



NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

BEYOND LED TECHNOLOGY

(Brand Name: BeyondLED)

1939 Parker Ct Suite C
Stone Mountain, GA 30047

HD FPB Series - High Definition Outdoor Corn Bulb Decorative Luminaires (Type B)

Model name(s): BLTCLW30WE3957K

Representative (Tested) Model: SNC-CLW-30WB1E39

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

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Sept.01,2016

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.


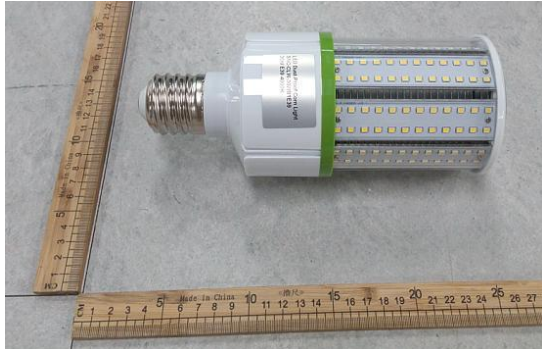
Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

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	BLTCLW30WE3957K	
SKU (if available)	108712	
Type of Luminaire (for integral lamps, list base type and lamp type)	HD FPB Series - High Definition Outdoor Corn Bulb Decorative Luminaires (Type B)	
Rated Voltage / Frequency	100-277Vac,60 Hz	
Nominal Power	30W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K,4500K,5000K,5700K	
LED Manufacturer	Shenzhen WeiXingXin Electronics Technology Co.,Ltd.	
LED Model	2835 0.5W White SMD LED	
Sample Number	GZE160842-A1(4000K),A2(5700K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
Photo		
		
		

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1.2 Test Specifications:

Date of Receipt	Aug.26,2016
Date of Test	Aug.28,2016
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

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 <i>(Refer to Work Instruction QD25)</i>

Test date	2016-08-28	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLTCLW30WE3957K		

Electrical Measurement in LEXALITE LINDY MODEL 424:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160842-	120.0	60	0.2586	30.52	0.9835	12.85
A1	277.0	60	0.1193	29.79	0.9015	18.01
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

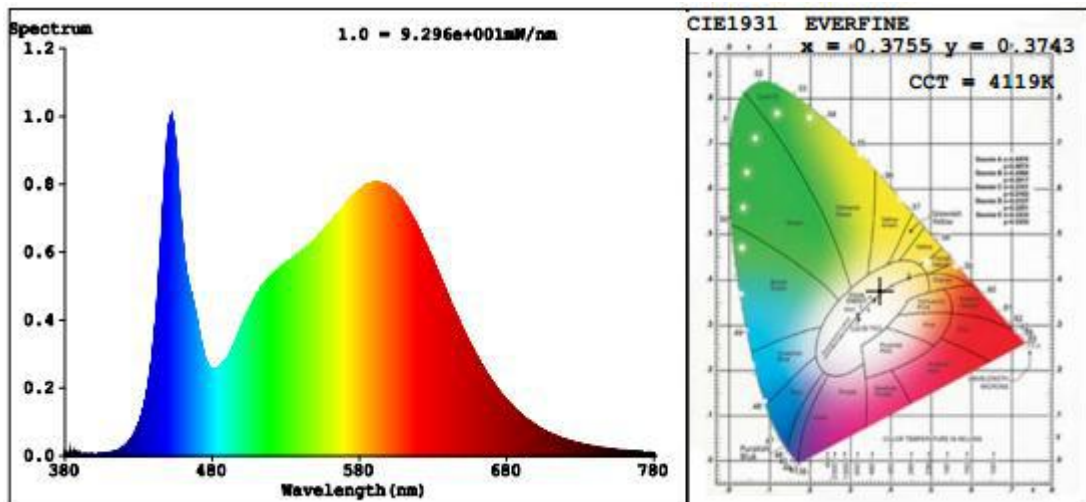
Chromaticity Measurement - Sphere-Spectroradiometer Method in LEXALITE LINDY MODEL 424:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	1
Frequency (Hz)	60	R2	90	R10	75
CCT (K)	4119	R3	95	R11	78
Duv	0.0003	R4	80	R12	59
Chromaticity (x, y)	x=0.3755 y=0.3743	R5	80	R13	83
Chromaticity (u', v')	u'=0.2228 v'=0.4998	R6	85	R14	98
Color Rendering Index (CRI)	82.1	R7	85	R15	74
R9	1	R8	62	--	--

