

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):ULD12-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: 2018-07-20

Test & Report By:

Allen Shao

Review By:

John Li

Engineer: Allen Shao

Manager: John Li

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 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

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

1.1 Product Information:		
Model Number	ULD12-XX	
Remark	“XX” could be 27/30/40/50 refers to CCT.	
Representative (Tested) Model	ULD12-27	
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-H1	
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	12W 16W	
Rated Initial Lamp Lumen	--	
Declared CC	2700K,3000K,4000K,5000K	
Sample Number	JCE180610-H1	
Photo		
		
		

1.3 Test Specifications:	
Date of Receipt	Jun.30,2018
Date of Test	Jul.05,2018
Test item	<ol style="list-style-type: none">1. Total Luminous Flux2. Luminous Distribution Intensity3. Luminous Efficacy4. Correlated Color Temperature5. Color Rendering Index6. Chromaticity Coordinate7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none">1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources4. CIE 15-2004 Technical Report Colorimetry5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems7. UL1993 4th Edition, Self-Ballasted Lamps and Lamp Adapters8. 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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
(Refer to Work Instruction QD25)

IES LM-79 2008

Test date	2018-07-05	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ULD12-27		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
JCE180610-H1	120.0	60	0.1298	15.51	0.9952

Sphere-Spectroradiometer Method:

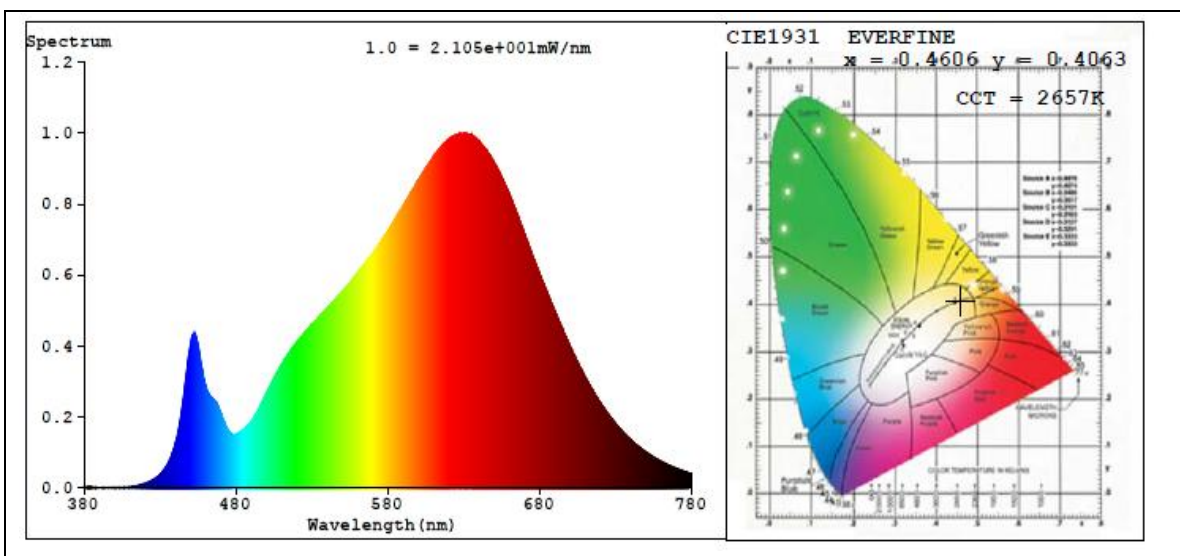
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	96.9
R9	63
CCT (K)	2714
Chromaticity (x, y)	x=0.4564 y=0.4062
Chromaticity (u', v')	u'=0.2623 v'=0.5251
Duv	-0.0014

Special Color Rendering Indices			
R1	95	R9	63
R2	99	R10	97
R3	98	R11	96
R4	94	R12	88
R5	96	R13	96
R6	97	R14	100
R7	91	R15	91
R8	82	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1075.6 931.6
Luminous Efficacy (lm/W)	59.95 69.35
Beam Angle °	104.7
Zonal Lumen Density(0-60 °)	80.7
Center Beam Candle Power (cd)	406

Spectral Power Distribution and Chromaticity Diagram



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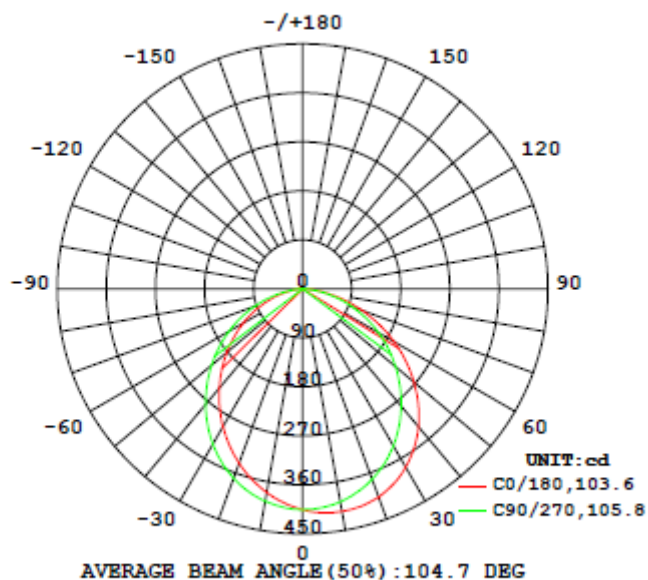
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Zonal Lumen Tabulation



Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	310.6	28.9%
0-40	503.3	46.8%
0-60	867.6	80.7%
60-90	206.3	19.2%
70-100	81.9	7.6%
90-120	0.3	0%
0-90	1,073.9	99.9%
90-180	1.6	0.1%
0-180	1,075.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	38.3	3.6%	90-100	0.1	0%
10-20	109.1	10.1%	100-110	0.1	0%
20-30	163.2	15.2%	110-120	0.1	0%
30-40	192.7	17.9%	120-130	0.2	0%
40-50	194.4	18.1%	130-140	0.3	0%
50-60	169.9	15.8%	140-150	0.3	0%
60-70	124.5	11.6%	150-160	0.3	0%
70-80	66.7	6.2%	160-170	0.2	0%
80-90	15.1	1.4%	170-180	0.1	0%

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	406	406	406	406	406	406	406	406	406	406	406	406	406	406	406	406			
5	413	412	410	407	403	400	398	395	394	395	397	400	403	407	410	412			
10	415	414	411	405	397	391	385	381	380	380	384	389	396	403	409	413			
15	414	412	407	397	387	377	370	364	362	363	368	375	385	395	405	411			
20	407	404	398	385	372	360	350	343	341	342	348	358	370	383	395	403			
25	395	391	384	369	355	339	329	320	317	318	326	337	352	367	381	390			
30	378	373	366	350	333	317	304	295	292	293	301	314	329	346	362	373			
35	356	351	343	326	308	291	278	269	266	266	274	288	304	322	340	351			
40	331	325	316	299	281	264	251	241	238	237	246	260	277	295	313	325			
45	300	295	286	270	253	235	222	213	210	209	218	231	248	266	283	295			
50	266	262	253	239	223	206	193	185	182	181	190	202	218	235	251	261			
55	231	227	219	206	192	176	165	157	153	153	161	172	187	202	216	225			
60	194	190	183	172	161	147	136	128	126	125	133	142	156	169	180	188			
65	155	152	147	138	129	117	108	101	98.9	98.7	104	113	125	134	144	150			
70	116	114	110	104	97.2	87.1	79.6	73.3	72.4	72.5	76.8	83.7	93.6	101	108	111			
75	78.0	76.4	74.4	70.3	66.0	58.7	52.8	48.2	47.5	47.3	50.5	55.6	62.6	67.8	72.1	75.6			
80	43.6	42.5	41.9	39.6	36.5	32.1	28.5	26.5	25.4	25.1	26.8	29.7	33.9	37.2	39.6	41.4			
85	16.4	16.2	15.8	14.3	12.5	11.3	10.3	9.64	9.27	9.01	9.44	9.92	10.7	12.9	14.5	15.4			
90	0.18	0.23	0.39	0.44	0.53	0.28	0.06	0.11	0.00	0.00	0.10	0.05	0.26	0.10	0.00	0.05			
95	0.00	0.00	0.00	0.05	0.21	0.05	0.00	0.05	0.00	0.00	0.05	0.05	0.37	0.11	0.00	0.11			
100	0.00	0.00	0.00	0.15	0.10	0.05	0.00	0.00	0.05	0.00	0.05	0.16	0.58	0.26	0.00	0.05			
105	0.00	0.00	0.00	0.16	0.16	0.05	0.05	0.00	0.11	0.00	0.10	0.16	0.52	0.26	0.00	0.05			
110	0.00	0.00	0.00	0.16	0.16	0.05	0.00	0.00	0.11	0.11	0.16	0.16	0.58	0.26	0.00	0.05			
115	0.00	0.00	0.00	0.16	0.16	0.10	0.00	0.00	0.11	0.16	0.21	0.26	0.58	0.26	0.11	0.05			
120	0.00	0.00	0.00	0.16	0.16	0.10	0.00	0.05	0.22	0.21	0.31	0.31	0.58	0.37	0.21	0.21			
125	0.00	0.00	0.00	0.16	0.31	0.21	0.05	0.16	0.32	0.21	0.31	0.36	0.94	0.68	0.21	0.21			
130	0.00	0.00	0.05	0.26	0.37	0.31	0.11	0.26	0.38	0.21	0.37	0.42	0.79	0.68	0.32	0.21			
135	0.00	0.00	0.05	0.41	0.37	0.31	0.11	0.26	0.33	0.27	0.47	0.47	0.79	0.68	0.42	0.26			
140	0.00	0.00	0.05	0.42	0.42	0.62	0.21	0.26	0.38	0.27	0.58	0.62	0.79	0.79	0.48	0.47			
145	0.00	0.00	0.10	0.57	0.42	0.68	0.21	0.26	0.38	0.27	0.52	0.62	0.73	0.79	0.53	0.42			
150	0.00	0.11	0.16	0.57	0.84	0.84	0.37	0.42	0.38	0.27	0.53	0.62	0.73	0.94	0.69	0.58			
155	0.00	0.21	0.37	0.73	0.84	0.84	0.42	0.58	0.38	0.27	0.58	0.62	0.73	0.89	0.90	0.63			
160	0.00	0.21	0.42	0.73	0.84	0.79	0.58	0.58	0.38	0.27	0.58	0.62	0.73	1.05	0.90	0.63			
165	0.11	0.27	0.47	0.73	0.84	0.73	0.58	0.58	0.38	0.27	0.63	0.68	0.68	1.10	0.90	0.74			
170	0.16	0.27	0.68	0.73	0.84	0.84	0.74	0.63	0.49	0.27	0.68	0.83	0.99	1.15	0.90	0.95			
175	0.16	0.37	0.94	0.78	1.05	0.84	0.79	0.69	0.49	0.27	0.73	0.78	1.05	1.15	0.84	0.95			
180	0.22	0.53	0.89	0.83	1.15	0.84	1.00	0.74	0.49	0.27	0.52	0.88	0.85	1.15	0.84	1.00			

