LM-79-08 Test Report

For

Revolution Lighting Technologies, Inc.

(Brand Name: Revolution Lighting)

2280 Ward Ave. Simi Valley, CA. 93065

Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

Model name(s): 1130SF-33T

Remark: S represents Sensor Options,can be 1 =N/A, 2 = 7-Pin Photocell, 9 = 3-Pin Photocell
T represents CCT,can be 2=4000K,4=5000K

Representative (Tested) Model: 1130SF-332
1130SF-334

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

Test & Report By:

Grace Li

Engineer: Grace Li
Date:April.09,2018

Review By:

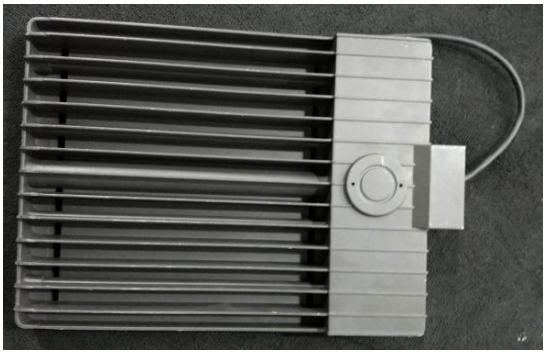
Tommy Liang

Manager: Tommy Liang

1.1 Product Information:

Organization Name	Revolution Lighting Technologies, Inc.	
Brand Name	Revolution Lighting	
Model Number	1130SF-33T	
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	100-277Vac, 50/60 Hz	
Nominal Power	166W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K,5000K	
LED Manufacturer	Lumileds	
LED Model	LUXEON 3030 2D	
Sample Number	BLC1803017E-G1(4000K),G2(5000K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Photo



Certificate#4810.01

1.2 Test Specifications:

Date of Receipt	April.04,2018
Date of Test	April.08,2018
Test item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. 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° C ± 1° 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 25º C ± 1º 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 25º C ± 1º 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	2018-4-8	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	1130SF-332		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC180301 7E-G1	120.0	60	1.4170	169.53	0.997	4.34
	277.0	60	0.6363	165.54	0.9392	13.83
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

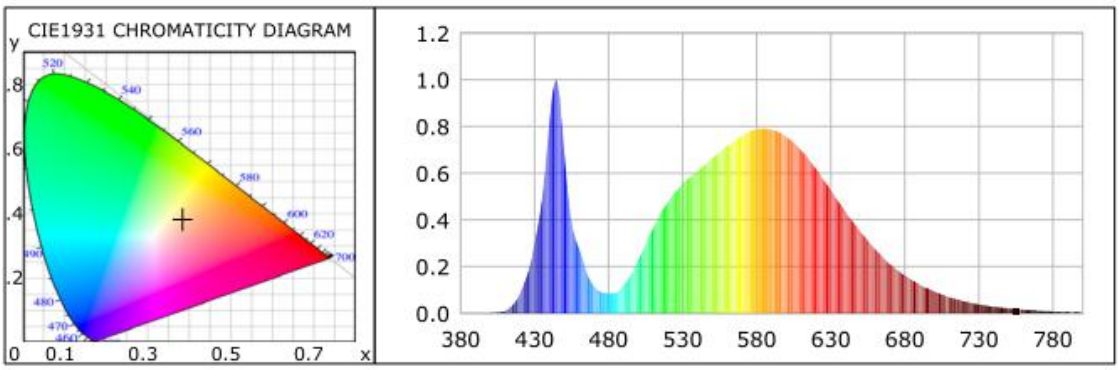
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3909
Duv	-0.00036
Chromaticity (x, y)	x=0.3843 y=0.3784
Chromaticity (u', v')	u(u')=0.2270 v'=0.5029
Color Rendering Index (CRI)	72.2
R9	0

Special Color Rendering Indices			
R1	70	R9	0
R2	78	R10	48
R3	84	R11	69
R4	73	R12	45
R5	70	R13	71
R6	69	R14	91
R7	80	R15	64
R8	55	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result		DLC V4.3 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	22416.95	22150.91	>=10000(-10%)
Luminous Efficacy (lm/W)	132.23	133.81	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	130.66		
Zonal lumens in the 0-90° zone (%)	99.6	--	>=100(-1)
Zonal lumens in the 80-90° zone (%)	2.1	--	<=10(+3)
Beam Angle (°)	146.7	--	--
Center Beam Candle Power (cd)	5323	--	--

