

Energy Star Test Report

For

Beyond LED Technology

(Brand Name: Beyond LED Technology)

Downlights

Model name(s): BLT-CP6-D15W-30E

Remark: Where the first "XX" represents different LED color temperature which could be numbers "00" to "99". The last X represents commercial use code which could be letters "A" to "Z".

Representative (Tested) Model: BLT-CP6-D15W-30E

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

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Jul.27,2017

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.

U.S. Department of Energy

Lighting Facts[™] Uniform LM-79 Reporting Template

Laboratory Information:

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	Jul.22,2017
Test Report No.	GZE1707079-C
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Beyond LED Technology		
Brand Name	Beyond LED Technology		
Model Number	BLT-CP6-D15W-30E		
SKU (if available)	N/A		
Type of Luminaire (for integral lamps, list base type and lamp type)	Downlights		
Luminaire Aperture (for Downlightss)	--	in.	
Luminaire Length	--	mm	
Luminaires Width	--	mm	
Number of Units (modular products)	N/A	s	

Integrating Sphere

Goniophotometer

Electrical Measurements:

	Output	Output	
Input Wattage	--	14.97	W
Input Current	--	0.1274	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9792	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	1325.3	lm
Initial Lumen Efficacy	--	88.53	lm/w
Correlated color temperature / CCT	3036	--	K
Color rendering index / CRI	82.4	--	
R9 Value	9	--	
Duv	0.0011	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		957	cd
Beam angle (if applicable)		79.9	°
Zonal lumens in the 0°-60° zone		99.4	%
Zonal lumens in the 60°-90° zone	-----	0.5	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0	%

Lighting Facts™ Uniform LM-79 Reporting Template

Laboratory Information:

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Date of Test Report	Jul.22,2017
Test Report No.	GZE1707079-C
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED Technology	
Model Number	BLT-CP6-D15W-30E	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Downlights	
Luminaire Aperture (for Downlightss)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Integrating Sphere

Goniophotometer

Electrical Measurements:

	Output	Output	
Input Wattage	14.78	--	W
Input Current	0.1256	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9809	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	1319	--	lm
Initial Lumen Efficacy	89.24	--	lm/w
Correlated color temperature / CCT	3475	--	K
Color rendering index / CRI	83.7	--	
R9 Value	13	--	
Duv	0.0001	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)	-----	--	cd
Beam angle (if applicable)		--	°
Zonal lumens in the 0°-60° zone		--	%
Zonal lumens in the 60°-90° zone		--	%
Zonal lumens in the 90°-120° zone		--	%
Zonal lumens in the 120°-180° zone		--	%

Lighting Facts[™] Uniform LM-79 Reporting Template

Laboratory Information:

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	Jul.22,2017
Test Report No.	GZE1707079-C
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Beyond LED TEchnology	
Brand Name	Beyond LED Technology	
Model Number	BLT-CP6-D15W-30E	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Downlights	
Luminaire Aperture (for Downlightss)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Integrating Sphere

Goniophotometer

Electrical Measurements:

	Output	Output	
Input Wattage	14.81	--	W
Input Current	0.1258	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9811	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	1333	--	lm
Initial Lumen Efficacy	90.01	--	lm/w
Correlated color temperature / CCT	4017	--	K
Color rendering index / CRI	83.8	--	
R9 Value	15	--	
Duv	-0.0021	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)	-----	--	cd
Beam angle (if applicable)		--	°
Zonal lumens in the 0°-60° zone		--	%
Zonal lumens in the 60°-90° zone		--	%
Zonal lumens in the 90°-120° zone		--	%
Zonal lumens in the 120°-180° zone		--	%

Lighting Facts™ Uniform LM-79 Reporting Template

Laboratory Information:

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	Jul.22,2017
Test Report No.	GZE1707079-C
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED Technology	
Model Number	BLT-CP6-D15W-30E	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Downlights	
Luminaire Aperture (for Downlightss)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Integrating Sphere

Goniophotometer

Electrical Measurements:

	Output	Output	
Input Wattage	14.86	--	W
Input Current	0.1263	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9808	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	1360	--	lm
Initial Lumen Efficacy	91.52	--	lm/w
Correlated color temperature / CCT	5203	--	K
Color rendering index / CRI	85.5	--	
R9 Value	21	--	
Duv	-0.0004	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)		--	cd
Beam angle (if applicable)		--	°
Zonal lumens in the 0°-60° zone		--	%
Zonal lumens in the 60°-90° zone	-----	--	%
Zonal lumens in the 90°-120° zone		--	%
Zonal lumens in the 120°-180° zone		--	%

Test Specifications:	
Date of Receipt	Jul.21,2017
Date of Test	Jul.22,2017
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems UL1993 4 th Edition, Self-Ballasted Lamps and Lamp Adapters ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) – Version 2.0
Reference Work Instruction	QD25
Remark	Below test and data are not covered by NVLAP accreditation: - Operating Frequency

Test Methods

1. Photometric and Electrical measurements – Light Distribution 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 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. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric 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 Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at least 5 nm intervals over the range of 380 to 780 nm.

