

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): LRKT567W-EN-##90

Remark: "##" in the model name stands for different CCT as bellow:
27=2700K,30=3000K,40=4000K,50=5000K

Representative (Tested) Model: LRKT567W-EN-2790

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

Test & Report By:

Bill Luo

Engineer: Bill Luo

Date: Oct.16,2017

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

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<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	Oct.16,2017
Test Report No.	GZE1709109-H-K
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	L-TECH CORPORTION		
Brand Name	L-TECH CORP		
Model Number	LRKT567W-EN-##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	--	12.81	W
Input Current	--	0.1128	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9460	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	934.51	lm
Initial Lumen Efficacy	--	72.95	lm/w
Correlated color temperature / CCT	2736	--	K
Color rendering index / CRI	92.7	--	
R9 Value	56	--	
Duv	-0.0015	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		352	cd
Beam angle (if applicable)		104.0	°
Zonal lumens in the 0°-60° zone		79	%
Zonal lumens in the 60°-90° zone	-----	21	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0	%

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Test Specifications:	
Date of Receipt	Sep.20,2017
Date of Test	Oct.09,2017
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

<p>Test Methods</p> <p>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.</p> <p>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.</p>

1. Product Information:

Brand Name	L-TECH CORP
Model Number	LRKT567W-EN-##90
Luminaire Type	Downlights
Rated Voltage / Frequency	120Vac, 50/60 Hz
Nominal Power	13W
Rated Initial Lamp Lumen	--
Declared CCT	2700K,3000K,4000K,5000K
LED Manufacturer	Edison Opto Corporation
LED Model	2T03X5WW11000003
Sample Receipt Date	Sep.20,2017
Sample Number	GZE1709109-H-K1,K2,K3

Photo



2.1 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
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Test date	2017-10-09	Test Ambient:	25.0 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LRKT567W-EN-2790		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE1709109-H-K1	120.0	60	0.1128	12.81	0.9460
GZE1709109-H-K2	120.0	60	0.1118	12.69	0.9455
GZE1709109-H-K3	120.0	60	0.1126	12.77	0.9451
Average			0.1124	12.76	0.9455

Sphere-Spectroradiometer Method:

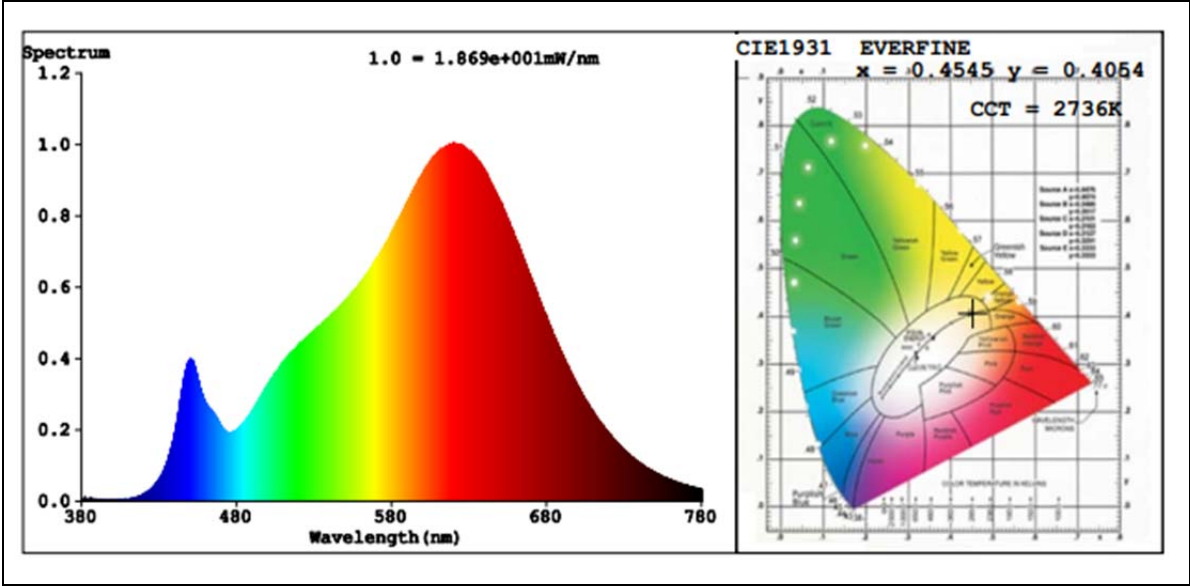
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	92.7
R9	56
CCT (K)	2736
Chromaticity (x, y)	x=0.4545 y=0.4054
Chromaticity (u', v')	u'=0.2613 v'=0.5246
Duv	-0.0015

