

Energy Star Test Report

For

L-TECH CORPORTION

(Brand Name: L-TECH CORP)

SHAOGANGTOU DISTRICT.QIAOTOU TOWN.DONGGUAN
CITY.GUANGDONG PROVINCE,CHINA

Downlights

Model name(s): LSKT422W-##90

LSKT455W-##90

Remark: "##" in the model name stands for different CCT as bellow:

27=2700K,30=3000K,40=4000K,50=5000K

Representative (Tested) Model: LSKT422W-2790

LSKT455W-2790

Model Different: All construction and rating are the same, except the
installation of driver.

Test & Report By:

Bill Luo

Engineer: Bill Luo

Date: Sep.28,2017

Updated: Dec.25,2017

Review By:

Tommy Liang

Manager: Tommy Liang

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

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>

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	Sep.27,2017
Test Report No.	GZE1709109-H-A-R
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	L-TECH CORPORTION		
Brand Name	L-TECH CORP		
Model Number	LSKT422W-##90 LSKT455W-##90		
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	--	8.934	W
Input Current	--	0.0771	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9651	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	574.63	lm
Initial Lumen Efficacy	--	64.32	lm/w
Correlated color temperature / CCT	2700	--	K
Color rendering index / CRI	93.5	--	
R9 Value	62	--	
Duv	-0.0022	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		207	cd
Beam angle (if applicable)		110.0	°
Zonal lumens in the 0°-60° zone		80.5	%
Zonal lumens in the 60°-90° zone	-----	19.5	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0	%

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>

Test Specifications:	
Date of Receipt	Sep.20,2017
Date of Test	Sep.25,2017
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:

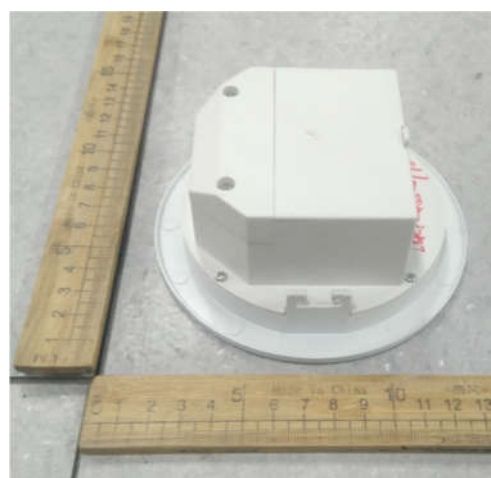
Brand Name	L-TECH CORP
Model Number	LSKT422W-##90 LSKT455W-##90
Luminaire Type	Downlights
Rated Voltage / Frequency	120Vac, 50/60 Hz
Nominal Power	10W
Rated Initial Lamp Lumen	--
Declared CCT	2700K,3000K,4000K,5000K
LED Manufacturer	Edison Opto Corporation
LED Model	2T03X2WW11000002
Sample Receipt Date	Sep.20,2017
Sample Number	GZE1709109-H-A1,A2,A3 GZE1712059-H -E1,E2,E3

Photo

LSKT422W



LSKT455W



2.1 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
---	-----------------------

Test date	2017-09-25	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LSKT422W-2790		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE1709109-H-A1	120.0	60	0.0771	8.934	0.9651
GZE1709109-H-A2	120.0	60	0.0769	8.895	0.9645
GZE1709109-H-A3	120.0	60	0.0779	9.021	0.9653
Average			0.0773	8.950	0.9650

Sphere-Spectroradiometer Method:

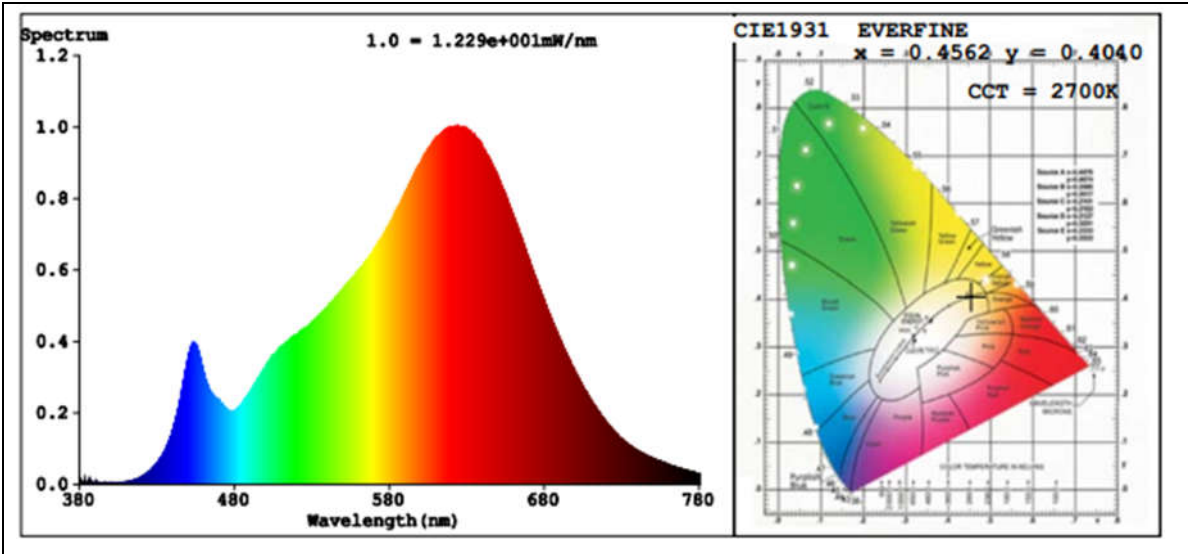
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	93.5
R9	62
CCT (K)	2700
Chromaticity (x, y)	x=0.4562 y=0.4040
Chromaticity (u', v')	u'=0.2631 v'=0.5242
Duv	-0.0022