1. Product Information:

Brand Name	Beyond LED Technology
Model Number	BLT-CP6-D15W-30E
Luminaire Type	Downlights
Rated Voltage / Frequency	100-277Vac, 50/60 Hz
Nominal Power	15W
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,5000K
LED Manufacturer	LG Innotek Co., Ltd.
LED Model	LEMWS36X Series
Sample Receipt Date	Jul.21,2017
Sample Number	GZE1707079-C1,C2,C3(3000K),C4(3500K),C5(4000K),C6(5000K)

Photo



2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2017-07-22	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-CP6-D15W-30E		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE1707079-C1	120.0	60	0.1274	14.97	0.9792
GZE1707079-C2	120.0	60	0.1258	14.76	0.9775
GZE1707079-C3	120.0	60	0.1262	14.82	0.9789
Average			0.1265	14.85	0.9785

Electrical Measurement(277V):

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE1707079-C1	277.0	60	0.0586	14.84	0.9135

Sphere-Spectroradiometer Method:

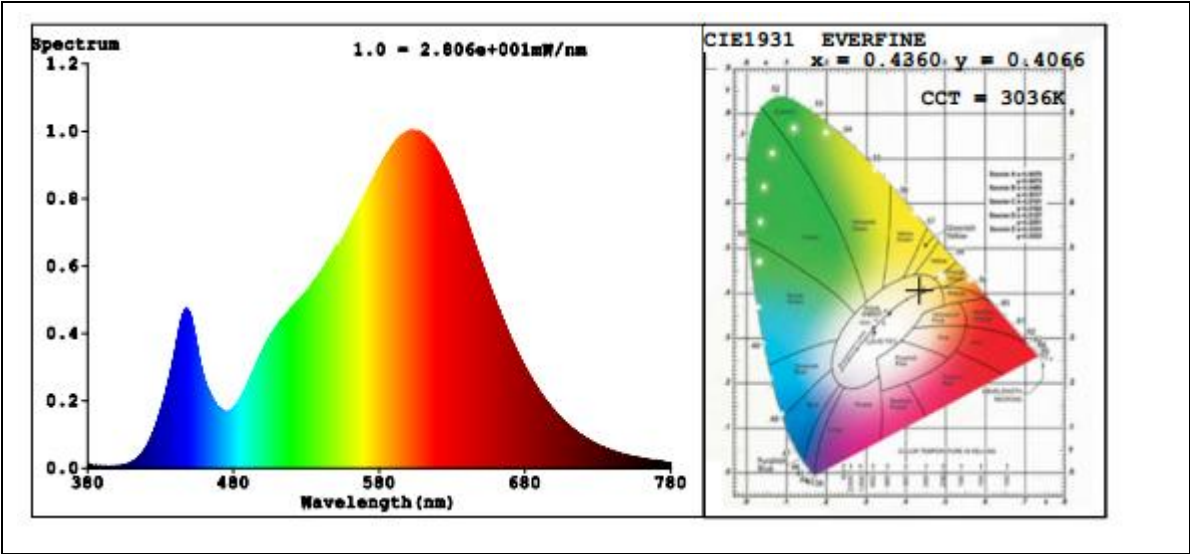
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	82.4
R9	9
CCT (K)	3036
Chromaticity (x, y)	x=0.4360 y=0.4066
Chromaticity (u', v')	u'=0.2489 v'=0.5222
Duv	0.0011

Special Color Rendering Indices			
R1	80	R9	9
R2	89	R10	75
R3	97	R11	80
R4	81	R12	72
R5	80	R13	82
R6	87	R14	98
R7	84	R15	73
R8	61	--	--

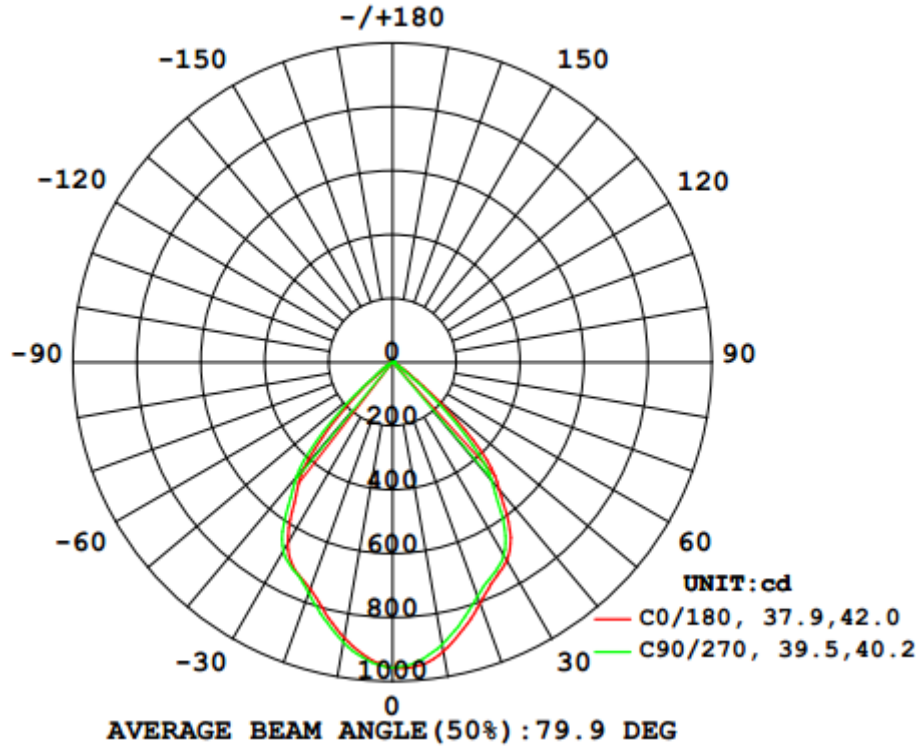
Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1325.3
Luminous Efficacy (lm/W)	88.53
Beam Angle°	79.9
Center Beam Candle Power (cd)	957

