

# Visual Comfort & Co.

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

241115139GZU-007

**ISSUE DATE**

18 December 2024

**REVISION DATE**

None

**NUMBER OF PAGES**

13

**DOCUMENT CONTROL NUMBER**

Report format for LM-79\_G

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Report No.: 241115139GZU-007

## TEST REPORT

### TEST OF ONE LED LUMINAIRE

MODEL NO. KWFL71427XXXALB

Remark: "XXX" are denoted appearance color.

#### RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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Email: jrivero@visualcomfort.com

Phone No.: 847-410-4552

<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ241114023.
<u>STANDARDS USED:</u>	The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:
IES LM-79-19	Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI C78.377-2017 (R2022)	Specifications of the Chromaticity of Solid State Lighting Products
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model KWFL71427XXXALB. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115139-001.
<u>MANUFACTURER /FACTORY &amp; ADDRESS:</u>	Union Star Collection-Dongguan Denghuang HomeFurnishing Co., Ltd. No.5, Central Road, Yayuan Industrial Zone, Nancheng District, Dongguan City, Guangdong Province, 523000
<u>DATES OF TESTS:</u>	05 December 2024, 11 December 2024
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District, Guangzhou, Guangdong, China

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## TEST REPORT

### SUMMARY

Model Number:	KWFL71427XXXALB
Description:	LED Luminaries
Brand Name:	--

#### Test Condition: 120V, 60Hz For KWFL71427XXXALB

Criteria	Result
Total Lumen Output	40.0 lm
Total Power	3.1 W
Luminaire Efficacy	12.7 lm/W
S/MH(C0/180)	0.14
S/MH(C90/270)	1.66
Correlated Color Temperature (CCT)	2541 K
Color Rendering Index (CRI)	94
R9	67
Chromaticity Coordinate (x)	0.4717
Chromaticity Coordinate (y)	0.4104
Chromaticity Coordinate (u')	0.2703
Chromaticity Coordinate (v')	0.5291

#### Remark:

N/A

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### **EQUIPMENT LIST**

<b>Equipment Used</b>	<b>Model Number</b>	<b>Control Number</b>
Two Meter Integrating Sphere System	Sensing – 2M	SA063-12
Integration Sphere	Φ2m	SA063-12-01
Frequency power supply	APW-105N	SA063-12-05
High Accuracy Plant Spectroradiometer	PMS-2000P	SA063-12-25
Standard Lamp	D204	SA063-12-27
Power Meter	WT-310E	SA011-234
Temperature Meter	S500-TH	SA047-230
Goniophotometer System	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard Lamp	D215S	SA063-16-06
Digital Power Meter	PLM3000	SA063-16-09
AC power source for Goniophotometer	PCR-1000WH	SA063-16-10
Temperature Meter	S500-TH	SA047-182

### **GENERAL REMARK**

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When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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## **TEST METHOD**

### **Seasoning in Sample Orientation – LED Products**

No seasoning was performed in accordance with IES LM-79

### **Light Distribution and Output Measurements**

Light Distribution and total light output (luminous flux) were measured using a Go-R5000 Type-C Rotating Mirror Goniophotometer. Temperature 25°C and relative humidity of 60% was measured at a position in the testing laboratory.

The lamp rotates only around the fixed vertical axle in the prescribed burning position. The lamp and mirror permit the measurement of luminous intensity at the direction of any horizontal or vertical angle without tilting the lamp. The lamp was allowed to stabilize before measurements were made.

### **Chromaticity Measurements**

Chromaticity was measured using a 2 meters integrating sphere spectral lamp measurement system,  $4\pi$  geometry, with an interior coating reflectance no less than 95 %. Temperature was measured at a position inside the sphere shielded from direct light. Relative humidity of 65% was measured at a position in the testing laboratory.