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

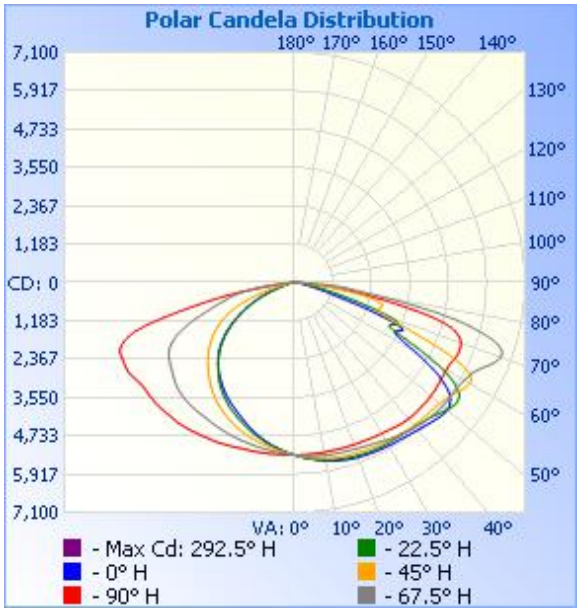
Zonal Lumen Summary

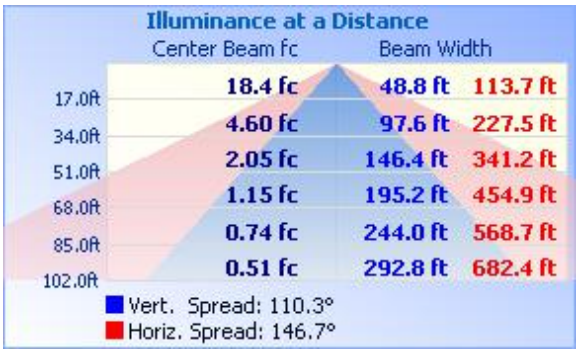
Zone	Lumens	% Lamp	% Luminaire
0-30	4,405.6	19.7%	19.7%
0-40	7,609.4	33.9%	33.9%
0-60	15,703.2	70.1%	70.1%
60-90	6,627.6	29.6%	29.6%
70-100	2,871.3	12.8%	12.8%
90-120	50.1	0.2%	0.2%
0-90	22,330.8	99.6%	99.6%
90-180	84.9	0.4%	0.4%
0-180	22,415.7	100%	100%