Spectral Power Distribution and Chromaticity Diagram



Zonal Lumen Tabulation



Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	662.4	50%
0-40	1,029.3	77.7%
0-60	1,317.6	99.4%
60-90	7.3	0.5%
70-100	0.8	0.1%
90-120	0.0	0%
0-90	1,324.9	100%
90-180	0.2	0%
0-180	1,325.1	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	88.2	6.7%	90-100	0.0	0%
10-20	235.5	17.8%	100-110	0	0%
20-30	338.7	25.6%	110-120	0.0	0%
30-40	366.9	27.7%	120-130	0.0	0%
40-50	238.2	18.0%	130-140	0.0	0%
50-60	50.1	3.8%	140-150	0.0	0%
60-70	6.5	0.5%	150-160	0.1	0%
70-80	0.7	0.0%	160-170	0.0	0%
80-90	0.1	0.0%	170-180	0.0	0%

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	957	957	957	957	957	957	957	957	957	957	957	957	957	957	957	957	
5	953	955	952	948	939	935	932	928	927	927	928	931	935	939	946	951	
10	919	920	916	909	897	889	884	877	875	875	878	885	891	897	907	917	
15	863	864	858	851	840	832	824	815	813	810	814	824	831	842	856	863	
20	804	802	796	792	779	774	765	760	756	755	755	762	770	781	792	805	
25	752	755	747	743	738	736	727	722	721	718	715	719	724	737	743	753	
30	716	722	712	705	697	686	673	664	656	654	664	675	683	696	706	713	
35	642	644	641	625	604	579	554	539	537	540	548	565	583	603	625	640	
40	519	520	511	500	484	465	446	431	432	433	442	455	469	486	502	514	
45	389	390	378	358	323	293	269	248	247	248	260	284	306	336	364	386	
50	190	190	175	155	134	115	99.1	88.3	86.6	86.4	92.1	104	122	151	171	190	
55	65.2	64.0	59.5	56.8	47.3	42.5	39.1	36.0	35.0	34.7	36.3	39.6	43.2	48.9	56.3	62.6	
60	25.9	25.7	24.2	21.8	18.6	15.8	13.5	12.1	11.8	11.8	12.7	15.1	18.2	20.6	23.3	25.9	
65	7.84	7.56	7.33	6.32	5.52	4.29	3.64	3.10	2.97	2.95	3.39	4.07	4.95	5.94	7.05	7.92	
70	1.45	1.41	1.32	1.19	1.07	1.00	0.96	0.94	0.93	0.90	0.88	0.90	0.98	1.11	1.28	1.43	
75	0.78	0.76	0.70	0.63	0.56	0.52	0.50	0.49	0.48	0.46	0.45	0.47	0.51	0.58	0.67	0.77	
80	0.39	0.38	0.35	0.31	0.28	0.25	0.23	0.23	0.22	0.21	0.20	0.22	0.24	0.28	0.33	0.38	
85	0.16	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.06	0.06	0.06	0.07	0.09	0.11	0.13	0.16	
90	0.03	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	
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	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
120	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
125	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	
130	0.02	0.02	0.01	0.01	0.03	0.04	0.04	0.03	0.03	0.04	0.03	0.02	0.03	0.03	0.03	0.01	
135	0.02	0.03	0.02	0.02	0.03	0.05	0.06	0.04	0.04	0.05	0.04	0.03	0.04	0.05	0.05	0.02	
140	0.03	0.04	0.03	0.03	0.04	0.07	0.08	0.06	0.06	0.07	0.05	0.04	0.06	0.07	0.06	0.04	
145	0.05	0.06	0.04	0.04	0.05	0.08	0.10	0.09	0.08	0.09	0.06	0.05	0.08	0.09	0.09	0.06	
150	0.07	0.08	0.06	0.05	0.07	0.10	0.11	0.12	0.11	0.13	0.08	0.04	0.11	0.11	0.11	0.08	
155	0.09	0.11	0.07	0.06	0.09	0.11	0.12	0.15	0.16	0.16	0.09	0.06	0.14	0.12	0.12	0.11	
160	0.08	0.15	0.10	0.09	0.12	0.12	0.09	0.15	0.23	0.27	0.22	0.08	0.16	0.13	0.10	0.15	
165	0.17	0.23	0.16	0.15	0.16	0.13	0.08	0.13	0.24	0.25	0.26	0.12	0.09	0.11	0.09	0.16	
170	0.21	0.25	0.24	0.20	0.17	0.13	0.10	0.14	0.27	0.27	0.19	0.15	0.08	0.09	0.10	0.14	
175	0.21	0.16	0.25	0.25	0.19	0.13	0.15	0.18	0.30	0.29	0.12	0.17	0.13	0.12	0.08	0.09	
180	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.01	

2.2 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
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Test date	2017-07-22	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-CP6-D15W-30E		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE1707079-C4	120.0	60	0.1256	14.78	0.9809
	277.0	60	0.0578	14.57	0.9108

