



ShenZhen Xin An Biao Technology Service Co. Ltd Testing Center

Floor 3, Building 3, No. 17, Yigongliu road, Loucun community building, Xihu Street, Guangming New district, Shenzhen 518107

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## LM-79-08 Test Report

For

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

**(Brand Name: Superior Life®)**

2285 Ward Avenue / Simi Valley, CA 93065

### Model name(s):

**SPSTLWP-50-[L;H]V- [C;MC;PC;PSC;SC]-TK**

**Report Type:** Testing and Report According to IES LM-79-2008  
**Type of Luminaire:** Outdoor Full-Cutoff Wall-Mounted Area Luminaires  
**Report Date:** 2020-08-31

Test & Report By:

*Garman Mo*

Engineer: Garman Mo

Review By:

*Johnson Sun*

Manager: Johnson Sun

Note: 1. The results contained in this report pertain only to the tested samples.

2. This report does not imply product certification, approval, or endorsement by A2LA or any agency of the Federal Government.



<b>1.1 Product Information:</b>		
Model Number	SPSTLWP-50-[L;H]V- [C;MC;PC;PSC;SC]-TK	
Remark	C=Adjustable CCT Switch; MC=With microwave motion sensor and Adjustable CCT switch; PC=With photocell sensor and Adjustable CCT switch; SP=Adjustable Power Switch with Photocell Sensor; PSC=With photocell sensor, Adjustable power switch and Adjustable CCT switch; SC=Adjustable power switch and Adjustable CCT switch	
Representative (Tested) Model	SPSTLWP-50-LV-SC-3000K	
Model Difference	N/A	
SKU (if available)	83910, 83913	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Full-Cutoff Wall-Mounted Area Luminaires	
LED Manufacturer	Lumileds	
LED Model	LUXEON 3030 2D	
Integral Controls Availability	Yes	
Dimming	Continuous	
Sample Number	STD200606SZ-ND1	
Date of Receipt	2020-07-18	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaire Width	--	mm
Number of Units (modular products)	N/A	s

<b>1.2 Rated Values:</b>	
Rated Voltage / Frequency	120-277 Vac, 50/60Hz
Nominal Power	50W
Rated Initial Lamp Lumen	--
Declared CCT	3000K, 4000K, 5000K



### 1.3 Test Specifications:

Test item	<ol style="list-style-type: none"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> </ol>

### 1.4 Test Methods

#### 1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  horizontal intervals.

#### 2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

#### 3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.



## 2.1 Summary of Test Result

Criteria Item	Measured Value		Compliance	Requirement (DLC V5.1)	
Minimum Total Luminous	6293.81		Pass	$\geq 300(-10\%)$	
Minimum Luminous Efficacy	126.81		Pass	Standard: $\geq 105(-3\%)$	Premium: $\geq 120(-3\%)$
Minimum Power Factor	0.907		Pass	$\geq 0.9(-3\%)$	
Maximum THD %	15.72		Pass	$\leq 20(+5)$	
Zonal Lumen Requirement	0-90°	99.8	Pass	$\geq 100(-3)$	
Zonal Lumen Requirement	80-90°	0.6	Pass	$\leq 10(+3)$	
BUG ratings	B1-U2-G1		--	--	



## 2.2 Electrical, Photometric and Chromaticity Measurements

<b>Test date</b>	2020-07-23	<b>Test Ambient:</b>	25±1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	SPSTLWP-50-LV-SC-3000K	<b>Total Operating Time (min)</b>	75

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD200606	120.0	60	0.418	49.96	0.996	3.60
SZ-ND1	277.0	60	0.198	49.63	0.907	15.72

### Photometric Measurement – Goniophotometer Method (Test Distance: 11.64m):

Parameter	Result	
Test Voltage (V)	120	277
Frequency (Hz)	60	60
Total Luminous (lm)	6343.14	6293.81
Luminous Efficacy (lm/W)	126.96	126.81
Zonal lumens in the 0-90° zone (%)	99.8	--
Zonal lumens in the 80-90° zone (%)	0.6	--
BUG ratings	B1-U2-G1	--
Beam Angle (°)	91.5	--
Center Beam Candle Power (cd)	1023	--

