



# IES LM-79-08

## MEASUREMENT AND TEST REPORT

For

**P.Q.L., Inc.**

2285 Ward Avenue . Simi Valley, CA 93065

**Test Model: 83678**

<b>Report Type:</b>	Electrical and Photometric tests including: Luminous Flux, Chromaticity, Luminous Intensity Distribution, THD
<b>Test Engineer:</b>	Daniel Duan <i>Daniel Duan</i>
<b>Report Number:</b>	RKS160716007-10
<b>Test Date:</b>	2016-07-26
<b>Report Date:</b>	2016-07-30
<b>Reviewed By:</b>	Jeanne Han/EE Manager <i>Jeanne Han</i>
<b>Prepared By:</b>	Bay Area Compliance Laboratories Corp. (Dongguan). Pu Long Cun 69, Puxinghu Industrial Area, Tangxia Town, Dongguan, Guangdong, P.R.China. Tel: +86-0769-86858888 Fax:+86-0769-86858588
<b>Test Facility:</b>	Test facility was located at Pu Long Cun 69, Puxinghu Industrial Area, Tangxia Town, Dongguan, Guangdong, P.R.China.
<b>Accreditation:</b>	The IAS Accreditation Number TL-460.

**Note:** The test data was only valid for the test sample(s). 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. (Dongguan). 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.

## 1. Product Description

### General Information:

One sample was received on 2016-07-16 and used for testing.

Model Tested: 83678  
 Manufacturer: P.Q.L.,Inc.  
 Brand Name: Superior Life®  
 Product Designation: Linear Retrofit Kits for 2x4 Luminaires  
 Dimmable: Non- Dimmable  
 Burning Time Before Test: 0hour(For New Products)  
 Auxiliary Equipment: Lithonia 2GT8 lensed 2X4 Troffer

### Rated Values:

Rated Voltage/Frequency: 100-277VAC, 50/60Hz  
 Rated Power: 50W  
 Nominal CCT: 3000K  
 Nominal Lumen Output: 6400 lm (For Linear Retrofit Kit)  
 Nominal CRI: 80

## 2. Standards Used

- IES LM-79-08: Approved Method: Electrical & Photometric Measurement of Solid-state Lighting Products
- ANSI C82.77-2002: Harmonic Emission Limits – Related Power Quality Requirements for Lighting
- IES TM-30-15: IES Method for Evaluating Light Source Color Rendition (This method is not in IAS accreditation scope)

## 3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Test Range	Calibration date	Calibration due date
Integrating Sphere	SENSING	SPR-600	S09008	25~50°C	2016-03-10	2017-03-09
Spectral photometer	SENSING	SPR3000	90902027	350nm~800nm	2016-03-10	2017-03-09
Power Meter	YOKOGAWA	WT-210	91j926132	15/30/60/150/300/600 V	2016-03-04	2017-03-03
AC Power Supply	ALL Power	APW-105N	970663	220V±10% 50HZ	2016-03-04	2017-03-03
Standard Light Source	EVERFINE	D204	01331191	24V/100W	2015-08-27	2016-08-26
Thermal Meter	SENSING	N/A	N/A	25、50°C	2016-03-10	2017-03-09
DC Power Supply	ITECH	IT6154	0061 0417 6471 0010 19	0~32V	2016-03-04	2017-03-03
AC Power Supply	EVERFINE	VPS1030 PWM	1012017	0-150V, 0-300V	2016-03-04	2017-03-03
DC Power Supply	EVERFINE	WY12010	1009009	30V/5A	2016-03-04	2017-03-03
Power Meter	YOKOGAWA	WT-210	91KB35700	15/30/60/150/300/600V	2016-03-04	2017-03-03
Goniophotometer	EVERFINE	GO-R5000	YG108492N10120001	1600mm,3000W/10A	2016-03-10	2017-03-09
Wireless Remote	N/A	433MHz	N/A	0°C~50°C;-20°C~60°C	2016-03-21	2017-03-20

Device	Manufacture	Model No	Serial No	Test Range	Calibration date	Calibration due date
Sensor						
Standard Light Source	EVERFINE	D908	1012003	N/A	2015-09-08	2016-09-07

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) 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 IES LM-79-08. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at  $25^{\circ}\text{C}\pm 1^{\circ}\text{C}$  during measurement. And relative humidity is less than 65%.

### 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  $U=32\text{K}$  ( $K=2$ ), 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  $U=0.19\%$  of rdg, AC Voltage  $U=0.15\%$  of rdg, Power  $U=0.20\%$  ( $K=2$ ), 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. The vertical angle ( $\gamma$ ) test intervals were set no more than 1 degree while data for 5 degree intervals is reported. The horizontal angle (C plane) test intervals were set no more than 22.5 degree.

The uncertainty of the luminous intensity is  $U=1.6\%$  ( $K=2$ ), at the 95% confidence level.

### Additional Test

The Additional Test item may not be covered by IESNA LM-79-2008. Additional test including power factor, off-state power and THD, was measured by Digital Power Meter after stabilized at  $25^{\circ}\text{C}\pm 1^{\circ}\text{C}$ . Test voltage for THD and power factor test would be equal to rated voltage or, in case of a voltage range, maximum value of that range.

The uncertainty of power meter AC current  $U=0.19\%$  of rdg, AC Voltage  $U=0.15\%$  of rdg, Power  $U=0.20\%$  ( $K=2$ ), at the 95% confidence level.