Sphere-Spectroradiometer Method:

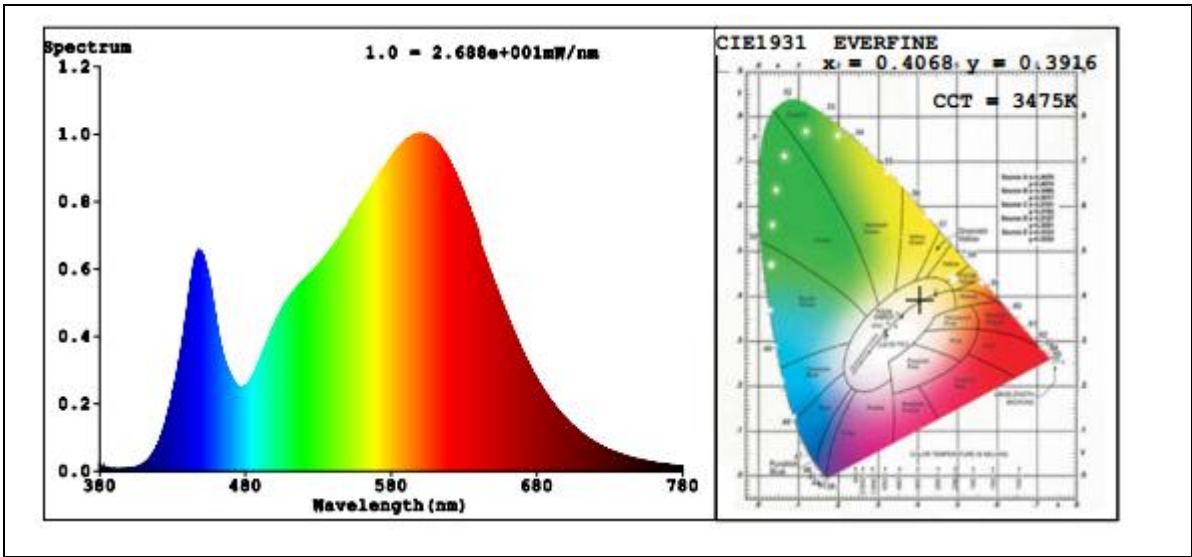
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	83.7
R9	13
CCT (K)	3475
Chromaticity (x, y)	x=0.4068 y=0.3916
Chromaticity (u', v')	u'=0.2363 v'=0.5118
Duv	0.0001

Special Color Rendering Indices			
R1	82	R9	13
R2	90	R10	77
R3	96	R11	82
R4	83	R12	72
R5	82	R13	84
R6	87	R14	98
R7	86	R15	76
R8	64	--	--

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1319
Luminous Efficacy (lm/W)	89.24

Spectral Power Distribution and Chromaticity Diagram



2.3 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
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Test date	2017-07-22	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-CP6-D15W-30E		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE1707079-C5	120.0	60	0.1258	14.81	0.9811
	277.0	60	0.0578	14.60	0.9112

Sphere-Spectroradiometer Method:

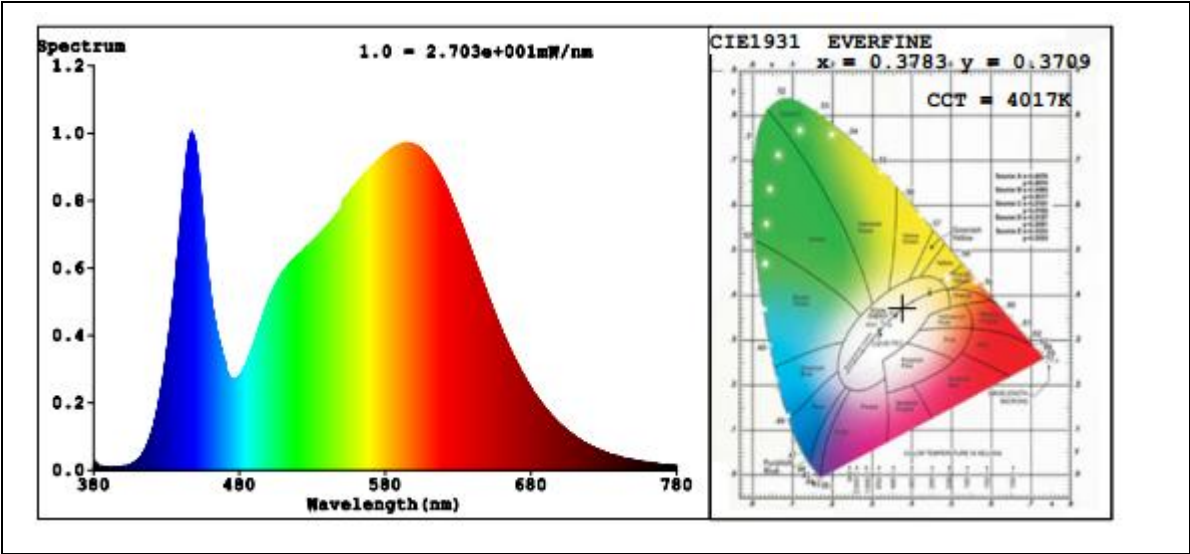
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	83.8
R9	15
CCT (K)	4017
Chromaticity (x, y)	x=0.3783 y=0.3709
Chromaticity (u', v')	u'=0.2260 v'=0.4986
Duv	-0.0021

