

## 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):ULD2-XX**

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

Test & Report By:

*Garman Mo*

Engineer: Garman Mo

Review By:

*John Li*

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.

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

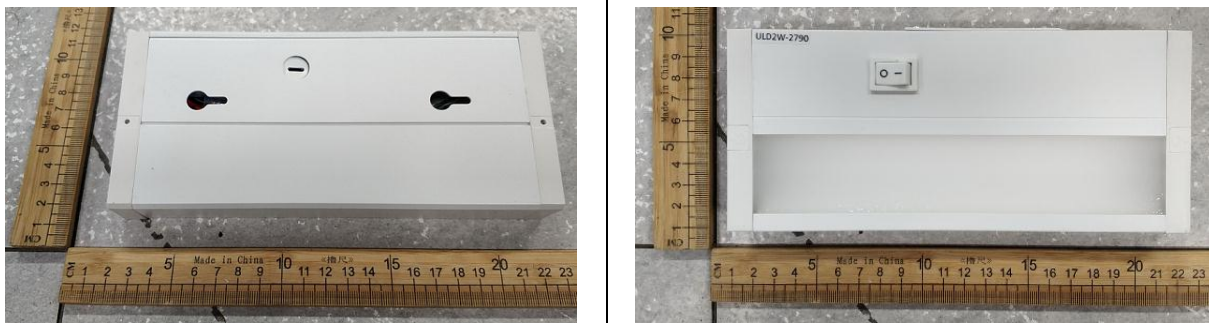
Report Format Number STD/QR4910-A/1

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

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

<b>1.1 Product Information:</b>		
Model Number	ULD2-XX	
Remark	“XX” could be 27/30/35/40/50 refers to CCT.	
Representative (Tested) Model	ULD2-27	
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-A1	
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
<b>1.2 Rated Values:</b>		
Rated Voltage / Frequency	120Vac, 60 Hz	
Nominal Power	4.5W	
Rated Initial Lamp Lumen	--	
Declared CC	2700K, 3000K, 3500K, 4000K, 5000K	
Sample Number	JCE180610-A1	
<b>Photo</b>		
		

1.3 Test Specifications:	
Date of Receipt	Jun.30,2018
Date of Test	Jul.01,2018
Test item	<ol style="list-style-type: none"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> <li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li> <li>7. UL1993 4<sup>th</sup> Edition, Self-Ballasted Lamps and Lamp Adapters</li> <li>8. ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) – Version 2.1</li> </ol>
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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , 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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  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**  
*(Refer to Work Instruction QD25)*

IES LM-79 2008

Test date	2018-07-01	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ULD2-27		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
JCE180610-A1	120.0	60	0.0384	4.490	0.9740

**Sphere-Spectroradiometer Method:**

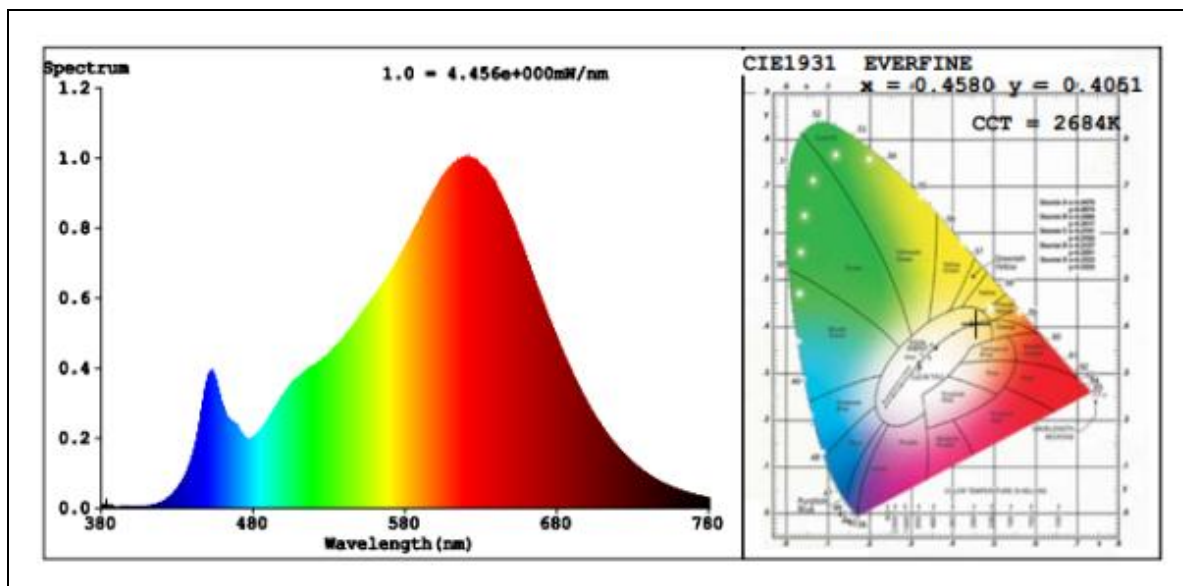
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	91.8
R9	53
CCT (K)	2684
Chromaticity (x, y)	x=0.4580 y=0.4051
Chromaticity (u', v')	u'=0.2637 v'=0.5250
Duv	-0.0019

