



Report No.:
BLC1811028E-C-PL

LM-79-08 Test Report

For

Revolution Lighting Technologies, Inc.

(Brand Name: Revolution Lighting Technologies)

2280 Ward Ave. Simi Valley, CA. 93065

Outdoor Full-Cutoff Wall-Mounted Area Luminaires

Model name(s): 282404-01X

Remark: The Suffix X represents for CCT, could be 3=4000K, 4=4500K, 5=5000K,
6=5700K.

Representative (Tested) Model:

282404-013

282404-016

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

Test & Report By:

Jason Luo

Engineer: Jason Luo

Date: Dec 03, 2018

Review By:

Grace Li

Manager: Grace Li

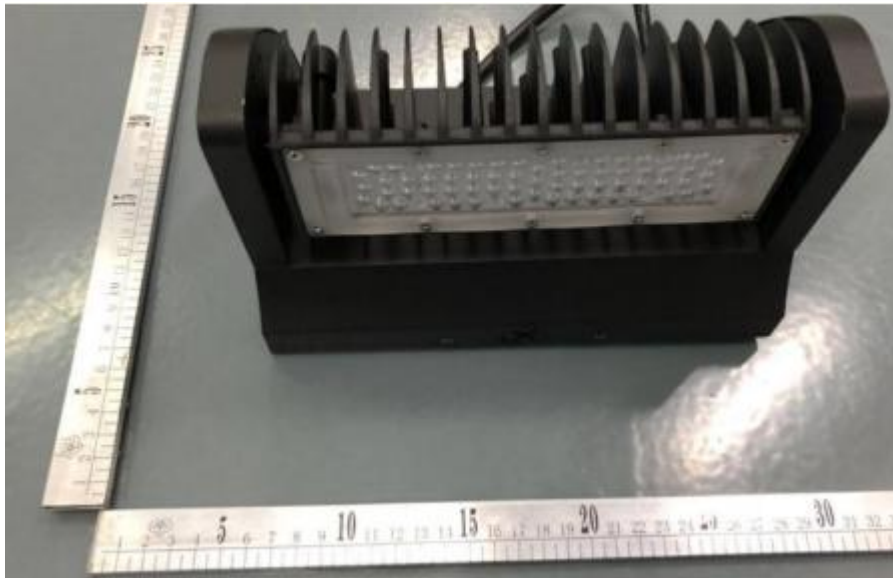


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1.1 Product Information:

Organization Name	Revolution Lighting Technologies, Inc.	
Brand Name	Revolution Lighting Technologies	
Model Number	282404-01X	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Full-Cutoff Wall-Mounted Area Luminaires	
Rated Voltage / Frequency	100-277Vac, 50/60 Hz	
Nominal Power	60W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K,4500K,5000K,5700K	
LED Manufacturer	Seoul Semiconductor Co., LTD	
LED Model	3030B	
Sample Number	BLC1811028E-C-PL1(4000K),C-PL2(5700K)	
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	Dec 30,2017
Date of Test	Jan 07,2018
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	2018-1-07	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	282404-013		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC181102	120.0	60	0.4877	58.24	0.9951	5.87
8E-C-PL1	277.0	60	0.2285	57.86	0.9143	15.56
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

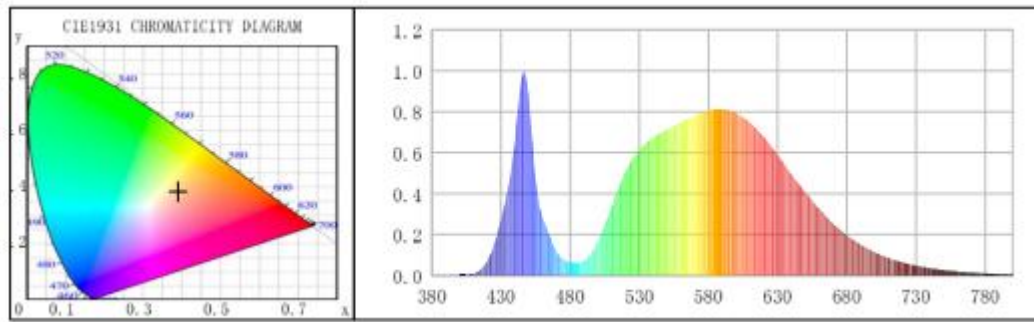
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	71	R9	0
Frequency (Hz)	60	R2	77	R10	45
CCT (K)	3795	R3	81	R11	69
Duv	0.00034	R4	73	R12	39
Chromaticity (x, y)	x=0.3902 y=0.3833	R5	70	R13	71
Chromaticity (u', v')	u(u')=0.2289 v'(v')=0.5059	R6	67	R14	89
Color Rendering Index (CRI)	72.3	R7	81	R15	67
R9	0	R8	58	--	--