Special Color Rendering Indices			
R1	82	R9	15
R2	89	R10	74
R3	94	R11	83
R4	84	R12	70
R5	83	R13	84
R6	85	R14	97
R7	86	R15	77
R8	67	--	--

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1333
Luminous Efficacy (lm/W)	90.01

Spectral Power Distribution and Chromaticity Diagram



2.4 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
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Test date	2017-07-22	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-CP6-D15W-30E		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE1707079-C6	120.0	60	0.1263	14.86	0.9808
	277.0	60	0.0579	14.64	0.9125

Sphere-Spectroradiometer Method:

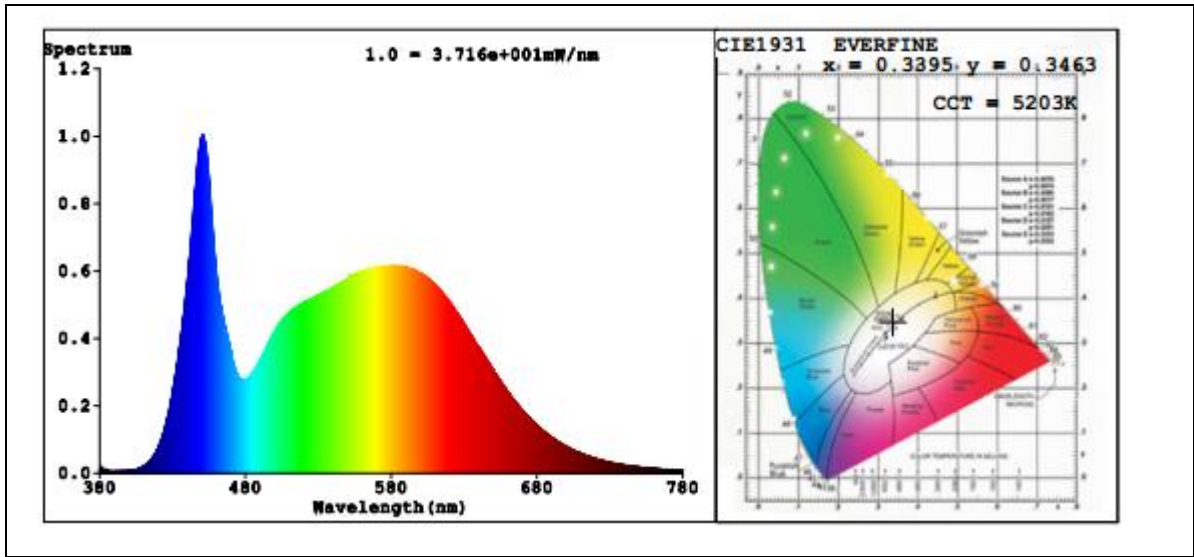
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	85.5
R9	21
CCT (K)	5203
Chromaticity (x, y)	x=0.3395 y=0.3463
Chromaticity (u', v')	u'=0.2097 v'=0.4812
Duv	-0.0004

Special Color Rendering Indices			
R1	84	R9	21
R2	90	R10	75
R3	93	R11	86
R4	86	R12	70
R5	86	R13	86
R6	86	R14	96
R7	88	R15	80
R8	72	--	--

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1360
Luminous Efficacy (lm/W)	91.52

Spectral Power Distribution and Chromaticity Diagram



2.2 Color Spatial Uniformity	IES LM-79 2008 ENERGY STAR[®] Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0
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Test Data :

Test date 2017-07-22	Test Ambient 25.1°C
Sample No.	Maximum $\Delta u'v'$
GZE1707079-C1	0.0021

Gamma\C	CIE u'	CIE v'	du' v'	CIE u'	CIE v'	du' v'
-53	0.2485	0.5215	0.0019	0.2477	0.5213	0.0019
-52	0.2488	0.5216	0.002	0.2479	0.5212	0.0018
-51	0.2492	0.5216	0.0021	0.2482	0.5211	0.0016
-50	0.2491	0.5214	0.0019	0.2486	0.5211	0.0015
-49	0.2493	0.5213	0.0019	0.2487	0.521	0.0014
-48	0.2494	0.5212	0.0018	0.2489	0.5209	0.0014
-47	0.2496	0.5212	0.0019	0.249	0.5208	0.0013
-46	0.2495	0.521	0.0016	0.249	0.5207	0.0012
-45	0.2494	0.5208	0.0014	0.249	0.5207	0.0012
-44	0.2495	0.5207	0.0014	0.2491	0.5206	0.0011
-43	0.2495	0.5206	0.0014	0.249	0.5205	0.001
-42	0.2494	0.5205	0.0012	0.249	0.5204	0.0009
-41	0.2493	0.5204	0.0011	0.2489	0.5202	0.0007
-40	0.2493	0.5203	0.001	0.2488	0.5201	0.0006
-39	0.2492	0.5202	0.0008	0.2489	0.5201	0.0006
-38	0.2492	0.5201	0.0007	0.2487	0.5199	0.0003
-37	0.2493	0.5201	0.0009	0.2487	0.5199	0.0003
-36	0.2493	0.5201	0.0008	0.2487	0.5198	0.0002
-35	0.2494	0.5201	0.001	0.2486	0.5197	0.0002
-34	0.2494	0.5201	0.0009	0.2488	0.5198	0.0003
-33	0.2493	0.5199	0.0007	0.2488	0.5198	0.0003
-32	0.2493	0.5199	0.0008	0.2488	0.5197	0.0002
-31	0.2495	0.52	0.001	0.2488	0.5196	0.0001
-30	0.2495	0.52	0.0009	0.2489	0.5196	0.0002
-29	0.2493	0.5198	0.0007	0.2489	0.5196	0.0003
-28	0.2493	0.5198	0.0007	0.249	0.5196	0.0004
-27	0.2492	0.5197	0.0006	0.2489	0.5195	0.0002
-26	0.2491	0.5196	0.0005	0.2489	0.5195	0.0003
-25	0.2491	0.5195	0.0004	0.2488	0.5194	0.0002
-24	0.2489	0.5194	0.0003	0.2488	0.5193	0.0003