Special Color Rendering Indices			
R1	93	R9	56
R2	97	R10	93
R3	98	R11	95
R4	93	R12	88
R5	93	R13	95
R6	97	R14	99
R7	90	R15	88
R8	79	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	934.51
Luminous Efficacy (lm/W)	72.95
Beam Angle°	104.0
Center Beam Candle Power (cd)	352

Spectral Power Distribution and Chromaticity Diagram



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

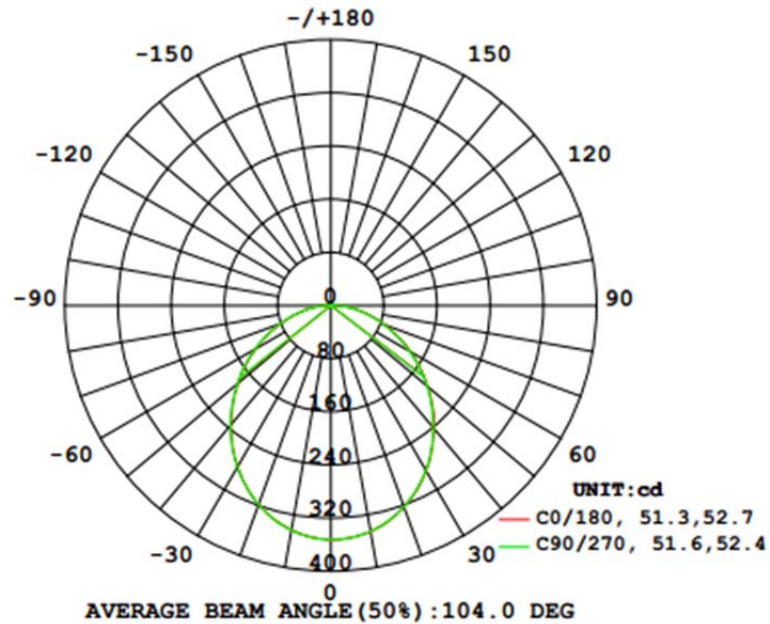
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Zonal Lumen Tabulation

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	267.1	28.6%
0-40	430.6	46.1%
0-60	737.9	79%
60-90	196.2	21%
70-100	88.8	9.5%
90-120	0.2	0%
0-90	934.1	100%
90-180	0.3	0%
0-180	934.4	100%

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-10	33.2	3.6%	90-100	0.2	0%
10-20	94.1	10.1%	100-110	0	0%
20-30	139.7	15.0%	110-120	0.0	0%
30-40	163.5	17.5%	120-130	0.0	0%
40-50	163.8	17.5%	130-140	0.0	0%
50-60	143.5	15.4%	140-150	0.0	0%
60-70	107.7	11.5%	150-160	0.0	0%
70-80	64.5	6.9%	160-170	0.0	0%
80-90	24.1	2.6%	170-180	0.0	0%

