

## **LM-79-08 Test Report**

For

### **Beyond LED Technology**

**(Brand Name: Beyond LED)**

1939 Parker Ct Suite C  
Stone Mountain, GA 30087

### **Cut Off Wall Pack**

Model name(s): BLT-FWP01-120CT4A1-57

Test & Report By:

*Bill Luo*

Engineer: Bill Luo

Date: Dec.14,2017

Review By:

*Univ Xie*

Manager: Univ Xie

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 NVLAP, NIST, or any agency of the Federal Government.

**Laboratory: Standard-Tech Co. Ltd Testing Center**  
**NVLAP CODE: 201011-0**

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

**1.1 Product Information:**

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED	
Model Number	BLT-FWP01-120CT4A1-57	
SKU (if available)	150313	
Type of Luminaire (for integral lamps, list base type and lamp type)	Cut Off Wall Pack	
Rated Voltage / Frequency	100-277Vac, 50/60Hz	
Nominal Power	120W	
Rated Initial Lamp Lumen	--	
Declared CCT	5700K	
LED Manufacturer	Seoul Semiconductor Co., LTD	
LED Model	SAWxC22B-xx	
Sample Number	GZE1712011-F1(4000K), F2(5700K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

**Photo**



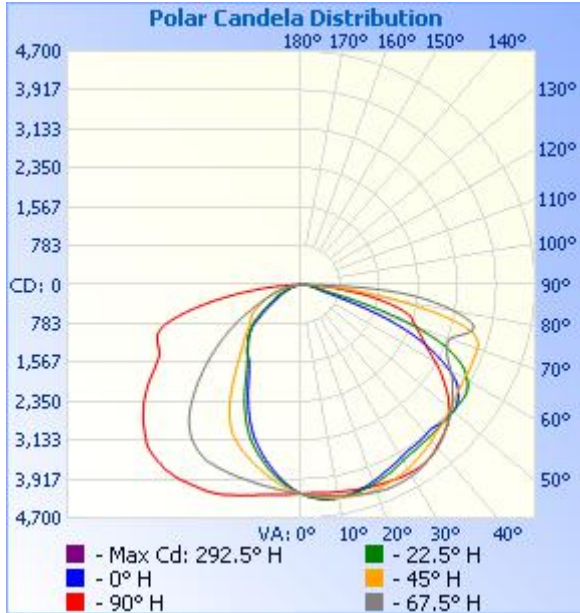
**1.2 Test Specifications:**

Date of Receipt	Dec.05,2017
Date of Test	Dec.12,2017
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	QD25

**1.3 Test Methods**

<p><b>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</b>                  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.</p>
<p><b>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</b>                  Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °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.</p>
<p><b>3) Electrical Measurements:</b>                  Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25 °C ± 1 °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.</p>

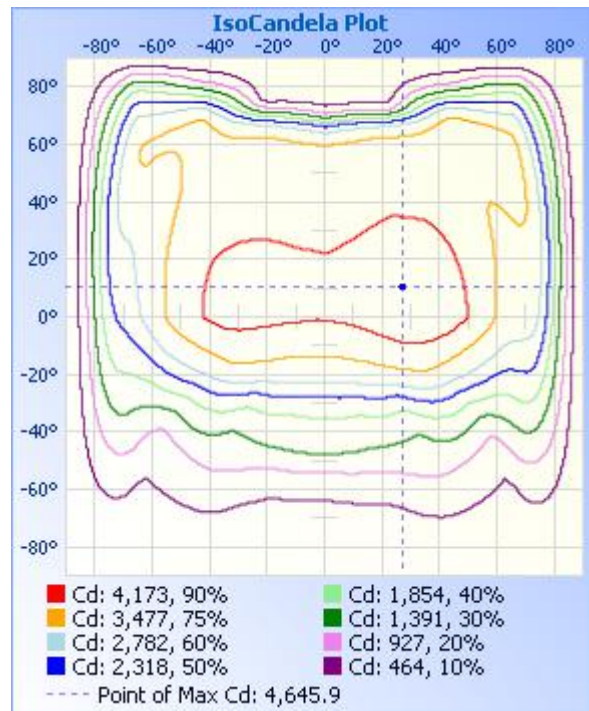
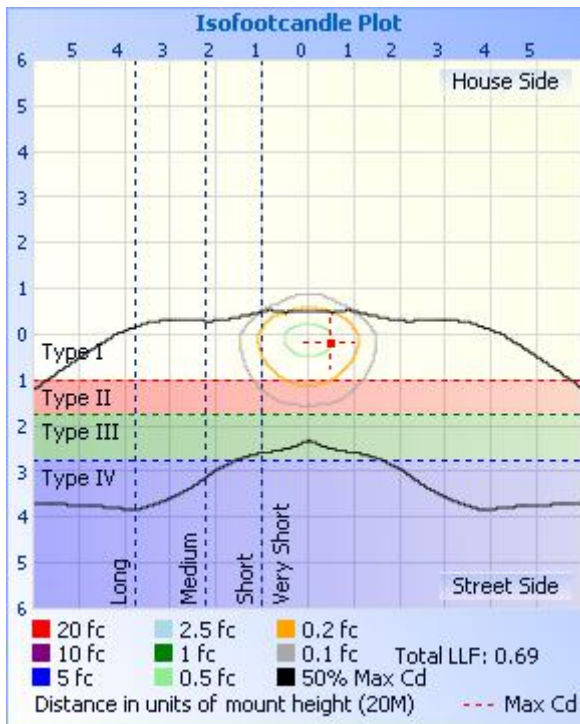
**Photometric Data**