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)	7412.2	7416	5000-10000(-10%)
Luminous Efficacy (lm/W)	127.27	128.17	Premium: >= 115(-3%)
Most worst Luminous/Highest	127.30		
Zonal lumens in the 0-90° zone (%)	99.6	--	>=100(-3)
Zonal lumens in the 80-90° zone (%)	0.1	--	<=10(+3)
Beam Angle (°)	64.9	--	--
Center Beam Candle Power (cd)	6110	--	--



Spectral Power Distribution & Chromaticity Diagram

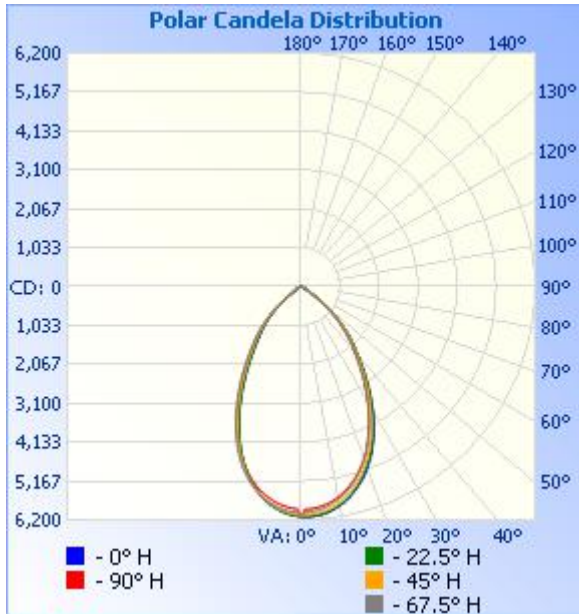


Zonal Lumen Tabulation

Zonal Lumen Summary				Lumens Per Zone					
Zone	Lumens	% Lamp	% Luminaire	Zone	Lumens	% Total	Zone	Lumens	% Total
0-30	3,972.8	53.6%	53.6%	0-10	562.6	7.6%	90-100	3.9	0.1%
0-40	5,655.6	76.3%	76.3%	10-20	1,502.1	20.3%	100-110	3.8	0.1%
0-60	7,193.9	97%	97%	20-30	1,908.2	25.7%	110-120	4.3	0.1%
60-90	192.4	2.6%	2.6%	30-40	1,682.7	22.7%	120-130	4.2	0.1%
70-100	70.9	1%	1%	40-50	1,146.1	15.5%	130-140	4.0	0.1%
90-120	12.0	0.2%	0.2%	50-60	392.3	5.3%	140-150	3.2	0%
0-90	7,386.3	99.6%	99.6%	60-70	125.4	1.7%	150-160	2.5	0%
90-180	27.9	0.4%	0.4%	70-80	56.4	0.8%	160-170	1.5	0%
0-180	7,414.2	100%	100%	80-90	10.7	0.1%	170-180	0.5	0%