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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	352	352	352	352	352	352	352	352	352	352	352	352	352	352	352	352
5	351	351	351	351	351	350	350	350	350	349	349	350	350	350	350	351
10	345	345	346	345	345	344	344	343	343	343	343	343	343	344	344	345
15	336	336	336	336	335	334	334	333	333	332	332	332	333	333	335	335
20	323	323	323	323	322	321	320	319	318	318	317	318	319	320	321	322
25	306	307	307	307	305	304	302	301	301	300	300	300	301	303	304	306
30	287	288	288	287	286	284	282	281	281	280	280	280	282	283	285	286
35	265	266	266	266	264	262	260	258	258	257	257	258	259	261	263	265
40	241	242	242	242	240	238	236	234	234	233	233	233	235	237	239	241
45	217	217	218	217	215	213	211	209	209	208	208	208	210	212	214	216
50	190	191	192	191	189	187	184	183	183	182	182	182	184	186	189	190
55	164	165	165	164	162	160	158	157	157	156	156	157	158	161	163	164
60	138	139	139	138	136	134	132	131	131	130	130	131	132	135	137	138
65	112	113	113	112	110	108	106	105	105	105	105	105	107	109	111	113
70	87.2	87.7	87.6	86.6	85.1	83.3	81.8	80.5	80.7	80.2	80.1	80.8	82.5	84.4	86.2	87.5
75	63.9	64.3	64.1	63.3	61.8	60.2	58.8	57.6	57.5	57.2	57.3	58.0	59.4	61.1	62.7	63.8
80	42.6	42.8	42.7	42.0	40.8	39.4	38.1	37.1	37.1	36.9	37.1	37.8	39.0	40.3	41.6	42.5
85	23.2	23.6	23.8	23.5	22.9	22.0	21.1	20.6	20.7	20.5	20.5	20.9	21.6	22.4	22.9	23.4
90	4.46	4.61	4.57	4.40	4.22	4.29	4.53	4.67	4.33	4.27	3.78	2.45	2.62	2.48	3.87	4.35
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	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
125	0.00	0.00	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
130	0.01	0.01	0.01	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
135	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
140	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	0.01
145	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	0.01
150	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	0.01
155	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	0.01
160	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	0.01
165	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	0.01
170	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	0.01
175	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	0.01
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

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

Test date 2017-10-09	Test Ambient 25.1°C
Sample No.	Maximum Δu'v'
GZE1709109-H-K1	0.0016

Gamma\C	CIE u'	CIE v'	du' v'	CIE u'	CIE v'	du' v'
-81	0.2606	0.5236	0.0014	0.2618	0.5235	0.0003
-80	0.2606	0.5235	0.0014	0.2617	0.5234	0.0004
-79	0.2606	0.5235	0.0014	0.2617	0.5234	0.0003
-78	0.2605	0.5234	0.0015	0.2616	0.5234	0.0005
-77	0.2608	0.5235	0.0013	0.2617	0.5234	0.0004
-76	0.2607	0.5234	0.0014	0.2616	0.5234	0.0005
-75	0.2606	0.5234	0.0014	0.2615	0.5233	0.0005
-74	0.2606	0.5234	0.0015	0.2616	0.5233	0.0005
-73	0.2608	0.5234	0.0012	0.2616	0.5233	0.0005
-72	0.2608	0.5234	0.0013	0.2617	0.5233	0.0004
-71	0.2607	0.5234	0.0013	0.2616	0.5233	0.0004
-70	0.2607	0.5234	0.0013	0.2616	0.5233	0.0005
-69	0.2608	0.5234	0.0013	0.2617	0.5233	0.0003
-68	0.2607	0.5234	0.0013	0.2617	0.5233	0.0004
-67	0.2608	0.5234	0.0012	0.2616	0.5233	0.0004
-66	0.2608	0.5234	0.0012	0.2617	0.5233	0.0004
-65	0.2608	0.5234	0.0013	0.2618	0.5234	0.0003
-64	0.2611	0.5234	0.001	0.2618	0.5234	0.0003
-63	0.2611	0.5234	0.001	0.2618	0.5234	0.0003
-62	0.2611	0.5234	0.001	0.2618	0.5234	0.0003
-61	0.2611	0.5234	0.001	0.262	0.5234	0.0001
-60	0.2611	0.5235	0.001	0.262	0.5234	0.0001
-59	0.2611	0.5234	0.001	0.262	0.5234	0.0001
-58	0.2611	0.5234	0.001	0.2619	0.5234	0.0001
-57	0.2612	0.5235	0.0008	0.262	0.5234	0.0001
-56	0.2612	0.5235	0.0008	0.2621	0.5235	0.0001
-55	0.2612	0.5235	0.0008	0.2622	0.5235	0.0001
-54	0.2613	0.5235	0.0007	0.2622	0.5235	0.0002
-53	0.2613	0.5235	0.0007	0.2622	0.5235	0.0001
-52	0.2614	0.5235	0.0007	0.2622	0.5235	0.0002