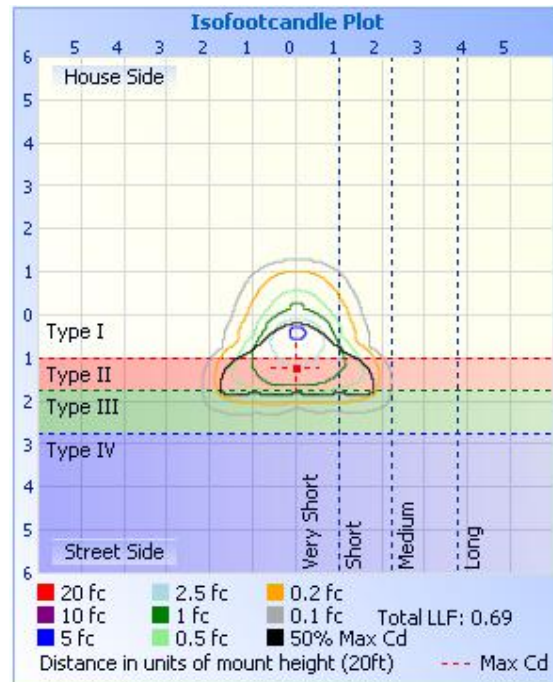
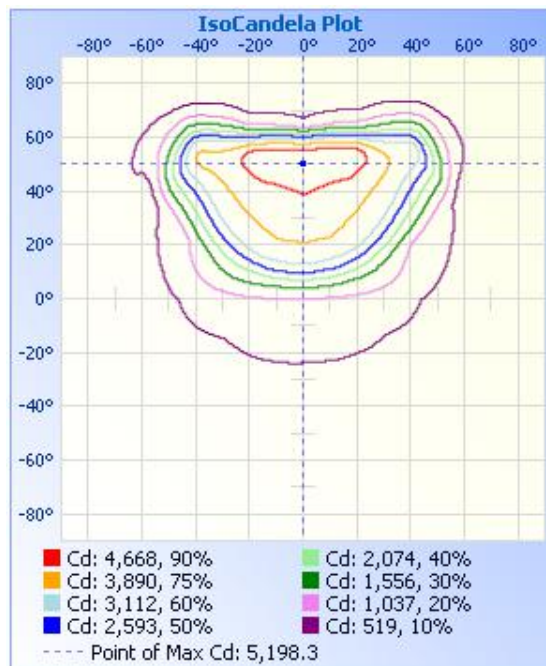
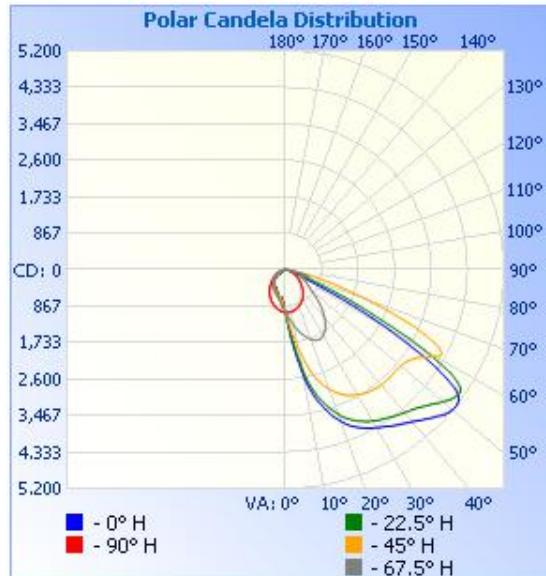


### Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,333.3	21%
0-40	2,414.0	38.1%
0-60	5,145.4	81.1%
60-90	1,185.5	18.7%
70-100	329.1	5.2%
90-120	4.5	0.1%
0-90	6,330.9	99.8%
90-180	11.7	0.2%
0-180	6,342.6	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	111.8	1.8%	90-100	1.5	0%
10-20	432.4	6.8%	100-110	1.3	0%
20-30	789.1	12.4%	110-120	1.7	0%
30-40	1,080.7	17.0%	120-130	1.9	0%
40-50	1,303.8	20.6%	130-140	1.9	0%
50-60	1,427.6	22.5%	140-150	1.5	0%
60-70	857.9	13.5%	150-160	1.1	0%
70-80	290.4	4.6%	160-170	0.6	0%
80-90	37.3	0.6%	170-180	0.2	0%

**Photometric Data**





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**Candela Table - Type C**

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023
1	1114	1101	1075	1049	1017	1007	984	968	950	963	971	984	1013	1055	1082	1102	1114
2	1224	1198	1142	1075	1018	979	934	910	900	902	921	958	1010	1082	1145	1197	1224
3	1339	1301	1225	1110	1018	956	900	852	837	842	883	928	1006	1111	1224	1322	1339
4	1497	1443	1306	1147	1017	930	857	802	776	792	836	902	1001	1136	1296	1434	1497
5	1660	1591	1411	1178	1017	912	809	756	743	749	786	879	995	1167	1397	1576	1660
6	1809	1719	1523	1223	1015	886	777	730	711	723	758	851	989	1202	1497	1733	1809
7	2010	1899	1610	1270	1013	862	748	703	689	696	730	820	982	1230	1579	1867	2010
8	2185	2091	1731	1307	1010	842	723	680	666	673	706	795	976	1266	1685	2054	2185
9	2409	2253	1858	1352	1006	815	705	664	651	658	689	768	967	1302	1800	2249	2409
10	2621	2455	1966	1398	1002	789	685	650	648	647	670	751	960	1329	1897	2407	2621
11	2813	2643	2105	1435	998	770	668	646	657	647	657	732	952	1364	2022	2593	2813
12	2947	2812	2245	1479	992	752	655	652	675	658	644	714	943	1397	2151	2762	2947
13	3098	2932	2357	1523	985	738	643	667	684	674	637	702	934	1423	2254	2883	3098
14	3235	3066	2487	1565	979	721	637	678	682	681	636	686	925	1454	2376	3018	3235
15	3334	3189	2605	1596	972	705	633	676	678	677	642	672	915	1484	2490	3139	3334
16	3450	3278	2711	1633	963	690	637	670	658	670	651	660	903	1511	2574	3230	3450
17	3561	3388	2786	1668	957	679	642	659	622	646	658	647	895	1529	2668	3336	3561
18	3662	3485	2872	1696	947	665	648	629	596	619	656	635	883	1551	2753	3432	3662
19	3739	3559	2948	1727	938	650	646	598	574	589	647	624	870	1568	2827	3505	3739
20	3827	3644	3004	1755	927	640	640	580	561	568	639	613	861	1585	2882	3589	3827
21	3906	3725	3070	1781	918	627	630	562	545	558	620	603	847	1594	2947	3671	3906
22	3977	3798	3130	1802	906	618	615	550	535	545	594	596	834	1606	3004	3747	3977
23	4040	3848	3187	1818	894	607	597	539	523	531	574	587	824	1614	3056	3797	4040
24	4084	3906	3226	1829	882	595	574	526	513	522	555	582	810	1617	3096	3856	4084
25	4140	3959	3273	1838	872	585	556	515	501	511	540	576	799	1618	3141	3911	4140
26	4183	4007	3319	1841	859	575	544	505	490	501	531	572	785	1617	3181	3964	4183
27	4229	4045	3355	1838	845	565	530	493	481	489	522	568	769	1609	3219	4006	4229
28	4267	4084	3380	1831	831	558	519	482	476	479	510	562	755	1596	3247	4038	4267
29	4299	4122	3409	1820	820	549	512	474	470	472	500	555	744	1582	3273	4077	4299
30	4341	4151	3436	1803	806	541	500	466	467	466	490	548	729	1559	3296	4106	4341

