



Report No.: BLC1906012E-L

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-150WXXKD-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-150W40KD-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-150WXXKD-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	150W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K,5000K,5700K	
Sample Number	BLC1906012E-L1(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">1. Total Luminous Flux2. Luminous Distribution Intensity3. Luminous Efficacy4. Correlated Color Temperature5. Color Rendering Index6. Chromaticity Coordinate7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none">1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources4. CIE 15-2004 Technical Report Colorimetry5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
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° vertical intervals and 22.5° 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)*

Test date	2019-06-06	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LOC-LWAL-150W40KD-T3LV-MZ		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC190601	120.0	60	1.3005	155.75	0.998	2.96
2E-L1	347.0	60	0.4498	152.33	0.976	8.22
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

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)	21366.6	20830.3	>=10000 (-10%)
Luminous Efficacy (lm/W)	137.19	136.74	Premium:>= 120 (-3%)
Most worst Luminous/Highest Watts	133.74		
Zonal lumens in the 0-90° zone (%)	99.5		>=100(-1)
Zonal lumens in the 80-90° zone (%)	0.7		≤10(+3)
Beam Angle (°)	136.2		--
Center Beam Candle Power (cd)	4086		--



Zonal Lumen Tabulation

Zonal Lumen Summary

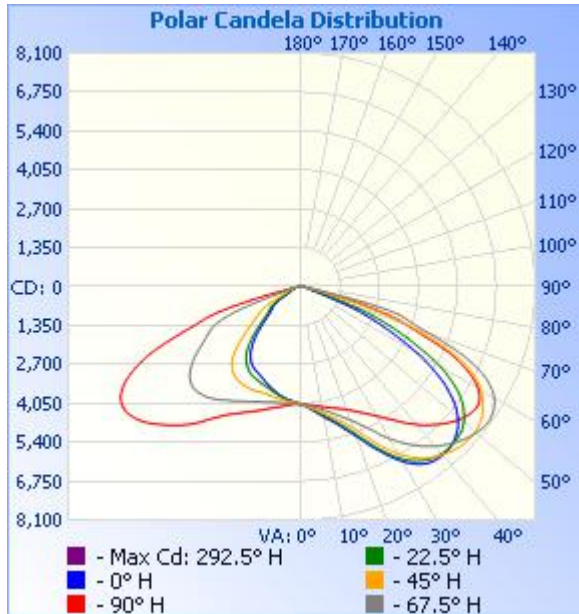
Zone	Lumens	% Lamp	% Luminaire
0-30	3,917.0	18.3%	18.3%
0-40	7,396.0	34.6%	34.6%
0-60	16,393.1	76.7%	76.7%
60-90	4,862.8	22.8%	22.8%
70-100	1,300.4	6.1%	6.1%
90-120	46.0	0.2%	0.2%
0-90	21,255.9	99.5%	99.5%
90-180	109.1	0.5%	0.5%
0-180	21,365.0	100%	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	397.3	1.9%	90-100	14.2	0.1%
10-20	1,244.4	5.8%	100-110	14.6	0.1%
20-30	2,275.4	10.7%	110-120	17.2	0.1%
30-40	3,479.0	16.3%	120-130	17.5	0.1%
40-50	4,379.3	20.5%	130-140	15.9	0.1%
50-60	4,617.7	21.6%	140-150	12.9	0.1%
60-70	3,576.6	16.7%	150-160	9.4	0%
70-80	1,140.9	5.3%	160-170	5.5	0%
80-90	145.3	0.7%	170-180	1.8	0%



