	0	0	0	0	0	0	0	0
172°	0	0	0	0	0	0	0	0
173°	0	0	0	0	0	0	0	0
174°	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0
176°	0	0	0	0	0	0	0	0
177°	0	0	0	0	0	0	0	0
178°	0	0	0	0	0	0	0	0
179°	0	0	0	0	0	0	0	0
180°	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°
0°	1274	1274	1274	1274	1274	1274	1274	1274
1°	1275	1265	1257	1251	1249	1249	1255	1262
2°	1275	1256	1240	1228	1225	1227	1235	1250
3°	1276	1247	1224	1208	1203	1206	1218	1238
4°	1274	1236	1208	1189	1183	1186	1200	1226
5°	1273	1225	1191	1170	1164	1167	1183	1213
6°	1271	1214	1176	1152	1145	1149	1167	1200
7°	1268	1203	1161	1135	1127	1132	1151	1188
8°	1264	1191	1146	1119	1109	1115	1135	1174
9°	1259	1179	1129	1102	1091	1098	1120	1162
10°	1254	1167	1115	1085	1076	1081	1104	1149
11°	1248	1154	1100	1069	1059	1064	1088	1136
12°	1242	1141	1084	1053	1043	1048	1073	1122
13°	1235	1127	1068	1037	1028	1034	1057	1107
14°	1228	1113	1052	1022	1013	1018	1042	1092
15°	1219	1099	1036	1007	999	1004	1026	1077
16°	1210	1084	1020	992	986	990	1010	1062
17°	1200	1069	1004	978	973	977	995	1046
18°	1189	1054	988	964	961	964	980	1031
19°	1178	1038	972	951	949	952	965	1013
20°	1166	1021	957	939	937	940	951	997
21°	1153	1004	941	926	924	926	936	980
22°	1140	986	925	913	911	914	923	962
23°	1126	968	910	900	898	901	909	944
24°	1111	950	895	886	884	887	895	927
25°	1095	931	880	873	870	873	882	910
26°	1078	912	865	858	855	859	867	891
27°	1061	893	851	844	841	844	853	873
28°	1043	873	835	829	825	829	839	856
29°	1025	853	820	814	810	813	823	839
30°	1005	833	805	798	794	798	808	821
31°	986	813	789	782	777	782	792	803
32°	965	793	774	765	759	765	776	785
33°	945	773	757	748	740	747	760	767
34°	922	753	741	730	720	729	743	750
35°	901	733	724	712	699	710	726	733
36°	878	714	707	693	677	689	708	715
37°	855	694	689	672	654	668	691	698
38°	832	674	670	651	628	645	672	680
39°	808	654	653	629	601	620	654	662
40°	785	635	634	605	571	595	635	644
41°	760	616	616	581	539	566	615	627
42°	736	596	597	554	507	536	595	608
43°	712	577	577	525	471	505	573	590
44°	687	558	557	494	428	471	551	571
45°	662	538	537	462	381	433	528	551
46°	637	519	516	429	336	390	504	533
47°	613	499	494	389	295	345	478	513
48°	588	479	472	346	263	304	451	493
49°	564	459	449	304	238	269	423	473

Luminous Intensity (cd) Distribution Data (cont.)

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
50°	540	439	424	268	220	240	394	453
51°	517	418	399	238	207	219	364	433
52°	494	399	373	215	199	204	331	413
53°	471	379	346	198	194	193	294	392
54°	449	360	319	185	193	185	259	372
55°	427	341	290	176	194	180	228	352
56°	405	322	259	169	199	178	202	332
57°	383	305	227	164	208	177	182	312
58°	361	287	200	161	220	179	167	293
59°	339	271	178	159	233	184	155	274
60°	317	254	160	159	244	193	147	256
61°	296	239	148	161	251	203	138	237
62°	275	223	137	166	251	214	130	219
63°	256	208	125	174	247	222	123	202
64°	237	194	117	182	239	225	117	185
65°	220	180	110	189	230	221	111	168
66°	204	166	103	192	222	213	107	151
67°	189	153	96	190	216	203	103	134
68°	176	141	90	182	208	195	100	117
69°	163	128	84	175	199	187	97	105
70°	151	116	79	166	188	178	95	95
71°	139	105	74	157	175	167	93	87
72°	128	93	69	146	159	154	92	79
73°	118	83	64	134	143	142	92	73
74°	108	74	59	123	127	129	91	66
75°	98	66	56	110	112	115	89	60
76°	89	59	52	97	99	101	85	54
77°	80	52	48	85	86	88	77	48
78°	71	46	44	73	75	76	68	42
79°	63	40	40	62	64	65	59	37
80°	55	34	35	50	52	53	49	31
81°	47	29	29	40	41	43	40	26
82°	39	23	23	29	30	32	31	21
83°	32	18	17	19	20	21	23	17
84°	26	14	11	10	10	11	16	13
85°	20	9	5	1	0	1	8	9
86°	15	5	1	0	0	0	1	6
87°	10	2	0	0	0	0	0	3
88°	5	0	0	0	0	0	0	0
89°	2	0	0	0	0	0	0	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
98°	0	0	0	0	0	0	0	0
99°	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°
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°	0	0	0	0	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	0	0	0	0	0	0	0	0
139°	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0
141°	0	0	0	0	0	0	0	0
142°	0	0	0	0	0	0	0	0
143°	0	0	0	0	0	0	0	0
144°	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0
146°	0	0	0	0	0	0	0	0
147°	0	0	0	0	0	0	0	0
148°	0	0	0	0	0	0	0	0
149°	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°
150°	0	0	0	0	0	0	0	0
151°	0	0	0	0	0	0	0	0
152°	0	0	0	0	0	0	0	0
153°	0	0	0	0	0	0	0	0
154°	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0
156°	0	0	0	0	0	0	0	0
157°	0	0	0	0	0	0	0	0
158°	0	0	0	0	0	0	0	0
159°	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0
161°	0	0	0	0	0	0	0	0
162°	0	0	0	0	0	0	0	0
163°	0	0	0	0	0	0	0	0
164°	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0
166°	0	0	0	0	0	0	0	0
167°	0	0	0	0	0	0	0	0
168°	0	0	0	0	0	0	0	0
169°	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0
171°	0	0	0	0	0	0	0	0
172°	0	0	0	0	0	0	0	0
173°	0	0	0	0	0	0	0	0
174°	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0
176°	0	0	0	0	0	0	0	0
177°	0	0	0	0	0	0	0	0
178°	0	0	0	0	0	0	0	0
179°	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	30.4	0.76
5-10	91.2	2.29
10-15	152.0	3.82
15-20	212.2	5.33
20-25	271.7	6.82
25-30	331.8	8.32
30-35	391.2	9.82
35-40	431.7	10.84
40-45	439.5	11.03
45-50	419.3	10.52
50-55	373.5	9.37
55-60	301.8	7.58
60-65	218.9	5.49
65-70	146.2	3.67
70-75	91.6	2.30
75-80	51.0	1.28
80-85	23.2	0.59
85-90	7.0	0.17
90-95	0.0	0.00
95-100	0.0	0.00
100-105	0.0	0.00
105-110	0.0	0.00
110-115	0.0	0.00
115-120	0.0	0.00
120-125	0.0	0.00
125-130	0.0	0.00
130-135	0.0	0.00
135-140	0.0	0.00
140-145	0.0	0.00
145-150	0.0	0.00
150-155	0.0	0.00
155-160	0.0	0.00
160-165	0.0	0.00
165-170	0.0	0.00
170-175	0.0	0.00
175-180	0.0	0.00