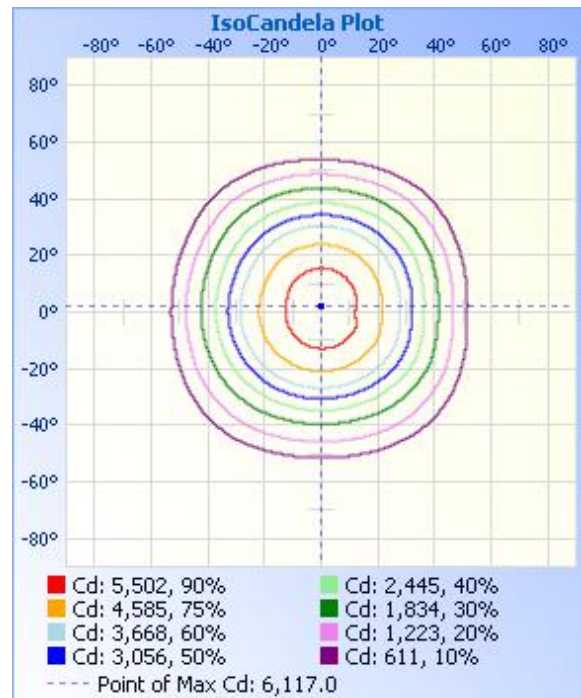
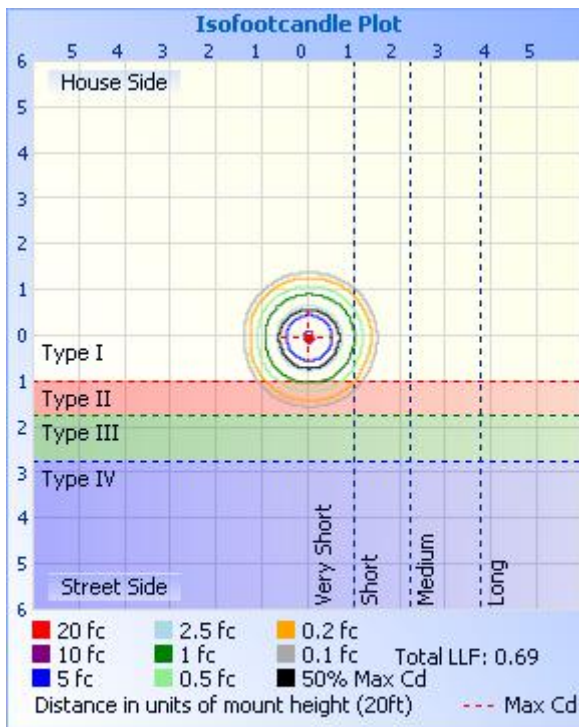


Photometric Data



	Center Beam fc	Beam Width	
17.0ft	21.1 fc	21.6 ft	21.6 ft
34.0ft	5.29 fc	43.3 ft	43.2 ft
51.0ft	2.35 fc	64.9 ft	64.8 ft
68.0ft	1.32 fc	86.6 ft	86.4 ft
85.0ft	0.85 fc	108.2 ft	108.0 ft
102.0ft	0.59 fc	129.8 ft	129.6 ft

