



Report No.: GZE160771-P

NVLAP LAB CODE 201011-0

## LM-79-08 Test Report

For

### L-TECH CORPORATION

**(Brand Name: L-TECH CORP)**

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

### LED Luminaires

Model name(s): LJKT800S-4090

Test & Report By:

*Johnson Sun*

Engineer: Johnson Sun

Date: Aug.03,2016

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

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

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

**1.1 Product Information:**

Organization Name	L-TECH CORPORTION	
Brand Name	L-TECH CORP	
Model Number	LJKT800S-4090	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaires	
Rated Voltage / Frequency	120Vac, 60 Hz	
Nominal Power	17W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K	
LED Manufacturer	N/A	
LED Model	N/A	
Sample Number	GZE160771-P1	
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	Jul.25,2016
Date of Test	Jul.27,2016
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

### 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)

<b>Test date</b>	2016-07-27	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	Horizontal	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LJKT800S-4090		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE160771-P1	120.0	60	0.1374	16.08	0.9753

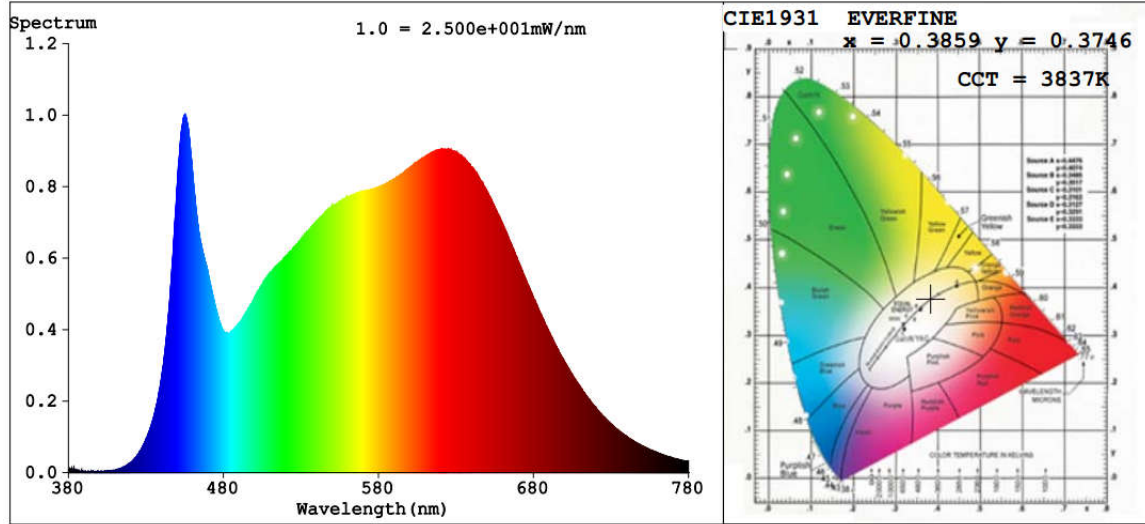
### Chromaticity Measurement - Sphere-Spectroradiometer Method i:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	96	R9	80
Frequency (Hz)	60	R2	99	R10	95
CCT (K)	3837	R3	98	R11	93
Duv	-0.0026	R4	93	R12	74
Chromaticity (x, y)	x=0.3859 y=0.3746	R5	95	R13	98
Chromaticity (u', v')	u'=0.2296 v'=0.5014	R6	95	R14	98
Color Rendering Index (CRI)	95.1	R7	94	R15	95
R9	80	R8	91	--	--

### Photometric Measurement – Goniophotometer Method:

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	1419.5	--
Luminous Efficacy (lm/W)	88.28	--
Beam Angle (°)	107.9	--
Center Beam Candle Power (cd)	512	--

**Spectral Power Distribution & Chromaticity Diagram**

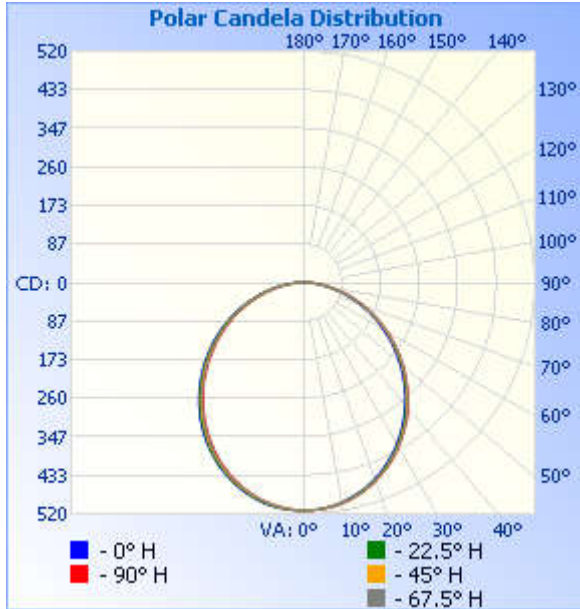


**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	392.2	27.6%
0-40	636.9	44.9%
0-60	1,107.7	78%
60-90	306.8	21.6%
70-100	140.0	9.9%
90-120	3.4	0.2%
0-90	1,414.6	99.7%
90-180	4.8	0.3%
0-180	1,419.4	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	48.3	3.4%	90-100	2.4	0.2%
10-20	137.6	9.7%	100-110	0.6	0%
20-30	206.2	14.5%	110-120	0.5	0%
30-40	244.7	17.2%	120-130	0.3	0%
40-50	249.1	17.5%	130-140	0.3	0%
50-60	221.8	15.6%	140-150	0.3	0%
60-70	169.1	11.9%	150-160	0.2	0%
70-80	100.9	7.1%	160-170	0.1	0%
80-90	36.8	2.6%	170-180	0.1	0%

