Energy Star Test Report

For

Best Lighting Products, Inc.

(Brand Name: Best Lighting Products, Inc.)

1213, Etna Pkwy PATASKALA, Ohio, U.S.A.

Model name(s):ULD8-XX

Report Type:	Testing and Report According to ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1
Type of Luminaire:	Cove or Under Cabinet Mount
Report Date:	2018-07-17

Test & Report By:

Vicky Sun

Engineer: Vicky Sun

Review By:

Manager: John Li

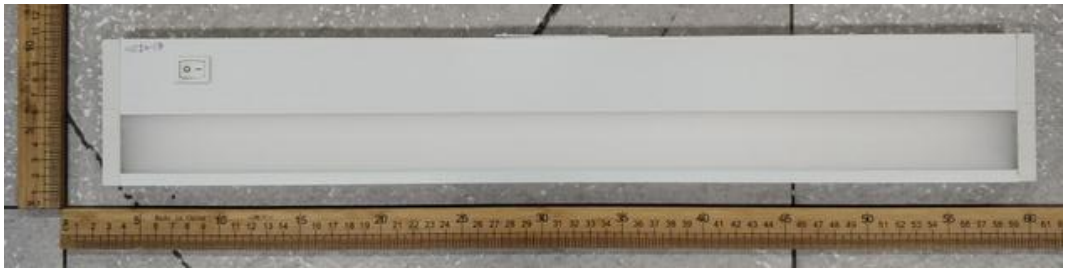
Note: 1. The results contained in this report pertain only to the rested samples.

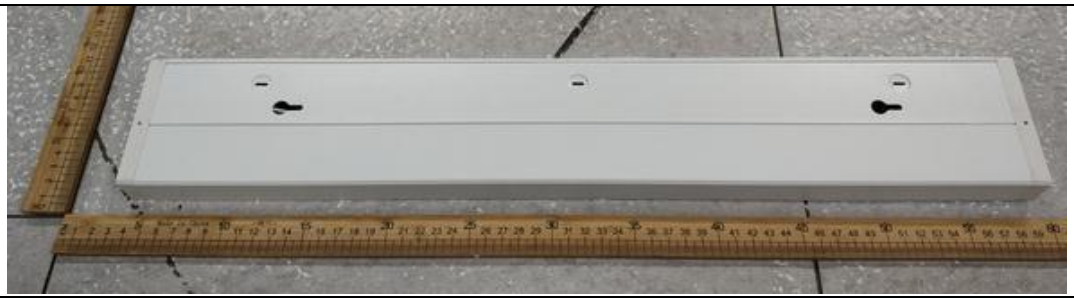
2. This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

1.1 Product Information:		
Model Number	ULD8-XX	
Remark	"XX" could be 27/30/35/40/50 refers to CCT.	
Representative (Tested) Model	ULD8-27	
Model Difference	N/A	
Type of Luminaire	Cove or Under Cabinet Mount	
LED Manufacturer	EVERLIGHT ELECTRONICS CO., LTD	
LED Model	67-21S Series (3000K)	
Dimming	Dimmable	
Sample Number	JCE180610-E1	
Date of Receipt	Jun.30,2018	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

1.2 Rated Values:	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	10.5W
Rated Initial Lamp Lumen	--
Declared CC	2700K, 3000K, 3500K, 4000K, 5000K
Sample Number	JCE180610-E1

Photo





1.3 Test Specifications:	
Date of Receipt	Jun.30,2018
Date of Test	Jul.01,2018
Test item	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	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 7. UL1993 4th Edition, Self-Ballasted Lamps and Lamp Adapters 8. ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) – Version 2.1
Reference Work Instruction	QD25
Remark	Below test and data are not covered by NVLAP accreditation: - Operating Frequency

1.4 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 °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.
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 ºC ±1 ºC. 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 ºC ±1 ºC. 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 *(Refer to Work Instruction QD25)*	**IES LM-79 2008**

Test date	2018-07-01	**Test Ambient:**	25.0 ℃
Test Orientation	As intended	**Stabilization Time (min)**	90
Model Number	ULD8-27		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
JCE180610-E1	120.0	60	0.0880	10.46	0.9902

Sphere-Spectroradiometer Method:

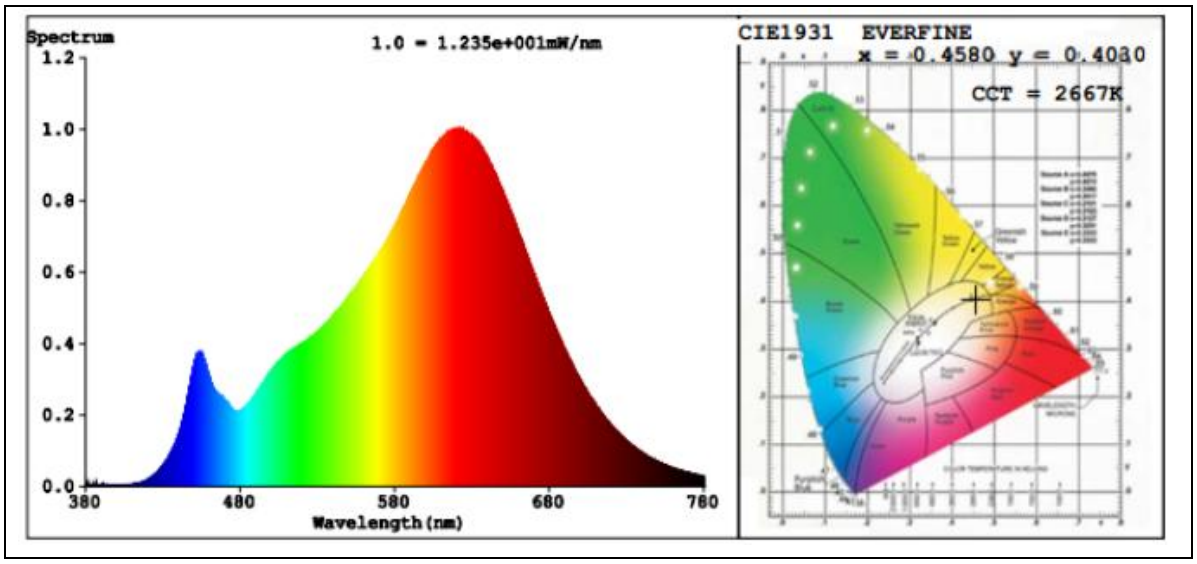
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	92.1
R9	56
CCT (K)	2667
Chromaticity (x, y)	x=0.4580 y=0.4030
Chromaticity (u', v')	u'=0.2647 v'=0.5241
Duv	-0.0027

Special Color Rendering Indices			
R1	94	R9	56
R2	99	R10	97
R3	96	R11	94
R4	92	R12	89
R5	94	R13	95
R6	96	R14	99
R7	88	R15	89
R8	78	--	--

Goniophotometer Method:

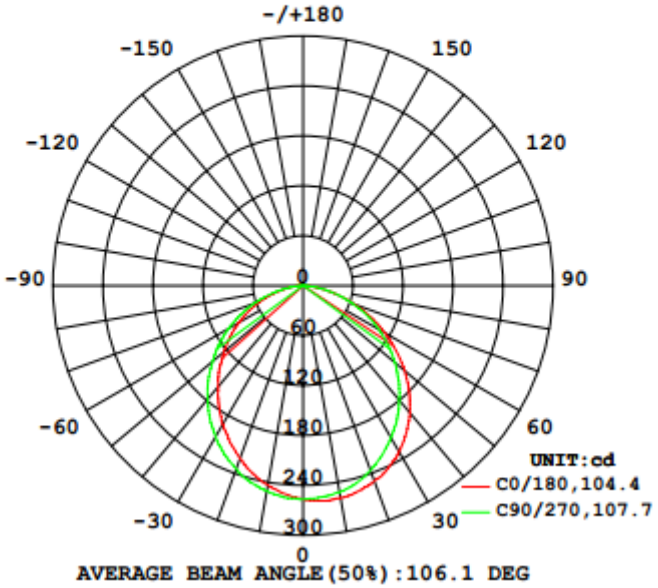
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	686.55
Luminous Efficacy (lm/W)	65.64
Beam Angle °	106.1
Zonal Lumen Density(0-60 °)	80.4
Center Beam Candle Power (cd)	257

Spectral Power Distribution and Chromaticity Diagram



Zonal Lumen Tabulation

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):106.1 DEG

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	196.5	28.6%
0-40	318.8	46.4%
0-60	551.8	80.4%
60-90	134.1	19.5%
70-100	53.5	7.8%
90-120	0.1	0%
0-90	685.9	99.9%
90-180	0.6	0.1%
0-180	686.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	24.2	3.5%	90-100	0.0	0%
10-20	69.0	10.1%	100-110	0.0	0%
20-30	103.3	15.0%	110-120	0.0	0%
30-40	122.3	17.8%	120-130	0.1	0%
40-50	123.9	18.1%	130-140	0.1	0%
50-60	109.1	15.9%	140-150	0.1	0%
60-70	80.6	11.7%	150-160	0.1	0%
70-80	43.4	6.3%	160-170	0.1	0%
80-90	10.0	1.5%	170-180	0.0	0%