Deg	Flux (lm)	%
0-5	30.4	0.76
0-10	121.6	3.05
0-15	273.7	6.87
0-20	485.9	12.20
0-25	757.7	19.02
0-30	1089.5	27.34
0-35	1480.7	37.16
0-40	1912.4	48.00
0-45	2351.8	59.03
0-50	2771.1	69.55
0-55	3144.6	78.92
0-60	3446.4	86.50
0-65	3665.4	91.99
0-70	3811.6	95.66
0-75	3903.2	97.96
0-80	3954.2	99.24
0-85	3977.4	99.83
0-90	3984.4	100.00
0-95	3984.4	100.00
0-100	3984.4	100.00
0-105	3984.4	100.00
0-110	3984.4	100.00
0-115	3984.4	100.00
0-120	3984.4	100.00
0-125	3984.4	100.00
0-130	3984.4	100.00
0-135	3984.4	100.00
0-140	3984.4	100.00
0-145	3984.4	100.00
0-150	3984.4	100.00
0-155	3984.4	100.00
0-160	3984.4	100.00
0-165	3984.4	100.00
0-170	3984.4	100.00
0-175	3984.4	100.00
0-180	3984.4	100.00

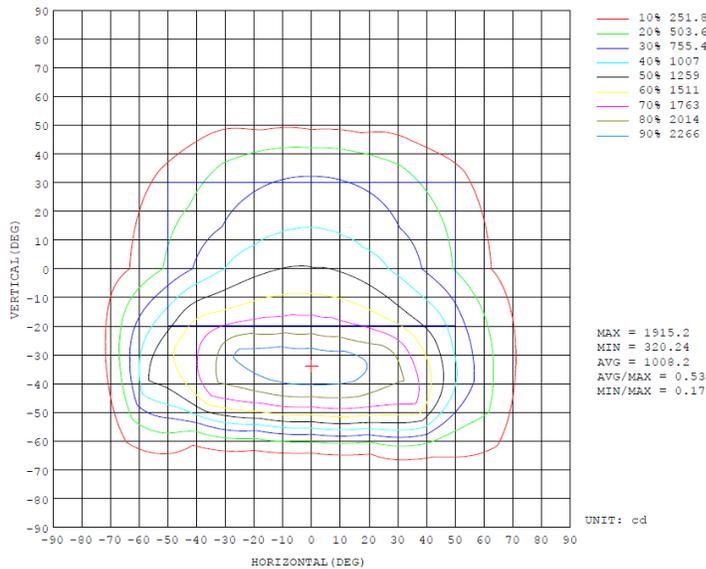
Backlight, Uplight, and Glare (BUG) Tables

LCS	Zone	Lumens	%Lamp	%Lum
FL	(0-30)	675.9	N.A.	17.0
FM	(30-60)	1811.1	N.A.	45.4
FH	(60-80)	374.1	N.A.	9.4
FVH	(80-90)	22.9	N.A.	0.6
BL	(0-30)	413.8	N.A.	10.4
BM	(30-60)	547.3	N.A.	13.7
BH	(60-80)	133.8	N.A.	3.4
BVH	(80-90)	7.3	N.A.	0.2
UL	(90-100)	0.0	N.A.	0.0
UH	(100-180)	0.0	N.A.	0.0

BUG Rating: **B1-U0-G1**

IES Classification: Type II

ISO illuminance diagram



Test CCT: **4000K**

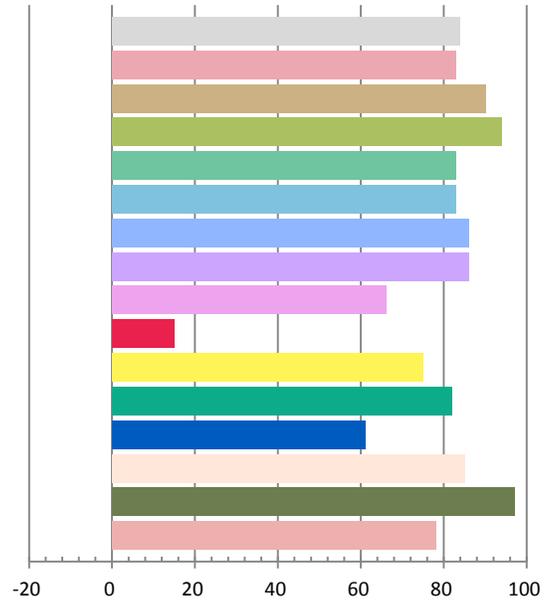
Photometric and Electrical Measurement Result