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-51	0.2615	0.5236	0.0006	0.2624	0.5236	0.0003
-50	0.2615	0.5236	0.0006	0.2624	0.5236	0.0004
-49	0.2615	0.5236	0.0006	0.2624	0.5236	0.0004
-48	0.2615	0.5236	0.0006	0.2624	0.5236	0.0004
-47	0.2616	0.5236	0.0004	0.2624	0.5236	0.0004
-46	0.2616	0.5236	0.0004	0.2624	0.5236	0.0004
-45	0.2617	0.5236	0.0004	0.2624	0.5236	0.0004
-44	0.2616	0.5236	0.0004	0.2627	0.5237	0.0007
-43	0.2616	0.5236	0.0004	0.2627	0.5237	0.0007
-42	0.2618	0.5236	0.0003	0.2627	0.5237	0.0007
-41	0.2618	0.5236	0.0003	0.2627	0.5237	0.0007
-40	0.2618	0.5236	0.0002	0.2627	0.5237	0.0007
-39	0.2618	0.5236	0.0002	0.2628	0.5237	0.0008
-38	0.2618	0.5236	0.0002	0.2628	0.5237	0.0008
-37	0.262	0.5236	0.0001	0.2628	0.5237	0.0008
-36	0.262	0.5236	0.0001	0.263	0.5237	0.001
-35	0.262	0.5236	0.0001	0.263	0.5237	0.001
-34	0.262	0.5236	0.0001	0.263	0.5237	0.001
-33	0.262	0.5236	0.0001	0.263	0.5237	0.001
-32	0.262	0.5236	0.0001	0.263	0.5237	0.001
-31	0.2622	0.5236	0.0002	0.263	0.5237	0.001
-30	0.2621	0.5236	0.0002	0.263	0.5237	0.001
-29	0.2621	0.5236	0.0001	0.263	0.5237	0.001
-28	0.2621	0.5236	0.0001	0.263	0.5237	0.001
-27	0.2621	0.5236	0.0001	0.263	0.5237	0.001
-26	0.2621	0.5236	0.0001	0.263	0.5237	0.001
-25	0.2621	0.5236	0.0001	0.263	0.5237	0.001
-24	0.2621	0.5236	0.0001	0.2632	0.5237	0.0012
-23	0.2623	0.5236	0.0003	0.2632	0.5237	0.0012
-22	0.2623	0.5236	0.0003	0.2632	0.5237	0.0012
-21	0.2623	0.5236	0.0002	0.2632	0.5237	0.0012
-20	0.2623	0.5236	0.0002	0.2633	0.5237	0.0012
-19	0.2622	0.5236	0.0002	0.2633	0.5237	0.0012
-18	0.2622	0.5236	0.0002	0.2633	0.5237	0.0012
-17	0.2622	0.5236	0.0002	0.2632	0.5237	0.0012
-16	0.2622	0.5235	0.0002	0.2632	0.5237	0.0012
-15	0.2622	0.5235	0.0002	0.2632	0.5237	0.0012
-14	0.2622	0.5235	0.0002	0.2632	0.5237	0.0012
-13	0.2622	0.5235	0.0002	0.2632	0.5237	0.0012
-12	0.2622	0.5235	0.0002	0.2632	0.5236	0.0012

