

## LM-79-08 Test Report

For

### L-TECH CORPORATION (Brand Name: L-TECH CORP)

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

## LED Luminare

Model name(s): LRKT567W-EN-2790

Representative (Tested) Model: LRKT567W-EN-2790

Model Different: N/A

Test & Report By:

*Univ Xie*

Engineer: Univ Xie

Date: Jan17, 2017

Review By:

*Tommy Liang*

Manager: Tommy Liang

Note: 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/QR4909-A/2

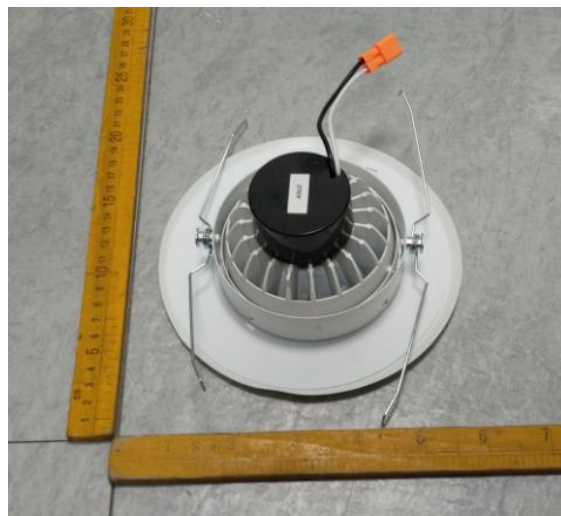
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Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

**1.1 Product Information:**

Organization Name	L-TECH CORPORTION	
Brand Name	L-TECH CORP	
Model Number	LRKT567W-EN-2790	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaire	
Rated Voltage / Frequency	120Vac, 60 Hz	
Nominal Power	13W	
Rated Initial Lamp Lumen	--	
Declared CCT	2700K	
LED Manufacturer	Edison Opto Corporation	
LED Model	2T03X5	
Sample Number	GZE1612120-AU1	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

**Photo**



**1.2 Test Specifications:**

Date of Receipt	Jan08, 2017
Date of Test	Jan.11, 2017
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> </ol>
Reference Work Instruction	QD25

**1.3 Test Methods**

<p><b>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</b></p> <p>Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.</p>
<p><b>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</b></p> <p>Chromaticity 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 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.</p>
<p><b>3) Electrical Measurements:</b></p> <p>Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25° C ± 1° 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.</p>

**2.1 Electrical, Photometric and Chromaticity Measurements**

*(Refer to Work Instruction QD25)*

<b>Test date</b>	2017-01-11	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LRKT567W-EN-2790		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE161212 0-AU1	120.0	60	0.1080	12.20	0.9429

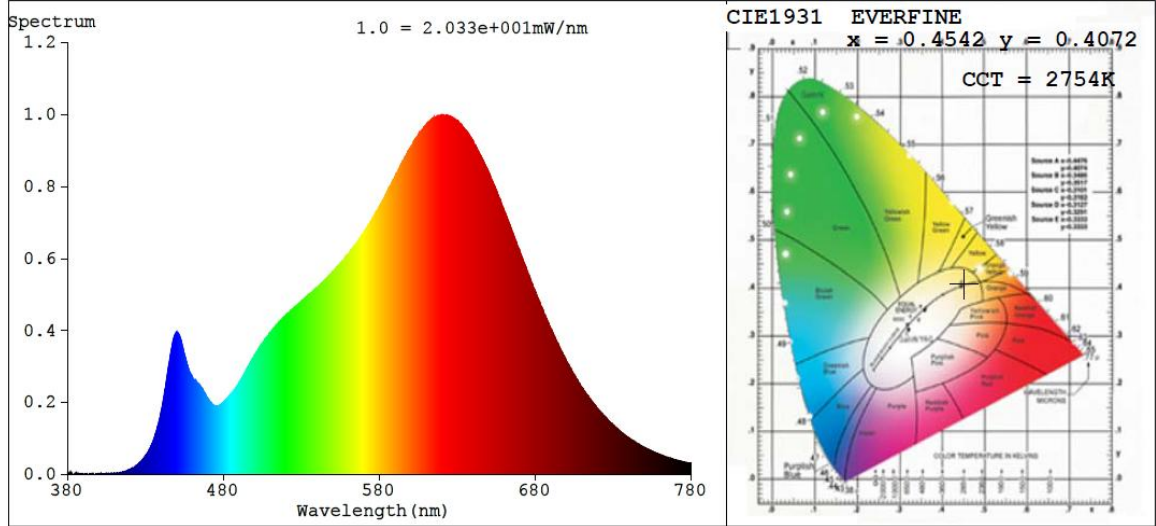
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	94	R9	58
Frequency (Hz)	60	R2	98	R10	94
CCT (K)	2754	R3	99	R11	95
Duv	-0.0008	R4	94	R12	87
Chromaticity (x, y)	x=0.4542 y=0.4072	R5	94	R13	95
Chromaticity (u', v')	u'=0.2604 v'=0.5252	R6	97	R14	99
Color Rendering Index (CRI)	93.2	R7	91	R15	89
R9	58	R8	80	--	--