### Fidelity Index and Gamut Index Calculation

The  $R_f$ ,  $R_g$  was calculated according to IES TM-30-15 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]

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

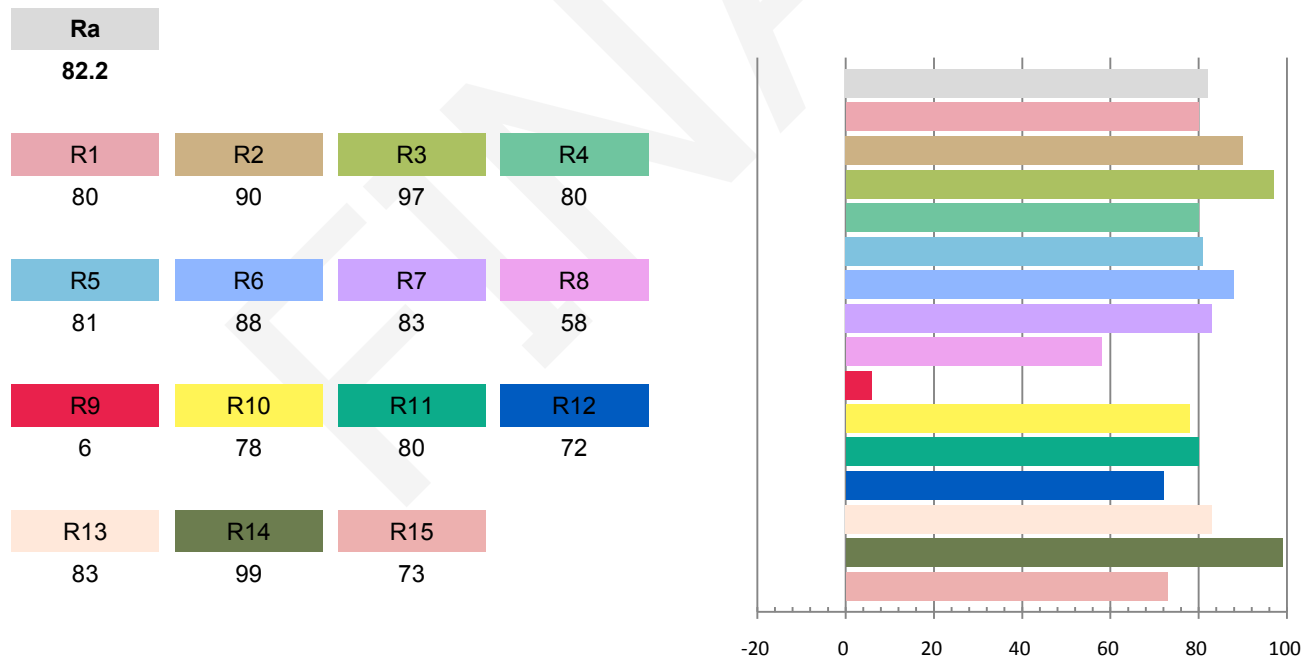
Test orientation: **Downward**

### Photometric and Electrical Measurement Result

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.4564	54.31	0.9912	5341.9	98.36

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
16.231	2890	-0.00046	0.4442	0.4053	0.2548	0.5229