Special Color Rendering Indices			
R1	95	R9	62
R2	99	R10	97
R3	97	R11	96
R4	94	R12	89
R5	95	R13	96
R6	97	R14	99
R7	90	R15	90
R8	81	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	574.63
Luminous Efficacy (lm/W)	64.32
Beam Angle°	110.0
Center Beam Candle Power (cd)	207

Spectral Power Distribution and Chromaticity Diagram



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

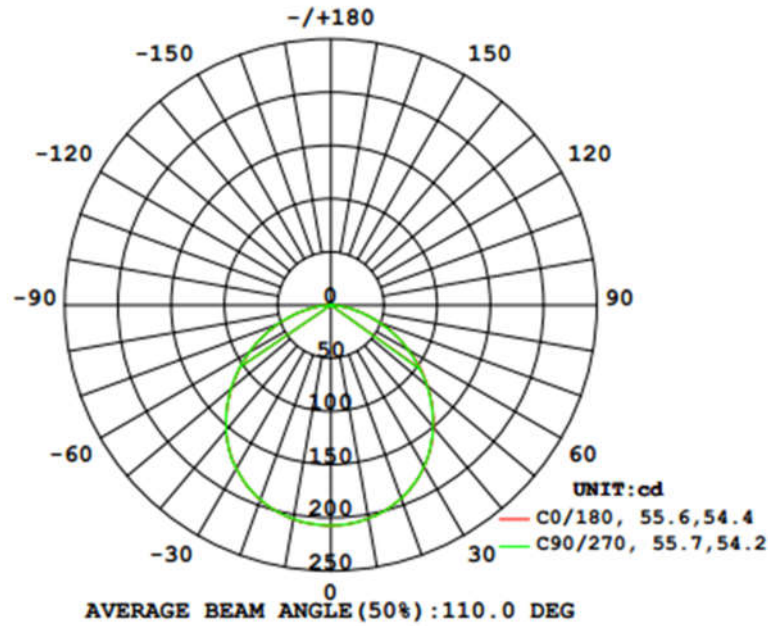
Report Format Number STD/QR4910-A/1

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>

Zonal Lumen Tabulation

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	161.8	28.2%
0-40	264.9	46.1%
0-60	462.6	80.5%
60-90	111.8	19.5%
70-100	43.7	7.6%
90-120	0.0	0%
0-90	574.5	100%
90-180	0.1	0%
0-180	574.6	100%

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-10	19.6	3.4%	90-100	0.0	0%
10-20	56.4	9.8%	100-110	0.0	0%
20-30	85.8	14.9%	110-120	0.0	0%
30-40	103.1	17.9%	120-130	0.0	0%
40-50	105.2	18.3%	130-140	0.0	0%
50-60	92.5	16.1%	140-150	0.0	0%
60-70	68.1	11.9%	150-160	0.0	0%
70-80	36.2	6.3%	160-170	0.0	0%
80-90	7.5	1.3%	170-180	0.0	0%

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>

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	207	207	207	207	207	207	207	207	207	207	207	207	207	207	207	207
5	206	206	206	206	206	206	206	206	207	207	207	207	206	206	206	206
10	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204
15	199	199	199	199	199	200	200	200	200	200	200	200	200	200	200	200
20	193	193	193	193	193	194	194	194	195	195	195	195	195	194	194	194
25	185	185	185	185	185	186	186	186	187	187	187	187	187	187	187	186
30	175	175	175	175	175	176	176	176	178	178	178	178	178	178	177	177
35	163	163	163	163	163	164	164	165	167	167	167	167	167	166	166	166
40	150	149	149	149	149	150	151	151	153	153	154	154	154	153	153	152
45	135	134	134	134	134	135	136	136	138	139	139	139	139	138	138	137
50	119	118	117	117	118	119	120	120	122	123	123	123	123	122	122	121
55	102	101	100	100	101	102	103	103	106	106	106	106	106	106	105	104
60	84.2	83.4	82.9	82.9	83.5	84.4	85.3	86.1	88.3	88.7	88.9	88.9	88.8	88.3	87.6	86.7
65	67.1	66.3	65.9	65.9	66.5	67.4	68.3	69.2	70.8	71.2	71.4	71.4	71.3	70.7	70.0	69.0
70	49.6	48.7	48.3	48.5	49.0	49.9	50.9	51.8	53.3	53.8	54.0	54.0	53.7	53.2	52.4	51.4
75	32.5	30.6	30.0	31.4	32.1	32.9	33.9	34.8	36.3	36.5	36.6	37.0	36.6	36.0	35.2	34.2
80	16.6	14.1	13.7	15.1	16.7	17.4	18.2	19.1	20.2	19.5	19.6	20.5	20.7	20.1	19.4	18.5
85	4.80	3.53	3.32	4.04	5.19	5.62	6.16	6.60	7.16	5.64	5.90	6.92	7.54	7.05	6.48	5.87
90	0.04	0.04	0.04	0.04	0.03	0.01	0.02	0.04	0.13	0.21	0.30	0.29	0.19	0.07	0.03	0.03
95	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.02
100	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
105	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
110	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
115	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
120	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
125	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02
130	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
135	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
140	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02
145	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
150	0.03	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03
155	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
160	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
165	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02
170	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
175	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
180	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