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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	2018-07-05	Test Ambient	25.1°C
Sample No.		Maximum $\Delta u'v'$	
JCE180610-H1		0.0009	

Gamma\C	CIE u'	CIE v'	$du'v'$	CIE u'	CIE v'	$du'v'$
-80	0.2651	0.5254	0.0007	0.2643	0.5254	0.0002
-79	0.265	0.5254	0.0007	0.2641	0.5253	0.0003
-78	0.265	0.5254	0.0007	0.2642	0.5253	0.0003
-77	0.265	0.5253	0.0006	0.2642	0.5253	0.0002
-76	0.2649	0.5253	0.0005	0.2641	0.5253	0.0003
-75	0.2648	0.5253	0.0004	0.2642	0.5253	0.0002
-74	0.265	0.5254	0.0007	0.2641	0.5253	0.0003
-73	0.265	0.5254	0.0006	0.2642	0.5253	0.0002
-72	0.2649	0.5253	0.0005	0.2641	0.5253	0.0003
-71	0.265	0.5253	0.0006	0.2641	0.5253	0.0003
-70	0.2649	0.5254	0.0006	0.2642	0.5253	0.0002
-69	0.2652	0.5254	0.0008	0.2641	0.5253	0.0003
-68	0.2651	0.5254	0.0008	0.2641	0.5253	0.0003
-67	0.2651	0.5254	0.0007	0.2642	0.5253	0.0002
-66	0.265	0.5254	0.0007	0.2642	0.5253	0.0002
-65	0.265	0.5254	0.0006	0.2641	0.5253	0.0003
-64	0.2651	0.5254	0.0007	0.2643	0.5253	0.0002
-63	0.265	0.5254	0.0007	0.2642	0.5253	0.0002
-62	0.2651	0.5254	0.0007	0.2642	0.5253	0.0002
-61	0.265	0.5254	0.0007	0.2642	0.5253	0.0003
-60	0.265	0.5254	0.0006	0.2641	0.5253	0.0003
-59	0.2651	0.5254	0.0007	0.2642	0.5253	0.0002
-58	0.265	0.5254	0.0007	0.2642	0.5253	0.0002
-57	0.265	0.5254	0.0006	0.2642	0.5253	0.0002
-56	0.2651	0.5254	0.0007	0.2642	0.5253	0.0002
-55	0.2651	0.5254	0.0007	0.2642	0.5253	0.0002
-54	0.265	0.5254	0.0006	0.2642	0.5253	0.0002
-53	0.2651	0.5254	0.0007	0.2642	0.5253	0.0002
-52	0.2651	0.5253	0.0007	0.2642	0.5253	0.0002
-51	0.265	0.5253	0.0007	0.2642	0.5253	0.0002