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-11	0.2622	0.5235	0.0002	0.2632	0.5237	0.0012
-10	0.2622	0.5235	0.0002	0.2632	0.5236	0.0012
-9	0.2624	0.5235	0.0003	0.2632	0.5236	0.0012
-8	0.2624	0.5235	0.0004	0.2632	0.5236	0.0012
-7	0.2624	0.5235	0.0003	0.2632	0.5236	0.0012
-6	0.2624	0.5235	0.0003	0.2632	0.5236	0.0012
-5	0.2623	0.5235	0.0003	0.2632	0.5236	0.0012
-4	0.2624	0.5235	0.0004	0.2632	0.5236	0.0012
-3	0.2624	0.5235	0.0003	0.2632	0.5236	0.0012
-2	0.2624	0.5235	0.0004	0.2632	0.5236	0.0012
-1	0.2624	0.5235	0.0003	0.2632	0.5236	0.0012
0	0.2622	0.524	0.0005	0.2622	0.524	0.0005
1	0.2624	0.5235	0.0004	0.2632	0.5236	0.0012
2	0.2624	0.5235	0.0003	0.2632	0.5236	0.0012
3	0.2624	0.5235	0.0003	0.2631	0.5236	0.001
4	0.2624	0.5235	0.0004	0.2631	0.5236	0.001
5	0.2624	0.5235	0.0003	0.2631	0.5236	0.001
6	0.2624	0.5235	0.0004	0.2631	0.5236	0.001
7	0.2624	0.5235	0.0003	0.263	0.5236	0.001
8	0.2624	0.5235	0.0004	0.263	0.5236	0.001
9	0.2623	0.5235	0.0003	0.2631	0.5236	0.001
10	0.2624	0.5235	0.0003	0.263	0.5236	0.001
11	0.2623	0.5235	0.0003	0.2631	0.5236	0.001
12	0.2623	0.5235	0.0003	0.2631	0.5236	0.001
13	0.2623	0.5235	0.0003	0.2631	0.5236	0.001
14	0.2623	0.5235	0.0003	0.263	0.5236	0.001
15	0.2623	0.5235	0.0003	0.2631	0.5236	0.001
16	0.2623	0.5235	0.0003	0.2631	0.5236	0.001
17	0.2623	0.5235	0.0003	0.263	0.5236	0.001
18	0.2623	0.5235	0.0003	0.263	0.5236	0.001
19	0.2623	0.5235	0.0003	0.2631	0.5236	0.001
20	0.2623	0.5235	0.0002	0.263	0.5236	0.001
21	0.2623	0.5235	0.0003	0.263	0.5236	0.001
22	0.2623	0.5235	0.0003	0.263	0.5237	0.001
23	0.2623	0.5235	0.0003	0.2629	0.5236	0.0009
24	0.2623	0.5235	0.0003	0.2629	0.5236	0.0009
25	0.2623	0.5235	0.0002	0.2629	0.5236	0.0009
26	0.2623	0.5235	0.0002	0.2629	0.5237	0.0009
27	0.2621	0.5235	0	0.2629	0.5237	0.0009
28	0.2621	0.5235	0	0.2629	0.5237	0.0009

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Report Format Number STD/QR4910-A/1