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>

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

Test Data :

Test date 2017-09-25	Test Ambient 25.1°C
Sample No.	Maximum Δu'v'
GZE1709109-H-A1	0.0008

Gamma/C	CIE u'	CIE v'	du'v'	CIE u'	CIE v'	du'v'
-80	0.2641	0.5239	0.0003	0.2633	0.5236	0.0006
-79	0.2639	0.5239	0.0001	0.2633	0.5236	0.0005
-78	0.264	0.5239	0.0002	0.2632	0.5236	0.0007
-77	0.2639	0.5239	0.0001	0.2633	0.5237	0.0006
-76	0.2638	0.5239	0.0001	0.2634	0.5237	0.0005
-75	0.2639	0.5239	0.0001	0.2633	0.5236	0.0006
-74	0.2638	0.5239	0.0001	0.2634	0.5237	0.0005
-73	0.2638	0.5238	0.0001	0.2633	0.5237	0.0005
-72	0.264	0.5239	0.0002	0.2634	0.5237	0.0004
-71	0.2639	0.5239	0.0001	0.2634	0.5237	0.0004
-70	0.2639	0.5239	0.0001	0.2634	0.5236	0.0005
-69	0.2639	0.5239	0.0001	0.2635	0.5237	0.0004
-68	0.2639	0.5239	0.0001	0.2635	0.5237	0.0004
-67	0.264	0.5239	0.0002	0.2634	0.5237	0.0004
-66	0.2639	0.5239	0.0001	0.2636	0.5237	0.0003
-65	0.2642	0.5239	0.0004	0.2635	0.5237	0.0003
-64	0.2641	0.5239	0.0003	0.2635	0.5237	0.0003
-63	0.2641	0.5239	0.0003	0.2635	0.5237	0.0004
-62	0.2641	0.5239	0.0003	0.2636	0.5237	0.0002
-61	0.2641	0.5239	0.0003	0.2636	0.5237	0.0002
-60	0.264	0.5239	0.0002	0.2636	0.5237	0.0003
-59	0.2641	0.5239	0.0003	0.2636	0.5237	0.0003
-58	0.2641	0.5239	0.0003	0.2638	0.5238	0.0001
-57	0.264	0.5239	0.0002	0.2637	0.5238	0.0001
-56	0.2642	0.524	0.0004	0.2637	0.5238	0.0001
-55	0.2641	0.5239	0.0003	0.2637	0.5238	0.0002
-54	0.2641	0.5239	0.0003	0.2637	0.5238	0.0002
-53	0.2642	0.524	0.0004	0.2637	0.5237	0.0002
-52	0.2642	0.5239	0.0004	0.2638	0.5238	0

**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>

-51	0.2642	0.524	0.0004	0.2638	0.5238	0
-50	0.2643	0.524	0.0005	0.2638	0.5238	0.0001
-49	0.2642	0.524	0.0004	0.2638	0.5238	0.0001
-48	0.2642	0.524	0.0004	0.2638	0.5238	0.0001
-47	0.2642	0.524	0.0004	0.2637	0.5238	0.0001
-46	0.2643	0.524	0.0005	0.2637	0.5238	0.0001
-45	0.2643	0.524	0.0005	0.2639	0.5238	0
-44	0.2642	0.524	0.0004	0.2638	0.5238	0
-43	0.2642	0.524	0.0004	0.2638	0.5238	0
-42	0.2642	0.5239	0.0004	0.2638	0.5238	0
-41	0.2643	0.524	0.0005	0.2638	0.5238	0
-40	0.2643	0.5239	0.0004	0.2638	0.5237	0.0001
-39	0.2642	0.5239	0.0004	0.2638	0.5237	0.0001
-38	0.2642	0.5239	0.0004	0.2637	0.5237	0.0001
-37	0.2641	0.5239	0.0003	0.2637	0.5237	0.0002
-36	0.2641	0.5239	0.0003	0.2639	0.5238	0
-35	0.2642	0.5239	0.0004	0.2638	0.5237	0.0001
-34	0.2642	0.5239	0.0004	0.2638	0.5237	0.0001
-33	0.2641	0.5239	0.0003	0.2637	0.5237	0.0001
-32	0.2641	0.5239	0.0003	0.2637	0.5237	0.0002
-31	0.2641	0.5239	0.0003	0.2637	0.5237	0.0002
-30	0.264	0.5239	0.0002	0.2637	0.5237	0.0002
-29	0.264	0.5238	0.0002	0.2636	0.5237	0.0002
-28	0.264	0.5238	0.0001	0.2636	0.5237	0.0003
-27	0.2641	0.5238	0.0002	0.2636	0.5236	0.0003
-26	0.264	0.5238	0.0002	0.2635	0.5236	0.0004
-25	0.264	0.5238	0.0002	0.2635	0.5236	0.0004
-24	0.264	0.5238	0.0001	0.2635	0.5236	0.0004
-23	0.2639	0.5238	0.0001	0.2634	0.5236	0.0005
-22	0.2639	0.5238	0.0001	0.2634	0.5236	0.0005
-21	0.2639	0.5238	0	0.2634	0.5235	0.0005
-20	0.2638	0.5237	0	0.2634	0.5236	0.0005
-19	0.2638	0.5237	0	0.2633	0.5235	0.0006
-18	0.2638	0.5237	0.0001	0.2633	0.5235	0.0006
-17	0.2638	0.5237	0.0001	0.2633	0.5235	0.0006
-16	0.2637	0.5237	0.0001	0.2632	0.5235	0.0007
-15	0.2637	0.5237	0.0002	0.2632	0.5235	0.0007
-14	0.2637	0.5237	0.0002	0.2632	0.5235	0.0007
-13	0.2638	0.5237	0.0001	0.2632	0.5235	0.0007
-12	0.2638	0.5237	0.0001	0.2632	0.5235	0.0008