Special Color Rendering Indices			
R1	92	R9	53
R2	98	R10	95
R3	97	R11	93
R4	91	R12	88
R5	93	R13	94
R6	97	R14	99
R7	89	R15	88
R8	77	--	--

**Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	251.88
Luminous Efficacy (lm/W)	56.10
Beam Angle °	105.0
Zonal Lumen Density(0-60 °)	80.8
Center Beam Candle Power (cd)	94

**Spectral Power Distribution and Chromaticity Diagram**



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

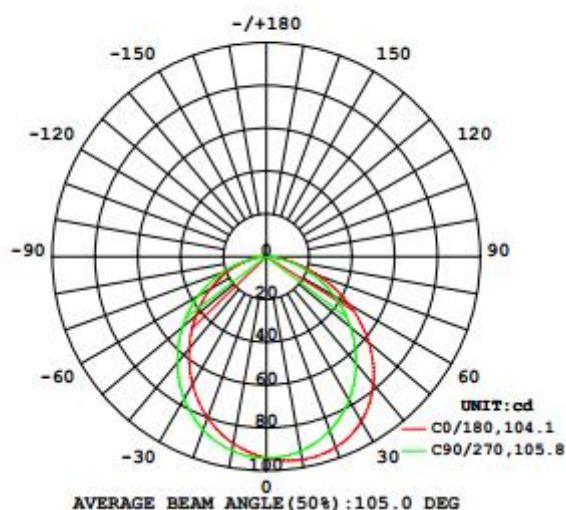
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**Zonal Lumen Tabulation**
**LUMINOUS INTENSITY DISTRIBUTION DIAGRAM**


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	72.5	28.8%
0-40	117.7	46.7%
0-60	203.4	80.8%
60-90	48.5	19.2%
70-100	19.2	7.6%
90-120	0	0%
0-90	251.9	100%
90-180	0	0%
0-180	251.9	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	%Total
0-10	8.9	3.5%	90-100	0	0%
10-20	25.4	10.1%	100-110	0	0%
20-30	38.2	15.2%	110-120	0	0%
30-40	45.3	18.0%	120-130	0	0%
40-50	45.7	18.2%	130-140	0	0%
50-60	39.9	15.9%	140-150	0	0%
60-70	29.3	11.6%	150-160	0	0%
70-80	15.7	6.2%	160-170	0	0%
80-90	3.5	1.4%	170-180	0	0%