Spectral radiant flux measurements were made using spectroradiometer attached to the detector port of the integrating sphere. Each lamp was allowed to stabilise before measurements were made. The calibration of the integrating sphere spectroradiometer system is by the reference/standard lamps which are traceable to National Institute of Metrology P.R. CHINA. Lamp efficacy (lumens per watt) for each lamp model was then computed based on the luminous flux result. Electrical measurements including voltage, power and power factor were measured using YOKOGAWA - Digital Power Meter., model WT310E.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A DC

Standard lamp used for integrating sphere:

Model: D204

Current: 3.948A DC

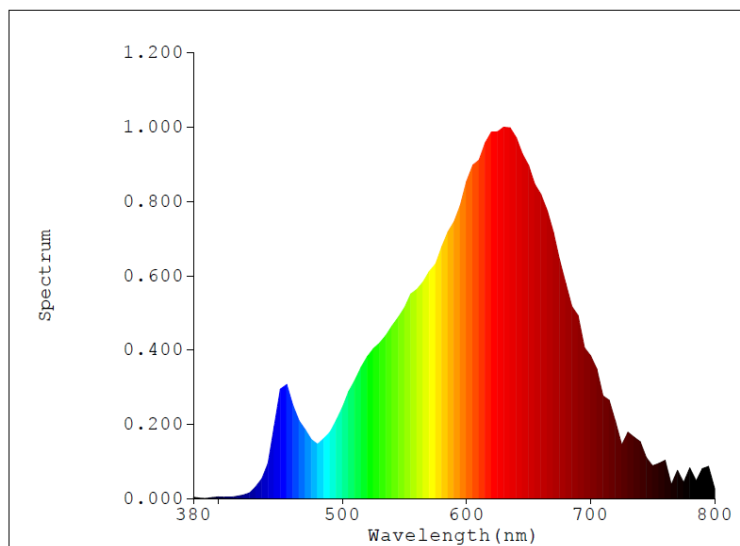
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## RESULTS OF TESTS

**Test Condition: 120V, 60Hz For KWFL71427XXXALB**

### Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0029	480	0.1380	580	0.6397	680	0.5455	780	0.0775
385	0.0007	485	0.1525	585	0.6774	685	0.4869		
390	0.0000	490	0.1685	590	0.7030	690	0.4646		
395	0.0027	495	0.1983	595	0.7445	695	0.3824		
400	0.0037	500	0.2313	600	0.8045	700	0.3616		
405	0.0033	505	0.2710	605	0.8470	705	0.3281		
410	0.0032	510	0.2995	610	0.8589	710	0.2601		
415	0.0055	515	0.3337	615	0.9029	715	0.2493		
420	0.0085	520	0.3604	620	0.9308	720	0.1964		
425	0.0140	525	0.3811	625	0.9308	725	0.1358		
430	0.0296	530	0.3946	630	0.9428	730	0.1681		
435	0.0500	535	0.4139	635	0.9416	735	0.1557		
440	0.0894	540	0.4380	640	0.9161	740	0.1441		
445	0.1827	545	0.4608	645	0.8745	745	0.1031		
450	0.2776	550	0.4848	650	0.8462	750	0.0829		
455	0.2897	555	0.5191	655	0.7980	755	0.0888		
460	0.2360	560	0.5308	660	0.7723	760	0.0968		
465	0.1966	565	0.5496	665	0.7301	765	0.0355		
470	0.1742	570	0.5760	670	0.6755	770	0.0709		
475	0.1491	575	0.5957	675	0.6050	775	0.0404		



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## RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWFL71427XXXALB**

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

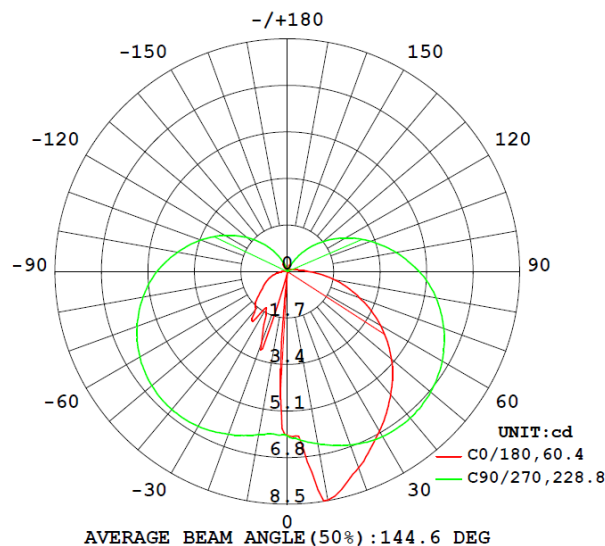
### Photometric Measurements at 25°C – Integral sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y Coordinate (x)	Chromaticit y Coordinate (y)	Chromaticit y Coordinate (u')	Chromaticit y Coordinate (v')
KWFL71427XXXALB								
S2411151 39-001	base-up	2541	94	67	0.4717	0.4104	0.2703	0.5291