**Illuminance at a Distance**

Distance	Center Beam fc	Beam Width
3.33M	35.2 fc	7.52 M 27.59 M
6.67M	8.80 fc	15.03 M 55.15 M
10.00M	3.91 fc	22.56 M 82.74 M
13.33M	2.20 fc	30.07 M 110.30 M
16.67M	1.41 fc	37.59 M 137.89 M
20.00M	0.98 fc	45.11 M 165.48 M

■ Vert. Spread: 96.9°  
■ Horiz. Spread: 152.8°



**Laboratory: Standard-Tech Co. Ltd Testing Center**  
**NVLAP CODE: 201011-0**

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Table--1 UNIT: cd

C (DEG) \ γ (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	4209	4209	4209	4209	4209	4209	4209	4209	4209	4209	4209	4209	4209	4209	4209	4209
5	4246	4289	4327	4338	4329	4317	4291	4261	4209	4135	4050	4005	3980	4022	4082	4159
10	4292	4378	4387	4384	4359	4349	4359	4311	4237	4070	3857	3741	3684	3762	3904	4115
15	4394	4482	4418	4373	4310	4330	4390	4373	4271	3988	3645	3442	3355	3465	3716	4083
20	4506	4584	4417	4309	4220	4275	4397	4439	4314	3912	3430	3099	2972	3122	3516	4064
25	4575	4628	4415	4239	4114	4191	4356	4462	4343	3846	3156	2675	2525	2685	3277	4042
30	4599	4637	4381	4175	4017	4090	4290	4448	4377	3747	2742	2207	2096	2226	2878	3980
35	4613	4579	4332	4113	3961	4036	4189	4375	4366	3536	2270	1871	1837	1884	2382	3818
40	4561	4476	4254	4090	3923	4005	4092	4275	4254	3174	1845	1685	1659	1687	1931	3503
45	4410	4328	4167	4067	3950	3982	3992	4108	4110	2687	1567	1489	1492	1488	1623	3015
50	4142	4122	4102	4075	3985	3980	3903	3936	3885	2191	1337	1276	1239	1279	1394	2482
55	3812	3889	4062	4071	3859	3985	3828	3714	3534	1724	1189	902	813	969	1239	1947
60	3402	3654	4020	3955	3443	3863	3786	3472	3117	1277	1028	615	559	678	1104	1451
65	3149	3459	4038	3438	2627	3421	3785	3234	2733	852	804	448	406	518	874	991
70	3079	3725	4035	2283	1288	2413	3770	3179	2457	602	613	271	249	315	695	664
75	2649	4043	3632	548	372	664	3494	3566	2187	457	412	204	174	228	458	461
80	1669	3322	2117	263	226	266	2181	3161	1451	259	228	115	88.0	129	237	256
85	654	2022	774	161	126	163	875	2084	582	109	84.2	39.9	29.9	43.2	88.8	107
90	13.9	48.1	50.9	42.5	35.3	42.2	60.2	81.0	13.1	7.55	5.01	1.53	1.07	1.78	5.67	8.24
95	7.36	7.39	5.73	2.66	2.15	2.25	4.96	7.92	7.45	8.32	6.62	2.35	1.53	2.65	6.84	8.35
100	7.04	4.22	3.54	1.79	1.53	1.68	3.11	4.94	7.70	9.33	7.98	4.34	2.71	4.59	7.70	8.70
105	8.00	3.55	2.78	1.68	1.43	1.58	2.75	4.22	4.75	10.1	9.10	6.59	4.55	6.77	9.08	9.26
110	9.27	3.95	2.73	1.63	1.38	1.68	2.75	4.68	8.62	10.1	10.4	7.86	6.48	7.99	10.0	9.26
115	10.2	4.97	2.88	2.04	1.78	2.14	3.11	5.75	9.02	10.1	10.7	8.77	7.91	8.86	10.0	9.41
