



# IES LM-79-08

## MEASUREMENT AND TEST REPORT

For

### SIMKAR Corp

700 Ramona Avenue, Philadelphia PA 19120.

**Test Model: LDP2241L35U1**

<b>Report Type:</b>	Electrical and Photometric tests including: Luminous Flux, Chromaticity, Luminous Intensity Distribution, THD
<b>Test Engineer:</b>	Carl Du <i>Carl Du</i>
<b>Report Number:</b>	RKS170414003-10
<b>Test Date:</b>	2016-07-28 to 2016-07-29
<b>Report Date:</b>	2017-04-17
<b>Reviewed By:</b>	Blake Zhang <i>Blake Zhang</i>
<b>Prepared By:</b>	Bay Area Compliance Laboratories Corp. (Dongguan). No.69, Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China. Tel: +86-0769-86858888 Fax: +86-0769-86858588
<b>Test Facility:</b>	Test facility was located at No.69, Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, 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 2016-07-27 and used for testing.

Model Tested: LDP2241L35U1  
 Manufacturer: SIMKAR Corp  
 Brand Name: SIMKAR  
 Product Designation: 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces  
 Dimmable: Continuous  
 Dimming Range: 10% to 100%  
 Burning Time Before Test: 0hour(For New Products)

### Rated Values:

Rated Voltage/Frequency: 120-277VAC, 60Hz  
 Rated Power: 40W  
 Nominal CCT: 3500K  
 Nominal Lumen Output: 4000lm  
 Nominal CRI: 80

### Note:

1. The applicant SIMKAR Corp declare that their product with model LDP2241L35U1 is the same to the product in report# RKS160727005-10 and is authorized by original applicant to use their test data.
2. All the data in previous report (RKS160727005-10) is shared in report.

## 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
2.0m integrating sphere	EVERFINE	R98	11010018	R98	2015-11-09	2016-11-08
High accuracy array spectroradiometer	EVERFINE	HAAS-2000	1012016T	380-780nm	2016-03-10	2017-03-09
Digital Power Meter	EVERFINE	PF2010A	1011004	600V/20A	2016-07-11	2017-07-10
Digital CC&CV DC Power Supply	EVERFINE	WY305-V1	1101047	30V/5A	2016-07-07	2017-07-06
Temperature/humidity/clock	Victor	VC230	EE023	0~40°C0~90%	2016-03-21	2017-03-20
Standard Light Source	SENSING	N/A	LSD090808	N/A	2015-09-25	2016-09-24
Special zero-voltage synchronous switching AC	EVERFINE	DPS1010-YF	1011001T	30V/5A	2016-03-04	2017-03-03

Device	Manufacture	Model No	Serial No	Test Range	Calibration date	Calibration due date
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 Sensor	N/A	433MHz	N/A	0°C~50°C;-20°C~60°C	2016-03-21	2017-03-20
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°C±1°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.

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=1.8% (K=2), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is U=20K (K=2), at the 95% confidence level. The uncertainty of the CRI is U=1.8(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 (γ) 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°C±1°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  $R_i$ ,  $R_g$  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: **0.5 hour**

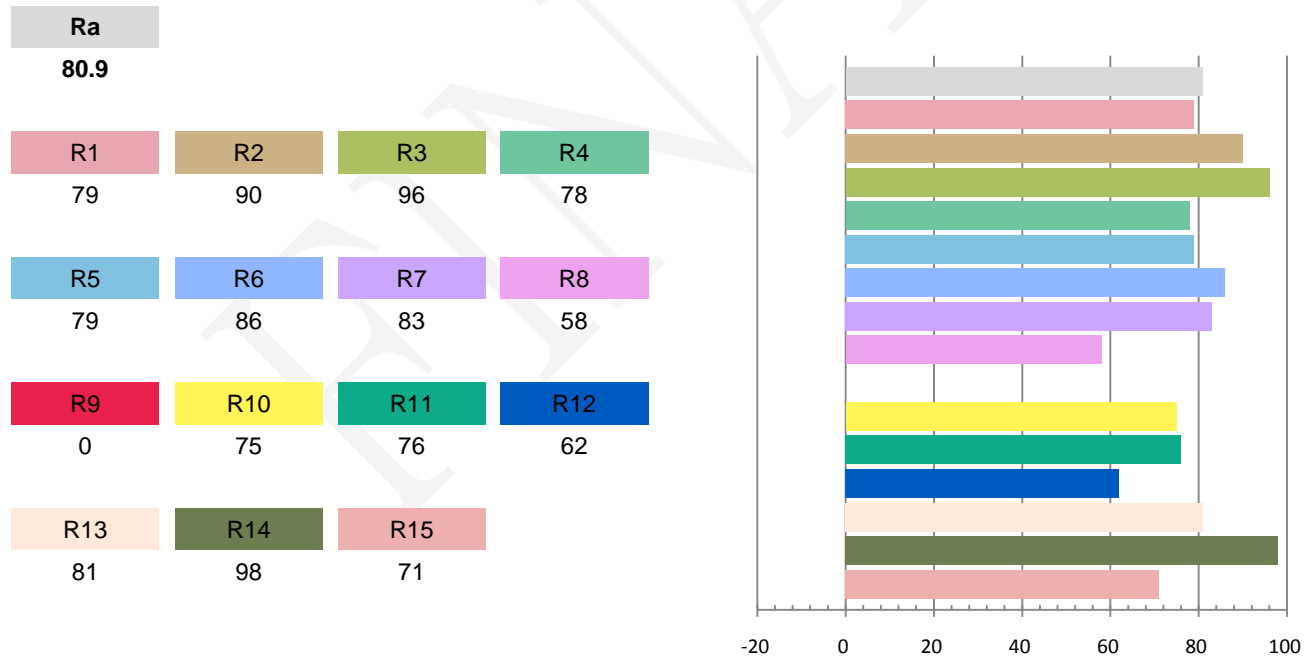
Test orientation: **Downward**

### Photometric and Electrical Measurement Result

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
119.9	60	0.3287	39.16	0.993	4046.6	103.31