Photometric Measurement – Goniophotometer Method in LEXALITE LINDY MODEL 424:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	3372.8	3331.3	In luminaire: 1000-5000(±10%)
Luminous Efficacy (lm/W)	110.51	111.83	In luminaire: >=90(-3%)
Zonal lumens in the 0-90° zone (%)	86	--	>= 65(-3)
Beam Angle (°)	185.8	--	--
Center Beam Candle Power (cd)	158	--	--

Spectral Power Distribution & Chromaticity Diagram

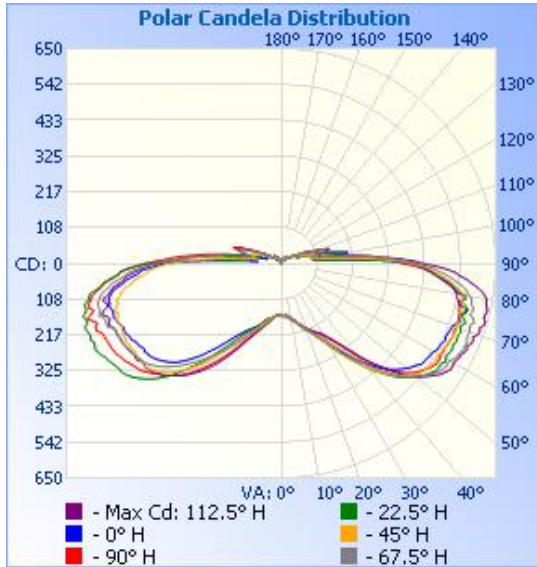


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	181.3	5.4%
0-40	391.8	11.6%
0-60	1,227.3	36.4%
60-90	1,672.7	49.6%
70-100	1,349.4	40%
90-120	406.8	12.1%
0-90	2,900.0	86%
90-180	472.9	14%
0-180	3,372.9	100%

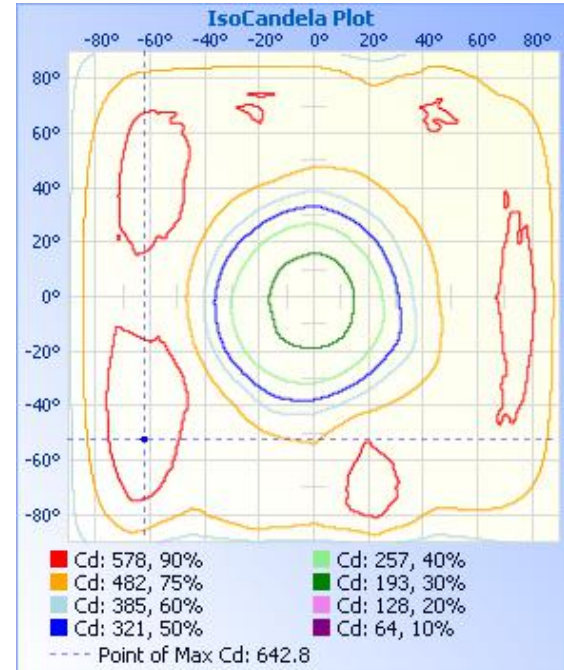
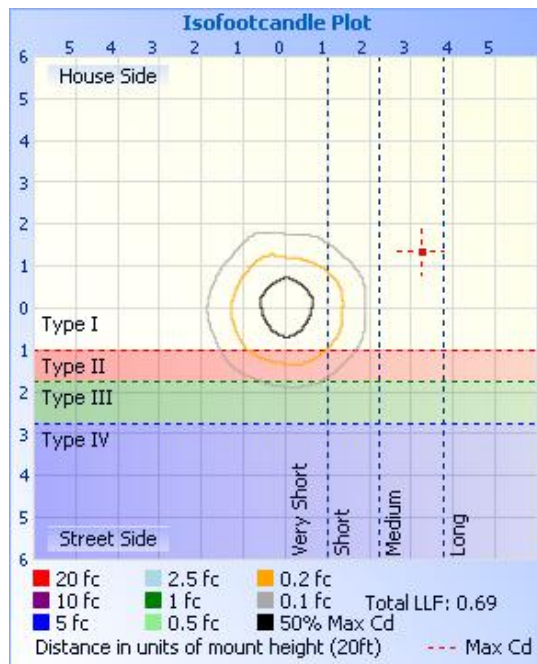
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	15.5	0.5%	90-100	231.8	6.9%
10-20	53.9	1.6%	100-110	109.2	3.2%
20-30	111.9	3.3%	110-120	65.8	2%
30-40	210.5	6.2%	120-130	31.0	0.9%
40-50	355.0	10.5%	130-140	19.2	0.6%
50-60	480.5	14.2%	140-150	10.8	0.3%
60-70	555.2	16.5%	150-160	4.1	0.1%
70-80	596.2	17.7%	160-170	1.0	0%
80-90	521.3	15.5%	170-180	0.1	0%

Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width
17.0ft	0.55 fc	
34.0ft	0.14 fc	
51.0ft	0.06 fc	
68.0ft	0.03 fc	
85.0ft	0.02 fc	
102.0ft	0.02 fc	



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Table--1 UNIT: cd

Y (DEG) \ C (DEG)	C (DEG)															
	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158
5	157	157	158	157	159	160	161	158	157	161	158	160	159	157	156	158
10	175	170	172	172	166	169	169	169	173	170	169	168	168	167	166	175
15	196	195	194	189	186	190	187	188	185	186	183	180	178	181	185	193
20	221	224	224	216	211	213	209	209	207	205	195	196	200	202	209	214
25	258	267	265	251	239	238	238	235	229	226	216	216	219	226	237	243
30	313	326	317	301	283	283	283	269	252	246	242	241	246	264	280	283
35	374	387	372	360	335	345	348	325	297	289	285	280	292	324	345	332
40	434	439	427	414	394	415	414	398	373	365	364	336	356	400	409	385
45	479	481	479	462	453	483	477	473	450	454	453	396	418	482	465	439
50	516	510	527	494	493	532	525	533	515	535	511	460	461	544	505	485
55	542	516	551	507	525	569	547	575	550	586	532	511	488	582	518	513
60	563	528	561	518	534	577	552	589	557	603	536	540	497	597	520	531
65	576	538	570	520	549	577	562	610	561	620	535	562	512	621	524	537
70	596	553	585	507	553	578	565	607	566	633	528	569	525	618	524	559
75	596	558	596	508	579	574	558	592	558	635	510	568	532	621	518	569
80	584	529	566	469	559	567	560	583	541	631	486	554	522	591	490	555
85	512	472	505	404	479	488	496	519	480	564	429	487	450	516	420	481
90	411	381	415	343	407	406	399	405	367	429	324	364	359	408	340	381
95	274	242	198	93.4	108	111	187	251	247	266	136	82.5	71.6	97.5	169	240
100	143	124	106	146	203	181	95.6	103	123	116	102	120	137	156	76.0	122
105	116	113	99.7	81.6	118	108	97.8	123	128	142	85.1	61.8	63.9	75.3	86.9	116
110	145	132	88.8	52.6	55.6	54.4	70.8	119	114	119	68.3	56.7	44.6	66.0	84.3	117
115	89.1	85.0	69.2	55.9	55.6	49.2	59.1	80.1	77.1	82.7	55.0	55.7	48.5	61.6	61.8	79.5
120	58.2	58.3	54.9	49.4	51.3	47.3	43.7	47.5	45.3	42.4	35.8	38.7	38.6	43.9	40.5	54.0
125	34.8	34.1	38.9	35.9	36.0	35.0	33.3	29.5	32.6	29.0	31.6	28.7	30.4	30.8	30.4	30.5
130	28.0	26.9	31.6	27.1	30.2	29.0	29.5	24.8	27.3	25.5	28.3	24.3	26.6	25.6	26.9	26.4
135	29.5	28.1	28.0	24.1	18.2	23.8	25.1	27.0	28.2	28.3	24.3	21.5	16.1	20.9	23.1	28.2
140	30.1	28.1	22.6	18.6	17.8	18.4	20.4	27.4	28.4	27.2	20.5	16.7	14.7	15.4	18.3	27.7
145	25.2	24.5	17.0	12.3	11.8	11.3	15.4	23.7	24.0	23.5	16.7	10.6	7.51	8.62	13.6	23.2
150	18.8	18.4	12.6	8.85	4.63	8.58	12.7	18.1	18.1	17.9	13.5	8.38	3.93	5.58	10.5	16.7
155	12.1	12.0	9.01	6.04	4.24	6.30	9.53	12.0	12.0	12.2	9.86	6.82	3.92	3.52	7.08	10.6
160	7.32	6.90	5.74	4.31	3.93	4.10	6.24	7.18	6.92	7.33	5.95	4.85	2.98	2.83	3.46	5.66
165	3.97	4.14	3.29	2.90	2.98	3.30	3.16	3.95	4.19	3.82	3.13	2.27	1.32	1.42	1.73	2.04
170	2.80	2.66	2.04	1.57	1.81	2.13	2.37	3.07	2.26	2.19	1.80	1.02	0.39	0.16	0.54	0.94
175	1.01	1.48	1.33	1.18	1.26	1.42	1.66	1.73	1.17	1.02	1.02	1.02	0.94	0.64	0.63	0.87
180	1.01	1.09	0.95	1.33	1.33	1.57	0.81	0.71	1.09	1.02	1.18	1.18	1.10	1.42	1.34	1.03