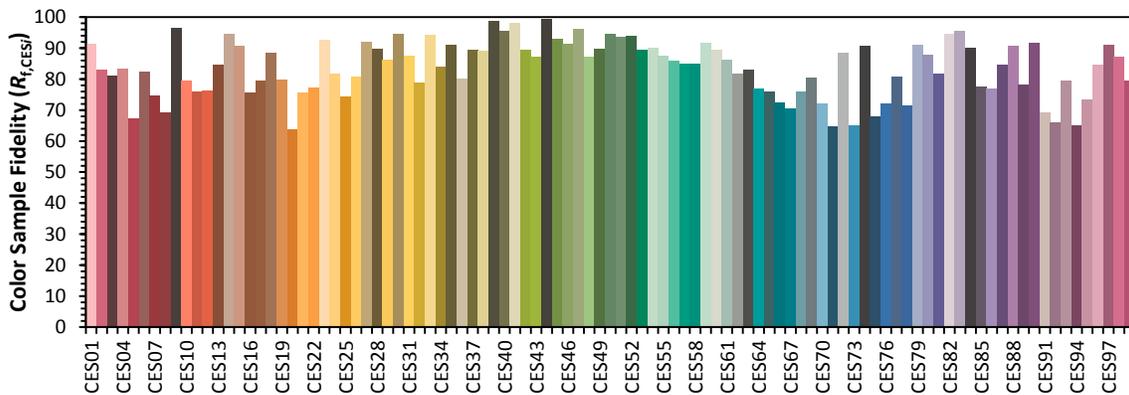
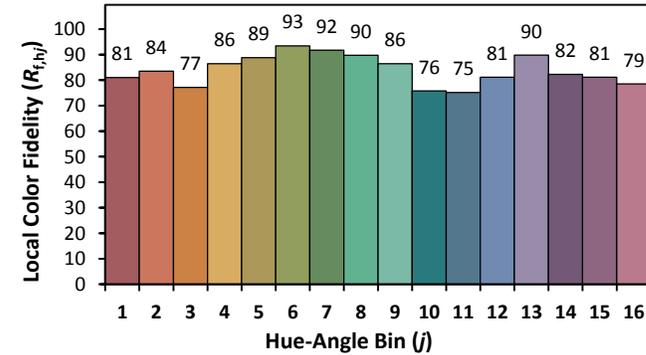
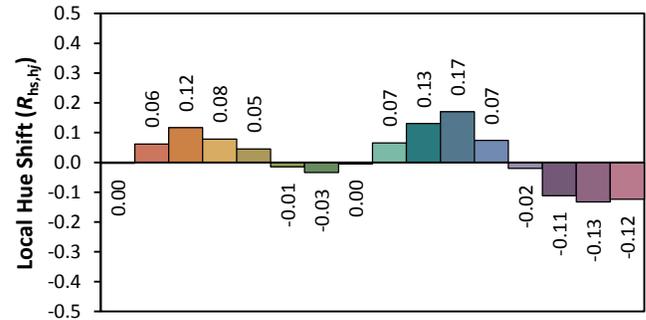
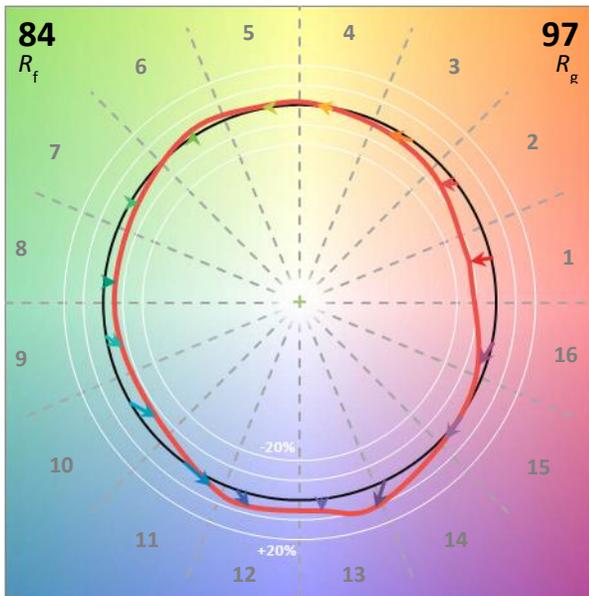
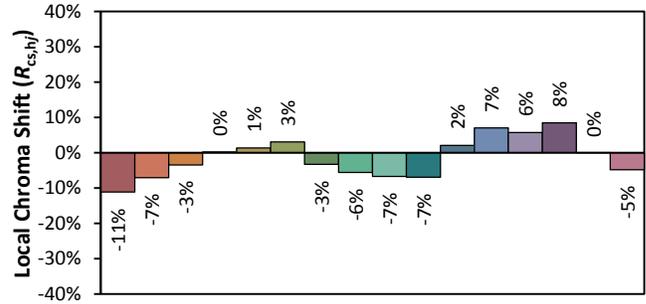
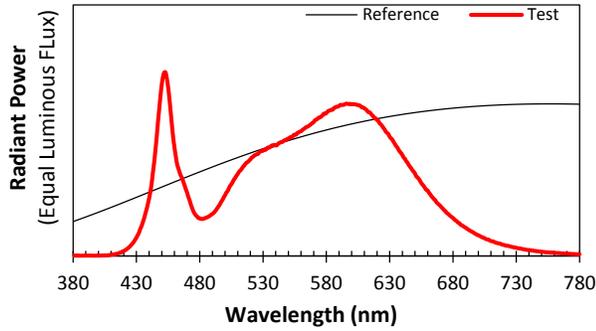
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.2455	29.34	0.996	4309	146.85

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
13.188	3831	-0.00220	0.3865	0.3757	0.2295	0.5020

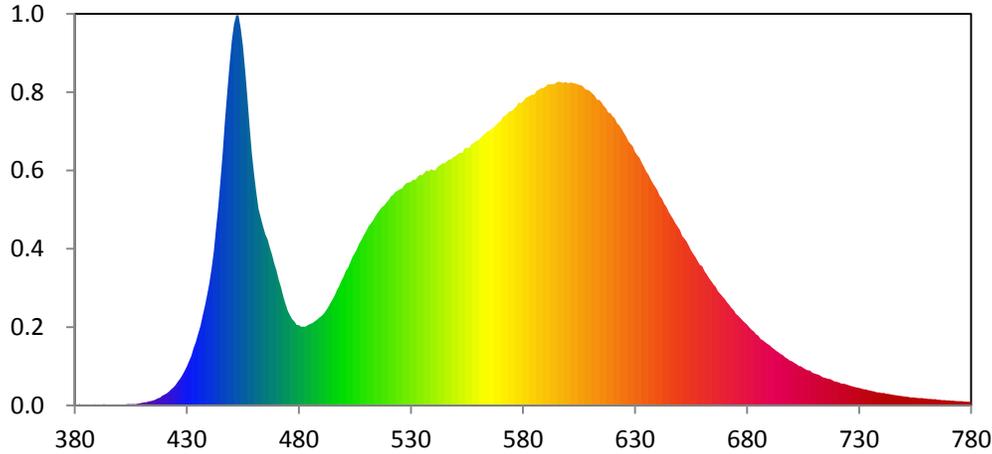
Color Rendering Index

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83.9			
R1	R2	R3	R4
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R5	R6	R7	R8
83	86	86	66
R9	R10	R11	R12
15	75	82	61
R13	R14	R15	
85	97	78	