120	11.1	6.28	3.38	2.70	2.45	2.70	3.52	6.92	9.73	10.1	10.4	9.79	9.03	9.82	9.84	9.62
125	11.8	7.30	3.99	3.41	3.11	3.26	4.33	8.09	10.2	10.2	10.1	10.1	9.38	9.82	9.84	9.72
130	12.2	8.16	4.80	3.92	3.57	3.92	4.89	8.85	10.8	10.6	10.4	10.1	9.64	10.1	9.94	10.1
135	12.3	9.02	5.75	4.83	4.07	4.37	5.91	9.67	11.8	11.2	10.9	10.3	10.1	10.2	10.4	10.7
140	12.8	9.63	6.86	5.65	4.43	5.29	7.14	10.2	12.5	11.7	11.6	10.7	10.2	10.4	10.8	11.1
145	12.9	9.94	7.73	6.41	5.29	6.35	8.05	10.5	12.9	12.5	12.3	11.2	10.6	10.8	11.3	11.5
150	12.9	10.7	8.94	7.69	6.52	7.52	9.17	11.3	13.2	12.7	12.7	12.3	11.8	11.9	12.4	12.2
155	12.9	11.4	9.70	8.92	7.69	8.80	10.0	12.1	12.9	12.9	12.3	12.4	12.0	11.7	12.2	12.1
160	12.8	11.5	10.5	9.84	8.77	9.61	10.5	12.0	11.7	11.7	11.5	11.5	11.7	11.4	11.7	11.6
165	12.7	12.0	11.3	10.9	9.79	10.5	11.4	12.2	11.7	11.7	11.5	11.6	11.7	11.4	11.7	11.8
170	14.4	13.9	13.4	12.7	11.4	12.1	13.3	14.0	15.1	15.0	14.8	14.7	14.1	13.1	13.9	14.4
175	15.1	15.2	14.6	13.8	12.5	13.1	14.4	15.1	15.4	15.4	16.0	15.8	15.0	13.6	14.1	15.4
180	14.9	15.5	15.0	14.2	12.8	13.3	14.6	15.1	14.9	15.1	15.4	15.2	14.2	12.8	13.4	14.6

Laboratory: Standard-Tech Co. Ltd Testing Center  
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

**BUG Rating: B3-U2-G3****IESNA Luminaire Flux Distribution Table:**

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1837.8	12.5
FM - Front-Medium(30-60)	4681.6	31.9
FH - Front-High(60-80)	2916.3	19.9
FVH - Front-Very High(80-90)	457.7	3.1
<b>Total Forward Light</b>	<b>9914.2</b>	<b>67.6</b>

BL - Back-Low(0-30)	1482.2	10.1
BM - Back-Medium(30-60)	2392.4	16.3
BH - Back-High(60-80)	769.56	5.2
BVH - Back-Very High(80-90)	79.909	0.5
<b>Total Back Light</b>	<b>4753.4</b>	<b>32.4</b>

UL - Uplight-Low(90-100)	7.6024	0.1
UH - Uplight-High(100-180)	42.602	0.3
<b>Total Up Light</b>	<b>50.205</b>	<b>0.3</b>

<b>BUG(Back,Up,Glare) Rating</b>	<b>B3-U2-G3</b>
----------------------------------	-----------------

Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	4724	29.431	4753.4
Street Side	9893.4	20.774	9914.2

**2.2 Electrical, Photometric and Chromaticity Measurements**

*(Refer to Work Instruction QD25)*

<b>Test date</b>	2017-12-12	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	BLT-FWP01-120CT4A1-57		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE171201	120.0	60	1.0156	121.7	0.9986	3.64
1-F2	277.0	60	0.4407	118.1	0.9674	10.39
<b>DLC Pass Criteria</b>					>= 0.9(-3%)	<= 20(+5)

