

# Visual Comfort & Co.

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

241111186GZU-002

**ISSUE DATE**

05 December 2024

**REVISION DATE**

None

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12

**DOCUMENT CONTROL NUMBER**

Report format for LM-79\_G

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Report No.: 241111186GZU-002

## TEST REPORT

### TEST OF ONE LED LUMINAIRE

MODEL NO. KWLS70727XXXALB

Remark: "XXX" are denoted appearance color.

#### RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

7400 LINDER AVE. SKOKIE, IL, 60077

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: QGZ241106002.
<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 KWLS70727XXXALB. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241111186-004.
<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>	27 November 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:	KWLS70727XXXALB
Description:	LED Luminaries
Brand Name:	--

#### Test Condition: 120V, 60Hz For KWLS70727XXXALB

Criteria	Result
Total Lumen Output	809.0 lm
Total Power	26.2 W
Luminaire Efficacy	30.8 lm/W
S/MH(C0/180)	1.17
S/MH(C90/270)	1.87
Correlated Color Temperature (CCT)	2457 K
Color Rendering Index (CRI)	93
R9	61
Chromaticity Coordinate (x)	0.4801
Chromaticity Coordinate (y)	0.4128
Chromaticity Coordinate (u')	0.2746
Chromaticity Coordinate (v')	0.5312

#### Remark:

N/A

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## TEST REPORT

### EQUIPMENT LIST

Equipment Used	Model Number	Control Number
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 REPORT

### 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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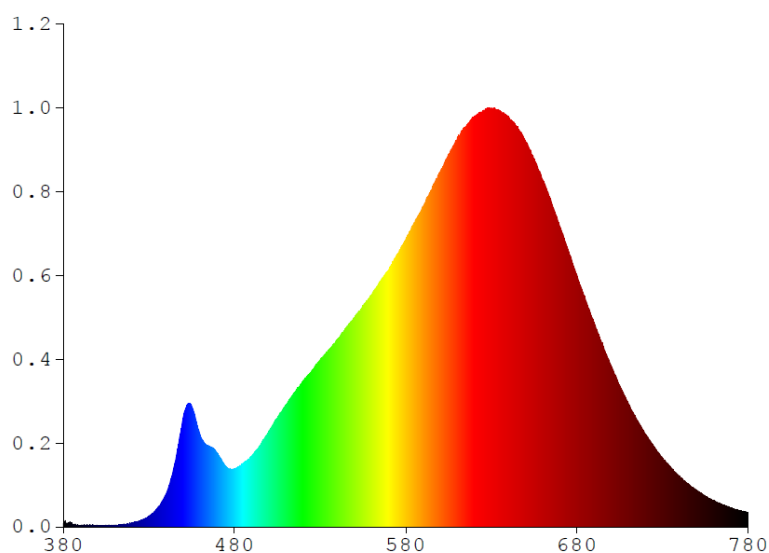
## TEST REPORT

### RESULTS OF TESTS

**Test Condition: 120V, 60Hz For KWLS70727XXXALB**

#### Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1415	480	3.0238	580	15.0440	680	13.1060	780	0.7696
385	0.1856	485	3.3457	585	15.9290	685	11.8240		
390	0.0639	490	3.7027	590	16.7870	690	10.6580		
395	0.0633	495	4.2690	595	17.6640	695	9.4800		
400	0.0602	500	4.9995	600	18.5750	700	8.3704		
405	0.0734	505	5.7019	605	19.4930	705	7.3587		
410	0.0680	510	6.3708	610	20.3550	710	6.4234		
415	0.1304	515	7.0314	615	20.9540	715	5.5823		
420	0.1944	520	7.6207	620	21.4680	720	4.8384		
425	0.3274	525	8.1687	625	21.7810	725	4.1707		
430	0.5432	530	8.7463	630	21.9200	730	3.5820		
435	0.9690	535	9.2646	635	21.7890	735	3.0829		
440	1.7094	540	9.8141	640	21.4480	740	2.6094		
445	3.2665	545	10.4080	645	20.9520	745	2.2297		
450	5.6716	550	10.9600	650	20.1590	750	1.9046		
455	6.2723	555	11.5920	655	19.2350	755	1.5974		
460	4.7582	560	12.1290	660	18.1630	760	1.3747		
465	4.1877	565	12.8660	665	16.9840	765	1.1712		
470	3.8271	570	13.4520	670	15.6860	770	0.9877		
475	3.1431	575	14.2770	675	14.1810	775	0.8298		



