



Report No.: BLC1906012E-M

## LM-79-08 Test Report

For

# LED One Corporation

**(Brand Name: LED ONE)**

45885 Hotchkiss St Fremont, CA 94539 USA

## Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

Model name(s): LOC-LWAL-250WXXKD-T3LV-MZ

Remark: "XX" represents different CCT, can be 40=4000K, 50=5000K, 57=5700K. "Z" stands for sensors options, can be "D" or "N" to represent sensor or None sensor. "R" represents mounting options, can be S=Slip Fitter Arm, E=Extruded Arm, M=Surface mounting Arm, F=Slip Fitter+ E=Extruded Arm.

Representative (Tested) Model:

LOC-LWAL-250W40KD-T3LV-MZ

Model Different: All construction and rating are the same, except CCT

Test & Report By:

*Sherry Yang*

Engineer: Sherry Yang

Date: Jun.11, 2019

Review By:

*Jason Luo*

Manager: Jason Luo

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01  
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,  
Guangzhou, People' s Republic of China. Website: <http://www.blst.com>

Report Format Number BL-FM-SA-012



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### 1.1 Product Information:

Organization Name	LED One Corporation	
Brand Name	LED ONE	
Model Number	LOC-LWAL-250WXXKD-T3LV-MZ	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	
Rated Voltage / Frequency	120-347Vac, 50/60Hz	
Nominal Power	250W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K,5000K,5700K	
Sample Number	BLC1906012E-M1(4000K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

#### Photo





## 1.2 Test Specifications:

Date of Receipt	June 05, 2019
Date of Test	June 06, 2019
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><li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li></ol>
Reference Work Instruction	BL-QP-033

## 1.3 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 Electrical, Photometric and Chromaticity Measurements***(Refer to Work Instruction BL-QP-033)*

<b>Test date</b>	2019-06-06	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LOC-LWAL-250W40KD-T3LV-MZ		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC190601	120.0	60	2.0965	250.83	0.997	2.53
2E-M1	347.0	60	0.7477	250.36	0.965	9.11
<b>DLC Pass Criteria</b>					<b>&gt;= 0.9(-3%)</b>	<b>&lt;= 20(+5)</b>

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result		DLC V4.4 Pass Criteria
Test Voltage (V)	120.0	347.0	--
Frequency (Hz)	60	60	--
Total Luminous (lm)	34673.6	34378.3	>=30000 (-10%)
Luminous Efficacy (lm/W)	138.24	137.32	Premium:>= 120 (-3%)
Most worst Luminous/Highest Watts	137.06		
Zonal lumens in the 0-90° zone (%)	99.6		>=100(-1)
Zonal lumens in the 80-90° zone (%)	0.8		≤10(+3)
Beam Angle (°)	136.9		--
Center Beam Candle Power (cd)	6715		--



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## Zonal Lumen Tabulation

### Zonal Lumen Summary

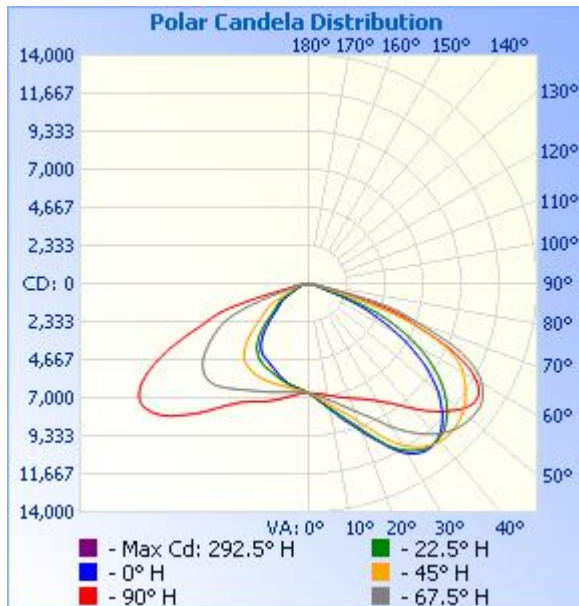
Zone	Lumens	% Lamp	% Luminaire
0-30	6,551.8	18.9%	18.9%
0-40	12,306.3	35.5%	35.5%
0-60	26,846.7	77.4%	77.4%
60-90	7,680.4	22.2%	22.2%
70-100	2,051.7	5.9%	5.9%
90-120	60.3	0.2%	0.2%
0-90	34,527.1	99.6%	99.6%
90-180	143.7	0.4%	0.4%
0-180	34,670.9	100%	100%

### Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	656.5	1.9%	90-100	19.3	0.1%
10-20	2,085.1	6.0%	100-110	19.2	0.1%
20-30	3,810.1	11.0%	110-120	21.7	0.1%
30-40	5,754.5	16.6%	120-130	22.3	0.1%
40-50	7,164.9	20.7%	130-140	20.0	0.1%
50-60	7,375.5	21.3%	140-150	18.0	0.1%
60-70	5,648.1	16.3%	150-160	13.0	0%
70-80	1,768.5	5.1%	160-170	7.6	0%
80-90	263.8	0.8%	170-180	2.4	0%



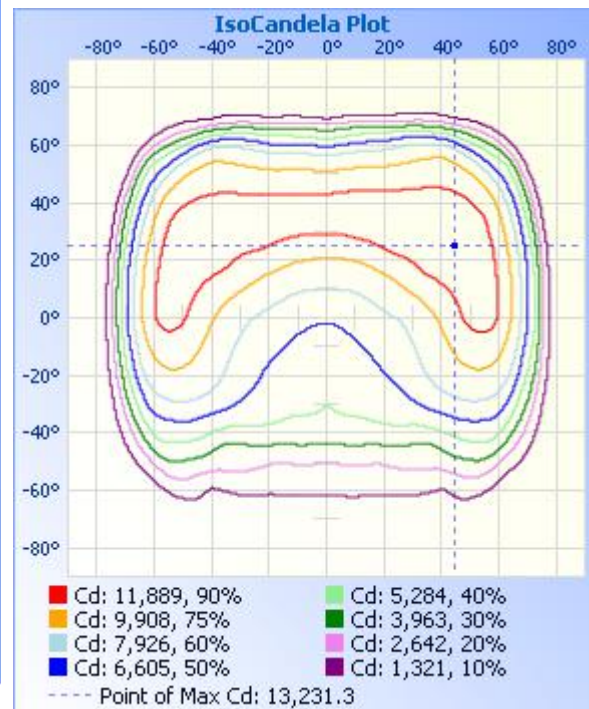
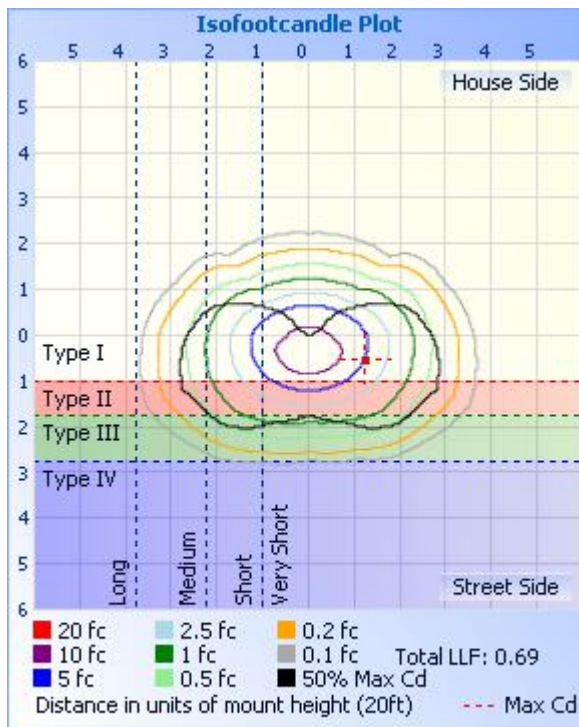
**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	23.2 fc	37.5 ft	86.2 ft
34.0ft	5.81 fc	74.9 ft	172.4 ft
51.0ft	2.58 fc	112.4 ft	258.6 ft
68.0ft	1.45 fc	149.8 ft	344.8 ft
85.0ft	0.93 fc	187.3 ft	431.0 ft
102.0ft	0.65 fc	224.8 ft	517.2 ft