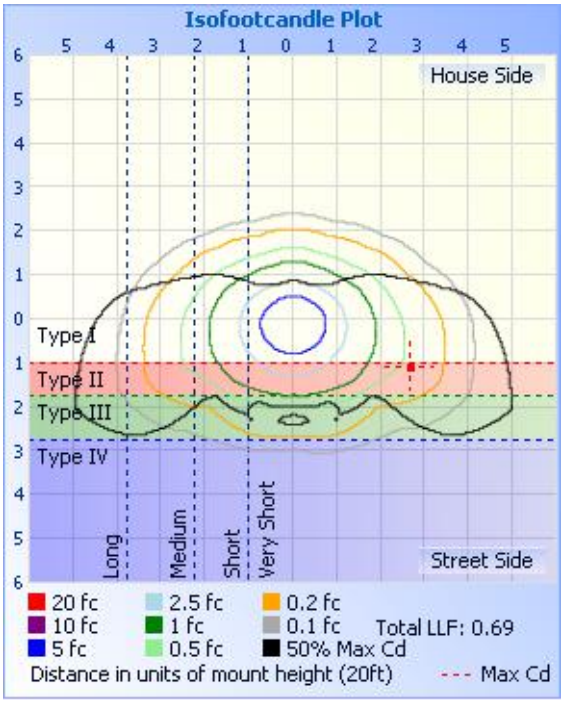
Lumens Per Zone

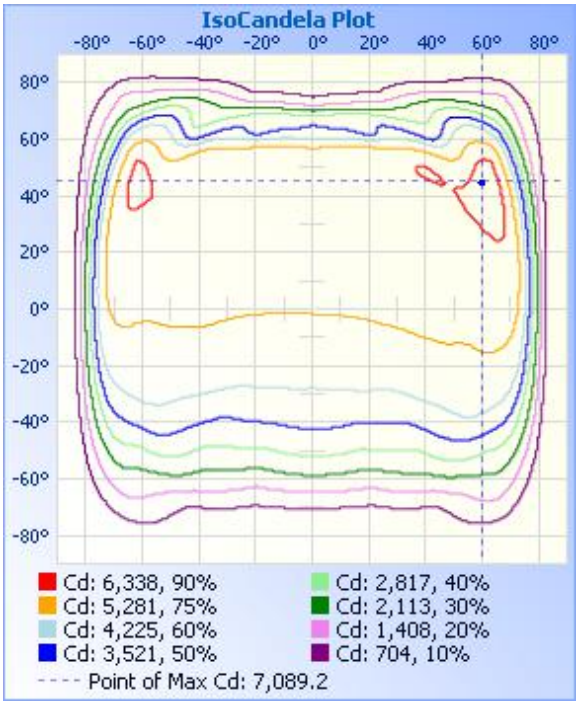
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	507.4	2.3%	90-100	21.5	0.1%
10-20	1,494.1	6.7%	100-110	16.0	0.1%
20-30	2,404.1	10.7%	110-120	12.7	0.1%
30-40	3,203.8	14.3%	120-130	10.5	0%
40-50	3,857.8	17.2%	130-140	7.7	0%
50-60	4,236.0	18.9%	140-150	6.7	0%
60-70	3,777.7	16.9%	150-160	5.4	0%
70-80	2,379.4	10.6%	160-170	3.2	0%
80-90	470.5	2.1%	170-180	1.1	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	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323	5323
1	5352	5351	5346	5332	5321	5309	5299	5290	5292	5296	5303	5310	5322	5338	5349	5350	5352
2	5383	5380	5365	5346	5318	5297	5276	5262	5268	5266	5280	5303	5324	5350	5371	5377	5383
3	5410	5405	5381	5355	5318	5283	5251	5234	5237	5238	5262	5295	5327	5363	5393	5406	5410
4	5437	5427	5404	5362	5321	5274	5230	5199	5203	5208	5238	5282	5328	5381	5414	5435	5437
5	5463	5453	5423	5374	5318	5259	5207	5168	5171	5180	5216	5271	5330	5388	5434	5463	5463
6	5487	5476	5441	5383	5317	5246	5182	5137	5134	5149	5198	5262	5331	5402	5453	5486	5487
7	5512	5500	5458	5393	5318	5234	5157	5100	5101	5120	5171	5252	5336	5413	5473	5512	5512
8	5542	5522	5474	5399	5317	5220	5131	5067	5067	5087	5152	5243	5342	5427	5494	5537	5542
9	5564	5542	5488	5409	5319	5209	5106	5035	5029	5055	5129	5229	5342	5437	5507	5557	5564
10	5585	5564	5506	5416	5317	5196	5081	4999	4989	5020	5109	5222	5341	5448	5522	5580	5585
11	5610	5580	5522	5424	5313	5186	5057	4964	4955	4988	5085	5213	5349	5456	5531	5600	5610
12	5629	5599	5532	5427	5313	5169	5030	4926	4911	4947	5060	5202	5352	5468	5545	5615	5629
13	5653	5613	5545	5431	5315	5159	5001	4886	4870	4909	5038	5194	5354	5474	5560	5632	5653
14	5664	5625	5558	5434	5315	5146	4978	4853	4828	4876	5016	5185	5359	5485	5572	5645	5664
15	5678	5638	5569	5438	5319	5136	4951	4814	4779	4838	4989	5175	5363	5494	5581	5664	5678
16	5696	5648	5573	5442	5320	5129	4925	4775	4735	4797	4970	5164	5368	5501	5590	5669	5696
17	5709	5659	5577	5447	5322	5118	4895	4734	4687	4758	4943	5157	5376	5508	5604	5683	5709
18	5721	5667	5582	5453	5323	5104	4871	4701	4644	4716	4917	5146	5382	5513	5607	5692	5721
19	5729	5678	5591	5462	5325	5095	4837	4657	4594	4675	4887	5141	5391	5528	5617	5706	5729
20	5741	5683	5598	5468	5328	5082	4808	4620	4541	4635	4858	5132	5401	5536	5627	5716	5741
21	5745	5688	5605	5480	5331	5076	4777	4581	4500	4597	4828	5122	5414	5548	5633	5725	5745
22	5755	5701	5611	5492	5330	5066	4752	4537	4452	4560	4796	5111	5424	5561	5644	5735	5755
23	5764	5707	5623	5502	5336	5057	4719	4495	4414	4517	4764	5104	5440	5581	5655	5743	5764
24	5770	5717	5626	5515	5340	5042	4691	4458	4368	4476	4732	5092	5449	5598	5664	5753	5770
25	5777	5722	5633	5526	5347	5031	4656	4418	4326	4436	4697	5079	5465	5619	5675	5753	5777
26	5787	5721	5644	5542	5353	5023	4623	4378	4283	4393	4664	5072	5475	5638	5684	5756	5787
27	5792	5726	5648	5552	5356	5016	4586	4332	4243	4355	4630	5060	5485	5658	5694	5759	5792
28	5796	5730	5656	5572	5367	5003	4551	4284	4202	4317	4592	5050	5490	5674	5704	5764	5796
29	5806	5733	5664	5598	5370	4991	4509	4238	4160	4263	4552	5038	5499	5702	5703	5765	5806