■ Vert. Spread: 64.9°
■ Horiz. Spread: 64.9°





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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	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110	6110
1	6117	6108	6064	6000	5919	5980	6038	6077	6099	6092	6056	5999	5908	5980	6047	6093	6117
2	6115	6112	6063	5992	5912	5970	6028	6061	6081	6075	6042	5986	5896	5973	6043	6092	6115
3	6111	6101	6049	5982	5903	5954	6007	6043	6057	6053	6022	5973	5879	5962	6034	6083	6111
4	6098	6090	6037	5961	5885	5937	5981	6010	6027	6026	5998	5951	5852	5942	6019	6072	6098
5	6086	6070	6014	5937	5864	5909	5950	5976	5995	5989	5959	5923	5826	5918	5999	6055	6086
6	6061	6048	5989	5909	5837	5874	5911	5935	5947	5947	5924	5892	5793	5890	5972	6032	6061
7	6034	6019	5957	5872	5802	5840	5869	5893	5902	5897	5881	5848	5754	5852	5940	5999	6034
8	5995	5981	5915	5828	5765	5795	5820	5836	5850	5845	5826	5807	5703	5809	5902	5963	5995
9	5953	5936	5873	5779	5720	5751	5765	5778	5788	5785	5768	5759	5657	5761	5856	5918	5953
10	5908	5889	5825	5725	5676	5688	5703	5711	5713	5721	5709	5701	5601	5707	5805	5876	5908
11	5858	5840	5765	5673	5617	5633	5635	5635	5642	5643	5635	5642	5540	5656	5752	5817	5858
12	5800	5771	5702	5609	5560	5556	5561	5556	5550	5559	5560	5569	5469	5588	5685	5758	5800
13	5736	5710	5640	5539	5487	5489	5478	5470	5465	5463	5477	5495	5397	5518	5621	5691	5736
14	5658	5644	5566	5466	5419	5407	5393	5375	5371	5369	5390	5416	5318	5442	5548	5623	5658
15	5588	5559	5479	5381	5341	5325	5290	5266	5266	5263	5284	5330	5222	5362	5463	5543	5588
16	5504	5476	5398	5296	5262	5236	5190	5158	5150	5158	5184	5231	5134	5276	5378	5459	5504
17	5420	5391	5309	5200	5174	5129	5085	5051	5036	5042	5076	5131	5028	5174	5289	5375	5420
18	5334	5302	5217	5102	5070	5027	4962	4923	4922	4913	4947	5029	4928	5073	5198	5275	5334
19	5238	5196	5111	4999	4974	4913	4847	4800	4783	4787	4827	4908	4803	4964	5086	5179	5238
20	5124	5096	5004	4884	4869	4794	4727	4670	4651	4659	4701	4791	4691	4845	4978	5078	5124
21	5017	4987	4883	4765	4757	4677	4594	4536	4510	4505	4568	4667	4566	4721	4867	4966	5017
22	4907	4874	4765	4646	4627	4547	4447	4382	4368	4364	4420	4535	4440	4602	4734	4844	4907
23	4786	4743	4648	4518	4506	4408	4313	4238	4205	4217	4279	4389	4293	4470	4611	4723	4786
24	4650	4624	4521	4391	4367	4273	4173	4093	4058	4056	4137	4254	4154	4338	4488	4597	4650
25	4522	4494	4393	4245	4235	4131	4013	3928	3901	3904	3977	4108	4021	4188	4354	4469	4522
26	4393	4349	4246	4113	4099	3987	3864	3778	3745	3746	3823	3963	3865	4050	4207	4325	4393
27	4245	4213	4112	3960	3963	3845	3716	3622	3573	3593	3670	3803	3724	3898	4067	4192	4245
28	4104	4073	3972	3817	3824	3686	3564	3470	3415	3421	3518	3659	3581	3755	3925	4048	4104
29	3957	3931	3817	3678	3669	3539	3397	3300	3257	3265	3355	3511	3434	3612	3778	3895	3957