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-50	0.265	0.5253	0.0006	0.2642	0.5253	0.0002
-49	0.2651	0.5254	0.0007	0.2643	0.5253	0.0001
-48	0.2651	0.5253	0.0007	0.2643	0.5253	0.0001
-47	0.265	0.5253	0.0006	0.2643	0.5253	0.0001
-46	0.265	0.5253	0.0006	0.2643	0.5252	0.0001
-45	0.2649	0.5253	0.0006	0.2643	0.5252	0.0001
-44	0.265	0.5253	0.0007	0.2643	0.5252	0.0001
-43	0.265	0.5253	0.0006	0.2643	0.5252	0.0001
-42	0.265	0.5253	0.0006	0.2643	0.5252	0.0001
-41	0.2649	0.5253	0.0005	0.2643	0.5252	0.0001
-40	0.2649	0.5253	0.0005	0.2643	0.5252	0.0001
-39	0.2649	0.5253	0.0005	0.2643	0.5252	0.0001
-38	0.265	0.5253	0.0006	0.2643	0.5252	0.0001
-37	0.2649	0.5253	0.0005	0.2643	0.5252	0.0001
-36	0.2649	0.5253	0.0005	0.2643	0.5252	0.0001
-35	0.2648	0.5253	0.0004	0.2643	0.5252	0.0001
-34	0.2648	0.5253	0.0004	0.2643	0.5252	0.0001
-33	0.2647	0.5252	0.0004	0.2643	0.5252	0.0001
-32	0.2647	0.5252	0.0003	0.2643	0.5252	0.0001
-31	0.2647	0.5253	0.0003	0.2643	0.5252	0.0001
-30	0.2648	0.5252	0.0004	0.2643	0.5252	0.0001
-29	0.2647	0.5252	0.0004	0.2643	0.5251	0.0001
-28	0.2647	0.5252	0.0003	0.2643	0.5251	0.0002
-27	0.2647	0.5252	0.0003	0.2643	0.5251	0.0002
-26	0.2646	0.5252	0.0002	0.2643	0.5251	0.0002
-25	0.2646	0.5252	0.0002	0.2642	0.5251	0.0002
-24	0.2646	0.5252	0.0002	0.2642	0.5251	0.0002
-23	0.2645	0.5252	0.0001	0.2642	0.5251	0.0002
-22	0.2645	0.5252	0.0001	0.2642	0.5251	0.0002
-21	0.2645	0.5252	0.0001	0.2642	0.5251	0.0002
-20	0.2645	0.5251	0.0001	0.2642	0.5251	0.0002
-19	0.2644	0.5252	0.0001	0.2642	0.5251	0.0003
-18	0.2644	0.5251	0.0001	0.2642	0.5251	0.0003
-17	0.2644	0.5251	0.0001	0.2642	0.525	0.0003
-16	0.2643	0.5251	0.0001	0.2642	0.525	0.0002
-15	0.2643	0.5251	0.0001	0.2641	0.525	0.0003
-14	0.2643	0.5251	0.0002	0.2641	0.525	0.0003
-13	0.2643	0.5251	0.0002	0.2641	0.525	0.0003
-12	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
-11	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
-10	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
-9	0.2642	0.5251	0.0002	0.2641	0.525	0.0003

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-8	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
-7	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
-6	0.2642	0.5251	0.0002	0.2641	0.525	0.0004
-5	0.2642	0.5251	0.0003	0.2641	0.525	0.0004
-4	0.2642	0.5251	0.0003	0.2641	0.525	0.0004
-3	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
-2	0.2642	0.5251	0.0002	0.2641	0.525	0.0004
-1	0.2642	0.5251	0.0002	0.2641	0.525	0.0004
0	0.2644	0.5252	0.0001	0.2644	0.5252	0.0001
1	0.2642	0.5251	0.0002	0.2641	0.525	0.0004
2	0.2642	0.5251	0.0002	0.2641	0.525	0.0004
3	0.2642	0.5251	0.0002	0.2641	0.525	0.0004
4	0.2642	0.5251	0.0002	0.2641	0.525	0.0004
5	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
6	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
7	0.2642	0.5251	0.0002	0.2641	0.525	0.0003
8	0.2643	0.5251	0.0002	0.2641	0.525	0.0003
9	0.2643	0.5251	0.0002	0.2641	0.525	0.0003
10	0.2643	0.5251	0.0002	0.2641	0.525	0.0003
11	0.2643	0.5251	0.0001	0.2641	0.5251	0.0003
12	0.2643	0.5251	0.0001	0.2641	0.5251	0.0003
13	0.2643	0.5251	0.0001	0.2642	0.525	0.0003
14	0.2643	0.5251	0.0001	0.2642	0.5251	0.0003
15	0.2644	0.5251	0.0001	0.2642	0.5251	0.0003
16	0.2644	0.5251	0.0001	0.2642	0.5251	0.0002
17	0.2644	0.5251	0.0001	0.2642	0.5251	0.0002
18	0.2644	0.5252	0	0.2642	0.5251	0.0002
19	0.2644	0.5252	0	0.2642	0.5251	0.0002
20	0.2644	0.5252	0	0.2642	0.5251	0.0002
21	0.2644	0.5252	0	0.2642	0.5251	0.0002
22	0.2644	0.5252	0.0001	0.2642	0.5251	0.0002
23	0.2644	0.5252	0.0001	0.2642	0.5251	0.0002
24	0.2644	0.5252	0.0001	0.2642	0.5251	0.0002
25	0.2643	0.5252	0.0001	0.2643	0.5251	0.0002
26	0.2643	0.5252	0.0001	0.2641	0.5251	0.0003
27	0.2643	0.5252	0.0001	0.2641	0.5251	0.0003
28	0.2643	0.5252	0.0001	0.2641	0.5251	0.0003
29	0.2643	0.5252	0.0001	0.2641	0.5251	0.0003
30	0.2643	0.5251	0.0001	0.2641	0.5251	0.0003
31	0.2644	0.5252	0	0.2642	0.5251	0.0003
32	0.2643	0.5252	0.0001	0.2641	0.5251	0.0003
33	0.2643	0.5252	0	0.2642	0.5251	0.0002