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
11.960	3375	0.001110	0.4138	0.3974	0.2385	0.5153

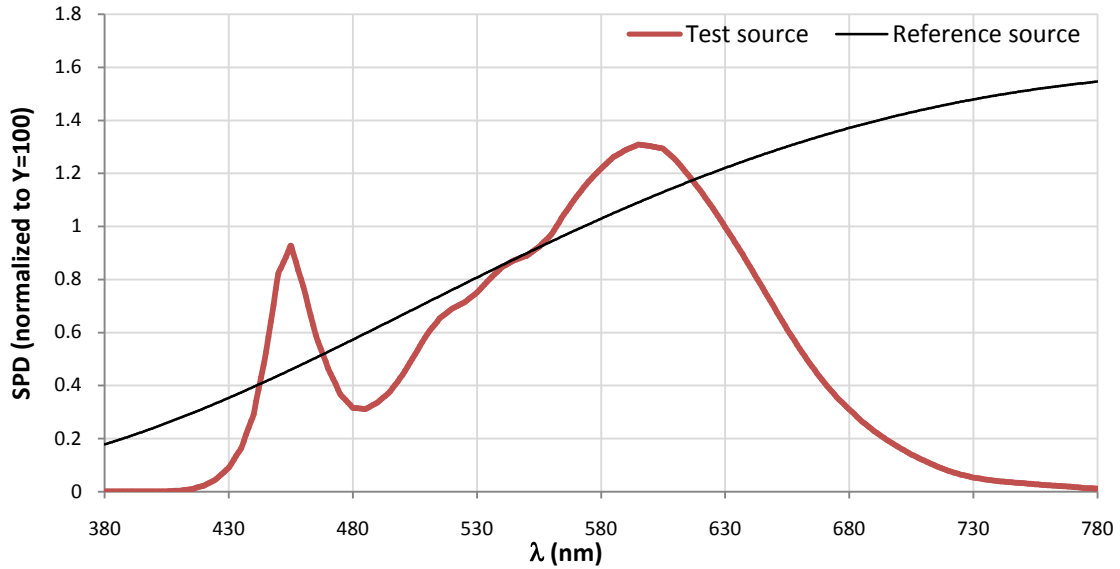
### Color Rendering Index



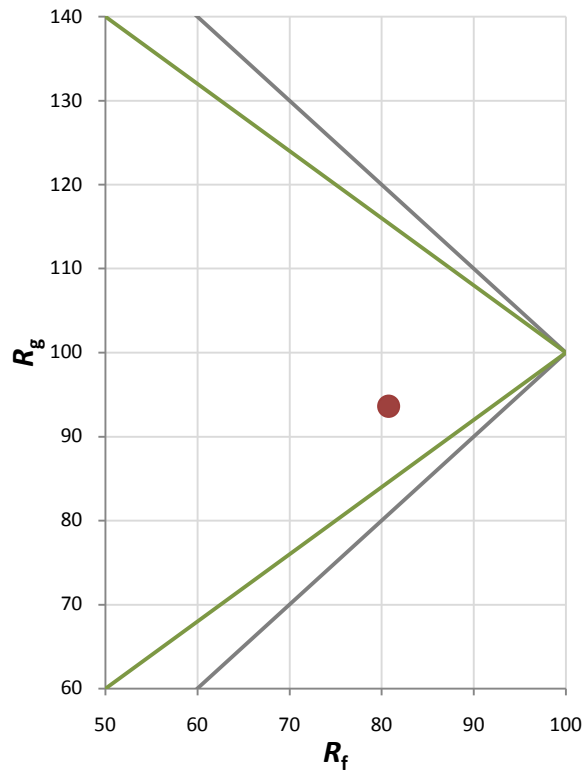
Fidelity Index and Gamut Index

Fidelity Index $R_f$	81
Gamut Index $R_g$	94

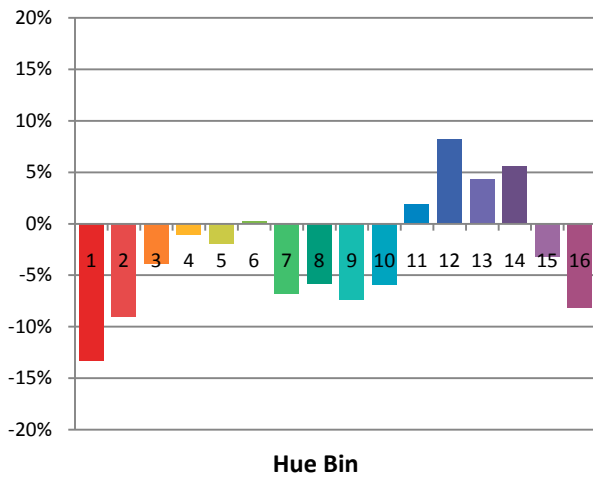
Spectral Power Distribution Comparison



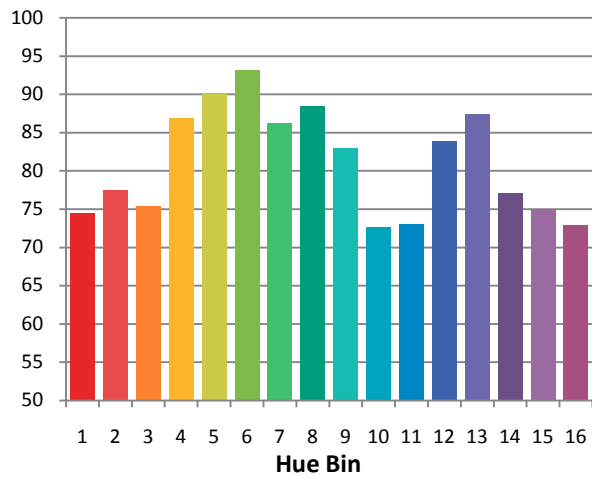
Plot of  $R_g$  versus  $R_f$



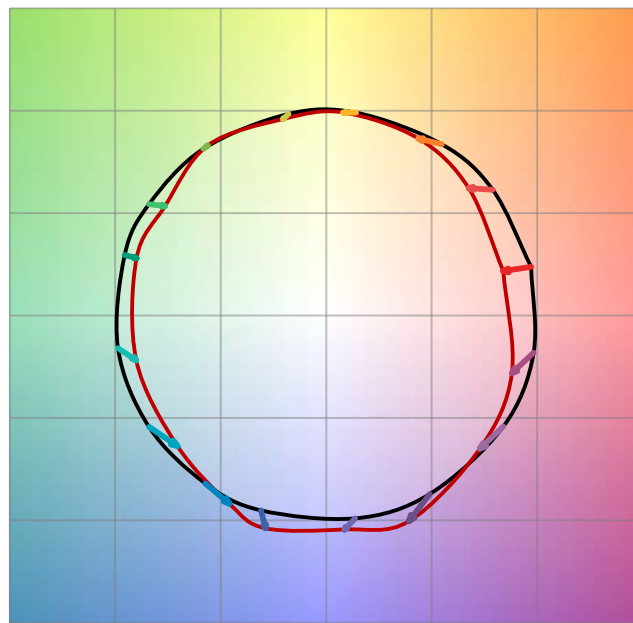
**Chroma Shift by Hue**



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

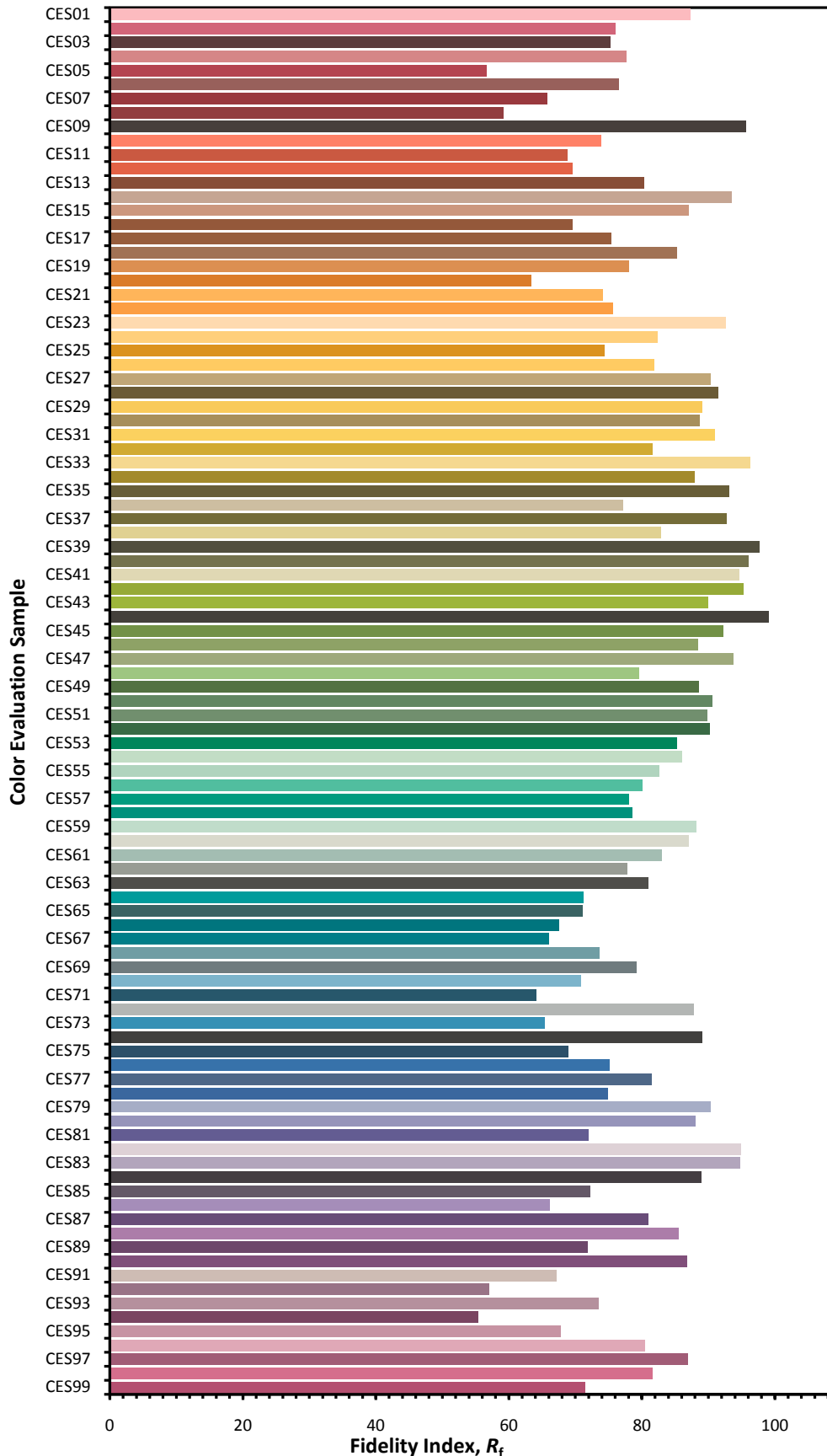


**Color Vector Graphic**

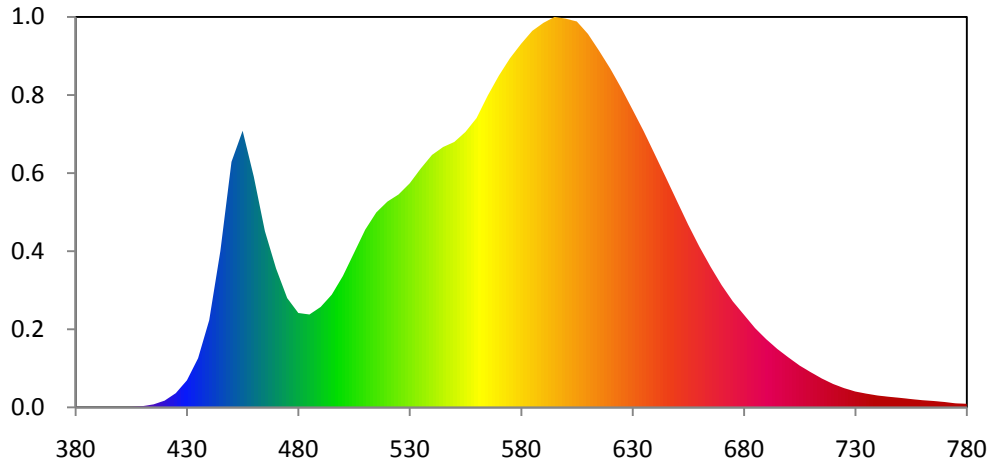


— Reference Illuminat    — Test Source

**Color Fidelity by CES Sample**



**Relative Spectral Power Distribution**

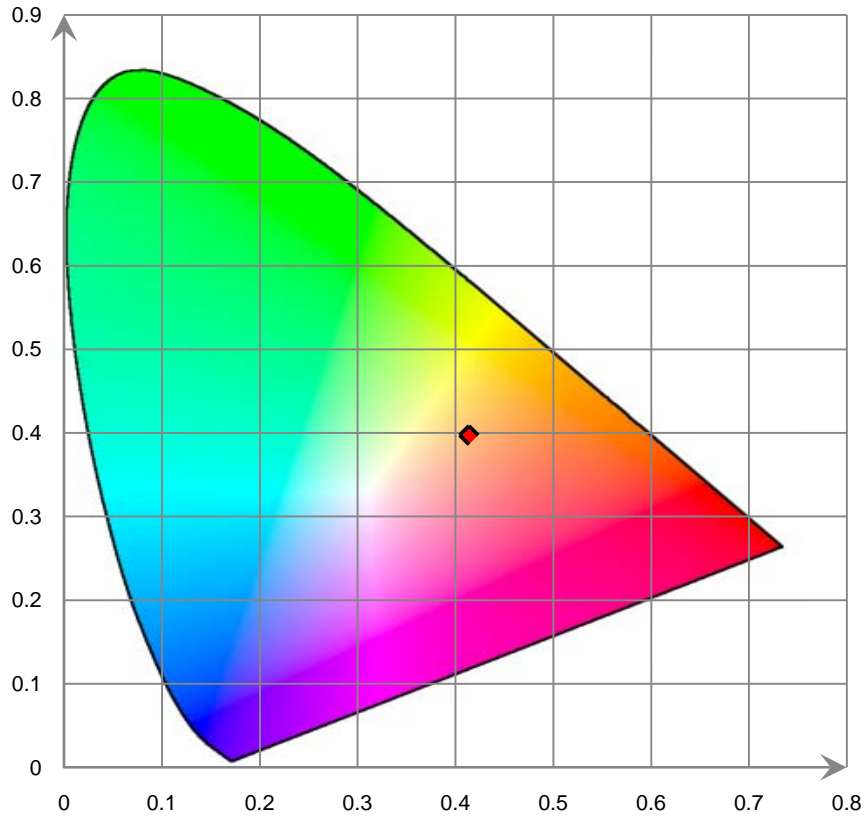


nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	9.048E-02	421	1.640E+00	462	4.149E+01	503	2.883E+01	544	5.138E+01
381	8.415E-02	422	1.936E+00	463	3.932E+01	504	2.975E+01	545	5.169E+01
382	7.782E-02	423	2.233E+00	464	3.715E+01	505	3.067E+01	546	5.189E+01
383	7.149E-02	424	2.529E+00	465	3.498E+01	506	3.158E+01	547	5.209E+01
384	6.517E-02	425	2.825E+00	466	3.350E+01	507	3.250E+01	548	5.229E+01