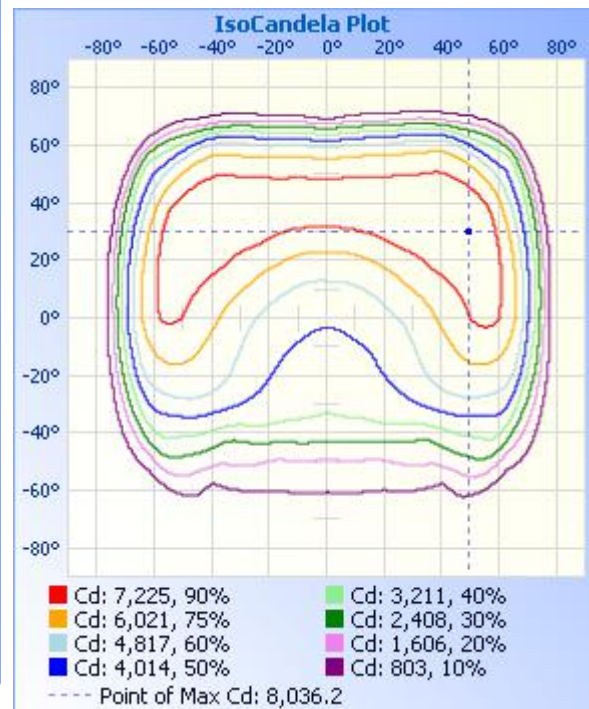
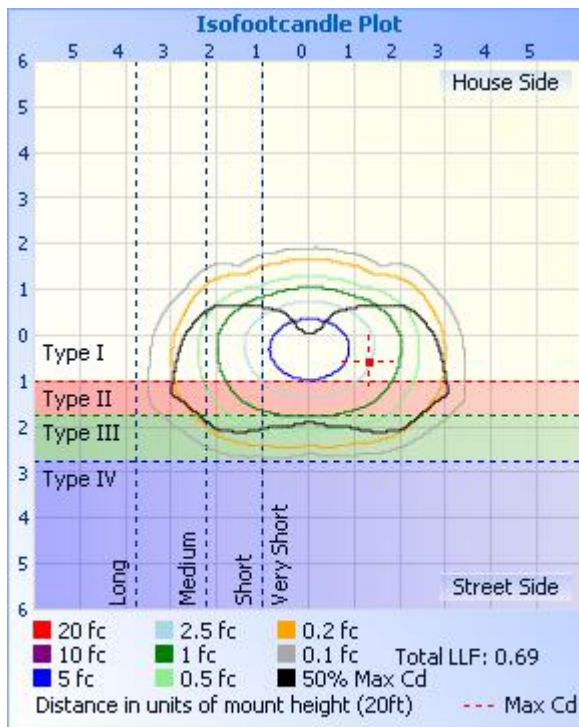
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	14.1 fc	36.4 ft	84.5 ft
34.0ft	3.53 fc	72.9 ft	169.0 ft
51.0ft	1.57 fc	109.3 ft	253.5 ft
68.0ft	0.88 fc	145.7 ft	338.0 ft
85.0ft	0.57 fc	182.2 ft	422.5 ft
102.0ft	0.39 fc	218.6 ft	507.0 ft