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29	0.2621	0.5235	0.0001	0.2629	0.5237	0.0008
30	0.2621	0.5235	0.0001	0.2628	0.5237	0.0008
31	0.262	0.5235	0	0.2627	0.5236	0.0007
32	0.2621	0.5235	0	0.2627	0.5236	0.0007
33	0.262	0.5235	0	0.2627	0.5236	0.0007
34	0.262	0.5235	0	0.2627	0.5236	0.0007
35	0.262	0.5235	0	0.2627	0.5236	0.0006
36	0.262	0.5235	0	0.2627	0.5236	0.0006
37	0.262	0.5235	0.0001	0.2625	0.5236	0.0005
38	0.2618	0.5235	0.0003	0.2625	0.5236	0.0005
39	0.2617	0.5234	0.0003	0.2625	0.5236	0.0005
40	0.2617	0.5235	0.0003	0.2625	0.5236	0.0005
41	0.2617	0.5235	0.0003	0.2625	0.5236	0.0005
42	0.2617	0.5234	0.0003	0.2623	0.5236	0.0003
43	0.2617	0.5234	0.0003	0.2623	0.5236	0.0003
44	0.2617	0.5234	0.0004	0.2623	0.5236	0.0003
45	0.2616	0.5234	0.0004	0.2623	0.5236	0.0003
46	0.2614	0.5234	0.0006	0.2623	0.5236	0.0003
47	0.2614	0.5234	0.0006	0.2621	0.5235	0.0001
48	0.2614	0.5234	0.0006	0.2621	0.5235	0.0001
49	0.2614	0.5234	0.0006	0.2621	0.5236	0.0001
50	0.2614	0.5233	0.0007	0.2621	0.5235	0.0001
51	0.2614	0.5233	0.0007	0.262	0.5235	0.0001
52	0.2612	0.5233	0.0009	0.262	0.5235	0.0001
53	0.2612	0.5233	0.0009	0.262	0.5235	0.0001
54	0.2612	0.5233	0.0009	0.2618	0.5234	0.0002
55	0.2611	0.5233	0.0009	0.2618	0.5234	0.0002
56	0.2611	0.5233	0.0009	0.2618	0.5235	0.0002
57	0.2611	0.5233	0.001	0.2618	0.5235	0.0002
58	0.2609	0.5232	0.0012	0.2618	0.5234	0.0002
59	0.2609	0.5232	0.0012	0.2618	0.5234	0.0002
60	0.2609	0.5232	0.0011	0.2618	0.5234	0.0002
61	0.2609	0.5232	0.0012	0.2618	0.5234	0.0002
62	0.2607	0.5231	0.0013	0.2615	0.5233	0.0006
63	0.2608	0.5231	0.0013	0.2615	0.5233	0.0005
64	0.2608	0.5231	0.0013	0.2615	0.5233	0.0005
65	0.2608	0.5231	0.0013	0.2614	0.5233	0.0006
66	0.2606	0.5231	0.0015	0.2615	0.5233	0.0006
67	0.2606	0.5231	0.0015	0.2614	0.5233	0.0007
68	0.2607	0.5231	0.0014	0.2614	0.5233	0.0007

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69	0.2607	0.5231	0.0014	0.2614	0.5233	0.0006
70	0.2606	0.5231	0.0015	0.2614	0.5233	0.0006
71	0.2606	0.5231	0.0015	0.2615	0.5233	0.0006
72	0.2607	0.5231	0.0014	0.2612	0.5232	0.0009
73	0.2606	0.523	0.0015	0.2613	0.5233	0.0008
74	0.2606	0.5231	0.0015	0.2613	0.5233	0.0007
75	0.2605	0.5231	0.0016	0.2614	0.5233	0.0007
76	0.2606	0.5231	0.0015	0.2612	0.5232	0.0009
77	0.2607	0.5231	0.0014	0.2613	0.5233	0.0008
78	0.2607	0.5231	0.0014	0.2612	0.5233	0.0008
79	0.2607	0.5232	0.0013	0.2614	0.5233	0.0007
80	0.2607	0.5232	0.0013	0.2615	0.5234	0.0006
81	0.2607	0.5232	0.0013	0.2613	0.5234	0.0007