385	5.884E-02	426	3.334E+00	467	3.202E+01	508	3.342E+01	549	5.249E+01
386	5.618E-02	427	3.844E+00	468	3.054E+01	509	3.434E+01	550	5.269E+01
387	5.352E-02	428	4.354E+00	469	2.906E+01	510	3.526E+01	551	5.309E+01
388	5.085E-02	429	4.863E+00	470	2.758E+01	511	3.595E+01	552	5.349E+01
389	4.819E-02	430	5.373E+00	471	2.640E+01	512	3.664E+01	553	5.388E+01
390	4.553E-02	431	6.248E+00	472	2.523E+01	513	3.733E+01	554	5.428E+01
391	4.406E-02	432	7.123E+00	473	2.405E+01	514	3.802E+01	555	5.468E+01
392	4.258E-02	433	7.998E+00	474	2.287E+01	515	3.871E+01	556	5.523E+01
393	4.110E-02	434	8.874E+00	475	2.170E+01	516	3.914E+01	557	5.578E+01
394	3.963E-02	435	9.749E+00	476	2.111E+01	517	3.957E+01	558	5.634E+01
395	3.815E-02	436	1.126E+01	477	2.051E+01	518	4.000E+01	559	5.689E+01
396	4.001E-02	437	1.277E+01	478	1.992E+01	519	4.043E+01	560	5.744E+01
397	4.187E-02	438	1.429E+01	479	1.933E+01	520	4.086E+01	561	5.833E+01
398	4.373E-02	439	1.580E+01	480	1.874E+01	521	4.114E+01	562	5.922E+01
399	4.559E-02	440	1.731E+01	481	1.868E+01	522	4.143E+01	563	6.011E+01
400	4.745E-02	441	2.005E+01	482	1.862E+01	523	4.171E+01	564	6.100E+01
401	5.784E-02	442	2.279E+01	483	1.856E+01	524	4.199E+01	565	6.189E+01
402	6.823E-02	443	2.554E+01	484	1.850E+01	525	4.227E+01	566	6.268E+01