■ Vert. Spread: 94.0°
■ Horiz. Spread: 136.2°





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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	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086	4086
1	4120	4115	4114	4098	4087	4074	4067	4062	4058	4060	4063	4079	4086	4097	4108	4114	4120
2	4157	4147	4145	4112	4093	4070	4051	4042	4034	4041	4043	4072	4079	4114	4134	4150	4157
3	4203	4183	4174	4130	4107	4063	4036	4021	4012	4020	4032	4067	4084	4132	4161	4193	4203
4	4246	4223	4204	4151	4113	4062	4029	4001	3994	4006	4022	4066	4092	4154	4195	4238	4246
5	4303	4273	4237	4175	4121	4064	4015	3985	3976	3992	4014	4063	4108	4187	4239	4283	4303
6	4358	4323	4272	4202	4138	4066	4008	3970	3959	3981	4005	4064	4130	4211	4276	4332	4358
7	4408	4374	4318	4238	4156	4073	4000	3954	3943	3963	4001	4074	4142	4244	4320	4382	4408
8	4473	4427	4367	4272	4186	4077	3994	3938	3924	3942	3994	4080	4180	4281	4367	4439	4473
9	4538	4484	4413	4314	4211	4090	3988	3919	3900	3918	3984	4085	4204	4320	4410	4505	4538
10	4599	4543	4467	4349	4233	4096	3987	3896	3874	3892	3977	4091	4232	4367	4469	4564	4599
11	4670	4605	4523	4390	4259	4101	3977	3875	3845	3870	3971	4099	4255	4408	4521	4621	4670
12	4736	4667	4580	4435	4282	4116	3970	3849	3819	3844	3963	4110	4285	4454	4588	4687	4736
13	4808	4740	4638	4479	4305	4124	3960	3830	3785	3824	3958	4117	4314	4499	4647	4757	4808
14	4886	4821	4703	4538	4343	4137	3956	3802	3750	3797	3947	4129	4345	4553	4709	4835	4886
15	4972	4897	4767	4594	4370	4152	3947	3782	3720	3774	3940	4146	4382	4608	4776	4916	4972
16	5065	4986	4843	4650	4393	4164	3940	3766	3688	3753	3931	4163	4418	4667	4848	5006	5065
17	5179	5081	4925	4711	4426	4181	3938	3745	3656	3727	3920	4180	4462	4723	4926	5102	5179
18	5290	5184	5013	4780	4458	4197	3943	3724	3627	3709	3915	4205	4502	4782	5011	5199	5290
19	5404	5314	5122	4847	4494	4216	3943	3702	3588	3690	3915	4226	4544	4852	5100	5311	5404
20	5525	5433	5233	4921	4542	4233	3944	3673	3556	3670	3916	4250	4586	4923	5194	5426	5525
21	5652	5565	5352	5000	4586	4259	3946	3653	3524	3655	3925	4270	4630	4999	5307	5571	5652
22	5802	5699	5477	5088	4634	4284	3951	3634	3488	3640	3934	4294	4675	5095	5444	5705	5802
23	5951	5840	5618	5198	4691	4314	3960	3614	3455	3624	3948	4325	4726	5183	5589	5852	5951
24	6103	6006	5775	5306	4748	4342	3963	3591	3424	3606	3959	4361	4770	5289	5752	6012	6103
25	6251	6162	5942	5416	4811	4372	3968	3578	3395	3592	3965	4395	4822	5394	5914	6171	6251
26	6400	6313	6103	5534	4877	4410	3975	3556	3370	3578	3966	4427	4870	5535	6072	6348	6400
27	6554	6469	6258	5669	4947	4452	3977	3538	3346	3560	3970	4465	4931	5675	6253	6501	6554
28	6709	6605	6405	5822	5017	4481	3979	3527	3334	3544	3965	4499	4994	5816	6408	6655	6709

