

LM-79-08 Test Report

For

Beyond LED Technology

(Brand Name: Beyond LED)

1939 Parker Court Suite C
Stone Mountain, GA 30087

Rotatable Wall Pack

Model name(s): BLT-RWP02-40WAT-1NA1-57K

Representative (Tested) Model: SNC-RWP02-40WAT1NA1-57K

Test & Report By:

Bill Luo

Engineer: Bill Luo

Date: Jul.25,2017

Review By:

Tommy Liang

Manager: Tommy Liang

Note: 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

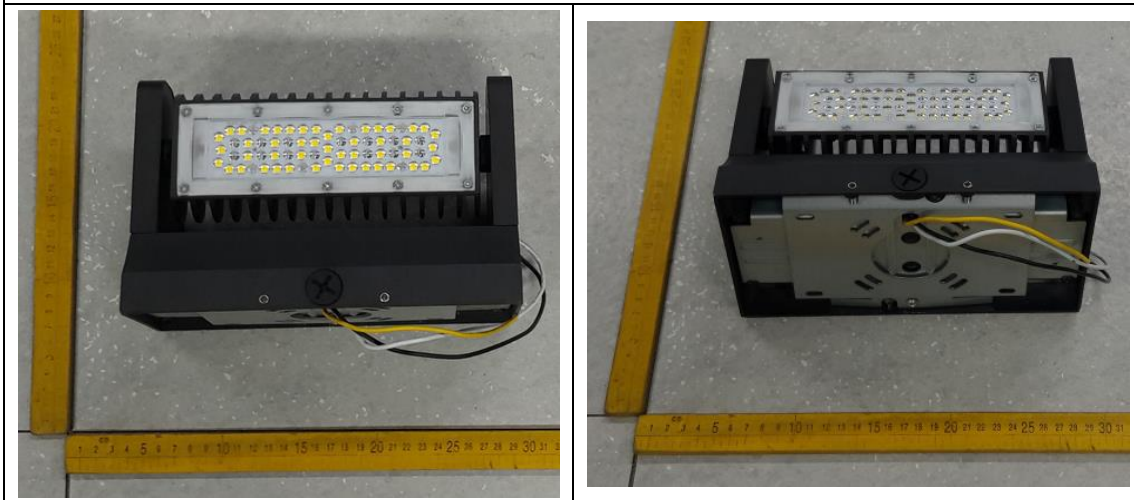
Fax: 8620-32290422

<http://www.standard-tech.com>

1.1 Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED	
Model Number	BLT-RWP02-40WAT-1NA1-57K	
SKU (if available)	150598	
Type of Luminaire (for integral lamps, list base type and lamp type)	Rotatable Wall Pack	
Rated Voltage / Frequency	100 -277Vac, 50/60 Hz	
Nominal Power	40W	
Rated Initial Lamp Lumen	--	
Declared CCT	5700K	
LED Manufacturer	PHILIPS LUMILEDS	
LED Model	L130-xyy003000W21	
Sample Number	GZE1707005-B1(4000K),B2(5700K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Photo



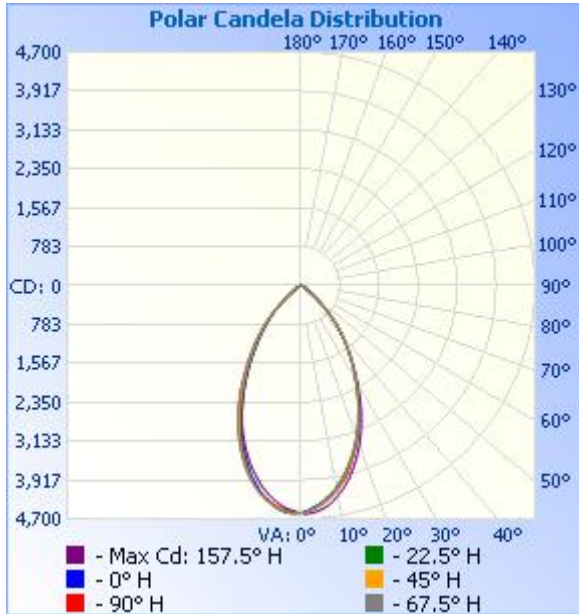
1.2 Test Specifications:

Date of Receipt	Jul.07,2017
Date of Test	Jul.08,2017
Test item	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	QD25

1.3 Test Methods

<p>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.</p>
<p>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 °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>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 °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>

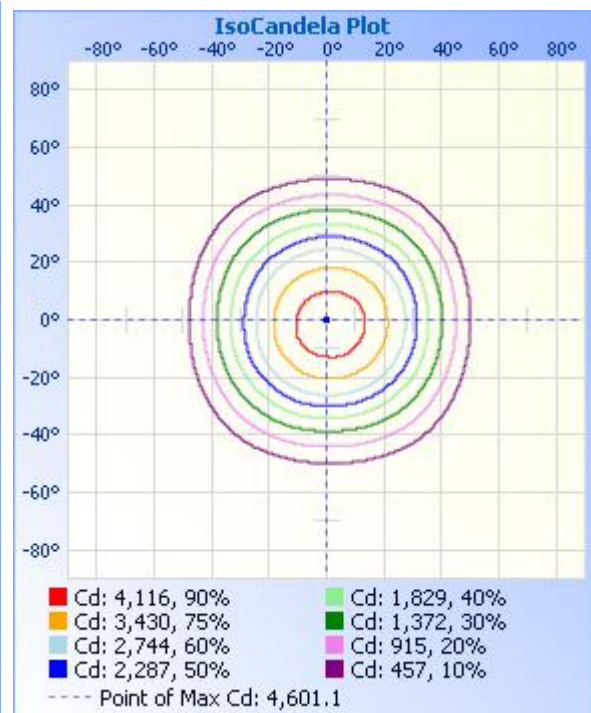
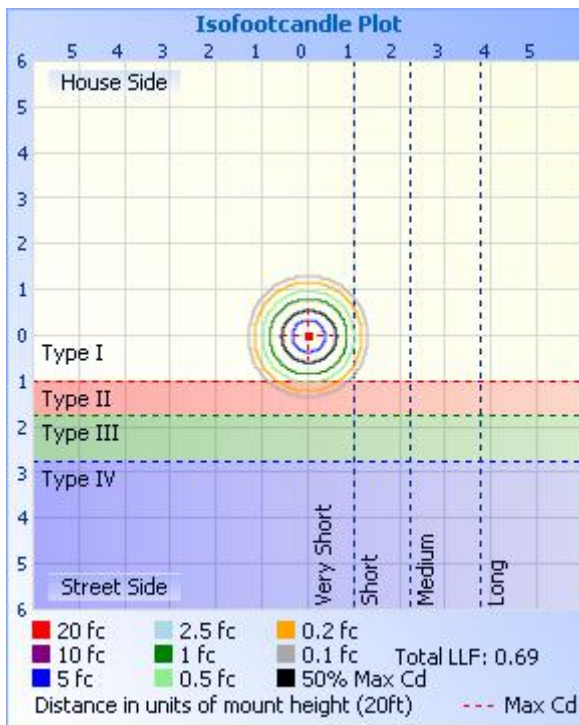
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	15.8 fc	19.2 ft	19.7 ft
34.0ft	3.96 fc	38.5 ft	39.5 ft
51.0ft	1.76 fc	57.7 ft	59.2 ft
68.0ft	0.99 fc	76.9 ft	78.9 ft
85.0ft	0.63 fc	96.1 ft	98.7 ft
102.0ft	0.44 fc	115.4 ft	118.4 ft