403	7.862E-02	444	2.828E+01	485	1.844E+01	526	4.272E+01	567	6.347E+01
404	8.901E-02	445	3.102E+01	486	1.874E+01	527	4.316E+01	568	6.427E+01
405	9.940E-02	446	3.457E+01	487	1.904E+01	528	4.360E+01	569	6.506E+01
406	1.274E-01	447	3.811E+01	488	1.933E+01	529	4.404E+01	570	6.585E+01
407	1.554E-01	448	4.166E+01	489	1.963E+01	530	4.449E+01	571	6.654E+01
408	1.834E-01	449	4.520E+01	490	1.993E+01	531	4.508E+01	572	6.723E+01
409	2.115E-01	450	4.875E+01	491	2.042E+01	532	4.567E+01	573	6.793E+01
410	2.395E-01	451	4.998E+01	492	2.091E+01	533	4.626E+01	574	6.862E+01
411	3.106E-01	452	5.122E+01	493	2.140E+01	534	4.686E+01	575	6.931E+01
412	3.817E-01	453	5.245E+01	494	2.189E+01	535	4.745E+01	576	6.988E+01
413	4.527E-01	454	5.368E+01	495	2.238E+01	536	4.798E+01	577	7.046E+01
414	5.238E-01	455	5.492E+01	496	2.312E+01	537	4.852E+01	578	7.103E+01
415	5.949E-01	456	5.310E+01	497	2.386E+01	538	4.905E+01	579	7.161E+01
416	7.448E-01	457	5.128E+01	498	2.460E+01	539	4.959E+01	580	7.218E+01
417	8.946E-01	458	4.946E+01	499	2.534E+01	540	5.012E+01	581	7.270E+01
418	1.044E+00	459	4.764E+01	500	2.608E+01	541	5.043E+01	582	7.321E+01
419	1.194E+00	460	4.583E+01	501	2.700E+01	542	5.075E+01	583	7.372E+01
420	1.344E+00	461	4.366E+01	502	2.791E+01	543	5.106E+01	584	7.424E+01