Table--1 UNIT: cd

γ (DEG) \ C (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	257	257	257	257	257	257	257	257	257	257	257	257	257	257	257	257
5	259	259	258	257	255	254	252	251	251	253	253	254	255	257	257	260
10	259	259	256	254	252	249	245	244	243	246	246	248	251	253	256	259
15	256	256	252	249	246	241	236	235	234	233	237	240	244	247	252	255
20	250	251	246	241	236	230	225	223	221	223	225	230	234	240	245	249
25	242	242	237	231	225	218	211	209	208	209	212	218	224	230	234	240
30	230	230	224	219	211	204	197	194	193	194	197	203	210	217	223	229
35	216	216	210	203	196	188	182	178	176	177	181	188	195	202	208	214
40	199	198	193	187	179	172	165	161	159	160	164	170	178	185	191	197
45	180	179	174	169	163	153	148	143	142	143	147	153	161	166	174	178
50	159	158	155	150	144	136	130	125	124	125	128	136	142	148	154	157
55	136	136	133	129	125	118	112	107	107	107	111	117	123	127	132	135
60	113	113	111	109	105	98.4	93.3	89.6	89.0	89.3	92.8	97.5	103	106	111	111
65	89.6	89.9	88.9	87.2	84.4	79.3	75.0	71.8	71.2	71.7	74.2	78.3	82.6	85.0	87.5	88.3
70	65.9	66.4	65.7	64.9	63.5	59.9	56.8	54.1	53.5	53.9	55.5	58.8	62.1	63.5	65.0	65.3
75	43.1	43.5	43.8	43.5	43.3	41.0	39.1	37.3	36.5	36.7	37.5	39.9	41.7	42.4	42.6	42.5
80	22.8	22.9	23.5	23.8	24.2	23.5	22.4	21.1	21.3	21.1	21.4	22.2	22.7	22.8	22.8	22.1
85	7.27	7.37	8.13	8.49	8.74	9.27	9.18	9.38	9.22	8.86	8.56	8.45	7.60	7.76	7.34	7.32
90	0.11	0.00	0.11	0.01	0.22	0.39	0.39	0.54	0.21	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	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.11	0.00	0.05	0.05	0.00	0.10	0.00	0.11
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.11	0.16	0.05	0.05	0.11	0.10	0.11	0.05
120	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.22	0.11	0.11	0.05	0.21	0.16	0.11	0.11
125	0.11	0.00	0.00	0.00	0.10	0.00	0.00	0.05	0.22	0.11	0.16	0.16	0.21	0.31	0.16	0.11
130	0.00	0.00	0.00	0.00	0.05	0.15	0.00	0.05	0.22	0.16	0.16	0.21	0.21	0.42	0.21	0.16
135	0.00	0.00	0.10	0.00	0.05	0.10	0.00	0.05	0.22	0.16	0.16	0.21	0.21	0.42	0.21	0.21
140	0.05	0.00	0.11	0.00	0.10	0.10	0.00	0.05	0.27	0.16	0.16	0.26	0.21	0.47	0.27	0.27
145	0.05	0.00	0.11	0.00	0.10	0.16	0.00	0.05	0.27	0.16	0.16	0.26	0.21	0.53	0.37	0.32
150	0.05	0.00	0.11	0.05	0.10	0.21	0.00	0.05	0.27	0.16	0.16	0.26	0.26	0.53	0.48	0.37
155	0.05	0.00	0.11	0.00	0.16	0.21	0.11	0.11	0.27	0.16	0.16	0.31	0.16	0.58	0.48	0.37
160	0.05	0.05	0.11	0.10	0.16	0.21	0.11	0.11	0.27	0.16	0.16	0.31	0.16	0.63	0.53	0.37
165	0.05	0.05	0.16	0.10	0.21	0.21	0.16	0.11	0.27	0.16	0.16	0.31	0.16	0.58	0.53	0.48
170	0.05	0.05	0.21	0.10	0.21	0.21	0.32	0.16	0.27	0.16	0.11	0.31	0.16	0.74	0.53	0.64
175	0.16	0.16	0.26	0.10	0.42	0.26	0.37	0.21	0.27	0.16	0.11	0.31	0.16	0.68	0.53	0.64
180	0.16	0.11	0.26	0.16	0.47	0.52	0.42	0.21	0.27	0.16	0.11	0.26	0.16	0.47	0.42	0.48

2.2 Color Spatial Uniformity	IES LM-79 2008 ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1

Test Data :

Test date	2018-07-01	Test Ambient	25.1°C
Sample No.		Maximum Δu'v'	
JCE180610-E1		0.0015	