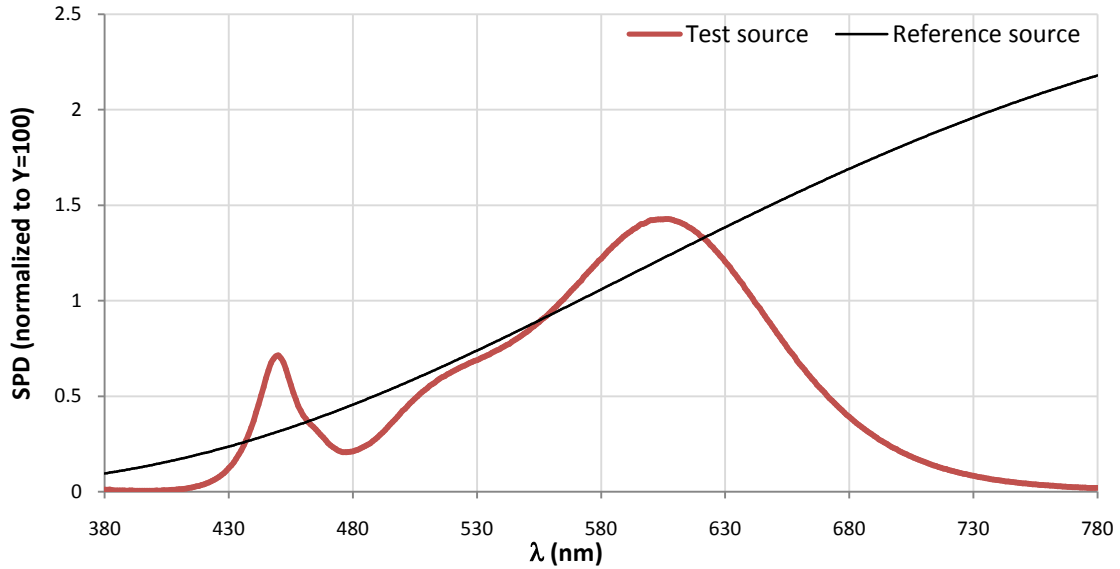
### Color Rendering Index



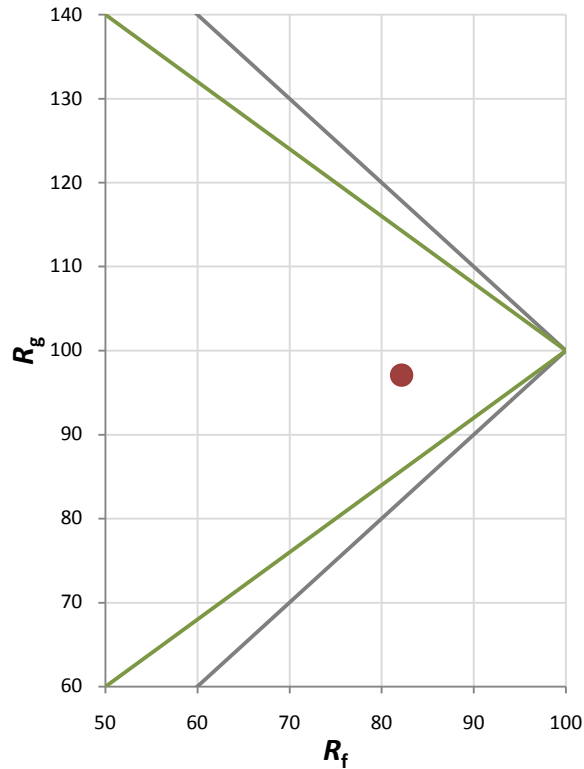
Fidelity Index and Gamut Index

Fidelity Index $R_f$	82
Gamut Index $R_g$	97

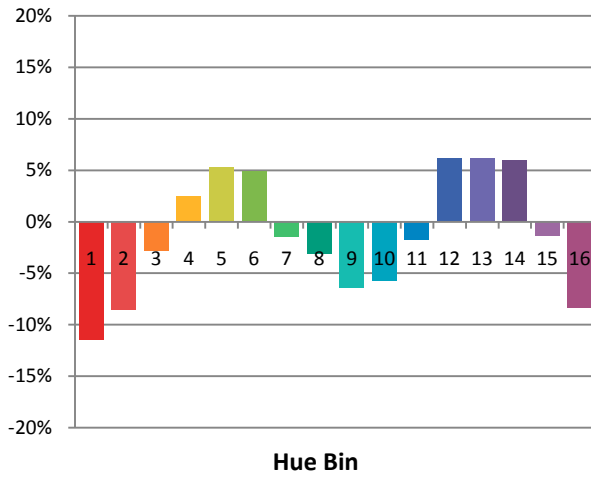
Spectral Power Distribution Comparison



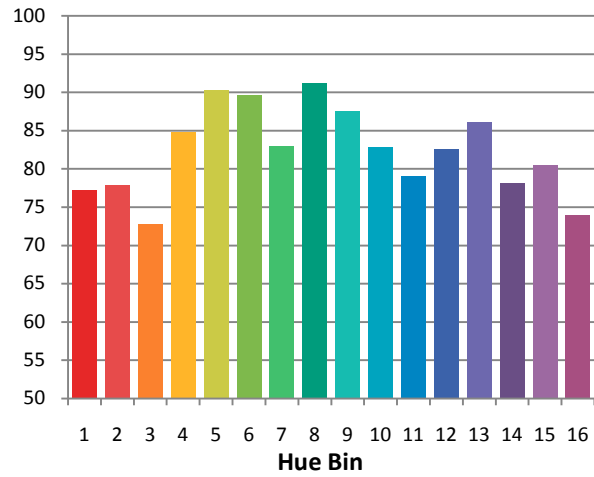
Plot of  $R_g$  versus  $R_f$



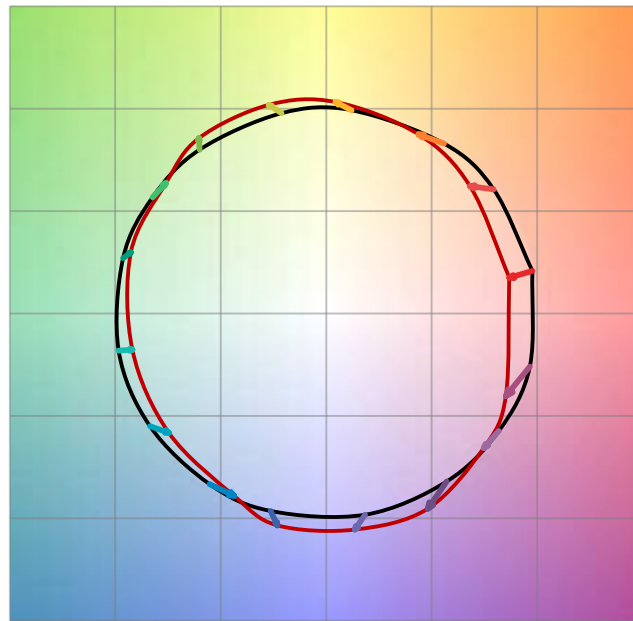
**Chroma Shift by Hue**



**R<sub>f</sub> by Hue**

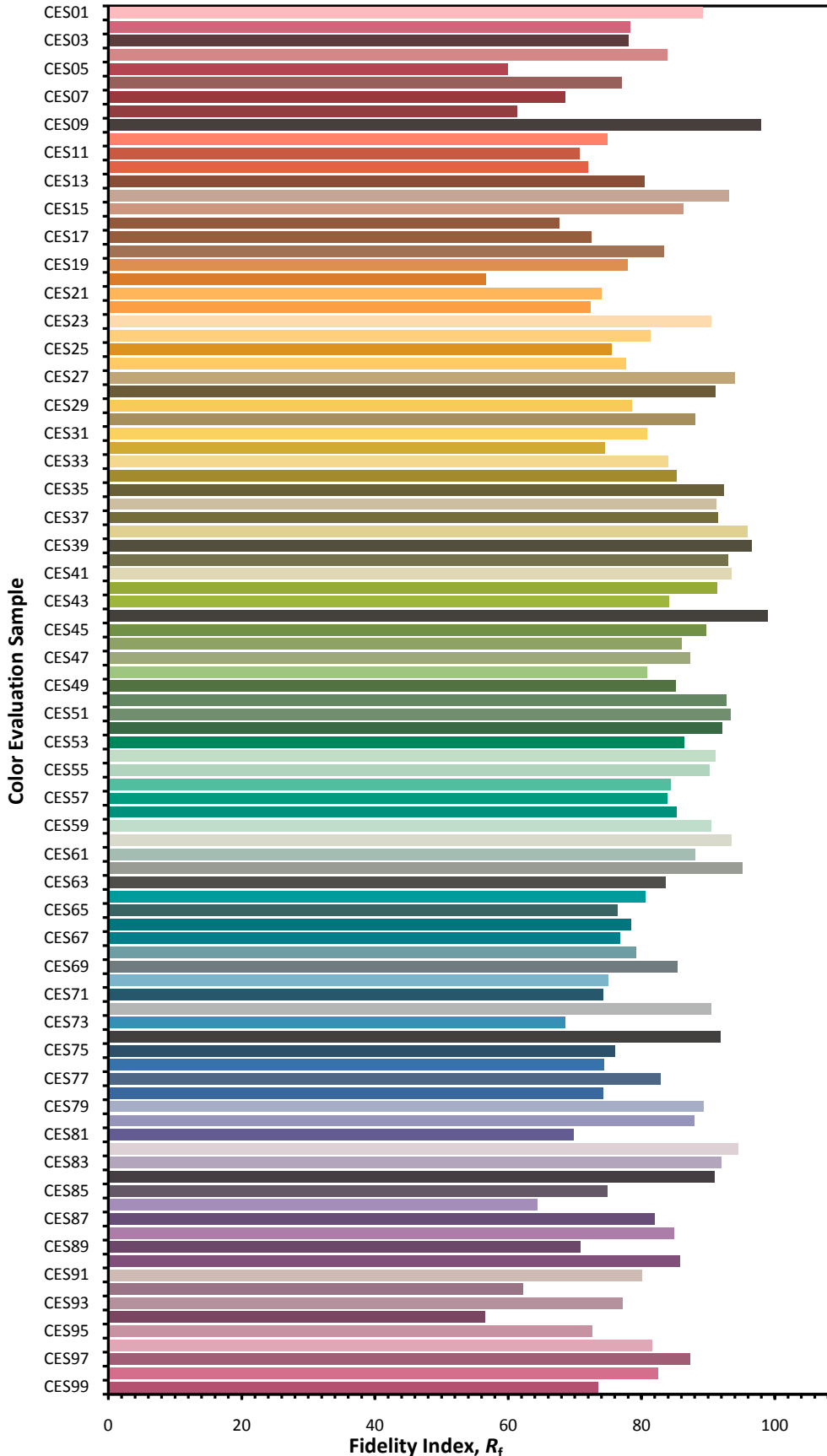


**Color Vector Graphic**

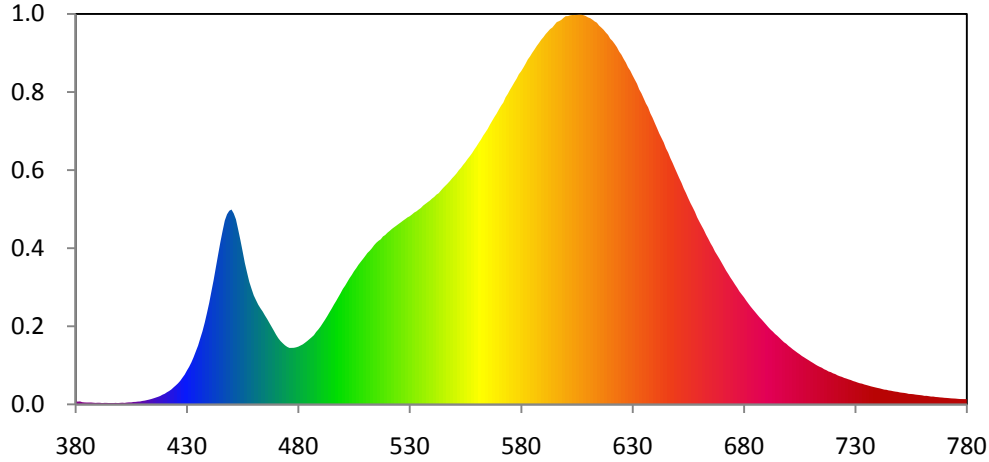


— Reference Illuminat    — Test Source

**Color Fidelity by CES Sample**



**Relative Spectral Power Distribution**

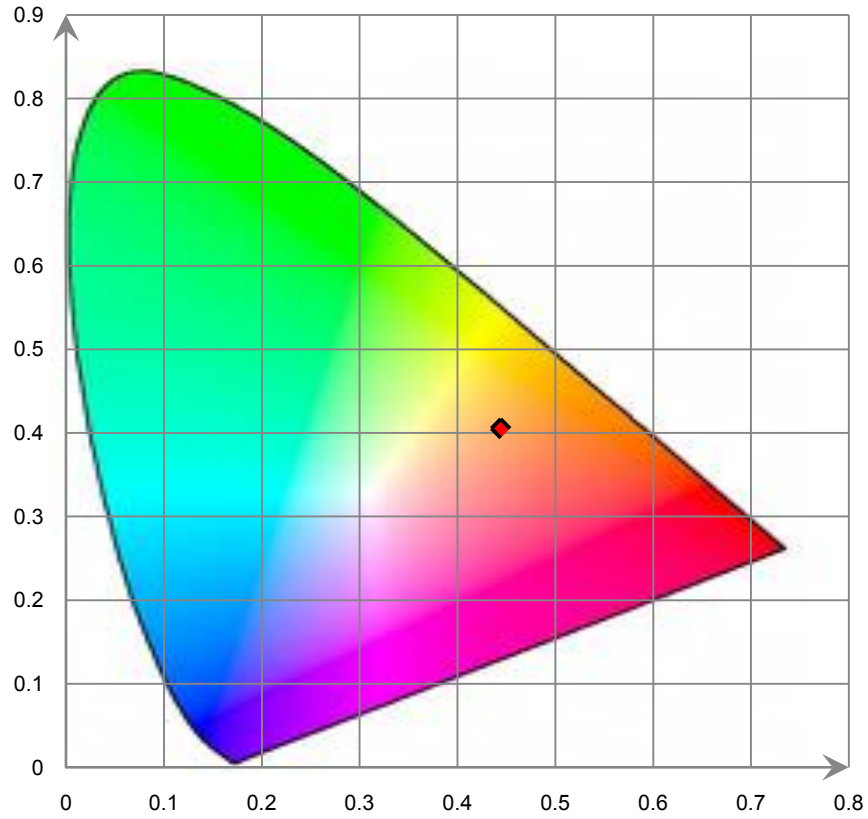


nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	8.782E-01	421	3.458E+00	462	2.855E+01	503	3.615E+01	544	6.125E+01
381	7.991E-01	422	3.824E+00	463	2.752E+01	504	3.708E+01	545	6.197E+01
382	8.503E-01	423	4.276E+00	464	2.659E+01	505	3.814E+01	546	6.261E+01
383	6.376E-01	424	4.860E+00	465	2.548E+01	506	3.901E+01	547	6.325E+01
384	5.683E-01	425	5.427E+00	466	2.446E+01	507	4.000E+01	548	6.394E+01
385	5.328E-01	426	6.027E+00	467	2.333E+01	508	4.082E+01	549	6.473E+01