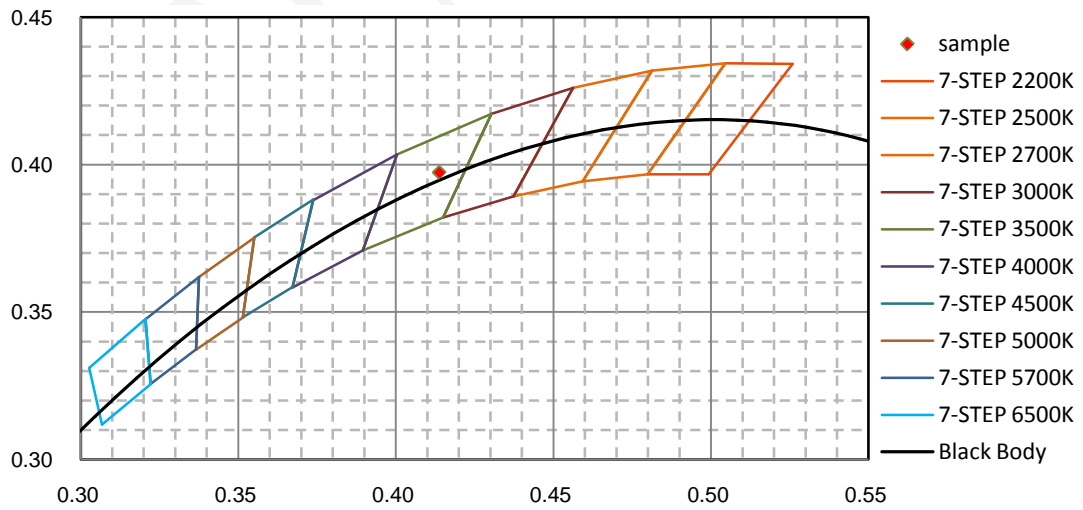


nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	7.475E+01	626	6.249E+01	667	2.647E+01	708	7.509E+00	749	1.936E+00
586	7.507E+01	627	6.165E+01	668	2.573E+01	709	7.244E+00	750	1.894E+00
587	7.539E+01	628	6.080E+01	669	2.500E+01	710	6.978E+00	751	1.846E+00
588	7.570E+01	629	5.996E+01	670	2.426E+01	711	6.727E+00	752	1.797E+00
589	7.602E+01	630	5.912E+01	671	2.362E+01	712	6.477E+00	753	1.749E+00
590	7.634E+01	631	5.826E+01	672	2.298E+01	713	6.226E+00	754	1.701E+00
591	7.657E+01	632	5.740E+01	673	2.234E+01	714	5.975E+00	755	1.653E+00
592	7.681E+01	633	5.655E+01	674	2.169E+01	715	5.724E+00	756	1.608E+00
593	7.704E+01	634	5.569E+01	675	2.105E+01	716	5.510E+00	757	1.562E+00
594	7.728E+01	635	5.484E+01	676	2.052E+01	717	5.295E+00	758	1.516E+00
595	7.752E+01	636	5.392E+01	677	1.999E+01	718	5.080E+00	759	1.471E+00
596	7.745E+01	637	5.299E+01	678	1.946E+01	719	4.865E+00	760	1.425E+00
597	7.738E+01	638	5.207E+01	679	1.892E+01	720	4.650E+00	761	1.394E+00
598	7.731E+01	639	5.115E+01	680	1.839E+01	721	4.483E+00	762	1.364E+00
599	7.724E+01	640	5.023E+01	681	1.786E+01	722	4.315E+00	763	1.333E+00
600	7.718E+01	641	4.931E+01	682	1.733E+01	723	4.147E+00	764	1.302E+00
601	7.706E+01	642	4.838E+01	683	1.680E+01	724	3.980E+00	765	1.272E+00
602	7.695E+01	643	4.745E+01	684	1.627E+01	725	3.812E+00	766	1.231E+00
603	7.684E+01	644	4.653E+01	685	1.574E+01	726	3.680E+00	767	1.191E+00
604	7.672E+01	645	4.560E+01	686	1.530E+01	727	3.547E+00	768	1.150E+00
605	7.661E+01	646	4.466E+01	687	1.485E+01	728	3.415E+00	769	1.110E+00
606	7.612E+01	647	4.372E+01	688	1.441E+01	729	3.282E+00	770	1.069E+00