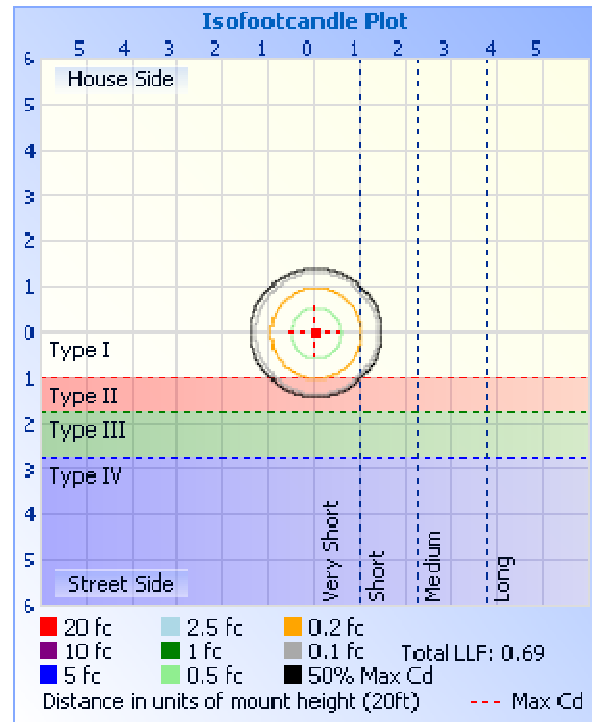
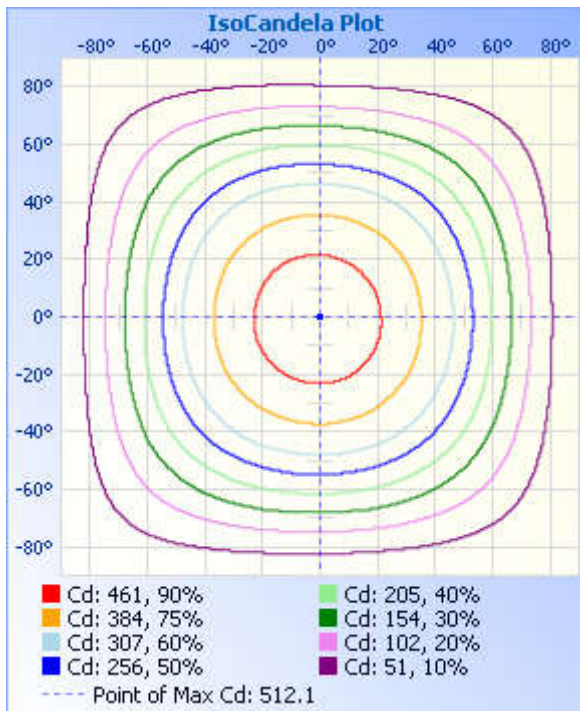
**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	1.77 fc	46.8 ft	46.5 ft
34.0ft	0.44 fc	93.6 ft	92.9 ft
51.0ft	0.20 fc	140.5 ft	139.4 ft
68.0ft	0.11 fc	187.3 ft	185.8 ft
85.0ft	0.07 fc	234.1 ft	232.3 ft
102.0ft	0.05 fc	280.9 ft	278.7 ft

■ Vert. Spread: 108.0°  
■ Horiz. Spread: 107.6°



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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	512	512	512	512	511	511	511	512	512	512	512	512	511	511	511	512	512
1	512	512	512	512	511	511	511	512	512	511	511	511	511	511	511	510	512
2	511	512	512	512	511	511	511	512	511	511	511	511	511	510	510	510	511
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4	510	510	511	511	511	510	510	511	510	510	509	509	508	508	508	508	510
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9	503	504	505	505	506	505	505	504	505	504	502	501	500	500	500	500	503
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11	499	500	501	501	502	502	501	500	501	499	497	497	496	495	496	497	499
12	496	498	498	499	500	500	499	498	499	497	495	494	493	493	493	494	496
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29	426	428	430	431	433	434	432	430	431	428	425	421	419	419	420	422	426
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61	199	203	205	207	210	211	209	207	207	204	198	195	192	192	194	196	199
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91	6	6	4	6	7	10	9	11	11	10	8	9	8	7	5	7	6
92	1	1	0	1	1	2	1	3	5	5	2	3	3	1	1	1	1

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93	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0
94	0	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0
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96	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0
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98	1	1	0	1	3	1	0	1	1	1	1	1	1	1	1	1
99	1	1	0	1	2	1	0	1	1	1	1	2	1	1	1	1
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101	0	0	0	1	2	1	0	0	0	1	1	1	1	1	0	0
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103	0	0	0	1	1	1	0	0	0	0	1	1	1	1	0	0
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106	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0
107	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0
108	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
109	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
110	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
111	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
112	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
113	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
114	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
115	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0
116	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
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118	0	0	0	1	0	1	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	1	0	0	0	0
121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	0	0	0	0	0	0	0	0	0	0	0	1	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
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
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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	1	0	1	0	0	0	0	0	0
135	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
136	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
137	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0
138	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
139	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
141	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
143	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
144	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0
145	0	0	0	0	1	0	0	0	1	0	1	1	0	0	1	0
146	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0
147	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	1
148	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0
149	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0
150	0	1	0	0	0	0	0	0	1	0	1	0	1	0	1	1
151	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0
152	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0
153	1	0	1	1	0	0	0	0	1	1	1	0	1	0	1	1
154	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1
155	0	0	0	0	1	1	0	0	1	1	1	1	1	1	0	0
156	1	0	0	0	1	0	0	0	1	1	1	1	1	1	0	1

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

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

### 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 \*\*\*\*\***