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Report Format Number STD/QR4910-A/1

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34	0.2644	0.5252	0	0.2642	0.5251	0.0002
35	0.2642	0.5251	0.0002	0.2642	0.5251	0.0002
36	0.2642	0.5251	0.0002	0.2642	0.5251	0.0002
37	0.2642	0.5252	0.0002	0.2642	0.5251	0.0002
38	0.2642	0.5251	0.0002	0.2642	0.5251	0.0002
39	0.2642	0.5251	0.0002	0.2642	0.5251	0.0002
40	0.2642	0.5251	0.0002	0.2642	0.5251	0.0002
41	0.2643	0.5251	0.0001	0.2642	0.5251	0.0002
42	0.2642	0.5251	0.0002	0.2642	0.5251	0.0002
43	0.264	0.5251	0.0004	0.2642	0.5251	0.0002
44	0.2641	0.5251	0.0003	0.2642	0.5251	0.0002
45	0.2641	0.5251	0.0003	0.2641	0.5251	0.0004
46	0.2641	0.5251	0.0003	0.2641	0.5251	0.0003
47	0.2641	0.5251	0.0003	0.2641	0.5251	0.0003
48	0.2641	0.5251	0.0003	0.2641	0.5251	0.0003
49	0.2641	0.5251	0.0003	0.2641	0.5251	0.0003
50	0.2639	0.5251	0.0005	0.2641	0.5251	0.0003
51	0.264	0.5251	0.0005	0.2641	0.5251	0.0003
52	0.264	0.5251	0.0004	0.2641	0.5251	0.0003
53	0.264	0.5251	0.0004	0.264	0.5251	0.0005
54	0.264	0.5251	0.0004	0.264	0.525	0.0005
55	0.2638	0.525	0.0006	0.264	0.525	0.0004
56	0.2638	0.525	0.0006	0.264	0.525	0.0005
57	0.2639	0.5251	0.0005	0.264	0.525	0.0005
58	0.2639	0.525	0.0005	0.264	0.525	0.0005
59	0.2639	0.525	0.0005	0.264	0.525	0.0004
60	0.2637	0.525	0.0007	0.2639	0.525	0.0006
61	0.2638	0.525	0.0006	0.2639	0.525	0.0005
62	0.2638	0.525	0.0006	0.2639	0.525	0.0006
63	0.2638	0.525	0.0006	0.2639	0.525	0.0005
64	0.2637	0.525	0.0007	0.2639	0.525	0.0005
65	0.2637	0.525	0.0007	0.2638	0.525	0.0006
66	0.2637	0.525	0.0007	0.2639	0.525	0.0005
67	0.2638	0.525	0.0006	0.2638	0.525	0.0006
68	0.2636	0.525	0.0008	0.2639	0.525	0.0006
69	0.2637	0.525	0.0007	0.2638	0.525	0.0006
70	0.2636	0.525	0.0009	0.2639	0.525	0.0006
71	0.2636	0.525	0.0008	0.2639	0.525	0.0005
72	0.2637	0.525	0.0007	0.264	0.525	0.0004
73	0.2637	0.525	0.0007	0.2637	0.525	0.0007
74	0.2637	0.525	0.0007	0.2638	0.525	0.0006
75	0.2638	0.525	0.0006	0.2638	0.525	0.0006

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76	0.2639	0.525	0.0006	0.2639	0.525	0.0005
77	0.2639	0.525	0.0005	0.2639	0.525	0.0005
78	0.2639	0.525	0.0006	0.2638	0.525	0.0007
79	0.2639	0.5251	0.0005	0.2639	0.525	0.0005
80	0.2639	0.5249	0.0006	0.2637	0.5249	0.0007

Laboratory: Standard-Tech Co., Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4910-A/1