607	7.562E+01	648	4.279E+01	689	1.397E+01	730	3.150E+00	771	1.016E+00
608	7.513E+01	649	4.185E+01	690	1.353E+01	731	3.065E+00	772	9.629E-01
609	7.463E+01	650	4.091E+01	691	1.314E+01	732	2.979E+00	773	9.097E-01
610	7.414E+01	651	3.998E+01	692	1.276E+01	733	2.894E+00	774	8.564E-01
611	7.347E+01	652	3.904E+01	693	1.237E+01	734	2.809E+00	775	8.031E-01
612	7.280E+01	653	3.811E+01	694	1.198E+01	735	2.724E+00	776	7.851E-01
613	7.213E+01	654	3.718E+01	695	1.159E+01	736	2.650E+00	777	7.670E-01
614	7.146E+01	655	3.624E+01	696	1.126E+01	737	2.576E+00	778	7.489E-01
615	7.079E+01	656	3.537E+01	697	1.092E+01	738	2.503E+00	779	7.308E-01
616	7.008E+01	657	3.451E+01	698	1.058E+01	739	2.429E+00	780	7.127E-01
617	6.938E+01	658	3.364E+01	699	1.024E+01	740	2.356E+00		
618	6.867E+01	659	3.277E+01	700	9.907E+00	741	2.305E+00		
619	6.797E+01	660	3.191E+01	701	9.586E+00	742	2.255E+00		
620	6.726E+01	661	3.111E+01	702	9.266E+00	743	2.205E+00		
621	6.648E+01	662	3.032E+01	703	8.946E+00	744	2.155E+00		
622	6.569E+01	663	2.953E+01	704	8.626E+00	745	2.105E+00		
623	6.491E+01	664	2.873E+01	705	8.306E+00	746	2.063E+00		
624	6.412E+01	665	2.794E+01	706	8.040E+00	747	2.021E+00		
625	6.334E+01	666	2.720E+01	707	7.775E+00	748	1.978E+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**

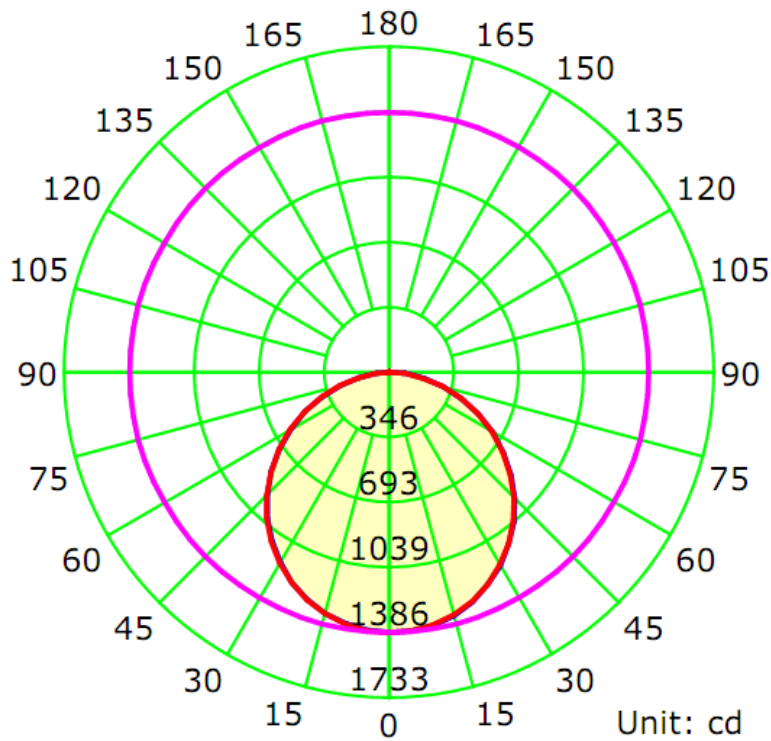
**Electrical Measurement**

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.0	60	0.3220	38.49	0.9940

**Photometric Measurement**

Luminous Flux (lm)	Efficacy (lm/W)	I <sub>max</sub> (cd)	S/MH (C0/180)	S/MH (C90/270)
4061	105.51	1386.5	1.26	1.26