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33	3340	3326	3222	3098	3096	2948	2784	2667	2616	2640	2743	2911	2835	3023	3163	3280	3340
34	3188	3157	3081	2961	2963	2808	2647	2529	2476	2498	2598	2766	2702	2886	3025	3130	3188
35	3021	3013	2933	2810	2813	2658	2506	2386	2320	2349	2465	2612	2561	2735	2884	2984	3021
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39	2437	2443	2386	2282	2279	2139	1991	1881	1827	1865	1971	2097	2059	2215	2349	2415	2437
40	2307	2306	2253	2168	2164	2025	1891	1784	1725	1761	1870	1986	1935	2101	2216	2275	2307
41	2186	2185	2138	2055	2051	1918	1786	1685	1627	1666	1757	1867	1821	1991	2100	2157	2186
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43	1952	1960	1924	1824	1818	1704	1585	1484	1448	1476	1555	1658	1586	1746	1879	1933	1952
44	1845	1852	1809	1711	1708	1603	1489	1388	1352	1378	1454	1552	1463	1628	1758	1812	1845
45	1723	1731	1701	1597	1597	1491	1387	1294	1250	1281	1358	1435	1354	1510	1638	1696	1723
46	1615	1622	1595	1469	1485	1387	1296	1190	1148	1183	1260	1319	1246	1375	1521	1575	1615
47	1494	1510	1467	1347	1364	1275	1186	1084	1044	1074	1144	1214	1128	1263	1390	1444	1494
48	1385	1396	1355	1223	1253	1154	1076	979	933	957	1039	1095	1003	1140	1272	1320	1385
49	1243	1265	1238	1103	1131	1043	975	867	833	847	927	979	874	1028	1151	1199	1243
50	1124	1148	1116	979	1015	930	851	759	728	744	811	865	748	895	1037	1085	1124
51	997	1032	979	845	891	814	738	651	623	635	685	751	634	772	916	952	997
52	876	901	857	727	766	701	622	555	521	527	570	629	506	653	787	839	876
53	745	782	733	595	645	568	522	451	424	435	471	512	405	526	663	719	745
54	638	672	612	492	521	469	409	361	320	347	372	411	331	427	551	608	638
55	533	556	506	401	428	371	338	285	238	277	300	331	267	340	454	499	533
56	433	460	411	334	339	306	262	219	195	219	249	263	223	274	358	409	433
57	334	371	340	269	278	248	220	180	171	192	209	230	197	226	292	331	334
58	252	305	283	239	225	212	187	160	156	168	192	199	183	202	248	267	252
59	215	263	248	206	204	195	175	149	144	155	174	183	169	183	212	219	215
60	191	221	221	195	181	171	156	136	138	142	163	168	164	164	190	185	191
61	173	193	197	177	161	162	153	128	131	132	155	159	150	159	175	176	173

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75	70	75	71	70	44	44	56	25	11	25	56	49	47	66	72	53	70
76	66	66	75	62	38	45	44	9	1	17	48	49	29	65	55	58	66
77	54	61	63	61	38	38	33	0	6	6	42	44	27	47	58	56	54
78	47	57	63	48	27	33	20	4	0	8	20	37	22	52	54	49	47
79	37	50	51	54	24	24	11	0	6	10	23	33	15	49	43	45	37
80	34	45	50	48	18	20	0	0	6	4	10	24	11	40	37	37	34
81	25	42	41	41	8	12	1	0	0	6	6	14	5	36	31	28	25
82	22	34	34	34	14	8	0	0	3	3	2	14	4	34	29	26	22
83	6	25	29	37	5	7	0	2	4	6	6	10	4	29	17	10	6
84	0	15	24	29	8	4	0	0	1	6	5	7	3	24	16	0	0
85	0	16	17	24	4	0	0	0	2	10	4	3	2	18	10	6	0
86	2	13	15	17	4	3	4	0	4	4	6	7	7	8	10	6	2
87	0	12	8	20	7	1	1	0	2	6	5	7	6	6	7	2	0
88	0	4	8	9	9	2	0	0	2	4	3	9	1	5	1	0	0
89	4	12	3	10	10	5	3	1	0	7	7	5	3	4	0	2	4
90	0	8	6	8	9	2	1	0	1	7	9	13	4	3	2	0	0
91	0	5	4	7	2	2	0	2	2	6	5	6	3	3	0	0	0
92	4	12	3	5	5	3	0	0	1	8	2	5	4	2	0	0	4
93	0	8	4	7	3	2	3	0	0	8	6	6	4	2	0	0	0