### Photometric and Electrical Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
KWFL71427XXXALB							
S2411151 39-001	base-up	120.1	38.6	3.1	0.676	40.0	12.7

### Intensity (Candlepower) Summary at 25°C - Candelas



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**RESULTS OF TESTS (cont'd)**

**Test Condition: 120V, 60Hz For KWFL71427XXXALB**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	6.0	6.0	6.0	6.0	6.0
5	6.4	6.1	6.1	6.2	6.2
10	8.5	6.1	6.3	6.4	6.4
15	8.1	6.1	6.4	6.6	6.6
20	7.6	6.1	6.5	6.7	6.7
25	7.2	6.0	6.5	6.8	6.9
30	6.7	5.9	6.6	6.9	7.0
35	6.3	5.8	6.5	6.9	7.0
40	5.9	5.6	6.4	6.9	7.0
45	5.4	5.4	6.3	6.9	6.9
50	5.0	5.1	6.2	6.8	6.8
55	4.5	4.8	5.9	6.6	6.7
60	3.9	4.5	5.7	6.4	6.5
65	3.4	4.1	5.4	6.2	6.3
70	2.8	3.8	5.2	6.0	6.1
75	2.3	3.4	4.9	5.7	5.8
80	1.8	3.0	4.5	5.4	5.5
85	1.2	2.7	4.2	5.1	5.2
90	0.8	2.4	3.9	4.7	4.8
95	0.6	2.1	3.5	4.3	4.4
100	0.4	1.8	3.1	3.9	4.0
105	0.3	1.5	2.8	3.5	3.6
110	0.2	1.3	2.5	3.2	3.3
115	0.2	1.1	2.1	2.8	2.9
120	0.1	0.9	1.8	2.4	2.5
125	0.1	0.6	1.5	2.0	2.1
130	0.1	0.4	1.2	1.7	1.7
135	0.1	0.3	0.9	1.3	1.4
140	0.1	0.2	0.6	1.0	1.0
145	0.1	0.1	0.4	0.7	0.7
150	0.1	0.1	0.2	0.4	0.4
155	0.1	0.1	0.1	0.1	0.1
160	0.3	0.1	0.1	0.0	0.0
165	0.1	0.1	0.0	0.0	0.0
170	0.0	0.1	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.1	0.0	0.0

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## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFL71427XXXALB

### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFL71427XXXALB		
0-30	5.0	12.5
0-40	8.7	21.8
0-60	17.7	44.5
0-90	30.5	76.7
60-90	12.8	32.2
0-180	40.0	100.0

### Beam Angle

Total Beam Angle(°)