**Luminous Intensity Distribution**



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I <sub>max</sub> ):	113.6	113.6	113.6	113.6	113.6
Field Angle (10% I <sub>max</sub> ):	164.1	164.0	163.9	164.0	164.0

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	1387	1387	1387	1387	1387	1387	1387	1387
5.0°	1382	1382	1382	1384	1382	1382	1379	1382
10.0°	1367	1366	1367	1367	1365	1363	1362	1363
15.0°	1340	1338	1339	1339	1339	1334	1333	1334
20.0°	1300	1300	1299	1299	1298	1295	1292	1292
25.0°	1248	1248	1247	1249	1246	1244	1239	1240
30.0°	1187	1187	1188	1188	1185	1183	1178	1176
35.0°	1115	1118	1116	1116	1112	1110	1107	1104
40.0°	1037	1036	1037	1035	1033	1030	1025	1023
45.0°	946	948	947	948	942	939	936	934
50.0°	851	850	852	851	847	842	839	835
55.0°	747	747	749	747	743	740	737	733
60.0°	639	639	640	637	635	631	627	623
65.0°	526	528	527	526	523	519	514	512
70.0°	414	414	414	413	408	404	401	397
75.0°	301	300	302	299	295	292	290	286
80.0°	193	193	194	189	187	185	183	179
85.0°	92	92	93	92	88	85	84	81
90.0°	6	6	7	5	4	3	3	3
95.0°	2	2	2	2	2	2	2	2
100.0°	1	1	2	2	1	2	2	2
105.0°	1	2	1	2	1	2	2	2
110.0°	1	1	1	2	1	2	2	2
115.0°	1	1	1	2	1	2	2	2
120.0°	2	2	2	2	2	2	2	2
125.0°	2	2	2	2	2	3	2	2
130.0°	2	3	3	2	3	3	3	2
135.0°	2	3	3	3	3	3	3	3
140.0°	3	4	3	3	3	4	3	3
145.0°	3	4	4	4	3	4	4	4
150.0°	4	4	4	4	4	4	4	4
155.0°	4	4	4	4	4	5	4	4
160.0°	4	4	4	4	4	5	4	4
165.0°	4	4	4	5	4	5	4	4
170.0°	4	4	5	5	4	5	5	5
175.0°	4	4	5	5	5	5	5	5
180.0°	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°
0.0°	1387	1387	1387	1387	1387	1387	1387	1387
5.0°	1379	1377	1378	1381	1380	1380	1379	1383
10.0°	1359	1359	1359	1361	1361	1360	1362	1364
15.0°	1329	1327	1327	1330	1330	1331	1332	1335
20.0°	1285	1284	1284	1288	1287	1289	1290	1295
25.0°	1232	1229	1231	1233	1236	1237	1237	1241
30.0°	1167	1167	1166	1169	1170	1175	1175	1180
35.0°	1094	1092	1094	1095	1098	1100	1102	1106
40.0°	1012	1009	1010	1013	1016	1019	1020	1025
45.0°	920	919	918	922	924	927	928	934
50.0°	821	820	820	825	826	829	832	838
55.0°	717	717	716	720	721	724	728	734
60.0°	608	605	607	609	612	616	618	626
65.0°	496	494	494	495	499	503	507	511
70.0°	381	381	379	382	383	388	394	398
75.0°	271	270	269	271	272	276	281	287
80.0°	166	164	164	163	166	171	175	178
85.0°	69	69	67	67	70	74	76	81
90.0°	2	3	3	3	3	3	3	3
95.0°	1	2	2	2	2	3	2	2
100.0°	1	2	2	2	2	2	2	2
105.0°	1	2	2	2	2	2	2	2
110.0°	1	1	2	2	2	2	2	2
115.0°	1	2	2	2	2	2	2	2
120.0°	1	2	2	2	2	2	2	2
125.0°	1	2	2	2	2	3	2	2
130.0°	2	2	2	3	3	3	3	3
135.0°	2	3	3	3	3	3	3	3
140.0°	2	3	3	3	3	3	3	3
145.0°	3	3	3	4	3	4	4	4
150.0°	3	4	4	4	4	4	4	4
155.0°	3	4	4	4	4	4	4	4
160.0°	4	4	4	4	4	5	5	4
165.0°	4	4	4	5	5	5	5	5
170.0°	4	5	5	5	4	5	5	5
175.0°	4	5	5	5	5	5	5	5
180.0°	0	0	0	0	0	0	0	0