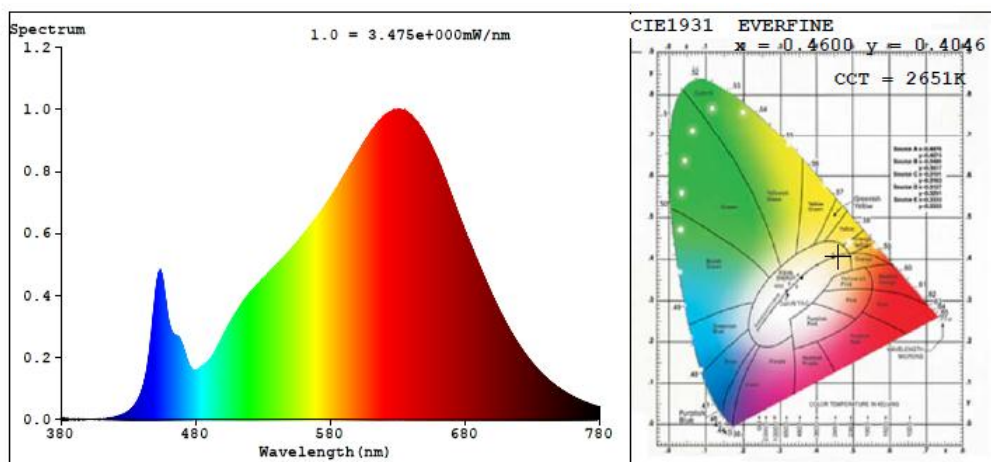
Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

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	2018-07-05	Test Ambient:	25.1°C
Dimmer Model	LEVITON MFG CO INC (E31373), Cat. No. 6681		
Sample No.		Maximum Level	Minimum Level
JCE180610-H1	Input: 120.0 V / 60 Hz	Light output (Lumen) Percentage(%)	931.6 100% 89.3 9.58%



Colorimetric Parameters

Chromaticity Coordinate: $x=0.4600$ $y=0.4046$ $u'=0.2653$ $v'=0.5251$

CCT=2651K (Duv=-0.0022) Dominant WL:Ld =585.2nm Purity=59.5%

Peak WL:Lp=630.7nm FWHM=149.6nm

Render Index:Ra=94.0 CRI=91.7

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

R8 =85 R9 =69 R10=93 R11=94 R12=82 R13=96 R14=98 R15=92

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	<u>19.820.9</u>	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	0.122	1.459
Maximum Level (100%)	0.106	1.552
Minimun Level (20%)	0.320	1.612

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Report Format Number STD/QR4910-A/1

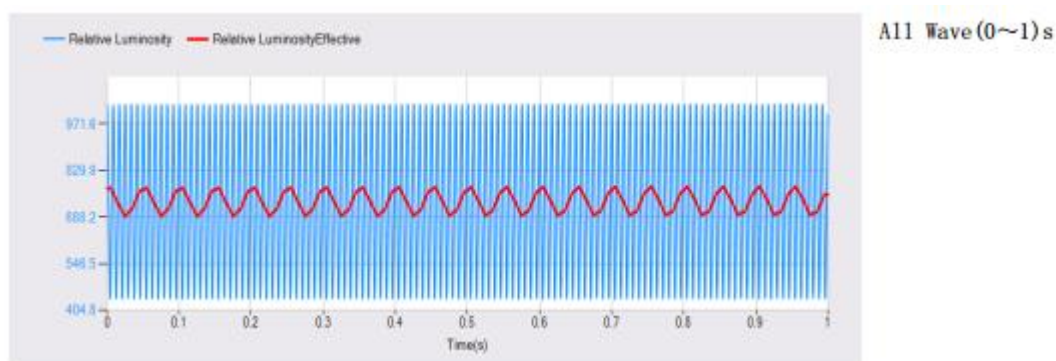
Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

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	2018-07-05	Test Ambient:	25.1°C
Sample No.	Operating Frequency (Hz)		
JCE180610-H1	120.02		