■ Vert. Spread: 59.0°
■ Horiz. Spread: 60.3°



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Table--1

UNIT: cd

C (DEG) \ y (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	4573	4573	4573	4573	4573	4573	4573	4573	4573	4573	4573	4573	4573	4573	4573	4573
5	4501	4490	4457	4449	4407	4401	4423	4434	4437	4487	4509	4529	4542	4544	4513	4531
10	4307	4291	4220	4180	4136	4112	4143	4154	4175	4234	4260	4285	4309	4322	4333	4328
15	3977	3950	3873	3805	3737	3709	3739	3752	3790	3847	3881	3905	3918	3960	3971	3999
20	3520	3510	3425	3347	3269	3240	3258	3271	3291	3352	3373	3416	3414	3465	3499	3537
25	2982	2971	2888	2813	2758	2712	2721	2735	2732	2790	2799	2856	2839	2880	2938	2988
30	2421	2402	2334	2265	2224	2189	2194	2198	2196	2242	2227	2261	2234	2279	2332	2403
35	1850	1848	1813	1744	1709	1702	1708	1712	1702	1728	1706	1716	1683	1727	1785	1833
40	1363	1367	1339	1284	1248	1246	1258	1252	1235	1242	1241	1238	1211	1257	1316	1347
45	882	893	891	849	822	805	804	768	747	764	796	803	801	834	880	872
50	421	440	457	437	422	402	387	355	327	350	391	414	421	445	460	437
55	201	199	197	191	185	184	184	176	175	172	181	191	186	203	211	203
60	150	146	143	128	123	126	140	131	137	127	132	125	123	128	150	145
65	122	113	119	101	96.8	99.5	119	103	117	100	111	98.0	99.3	99.6	117	109
70	96.2	85.5	86.5	77.0	78.4	75.5	85.8	78.1	91.2	75.8	79.5	54.0	46.4	58.4	86.2	82.5
75	68.7	60.5	57.4	52.2	51.9	50.1	56.1	54.7	63.3	53.2	35.7	2.70	0.46	5.03	44.8	58.2
80	38.2	37.3	32.0	29.0	27.9	27.7	29.7	32.1	36.3	31.4	2.12	0.00	0.00	0.00	4.20	36.0
85	22.2	14.2	11.7	11.2	8.85	9.70	9.29	10.2	19.4	6.03	0.00	0.00	0.00	0.00	0.00	11.0
90	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.40	0.35	0.35	0.51	0.41	0.46	0.30	0.46	0.56	0.41	0.36	0.52	0.56	0.31	0.16	0.21
135	1.40	1.22	0.66	1.48	1.22	1.37	1.11	1.37	1.51	1.32	1.07	1.43	1.33	1.22	0.97	1.07
140	2.61	2.18	1.77	2.60	2.19	2.44	1.98	2.33	2.62	2.29	1.88	2.50	2.35	2.09	1.78	1.83
145	3.47	3.04	2.84	3.62	2.80	3.61	2.84	3.24	3.57	3.50	2.74	3.37	3.31	3.21	2.60	2.70
150	4.42	3.70	4.41	4.74	4.74	4.83	4.06	4.46	4.88	4.52	3.96	4.44	4.33	4.13	4.27	3.86
155	5.18	4.81	6.24	5.81	5.91	5.85	5.98	5.59	5.53	5.73	5.38	5.72	5.20	4.99	5.44	5.03
160	5.33	5.92	7.30	6.68	6.88	6.56	7.05	6.70	5.59	5.78	5.89	6.02	6.12	5.55	6.09	5.44
165	6.23	6.63	7.96	7.19	7.08	7.32	7.66	7.11	6.74	6.19	6.54	6.84	6.73	6.57	6.30	6.30
170	7.14	7.50	9.28	8.41	8.25	8.65	9.18	7.62	7.84	7.70	7.97	8.98	8.66	8.45	8.34	8.48
175	7.89	8.20	10.1	9.18	10.2	9.36	9.85	8.08	8.45	8.36	8.52	9.69	9.53	10.6	9.24	9.50
180	7.69	8.36	9.43	8.88	9.83	9.22	9.44	8.13	7.84	8.01	8.32	9.44	8.97	9.67	9.04	9.30

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BUG Rating: B3-U1-G0

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1386	28.4
FM - Front-Medium(30-60)	968.67	19.8
FH - Front-High(60-80)	83.879	1.7
FVH - Front-Very High(80-90)	7.1282	0.1
Total Forward Light	2450	50.1