386	5.365E-01	427	6.747E+00	468	2.223E+01	509	4.163E+01	550	6.541E+01
387	5.434E-01	428	7.648E+00	469	2.112E+01	510	4.246E+01	551	6.614E+01
388	4.846E-01	429	8.527E+00	470	1.997E+01	511	4.335E+01	552	6.703E+01
389	4.265E-01	430	9.693E+00	471	1.896E+01	512	4.396E+01	553	6.773E+01
390	4.684E-01	431	1.077E+01	472	1.815E+01	513	4.471E+01	554	6.861E+01
391	4.619E-01	432	1.203E+01	473	1.751E+01	514	4.557E+01	555	6.939E+01
392	3.728E-01	433	1.352E+01	474	1.691E+01	515	4.627E+01	556	7.030E+01
393	4.325E-01	434	1.518E+01	475	1.648E+01	516	4.684E+01	557	7.109E+01
394	4.297E-01	435	1.683E+01	476	1.617E+01	517	4.727E+01	558	7.197E+01
395	3.841E-01	436	1.893E+01	477	1.618E+01	518	4.809E+01	559	7.298E+01
396	3.726E-01	437	2.098E+01	478	1.620E+01	519	4.850E+01	560	7.391E+01
397	3.724E-01	438	2.343E+01	479	1.634E+01	520	4.917E+01	561	7.492E+01
398	4.404E-01	439	2.619E+01	480	1.653E+01	521	4.967E+01	562	7.587E+01
399	3.545E-01	440	2.907E+01	481	1.686E+01	522	5.024E+01	563	7.700E+01
400	4.415E-01	441	3.239E+01	482	1.719E+01	523	5.073E+01	564	7.791E+01
401	4.792E-01	442	3.566E+01	483	1.765E+01	524	5.118E+01	565	7.889E+01
402	4.240E-01	443	3.929E+01	484	1.814E+01	525	5.167E+01	566	8.010E+01
403	5.302E-01	444	4.289E+01	485	1.870E+01	526	5.213E+01	567	8.120E+01