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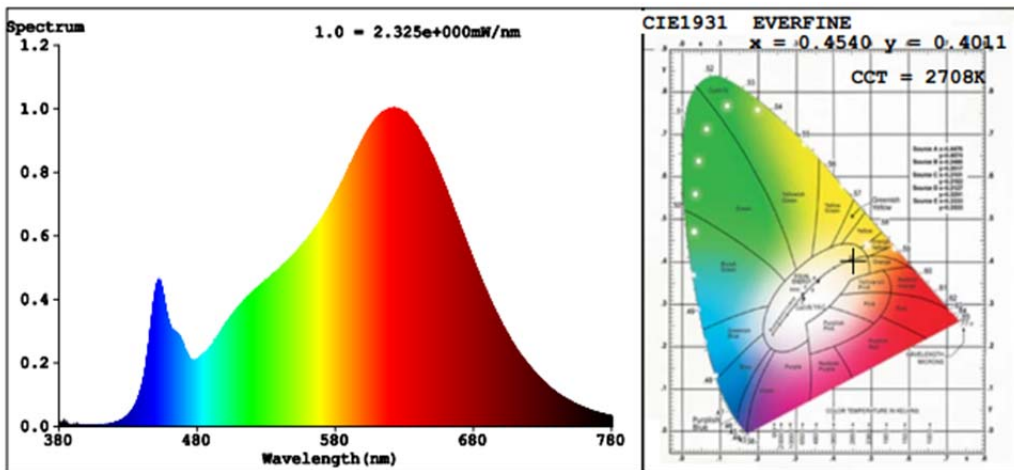
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3. Electrical and Photometric Measurements, with dimming	IES LM-79 2008 ENERGY STAR[®] Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.0
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Test date	2017-10-09	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-K1	120.0 V / 60 Hz	108.1	2708	93.4	0.2088
GZE1709109-H-K2	120.0 V / 60 Hz	146.4	2710	93.3	0.2120
GZE1709109-H-K3	120.0 V / 60 Hz	91.07	2706	93.4	0.2136
Average		115.2	2708	93.4	0.2115



Colorimetric Parameters

Chromaticity Coordinate: $x=0.4540$ $y=0.4011$ $u'=0.2630$ $v'=0.5228$ $Dx, Dy: -0.0052, -0.0093$
 CCT=2708K (Duv=-0.0031) Dominant WL: $\lambda_d = 585.2\text{nm}$ Purity=56.7%
 Peak WL: $\lambda_p = 622.1\text{nm}$ FWHM=140.8nm
 Render Index: $R_a = 93.4$ CRI=91.7
 R1 =95 R2 =99 R3 =97 R4 =94 R5 =96 R6 =96 R7 =90
 R8 =81 R9 =62 R10=98 R11=96 R12=86 R13=97 R14=99 R15=91

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	15.5	Dimmer adjusted to lowest light output	< 1 m

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NVLAP CODE: 201011-0

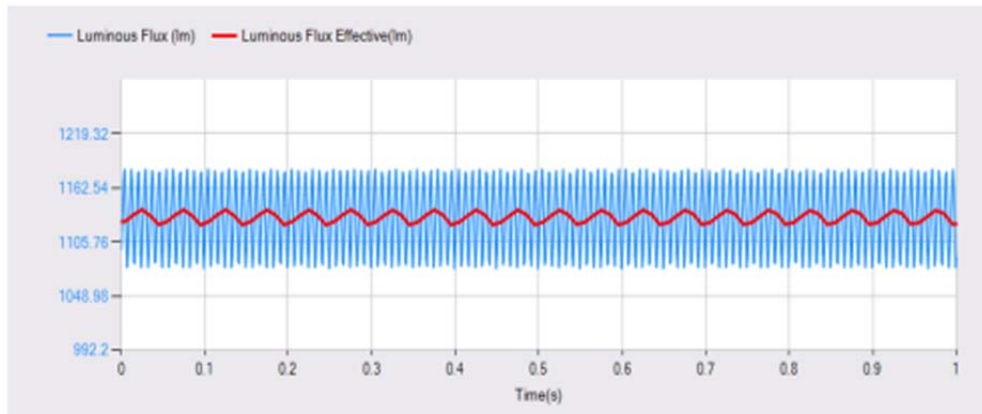
Report Format Number STD/QR4910-A/1

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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	2017-10-09	Test Ambient:	25.1°C
Sample No.		Operating Frequency (Hz)	
GZE1709109-H-K1		120.37	
GZE1709109-H-K2		120.45	
GZE1709109-H-K3		120.39	
Average		120.40	