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>

-11	0.2638	0.5237	0.0001	0.2632	0.5235	0.0008
-10	0.2637	0.5237	0.0001	0.2631	0.5235	0.0008
-9	0.2637	0.5237	0.0002	0.2631	0.5235	0.0008
-8	0.2637	0.5237	0.0002	0.2631	0.5235	0.0008
-7	0.2637	0.5237	0.0002	0.2631	0.5235	0.0008
-6	0.2637	0.5237	0.0002	0.2631	0.5234	0.0008
-5	0.2637	0.5237	0.0002	0.2631	0.5234	0.0008
-4	0.2637	0.5237	0.0002	0.2631	0.5234	0.0008
-3	0.2637	0.5237	0.0002	0.2631	0.5234	0.0008
-2	0.2637	0.5236	0.0002	0.2631	0.5234	0.0008
-1	0.2637	0.5237	0.0002	0.2631	0.5234	0.0008
0	0.2638	0.5239	0.0001	0.2638	0.5239	0.0001
1	0.2637	0.5236	0.0002	0.2631	0.5234	0.0008
2	0.2637	0.5236	0.0002	0.2631	0.5235	0.0008
3	0.2637	0.5236	0.0002	0.2631	0.5234	0.0008
4	0.2637	0.5236	0.0002	0.2631	0.5234	0.0008
5	0.2637	0.5236	0.0002	0.2631	0.5234	0.0008
6	0.2637	0.5236	0.0002	0.2631	0.5235	0.0008
7	0.2637	0.5236	0.0002	0.2632	0.5235	0.0008
8	0.2637	0.5236	0.0002	0.2632	0.5235	0.0008
9	0.2637	0.5237	0.0002	0.2632	0.5235	0.0007
10	0.2637	0.5237	0.0001	0.2632	0.5235	0.0007
11	0.2638	0.5237	0.0001	0.2632	0.5235	0.0007
12	0.2638	0.5237	0.0001	0.2632	0.5235	0.0007
13	0.2638	0.5237	0.0001	0.2632	0.5235	0.0007
14	0.2638	0.5237	0.0001	0.2633	0.5235	0.0007
15	0.2638	0.5237	0.0001	0.2633	0.5235	0.0006
16	0.2639	0.5237	0.0001	0.2633	0.5235	0.0006
17	0.2639	0.5237	0.0001	0.2633	0.5235	0.0006
18	0.2639	0.5237	0.0001	0.2634	0.5236	0.0005
19	0.264	0.5237	0.0001	0.2634	0.5235	0.0005
20	0.264	0.5238	0.0001	0.2634	0.5236	0.0005
21	0.264	0.5237	0.0002	0.2635	0.5236	0.0004
22	0.264	0.5238	0.0002	0.2635	0.5236	0.0004
23	0.264	0.5238	0.0002	0.2634	0.5236	0.0005
24	0.2641	0.5238	0.0002	0.2634	0.5236	0.0005
25	0.2641	0.5238	0.0003	0.2635	0.5236	0.0004
26	0.2642	0.5238	0.0003	0.2635	0.5236	0.0004
27	0.2641	0.5238	0.0003	0.2635	0.5236	0.0004
28	0.2642	0.5238	0.0003	0.2636	0.5236	0.0003