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	942.61
Luminous Efficacy (lm/W)	77.26
Beam Angle (°)	104.7
Center Beam Candle Power (cd)	357

**Spectral Power Distribution & Chromaticity Diagram**

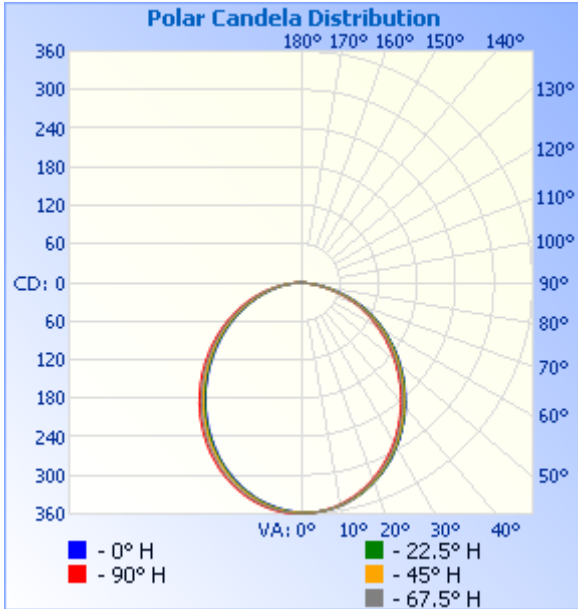


**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	270.7	28.7%
0-40	436.7	46.3%
0-60	750.7	79.6%
60-90	190.4	20.2%
70-100	79.7	8.5%
90-120	0.6	0.1%
0-90	941.0	99.8%
90-180	1.5	0.2%
0-180	942.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	33.7	3.6%	90-100	0.3	0%
10-20	95.4	10.1%	100-110	0.2	0%
20-30	141.6	15.0%	110-120	0.2	0%
30-40	166.0	17.6%	120-130	0.2	0%
40-50	167.0	17.7%	130-140	0.2	0%
50-60	147.0	15.6%	140-150	0.2	0%
60-70	110.9	11.8%	150-160	0.2	0%
70-80	63.5	6.7%	160-170	0.1	0%
80-90	15.9	1.7%	170-180	0.0	0%