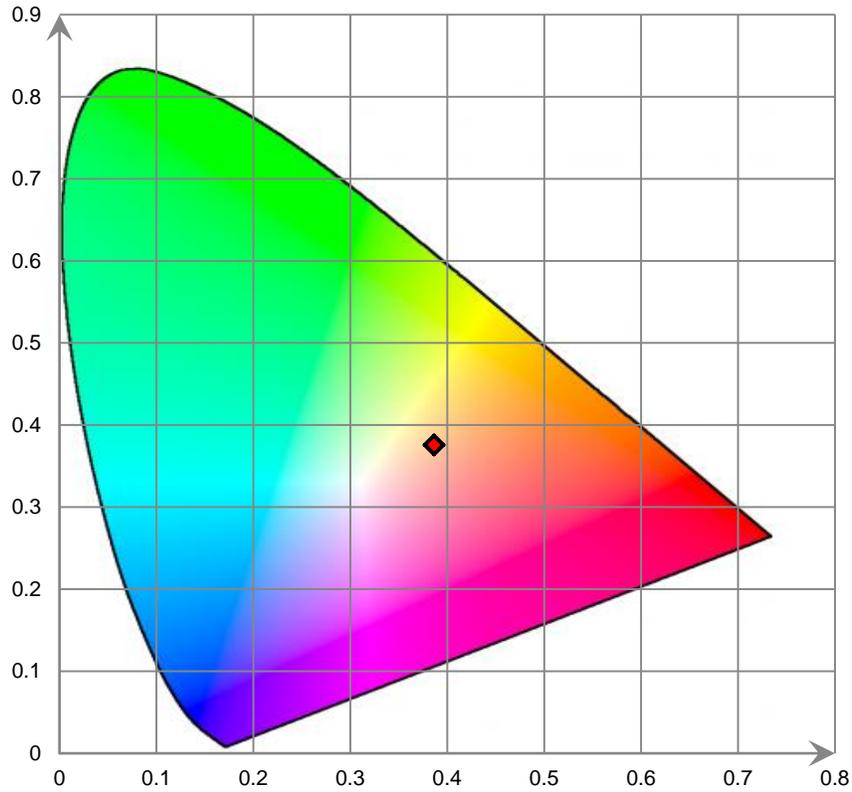
Relative Spectral Power Distribution



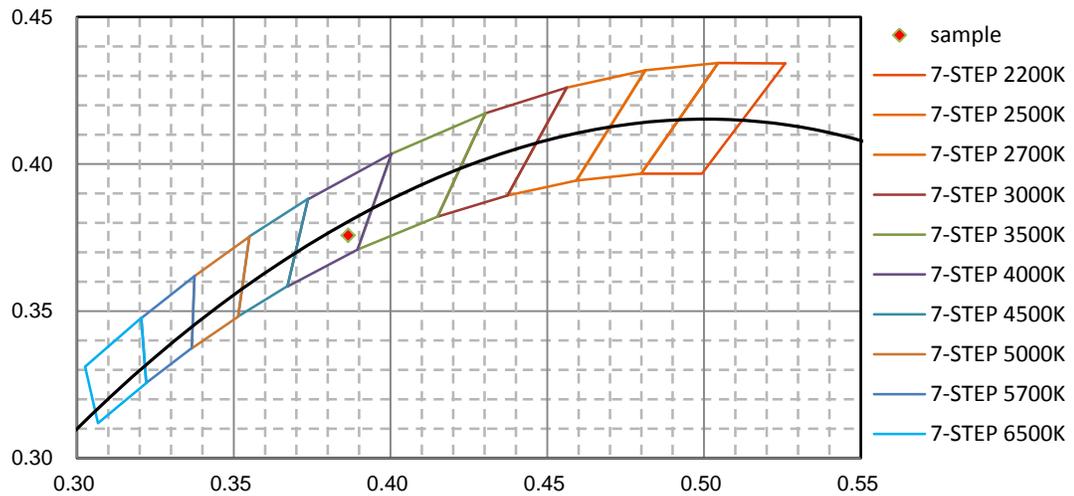
nm	mW								
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381	8.289E-02	422	3.249E+00	463	4.426E+01	504	3.529E+01	545	5.724E+01
382	3.245E-01	423	3.817E+00	464	4.229E+01	505	3.609E+01	546	5.775E+01
383	1.348E-01	424	4.290E+00	465	4.042E+01	506	3.718E+01	547	5.817E+01
384	2.717E-01	425	4.901E+00	466	3.926E+01	507	3.839E+01	548	5.822E+01
385	1.627E-01	426	5.656E+00	467	3.734E+01	508	3.928E+01	549	5.881E+01
386	1.512E-01	427	6.345E+00	468	3.560E+01	509	4.034E+01	550	5.899E+01
387	1.771E-01	428	7.229E+00	469	3.356E+01	510	4.122E+01	551	5.951E+01
388	1.452E-01	429	8.200E+00	470	3.190E+01	511	4.233E+01	552	5.979E+01
389	2.602E-01	430	9.243E+00	471	2.970E+01	512	4.297E+01	553	5.973E+01
390	1.845E-01	431	1.050E+01	472	2.797E+01	513	4.368E+01	554	6.077E+01
391	2.079E-01	432	1.171E+01	473	2.582E+01	514	4.465E+01	555	6.096E+01
392	1.854E-01	433	1.355E+01	474	2.406E+01	515	4.545E+01	556	6.093E+01
393	2.929E-01	434	1.496E+01	475	2.245E+01	516	4.622E+01	557	6.175E+01
394	1.371E-01	435	1.690E+01	476	2.129E+01	517	4.693E+01	558	6.209E+01
395	1.878E-01	436	1.878E+01	477	2.039E+01	518	4.729E+01	559	6.248E+01
396	1.769E-01	437	2.121E+01	478	1.983E+01	519	4.798E+01	560	6.273E+01
397	1.558E-01	438	2.348E+01	479	1.902E+01	520	4.859E+01	561	6.328E+01
398	1.421E-01	439	2.610E+01	480	1.898E+01	521	4.943E+01	562	6.380E+01
399	2.504E-01	440	2.889E+01	481	1.863E+01	522	4.981E+01	563	6.421E+01
400	1.475E-01	441	3.233E+01	482	1.865E+01	523	5.048E+01	564	6.477E+01
401	2.224E-01	442	3.638E+01	483	1.867E+01	524	5.078E+01	565	6.499E+01
402	1.993E-01	443	4.185E+01	484	1.903E+01	525	5.113E+01	566	6.537E+01
403	2.418E-01	444	4.701E+01	485	1.925E+01	526	5.132E+01	567	6.581E+01
404	3.334E-01	445	5.325E+01	486	1.947E+01	527	5.210E+01	568	6.632E+01
405	2.945E-01	446	5.977E+01	487	1.984E+01	528	5.257E+01	569	6.689E+01
406	3.144E-01	447	6.727E+01	488	2.024E+01	529	5.275E+01	570	6.730E+01
407	3.033E-01	448	7.389E+01	489	2.073E+01	530	5.294E+01	571	6.823E+01
408	4.002E-01	449	8.053E+01	490	2.115E+01	531	5.340E+01	572	6.852E+01
409	5.077E-01	450	8.619E+01	491	2.167E+01	532	5.333E+01	573	6.895E+01
410	6.335E-01	451	9.017E+01	492	2.240E+01	533	5.409E+01	574	6.955E+01
411	7.286E-01	452	9.227E+01	493	2.321E+01	534	5.456E+01	575	6.963E+01
412	7.743E-01	453	9.227E+01	494	2.418E+01	535	5.443E+01	576	7.020E+01
413	9.509E-01	454	8.925E+01	495	2.510E+01	536	5.504E+01	577	7.067E+01
414	1.059E+00	455	8.502E+01	496	2.608E+01	537	5.559E+01	578	7.158E+01
415	1.212E+00	456	7.927E+01	497	2.730E+01	538	5.534E+01	579	7.146E+01
416	1.398E+00	457	7.281E+01	498	2.824E+01	539	5.591E+01	580	7.186E+01
417	1.686E+00	458	6.600E+01	499	2.953E+01	540	5.562E+01	581	7.264E+01
418	1.828E+00	459	5.962E+01	500	3.055E+01	541	5.565E+01	582	7.296E+01
419	2.272E+00	460	5.470E+01	501	3.188E+01	542	5.652E+01	583	7.322E+01
420	2.546E+00	461	5.038E+01	502	3.261E+01	543	5.680E+01	584	7.353E+01