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>

29	0.2642	0.5238	0.0004	0.2636	0.5236	0.0003
30	0.2643	0.5238	0.0004	0.2636	0.5236	0.0003
31	0.2643	0.5239	0.0004	0.2637	0.5237	0.0002
32	0.2643	0.5239	0.0005	0.2637	0.5237	0.0002
33	0.2641	0.5238	0.0003	0.2636	0.5237	0.0003
34	0.2642	0.5238	0.0004	0.2637	0.5237	0.0002
35	0.2643	0.5239	0.0004	0.2637	0.5237	0.0002
36	0.2643	0.5239	0.0004	0.2638	0.5237	0.0001
37	0.2643	0.5239	0.0004	0.2638	0.5237	0.0001
38	0.2643	0.5239	0.0005	0.2638	0.5237	0.0001
39	0.2643	0.5239	0.0005	0.2637	0.5237	0.0002
40	0.2644	0.5239	0.0005	0.2637	0.5237	0.0001
41	0.2644	0.5239	0.0005	0.2638	0.5237	0.0001
42	0.2644	0.5239	0.0006	0.2638	0.5237	0.0001
43	0.2644	0.5239	0.0006	0.2638	0.5238	0
44	0.2642	0.5239	0.0004	0.2637	0.5237	0.0002
45	0.2643	0.5239	0.0005	0.2638	0.5237	0.0001
46	0.2643	0.5239	0.0005	0.2638	0.5238	0.0001
47	0.2643	0.5239	0.0005	0.2638	0.5238	0
48	0.2644	0.5239	0.0005	0.2639	0.5238	0
49	0.2644	0.5239	0.0005	0.2638	0.5238	0.0001
50	0.2644	0.5239	0.0006	0.2638	0.5238	0.0001
51	0.2642	0.5239	0.0004	0.2638	0.5238	0.0001
52	0.2642	0.5239	0.0004	0.2637	0.5237	0.0002
53	0.2643	0.5239	0.0004	0.2638	0.5237	0.0001
54	0.2643	0.5239	0.0005	0.2638	0.5238	0.0001
55	0.2643	0.5239	0.0005	0.2638	0.5237	0.0001
56	0.2643	0.5239	0.0005	0.2638	0.5238	0
57	0.2641	0.5239	0.0003	0.2638	0.5237	0
58	0.2642	0.5239	0.0003	0.2639	0.5237	0
59	0.2642	0.5239	0.0003	0.2639	0.5237	0
60	0.2642	0.5239	0.0004	0.2636	0.5237	0.0003
61	0.2642	0.5239	0.0004	0.2636	0.5237	0.0003
62	0.2641	0.5238	0.0002	0.2636	0.5237	0.0002
63	0.2641	0.5238	0.0003	0.2637	0.5237	0.0002
64	0.2641	0.5238	0.0003	0.2637	0.5237	0.0002
65	0.2642	0.5238	0.0003	0.2637	0.5237	0.0002
66	0.264	0.5238	0.0002	0.2634	0.5236	0.0005
67	0.264	0.5238	0.0002	0.2635	0.5237	0.0004
68	0.2641	0.5238	0.0002	0.2636	0.5236	0.0003

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>

69	0.2639	0.5238	0.0001	0.2636	0.5236	0.0003
70	0.264	0.5238	0.0001	0.2637	0.5236	0.0002
71	0.264	0.5238	0.0002	0.2634	0.5236	0.0005
72	0.2639	0.5237	0.0001	0.2634	0.5236	0.0004
73	0.264	0.5238	0.0001	0.2635	0.5236	0.0004
74	0.2638	0.5237	0	0.2633	0.5236	0.0006
75	0.2639	0.5238	0.0001	0.2634	0.5236	0.0005
76	0.2638	0.5237	0.0001	0.2634	0.5236	0.0005
77	0.2639	0.5237	0.0001	0.2634	0.5236	0.0005
78	0.2638	0.5237	0	0.2635	0.5236	0.0004
79	0.2638	0.5237	0.0001	0.2633	0.5236	0.0006
80	0.2639	0.5237	0.0001	0.2634	0.5236	0.0005

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

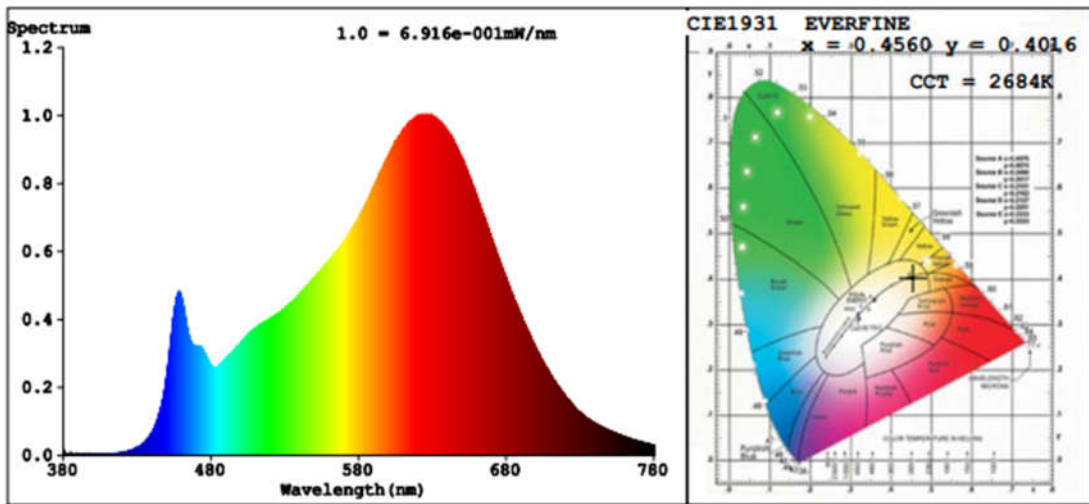
Report Format Number STD/QR4910-A/1

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 2.0
---	--

Test date	2017-09-25	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.
GZE1709109-H-A1	120.0 V / 60 Hz	30.70	2684	93.0	0.1326
GZE1709109-H-A2	120.0 V / 60 Hz	35.41	2686	93.1	0.1340
GZE1709109-H-A3	120.0 V / 60 Hz	29.10	2684	93.0	0.1481
Average		31.74	2685	93.0	0.1382