30	5813	5732	5670	5619	5379	4980	4470	4183	4120	4218	4512	5029	5512	5725	5708	5768	5813
31	5818	5732	5676	5640	5388	4969	4429	4137	4074	4170	4476	5021	5524	5752	5719	5770	5818
32	5826	5732	5685	5660	5394	4957	4381	4088	4027	4127	4435	5010	5536	5765	5729	5771	5826
33	5829	5735	5692	5682	5408	4942	4335	4031	3979	4075	4399	5002	5540	5794	5747	5773	5829
34	5843	5743	5707	5697	5426	4927	4286	3976	3931	4016	4355	4993	5559	5817	5758	5775	5843
35	5855	5749	5714	5714	5439	4914	4238	3920	3885	3967	4305	4987	5572	5838	5773	5791	5855
36	5866	5752	5719	5736	5451	4899	4187	3863	3832	3909	4257	4985	5584	5858	5791	5795	5866
37	5878	5759	5725	5756	5462	4884	4136	3806	3783	3851	4209	4979	5599	5889	5808	5809	5878
38	5895	5773	5730	5778	5471	4871	4078	3750	3732	3784	4156	4975	5607	5912	5823	5822	5895
39	5916	5784	5737	5799	5477	4860	4025	3692	3681	3717	4104	4970	5618	5937	5840	5839	5916
40	5934	5802	5741	5817	5482	4848	3964	3628	3628	3655	4049	4963	5629	5957	5855	5853	5934
41	5956	5812	5751	5831	5487	4829	3901	3566	3571	3591	3992	4956	5631	5983	5871	5872	5956
42	5974	5831	5761	5845	5485	4814	3844	3504	3515	3527	3936	4946	5631	6009	5883	5892	5974
43	5995	5852	5762	5860	5489	4794	3786	3438	3464	3452	3881	4939	5635	6033	5900	5919	5995
44	6021	5879	5770	5877	5486	4775	3717	3365	3405	3384	3823	4928	5639	6052	5912	5943	6021
45	6047	5907	5775	5893	5486	4751	3663	3295	3336	3315	3767	4916	5647	6071	5923	5971	6047
46	6074	5943	5780	5909	5478	4727	3597	3225	3272	3244	3708	4899	5656	6085	5936	6011	6074
47	6098	5987	5790	5927	5481	4700	3539	3150	3203	3172	3657	4883	5665	6100	5946	6058	6098
48	6120	6027	5802	5939	5483	4666	3479	3066	3129	3091	3602	4862	5673	6117	5958	6105	6120
49	6137	6071	5810	5950	5474	4635	3411	2974	3052	3017	3537	4835	5677	6126	5980	6157	6137
50	6136	6122	5829	5955	5471	4602	3344	2895	2964	2934	3475	4807	5675	6143	5997	6205	6136
51	6129	6166	5853	5962	5468	4568	3280	2806	2877	2847	3415	4769	5670	6156	6023	6251	6129
52	6084	6198	5881	5958	5465	4521	3213	2723	2786	2752	3353	4734	5666	6165	6051	6283	6084
53	6020	6224	5910	5952	5454	4480	3136	2631	2690	2664	3288	4700	5667	6175	6091	6300	6020
54	5913	6224	5955	5955	5442	4441	3059	2522	2584	2564	3210	4664	5665	6182	6143	6299	5913
55	5777	6194	6003	5963	5431	4410	2984	2422	2483	2458	3143	4639	5664	6187	6192	6257	5777
56	5565	6119	6048	5971	5424	4367	2911	2323	2377	2348	3072	4617	5673	6193	6254	6170	5565
57	5340	5985	6110	5981	5411	4335	2830	2209	2263	2247	2994	4587	5696	6202	6302	6022	5340
58	5031	5784	6160	5992	5408	4301	2748	2091	2154	2126	2909	4553	5723	6225	6356	5826	5031
59	4676	5519	6210	6017	5404	4264	2658	1974	2038	2005	2824	4520	5747	6247	6397	5527	4676
60	4331	5160	6234	6043	5402	4220	2579	1869	1918	1892	2745	4480	5782	6275	6410	5133	4331
61	3971	4719	6229	6074	5403	4165	2496	1755	1798	1772	2655	4439	5806	6321	6368	4669	3971

