NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

L-TECH CORPORTION

(Brand Name: L-TECH CORP)

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

LED Luminaire

Model name(s): LJKT404S-2790

Test & Report By:

Johnson Sun

Engineer: Johnson Sun
Date: Jul.26,2016

Review By:

Tommy Liang

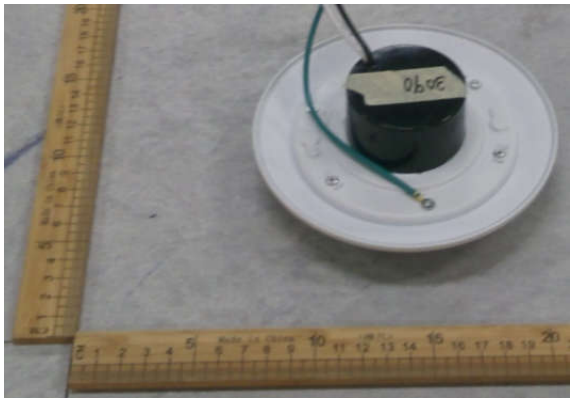
Manager: Tommy Liang

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

1.1 Product Information:

Organization Name	L-TECH CORPORTION	
Brand Name	L-TECH CORP	
Model Number	LJKT404S-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	11W	
Rated Initial Lamp Lumen	--	
Declared CCT	2700K	
LED Manufacturer	N/A	
LED Model	N/A	
Sample Number	GZE160771-A1	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaire Width	--	mm
Number of Units (modular products)	N/A	s

Photo



1.2 Test Specifications:

Date of Receipt	Jul.20,2016
Date of Test	Jul.21,2016
Test item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
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° 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.
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 25º C ± 1º 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 25º C ± 1º 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)

Test date	2016-07-21	Test Ambient:	25.2 ° C
Test Orientation	Horizontal	Stabilization Time (min)	90
Model Number	LJKT404S-2790		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE160771-A1	120.0	60	0.0964	10.78	0.9318

Chromaticity Measurement - Sphere-Spectroradiometer Method i:

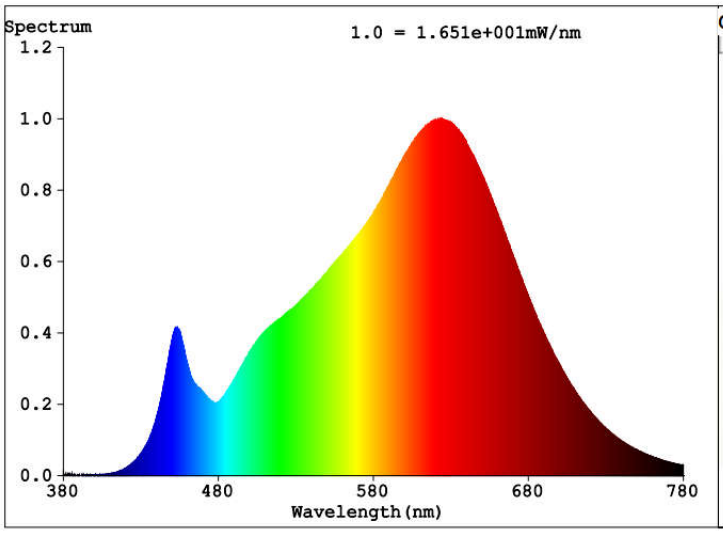
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	2789
Duv	-0.0012
Chromaticity (x, y)	x=0.4508 y=0.4053
Chromaticity (u', v')	u'=0.2590 v'=0.5239
Color Rendering Index (CRI)	93.8
R9	62

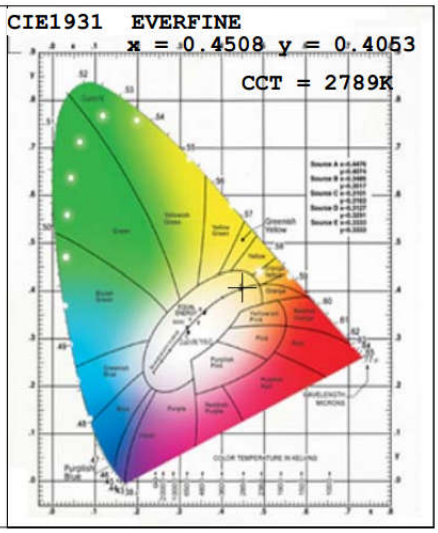
Special Color Rendering Indices			
R1	95	R9	62
R2	98	R10	95
R3	99	R11	96
R4	94	R12	88
R5	95	R13	96
R6	97	R14	100
R7	91	R15	90
R8	82	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	884.35	--
Luminous Efficacy (lm/W)	82.04	--
Beam Angle (°)	107	--
Center Beam Candle Power (cd)	316	--