Colorimetric Parameters

Chromaticity Coordinate: $x=0.4560$ $y=0.4016/u'=0.2641$ $v'=0.5233$
 CCT=2684K (Duv=-0.0030) Dominant WL:Ld =585.3nm Purity=57.4%
 Peak WL:Lp=624.9nm FWHM=135.6nm
 Render Index: Ra=93.0 CRI=91.7
 R1 =98 R2 =97 R3 =94 R4 =94 R5 =97 R6 =92 R7 =89
 R8 =83 R9 =69 R10=95 R11=97 R12=82 R13=99 R14=97 R15=93

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	18.6	Dimmer adjusted to lowest light output	< 1 m

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

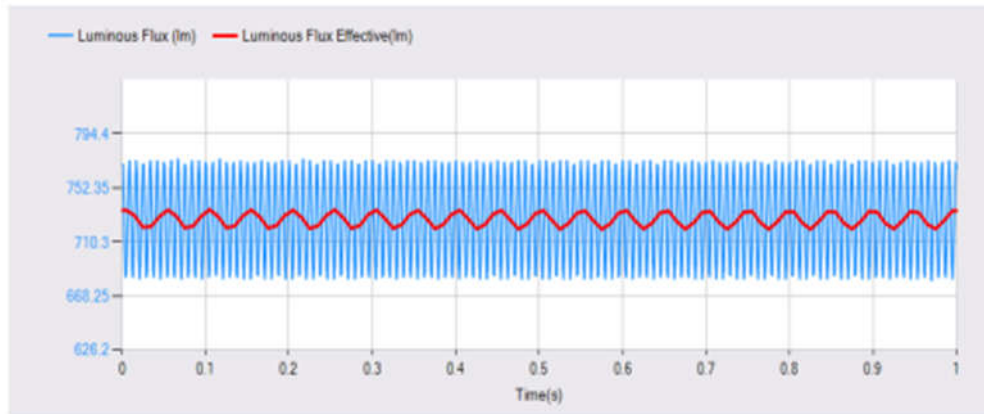
Report Format Number STD/QR4910-A/1

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>

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	2017-09-25	Test Ambient:	25.1°C
Sample No.	Operating Frequency (Hz)		
GZE1709109-H-A1	120.37		
GZE1709109-H-A2	120.22		
GZE1709109-H-A3	120.35		
Average	120.31		



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

Report Format Number STD/QR4910-A/1

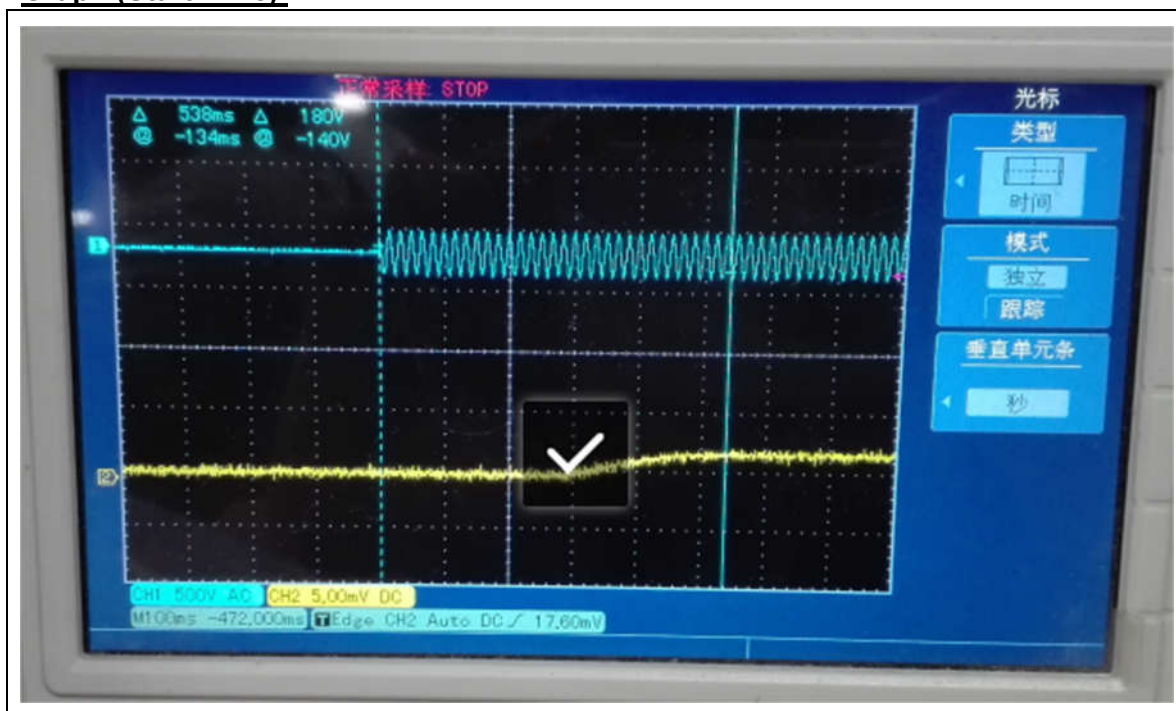
Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

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

<p>5 Starting Time <i>(Refer to Work Instruction QD28)</i></p>	<p>ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0</p>
--	---

Test date	2017-09-25	Test Ambient:	25.1°C
Sample No.	Start Time (ms)		
GZE1709109-H-A1	538		
GZE1709109-H-A2	534		
GZE1709109-H-A3	524		
Average	532		