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	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	94.1	
5	95.6	95.5	95.0	94.4	93.6	92.9	92.3	91.9	91.8	91.9	92.3	92.8	93.5	94.3	94.9	95.4	
10	96.3	96.1	95.0	93.7	92.3	90.8	89.6	88.9	88.7	88.9	89.6	90.5	92.1	93.6	94.9	95.9	
15	96.1	95.7	94.2	92.0	89.9	87.8	86.1	85.1	84.8	85.1	86.1	87.4	89.5	91.9	93.9	95.5	
20	94.8	94.2	92.3	89.4	86.6	83.9	81.8	80.5	80.2	80.5	81.7	83.5	86.1	89.1	91.9	94.2	
25	92.5	91.8	89.4	85.9	82.3	79.2	76.8	75.3	74.8	75.3	76.6	78.8	81.8	85.5	88.9	91.6	
30	88.8	88.0	85.4	81.4	77.4	73.8	71.2	69.4	68.9	69.4	71.0	73.4	76.8	80.9	84.8	87.8	
35	84.0	83.1	80.3	76.1	71.6	67.9	65.1	63.2	62.6	63.2	64.8	67.4	71.0	75.5	79.7	82.9	
40	77.8	77.1	74.2	69.9	65.2	61.5	58.7	56.7	56.1	56.6	58.4	61.1	64.8	69.3	73.7	76.9	
45	70.6	70.0	67.3	63.0	58.5	54.8	52.1	50.1	49.4	50.0	51.7	54.4	58.0	62.6	66.8	69.7	
50	62.5	62.0	59.5	55.6	51.4	47.9	45.3	43.5	42.9	43.4	45.0	47.7	51.1	55.3	59.1	61.8	
55	53.9	53.4	51.3	47.8	44.1	41.0	38.6	37.0	36.4	36.8	38.4	40.8	43.9	47.7	51.0	53.2	
60	44.7	44.4	42.7	39.9	36.7	34.0	32.0	30.6	30.1	30.4	31.8	33.9	36.6	39.9	42.6	44.3	
65	35.4	35.2	33.9	31.8	29.3	27.1	25.4	24.3	23.9	24.2	25.3	27.0	29.3	31.8	33.9	35.2	
70	26.2	26.1	25.2	23.6	21.9	20.2	19.0	18.2	17.9	18.1	18.9	20.3	22.0	23.8	25.2	26.1	
75	17.4	17.3	16.7	15.8	14.6	13.6	12.8	12.3	12.2	12.3	12.8	13.5	14.6	15.8	16.9	17.4	
80	9.46	9.46	9.11	8.55	7.86	7.50	7.28	7.12	7.06	7.10	7.28	7.48	7.77	8.57	9.18	9.54	
85	3.32	3.32	3.14	2.90	2.44	2.69	2.72	2.84	2.96	2.89	2.77	2.70	2.42	2.90	3.15	3.38	
90	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	
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	0.00	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	
135	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	
140	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	
145	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	
150	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	
155	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	
160	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	
165	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	
170	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	
175	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	
180	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	



**2.2 Color Spatial Uniformity**

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

**Test Data :**

<b>Test date</b>	2018-07-01	<b>Test Ambient</b>	25.1°C
<b>Sample No.</b>		<b>Maximum <math>\Delta u'v'</math></b>	
JCE180610-A1		0.0012	

Gamma\C	CIE $u'$	CIE $v'$	$du'v'$	CIE $u'$	CIE $v'$	$du'v'$
-80	0.2652	0.526	0.001	0.2642	0.5255	0.0002
-79	0.2652	0.526	0.001	0.2642	0.5255	0.0002
-78	0.2653	0.526	0.0011	0.2641	0.5255	0.0002
-77	0.2653	0.526	0.0011	0.2642	0.5255	0.0002
-76	0.2654	0.526	0.0011	0.2641	0.5255	0.0002
-75	0.2654	0.5259	0.0011	0.2642	0.5255	0.0002
-74	0.2654	0.526	0.0011	0.2641	0.5255	0.0002
-73	0.2654	0.5259	0.0011	0.2641	0.5254	0.0002
-72	0.2654	0.5259	0.0012	0.2641	0.5255	0.0002
-71	0.2654	0.5259	0.0011	0.2641	0.5255	0.0003
-70	0.2654	0.5259	0.0012	0.2641	0.5255	0.0002
-69	0.2654	0.5259	0.0012	0.2641	0.5255	0.0002
-68	0.2654	0.5259	0.0011	0.2641	0.5255	0.0003
-67	0.2654	0.5259	0.0011	0.2641	0.5255	0.0002
-66	0.2654	0.5259	0.0011	0.2641	0.5254	0.0002
-65	0.2653	0.5259	0.0011	0.2641	0.5255	0.0003
-64	0.2653	0.5258	0.001	0.2641	0.5255	0.0003
-63	0.2653	0.5258	0.001	0.2641	0.5255	0.0003
-62	0.2652	0.5258	0.001	0.264	0.5255	0.0003
-61	0.2652	0.5258	0.0009	0.264	0.5255	0.0004
-60	0.2652	0.5258	0.0009	0.264	0.5255	0.0004
-59	0.2651	0.5258	0.0008	0.264	0.5254	0.0004
-58	0.2651	0.5258	0.0008	0.2639	0.5254	0.0004
-57	0.2652	0.5258	0.0009	0.2639	0.5254	0.0004
-56	0.2651	0.5258	0.0008	0.2639	0.5254	0.0005
-55	0.2651	0.5258	0.0008	0.264	0.5255	0.0004
-54	0.2652	0.5258	0.0009	0.264	0.5254	0.0004
-53	0.2652	0.5258	0.0009	0.264	0.5255	0.0004
-52	0.2651	0.5257	0.0008	0.264	0.5254	0.0004