■ Vert. Spread: 95.5°  
■ Horiz. Spread: 136.9°







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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	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715	6715
1	6792	6789	6776	6741	6721	6685	6655	6643	6650	6662	6667	6696	6714	6746	6775	6788	6792
2	6881	6874	6835	6774	6724	6655	6614	6589	6587	6609	6629	6682	6718	6783	6840	6869	6881
3	6978	6957	6906	6813	6730	6634	6577	6545	6533	6568	6595	6674	6736	6833	6905	6961	6978
4	7083	7055	6973	6857	6753	6624	6545	6505	6495	6527	6570	6676	6754	6887	6988	7055	7083
5	7189	7154	7048	6902	6772	6605	6524	6469	6460	6491	6552	6677	6791	6945	7066	7162	7189
6	7311	7265	7132	6958	6799	6609	6505	6439	6434	6453	6533	6688	6834	7009	7154	7286	7311
7	7438	7390	7224	7019	6829	6614	6490	6408	6393	6419	6523	6702	6879	7081	7248	7405	7438
8	7584	7513	7323	7086	6868	6622	6474	6392	6365	6387	6512	6714	6930	7153	7347	7525	7584
9	7726	7641	7420	7162	6906	6627	6466	6362	6337	6356	6502	6732	6979	7229	7452	7650	7726
10	7870	7764	7532	7235	6948	6641	6455	6339	6299	6325	6490	6748	7028	7320	7556	7778	7870
11	8021	7905	7641	7317	6988	6646	6443	6310	6259	6292	6484	6765	7083	7406	7676	7913	8021
12	8166	8044	7756	7402	7038	6657	6432	6270	6209	6260	6474	6792	7149	7495	7781	8068	8166
13	8351	8195	7889	7496	7085	6667	6415	6225	6157	6219	6473	6819	7210	7591	7901	8215	8351
14	8520	8371	8019	7599	7145	6688	6410	6179	6101	6176	6466	6847	7290	7686	8024	8365	8520
15	8717	8541	8158	7705	7190	6709	6395	6142	6059	6145	6461	6872	7352	7799	8155	8531	8717
16	8851	8727	8302	7819	7247	6730	6386	6105	6006	6103	6455	6905	7419	7925	8294	8709	8851
17	9045	8882	8460	7931	7301	6755	6386	6058	5942	6071	6458	6951	7482	8035	8448	8852	9045
18	9238	9076	8630	8052	7354	6778	6379	6006	5888	6030	6457	6987	7544	8149	8620	9060	9238
19	9451	9277	8778	8189	7408	6809	6375	5960	5815	5993	6461	7026	7607	8277	8767	9258	9451
20	9690	9513	9014	8322	7469	6824	6360	5922	5751	5947	6467	7068	7672	8409	8962	9462	9690
21	9918	9741	9217	8455	7528	6843	6354	5880	5691	5916	6471	7105	7732	8544	9170	9690	9918
22	10129	9984	9442	8598	7588	6870	6345	5849	5633	5887	6473	7136	7791	8730	9427	9937	10129
23	10357	10233	9683	8749	7654	6903	6334	5809	5579	5866	6474	7179	7844	8823	9699	10232	10357
24	10585	10488	9937	8897	7715	6939	6332	5770	5531	5836	6479	7222	7897	8992	9987	10503	10585
25	10832	10749	10227	9070	7798	6978	6326	5733	5485	5808	6481	7267	7959	9176	10286	10780	10832
26	11103	11012	10491	9250	7873	7017	6322	5702	5443	5782	6482	7316	8037	9407	10573	11043	11103
27	11351	11235	10734	9457	7968	7067	6324	5672	5404	5755	6487	7372	8121	9648	10876	11293	11351
28	11590	11444	10969	9664	8067	7122	6319	5640	5361	5723	6480	7427	8207	9909	11131	11541	11590
29	11808	11620	11190	9900	8165	7168	6321	5612	5321	5687	6466	7479	8300	10162	11368	11743	11808