Gamma\C	I(cd)	CIE u'	CIE v'	du'v'	CIE u'	CIE v'	du'v'
-79	75.764	0.2642	0.5261	0.0007	0.2633	0.5257	0.0004
-78	80.378	0.2642	0.5261	0.0006	0.2632	0.5257	0.0005
-77	84.993	0.2641	0.5261	0.0006	0.2631	0.5257	0.0005
-76	89.685	0.2641	0.526	0.0005	0.263	0.5257	0.0006
-75	94.293	0.264	0.526	0.0005	0.2629	0.5256	0.0007
-74	98.999	0.2639	0.526	0.0004	0.263	0.5257	0.0006
-73	103.64	0.2641	0.526	0.0005	0.2629	0.5257	0.0007
-72	108.19	0.264	0.526	0.0005	0.2631	0.5257	0.0005
-71	112.82	0.264	0.526	0.0004	0.263	0.5256	0.0007
-70	117.35	0.2642	0.5259	0.0007	0.2629	0.5256	0.0007
-69	122.02	0.2642	0.526	0.0006	0.2631	0.5257	0.0006
-68	126.49	0.2641	0.526	0.0005	0.263	0.5256	0.0006
-67	130.93	0.2641	0.5259	0.0005	0.2629	0.5256	0.0007
-66	135.41	0.2641	0.526	0.0006	0.2631	0.5257	0.0005
-65	139.85	0.2641	0.526	0.0005	0.263	0.5256	0.0006
-64	144.27	0.2642	0.526	0.0006	0.263	0.5257	0.0006
-63	148.66	0.2641	0.526	0.0006	0.263	0.5257	0.0007
-62	152.9	0.2641	0.526	0.0005	0.2631	0.5257	0.0005
-61	157.15	0.2643	0.526	0.0008	0.2631	0.5257	0.0006
-60	161.41	0.2643	0.526	0.0008	0.263	0.5257	0.0006
-59	165.5	0.2643	0.526	0.0007	0.263	0.5257	0.0006
-58	169.58	0.2643	0.526	0.0007	0.2632	0.5257	0.0005
-57	173.61	0.2642	0.526	0.0006	0.2632	0.5257	0.0004
-56	177.6	0.2642	0.526	0.0006	0.2631	0.5257	0.0005
-55	180.67	0.2641	0.526	0.0005	0.2631	0.5257	0.0005
-54	184.54	0.2642	0.526	0.0007	0.2631	0.5257	0.0005
-53	188.2	0.2642	0.526	0.0006	0.2631	0.5256	0.0006
-52	191.83	0.2642	0.526	0.0006	0.2632	0.5257	0.0004
-51	195.53	0.2641	0.526	0.0006	0.2632	0.5257	0.0004
-50	198.93	0.2642	0.526	0.0007	0.2632	0.5257	0.0004

-49	202.32	0.2642	0.526	0.0006	0.2632	0.5257	0.0004
-48	205.59	0.2642	0.526	0.0006	0.2632	0.5257	0.0005
-47	208.84	0.2641	0.526	0.0005	0.2631	0.5257	0.0005
-46	211.82	0.2642	0.526	0.0006	0.2631	0.5257	0.0005
-45	214.85	0.2642	0.526	0.0006	0.2633	0.5257	0.0003
-44	217.67	0.2642	0.5259	0.0006	0.2633	0.5257	0.0003
-43	220.53	0.2641	0.5259	0.0005	0.2633	0.5257	0.0003
-42	223.1	0.2641	0.5259	0.0005	0.2633	0.5257	0.0003
-41	225.78	0.2642	0.5259	0.0006	0.2633	0.5257	0.0004
-40	228.04	0.2641	0.5259	0.0005	0.2633	0.5257	0.0004
-39	230.47	0.2641	0.5259	0.0005	0.2632	0.5257	0.0004
-38	232.58	0.2641	0.5259	0.0005	0.2632	0.5257	0.0004
-37	234.61	0.264	0.5259	0.0004	0.2632	0.5257	0.0004
-36	236.55	0.264	0.5259	0.0004	0.2632	0.5257	0.0004
-35	238.5	0.2641	0.5259	0.0005	0.2634	0.5257	0.0003
-34	240.37	0.264	0.5259	0.0004	0.2634	0.5257	0.0003
-33	241.96	0.264	0.5259	0.0004	0.2634	0.5257	0.0003
-32	243.35	0.264	0.5259	0.0004	0.2634	0.5257	0.0003
-31	244.82	0.2639	0.5259	0.0003	0.2633	0.5257	0.0003
-30	246.06	0.2639	0.5259	0.0003	0.2633	0.5257	0.0003
-29	247.27	0.2638	0.5259	0.0002	0.2633	0.5257	0.0003
-28	248.35	0.2638	0.5258	0.0002	0.2633	0.5257	0.0003
-27	249.23	0.2639	0.5258	0.0003	0.2633	0.5257	0.0003
-26	250.09	0.2639	0.5258	0.0002	0.2633	0.5257	0.0003
-25	250.81	0.2638	0.5258	0.0002	0.2633	0.5257	0.0004
-24	251.41	0.2638	0.5258	0.0002	0.2633	0.5257	0.0004
-23	251.88	0.2638	0.5258	0.0001	0.2633	0.5257	0.0004
-22	252.17	0.2637	0.5258	0.0001	0.2632	0.5257	0.0004
-21	252.6	0.2637	0.5258	0.0001	0.2632	0.5257	0.0004
-20	252.79	0.2636	0.5258	0	0.2632	0.5257	0.0004
-19	252.72	0.2636	0.5258	0	0.2632	0.5257	0.0004
-18	252.77	0.2636	0.5257	0	0.2632	0.5257	0.0004
-17	252.62	0.2636	0.5257	0.0001	0.2632	0.5257	0.0004
-16	252.45	0.2635	0.5257	0.0001	0.2632	0.5257	0.0005
-15	252.07	0.2635	0.5257	0.0002	0.2632	0.5257	0.0004
-14	251.56	0.2635	0.5257	0.0002	0.2632	0.5257	0.0005
-13	250.87	0.2634	0.5257	0.0002	0.2631	0.5256	0.0005
-12	250.4	0.2634	0.5257	0.0002	0.2631	0.5256	0.0005
-11	249.59	0.2634	0.5257	0.0003	0.2631	0.5256	0.0005
-10	248.61	0.2634	0.5257	0.0002	0.2631	0.5256	0.0005