nm	mW								
585	7.350E+01	626	6.361E+01	667	2.697E+01	708	8.250E+00	749	2.214E+00
586	7.437E+01	627	6.245E+01	668	2.639E+01	709	7.793E+00	750	2.142E+00
587	7.466E+01	628	6.186E+01	669	2.578E+01	710	7.536E+00	751	2.068E+00
588	7.502E+01	629	6.123E+01	670	2.520E+01	711	7.397E+00	752	2.017E+00
589	7.504E+01	630	5.993E+01	671	2.440E+01	712	7.252E+00	753	1.884E+00
590	7.540E+01	631	5.919E+01	672	2.383E+01	713	6.911E+00	754	1.896E+00
591	7.594E+01	632	5.856E+01	673	2.307E+01	714	6.632E+00	755	1.849E+00
592	7.591E+01	633	5.743E+01	674	2.255E+01	715	6.523E+00	756	1.782E+00
593	7.594E+01	634	5.643E+01	675	2.166E+01	716	6.320E+00	757	1.745E+00
594	7.604E+01	635	5.534E+01	676	2.126E+01	717	6.231E+00	758	1.761E+00
595	7.642E+01	636	5.458E+01	677	2.065E+01	718	5.987E+00	759	1.660E+00
596	7.656E+01	637	5.343E+01	678	2.008E+01	719	5.686E+00	760	1.624E+00
597	7.646E+01	638	5.248E+01	679	1.956E+01	720	5.582E+00	761	1.516E+00
598	7.631E+01	639	5.168E+01	680	1.911E+01	721	5.409E+00	762	1.523E+00
599	7.651E+01	640	5.084E+01	681	1.843E+01	722	5.178E+00	763	1.448E+00
600	7.617E+01	641	4.954E+01	682	1.790E+01	723	5.134E+00	764	1.479E+00
601	7.637E+01	642	4.890E+01	683	1.747E+01	724	5.036E+00	765	1.339E+00
602	7.630E+01	643	4.770E+01	684	1.681E+01	725	4.851E+00	766	1.346E+00
603	7.615E+01	644	4.696E+01	685	1.651E+01	726	4.636E+00	767	1.224E+00
604	7.601E+01	645	4.583E+01	686	1.573E+01	727	4.511E+00	768	1.278E+00
605	7.582E+01	646	4.493E+01	687	1.543E+01	728	4.372E+00	769	1.208E+00
606	7.573E+01	647	4.407E+01	688	1.502E+01	729	4.243E+00	770	1.200E+00
607	7.533E+01	648	4.313E+01	689	1.458E+01	730	4.118E+00	771	1.138E+00
608	7.468E+01	649	4.232E+01	690	1.424E+01	731	3.967E+00	772	1.122E+00
609	7.465E+01	650	4.146E+01	691	1.373E+01	732	3.844E+00	773	1.054E+00
610	7.424E+01	651	4.005E+01	692	1.334E+01	733	3.778E+00	774	9.891E-01
611	7.373E+01	652	3.947E+01	693	1.288E+01	734	3.609E+00	775	1.015E+00
612	7.322E+01	653	3.875E+01	694	1.256E+01	735	3.499E+00	776	9.877E-01
613	7.231E+01	654	3.774E+01	695	1.216E+01	736	3.366E+00	777	9.099E-01
614	7.227E+01	655	3.664E+01	696	1.186E+01	737	3.280E+00	778	8.984E-01
615	7.165E+01	656	3.583E+01	697	1.137E+01	738	3.081E+00	779	8.495E-01
616	7.085E+01	657	3.506E+01	698	1.107E+01	739	3.071E+00	780	8.816E-01
617	7.029E+01	658	3.407E+01	699	1.064E+01	740	2.947E+00		
618	6.924E+01	659	3.320E+01	700	1.044E+01	741	2.958E+00		
619	6.915E+01	660	3.294E+01	701	1.009E+01	742	2.778E+00		
620	6.834E+01	661	3.180E+01	702	9.794E+00	743	2.732E+00		
621	6.788E+01	662	3.102E+01	703	9.376E+00	744	2.608E+00		
622	6.672E+01	663	3.010E+01	704	9.249E+00	745	2.509E+00		
623	6.618E+01	664	2.937E+01	705	8.871E+00	746	2.438E+00		
624	6.538E+01	665	2.858E+01	706	8.557E+00	747	2.374E+00		
625	6.443E+01	666	2.801E+01	707	8.329E+00	748	2.310E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



Test CCT: **5000K**

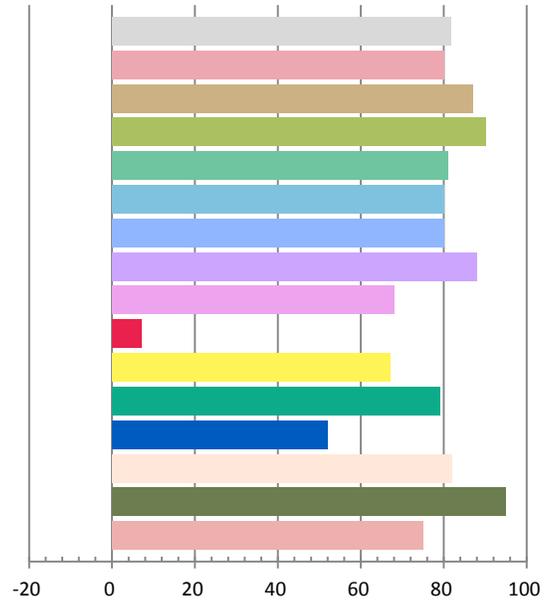
Photometric and Electrical Measurement Result