-23	0.2488	0.5193	0.0003	0.2485	0.5192	0.0004
-22	0.2488	0.5193	0.0003	0.2485	0.5191	0.0005
-21	0.2486	0.5192	0.0004	0.2485	0.5191	0.0005
-20	0.249	0.5194	0.0004	0.2484	0.519	0.0006
-19	0.2486	0.5191	0.0005	0.2483	0.5189	0.0008
-18	0.2487	0.5192	0.0004	0.2482	0.5188	0.0009
-17	0.2486	0.5191	0.0005	0.2483	0.5189	0.0007
-16	0.2485	0.5191	0.0005	0.2483	0.5189	0.0008
-15	0.2487	0.5192	0.0004	0.2484	0.519	0.0007
-14	0.2487	0.5192	0.0004	0.2485	0.519	0.0006
-13	0.2485	0.5191	0.0005	0.2483	0.5189	0.0008
-12	0.2485	0.5191	0.0005	0.2484	0.519	0.0007
-11	0.2485	0.5191	0.0005	0.2482	0.5188	0.0009
-10	0.2486	0.5192	0.0004	0.2483	0.5189	0.0008
-9	0.2485	0.5191	0.0005	0.2482	0.5188	0.0009
-8	0.2484	0.519	0.0006	0.2481	0.5188	0.0009
-7	0.2485	0.5191	0.0005	0.2481	0.5188	0.0009
-6	0.2484	0.519	0.0006	0.2482	0.5189	0.0009
-5	0.2484	0.519	0.0006	0.2481	0.5188	0.0009
-4	0.2483	0.519	0.0006	0.2482	0.5189	0.0008
-3	0.2485	0.5191	0.0005	0.2482	0.5189	0.0008
-2	0.2485	0.5191	0.0005	0.2481	0.5188	0.001
-1	0.2484	0.519	0.0006	0.2482	0.5189	0.0008
0	0.2485	0.5192	0.0004	0.2485	0.5192	0.0004
1	0.2485	0.5191	0.0005	0.248	0.5188	0.001
2	0.2484	0.519	0.0006	0.2481	0.5189	0.0009
3	0.2485	0.5191	0.0005	0.2481	0.5188	0.0009
4	0.2485	0.519	0.0005	0.2481	0.5188	0.0009
5	0.2485	0.5191	0.0005	0.2481	0.5189	0.0009
6	0.2483	0.5189	0.0007	0.248	0.5188	0.001
7	0.2485	0.519	0.0006	0.2481	0.5188	0.0009
8	0.2483	0.5189	0.0008	0.2481	0.5188	0.0009
9	0.2485	0.519	0.0006	0.2481	0.5188	0.001
10	0.2484	0.519	0.0007	0.248	0.5187	0.0011
11	0.2483	0.5189	0.0008	0.248	0.5187	0.0011
12	0.2484	0.5189	0.0007	0.248	0.5187	0.0011
13	0.2485	0.519	0.0006	0.248	0.5187	0.0011
14	0.2482	0.5188	0.0009	0.248	0.5187	0.0011
15	0.2482	0.5188	0.0008	0.2479	0.5186	0.0012
16	0.2483	0.5189	0.0007	0.248	0.5187	0.0011