Zonal Lumen Density Measurement

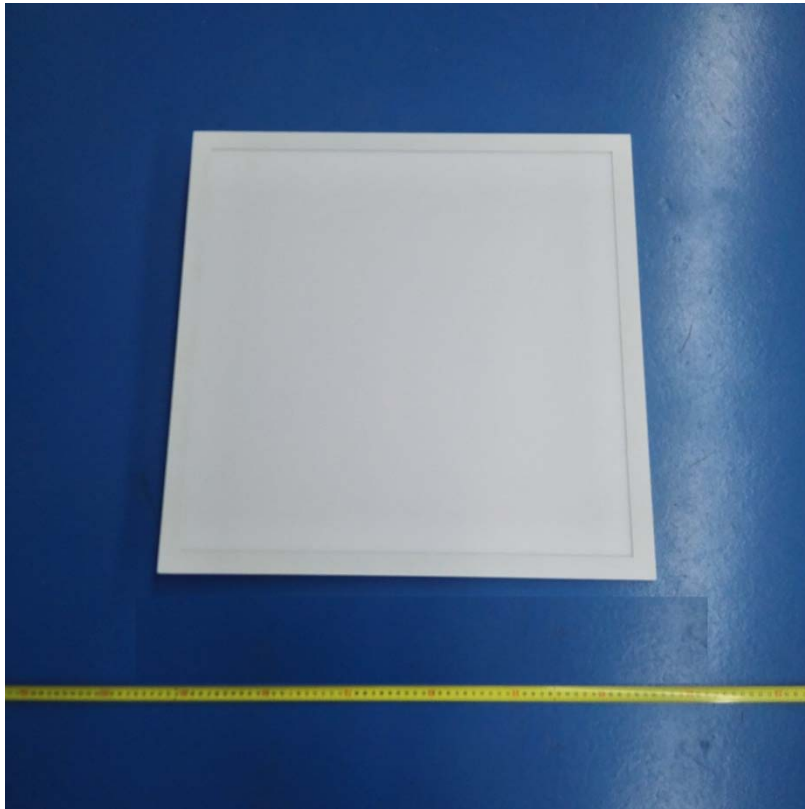
Deg	Flux (lm)	%
0-5	33.1	0.81
5-10	98.1	2.42
10-15	159.9	3.94
15-20	216.4	5.33
20-25	265.6	6.54
25-30	305.9	7.53
30-35	336.1	8.28
35-40	355.2	8.75
40-45	362.4	8.92
45-50	357.5	8.80
50-55	341.0	8.40
55-60	313.4	7.72
60-65	275.7	6.79
65-70	229.9	5.66
70-75	178.2	4.39
75-80	123.9	3.05
80-85	70.1	1.73
85-90	22.9	0.56
90-95	1.6	0.04
95-100	1.0	0.03
100-105	0.9	0.02
105-110	0.9	0.02
110-115	0.8	0.02
115-120	0.8	0.02
120-125	0.9	0.02
125-130	1.0	0.02
130-135	1.1	0.03
135-140	1.1	0.03
140-145	1.1	0.03
145-150	1.1	0.03
150-155	1.0	0.02
155-160	0.9	0.02
160-165	0.7	0.02
165-170	0.5	0.01
170-175	0.3	0.01
175-180	0.1	0.00

Deg	Flux (lm)	%
0-5	33.1	0.81
0-10	131.2	3.23
0-15	291.2	7.17
0-20	507.6	12.50
0-25	773.1	19.04
0-30	1079.0	26.57
0-35	1415.1	34.85
0-40	1770.3	43.59
0-45	2132.7	52.52
0-50	2490.2	61.32
0-55	2831.2	69.72
0-60	3144.6	77.43
0-65	3420.3	84.22
0-70	3650.1	89.88
0-75	3828.4	94.27
0-80	3952.3	97.32
0-85	4022.3	99.05
0-90	4045.2	99.61
0-95	4046.8	99.65
0-100	4047.8	99.68
0-105	4048.7	99.70
0-110	4049.6	99.72
0-115	4050.4	99.74
0-120	4051.3	99.76
0-125	4052.2	99.78
0-130	4053.2	99.81
0-135	4054.2	99.83
0-140	4055.3	99.86
0-145	4056.4	99.89
0-150	4057.5	99.92
0-155	4058.5	99.94
0-160	4059.3	99.96
0-165	4060.0	99.98
0-170	4060.6	99.99
0-175	4060.9	100.00
0-180	4061.0	100.00

**[Additional Test]**

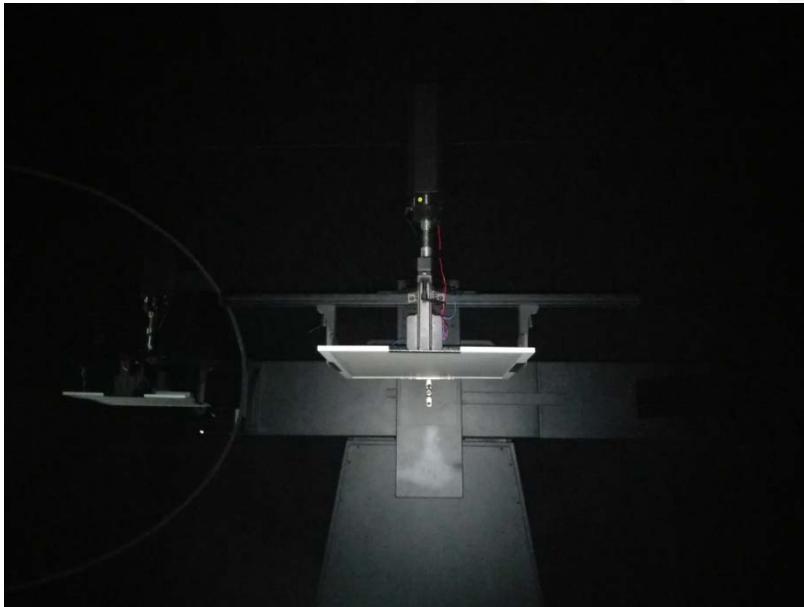
Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Power Factor:	240.0	60	0.9269
Total Harmonic Distortion:	240.0	60	12.64%
Total Harmonic Distortion:	120.0	60	8.81%
Total Harmonic Distortion:	277.0	60	15.29%
Power Factor:	277.0	60	0.8996

**6. Product Photo**





### 7. Product Test orientation in the Goniophotometer



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