404	5.860E-01	445	4.642E+01	486	1.924E+01	527	5.262E+01	568	8.228E+01
405	5.781E-01	446	4.965E+01	487	1.983E+01	528	5.307E+01	569	8.327E+01
406	6.979E-01	447	5.265E+01	488	2.075E+01	529	5.355E+01	570	8.443E+01
407	7.211E-01	448	5.443E+01	489	2.146E+01	530	5.388E+01	571	8.552E+01
408	8.036E-01	449	5.543E+01	490	2.232E+01	531	5.437E+01	572	8.642E+01
409	8.439E-01	450	5.579E+01	491	2.329E+01	532	5.492E+01	573	8.791E+01
410	9.861E-01	451	5.468E+01	492	2.426E+01	533	5.528E+01	574	8.890E+01
411	1.073E+00	452	5.298E+01	493	2.529E+01	534	5.579E+01	575	9.009E+01
412	1.217E+00	453	5.007E+01	494	2.640E+01	535	5.624E+01	576	9.115E+01
413	1.360E+00	454	4.705E+01	495	2.747E+01	536	5.691E+01	577	9.227E+01
414	1.532E+00	455	4.381E+01	496	2.860E+01	537	5.739E+01	578	9.330E+01
415	1.734E+00	456	4.047E+01	497	2.964E+01	538	5.789E+01	579	9.457E+01
416	1.950E+00	457	3.773E+01	498	3.076E+01	539	5.835E+01	580	9.540E+01
417	2.162E+00	458	3.507E+01	499	3.188E+01	540	5.893E+01	581	9.643E+01
418	2.403E+00	459	3.308E+01	500	3.308E+01	541	5.942E+01	582	9.755E+01
419	2.760E+00	460	3.119E+01	501	3.399E+01	542	6.008E+01	583	9.879E+01
420	3.029E+00	461	2.986E+01	502	3.507E+01	543	6.048E+01	584	9.965E+01