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWLS70727XXXALB**

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

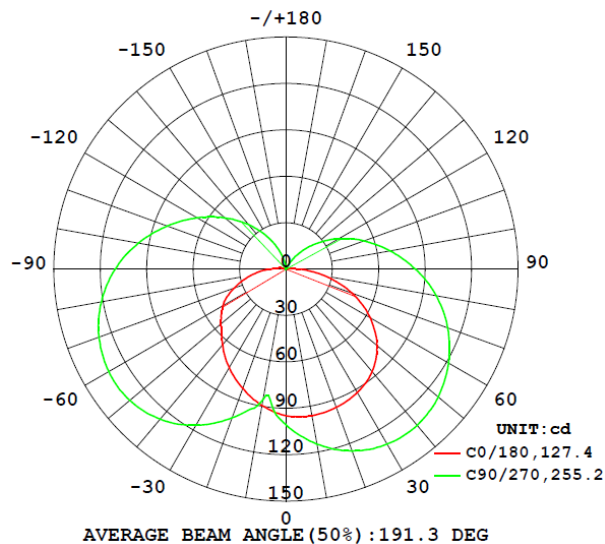
#### Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
KWLS70727XXXALB								
S2411111 86-004	base-up	2457	93	61	0.4801	0.4128	0.2746	0.5312

#### 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 Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
KWLS70727XXXALB							
S2411111 86-004	base-up	120.0	220.0	26.2	0.994	809.0	30.8

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



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWLS70727XXXALB**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	94.7	94.7	94.8	99.5	100.7
5	95.8	98.9	101.3	106.9	108.2
10	96.2	102.3	106.9	113.7	114.7
15	95.9	105.1	112.0	119.5	120.5
20	95.0	107.4	116.4	124.2	125.1
25	93.8	109.2	119.9	127.7	128.4
30	92.1	110.5	122.4	129.9	130.6
35	89.8	111.0	124.1	131.3	131.7
40	86.7	110.8	124.7	131.3	131.8
45	82.3	109.5	124.4	130.3	130.6
50	76.8	107.0	123.1	128.3	128.4
55	70.3	103.3	121.0	125.1	125.2
60	62.9	98.6	117.7	121.2	121.3
65	54.5	92.9	113.5	116.4	116.6
70	45.4	86.3	108.3	111.0	111.1
75	35.7	79.0	102.3	104.9	105.2
80	25.5	71.2	95.6	98.2	98.5
85	15.8	63.0	88.1	91.0	91.3
90	8.2	54.4	79.9	83.3	83.6
95	4.1	46.1	71.5	75.6	76.0
100	2.0	38.4	63.2	67.8	68.4
105	1.7	31.4	55.2	60.3	60.8
110	1.5	25.0	47.6	53.2	53.8
115	1.3	19.3	40.2	45.9	46.6
120	1.0	14.1	33.2	38.9	39.6
125	0.6	9.9	26.7	32.2	32.8
130	0.3	6.2	20.8	25.8	26.3
135	0.2	3.0	15.4	19.8	20.2
140	0.2	0.9	10.6	14.1	14.2
145	0.2	0.2	6.3	9.0	9.0
150	0.2	0.2	2.7	4.5	4.5
155	0.2	0.2	0.5	1.0	0.9
160	0.2	0.2	0.2	0.2	0.2
165	0.2	0.2	0.2	0.2	0.2
170	0.2	0.2	0.2	0.2	0.2
175	0.2	0.2	0.2	0.2	0.2
180	0.2	0.2	0.2	0.2	0.2