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

Report Format Number STD/QR4910-A/1

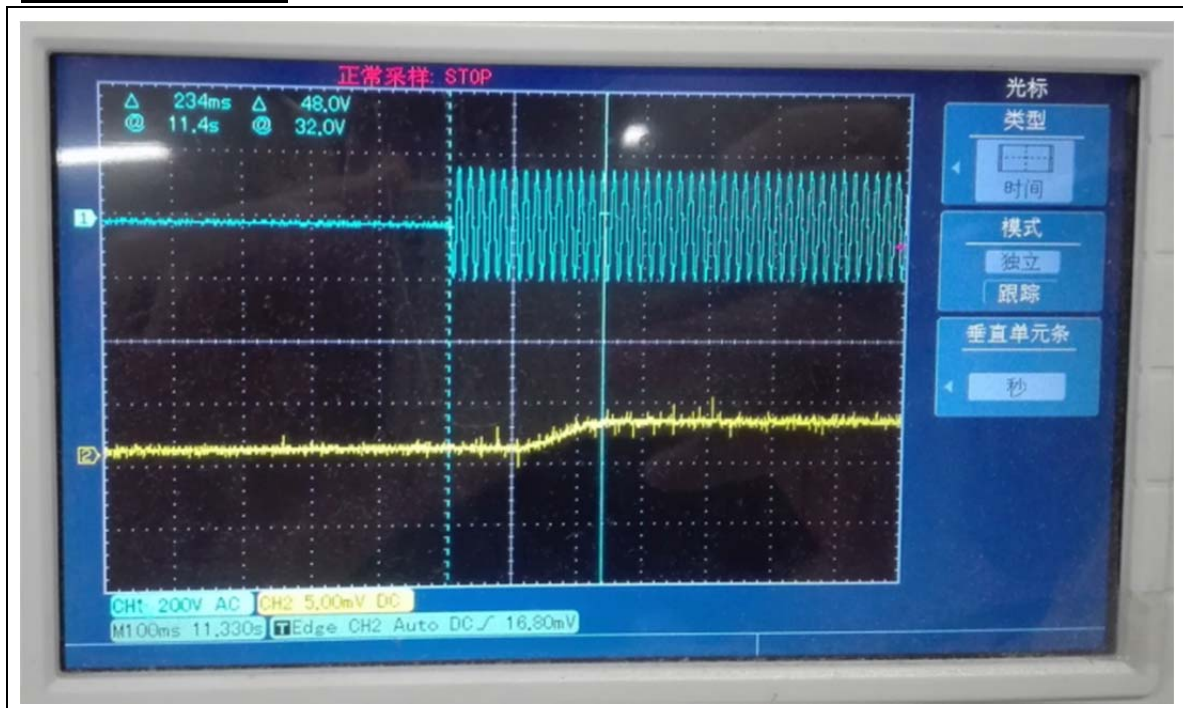
Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

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<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>
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Test date	2017-10-09	Test Ambient:	25.1°C
Sample No.	Start Time (ms)		
GZE1709109-H-K1	234		
GZE1709109-H-K2	238		
GZE1709109-H-K3	232		
Average	235		

Graph (Start Time):



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

Test date	2017-10-09	Test Ambient	25.1°C
Sample No.		Transient Protection Test - Seven Strikes	
GZE1709109-H-K1		Pass	
GZE1709109-H-K2		Pass	
GZE1709109-H-K3		Pass	

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

Test date	2017-10-09	Test Ambient	25.1°C
Input Vol./Frequency	120 V / 60 Hz	Output Current of Single LED(mA)	143
Sample No.	LED Package Model	Maximum Measured LED Ts Point Temperature (°C)	Maximum LED Ts Point Temperature Limited (°C)
GZE1709109-H-K1	2T03X5WW11000003	84.9	105

In-Situ Picture - Ts:



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

Test date	2017-10-09	Test Ambient	25.1°C
Sample No.	Maximum Measured Driver Case Temperature (°C)	Maximum Driver Case Temperature Limited (°C)	
GZE1709109-H-K1	98.8	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	2017-10-09	Test Ambient:	25.0 ° C
Model Number	LRKT567W-EN-2790	Stabilization Time (min)	90

Electrical Measurement – when the luminaires turned off:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)
GZE1709109-H -K1	120.0	60	0	0

**Laboratory: Standard-Tech Co. Ltd Testing Center
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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 *******