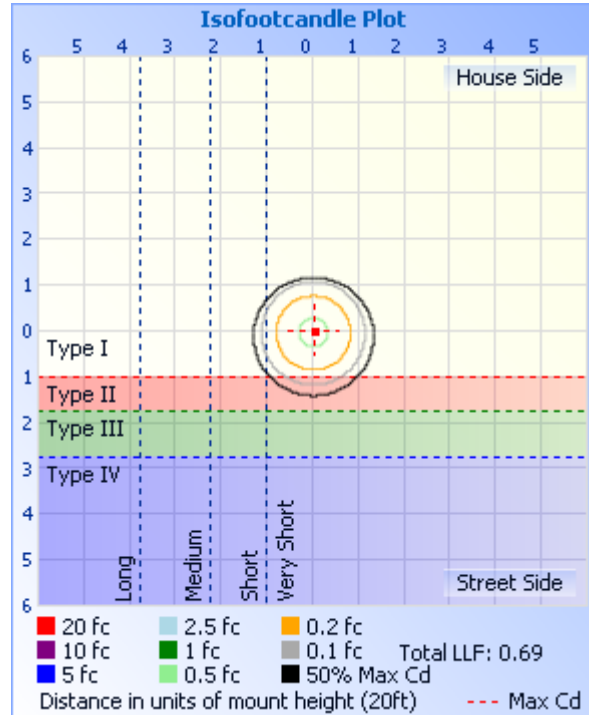
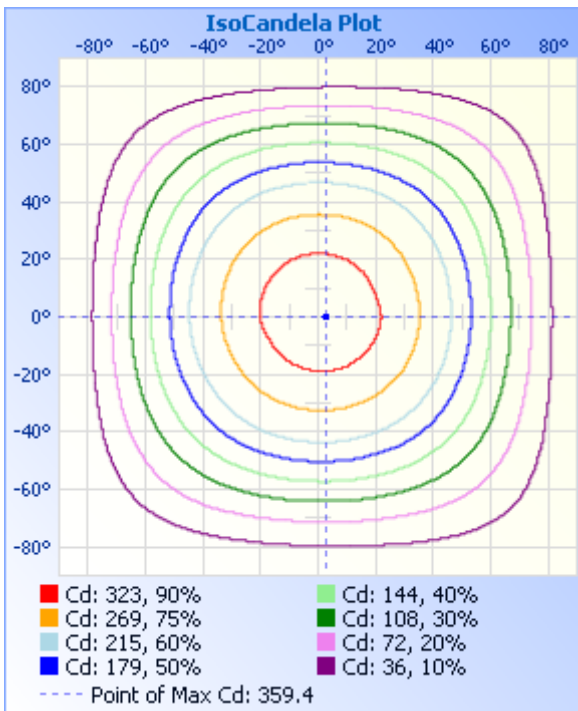
**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	1.24 fc	43.7 ft	44.1 ft
34.0ft	0.31 fc	87.3 ft	88.3 ft
51.0ft	0.14 fc	131.0 ft	132.4 ft
68.0ft	0.08 fc	174.6 ft	176.5 ft
85.0ft	0.05 fc	218.3 ft	220.7 ft
102.0ft	0.03 fc	261.9 ft	264.8 ft

■ Vert. Spread: 104.2°  
■ Horiz. Spread: 104.8°



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**Candela Table - Type C**

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357
1	358	358	358	359	359	355	356	356	357	357	358	359	359	355	356	357	358
2	358	358	358	359	359	355	355	356	356	357	357	359	359	355	356	357	358
3	358	358	358	359	358	354	354	355	356	356	357	358	359	354	357	357	358
4	357	358	358	358	358	353	354	355	355	355	356	357	358	355	356	356	357
5	357	357	357	357	357	352	352	353	353	354	355	357	358	354	355	356	357
6	356	356	356	356	356	351	350	352	352	353	354	356	357	354	355	355	356
7	356	356	355	355	355	350	350	350	350	352	353	354	356	353	354	355	356
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11	351	351	350	349	348	343	342	343	344	344	346	348	350	347	349	350	351
12	349	349	349	347	346	341	341	340	341	342	344	346	348	346	347	348	349
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27	308	307	305	303	300	293	292	291	291	293	296	300	303	302	305	307	308
28	303	303	301	299	296	290	288	287	288	289	292	296	300	299	301	303	303

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29	299	299	297	295	291	285	283	283	283	285	288	291	295	295	297	299	299
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98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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153	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
156	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
157	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0
158	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
159	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
160	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
161	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
162	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
163	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
164	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
165	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
166	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
167	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0
168	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	0
169	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
170	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1
171	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0
172	1	0	0	0	0	1	1	0	1	1	0	0	0	0	0	1
173	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1
174	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0
175	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
176	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
177	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
178	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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**STANDARD-TECH**



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**3. Test Equipment**

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2016-07-01	2017-06-30
ST-R-331	Spectral analysis system HAAS-2000	2016-07-01	2017-06-30
D204	Standard Lamp	2016-07-01	2017-06-30
PF2010	Power Meter for Integrating Sphere	2016-07-01	2017-06-30
EE-09	Goniophotometer system	2016-07-01	2017-06-30
D908S	Standard Lamp	2016-07-01	2017-06-30
PF210	Power Meter for Goniophotometer	2016-07-01	2017-06-30
ST-R-181A	Temperature Tester	2016-07-01	2017-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

**\*\*\*\*\* END OF REPORT \*\*\*\*\***

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