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-51	0.265	0.5257	0.0007	0.2639	0.5254	0.0004
-50	0.2651	0.5257	0.0008	0.2641	0.5255	0.0003
-49	0.2651	0.5257	0.0008	0.2641	0.5255	0.0003
-48	0.265	0.5257	0.0007	0.2641	0.5255	0.0003
-47	0.265	0.5257	0.0007	0.2641	0.5254	0.0003
-46	0.2651	0.5257	0.0008	0.264	0.5254	0.0003
-45	0.2651	0.5257	0.0008	0.264	0.5254	0.0003
-44	0.265	0.5257	0.0007	0.264	0.5255	0.0003
-43	0.265	0.5257	0.0006	0.264	0.5254	0.0004
-42	0.2649	0.5257	0.0006	0.2642	0.5255	0.0002
-41	0.265	0.5257	0.0007	0.2642	0.5255	0.0002
-40	0.2649	0.5256	0.0006	0.2641	0.5255	0.0002
-39	0.2649	0.5257	0.0006	0.2641	0.5255	0.0002
-38	0.2649	0.5256	0.0005	0.2641	0.5254	0.0003
-37	0.2648	0.5256	0.0005	0.2641	0.5255	0.0003
-36	0.2648	0.5256	0.0004	0.2641	0.5254	0.0003
-35	0.2647	0.5256	0.0004	0.264	0.5254	0.0003
-34	0.2648	0.5256	0.0005	0.264	0.5254	0.0003
-33	0.2648	0.5256	0.0004	0.2642	0.5255	0.0002
-32	0.2647	0.5256	0.0004	0.2642	0.5254	0.0002
-31	0.2647	0.5256	0.0003	0.2642	0.5255	0.0002
-30	0.2646	0.5256	0.0003	0.2642	0.5254	0.0002
-29	0.2646	0.5255	0.0002	0.2641	0.5254	0.0002
-28	0.2645	0.5255	0.0002	0.2641	0.5254	0.0002
-27	0.2645	0.5255	0.0002	0.2641	0.5254	0.0002
-26	0.2644	0.5255	0.0001	0.2641	0.5254	0.0003
-25	0.2644	0.5255	0.0001	0.2641	0.5254	0.0003
-24	0.2644	0.5254	0.0001	0.2641	0.5254	0.0003
-23	0.2643	0.5254	0.0001	0.2641	0.5254	0.0003
-22	0.2643	0.5254	0.0001	0.264	0.5254	0.0004
-21	0.2644	0.5254	0.0001	0.264	0.5254	0.0003
-20	0.2644	0.5254	0.0001	0.264	0.5254	0.0004
-19	0.2643	0.5254	0.0001	0.264	0.5254	0.0004
-18	0.2643	0.5254	0.0002	0.264	0.5254	0.0004
-17	0.2643	0.5254	0.0001	0.2639	0.5254	0.0004
-16	0.2643	0.5254	0.0002	0.2639	0.5254	0.0004
-15	0.2642	0.5254	0.0002	0.2639	0.5254	0.0005
-14	0.2642	0.5254	0.0002	0.2639	0.5254	0.0005
-13	0.2642	0.5254	0.0002	0.2639	0.5254	0.0005
-12	0.2642	0.5254	0.0003	0.2639	0.5254	0.0005