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30	11997	11785	11423	10122	8285	7228	6325	5586	5280	5651	6445	7535	8409	10408	11598	11918	11997
31	12170	11941	11613	10332	8404	7282	6335	5562	5248	5610	6424	7603	8546	10645	11820	12082	12170
32	12289	12071	11780	10537	8532	7356	6346	5531	5217	5565	6410	7665	8710	10898	12019	12220	12289
33	12371	12178	11942	10746	8699	7429	6346	5489	5170	5510	6396	7734	8833	11132	12213	12353	12371
34	12454	12285	12085	10954	8791	7500	6341	5434	5110	5456	6376	7814	9006	11353	12360	12464	12454
35	12501	12362	12204	11148	8968	7578	6332	5371	5038	5389	6350	7883	9195	11551	12481	12550	12501
36	12514	12409	12311	11337	9164	7668	6318	5291	4951	5307	6316	7958	9402	11748	12607	12615	12514
37	12521	12435	12421	11522	9358	7752	6288	5200	4856	5224	6283	8037	9618	11943	12706	12654	12521
38	12490	12444	12481	11700	9559	7841	6256	5095	4748	5137	6238	8118	9863	12127	12781	12675	12490
39	12436	12428	12554	11871	9770	7940	6206	4994	4614	5032	6181	8195	10090	12298	12847	12675	12436
40	12366	12394	12594	12026	9980	8018	6148	4873	4475	4915	6116	8264	10312	12456	12886	12643	12366
41	12254	12352	12620	12159	10219	8114	6070	4739	4317	4782	6028	8336	10547	12591	12913	12603	12254
42	12117	12278	12631	12299	10433	8189	5977	4596	4129	4622	5918	8409	10769	12719	12919	12533	12117
43	11963	12189	12622	12419	10647	8264	5870	4421	3961	4461	5803	8462	10978	12826	12922	12447	11963
44	11785	12072	12612	12537	10868	8338	5729	4250	3763	4287	5671	8501	11202	12926	12899	12327	11785
45	11599	11928	12586	12632	11071	8396	5575	4057	3569	4097	5505	8530	11431	13010	12872	12182	11599
46	11383	11772	12558	12712	11277	8435	5394	3862	3378	3879	5334	8534	11668	13071	12838	12021	11383
47	11142	11608	12513	12775	11459	8461	5195	3646	3180	3667	5147	8526	11871	13120	12794	11859	11142
48	10905	11418	12473	12831	11646	8467	4987	3414	2992	3459	4949	8505	12053	13170	12737	11661	10905
49	10657	11200	12400	12876	11827	8450	4740	3198	2812	3254	4740	8467	12221	13204	12665	11477	10657
50	10384	10991	12329	12908	12002	8413	4515	3001	2638	3043	4507	8408	12348	13221	12592	11245	10384
51	10077	10750	12245	12930	12168	8360	4281	2813	2497	2863	4287	8333	12462	13231	12494	11023	10077
52	9740	10486	12125	12937	12297	8284	4059	2654	2379	2703	4070	8244	12545	13224	12399	10758	9740
53	9394	10217	12017	12944	12403	8170	3849	2514	2286	2563	3865	8124	12604	13202	12286	10500	9394
54	9041	9919	11881	12942	12484	8054	3632	2419	2202	2453	3669	8006	12634	13162	12160	10236	9041
55	8702	9620	11756	12897	12507	7929	3468	2344	2126	2349	3483	7871	12611	13101	12028	9923	8702
56	8251	9277	11607	12825	12498	7771	3335	2279	2048	2268	3326	7694	12529	13008	11889	9640	8251
57	7833	8930	11455	12721	12420	7580	3214	2201	1951	2187	3192	7512	12395	12877	11759	9317	7833
58	7408	8595	11284	12595	12306	7385	3128	2098	1823	2083	3066	7321	12203	12709	11618	8952	7408
59	6973	8220	11128	12453	12121	7169	3024	1964	1666	1954	2938	7121	11968	12532	11477	8635	6973
60	6481	7809	10933	12265	11885	6943	2895	1795	1501	1794	2793	6913	11653	12350	11314	8282	6481
61	6024	7413	10736	12035	11580	6712	2725	1614	1342	1608	2610	6712	11317	12118	11109	7874	6024