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29	6857	6758	6546	5954	5096	4521	3986	3513	3312	3526	3964	4545	5058	5961	6557	6800	6857
30	7000	6887	6696	6092	5185	4567	3989	3495	3281	3504	3962	4585	5129	6102	6703	6939	7000
31	7128	7009	6827	6213	5260	4613	3988	3475	3253	3477	3963	4628	5219	6242	6844	7067	7128
32	7240	7113	6948	6345	5361	4655	3989	3448	3230	3440	3958	4664	5304	6387	6979	7175	7240
33	7347	7209	7067	6466	5462	4702	3991	3413	3191	3399	3946	4704	5407	6515	7103	7273	7347
34	7427	7290	7167	6594	5555	4750	3979	3375	3140	3357	3933	4753	5510	6631	7214	7366	7427
35	7496	7363	7270	6704	5671	4801	3964	3323	3075	3308	3914	4802	5627	6750	7315	7447	7496
36	7550	7425	7353	6816	5780	4851	3941	3267	3010	3258	3894	4854	5754	6862	7415	7510	7550
37	7584	7471	7427	6922	5912	4906	3918	3207	2939	3196	3862	4893	5900	6965	7502	7566	7584
38	7607	7510	7494	7028	6023	4957	3889	3138	2861	3127	3833	4943	6022	7075	7570	7606	7607
39	7620	7540	7554	7130	6132	4997	3846	3055	2763	3048	3792	4981	6141	7179	7636	7632	7620
40	7622	7556	7607	7225	6249	5041	3798	2970	2666	2960	3749	5022	6255	7276	7698	7657	7622
41	7621	7573	7663	7307	6358	5087	3741	2875	2560	2861	3687	5057	6372	7354	7741	7661	7621
42	7609	7588	7706	7390	6459	5117	3670	2758	2442	2752	3623	5082	6474	7437	7777	7661	7609
43	7584	7585	7750	7475	6561	5143	3588	2640	2321	2617	3534	5103	6573	7508	7808	7666	7584
44	7542	7578	7785	7546	6649	5171	3485	2512	2181	2487	3443	5123	6677	7585	7832	7649	7542
45	7500	7563	7815	7625	6755	5183	3377	2364	2048	2353	3327	5137	6778	7657	7855	7631	7500
46	7446	7536	7836	7688	6845	5197	3250	2228	1919	2202	3205	5144	6880	7723	7869	7606	7446
47	7371	7502	7845	7750	6930	5198	3110	2088	1793	2064	3055	5142	6987	7769	7871	7563	7371
48	7299	7476	7857	7804	7010	5190	2967	1957	1680	1933	2913	5126	7079	7828	7871	7520	7299
49	7188	7415	7860	7855	7089	5166	2804	1834	1563	1807	2769	5093	7178	7883	7869	7458	7188
50	7083	7346	7855	7902	7169	5125	2658	1712	1473	1696	2626	5049	7252	7921	7853	7379	7083
51	6945	7261	7842	7938	7221	5074	2515	1604	1399	1582	2483	5000	7321	7951	7827	7288	6945
52	6791	7150	7816	7972	7276	5000	2380	1515	1345	1500	2332	4927	7378	7980	7813	7191	6791
53	6615	7032	7776	7988	7320	4916	2232	1445	1291	1434	2199	4838	7426	8005	7777	7090	6615
54	6402	6904	7725	7998	7355	4817	2114	1390	1249	1378	2084	4741	7465	8030	7747	6964	6402
55	6174	6738	7668	7995	7377	4703	2008	1340	1218	1332	1982	4644	7486	8035	7697	6829	6174
56	5936	6577	7591	7972	7376	4578	1908	1291	1173	1285	1889	4526	7470	8036	7633	6662	5936
57	5652	6356	7499	7931	7352	4446	1816	1237	1102	1233	1805	4395	7451	8018	7558	6475	5652
58	5350	6105	7406	7876	7292	4306	1739	1164	1027	1157	1730	4256	7401	7981	7480	6277	5350
59	5017	5858	7310	7810	7197	4146	1645	1073	923	1062	1661	4121	7325	7925	7397	6044	5017
60	4674	5573	7183	7722	7072	3998	1557	965	820	955	1571	3992	7201	7861	7304	5758	4674