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-11	0.2641	0.5254	0.0003	0.2639	0.5254	0.0005
-10	0.2641	0.5253	0.0003	0.2638	0.5254	0.0005
-9	0.2641	0.5254	0.0003	0.2639	0.5254	0.0005
-8	0.2641	0.5253	0.0003	0.2639	0.5254	0.0005
-7	0.2641	0.5254	0.0003	0.2638	0.5254	0.0005
-6	0.2641	0.5254	0.0003	0.2638	0.5254	0.0005
-5	0.2641	0.5254	0.0003	0.2638	0.5254	0.0006
-4	0.2641	0.5254	0.0003	0.2638	0.5254	0.0006
-3	0.2641	0.5254	0.0003	0.2638	0.5254	0.0005
-2	0.2641	0.5254	0.0003	0.2638	0.5253	0.0006
-1	0.2641	0.5254	0.0003	0.2638	0.5254	0.0006
0	0.2643	0.5256	0	0.2643	0.5256	0
1	0.2641	0.5254	0.0003	0.2638	0.5253	0.0006
2	0.2641	0.5254	0.0003	0.2638	0.5254	0.0006
3	0.2641	0.5254	0.0003	0.2638	0.5254	0.0005
4	0.2641	0.5254	0.0003	0.2638	0.5254	0.0005
5	0.2641	0.5254	0.0002	0.2638	0.5254	0.0006
6	0.2641	0.5254	0.0002	0.2638	0.5254	0.0005
7	0.2642	0.5254	0.0002	0.2638	0.5254	0.0005
8	0.2642	0.5254	0.0002	0.2638	0.5254	0.0005
9	0.2642	0.5254	0.0002	0.2638	0.5254	0.0005
10	0.2642	0.5254	0.0002	0.2638	0.5254	0.0005
11	0.2642	0.5254	0.0002	0.2639	0.5254	0.0005
12	0.2642	0.5254	0.0001	0.2639	0.5254	0.0005
13	0.2643	0.5255	0.0001	0.2639	0.5254	0.0005
14	0.2642	0.5254	0.0001	0.2639	0.5254	0.0005
15	0.2642	0.5255	0.0001	0.2639	0.5254	0.0005
16	0.2643	0.5255	0.0001	0.2639	0.5254	0.0004
17	0.2643	0.5255	0.0001	0.264	0.5254	0.0004
18	0.2643	0.5255	0.0001	0.2639	0.5254	0.0004
19	0.2641	0.5255	0.0002	0.264	0.5254	0.0004
20	0.2641	0.5255	0.0002	0.264	0.5254	0.0004
21	0.2641	0.5255	0.0002	0.2638	0.5254	0.0005
22	0.2642	0.5255	0.0002	0.2639	0.5254	0.0005
23	0.2642	0.5255	0.0002	0.2639	0.5254	0.0005
24	0.2642	0.5255	0.0002	0.2639	0.5254	0.0004
25	0.2642	0.5255	0.0002	0.2639	0.5254	0.0004
26	0.2642	0.5255	0.0002	0.2639	0.5254	0.0004
27	0.2642	0.5255	0.0001	0.2639	0.5254	0.0004
28	0.2642	0.5255	0.0001	0.264	0.5255	0.0004

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**NVLAP CODE: 201011-0**

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29	0.2642	0.5255	0.0001	0.264	0.5254	0.0004
30	0.2642	0.5255	0.0001	0.2638	0.5254	0.0005
31	0.264	0.5255	0.0004	0.2639	0.5254	0.0005
32	0.264	0.5255	0.0003	0.2639	0.5254	0.0004
33	0.264	0.5255	0.0003	0.2639	0.5254	0.0004
34	0.264	0.5255	0.0003	0.264	0.5254	0.0004
35	0.264	0.5255	0.0003	0.264	0.5255	0.0004
36	0.264	0.5255	0.0003	0.264	0.5255	0.0004
37	0.264	0.5255	0.0003	0.2639	0.5254	0.0005
38	0.264	0.5255	0.0003	0.2639	0.5254	0.0005
39	0.264	0.5255	0.0003	0.2639	0.5254	0.0004
40	0.2638	0.5255	0.0005	0.2639	0.5255	0.0004
41	0.2638	0.5255	0.0005	0.264	0.5254	0.0004
42	0.2638	0.5255	0.0005	0.2639	0.5254	0.0005
43	0.2638	0.5255	0.0005	0.2638	0.5254	0.0005
44	0.2638	0.5255	0.0005	0.2639	0.5254	0.0005
45	0.2638	0.5255	0.0005	0.2639	0.5255	0.0004
46	0.2638	0.5255	0.0005	0.2639	0.5255	0.0004
47	0.2636	0.5254	0.0007	0.2638	0.5254	0.0006
48	0.2636	0.5254	0.0007	0.2638	0.5254	0.0005
49	0.2636	0.5255	0.0007	0.2639	0.5254	0.0005
50	0.2636	0.5254	0.0007	0.2639	0.5254	0.0005
51	0.2636	0.5255	0.0007	0.2637	0.5254	0.0006
52	0.2636	0.5254	0.0007	0.2637	0.5254	0.0006
53	0.2636	0.5254	0.0007	0.2638	0.5254	0.0006
54	0.2636	0.5254	0.0007	0.2638	0.5254	0.0005
55	0.2636	0.5255	0.0007	0.2638	0.5254	0.0005
56	0.2636	0.5254	0.0007	0.2638	0.5255	0.0005
57	0.2636	0.5254	0.0007	0.2639	0.5255	0.0005
58	0.2636	0.5255	0.0007	0.2639	0.5254	0.0004
59	0.2636	0.5255	0.0007	0.2639	0.5255	0.0004
60	0.2636	0.5254	0.0008	0.264	0.5255	0.0004
61	0.2636	0.5254	0.0007	0.2639	0.5254	0.0004
62	0.2636	0.5255	0.0007	0.264	0.5255	0.0004
63	0.2636	0.5255	0.0008	0.264	0.5255	0.0003
64	0.2636	0.5255	0.0008	0.264	0.5255	0.0003
65	0.2636	0.5255	0.0007	0.264	0.5255	0.0003
66	0.2636	0.5255	0.0007	0.264	0.5254	0.0003
67	0.2636	0.5255	0.0007	0.2641	0.5255	0.0003
68	0.2636	0.5255	0.0008	0.2641	0.5255	0.0003