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94	3	7	6	12	4	2	2	0	3	7	5	8	3	0	0	0	3
95	3	7	11	8	2	5	0	0	0	6	5	4	5	3	0	0	3
96	0	7	2	13	2	1	0	0	3	7	7	7	7	6	3	0	0
97	2	3	9	6	5	0	0	0	0	7	6	1	3	3	1	0	2
98	0	1	5	11	7	3	0	0	0	4	5	5	4	2	0	0	0
99	1	6	7	9	3	4	0	0	3	5	6	7	4	3	4	0	1
100	0	4	6	10	2	1	3	4	2	6	9	8	3	3	0	0	0
101	3	6	2	8	6	4	0	0	3	7	5	7	4	2	1	0	3
102	2	9	3	8	0	4	0	0	4	5	6	11	0	1	0	0	2
103	0	4	8	9	5	3	0	0	0	0	0	8	2	4	0	0	0
104	1	7	6	7	5	5	2	0	0	8	2	6	7	2	1	0	1
105	3	10	5	11	5	1	2	0	2	11	3	7	3	5	0	1	3
106	0	7	6	8	5	3	2	0	9	5	7	8	2	2	0	0	0
107	2	10	2	4	2	6	0	0	0	9	7	10	6	4	2	0	2
108	1	5	4	5	2	2	2	0	4	7	2	10	1	0	0	0	1
109	2	10	3	6	4	4	0	0	0	8	7	10	8	0	0	0	2
110	1	7	7	9	5	4	1	0	2	9	0	10	5	7	0	0	1
111	4	5	3	9	6	0	1	0	5	8	8	11	0	1	2	0	4
112	2	4	2	6	5	5	2	1	3	8	5	10	2	4	0	2	2
113	1	10	7	7	4	2	1	0	4	8	9	10	5	3	0	0	1
114	0	6	11	11	7	5	0	0	2	9	6	13	3	3	0	0	0
115	5	8	6	8	1	3	0	1	3	10	1	9	4	0	0	0	5
116	0	5	5	10	6	2	1	0	5	8	8	6	1	2	0	0	0
117	3	8	3	9	6	5	3	0	1	7	2	11	7	3	0	0	3
118	2	10	6	10	2	5	5	1	1	15	6	11	0	3	0	2	2
119	2	6	6	11	10	9	2	2	3	11	9	14	6	0	1	0	2
120	1	3	10	10	5	7	0	2	2	10	6	9	3	5	4	0	1
121	0	9	0	9	8	11	4	0	5	9	9	10	6	1	0	0	0
122	2	7	0	7	5	4	1	1	6	4	9	13	7	4	0	0	2
123	1	6	9	8	3	7	6	0	0	7	5	10	5	2	0	0	1
124	3	7	0	9	7	8	3	3	4	7	11	11	2	1	0	3	3
125	0	5	1	11	4	4	0	0	3	10	9	11	6	0	0	0	0

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126	0	5	5	10	7	6	1	5	4	10	10	8	7	5	0	1	0
127	2	5	6	11	11	2	4	0	2	8	10	8	4	0	0	2	2
128	3	6	7	11	5	9	1	2	6	7	7	7	4	4	2	0	3
129	1	4	8	7	8	5	0	4	2	3	9	12	7	2	0	0	1
130	0	12	2	9	11	5	4	4	2	1	8	12	7	2	0	0	0
131	6	8	5	10	5	7	5	0	4	11	9	10	4	3	0	0	6
132	0	11	5	9	11	8	5	2	6	8	7	12	6	7	0	0	0
133	2	5	6	12	10	5	3	0	3	10	7	12	10	0	0	0	2
134	0	6	0	11	6	4	2	4	5	4	10	17	1	3	0	0	0
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136	2	7	5	7	10	11	5	0	8	10	5	10	3	3	0	0	2
137	0	3	6	1	5	5	0	5	2	14	6	12	2	2	0	0	0
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139	4	7	5	9	6	5	2	2	5	8	6	12	5	3	0	0	4
140	2	7	3	9	6	5	1	2	6	12	3	11	2	6	2	0	2
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142	2	8	6	9	7	5	3	2	5	11	8	4	5	3	0	0	2
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145	0	8	7	11	5	4	1	2	1	10	5	6	6	0	2	0	0
146	1	6	2	10	9	6	6	2	5	10	10	12	2	3	0	2	1
147	5	6	4	3	3	7	5	0	4	4	8	10	8	5	1	0	5
148	3	12	10	11	7	5	0	0	3	9	11	13	4	4	0	3	3
149	0	5	4	5	8	9	0	5	3	5	11	11	5	1	0	0	0
150	2	6	0	9	2	5	3	3	8	10	8	13	7	0	2	0	2
151	2	5	4	11	10	10	6	5	3	8	11	11	3	2	2	0	2
152	3	12	6	9	8	6	5	2	0	11	10	10	3	0	0	0	3
153	4	5	7	7	6	6	3	0	4	8	0	14	3	5	4	1	4
154	2	7	8	8	11	5	6	0	3	8	10	12	3	5	1	0	2
155	4	12	4	8	10	8	3	7	5	12	8	10	3	7	0	0	4
156	2	7	7	10	9	6	0	0	6	10	6	15	6	6	0	0	2
157	3	7	3	10	6	9	6	0	5	12	4	10	3	5	0	0	3