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31	4371	4183	3459	1781	791	535	491	461	465	461	480	534	716	1531	3319	4132	4371
32	4400	4214	3476	1755	775	526	479	457	462	458	470	518	701	1497	3336	4163	4400
33	4436	4236	3494	1723	762	516	469	453	458	456	458	505	685	1468	3352	4188	4436
34	4484	4262	3510	1697	744	506	459	450	455	452	450	489	671	1427	3362	4209	4484
35	4520	4294	3524	1658	727	494	448	447	451	448	440	474	655	1383	3372	4239	4520
36	4557	4318	3534	1617	709	483	438	442	445	444	432	465	638	1337	3380	4274	4557
37	4589	4348	3545	1572	695	469	431	439	438	439	427	454	624	1297	3387	4298	4589
38	4631	4374	3556	1535	678	455	422	433	432	433	420	445	607	1247	3395	4324	4631
39	4672	4398	3563	1486	659	444	414	426	426	426	414	434	594	1197	3402	4355	4672
40	4710	4428	3568	1435	641	433	409	420	416	421	409	424	577	1147	3408	4378	4710
41	4758	4461	3569	1380	627	423	403	414	409	414	404	417	559	1109	3410	4410	4758
42	4813	4485	3567	1336	608	414	396	406	398	405	400	407	545	1066	3406	4443	4813
43	4860	4519	3566	1278	589	404	392	397	389	398	395	397	528	1025	3402	4470	4860
44	4915	4555	3567	1217	570	397	386	389	381	388	390	389	514	989	3399	4508	4915
45	4970	4607	3565	1156	554	388	382	379	370	379	383	380	496	963	3395	4549	4970
46	5016	4658	3563	1106	535	378	376	372	357	372	376	371	478	932	3389	4604	5016
47	5078	4703	3560	1042	515	370	369	362	347	361	368	365	465	904	3377	4662	5078
48	5128	4764	3563	974	496	362	362	351	331	352	362	356	448	877	3370	4718	5128
49	5163	4826	3567	908	481	353	354	342	318	341	353	349	433	856	3365	4794	5163
50	5186	4882	3577	862	462	347	345	330	303	327	345	339	421	827	3357	4863	5186
51	5198	4942	3583	812	444	338	337	319	284	315	338	329	405	798	3351	4925	5198
52	5196	5003	3598	770	427	329	328	305	267	301	330	322	394	769	3352	4997	5196
53	5164	5037	3621	733	413	323	319	290	242	281	321	312	379	746	3354	5053	5164
54	5102	5070	3656	706	397	315	312	275	215	264	313	304	365	717	3366	5118	5102
55	4945	5076	3703	674	380	307	303	253	194	239	304	297	354	689	3378	5163	4945
56	4642	5032	3749	645	363	300	294	227	167	217	296	288	340	664	3391	5164	4642
57	4308	4872	3826	619	350	292	286	204	145	191	286	282	329	645	3419	5100	4308
58	3887	4639	3920	598	335	285	276	180	120	164	273	273	316	621	3454	4895	3887
59	3342	4244	4028	572	318	277	267	159	96	144	260	265	302	601	3483	4622	3342
60	2883	3824	4123	544	303	267	253	137	79	120	240	258	291	586	3528	4175	2883
61	2373	3365	4217	513	287	260	239	114	60	100	223	249	277	561	3619	3707	2373
62	1893	2780	4220	487	275	251	219	98	44	84	201	242	266	531	3730	3212	1893