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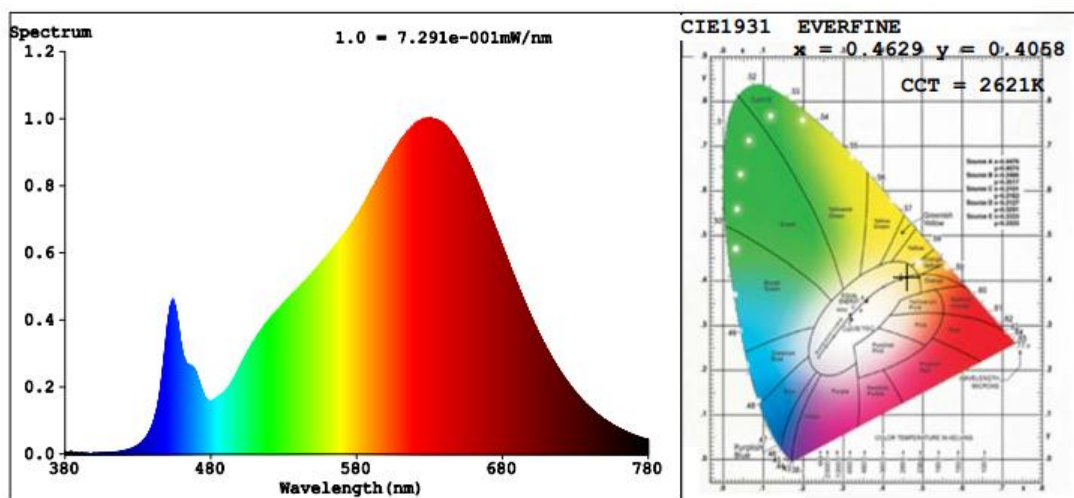
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69	0.2635	0.5255	0.0008	0.264	0.5255	0.0003
70	0.2636	0.5254	0.0008	0.2641	0.5255	0.0003
71	0.2636	0.5255	0.0008	0.2641	0.5255	0.0003
72	0.2636	0.5255	0.0008	0.2641	0.5255	0.0003
73	0.2636	0.5255	0.0008	0.2641	0.5255	0.0003
74	0.2635	0.5255	0.0008	0.2641	0.5255	0.0002
75	0.2636	0.5255	0.0008	0.2641	0.5255	0.0002
76	0.2636	0.5255	0.0007	0.2641	0.5255	0.0002
77	0.2635	0.5256	0.0008	0.2641	0.5255	0.0002
78	0.2635	0.5256	0.0008	0.2641	0.5255	0.0002
79	0.2635	0.5256	0.0008	0.2641	0.5255	0.0002
80	0.2636	0.5256	0.0008	0.2641	0.5255	0.0002

**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	Minimum Level
JCE180610-A1	Input: 120.0 V / 60 Hz	Light output (Lumen)	217.6
		Percentage(%)	86.4
			18.9
			7.5


**Colorimetric Parameters**

Chromaticity Coordinate: x=0.4629 y=0.4058/u'=0.2666 v'=0.5260

CCT=2621K(Duv=-0.0020) Dominant WL:Ld =585.3nm Purity=60.8%

Peak WL:Lp=629.2nm FWHM=148.8nm

Render Index: Ra=93.9 CRI=91.6

R1 =95 R2 =98 R3 =98 R4 =93 R5 =94 R6 =96 R7 =92

R8 =85 R9 =68 R10=93 R11=94 R12=82 R13=96 R14=98 R15=92

The luminaires [can] ~~lean 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	21.4	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**