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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWLS70727XXXALB**

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

Zone	Lumens (lm)	% Luminaire (%)
KWLS70727XXXALB		
0-30	86.1	10.7
0-40	154.3	19.1
0-60	332.9	41.2
0-90	606.7	75.0
60-90	273.8	33.8
0-180	809.0	100.0

#### Beam Angle

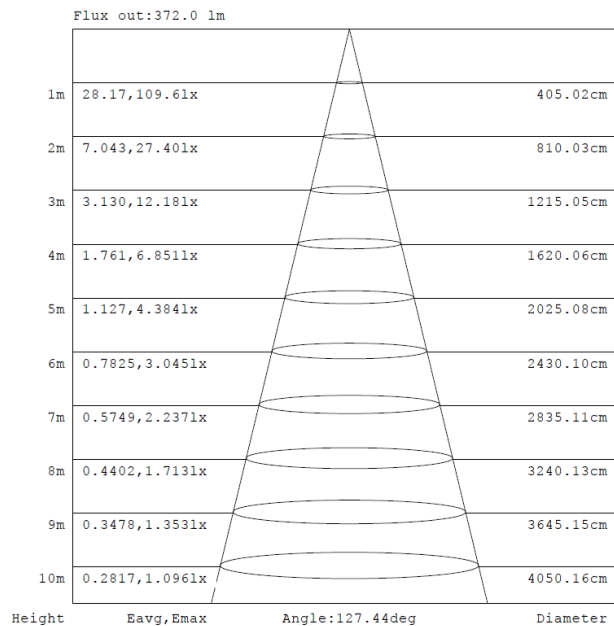
**Total Beam Angle(°)**  
191.3

#### Illumination Plots

Model No.: KWLS70727XXXALB

Mount Height: 2.5 m

#### Illuminance - Cone of Light



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# TEST REPORT

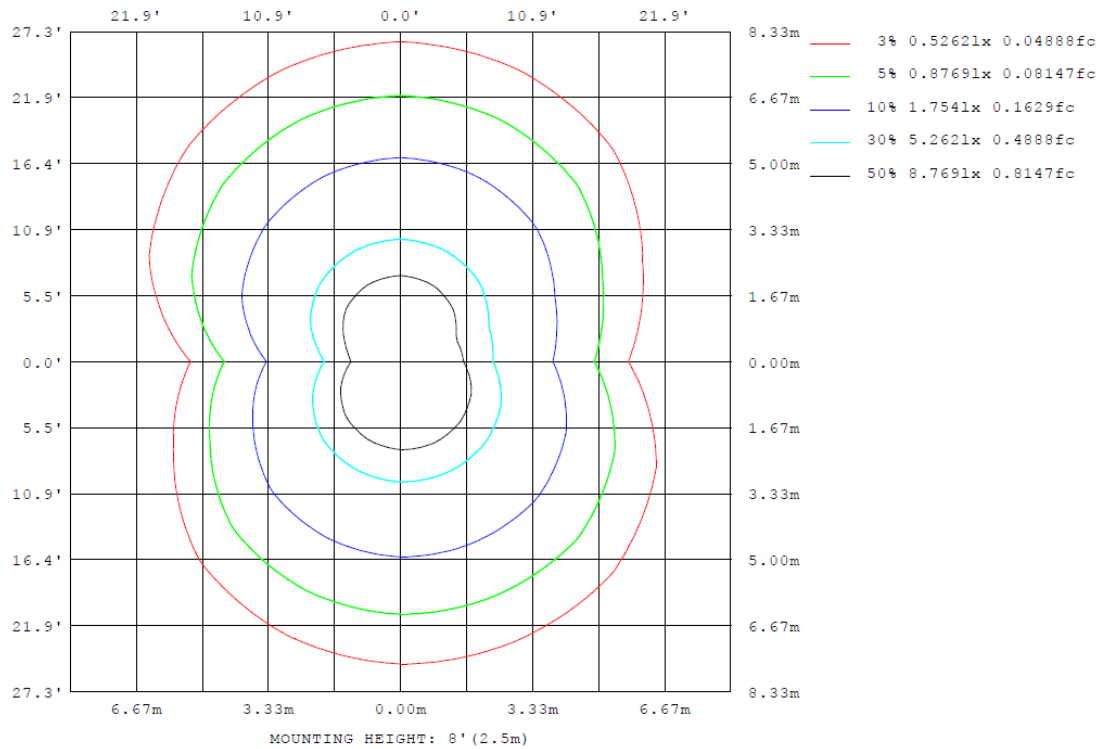
## RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWLS70727XXXALB**