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62	5524	6946	10454	11768	11228	6463	2480	1414	1205	1435	2395	6486	10883	11860	10877	7450	5524
63	5041	6477	10162	11441	10760	6256	2219	1258	1079	1288	2133	6293	10401	11545	10594	6996	5041
64	4556	6000	9779	11058	10236	6050	1926	1136	998	1166	1880	6072	9881	11182	10248	6532	4556
65	4169	5540	9357	10603	9682	5855	1656	1050	934	1071	1645	5813	9343	10809	9836	6042	4169
66	3708	5022	8887	10088	9016	5644	1409	988	878	1016	1442	5555	8716	10294	9312	5556	3708
67	3161	4458	8303	9437	8321	5362	1213	942	825	972	1275	5155	8110	9755	8769	4987	3161
68	2533	3783	7623	8730	7536	4995	1090	904	747	932	1148	4693	7465	9070	8079	4303	2533
69	1876	3029	6825	7960	6962	4503	1017	871	684	897	1077	4145	6898	8345	7303	3516	1876
70	1204	2280	5937	7279	6500	3899	968	829	635	855	1025	3473	6483	7575	6407	2694	1204
71	787	1589	4958	6698	6067	3206	938	785	594	810	988	2866	6144	6952	5522	1927	787
72	634	1104	3959	6191	5332	2511	904	734	551	758	957	2250	5712	6415	4613	1278	634
73	567	795	2870	5705	4381	1872	874	673	524	697	922	1716	4905	5948	3662	914	567
74	509	651	1922	4967	3432	1351	837	621	496	638	886	1271	3888	5397	2573	688	509
75	503	550	1279	3952	2607	1034	797	566	467	590	852	1045	2805	4455	1714	574	503
76	472	491	878	2705	1803	903	754	520	440	539	808	932	2001	3188	1124	506	472
77	390	498	657	1679	1197	869	693	476	408	492	755	894	1400	1930	767	474	390
78	329	469	510	981	791	895	624	437	385	447	683	897	930	1089	570	481	329
79	293	404	433	644	551	935	561	400	359	409	611	905	678	729	462	430	293
80	261	329	399	513	414	968	499	364	329	376	549	925	499	558	404	361	261
81	231	287	371	439	346	965	429	326	303	342	479	914	398	478	377	307	231
82	204	252	334	399	293	928	358	293	284	306	410	876	335	415	339	270	204
83	183	222	292	381	243	856	274	260	256	274	329	788	293	366	309	235	183
84	148	181	242	372	197	681	207	218	233	244	250	670	242	325	270	196	148
85	124	143	205	343	158	466	167	190	207	207	189	494	196	296	230	147	124
86	103	122	158	278	125	283	128	162	176	179	149	330	159	257	188	120	103
87	80	89	122	209	89	147	100	136	132	148	113	188	120	208	150	100	80
88	55	51	88	143	56	66	59	91	88	120	83	111	82	151	114	69	55
89	23	46	66	87	28	39	39	54	41	73	49	69	59	95	86	47	23
90	19	25	31	39	15	18	23	27	21	43	25	38	31	49	46	30	19
91	24	22	20	27	17	15	17	11	15	19	17	22	21	22	29	22	24
92	18	23	18	23	14	13	18	14	14	20	15	22	19	19	25	21	18
93	20	20	17	22	12	13	13	11	13	17	9	16	18	17	23	18	20

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94	17	20	17	26	11	15	15	12	17	18	11	22	17	20	22	20	17
95	18	19	14	21	14	13	15	0	17	21	11	21	15	14	19	15	18
96	20	18	17	22	13	11	17	14	14	22	11	21	17	17	22	20	20
97	19	18	15	22	11	15	18	16	18	18	13	21	17	11	18	18	19
98	17	17	15	21	14	16	17	12	15	18	12	17	21	18	19	18	17
99	16	16	15	22	14	14	21	10	16	16	11	17	17	17	16	14	16
100	19	16	17	17	9	14	20	16	17	17	13	21	18	14	16	17	19
101	14	18	15	20	14	14	18	16	14	18	15	23	14	14	18	16	14
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Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01  
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180	23	28	22	19	20	22	27	26	26	30	19	27	21	19	25	28	23



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### 3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2020-01-14
AC Power Source	CHP-500C	N/A	2020-01-13
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2020-01-21
Digital Power Meter	WT500	DYDWQ200006	2020-01-13
Integral Sphere (2M)	2M	DYJCE120067	2020-01-14
Digital Power Meter	WT500	DYDWQ200006	2020-01-13
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2020-01-14

Expand Uncertainty:  
Photometric Measurement (Sphere): 2.08%, k=2  
Chromaticity Measurement(Sphere):25.6K, k=2  
Photometric Measurement(Goniophotometer):2.654%, k=2

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