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62	3683	4273	6154	6102	5411	4108	2399	1637	1687	1666	2552	4373	5826	6385	6248	4211	3683
63	3501	3820	5971	6155	5431	4042	2311	1520	1571	1551	2446	4297	5826	6477	5986	3759	3501
64	3448	3443	5673	6228	5459	3961	2218	1417	1451	1446	2341	4204	5826	6580	5611	3411	3448
65	3534	3230	5213	6309	5481	3853	2121	1305	1332	1335	2224	4082	5818	6672	5012	3264	3534
66	3646	3215	4691	6405	5499	3721	2016	1203	1222	1217	2098	3950	5811	6773	4452	3320	3646
67	3592	3341	4083	6528	5502	3581	1892	1086	1104	1104	1957	3785	5804	6877	3870	3482	3592
68	3304	3440	3566	6626	5494	3400	1778	986	948	999	1829	3617	5804	6958	3374	3556	3304
69	2822	3389	3150	6703	5486	3240	1656	875	817	877	1681	3422	5770	7046	3083	3438	2822
70	2348	3147	2902	6760	5461	3037	1518	750	711	736	1516	3234	5687	7089	2908	3128	2348
71	1871	2811	2771	6775	5410	2836	1345	637	610	634	1333	3008	5556	7061	2855	2724	1871
72	1482	2413	2730	6716	5321	2648	1187	553	503	550	1176	2814	5380	6924	2865	2280	1482
73	1167	2019	2741	6557	5193	2449	1036	465	419	470	1023	2633	5128	6667	2900	1909	1167
74	925	1670	2774	6320	5011	2293	874	397	375	392	851	2477	4730	6321	2921	1580	925
75	746	1378	2798	5978	4738	2147	703	339	328	344	687	2315	4176	5919	2894	1289	746
76	595	1104	2777	5556	4337	2017	565	303	292	304	570	2174	3604	5432	2821	1039	595
77	498	881	2691	5108	3788	1890	460	267	262	263	460	2045	3076	4899	2658	817	498
78	429	712	2523	4509	3268	1760	374	233	222	243	368	1906	2620	4199	2390	657	429
79	380	580	2255	3854	2771	1633	304	207	192	205	306	1765	2172	3603	2038	543	380
80	321	492	1931	3167	2306	1469	258	178	164	179	255	1531	1722	2978	1680	459	321
81	274	403	1563	2603	1927	1281	217	140	136	149	216	1326	1178	2465	1388	379	274
82	232	321	1293	2120	1499	1096	185	114	112	124	177	1120	727	2091	1120	309	232
83	188	251	1025	1806	1060	846	149	100	89	106	141	866	480	1805	848	233	188
84	151	196	725	1591	703	613	116	81	61	78	114	630	334	1581	551	189	151
85	117	155	462	1359	462	427	84	66	51	45	82	373	224	1279	373	150	117
86	85	106	304	973	323	234	30	24	39	49	71	210	163	940	234	88	85
87	52	71	175	579	214	130	44	30	27	38	48	121	90	468	131	60	52
88	41	40	79	264	133	62	30	21	18	24	32	71	40	149	57	38	41
89	39	29	41	65	68	36	20	22	22	24	23	44	16	30	25	31	39
90	31	27	34	38	29	17	12	13	19	24	30	39	16	30	18	22	31
91	29	29	28	37	17	20	19	17	27	22	21	37	11	20	27	21	29
92	28	32	30	27	12	10	10	14	22	25	28	22	12	20	24	27	28
93	29	25	29	24	19	17	0	13	23	23	23	32	13	23	21	24	29