Model No.: KWLS70727XXXALB

Mount Height: 2.5 m

Isoillumination Plot



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWLS70727XXXALB

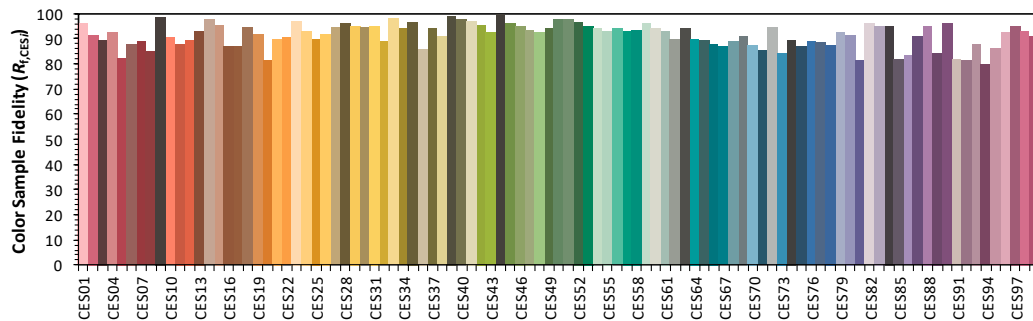
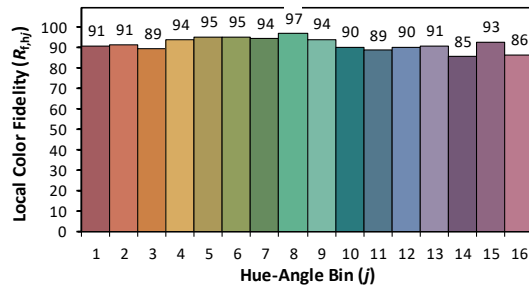
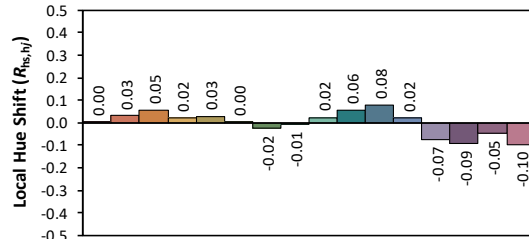
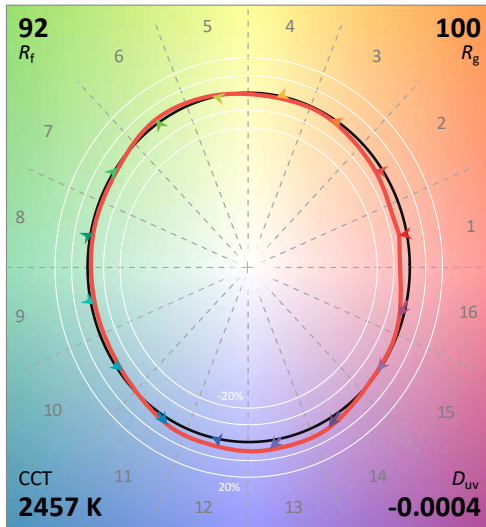
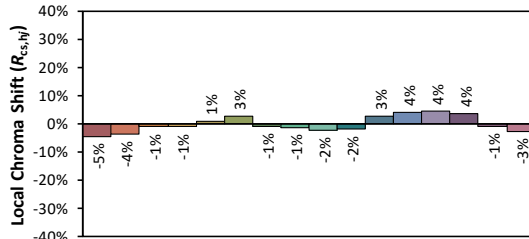
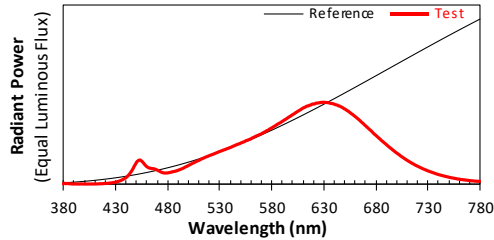
#### ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/11/27