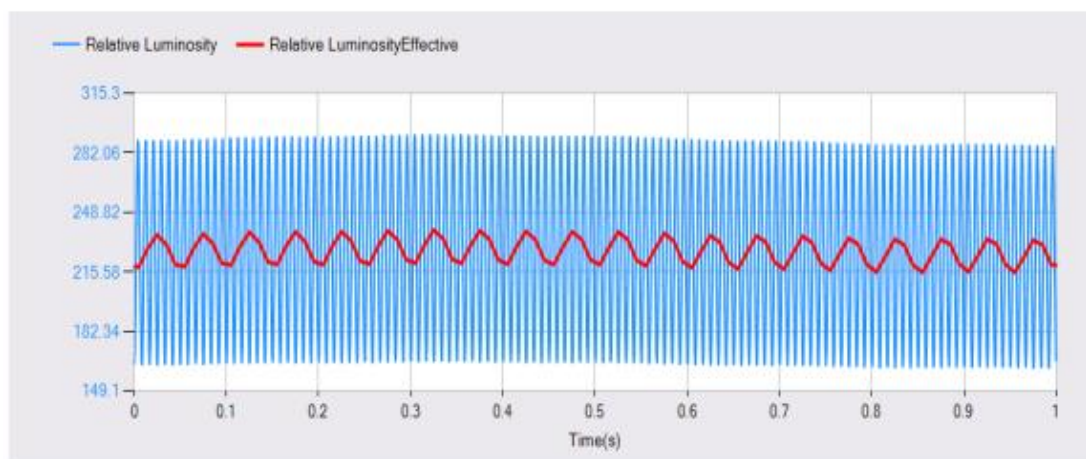
<b>Dimming Technology</b>	<a href="#">phase-cut</a>
<b>Dimmer</b>	<a href="#">LEVITON MFG CO INC (E31373), Cat. No. 6681</a>

<b>Item</b>	Short Term Flicker Indicator (Pst)	Stroboscopic Visibility Measure (SVM)
<b>Full light output</b>	0.135	1.044
<b>Maximum Level (100%)</b>	0.207	1.178
<b>Minimum Level (20%)</b>	0.234	1.182



**5. Operating Frequency****ENERGY STAR<sup>®</sup> 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-A1	120.02		



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

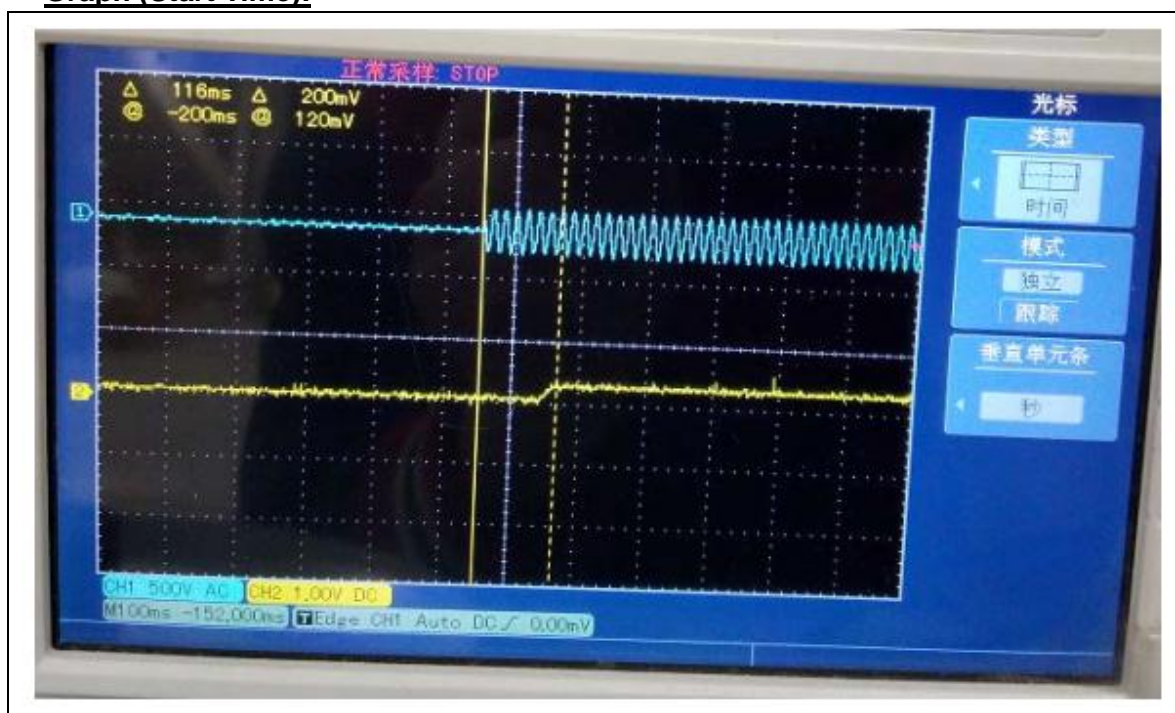
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**6. Starting Time***(Refer to Work Instruction QD28)***ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1**