94	29	29	24	28	18	18	12	12	21	19	26	31	12	13	27	21	29
95	33	24	22	26	10	10	11	15	19	22	27	25	10	18	15	24	33
96	29	25	18	26	0	11	9	14	19	22	24	28	0	14	22	21	29
97	27	25	20	26	0	10	12	13	18	24	23	28	11	11	15	24	27
98	28	22	18	21	0	15	10	11	21	24	19	28	0	16	18	18	28
99	24	24	24	14	0	0	16	17	20	23	24	29	0	12	15	21	24
100	22	23	11	22	10	16	12	11	22	19	22	28	0	17	15	19	22
101	26	18	22	15	0	9	17	16	22	24	26	25	0	0	20	18	26
102	22	19	15	24	13	15	11	17	16	18	24	23	0	0	16	20	22
103	25	13	12	22	0	13	18	16	25	17	23	27	0	12	11	18	25
104	18	19	18	20	10	13	13	17	19	21	28	27	0	15	14	20	18
105	23	18	19	19	0	10	19	15	21	18	23	17	0	0	13	15	23
106	25	17	11	16	0	12	15	15	20	21	23	28	0	0	11	12	25
107	21	16	20	17	0	0	14	16	18	19	25	25	0	0	13	22	21
108	20	19	18	16	0	18	13	18	22	21	26	22	0	0	0	14	20
109	24	17	10	19	0	12	14	15	23	18	25	24	0	0	13	14	24
110	21	12	14	17	0	15	15	20	23	20	15	20	0	0	16	11	21
111	18	15	14	12	0	11	19	15	20	17	26	23	0	0	11	0	18
112	22	15	16	16	0	12	12	17	24	25	19	22	0	0	0	12	22
113	22	18	13	16	0	9	13	19	18	20	22	18	0	0	9	12	22
114	23	18	14	17	0	16	13	20	24	19	24	23	0	0	9	14	23
115	20	14	15	15	0	13	11	14	19	19	17	19	0	0	11	12	20
116	18	15	9	13	0	14	15	21	22	20	17	20	0	0	11	11	18
117	21	14	17	19	0	15	17	16	19	21	23	17	0	0	12	12	21
118	17	18	14	13	0	12	15	15	20	17	16	24	0	0	0	0	17
119	19	14	18	12	0	0	14	11	21	22	20	18	0	0	0	0	19
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123	15	22	14	15	0	0	16	15	19	24	23	21	0	0	9	10	15
124	18	19	11	14	0	10	12	13	26	11	16	17	0	0	11	13	18
125	22	17	9	17	0	0	13	17	20	20	22	15	0	0	0	9	22

126	20	14	14	12	0	0	9	11	23	21	22	19	0	0	0	9	20
127	26	15	13	12	0	0	12	18	20	21	22	16	0	0	10	9	26
128	23	17	10	9	0	0	12	16	21	23	18	14	0	0	11	0	23
129	21	19	19	13	0	0	16	16	24	17	21	18	0	0	0	9	21
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133	17	14	17	0	0	0	12	12	24	19	17	14	0	0	0	0	17
134	24	15	13	0	0	0	10	13	21	19	15	19	0	0	0	16	24
135	18	19	12	10	0	0	11	17	20	19	14	10	0	0	11	0	18
136	16	13	15	0	0	0	9	12	16	17	16	14	0	0	10	11	16
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142	22	19	16	13	0	0	11	16	22	20	16	13	0	0	0	10	22
143	24	17	14	15	0	0	0	13	19	20	19	16	0	0	0	14	24
144	20	16	15	11	0	0	10	15	20	20	20	10	0	0	13	0	20
145	21	17	15	9	0	0	16	13	22	18	17	10	0	0	0	11	21
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152	18	19	15	12	0	0	10	18	20	24	18	18	12	0	13	14	18
153	20	18	12	10	0	0	0	20	24	18	21	13	0	0	13	10	20
154	18	21	13	13	0	0	0	16	23	18	19	10	0	0	0	11	18
155	22	23	17	12	0	10	13	18	19	15	17	10	10	0	11	11	22
156	19	21	13	11	0	0	0	14	26	17	15	9	0	0	14	10	19
157	18	19	14	15	0	0	11	15	19	23	16	13	0	0	11	14	18