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63	1399	2317	4114	457	258	244	201	80	29	67	187	234	253	493	3784	2595	1399
64	993	1921	3928	429	242	234	188	65	20	54	172	225	239	457	3734	2127	993
65	682	1612	3665	405	226	224	173	50	6	40	157	218	228	410	3547	1815	682
66	571	1248	3433	388	212	216	163	40	3	31	146	209	215	367	3291	1493	571
67	533	966	3084	376	201	206	152	29	2	24	134	201	204	334	3057	1197	533
68	500	812	2686	392	187	198	143	26	1	21	127	191	191	317	2725	975	500
69	464	676	2380	421	174	187	132	23	1	20	118	184	180	313	2397	847	464
70	425	580	2036	477	162	179	121	21	1	19	109	175	167	321	2154	716	425
71	391	501	1737	534	148	169	111	20	1	18	99	166	156	329	1867	608	391
72	350	449	1470	566	134	161	100	19	1	16	90	158	146	336	1605	533	350
73	314	394	1285	571	120	151	92	17	1	15	83	148	136	341	1415	456	314
74	287	348	1073	556	109	142	84	16	1	14	75	141	127	337	1195	393	287
75	254	315	881	526	96	135	77	15	1	13	69	132	115	321	994	341	254
76	224	276	743	488	84	126	68	13	1	12	61	126	106	303	810	303	224
77	197	242	588	428	73	118	61	12	1	11	54	118	94	269	677	263	197
78	177	209	450	359	62	110	53	11	1	10	46	112	84	226	522	226	177
79	154	185	345	285	54	102	46	9	1	9	40	102	73	179	372	197	154
80	132	156	221	227	44	93	39	8	0	7	34	93	63	142	260	166	132
81	111	129	156	164	34	85	32	7	0	6	28	81	53	104	166	136	111
82	96	110	128	115	26	73	27	6	1	5	24	71	46	77	127	110	96
83	80	89	97	80	19	63	22	5	0	4	20	58	36	54	95	91	80
84	62	68	65	57	13	50	18	4	0	3	16	46	30	37	67	68	62
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86	29	30	25	17	3	25	10	2	0	2	9	20	17	12	32	25	29
87	8	9	8	4	1	15	6	2	0	1	5	12	10	4	8	9	8
88	4	4	4	3	1	7	4	1	0	1	3	6	6	3	5	4	4
89	3	4	4	2	1	4	2	1	0	1	1	2	1	3	5	3	3
90	3	4	4	2	1	2	1	1	0	0	1	1	1	2	4	3	3
91	3	3	3	2	1	1	1	1	0	1	1	1	1	2	4	3	3
92	2	3	3	2	1	1	1	1	1	1	1	1	0	2	3	2	2
93	2	3	3	1	1	1	1	1	0	1	1	1	1	2	3	2	2
94	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2



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95	2	2	2	1	1	1	1	1	0	1	1	1	1	2	2	2	2
96	2	2	2	1	1	1	1	1	1	1	1	1	0	2	2	2	2
97	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1
98	1	1	2	1	1	1	1	1	1	1	2	1	0	1	2	1	1
99	1	1	1	1	1	1	2	1	1	1	2	1	0	1	1	1	1
100	1	1	1	1	1	1	2	1	1	1	2	1	0	1	1	1	1
101	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1
102	1	1	1	1	1	1	2	2	1	1	2	1	0	1	1	1	1
103	1	1	1	1	1	1	2	2	1	2	2	1	0	1	1	1	1
104	1	1	1	1	1	1	2	2	1	2	2	1	0	1	1	1	1
105	1	1	1	1	1	1	2	2	2	2	2	1	0	1	1	1	1
106	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1
107	1	1	1	1	1	1	2	3	2	2	2	1	0	1	1	1	1
108	1	1	1	1	1	2	3	3	2	3	2	1	0	1	1	1	1
109	1	1	1	1	1	1	3	3	2	3	2	1	0	1	1	1	1
110	1	1	1	1	1	2	3	3	3	3	3	1	0	1	1	1	1
111	1	1	1	1	1	2	3	3	3	3	3	1	1	1	1	1	1
112	1	1	1	1	1	2	3	3	3	3	3	1	1	1	1	1	1
113	1	1	1	1	1	2	3	3	3	4	3	1	0	1	1	1	1
114	1	1	1	1	1	2	3	3	3	4	3	2	0	1	1	1	1
115	1	1	1	1	1	2	3	4	4	4	3	2	1	1	1	1	1
116	1	1	1	1	1	2	4	4	4	4	3	2	1	1	1	1	1
117	1	1	1	1	1	2	4	4	4	4	3	2	1	1	1	1	1
118	1	1	1	1	1	2	4	4	4	4	3	2	1	1	1	1	1
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126	1	1	1	1	1	2	4	5	5	5	4	2	1	1	1	1	1