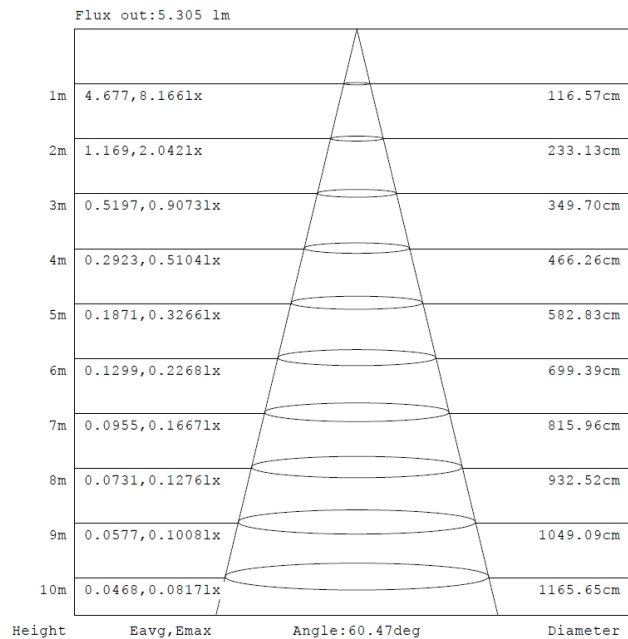
144.6

### Illumination Plots

Model No.: KWFL71427XXXALB

Mount Height: 2.5 m

#### Illuminance - Cone of Light



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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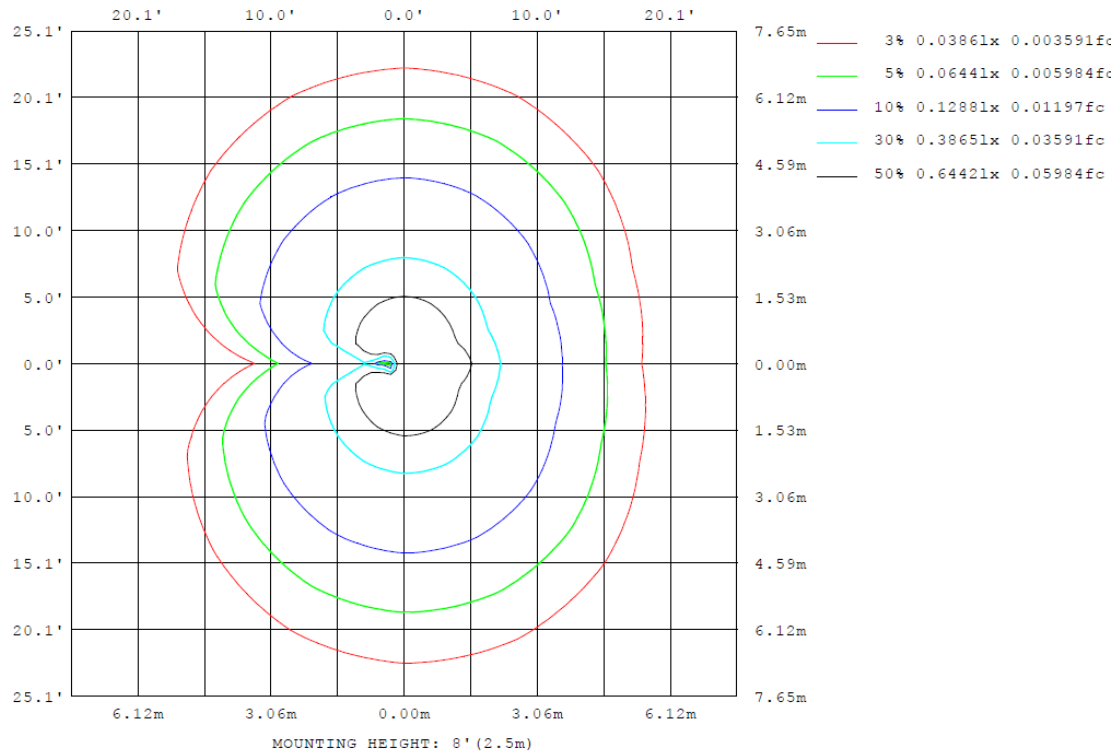
**RESULTS OF TESTS (cont'd)**

**Test Condition: 120V, 60Hz For KWFL71427XXXALB**

Model No.: KWFL71427XXXALB

Mount Height: 2.5 m

Isoillumination Plot



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**RESULTS OF TESTS (cont'd)**