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

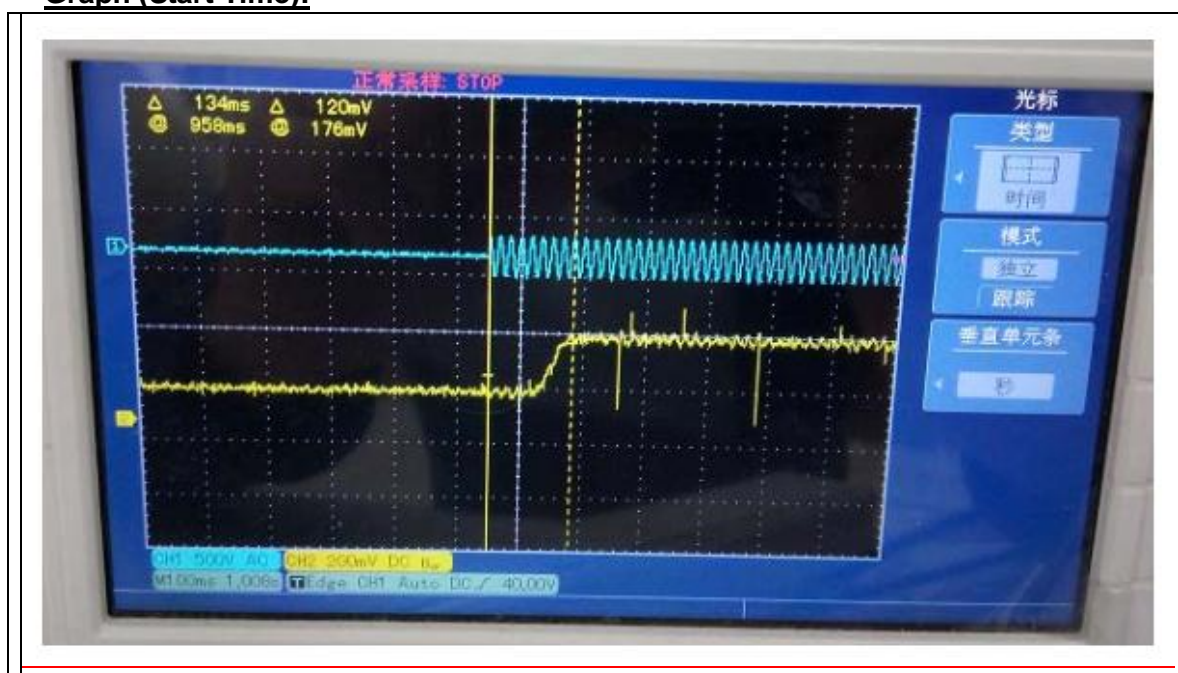
Report Format Number STD/QR4910-A/1

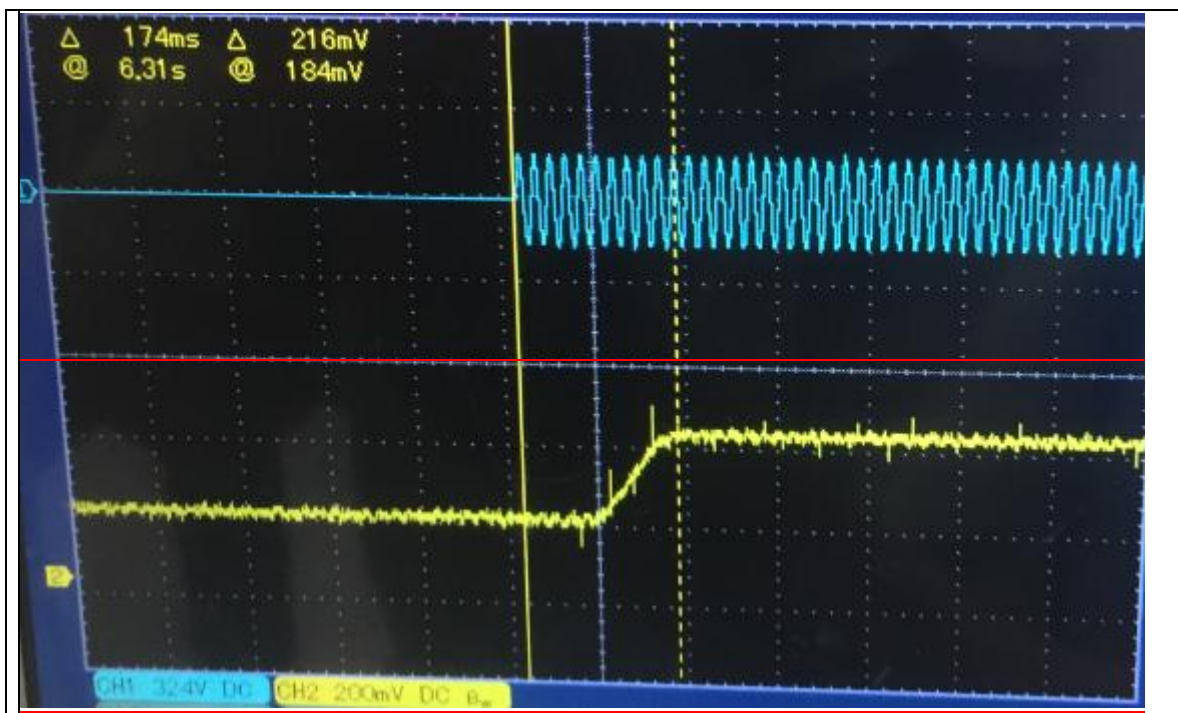
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6. Starting Time (Refer to Work Instruction QD28)	ENERGY STAR[®] Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.1
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Test date	2018-07-05	Test Ambient:	25.1°C
Sample No.	Start Time (ms)		
JCE180610-H1	174134		

Graph (Start Time):



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

Report Format Number STD/QR4910-A/1

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7. Transient Protection Test
(Refer to Work Instruction QD34)