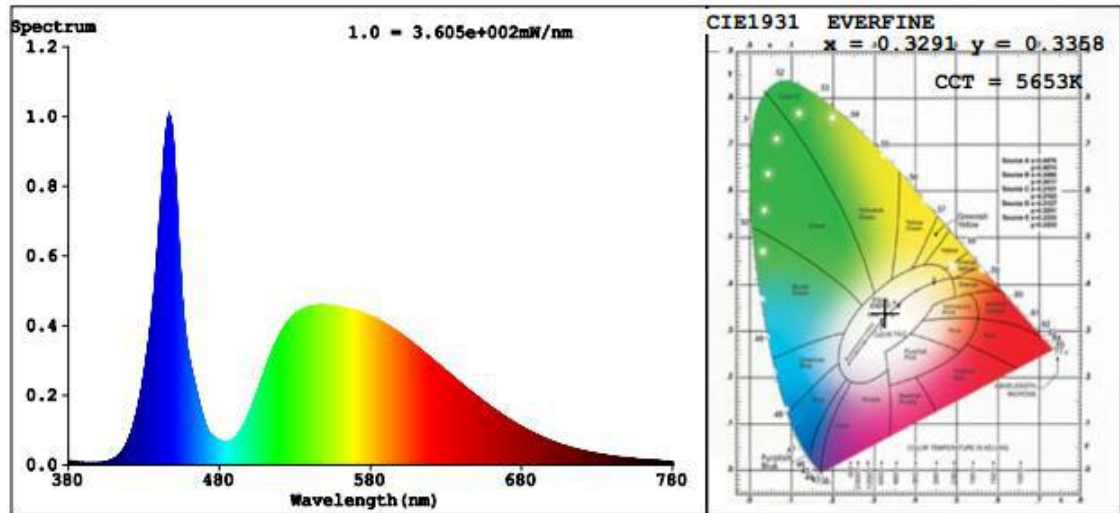
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	75	R9	0
Frequency (Hz)	60	R2	75	R10	40
CCT (K)	5653	R3	73	R11	75
Duv	-0.0012	R4	76	R12	43
Chromaticity (x, y)	x=0.3291 y=0.3358	R5	75	R13	73
Chromaticity (u', v')	u'=0.2066 v'=0.4743	R6	66	R14	84
Color Rendering Index (CRI)	73.5	R7	79	R15	72
R9	0	R8	68	--	--

**Photometric Measurement – Sphere-Spectroradiometer Method:**

Parameter	Result		DLC V4.2 Pass Criteria	
Test Voltage (V)	120.0	277.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	14460	14253	>=10000(-10%)	
Luminous Efficacy (lm/W)	118.82	120.69	Standard: >=	Premium: >=
Most Worst Luminous/Highest Watts	117.12		100(-3%)	120(-3%)

**Spectral Power Distribution & Chromaticity Diagram**



**Laboratory: Standard-Tech Co. Ltd Testing Center**  
**NVLAP CODE: 201011-0**

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>



**2.3 Performance Assessment:**

Model name	CCT(K)	Total Luminous (lm)	Power (W)	Luminous Efficacy (lm/W)
BLT-FWP01-120CT4A1-57	5700K	14460	121.7	118.82

\*1: This value is calculated and the calculation formula is as below:

$$14598=(14460-14667)/3+14667$$

$$14529=(14460-14667)/3+14598$$

\*2: This value is calculated and the calculation formula is as below:

$$121.0=(120.2+121.7)/2$$

\*3: This value is calculated and the calculation formula is as below:

$$120.64=14598/121.0$$

$$120.07=14529/121.0$$

**3. Test Equipment**

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-331	2 meter Integrating Sphere	2017-07-01	2018-06-30
ST-R-327	Spectral analysis system HAAS-2000	2017-07-01	2018-06-30
D204	Standard Lamp	2017-07-12	2018-07-11
PF2010	Power Meter for Integrating Sphere	2017-07-01	2018-06-30
GO-R5000	Goniophotometer system	2017-07-01	2018-06-30
D908S	Standard Lamp	2017-07-12	2018-07-11
PF210	Power Meter for Goniophotometer	2017-07-07	2018-07-06

Expand Uncertainty:  
Photometric Measurement (Sphere):2.04%, k=2  
Chromaticity Measurement(Sphere):28.8K, k=2  
Photometric Measurement(Goniophotometer):2.36%, k=2

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