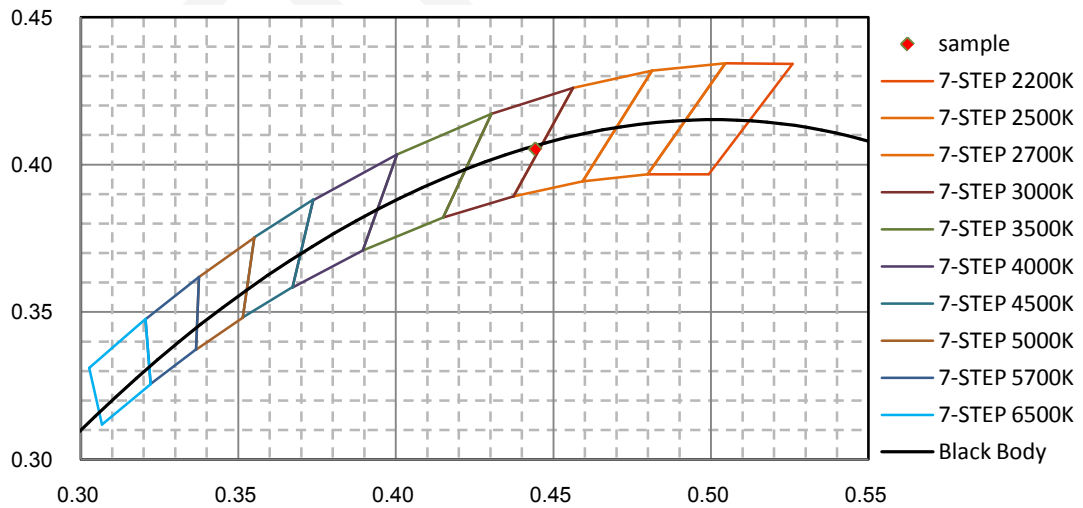


nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	1.007E+02	626	9.895E+01	667	4.378E+01	708	1.306E+01	749	3.581E+00
586	1.016E+02	627	9.788E+01	668	4.275E+01	709	1.267E+01	750	3.420E+00
587	1.026E+02	628	9.653E+01	669	4.170E+01	710	1.226E+01	751	3.344E+00
588	1.035E+02	629	9.554E+01	670	4.057E+01	711	1.187E+01	752	3.275E+00
589	1.044E+02	630	9.423E+01	671	3.944E+01	712	1.146E+01	753	3.164E+00
590	1.052E+02	631	9.301E+01	672	3.829E+01	713	1.108E+01	754	2.994E+00
591	1.060E+02	632	9.183E+01	673	3.731E+01	714	1.076E+01	755	2.973E+00
592	1.067E+02	633	9.019E+01	674	3.626E+01	715	1.049E+01	756	2.917E+00
593	1.075E+02	634	8.907E+01	675	3.532E+01	716	1.006E+01	757	2.803E+00
594	1.079E+02	635	8.764E+01	676	3.431E+01	717	9.792E+00	758	2.723E+00
595	1.087E+02	636	8.619E+01	677	3.338E+01	718	9.418E+00	759	2.660E+00
596	1.095E+02	637	8.505E+01	678	3.232E+01	719	9.232E+00	760	2.579E+00
597	1.097E+02	638	8.334E+01	679	3.150E+01	720	8.889E+00	761	2.441E+00
598	1.101E+02	639	8.207E+01	680	3.068E+01	721	8.673E+00	762	2.449E+00
599	1.107E+02	640	8.056E+01	681	2.975E+01	722	8.324E+00	763	2.345E+00
600	1.112E+02	641	7.911E+01	682	2.887E+01	723	8.062E+00	764	2.236E+00
601	1.112E+02	642	7.760E+01	683	2.802E+01	724	7.866E+00	765	2.231E+00
602	1.114E+02	643	7.630E+01	684	2.723E+01	725	7.582E+00	766	2.128E+00
603	1.115E+02	644	7.501E+01	685	2.648E+01	726	7.394E+00	767	2.082E+00
604	1.115E+02	645	7.333E+01	686	2.570E+01	727	7.151E+00	768	2.003E+00
605	1.115E+02	646	7.208E+01	687	2.494E+01	728	6.961E+00	769	1.958E+00
606	1.116E+02	647	7.048E+01	688	2.427E+01	729	6.687E+00	770	1.874E+00
607	1.116E+02	648	6.913E+01	689	2.354E+01	730	6.499E+00	771	1.843E+00
608	1.115E+02	649	6.764E+01	690	2.282E+01	731	6.266E+00	772	1.793E+00
609	1.112E+02	650	6.620E+01	691	2.208E+01	732	6.052E+00	773	1.720E+00
610	1.108E+02	651	6.475E+01	692	2.140E+01	733	5.933E+00	774	1.690E+00
611	1.106E+02	652	6.342E+01	693	2.083E+01	734	5.704E+00	775	1.655E+00
612	1.102E+02	653	6.183E+01	694	2.016E+01	735	5.534E+00	776	1.584E+00
613	1.097E+02	654	6.050E+01	695	1.963E+01	736	5.356E+00	777	1.534E+00
614	1.093E+02	655	5.904E+01	696	1.902E+01	737	5.164E+00	778	1.520E+00
615	1.085E+02	656	5.765E+01	697	1.840E+01	738	5.010E+00	779	1.514E+00
616	1.079E+02	657	5.643E+01	698	1.779E+01	739	4.850E+00	780	1.517E+00
617	1.073E+02	658	5.514E+01	699	1.736E+01	740	4.704E+00		
618	1.065E+02	659	5.357E+01	700	1.676E+01	741	4.578E+00		
619	1.058E+02	660	5.233E+01	701	1.627E+01	742	4.390E+00		
620	1.047E+02	661	5.114E+01	702	1.573E+01	743	4.230E+00		
621	1.041E+02	662	4.996E+01	703	1.527E+01	744	4.173E+00		
622	1.032E+02	663	4.861E+01	704	1.479E+01	745	3.993E+00		
623	1.023E+02	664	4.743E+01	705	1.436E+01	746	3.911E+00		
624	1.010E+02	665	4.617E+01	706	1.387E+01	747	3.769E+00		
625	1.001E+02	666	4.508E+01	707	1.347E+01	748	3.658E+00		