BL - Back-Low(0-30)	1407.5	28.8
BM - Back-Medium(30-60)	950.57	19.5
BH - Back-High(60-80)	71.359	1.5
BVH - Back-Very High(80-90)	2.8273	0.1
Total Back Light	2436.3	49.9

UL - Uplight-Low(90-100)	0.00018522	0.0
UH - Uplight-High(100-180)	8.2741	0.2
Total Up Light	8.2743	0.2

BUG(Back,Up,Glare) Rating	B3-U1-G0
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	2432.2	4.0378	2436.3
Street Side	2445.7	4.2365	2450

2.2 Electrical, Photometric and Chromaticity Measurements
(Refer to Work Instruction QD25)

Test date	2017-07-08	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-RWP02-40WAT-1NA1-57K		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE170700	120.0	60	0.3231	38.47	0.9923	7.43
5-B2	277.0	60	0.1613	40.39	0.9042	15.76
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

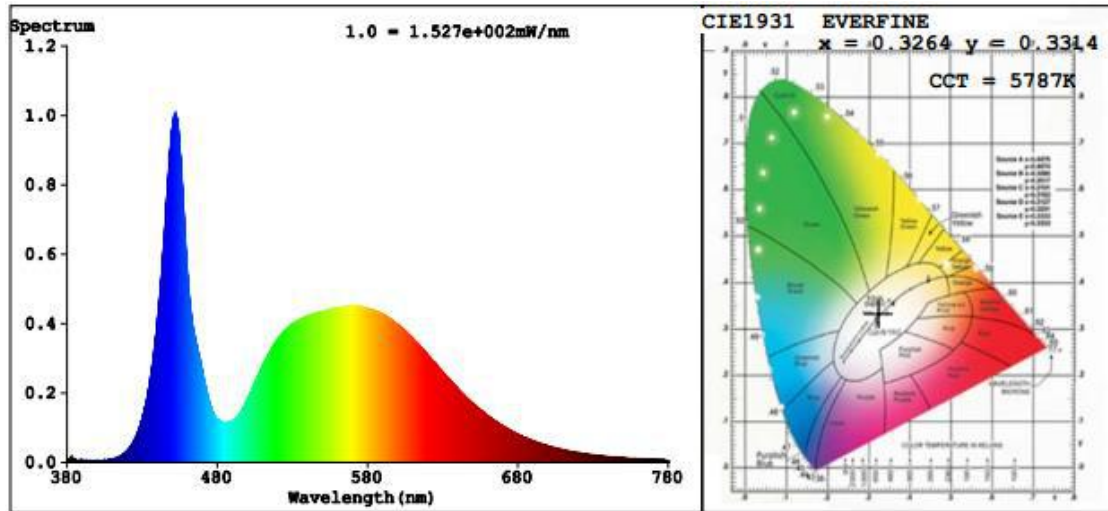
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	77	R9	0
Frequency (Hz)	60	R2	82	R10	55
CCT (K)	5787	R3	83	R11	75
Duv	-0.0023	R4	78	R12	47
Chromaticity (x, y)	x=0.3264 y=0.3314	R5	77	R13	78
Chromaticity (u', v')	x=0.3264 y=0.3314	R6	74	R14	90
Color Rendering Index (CRI)	77.7	R7	85	R15	74
R9	0	R8	66	--	--

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)	4892	5016	>=1000(-10%)	
Luminous Efficacy (lm/W)	127.16	124.19	Standard: >=	Premium: >=
Most worst Luminous/Highest Watts	121.12		90(-3%)	110(-3%)

Spectral Power Distribution & Chromaticity Diagram



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2.3 Performance Assessment:

Model name	CCT(K)	Total Luminous (lm)	Power (W)	Luminous Efficacy (lm/W)
BLT-RWP02-40WAT-1NA1-57K	5700K	4892	38.47	127.16

- *1: This value is calculated and the calculation formula is as below:
 $4890=(4892-4886.2)/3+4888$
- *2: This value is calculated and the calculation formula is as below:
 $38.66=(38.47+38.85)/2$
- *3: This value is calculated and the calculation formula is as below:
 $126.49=4890/38.66$

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 *******

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