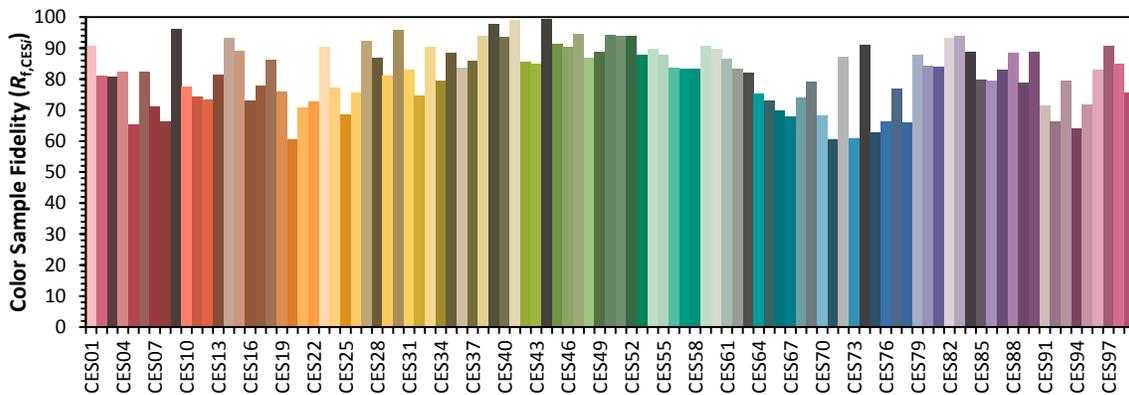
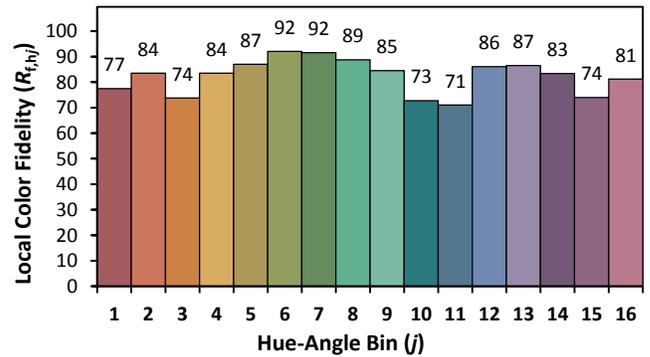
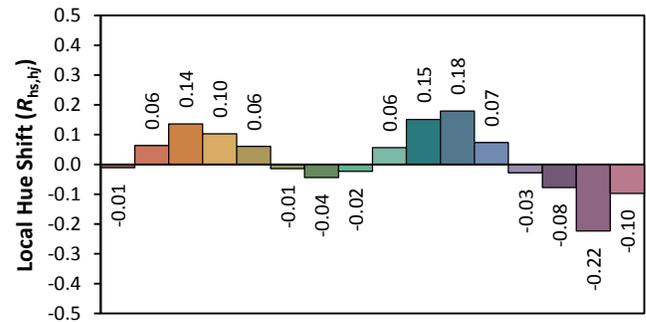
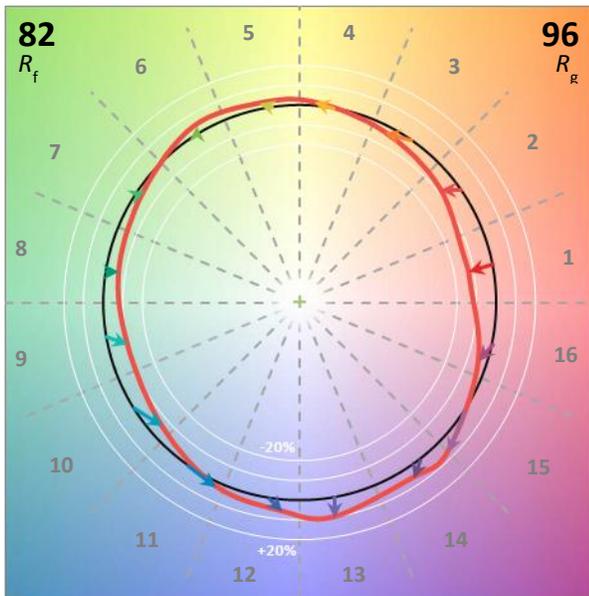
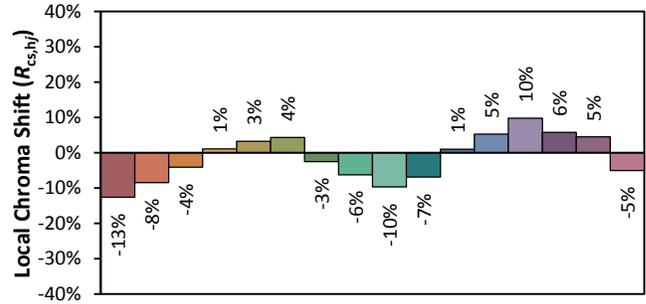
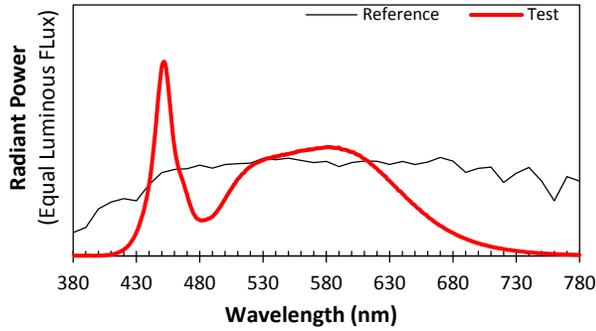
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.2536	30.31	0.9957	4237.9	139.84

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
13.082	4996	0.00154	0.3455	0.3550	0.2104	0.4864