**CIE 1931 x y Chromaticity Diagram**



**7-Step Chromaticity Quadrangles**



**[Goniophotometer System]**

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

Test orientation: **Downward**

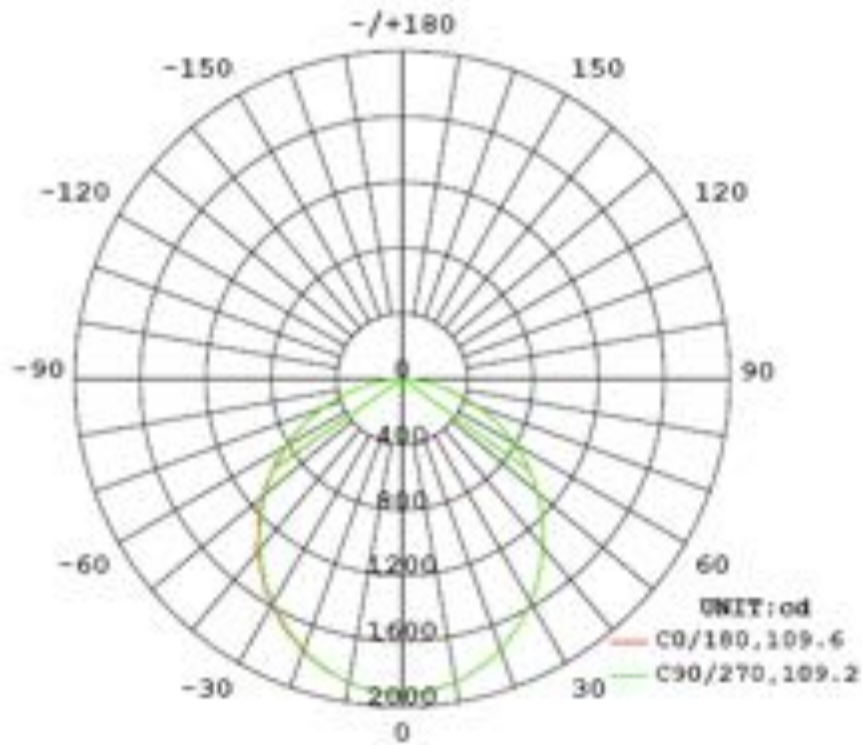
**Electrical Measurement**

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.0	60	0.4566	54.3	0.9907

**Photometric Measurement**

Luminous Flux (lm)	Efficacy (lm/W)	I <sub>max</sub> (cd)	S/MH (C0/180)	S/MH (C90/270)
5370.58	98.91	1924.0	1.22	1.22

**Luminous Intensity Distribution**



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I <sub>max</sub> ):	109.6	111.7	109.2	112.1	110.7
Field Angle (10% I <sub>max</sub> ):	161.0	162.0	160.5	162.2	161.4

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	1921	1921	1921	1921	1921	1921	1921	1921
5.0°	1909	1916	1915	1911	1910	1914	1912	1912
10.0°	1881	1880	1880	1878	1879	1881	1879	1880
15.0°	1832	1833	1831	1828	1823	1828	1829	1826
20.0°	1768	1767	1765	1760	1756	1755	1757	1756
25.0°	1690	1691	1685	1676	1670	1671	1672	1670
30.0°	1593	1594	1594	1585	1576	1573	1572	1571
35.0°	1486	1493	1493	1484	1467	1468	1467	1460
40.0°	1378	1376	1387	1370	1351	1351	1354	1340
45.0°	1243	1252	1273	1248	1223	1227	1236	1215
50.0°	1107	1127	1139	1118	1092	1099	1111	1083
55.0°	970	994	1010	983	956	964	976	946
60.0°	827	844	867	840	814	825	834	803
65.0°	667	694	714	689	662	676	682	653
70.0°	519	534	553	533	509	523	525	498
75.0°	361	380	392	377	356	368	369	343
80.0°	215	226	237	229	216	218	221	198
85.0°	91	94	102	99	92	90	89	79
90.0°	6	6	10	12	11	8	5	8
95.0°	1	1	1	0	0	0	1	1
100.0°	1	1	1	1	1	1	1	1
105.0°	1	1	1	1	1	1	1	1
110.0°	1	1	1	1	1	1	1	1
115.0°	1	1	1	1	1	1	1	1
120.0°	1	1	1	1	1	1	1	1
125.0°	1	1	1	1	1	1	1	1
130.0°	1	1	1	1	1	1	1	1
135.0°	1	1	1	1	1	1	1	1
140.0°	1	1	1	1	1	1	1	1
145.0°	1	1	1	2	2	2	1	1
150.0°	1	1	2	2	2	2	2	1
155.0°	1	2	2	2	2	2	2	1
160.0°	2	2	2	2	2	2	2	2
165.0°	2	2	2	2	2	2	2	2
170.0°	2	2	2	1	1	2	2	2
175.0°	2	2	2	1	1	2	2	2
180.0°	2	1	1	1	1	1	2	2

Luminous Intensity (cd) Distribution Data (cont.)