17	0.2482	0.5189	0.0009	0.248	0.5187	0.0011
18	0.2483	0.519	0.0007	0.2481	0.5187	0.001
19	0.2483	0.519	0.0007	0.2479	0.5186	0.0012
20	0.2485	0.5191	0.0005	0.2481	0.5187	0.001
21	0.2484	0.519	0.0006	0.248	0.5187	0.001
22	0.2485	0.5191	0.0005	0.2482	0.5188	0.0009
23	0.2487	0.5193	0.0003	0.2483	0.5189	0.0008
24	0.2486	0.5193	0.0003	0.2483	0.519	0.0007
25	0.2487	0.5194	0.0002	0.2484	0.519	0.0006
26	0.2487	0.5194	0.0002	0.2485	0.5191	0.0005
27	0.2488	0.5195	0.0002	0.2485	0.5191	0.0005
28	0.2486	0.5194	0.0002	0.2485	0.5192	0.0004
29	0.2487	0.5195	0.0001	0.2485	0.5192	0.0004
30	0.2485	0.5194	0.0002	0.2485	0.5192	0.0004
31	0.2485	0.5195	0.0002	0.2485	0.5192	0.0004
32	0.2486	0.5196	0.0001	0.2484	0.5193	0.0004
33	0.2486	0.5196	0.0001	0.2486	0.5193	0.0003
34	0.2483	0.5195	0.0004	0.2484	0.5193	0.0004
35	0.2484	0.5196	0.0002	0.2483	0.5193	0.0005
36	0.2484	0.5196	0.0003	0.2483	0.5193	0.0004
37	0.2485	0.5198	0.0003	0.2483	0.5194	0.0004
38	0.2484	0.5197	0.0003	0.2484	0.5195	0.0003
39	0.2485	0.5198	0.0003	0.2483	0.5195	0.0003
40	0.2485	0.52	0.0004	0.2484	0.5196	0.0003
41	0.2486	0.5201	0.0006	0.2485	0.5197	0.0002
42	0.2486	0.5203	0.0007	0.2485	0.5198	0.0003
43	0.2486	0.5203	0.0008	0.2486	0.5199	0.0004
44	0.2486	0.5205	0.0009	0.2484	0.52	0.0005
45	0.2485	0.5205	0.0009	0.2485	0.5202	0.0006
46	0.2484	0.5205	0.001	0.2483	0.5202	0.0007
47	0.2483	0.5206	0.0011	0.2485	0.5204	0.0009
48	0.2482	0.5206	0.0012	0.2483	0.5205	0.001
49	0.2478	0.5207	0.0014	0.2483	0.5207	0.0011
50	0.2477	0.5208	0.0016	0.2481	0.5207	0.0013
51	0.2476	0.521	0.0018	0.2479	0.5208	0.0014
52	0.2474	0.5211	0.002	0.2478	0.5209	0.0016
53	0.2474	0.5212	0.0021	0.2475	0.521	0.0019

3. Electrical and Photometric Measurements, with dimming	IES LM-79 2008 ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0
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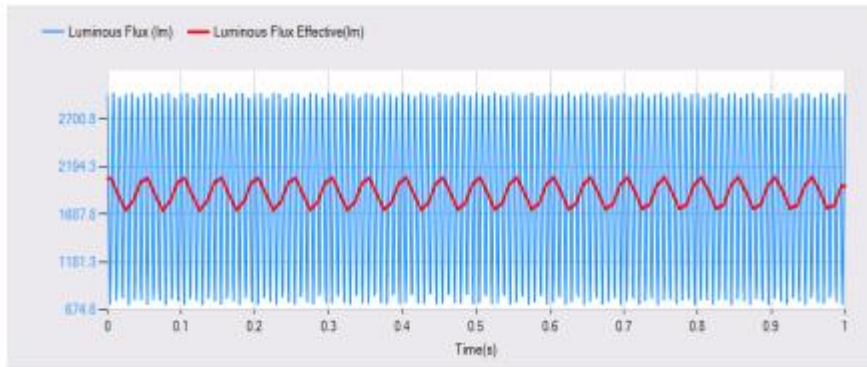
Test date	2017-07-22	Test Ambient:	25.1°C		
Dimmer Model		LEVITON MFG CO INC (E31373), Cat. No. 6681			
Sample No.	Input	Luminous flux (lm)	CCT (K)	CRI	P.F.
GZE1707079-C1	120.0 V / 60 Hz	--	--	--	--
GZE1707079-C2	120.0 V / 60 Hz	--	--	--	--
GZE1707079-C3	120.0 V / 60 Hz	--	--	--	--
Average		--	--	--	--

The luminaires ~~can~~ [can not] provide less than 20% of total light output with continuous dimmer.

Dimmer	Peak Noise Reading (dBA)	Test Condition	Distance between the microphone and the UUT
LEVITON MFG CO INC (E31373), Cat. No. 6681	--	Dimmer adjusted to lowest light output	< 1 m

4 Operating Frequency	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0
Noted: This test and data are not covered by NVLAP accreditation	

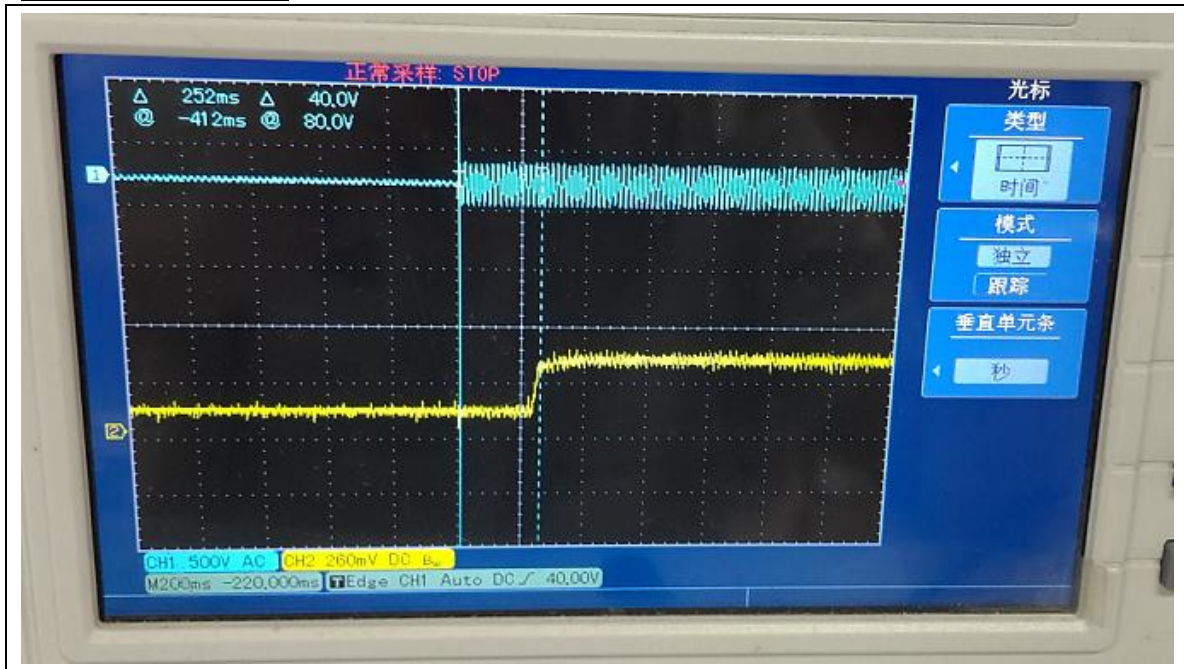
Test date	2017-07-22	Test Ambient:	25.1°C
Sample No.		Operating Frequency (Hz)	
GZE1707079-C1		120.37	
GZE1707079-C2		120.19	
GZE1707079-C3		120.42	
Average		120.33	