ANSI/IEEE C62.41
ENERGY STAR® Program Requirements for
Luminaires – Version 2.1

Test date	2018-07-05	Test Ambient	25.1°C
Sample No.		Transient Protection Test - Seven Strikes	
JCE180610-H1		Pass	

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

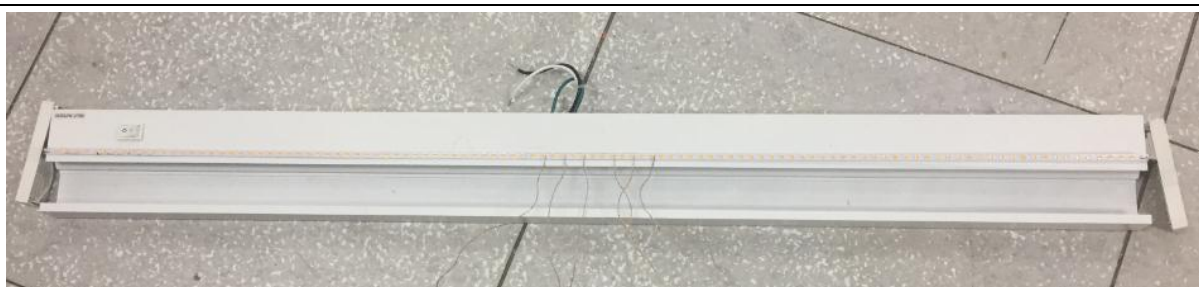
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

8.1 In-Situ Temperature Measurement Test (ISTMT)

UL1598-2008, 3rd Edition

Test date	2018-07-05	Test Ambient	25.1°C
Input Vol./Frequency	120 V / 60 Hz	Output Current of Single LED(mA)	40.6
Sample No.	LED Package Model	Maximum Measured LED Ts Point Temperature (°C)	Maximum LED Ts Point Temperature Limited (°C)
JCE180610-H1	67-21S Series (3000K)	56.3	105

In-Situ Picture - Ts:



Laboratory: Standard-Tech Co., Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4910-A/1

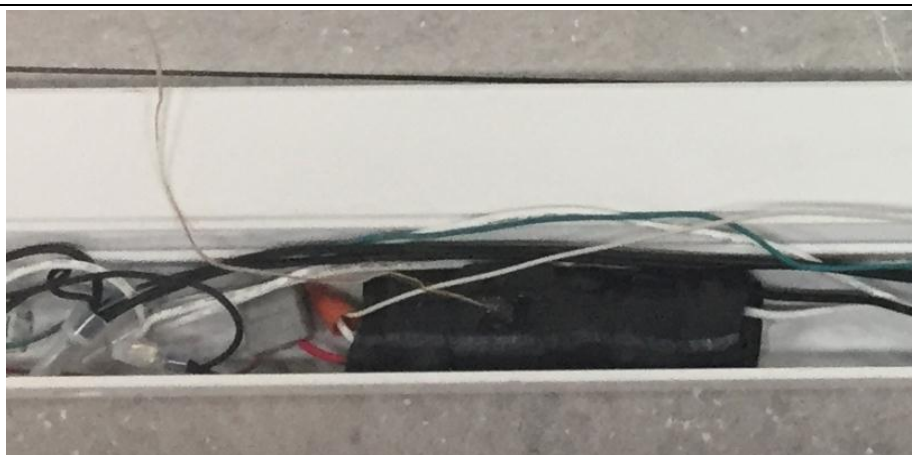
Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

8.2 Maximum Measured Ballast or Driver Case Temperature	UL1598-2008, 3rd Edition
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Test date	2018-07-05	Test Ambient	25.1℃
Sample No.	Maximum Measured Driver Case Temperature (°C)	Maximum Driver Case Temperature Limited (°C)	
JCE180610-H1	54.3	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	2018-07-05	Test Ambient:	25.0 °C
Model Number	ULD2-27	Stabilization Time (min)	90

Electrical Measurement – when the luminaires turned off:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)
JCE180610-H1	120.0	60	0	0.008

10. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2018-07-05	2019-06-30
ST-R-331	Spectral analysis system HAAS-2000	2018-07-05	2019-06-30
EE-09	Goniophotometer system	2018-07-05	2019-06-30
D908S	Standard Lamp	2018-07-05	2019-06-30
D204	Standard Lamp	2018-07-05	2019-06-30
PF2010	Power Meter for Integrating Sphere	2018-07-05	2019-06-30
PF210	Power Meter for Goniophotometer	2018-07-05	2019-06-30
EE-015	Flux Meter	2018-07-05	2019-06-30
ST-R-277	Oscilloscope	2018-07-05	2019-06-30
ST-R-EM01	Surge Generator	2018-07-05	2019-06-30
ST-R-EM02	EMC Coupler/Decoupler Module	2018-07-05	2019-06-30
Uncertainty Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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