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	1921	1921	1921	1921	1921	1921	1921	1921
5.0°	1910	1914	1912	1912	1912	1914	1912	1910
10.0°	1881	1880	1879	1878	1880	1882	1883	1884
15.0°	1824	1831	1826	1825	1824	1833	1837	1836
20.0°	1757	1756	1754	1751	1754	1766	1770	1772
25.0°	1667	1672	1668	1665	1668	1683	1693	1692
30.0°	1569	1569	1570	1567	1571	1588	1599	1603
35.0°	1457	1463	1461	1458	1460	1483	1498	1495
40.0°	1336	1341	1345	1339	1345	1365	1387	1384
45.0°	1208	1217	1224	1215	1212	1243	1264	1258
50.0°	1080	1089	1104	1086	1081	1114	1144	1131
55.0°	939	951	966	949	942	976	1005	992
60.0°	793	804	822	805	796	830	858	845
65.0°	642	655	671	657	644	679	704	698
70.0°	489	501	516	502	476	520	548	538
75.0°	337	346	361	327	314	344	391	383
80.0°	197	202	206	184	185	200	232	234
85.0°	78	81	73	76	81	88	93	106
90.0°	2	2	3	10	12	14	14	17
95.0°	0	0	0	0	0	0	0	0
100.0°	1	1	1	0	0	0	1	1
105.0°	1	1	1	1	1	1	1	1
110.0°	1	1	1	1	1	1	1	1
115.0°	1	1	1	1	1	1	1	1
120.0°	1	1	1	1	1	1	1	1
125.0°	1	1	1	1	1	1	1	1
130.0°	1	1	1	1	1	1	1	1
135.0°	1	1	1	1	1	1	1	1
140.0°	1	1	1	1	1	1	1	1
145.0°	1	1	1	1	1	1	1	1
150.0°	1	1	1	1	1	1	1	1
155.0°	1	1	1	1	1	1	1	1
160.0°	1	1	1	1	1	1	1	1
165.0°	1	1	1	1	1	1	1	1
170.0°	1	1	1	1	1	1	1	1
175.0°	2	2	1	1	1	1	1	2
180.0°	2	2	1	1	1	1	1	2

Zonal Lumen Density Measurement

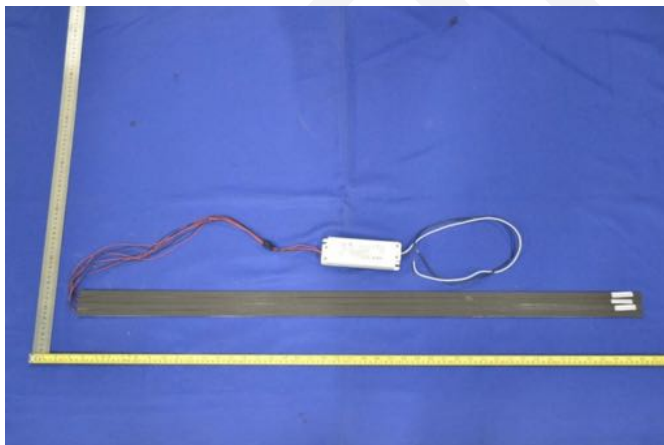
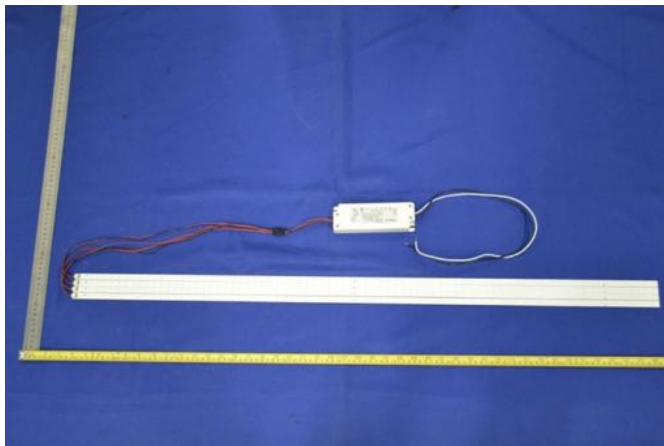
Deg	Flux (lm)	%
0-5	45.8	0.85
5-10	135.7	2.53
10-15	220.1	4.10
15-20	295.8	5.50
20-25	360.3	6.71
25-30	412.1	7.68
30-35	449.9	8.37
35-40	472.6	8.80
40-45	480.2	8.94
45-50	473.3	8.82
50-55	451.5	8.40
55-60	414.9	7.73
60-65	364.5	6.79
65-70	301.8	5.62
70-75	228.8	4.26
75-80	152.2	2.83
80-85	80.2	1.50
85-90	24.3	0.45
90-95	1.1	0.02
95-100	0.3	0.00
100-105	0.4	0.01
105-110	0.4	0.01
110-115	0.4	0.01
115-120	0.4	0.00
120-125	0.4	0.01
125-130	0.4	0.01
130-135	0.4	0.01
135-140	0.4	0.00
140-145	0.4	0.01
145-150	0.4	0.01
150-155	0.4	0.00
155-160	0.3	0.01
160-165	0.2	0.00
165-170	0.2	0.01
170-175	0.1	0.00
175-180	0.0	0.00

Deg	Flux (lm)	%
0-5	45.8	0.85
0-10	181.5	3.38
0-15	401.5	7.48
0-20	697.3	12.98
0-25	1057.7	19.69
0-30	1469.7	27.37
0-35	1919.6	35.74
0-40	2392.2	44.54
0-45	2872.4	53.48
0-50	3345.7	62.30
0-55	3797.2	70.70
0-60	4212.1	78.43
0-65	4576.7	85.22
0-70	4878.5	90.84
0-75	5107.3	95.10
0-80	5259.5	97.93
0-85	5339.7	99.43
0-90	5364.0	99.88
0-95	5365.1	99.90
0-100	5365.4	99.90
0-105	5365.8	99.91
0-110	5366.2	99.92
0-115	5366.6	99.93
0-120	5367.0	99.93
0-125	5367.4	99.94
0-130	5367.8	99.95
0-135	5368.2	99.96
0-140	5368.6	99.96
0-145	5369.0	99.97
0-150	5369.4	99.98
0-155	5369.7	99.98
0-160	5370.0	99.99
0-165	5370.3	99.99
0-170	5370.4	100.00
0-175	5370.5	100.00
0-180	5370.6	100.00

**[Additional Test]**

Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Power Factor:	277.0	60	0.9281
Total Harmonic Distortion:	277.0	60	8.21%
Total Harmonic Distortion:	120.0	60	9.28%
Total Harmonic Distortion:	100.0	60	8.07%
Power Factor:	100.0	60	0.9978

**6. Product Photo**



## 7. Product Test orientation in the Goniophotometer



Auxiliary Equipment (Recessed Troffer)



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