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158	16	14	16	15	0	15	15	18	19	20	14	10	0	0	12	13	16
159	22	19	15	9	0	0	19	16	22	16	15	17	0	0	9	9	22
160	14	19	16	9	0	0	9	19	26	14	13	15	0	0	11	13	14
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164	20	20	19	12	0	0	13	14	23	18	22	12	0	0	11	0	20
165	21	15	17	13	0	0	13	11	18	19	12	14	0	0	0	10	21
166	22	19	23	11	0	0	15	14	19	18	11	13	0	0	11	13	22
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168	21	20	16	15	0	0	9	19	21	17	16	17	0	0	12	10	21
169	18	15	15	18	0	0	9	20	22	17	15	13	0	0	16	14	18
170	20	21	13	20	0	0	14	23	22	25	14	15	0	0	15	0	20
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172	19	17	15	19	0	0	14	15	20	23	0	14	0	9	12	14	19
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176	20	16	16	10	0	0	0	12	25	18	18	12	0	10	0	11	20
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178	17	15	15	12	0	0	15	13	20	20	17	12	0	0	13	13	17
179	13	17	14	14	0	0	12	11	16	18	14	13	0	0	12	16	13
180	23	18	9	13	0	0	9	12	20	21	13	16	0	0	16	14	23

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2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2018-4-8	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	1130SF-334		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC180301 7E-G2	120.0	60	1.4126	168.82	0.9959	4.12
	277.0	60	0.6406	165.27	0.9314	13.55
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

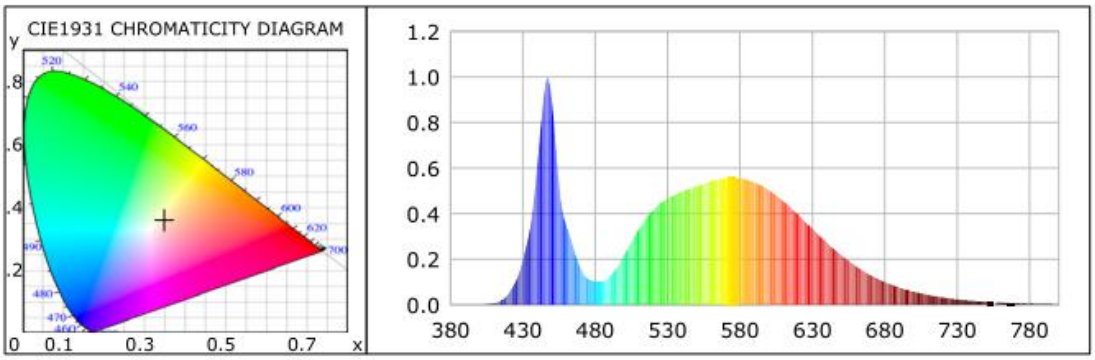
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	4894
Duv	0.00105
Chromaticity (x, y)	x=0.3484 y=0.3564
Chromaticity (u', v')	u(u')=0.2118 v'=0.4875
Color Rendering Index (CRI)	74
R9	0

Special Color Rendering Indices			
R1	72	R9	0
R2	78	R10	48
R3	83	R11	72
R4	75	R12	44
R5	72	R13	72
R6	70	R14	90
R7	82	R15	67
R8	60	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.3 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	22822.78	22483.33	5000-10000(-10%)
Luminous Efficacy (lm/W)	135.19	136.04	Premium: >= 115(-3%)
Most worst Luminous/Highest Watts	133.18		

Spectral Power Distribution & Chromaticity Diagram



3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometeric System	GPM-3000	DYHXF120001	2019-01-15
AC Power Source	CHP-500C	N/A	2019-01-14
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2019-01-22
Digital Power Meter	WT500	DYDWQ200006	2019-01-14
Integral Sphere (2M)	2M	DYJCE120067	2019-01-15
Digital Power Meter	WT500	DYDWQ200006	2019-01-14
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2019-01-15
Expand Uncertainty: Photometric Measurement (Sphere): 2.04%, k=2 Chromaticity Measurement(Sphere):28.8K, k=2 Photometric Measurement(Goniophotometer):2.7%, k=2			

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