

LM-79-08 Test Report

For

Beyond LED Technology

1939 Parker Court, Stone Mountain, GA 30087

Direct Linear Ambient Luminaires

Model name(s): ZS-T8-30P4FT-INT2(XXXXK)-F

Remark: Where “XXXX” can be any number, represents color temperature

This is multiple listed report, the Project Number of the original report is JBE200202-B

Representative (Tested) Model:
ZS-T8-30P4FT-INT2(3000K)-F

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

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Apr.29, 2020

Review By:

Johnson Sun

Manager: Johnson Sun

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 A2LA, or any agency of the Federal Government.

1.1 Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED Technology	
Model Number	ZS-T8-30P4FT-INT2(XXXXX)-F	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Direct Linear Ambient Luminaires	
Rated Voltage / Frequency	100-277Vac, 50/60Hz	
Nominal Power	30W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,3500K,4000K,4500K,5000K	
LED Manufacturer	Hongli Zhihui Group Co.,Ltd. Guangzhou Branch	
LED Model	HL-AM-2835HW-S1-08-HR3	
Sample Number	JBE200202-B1(3000K)	
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	Feb.20,2019
Date of Test	Feb.21,2019
Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. 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

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>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>

2.1 Electrical, Photometric and Chromaticity Measurements

Test date	2020-02-21	Test Ambient:	25±1 ° C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	ZS-T8-30P4FT-INT2(3000K)-F	Total Operating Time (min)	75

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JBE200202-	119.9	60	0.2723	30.44	0.9322	23.00
B1	277.2	60	0.1163	30.12	0.9341	19.29
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Photometric Measurement – Goniophotometer Method(Test Distance: 26.000m):

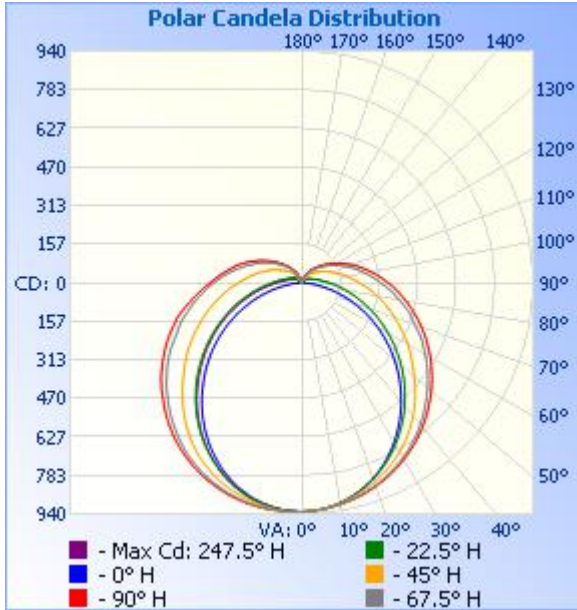
Parameter	Result		DLC V4.4 Pass Criteria	
Test Voltage (V)	120	277	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	3887.4	3914.7	>=375 lm/ft (-10%)	
Luminous Efficacy (lm/W)	127.69	129.95	Standard: >= 105(-3%)	Premium: >= 130(-3%)
Zonal lumens in the 0-60° zone (%)	56.9	--	>= 40(-3)	
Beam Angle (°)	129.9	--	--	
Center Beam Candle Power (cd)	930	--	--	

Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	728.6	18.7%
0-40	1,204.2	31%
0-60	2,210.9	56.9%
60-90	1,077.2	27.7%
70-100	840.2	21.6%
90-120	459.3	11.8%
0-90	3,288.1	84.6%
90-180	599.0	15.4%
0-180	3,887.1	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	88.1	2.3%	90-100	204.7	5.3%
10-20	253.2	6.5%	100-110	150.0	3.9%
20-30	387.3	10.0%	110-120	104.6	2.7%
30-40	475.7	12.2%	120-130	68.2	1.8%
40-50	510.6	13.1%	130-140	40.4	1%
50-60	496.0	12.8%	140-150	20.7	0.5%
60-70	441.7	11.4%	150-160	8.0	0.2%
70-80	361.2	9.3%	160-170	2.1	0.1%
80-90	274.3	7.1%	170-180	0.4	0%

Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
4.0ft	58.1 fc	10.6 ft	37.1 ft
8.0ft	14.5 fc	21.1 ft	74.2 ft
12.0ft	6.5 fc	31.7 ft	111.2 ft
16.0ft	3.6 fc	42.3 ft	148.3 ft
20.0ft	2.3 fc	52.9 ft	185.4 ft

■ Vert. Spread: 105.8°
■ Horiz. Spread: 155.6°

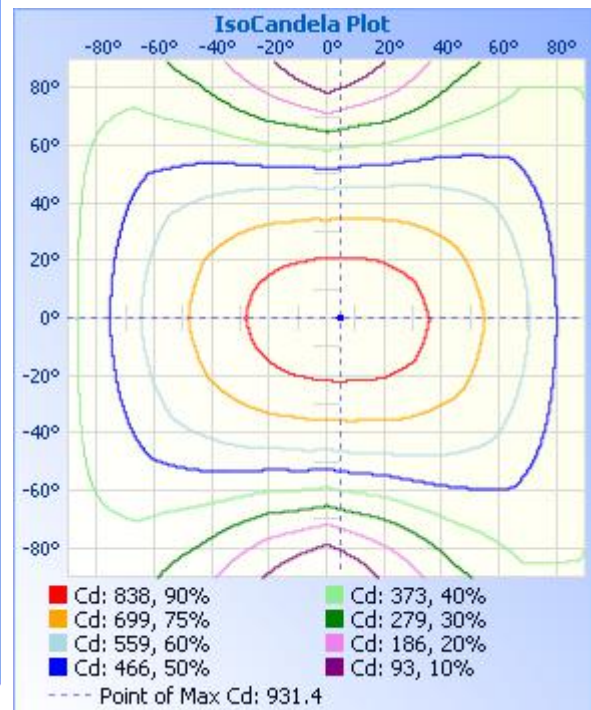
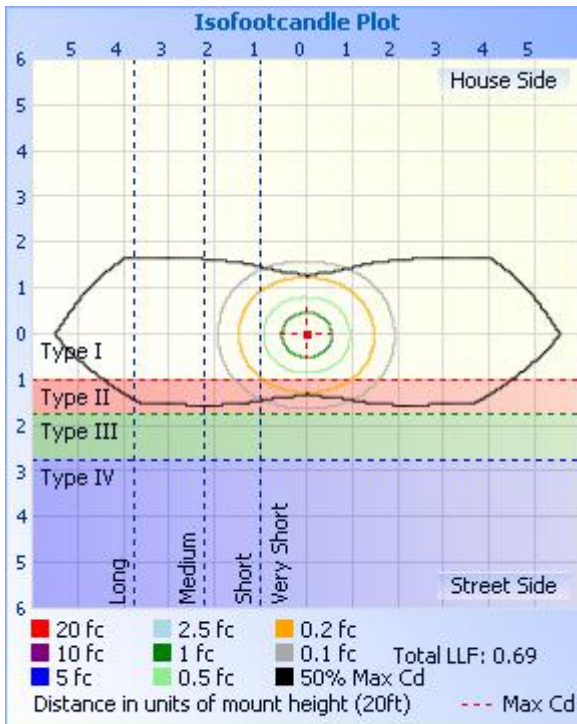


Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	
0	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	
5	931	930	929	927	925	923	925	924	924	924	925	924	925	925	929	931	
10	928	926	922	912	908	907	910	914	914	912	910	909	910	913	920	926	
15	921	916	906	889	882	883	889	898	899	895	889	884	884	891	904	918	
20	908	901	882	858	847	849	863	877	881	873	863	849	849	859	883	902	
25	891	879	852	818	803	808	831	851	857	846	830	810	804	820	856	882	
30	868	851	816	772	751	760	795	822	829	816	791	763	753	774	823	857	
35	841	822	773	719	692	708	752	788	799	782	747	708	694	723	782	827	
40	811	787	727	661	630	651	705	751	764	743	698	650	631	667	735	792	
45	775	745	675	599	563	591	652	710	726	701	646	588	564	607	684	754	
50	735	701	623	536	494	530	597	667	687	657	593	523	495	545	630	712	
55	696	657	570	472	424	466	546	624	646	612	539	458	424	481	579	670	
60	653	612	517	409	353	403	497	579	603	568	487	395	352	418	529	626	
65	608	565	465	346	280	343	448	536	560	522	436	331	278	357	478	576	
70	563	518	414	285	209	285	398	487	517	478	386	271	206	298	430	532	
75	517	472	365	227	139	230	354	449	473	434	339	214	137	243	381	484	
80	463	428	320	177	76.3	183	312	401	431	391	296	166	74.1	194	335	440	
85	415	384	279	134	26.0	142	272	362	390	350	256	124	24.2	151	296	396	
90	372	344	241	101	2.93	110	235	321	351	313	220	92.1	2.44	119	257	356	
95	335	307	210	77.9	1.78	86.1	203	286	313	277	189	69.0	1.75	94.5	224	317	
100	301	271	180	61.8	1.67	67.8	175	252	278	246	162	53.4	2.04	75.9	194	281	
105	272	241	155	48.6	1.67	54.4	149	222	245	214	138	42.2	2.26	61.9	167	248	
110	240	209	132	39.7	2.03	44.2	127	193	213	184	116	34.2	2.40	49.1	144	217	
115	209	181	113	35.4	2.38	36.6	108	166	185	160	98.3	28.3	2.51	41.2	124	189	
120	180	155	94.7	30.7	2.52	31.0	90.5	141	158	136	82.0	23.9	2.68	37.1	104	163	
125	153	131	73.3	25.6	2.59	26.2	75.3	119	133	115	68.1	20.3	2.76	31.1	87.7	138	
130	128	111	68.1	22.3	2.63	21.8	62.5	98.6	111	94.9	56.4	17.3	2.85	26.8	74.1	115	
135	105	91.6	56.5	14.5	2.66	18.8	51.2	80.8	90.8	77.7	46.4	12.1	2.91	20.9	61.7	95.7	
140	87.5	73.2	44.0	11.3	2.82	12.5	40.9	65.0	73.2	62.9	38.4	10.6	3.03	13.5	43.6	77.9	
145	69.1	59.2	32.8	9.05	3.14	10.4	31.1	51.0	57.6	49.8	31.5	9.77	3.24	10.7	33.9	61.2	
150	53.0	43.1	22.3	6.52	3.20	8.41	24.8	38.3	43.8	39.4	26.1	9.15	3.30	4.66	19.4	40.8	
155	39.6	31.3	13.5	3.44	3.25	3.51	14.6	27.7	31.7	29.9	17.0	7.95	3.27	3.18	13.8	26.4	
160	21.7	14.7	11.4	3.35	3.34	3.25	10.9	15.0	17.2	16.8	13.3	4.93	3.45	3.70	6.38	14.4	
165	15.4	10.1	4.74	3.37	3.97	3.54	3.97	10.1	11.5	11.7	9.15	3.43	3.71	4.12	3.83	8.07	
170	3.36	3.50	3.38	3.57	4.33	3.96	3.44	2.96	5.22	5.44	4.37	3.32	3.92	4.58	4.14	3.54	
175	2.81	3.13	3.32	3.73	4.86	4.17	3.46	2.92	3.41	3.54	3.17	3.40	3.76	4.85	4.23	3.49	
180	2.79	3.09	3.30	0.00	4.75	4.22	3.46	2.91	2.74	2.78	2.94	3.33	3.55	4.79	4.20	3.54	

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-355	Goniophotometer system	Verified by D908S standard lamp	
ST-R-359	Standard Lamp	2019-07-09	2020-07-08
ST-R-358	Power Meter for Goniophotometer	2019-06-27	2020-06-26
ST-R-354	hygrothermograph for Goniophotometer	2019-06-28	2020-06-27

Expand Uncertainty:
Photometric Measurement(Goniophotometer):3.38%, k=2

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