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61	4302	5224	7051	7598	6923	3869	1454	849	727	833	1452	3872	7065	7774	7190	5463	4302
62	3916	4854	6888	7453	6739	3739	1306	752	638	737	1314	3753	6881	7641	7066	5082	3916
63	3537	4475	6685	7254	6492	3611	1154	664	576	658	1163	3661	6660	7485	6915	4710	3537
64	3180	4102	6453	7042	6226	3498	995	602	522	596	995	3567	6404	7281	6740	4332	3180
65	2802	3721	6161	6776	5930	3374	851	562	481	555	852	3461	6127	7049	6505	3974	2802
66	2431	3363	5835	6430	5564	3235	726	534	450	527	724	3336	5778	6765	6209	3579	2431
67	2097	2970	5431	6073	5130	3068	631	512	428	504	643	3151	5370	6461	5887	3179	2097
68	1605	2562	4972	5624	4644	2819	582	485	415	482	590	2901	4895	6030	5453	2773	1605
69	1019	2114	4488	5134	4243	2511	552	463	403	456	562	2569	4410	5580	4983	2341	1019
70	617	1641	3989	4633	3891	2128	531	439	390	436	545	2130	4009	5086	4436	1879	617
71	415	1176	3406	4273	3587	1712	510	414	374	406	529	1651	3692	4636	3891	1407	415
72	330	759	2719	3961	3149	1260	490	386	357	389	507	1243	3414	4295	3312	973	330
73	298	498	2090	3769	2616	931	471	362	341	359	486	927	3031	4044	2683	617	298
74	289	361	1469	3499	1999	697	449	334	326	334	462	700	2479	3861	1989	423	289
75	282	313	988	2995	1440	565	427	314	306	311	441	571	1853	3571	1419	339	282
76	246	306	649	2256	938	502	395	289	291	287	414	519	1290	3003	958	313	246
77	203	293	438	1345	584	476	367	272	282	272	387	505	882	2144	619	309	203
78	180	253	317	735	382	464	339	256	270	255	353	491	588	1313	401	275	180
79	162	210	269	424	285	451	302	234	260	233	325	472	411	802	307	235	162
80	144	184	242	307	232	427	255	222	249	220	287	447	301	474	255	203	144
81	134	162	217	246	195	393	220	205	238	206	249	411	246	327	229	179	134
82	117	144	189	220	162	362	179	188	222	187	215	373	210	266	201	159	117
83	102	130	164	213	135	310	141	164	212	167	180	325	180	217	174	145	102
84	85	97	139	203	104	252	104	148	189	154	138	259	148	199	153	120	85
85	69	77	115	181	87	172	84	133	162	137	112	199	118	184	125	92	69
86	53	67	94	141	63	105	67	115	139	117	88	138	92	154	110	78	53
87	41	49	69	106	46	58	46	97	109	103	65	90	73	126	85	64	41
88	31	32	52	53	27	38	34	74	84	84	39	50	55	85	62	44	31
89	21	23	33	36	10	18	16	46	49	46	37	39	30	57	45	36	21
90	16	17	25	24	0	9	0	25	25	34	21	19	17	26	23	24	16
91	16	12	20	23	10	16	0	10	0	10	15	16	12	20	19	23	16
92	17	10	16	16	0	14	0	14	11	9	15	11	9	17	16	25	17

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93	18	11	18	16	0	12	11	12	12	9	15	16	11	12	15	21	18
94	11	12	16	20	0	12	0	17	13	9	13	17	10	18	14	20	11
95	19	13	14	20	10	9	0	16	11	8	19	17	12	12	20	19	
96	15	12	18	17	9	10	10	11	10	8	14	19	11	11	14	19	15
97	17	0	18	16	8	13	0	10	11	12	13	13	14	15	16	22	17
98	17	10	15	9	0	12	0	16	15	13	15	16	0	16	14	20	17
99	16	11	13	17	0	11	9	15	8	0	17	18	10	13	16	16	16
100	15	11	14	14	0	15	8	15	11	8	14	14	12	14	13	21	15
101	14	12	13	10	7	15	7	15	12	12	17	19	12	10	11	20	14
102	12	11	13	14	0	13	13	14	12	12	14	16	13	15	11	18	12
103	15	9	14	11	9	15	11	18	12	0	15	19	12	13	12	18	15
104	16	0	9	12	0	17	17	15	14	10	16	17	11	12	12	16	16
105	11	10	15	14	11	19	8	14	10	13	20	18	14	13	11	20	11
106	15	8	16	16	13	22	13	19	15	9	23	20	12	14	12	19	15
107	14	10	13	12	13	18	17	19	11	11	22	22	16	12	12	15	14
108	16	12	16	17	15	19	17	19	12	11	20	22	14	13	0	17	16
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180	25	18	15	18	13	15	13	23	21	17	19	20	14	16	18	20	25



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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 *****