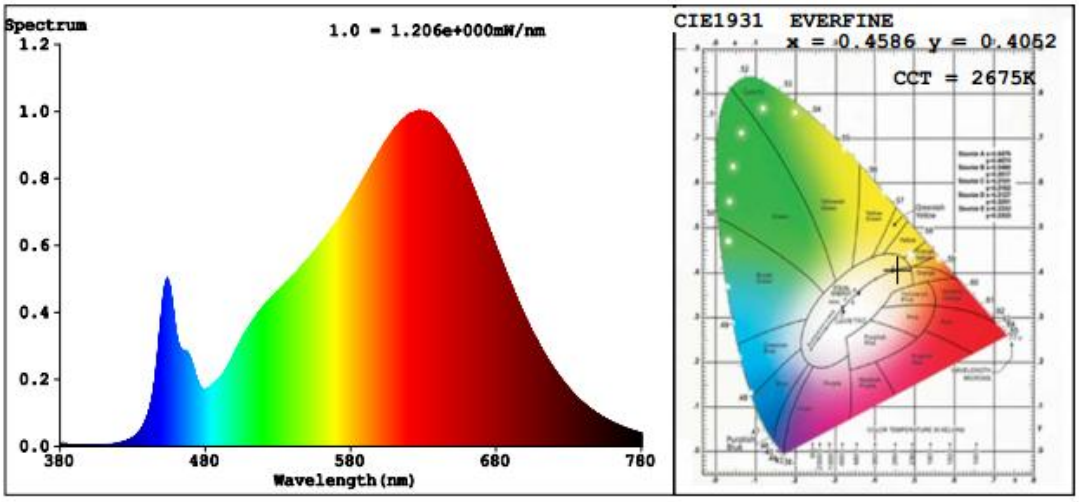
-9	247.81	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
-8	246.76	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
-7	245.36	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
-6	244.24	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
-5	242.79	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
-4	241.45	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
-3	239.75	0.2633	0.5257	0.0004	0.2631	0.5256	0.0005
-2	238.24	0.2633	0.5257	0.0003	0.2631	0.5256	0.0006
-1	236.37	0.2633	0.5257	0.0004	0.2631	0.5256	0.0005
0	234.58	0.2635	0.5258	0.0001	0.2635	0.5258	0.0001
1	232.67	0.2633	0.5257	0.0004	0.2631	0.5256	0.0006
2	230.68	0.2632	0.5257	0.0004	0.2631	0.5256	0.0005
3	228.62	0.2633	0.5257	0.0004	0.2631	0.5256	0.0006
4	226.39	0.2633	0.5257	0.0004	0.2631	0.5256	0.0006
5	223.99	0.2633	0.5257	0.0003	0.2631	0.5256	0.0006
6	221.66	0.2633	0.5257	0.0004	0.2631	0.5256	0.0006
7	219.28	0.2633	0.5257	0.0004	0.2631	0.5256	0.0005
8	216.87	0.2633	0.5257	0.0004	0.2631	0.5256	0.0005
9	214.36	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
10	211.77	0.2633	0.5257	0.0004	0.2631	0.5256	0.0005
11	209.09	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
12	206.25	0.2633	0.5257	0.0004	0.2631	0.5256	0.0005
13	203.27	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
14	200.46	0.2633	0.5257	0.0003	0.2632	0.5256	0.0005
15	197.67	0.2633	0.5257	0.0003	0.2632	0.5256	0.0005
16	194.66	0.2633	0.5257	0.0003	0.2632	0.5256	0.0005
17	191.64	0.2633	0.5257	0.0003	0.2632	0.5256	0.0005
18	188.63	0.2633	0.5257	0.0003	0.2632	0.5256	0.0004
19	185.57	0.2633	0.5257	0.0003	0.2632	0.5256	0.0004
20	182.6	0.2633	0.5257	0.0003	0.2632	0.5256	0.0004
21	179.23	0.2633	0.5257	0.0003	0.2632	0.5256	0.0004
22	176.12	0.2633	0.5257	0.0003	0.2633	0.5256	0.0004
23	172.98	0.2633	0.5256	0.0004	0.2633	0.5256	0.0004
24	169.54	0.2633	0.5257	0.0003	0.2631	0.5256	0.0005
25	166.31	0.2633	0.5257	0.0003	0.2632	0.5256	0.0005
26	163.06	0.2631	0.5256	0.0005	0.2631	0.5256	0.0005
27	159.68	0.2631	0.5256	0.0005	0.2632	0.5256	0.0005
28	156.42	0.2631	0.5256	0.0006	0.2632	0.5256	0.0005
29	153.03	0.2631	0.5256	0.0005	0.2632	0.5256	0.0005
30	149.6	0.2631	0.5256	0.0005	0.2632	0.5257	0.0004