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2.2 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>

Test date	2016-08-28	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLTCLW30WE3957K		

Electrical Measurement in LEXALITE LINDY MODEL 424:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160842-	120.0	60	0.2635	31.04	0.9817	13.46
A2	277.0	60	0.1210	30.18	0.9005	18.81
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

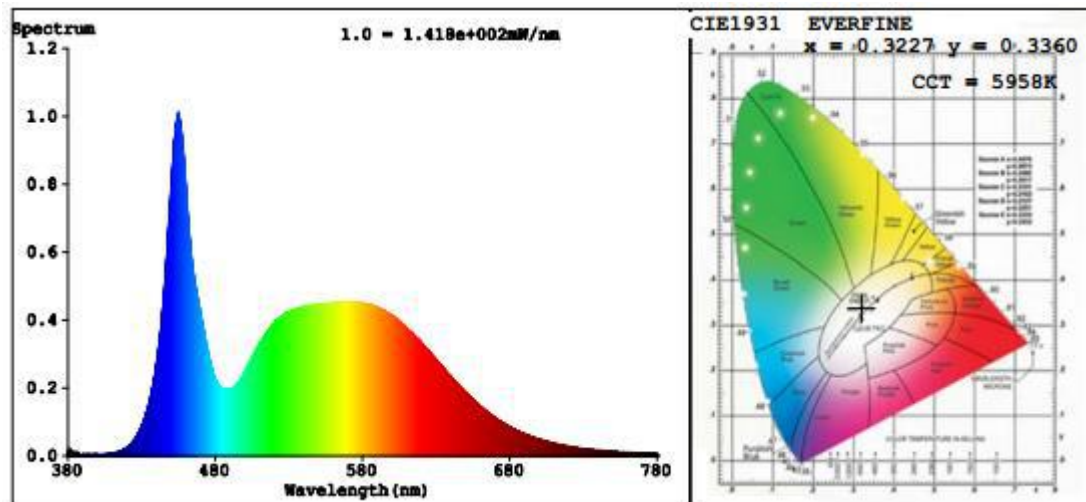
Chromaticity Measurement - Sphere-Spectroradiometer Method in LEXALITE LINDY MODEL 424:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	9
Frequency (Hz)	60	R2	89	R10	71
CCT (K)	5958	R3	91	R11	78
Duv	0.0019	R4	80	R12	53
Chromaticity (x, y)	x=0.3227 y=0.3360	R5	81	R13	84
Chromaticity (u', v')	u'=0.2021 v'=0.4735	R6	82	R14	95
Color Rendering Index (CRI)	82.6	R7	87	R15	77
R9	9	R8	69	--	--

Photometric Measurement – Sphere-Spectroradiometer Method in LEXALITE LINDY MODEL 424:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	3530	3455	In luminaire: 1000-5000(±10%)
Luminous Efficacy (lm/W)	113.71	114.47	In luminaire: >=90(-3%)

Spectral Power Distribution & Chromaticity Diagram



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3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2016-07-01	2017-06-30
ST-R-331	Spectral analysis system HAAS-2000	2016-07-01	2017-06-30
D204	Standard Lamp	2016-07-01	2017-06-30
PF2010	Power Meter for Integrating Sphere	2016-07-01	2017-06-30
EE-09	Goniophotometer system	2016-07-01	2017-06-30
D908S	Standard Lamp	2016-07-01	2017-06-30
PF210	Power Meter for Goniophotometer	2016-07-01	2017-06-30
ST-R-181A	Temperature Tester	2016-07-01	2017-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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

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