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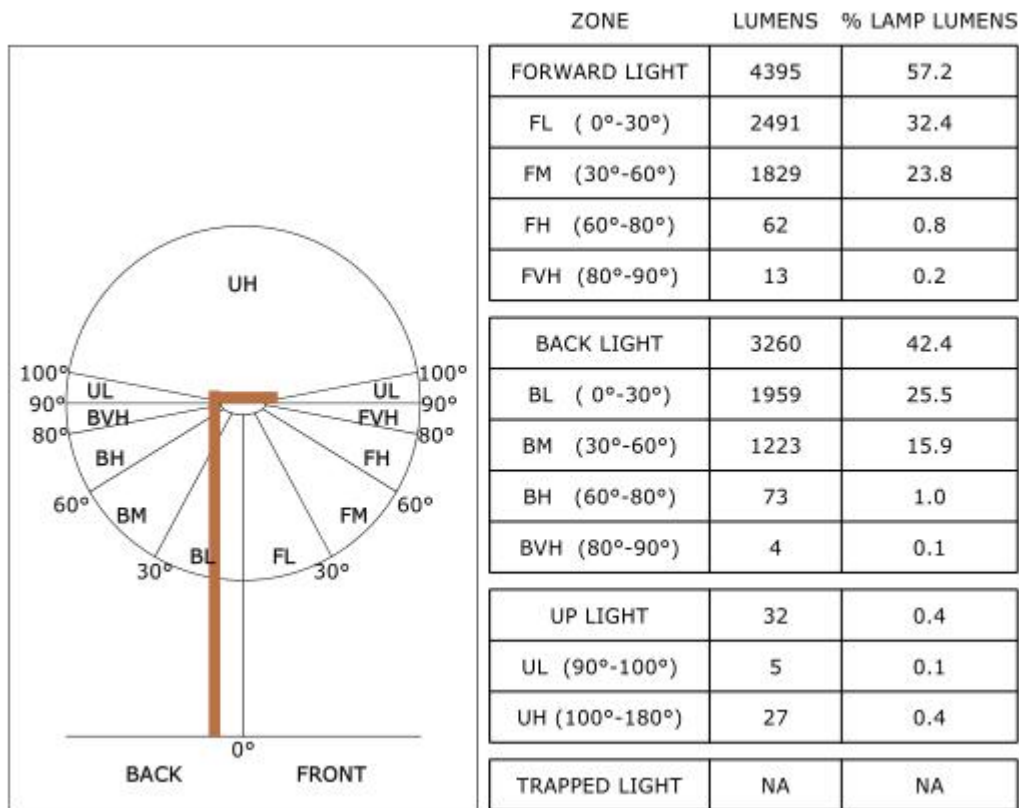
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158	1	8	3	10	7	3	5	0	0	10	7	15	2	6	0	0	1
159	2	5	2	7	12	5	0	2	1	14	8	10	2	7	6	1	2
160	1	10	4	11	8	4	5	3	2	13	9	10	9	2	3	1	1
161	0	7	7	11	7	4	0	5	3	8	8	10	7	3	0	3	0
162	3	12	2	10	9	7	1	3	7	5	8	14	5	5	2	0	3
163	0	6	9	8	8	10	4	0	4	11	8	9	7	2	4	0	0
164	2	6	6	8	7	6	2	0	0	9	10	10	3	7	2	1	2
165	5	10	10	6	8	4	0	0	8	11	8	10	7	1	7	0	5
166	4	8	3	9	7	1	6	2	0	7	10	11	5	8	0	1	4
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168	5	7	7	5	3	9	4	5	2	9	6	15	3	2	1	1	5
169	3	11	7	11	5	6	0	0	1	10	11	9	6	4	1	0	3
170	6	7	5	8	11	8	0	1	7	10	5	7	8	6	0	0	6
171	0	3	8	12	10	5	0	1	3	9	6	15	5	5	2	1	0
172	4	9	7	7	8	6	7	2	2	5	6	9	0	6	0	0	4
173	7	5	10	6	5	3	0	0	4	0	9	11	8	6	0	0	7
174	1	7	7	4	5	3	3	3	6	10	5	12	7	5	5	4	1
175	2	10	6	8	8	2	4	3	1	7	7	11	3	2	2	0	2
176	3	9	7	6	7	3	2	0	0	6	10	12	7	1	0	1	3
177	5	7	3	11	1	6	0	0	4	10	6	8	5	5	2	0	5
178	0	9	6	7	5	6	1	2	8	3	5	13	5	1	1	0	0
179	4	9	7	11	5	7	5	1	2	10	2	7	7	5	2	1	4
180	2	7	8	9	6	4	4	3	6	2	8	7	3	7	2	0	2