31	146.25	0.2631	0.5256	0.0005	0.2632	0.5256	0.0004
32	142.81	0.2631	0.5256	0.0005	0.2632	0.5256	0.0004
33	139.52	0.2631	0.5256	0.0006	0.2631	0.5256	0.0005
34	136.15	0.2631	0.5256	0.0005	0.2631	0.5256	0.0005
35	132.73	0.2631	0.5256	0.0006	0.2631	0.5256	0.0005
36	129.24	0.2631	0.5256	0.0006	0.2631	0.5256	0.0005
37	125.83	0.2629	0.5256	0.0008	0.2632	0.5256	0.0005
38	122.49	0.2629	0.5256	0.0008	0.2632	0.5256	0.0004
39	119.1	0.2629	0.5256	0.0008	0.2632	0.5256	0.0004
40	115.62	0.2629	0.5256	0.0008	0.2631	0.5256	0.0006
41	112.22	0.2629	0.5256	0.0008	0.2631	0.5256	0.0005
42	108.72	0.2629	0.5256	0.0008	0.2631	0.5256	0.0005
43	105.29	0.2629	0.5256	0.0008	0.2631	0.5256	0.0005
44	101.88	0.2629	0.5255	0.0008	0.2631	0.5256	0.0005
45	98.497	0.2627	0.5255	0.001	0.263	0.5256	0.0006
46	95.094	0.2627	0.5255	0.001	0.2631	0.5256	0.0006
47	91.646	0.2627	0.5255	0.001	0.2631	0.5256	0.0006
48	88.182	0.2627	0.5255	0.001	0.2631	0.5256	0.0006
49	84.803	0.2627	0.5255	0.001	0.2631	0.5256	0.0005
50	81.826	0.2627	0.5255	0.001	0.263	0.5256	0.0007
51	78.446	0.2627	0.5255	0.001	0.263	0.5256	0.0006
52	75.012	0.2625	0.5255	0.0012	0.263	0.5256	0.0006
53	71.598	0.2625	0.5255	0.0011	0.2631	0.5256	0.0006
54	68.189	0.2625	0.5255	0.0011	0.2629	0.5256	0.0007
55	64.785	0.2625	0.5255	0.0011	0.263	0.5256	0.0007
56	61.332	0.2626	0.5255	0.0011	0.263	0.5256	0.0006
57	57.998	0.2624	0.5255	0.0013	0.2631	0.5256	0.0006
58	54.61	0.2624	0.5255	0.0013	0.2631	0.5256	0.0006
59	51.238	0.2624	0.5255	0.0012	0.2631	0.5256	0.0006
60	47.915	0.2624	0.5255	0.0012	0.2631	0.5256	0.0005
61	44.605	0.2624	0.5255	0.0012	0.2632	0.5256	0.0005
62	41.339	0.2623	0.5254	0.0014	0.2629	0.5255	0.0008
63	38.103	0.2623	0.5254	0.0013	0.2629	0.5256	0.0007
64	34.941	0.2623	0.5254	0.0013	0.263	0.5256	0.0007
65	31.791	0.2624	0.5255	0.0013	0.2629	0.5255	0.0008
66	28.748	0.2622	0.5254	0.0015	0.2629	0.5255	0.0007
67	25.787	0.2622	0.5255	0.0014	0.263	0.5255	0.0007
68	22.91	0.2623	0.5255	0.0014	0.2631	0.5255	0.0006
69	20.171	0.2622	0.5254	0.0015	0.2631	0.5255	0.0006
70	17.559	0.2622	0.5254	0.0015	0.2628	0.5255	0.0009

71	15.113	0.2623	0.5255	0.0014	0.2629	0.5255	0.0007
72	12.797	0.2621	0.5255	0.0015	0.263	0.5255	0.0007
73	10.65	0.2622	0.5255	0.0015	0.263	0.5255	0.0006
74	8.6356	0.2622	0.5255	0.0015	0.2628	0.5255	0.0009
75	6.7396	0.2623	0.5255	0.0013	0.2629	0.5255	0.0008
76	4.8725	0.2623	0.5255	0.0013	0.263	0.5256	0.0007
77	2.8979	0.2624	0.5255	0.0013	0.2631	0.5256	0.0006
78	1.2938	0.2624	0.5256	0.0013	0.2632	0.5256	0.0005
79	0.2001	0.2624	0.5256	0.0012	0.2632	0.5256	0.0004