Test Condition: 120V, 60Hz For KWFL71427XXXALB

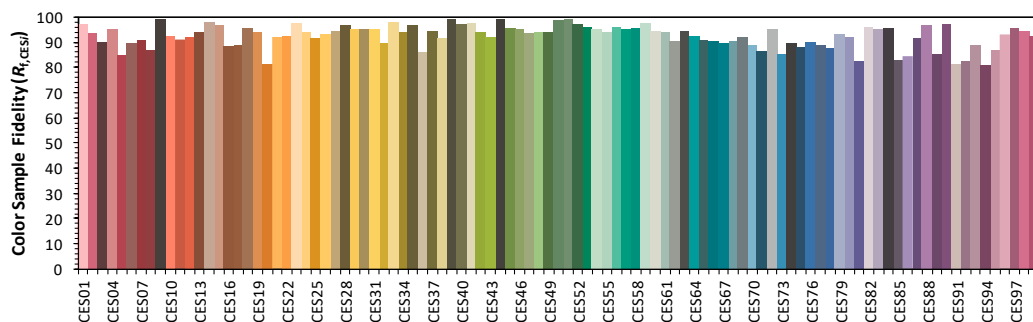
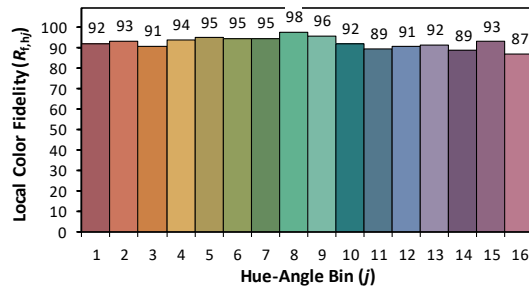
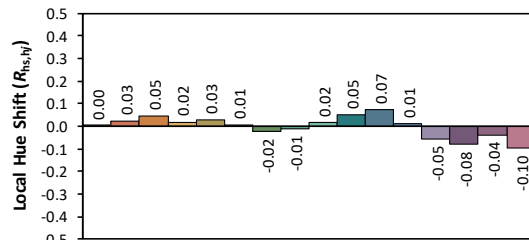
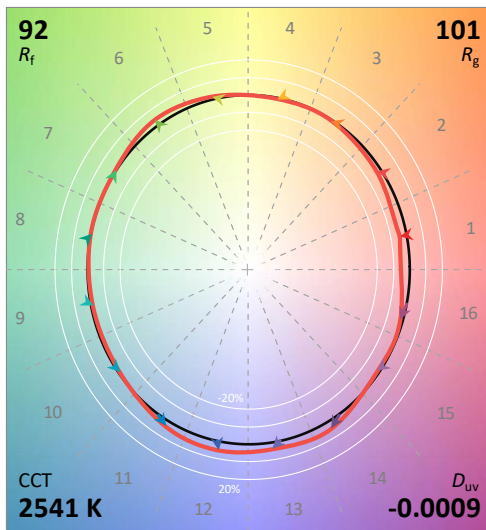
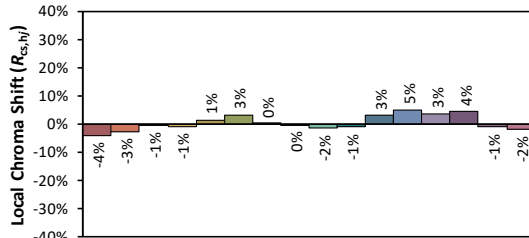
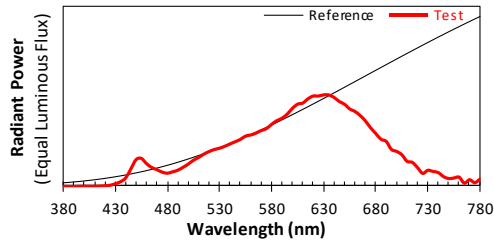
**ANSI/IES TM-30-18 Color Rendition Report**

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/11

Model: KWFL71427XXXALB



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.4717  
 $y$  0.4104  
 $u'$  0.2703  
 $v'$  0.5291

CIE 13.3-1995  
(CRI)  
 $R_a$  94  
 $R_g$  67

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

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**PRODUCT PICTURE (not to scale)**



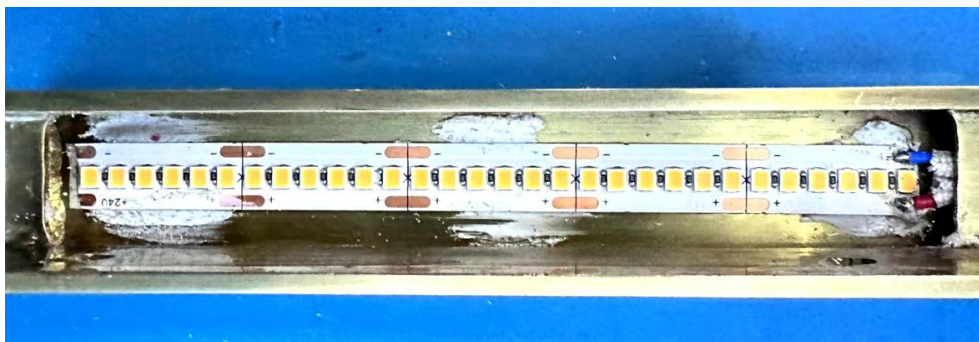
**External view of KWFL71427XXXALB**

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**PRODUCT PICTURE (not to scale)**



**View of LED driver JY24-240-100-SPS**



**View of LED**

In Charge Of Tests:

*Done Ye*

Done Ye  
Engineer

Report Reviewed By

*Shelley Ying*

Shelley Ying  
Reviewer

Attachment: None

\*\*\*\*\* End of Report \*\*\*\*\*