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Certificate #4703.03

127	1	1	1	1	1	2	4	5	6	5	4	2	1	1	1	1	1
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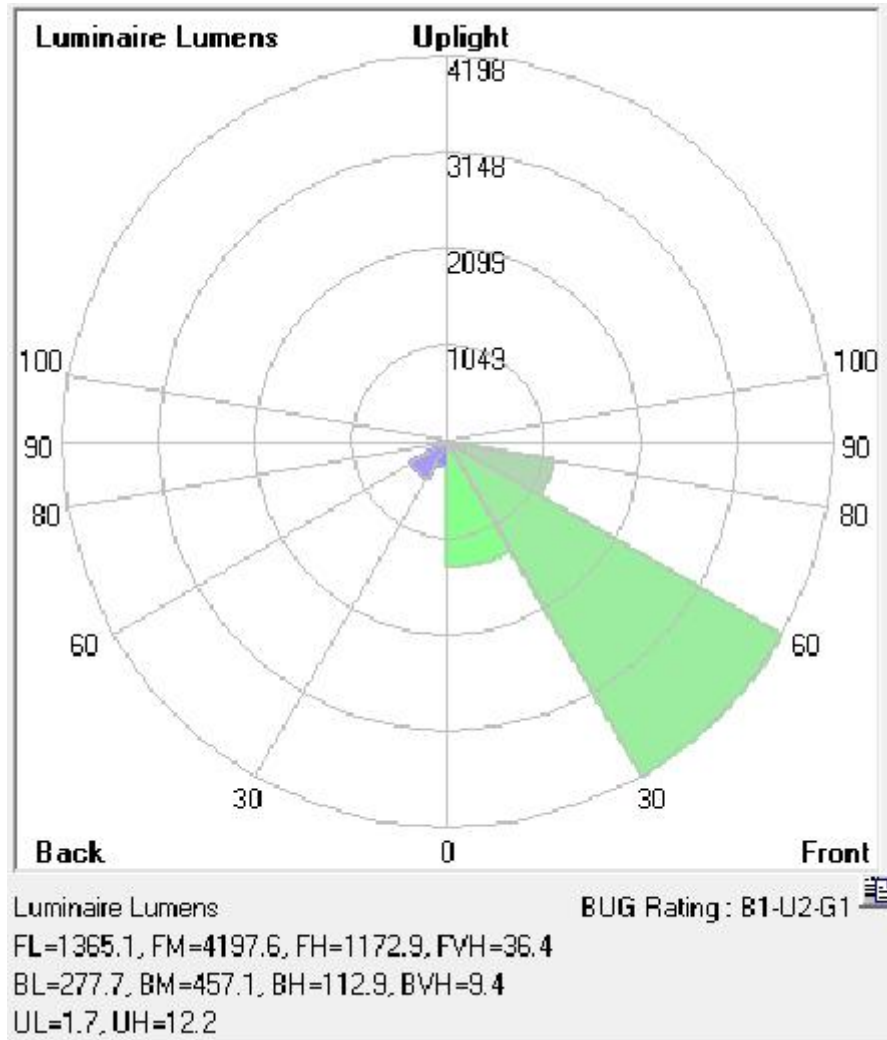
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Certificate #4703.03

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**BUG**





### 3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-S-451	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-S-455	Spectral analysis system HAAS-1200	Verified by D204 standard lamp	
ST-R-S-452	Standard Lamp D204	2020-04-16	2021-04-15
ST-R-S-453	Power Meter for Integrating Sphere	2020-04-08	2021-04-07
ST-R-407	Goniophotometer system	Verified by S1530039 standard lamp	
ST-R-410	Standard Lamp S1530039	2020-04-16	2021-04-15
ST-R-408	Power Meter for Goniophotometer	2020-04-08	2021-04-07
Uncertainty: Photometric Measurement (Sphere): 2.34%, k=2 Chromaticity Measurement(Sphere): 39.66K, k=2 Photometric Measurement(Goniophotometer): 2.94%, k=2			

#### 4. Product Photo



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