3. Electrical and Photometric Measurements, with dimming	IES LM-79 2008 ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1

Test date	2018-07-01	Test Ambient:	25.1°C	
Dimmer Model		LEVITON MFG CO INC (E31373), Cat. No. 6681		
Sample No.			Maximum Level	Minimun Level
JCE180610-E1	Input: 120.0 V / 60 Hz	Light output (Lumen)	599.6	54.7
		Percentage(%)	87.3	8.0



Colorimetric Parameters

Chromaticity Coordinate:x=0.4586 y=0.4052/u'=0.2641 v'=0.5251

CCT=2675K(Duv=-0.0019) Dominant WL:Ld =585.0nm Purity=59.3%

Peak WL:Lp=627.6nm FWHM=149.7nm

Render Index:Ra=93.5 CRI=91.1

R1 =94	R2 =98	R3 =98	R4 =93	R5 =94	R6 =96	R7 =92	
R8 =83	R9 =65	R10=93	R11=93	R12=81	R13=95	R14=99	R15=91

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	20.9	Dimmer adjusted to lowest light output	< 1 m

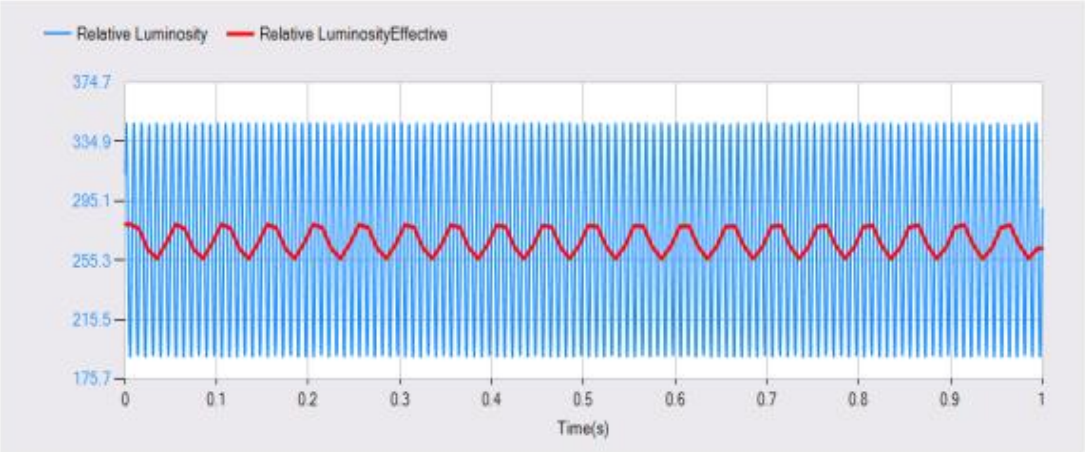
4. Flicker	NEMA 77-2017 ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1

Dimming Technology	phase-cut
Dimmer	LEVITON MFG CO INC (E31373), Cat. No. 6681

Item	Short Term Flicker Indicator (Pst)	Stroboscopic Visibility Measure (SVM)
Full light output	0.091	1.092
Maximum Level (100%)	0.105	1.130
Minimun Level (20%)	0.233	1.083

5. Operating Frequency	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1
Noted: This test and data are not covered by NVLAP accreditation	