Test date	2018-07-01	Test Ambient:	25.1°C
Sample No.	Start Time (ms)		
JCE180610-A1	116		

**Graph (Start Time):****Laboratory: Standard-Tech Co., Ltd Testing Center****NVLAP CODE: 201011-0**

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<b>7. Transient Protection Test</b> <i>(Refer to Work Instruction QD34)</i>	<b>ANSI/IEEE C62.41</b> <b>ENERGY STAR® Program Requirements for</b> <b>Luminaires – Version 2.1</b>
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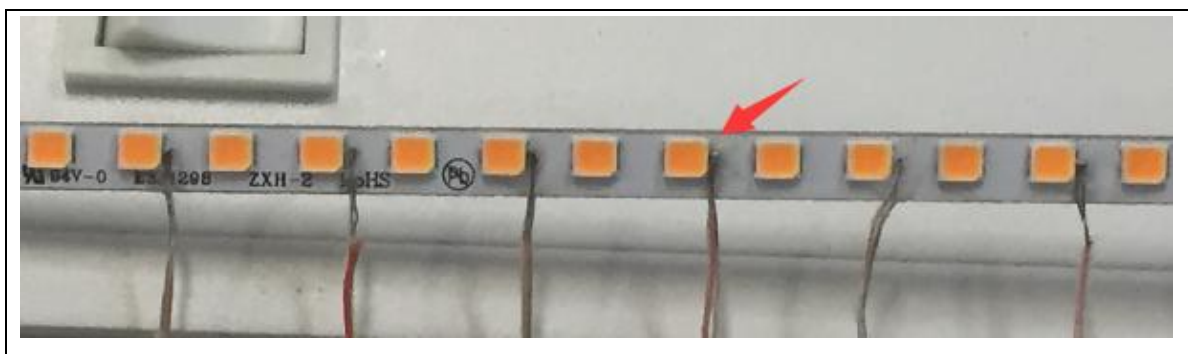
<b>Test date</b>	2018-07-01	<b>Test Ambient</b>	25.1°C
<b>Sample No.</b>		<b>Transient Protection Test - Seven Strikes</b>	
JCE180610-A1		Pass	

## 8.1 In-Situ Temperature Measurement Test (ISTMT)

UL1598-2008, 3<sup>rd</sup> Edition

Test date	2018-07-01	Test Ambient	25.1°C
Input Vol./Frequency	120 V / 60 Hz	Output Current of Single LED(mA)	49.7
Sample No.	LED Package Model	Maximum Measured LED Ts Point Temperature (°C)	Maximum LED Ts Point Temperature Limited (°C)
JCE180610-A1	67-21S Series (3000K)	49.0	105

## In-Situ Picture - Ts:



**8.2 Maximum Measured Ballast or Driver Case Temperature** **UL1598-2008, 3<sup>rd</sup> 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-A1	47.6	105	

**In-Situ Picture - Ts:**

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

<b>Test date</b>	2018-07-01	<b>Test Ambient:</b>	25.0 °C
<b>Model Number</b>	ULD2-27	<b>Stabilization Time (min)</b>	90

**Electrical Measurement – when the luminaires turned off:**

<b>Sample No.</b>	<b>Voltage (Vac)</b>	<b>Frequency (Hz )</b>	<b>Current (A)</b>	<b>Power (W)</b>
JCE180610-A1	120.0	60	0	0. 0073

**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 \*\*\*\*\***