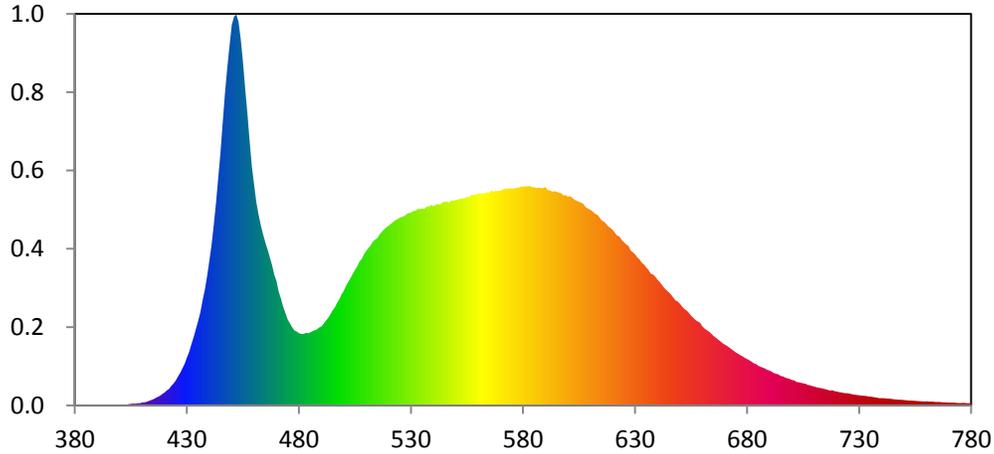
Color Rendering Index

Ra			
81.6			
R1	R2	R3	R4
80	87	90	81
R5	R6	R7	R8
80	80	88	68
R9	R10	R11	R12
7	67	79	52
R13	R14	R15	
82	95	75	





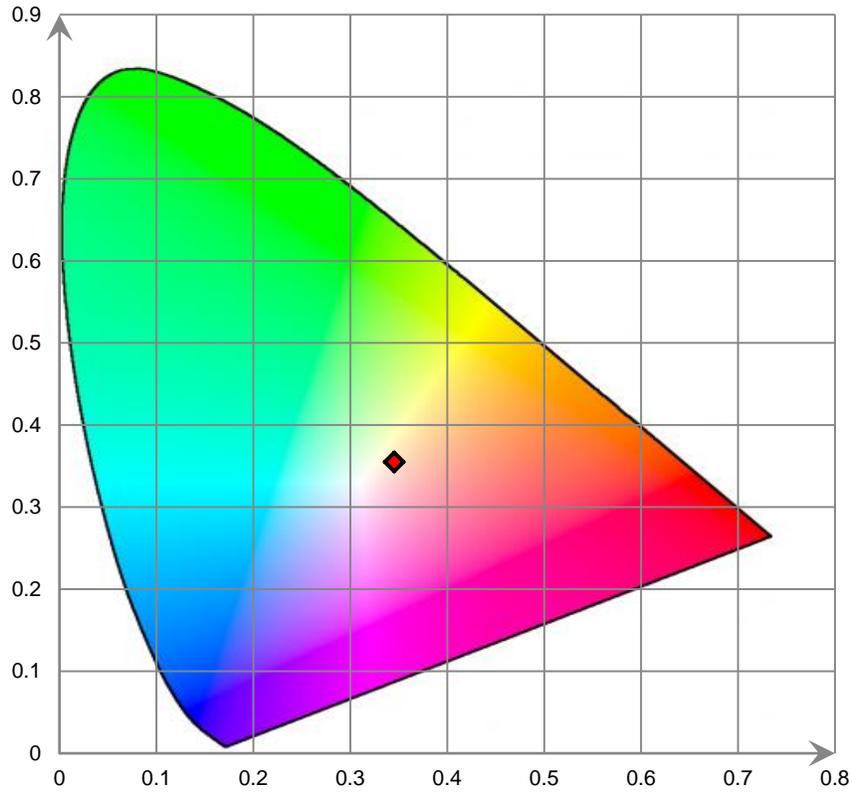
Relative Spectral Power Distribution



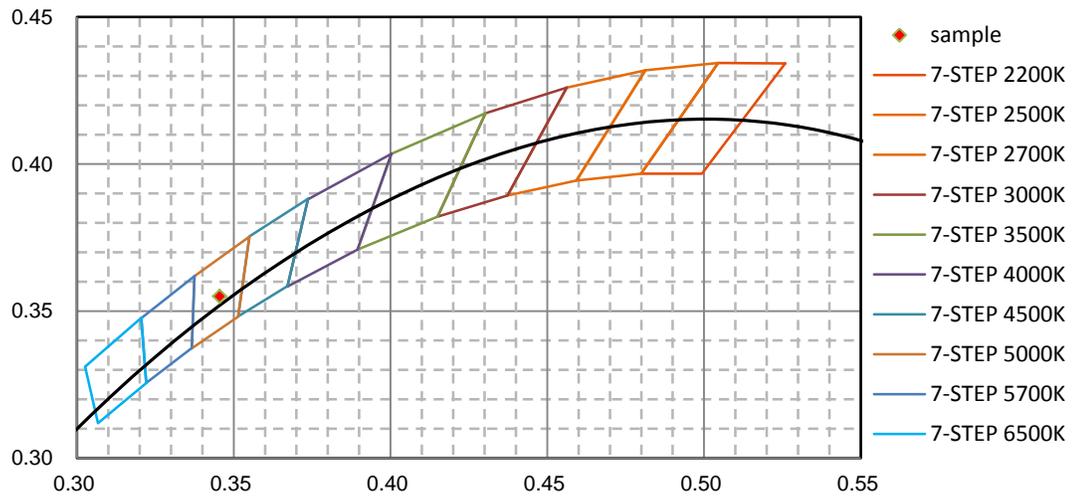
nm	mW								
380	2.236E-01	421	4.573E+00	462	5.863E+01	503	3.913E+01	544	6.226E+01
381	1.408E-01	422	5.038E+00	463	5.519E+01	504	4.040E+01	545	6.258E+01
382	3.118E-01	423	6.003E+00	464	5.243E+01	505	4.159E+01	546	6.257E+01
383	1.490E-01	424	6.708E+00	465	5.000E+01	506	4.273E+01	547	6.230E+01
384	2.598E-01	425	7.671E+00	466	4.784E+01	507	4.418E+01	548	6.295E+01
385	1.600E-01	426	8.893E+00	467	4.551E+01	508	4.492E+01	549	6.279E+01
386	1.981E-01	427	1.003E+01	468	4.305E+01	509	4.637E+01	550	6.311E+01
387	1.712E-01	428	1.142E+01	469	4.013E+01	510	4.746E+01	551	6.320E+01
388	2.249E-01	429	1.280E+01	470	3.816E+01	511	4.828E+01	552	6.347E+01
389	2.267E-01	430	1.472E+01	471	3.487E+01	512	4.913E+01	553	6.355E+01
390	1.277E-01	431	1.640E+01	472	3.277E+01	513	5.031E+01	554	6.366E+01
391	1.649E-01	432	1.875E+01	473	3.027E+01	514	5.088E+01	555	6.406E+01
392	2.942E-01	433	2.091E+01	474	2.837E+01	515	5.137E+01	556	6.396E+01
393	2.843E-01	434	2.338E+01	475	2.644E+01	516	5.252E+01	557	6.468E+01
394	1.580E-01	435	2.584E+01	476	2.513E+01	517	5.333E+01	558	6.464E+01
395	1.633E-01	436	2.866E+01	477	2.390E+01	518	5.404E+01	559	6.481E+01
396	1.818E-01	437	3.238E+01	478	2.299E+01	519	5.471E+01	560	6.502E+01
397	1.586E-01	438	3.558E+01	479	2.272E+01	520	5.521E+01	561	6.516E+01
398	1.997E-01	439	3.973E+01	480	2.221E+01	521	5.570E+01	562	6.500E+01
399	2.573E-01	440	4.441E+01	481	2.193E+01	522	5.630E+01	563	6.521E+01
400	2.375E-01	441	4.934E+01	482	2.196E+01	523	5.687E+01	564	6.546E+01
401	2.600E-01	442	5.554E+01	483	2.226E+01	524	5.720E+01	565	6.541E+01
402	2.384E-01	443	6.229E+01	484	2.217E+01	525	5.761E+01	566	6.595E+01
403	2.498E-01	444	6.997E+01	485	2.241E+01	526	5.791E+01	567	6.563E+01
404	3.860E-01	445	7.764E+01	486	2.281E+01	527	5.811E+01	568	6.595E+01
405	4.671E-01	446	8.685E+01	487	2.303E+01	528	5.869E+01	569	6.582E+01
406	5.746E-01	447	9.575E+01	488	2.333E+01	529	5.910E+01	570	6.601E+01
407	5.423E-01	448	1.034E+02	489	2.393E+01	530	5.918E+01	571	6.632E+01
408	6.922E-01	449	1.105E+02	490	2.427E+01	531	5.967E+01	572	6.651E+01
409	6.749E-01	450	1.169E+02	491	2.509E+01	532	5.985E+01	573	6.659E+01
410	8.973E-01	451	1.194E+02	492	2.601E+01	533	6.033E+01	574	6.660E+01
411	9.757E-01	452	1.200E+02	493	2.686E+01	534	6.033E+01	575	6.662E+01
412	1.123E+00	453	1.179E+02	494	2.798E+01	535	6.041E+01	576	6.669E+01
413	1.387E+00	454	1.126E+02	495	2.913E+01	536	6.038E+01	577	6.683E+01
414	1.641E+00	455	1.055E+02	496	3.007E+01	537	6.106E+01	578	6.689E+01
415	1.897E+00	456	9.736E+01	497	3.146E+01	538	6.101E+01	579	6.720E+01
416	2.300E+00	457	8.969E+01	498	3.260E+01	539	6.157E+01	580	6.721E+01
417	2.613E+00	458	8.125E+01	499	3.407E+01	540	6.118E+01	581	6.726E+01
418	2.993E+00	459	7.340E+01	500	3.515E+01	541	6.160E+01	582	6.730E+01
419	3.519E+00	460	6.782E+01	501	3.668E+01	542	6.187E+01	583	6.735E+01
420	3.959E+00	461	6.244E+01	502	3.788E+01	543	6.173E+01	584	6.702E+01