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>
---	---

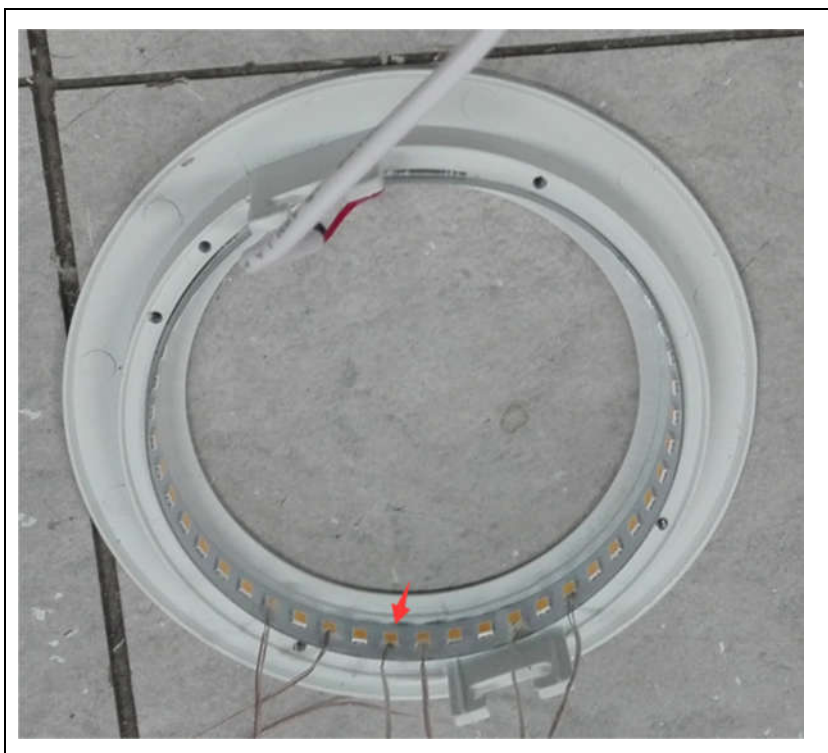
Test voltage: 120V,60Hz

Test date	2017-09-25	Test Ambient	25.1°C
Sample No.		Transient Protection Test - Seven Strikes	
GZE1709109-H-A1		Pass	
GZE1709109-H-A2		Pass	
GZE1709109-H-A3		Pass	

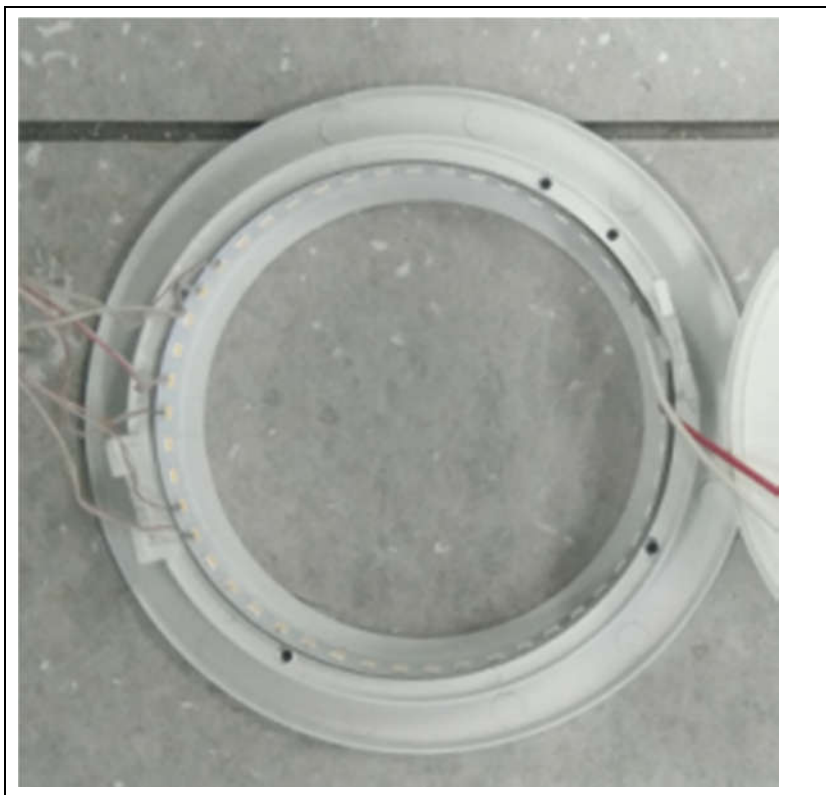
7.1 In-Situ Temperature Measurement Test (ISTMT)	UL1598-2008, 3rd Edition
---	--

Test date	2017-09-25	Test Ambient	25.1°C
Input Vol./Frequency	120 V / 60 Hz	Output Current of Single LED(mA)	38.0
Model Number	LSKT422W-2790		
Sample No.	LED Package Model	Maximum Measured LED Ts Point Temperature (°C)	Maximum LED Ts Point Temperature Limited (°C)
GZE1709109-H-A1	2T03X2WW11000002	51.8	105

In-Situ Picture - Ts:



Test date	2017-12-20	Test Ambient	25.1°C
Input Vol./Frequency	120 V / 60 Hz	Output Current of Single LED(mA)	40.1
Model Number	LSKT455W-2790		
Sample No.	LED Package Model	Maximum Measured LED Ts Point Temperature (°C)	Maximum LED Ts Point Temperature Limited (°C)
GZE1712059-H-E1	2T03X2WW11000002	86.9	105

In-Situ Picture - Ts:

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

Report Format Number STD/QR4910-A/1

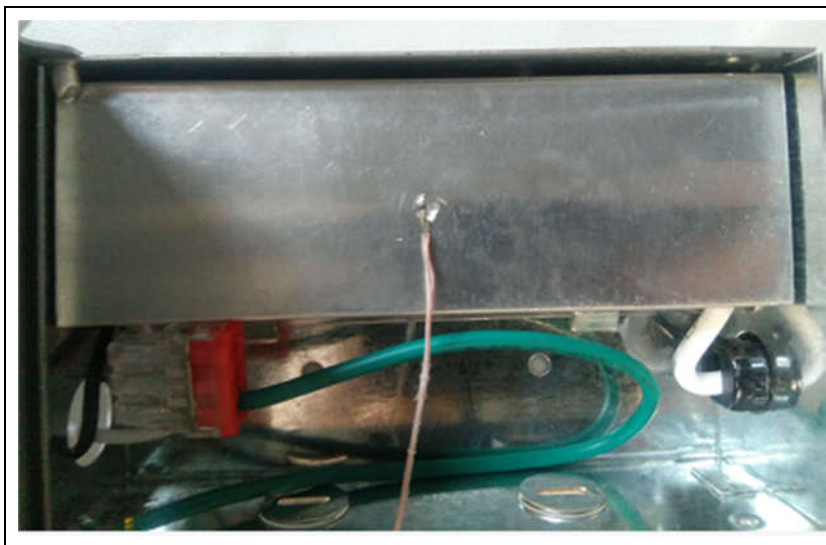
Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

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

7.2 Maximum Measured Ballast or Driver Case Temperature | **UL1598-2008, 3rd Edition**

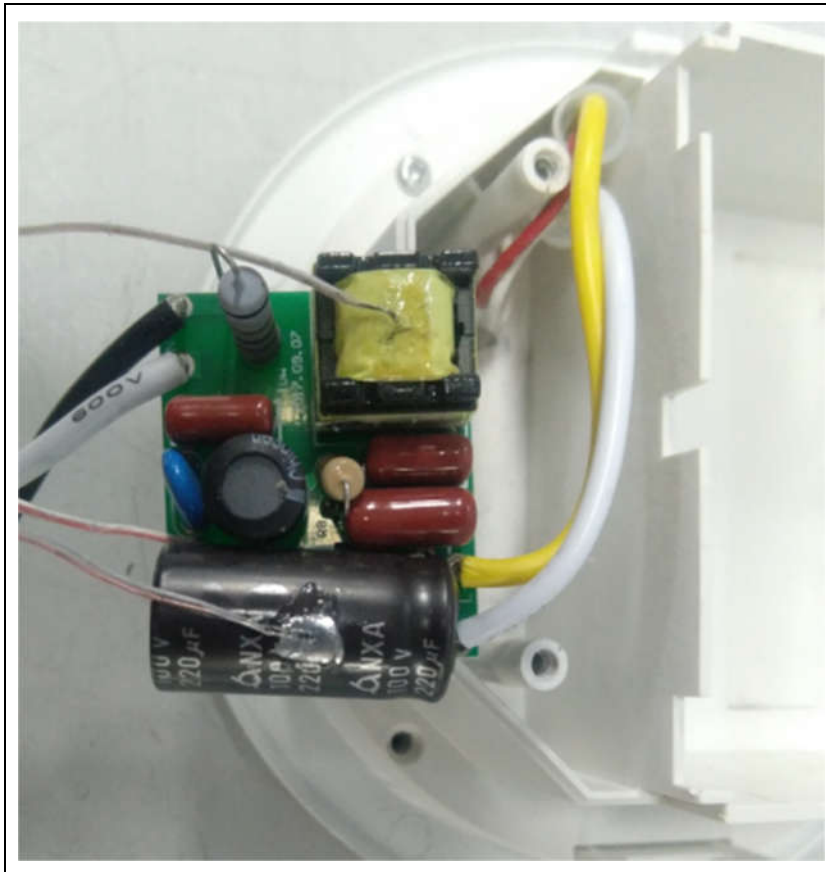
Test date	2017-09-25	Test Ambient	25.1°C
Model Number	LSKT422W-2790		
Sample No.	Maximum Measured Driver Case Temperature (°C)	Maximum Driver Case Temperature Limited (°C)	
GZE1709109-H-A1	42.6	105	

In-Situ Picture - Ts:



Test date	2017-12-20	Test Ambient	25.1°C
Model Number	LSKT455W-2790		
Sample No.	Maximum Measured Driver Case Temperature (°C)	Maximum Driver Case Temperature Limited (°C)	
GZE1712059-H-E1	89.1	105	

In-Situ Picture - Ts:



8 Off-State Power Consumption:	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0
---------------------------------------	--

Test date	2017-09-25	Test Ambient:	25.0 ° C
Model Number	LSKT422W-2790	Stabilization Time (min)	90

Electrical Measurement – when the luminaires turned off:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)
GZE1709109-H -A1	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 *******