Model: KWLS70727XXXALB



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

$x$  0.4801  
 $y$  0.4128  
 $u'$  0.2746  
 $v'$  0.5312

CIE 13.3-1995  
(CRI)

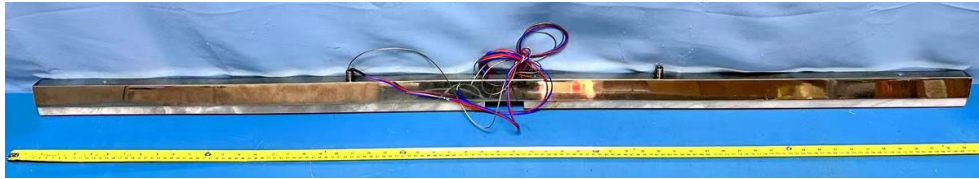
$R_a$  93  
 $R_g$  61

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

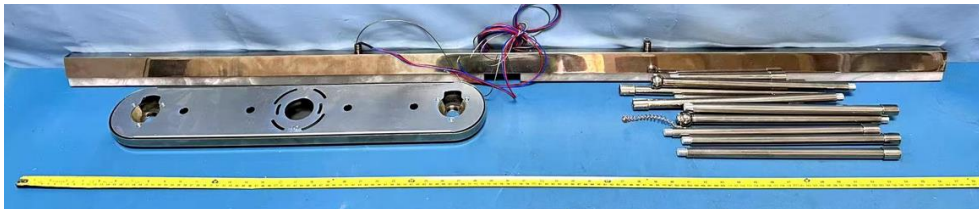
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## TEST REPORT

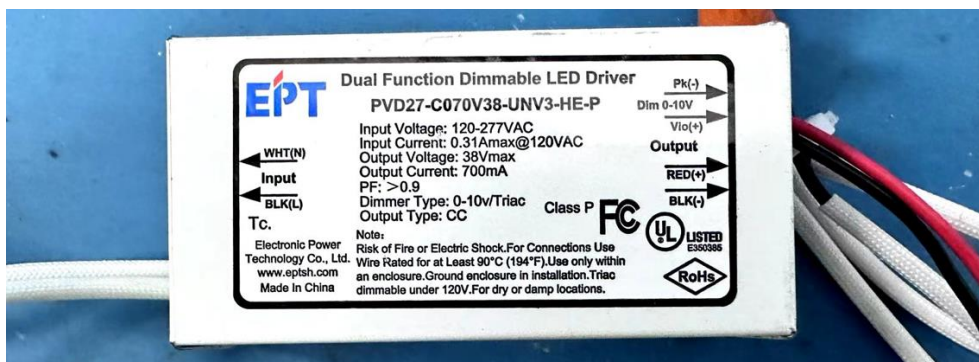
### PRODUCT PICTURE (not to scale)



External view of KWLS70727XXXALB



External view of KWLS70727XXXALB



View of LED driver PVD27-C070V38-UNV3-HE-P



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 \*\*\*\*\*