nm	mW								
585	6.708E+01	626	4.940E+01	667	2.024E+01	708	6.195E+00	749	1.771E+00
586	6.671E+01	627	4.904E+01	668	1.973E+01	709	5.959E+00	750	1.668E+00
587	6.692E+01	628	4.759E+01	669	1.911E+01	710	5.793E+00	751	1.608E+00
588	6.672E+01	629	4.700E+01	670	1.869E+01	711	5.578E+00	752	1.505E+00
589	6.670E+01	630	4.639E+01	671	1.830E+01	712	5.433E+00	753	1.502E+00
590	6.709E+01	631	4.544E+01	672	1.781E+01	713	5.284E+00	754	1.475E+00
591	6.613E+01	632	4.485E+01	673	1.726E+01	714	5.149E+00	755	1.407E+00
592	6.604E+01	633	4.379E+01	674	1.680E+01	715	4.986E+00	756	1.364E+00
593	6.565E+01	634	4.324E+01	675	1.625E+01	716	4.761E+00	757	1.315E+00
594	6.576E+01	635	4.237E+01	676	1.585E+01	717	4.598E+00	758	1.262E+00
595	6.561E+01	636	4.159E+01	677	1.545E+01	718	4.668E+00	759	1.211E+00
596	6.538E+01	637	4.044E+01	678	1.502E+01	719	4.388E+00	760	1.275E+00
597	6.514E+01	638	4.022E+01	679	1.457E+01	720	4.272E+00	761	1.226E+00
598	6.451E+01	639	3.952E+01	680	1.423E+01	721	4.115E+00	762	1.148E+00
599	6.455E+01	640	3.860E+01	681	1.387E+01	722	3.990E+00	763	1.152E+00
600	6.411E+01	641	3.792E+01	682	1.341E+01	723	3.837E+00	764	1.085E+00
601	6.420E+01	642	3.699E+01	683	1.295E+01	724	3.747E+00	765	1.073E+00
602	6.381E+01	643	3.608E+01	684	1.268E+01	725	3.732E+00	766	1.042E+00
603	6.309E+01	644	3.541E+01	685	1.219E+01	726	3.600E+00	767	9.733E-01
604	6.284E+01	645	3.477E+01	686	1.188E+01	727	3.424E+00	768	9.751E-01
605	6.247E+01	646	3.407E+01	687	1.160E+01	728	3.309E+00	769	9.232E-01
606	6.226E+01	647	3.318E+01	688	1.131E+01	729	3.203E+00	770	8.940E-01
607	6.180E+01	648	3.227E+01	689	1.092E+01	730	3.142E+00	771	8.914E-01
608	6.086E+01	649	3.191E+01	690	1.070E+01	731	3.025E+00	772	8.605E-01
609	6.048E+01	650	3.121E+01	691	1.033E+01	732	2.980E+00	773	8.440E-01
610	6.006E+01	651	3.032E+01	692	9.919E+00	733	2.897E+00	774	7.391E-01
611	5.957E+01	652	2.958E+01	693	9.701E+00	734	2.747E+00	775	7.453E-01
612	5.891E+01	653	2.914E+01	694	9.527E+00	735	2.717E+00	776	7.696E-01
613	5.860E+01	654	2.842E+01	695	9.032E+00	736	2.613E+00	777	7.569E-01
614	5.781E+01	655	2.754E+01	696	8.918E+00	737	2.501E+00	778	6.830E-01
615	5.687E+01	656	2.690E+01	697	8.538E+00	738	2.387E+00	779	6.680E-01
616	5.647E+01	657	2.624E+01	698	8.347E+00	739	2.253E+00	780	6.651E-01
617	5.587E+01	658	2.577E+01	699	8.149E+00	740	2.231E+00		
618	5.500E+01	659	2.537E+01	700	7.793E+00	741	2.233E+00		
619	5.448E+01	660	2.430E+01	701	7.700E+00	742	2.151E+00		
620	5.390E+01	661	2.364E+01	702	7.237E+00	743	2.109E+00		
621	5.303E+01	662	2.313E+01	703	7.124E+00	744	2.015E+00		
622	5.214E+01	663	2.264E+01	704	6.945E+00	745	1.929E+00		
623	5.184E+01	664	2.203E+01	705	6.764E+00	746	1.853E+00		
624	5.080E+01	665	2.135E+01	706	6.680E+00	747	1.811E+00		
625	5.014E+01	666	2.078E+01	707	6.279E+00	748	1.772E+00		

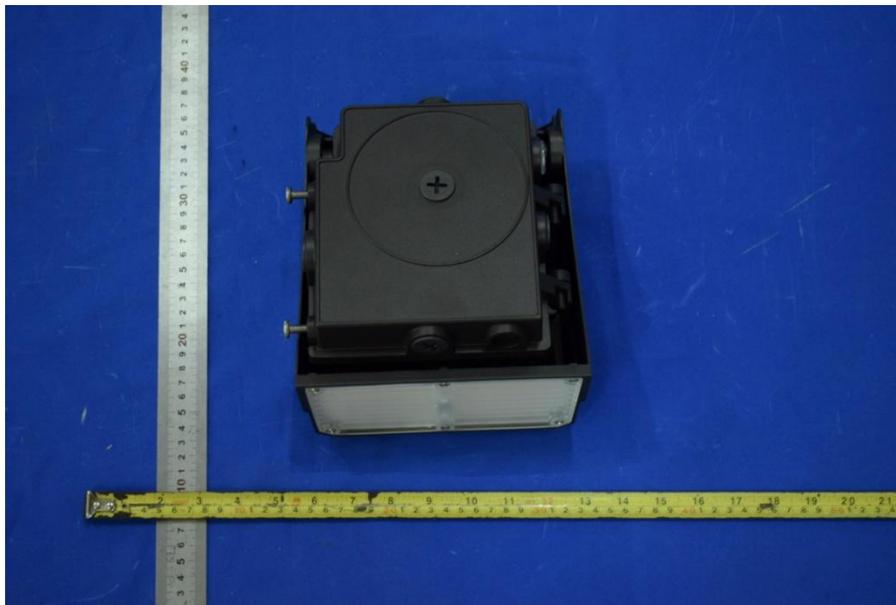
CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



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