5 Starting Time <i>(Refer to Work Instruction QD28)</i>	ENERGY STAR[®] Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0
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Test date	2017-07-22	Test Ambient:	25.1°C
Sample No.	Start Time (ms)		
GZE1707079-C1	252		
GZE1707079-C2	306		
GZE1707079-C3	269		
Average	276		

Graph (Start Time):



<p>6. Transient Protection Test <i>(Refer to Work Instruction QD34)</i></p>	<p>ANSI/IEEE C62.41 ENERGY STAR® Program Requirements for Luminaires – Version 2.0</p>
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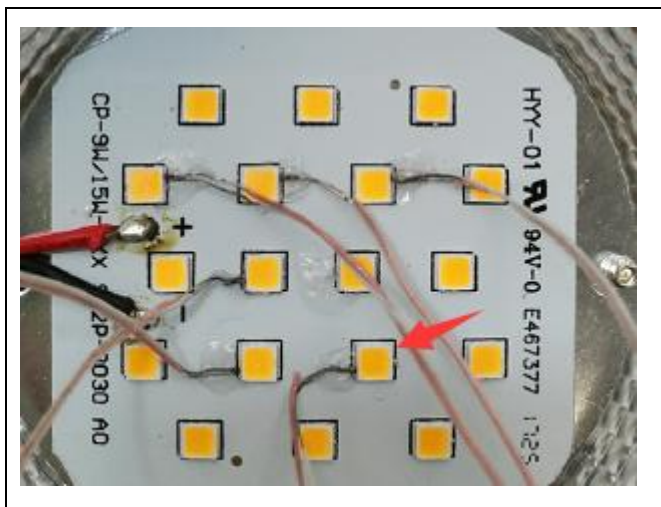
Test voltage: 120V,60Hz

Test date	2017-07-22	Test Ambient	25.1°C
Sample No.		Transient Protection Test - Seven Strikes	
GZE1707079-C1		Pass	
GZE1707079-C2		Pass	
GZE1707079-C3		Pass	

7.1 In-Situ Temperature Measurement Test (ISTMT)	UL1598-2008, 3rd Edition
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Test date	2017-07-22	Test Ambient	25.1°C
Input Vol./Frequency	120 V / 60 Hz	Output Current of Single LED(mA)	129.8
Sample No.	LED Package Model	Maximum Measured LED Ts Point Temperature (°C)	Maximum LED Ts Point Temperature Limited (°C)
GZE1707079-C1	BLT-CP6-D15W-30E	86.1	105

In-Situ Picture - Ts:



7.2 Maximum Measured Ballast or Driver Case Temperature	UL1598-2008, 3rd Edition
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Test date	2017-07-22	Test Ambient	25.1°C
Sample No.	Maximum Measured Driver Case Temperature (°C)	Maximum Driver Case Temperature Limited (°C)	
GZE1707079-C1	81.9	105	

In-Situ Picture - Ts:



8 Off-State Power Consumption:	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0
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Test date	2017-07-22	Test Ambient:	25.0 °C
Model Number	CP8-15W-30E	Stabilization Time (min)	90

Electrical Measurement – when the luminaires turned off:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)
GZE1707079-C 1	120.0	60	0	0

8. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2017-07-01	2018-06-30
ST-R-331	Spectral analysis system HAAS-2000	2017-07-01	2018-06-30
EE-09	Goniophotometer system	2017-07-01	2018-06-30
D908S	Standard Lamp	2017-07-01	2018-06-30
D204	Standard Lamp	2017-07-01	2018-06-30
PF2010	Power Meter for Integrating Sphere	2017-07-01	2018-06-30
PF210	Power Meter for Goniophotometer	2017-07-01	2018-06-30
EE-015	Flux Meter	2017-07-01	2018-06-30
ST-R-277	Oscillograph	2017-07-01	2018-06-30
ST-R-EM01	Surge Generator	2017-07-01	2018-06-30
ST-R-EM02	EMC Coupler/Decoupler Module	2017-07-01	2018-06-30
Uncertainty Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

******* END OF DATASHEET PACKAGE *******