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2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2018-1-07	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	282404-016		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC181102	120.0	60	0.4876	58.31	0.9965	6.87
8E-C-PL2	277.0	60	0.2206	57.65	0.9435	15.47
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	71	R9	0
Frequency (Hz)	60	R2	76	R10	40
CCT (K)	5480	R3	77	R11	70
Duv	0.0028	R4	74	R12	38
Chromaticity (x, y)	x=0.3330 y=0.3470	R5	71	R13	71
Chromaticity (u', v')	u(u')=0.2050 v'(v')=0.4806	R6	66	R14	87
Color Rendering Index (CRI)	72.4	R7	82	R15	68
R9	0	R8	63	--	--

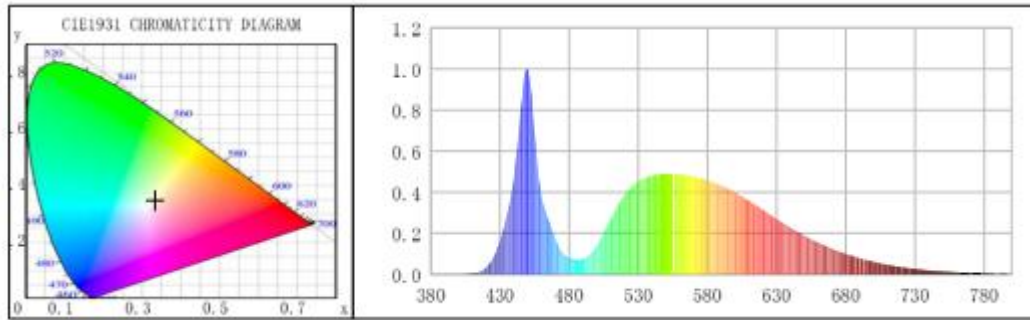
Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.3 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	7595	7458.18	5000-10000(-10%)
Luminous Efficacy (lm/W)	130.25	129.37	Premium: >= 115(-3%)
Most worst Luminous/Highest Watts	127.91		



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Spectral Power Distribution & Chromaticity Diagram





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Calculated Efficacy Data for family models (4500K and 5000K):

Model Number	Luminous Flux (lm)	Power (W)	Efficacy (lm/W)
282404-013	7412.2	58.24	127.27
282404-014	7457.9	58.26	128.02
282404-015	7503.6	58.28	128.76
282404-016	7595	58.31	130.25

Remark: This is a multiple listing test report, and the tested data is referred to report No.BL18010003-4 issued by Shenzhen Belling Efficiency Testing Laboratory (NVLAP accreditation no. 600102-0). The test data and report were reviewed, confirmed and accepted.

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3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric 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 *****