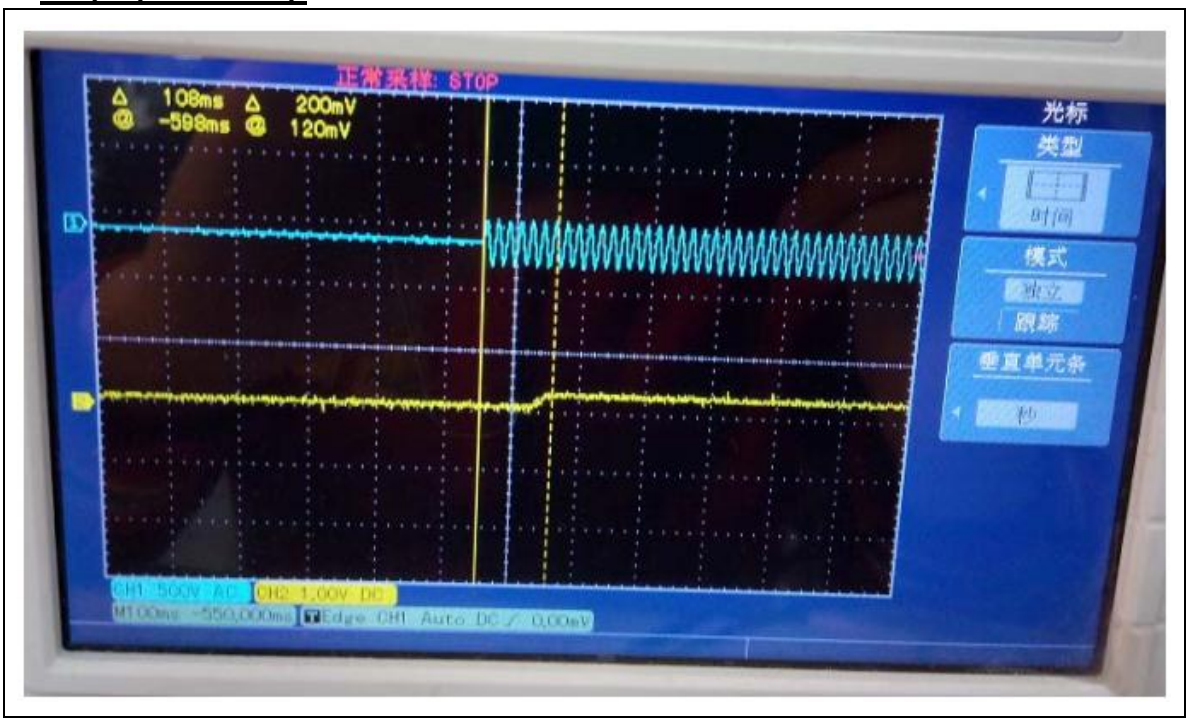
Test date	2018-07-01	Test Ambient:	25.1°C
Sample No.		**Operating Frequency (Hz)**	
JCE180610-E1		120.02	



6. Starting Time *(Refer to Work Instruction QD28)*	**ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1**

Test date	2018-07-01	Test Ambient:	25.1°C
Sample No.	**Start Time (ms)**		
JCE180610-E1	108		

Graph (Start Time):



7. Transient Protection Test *(Refer to Work Instruction QD34)*	**ANSI/IEEE C62.41** **ENERGY STAR® Program Requirements for Luminaires – Version 2.1**

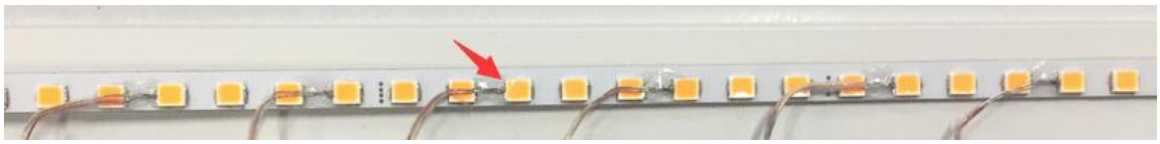
Test date	2018-07-01	**Test Ambient**	25.1°C
Sample No.		**Transient Protection Test - Seven Strikes**	
JCE180610-E1		Pass	

8.1 In-Situ Temperature Measurement Test (ISTMT)	UL1598-2008, 3rd Edition

Test date	2018-07-01	Test Ambient	25.1°C
Input Vol./Frequency	120 V / 60 Hz	Output Current of Single LED(mA)	41.67

Sample No.	LED Package Model	Maximum Measured LED Ts Point Temperature (°C)	Maximum LED Ts Point Temperature Limited (°C)
JCE180610-E1	67-21S Series (3000K)	56.6	105

In-Situ Picture - Ts:



8.2 Maximum Measured Ballast or Driver Case Temperature	UL1598-2008, 3rd Edition

Test date	2018-07-01	Test Ambient	25.1°C
Sample No.	**Maximum Measured Driver Case Temperature (°C)**	**Maximum Driver Case Temperature Limited (°C)**	
JCE180610-E1	54.1	105	

In-Situ Picture - Ts:

9. Off-State Power Consumption:	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1

Test date	2018-07-01	Test Ambient:	25.0 ℃
Model Number	ULD8-27	Stabilization Time (min)	90

Electrical Measurement – when the luminaires turned off:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)
JCE180610-E1	120.0	60	0	0.007

10. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2018-07-01	2019-06-30
ST-R-331	Spectral analysis system HAAS-2000	2018-07-01	2019-06-30
EE-09	Goniophotometer system	2018-07-01	2019-06-30
D908S	Standard Lamp	2018-07-01	2019-06-30
D204	Standard Lamp	2018-07-01	2019-06-30
PF2010	Power Meter for Integrating Sphere	2018-07-01	2019-06-30
PF210	Power Meter for Goniophotometer	2018-07-01	2019-06-30
EE-015	Flux Meter	2018-07-01	2019-06-30
ST-R-277	Oscillograph	2018-07-01	2019-06-30
ST-R-EM01	Surge Generator	2018-07-01	2019-06-30
ST-R-EM02	EMC Coupler/Decoupler Module	2018-07-01	2019-06-30

Uncertainty
Photometric Measurement (Sphere):1.74%
Chromaticity Measurement(Sphere):14.3K
Photometric Measurement(Goniophotometer):1.62%

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