Spectral Power Distribution & Chromaticity Diagram



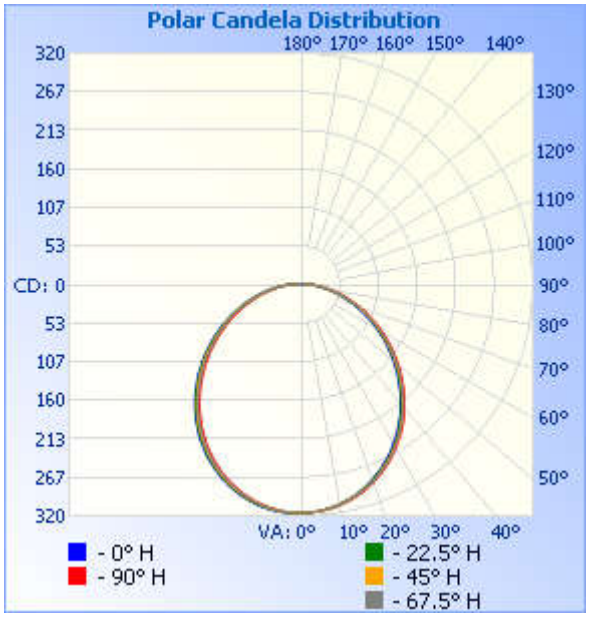


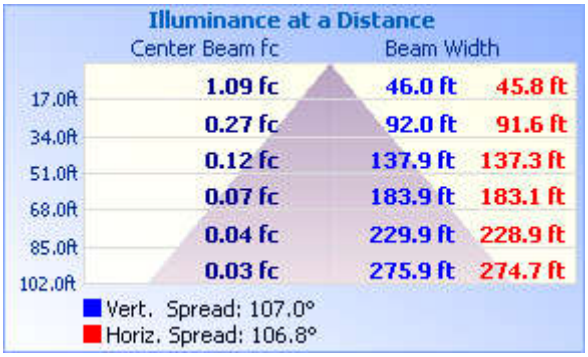
Zonal Lumen Tabulation

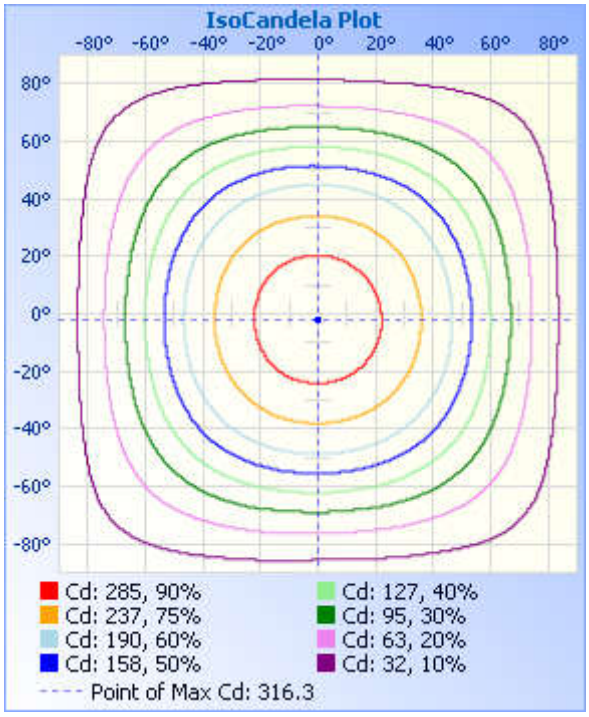
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	242.1	27.4%
0-40	392.9	44.4%
0-60	680.4	76.9%
60-90	198.4	22.4%
70-100	98.6	11.2%
90-120	4.3	0.5%
0-90	878.9	99.4%
90-180	5.5	0.6%
0-180	884.3	100%

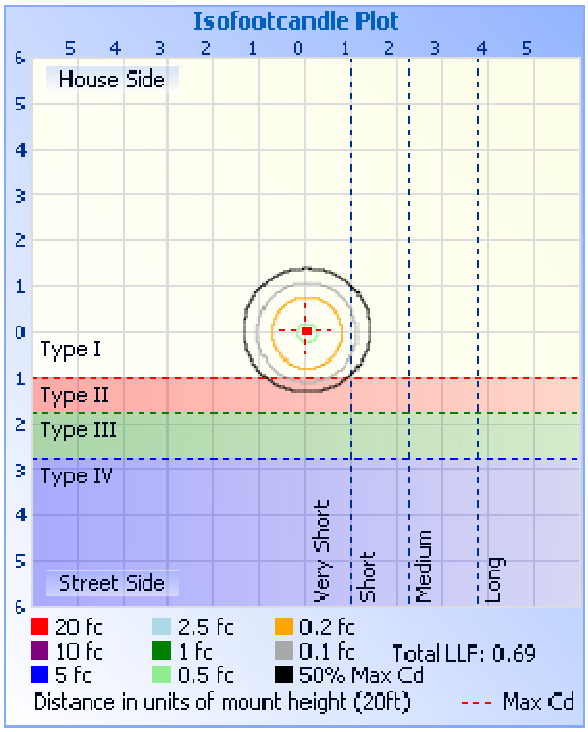
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	29.8	3.4%	90-100	3.2	0.4%
10-20	85.0	9.6%	100-110	0.7	0.1%
20-30	127.3	14.4%	110-120	0.4	0%
30-40	150.8	17.0%	120-130	0.3	0%
40-50	152.6	17.3%	130-140	0.3	0%
50-60	135.0	15.3%	140-150	0.3	0%
60-70	103.0	11.6%	150-160	0.2	0%
70-80	64.8	7.3%	160-170	0.1	0%
80-90	30.7	3.5%	170-180	0.0	0%

Photometric Data









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
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1	316	316	316	316	316	316	316	316	316	316	316	316	316	315	315	315	316
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142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
149	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
150	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
154	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
155	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0

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

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 ******