

# Visual Comfort & Co.

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

241111186GZU-007

**ISSUE DATE**

05 December 2024

**REVISION DATE**

None

**NUMBER OF PAGES**

13

**DOCUMENT CONTROL NUMBER**

Report format for LM-79\_G

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Report No.: 241111186GZU-007

## TEST REPORT

### TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS71227XXXALB

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: 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 KWWS71227XXXALB. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241111186-009.
<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>	22 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:	KWWS71227XXXALB
Description:	LED Luminaries
Brand Name:	--

#### Test Condition: 120V, 60Hz For KWWS71227XXXALB

Criteria	Result
Total Lumen Output	130.4 lm
Total Power	7.2 W
Luminaire Efficacy	18.2 lm/W
S/MH(C0/180)	1.44
S/MH(C90/270)	0.88
Correlated Color Temperature (CCT)	2451 K
Color Rendering Index (CRI)	91
R9	53
Chromaticity Coordinate (x)	0.4815
Chromaticity Coordinate (y)	0.4144
Chromaticity Coordinate (u')	0.2748
Chromaticity Coordinate (v')	0.5320

#### 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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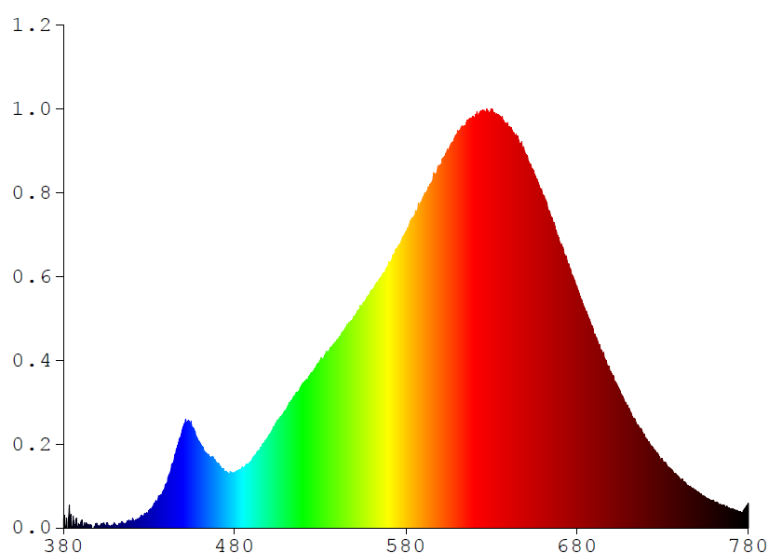
## TEST REPORT

### RESULTS OF TESTS

**Test Condition: 120V, 60Hz For KWWS71227XXXALB**

#### Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0556	480	0.3976	580	2.1156	680	1.7053	780	0.1753
385	0.0000	485	0.4311	585	2.2258	685	1.5352		
390	0.0284	490	0.4824	590	2.3554	690	1.3722		
395	0.0253	495	0.5724	595	2.4613	695	1.2250		
400	0.0012	500	0.6622	600	2.5890	700	1.1005		
405	0.0000	505	0.7606	605	2.6968	705	0.9765		
410	0.0278	510	0.8480	610	2.8265	710	0.8506		
415	0.0214	515	0.9440	615	2.8712	715	0.7355		
420	0.0409	520	1.0305	620	2.9200	720	0.6418		
425	0.0786	525	1.1003	625	2.9820	725	0.5616		
430	0.1266	530	1.1961	630	2.9734	730	0.4737		
435	0.1919	535	1.2619	635	2.9380	735	0.4147		
440	0.3143	540	1.3412	640	2.8615	740	0.3462		
445	0.5150	545	1.4289	645	2.7849	745	0.2964		
450	0.7234	550	1.5050	650	2.6665	750	0.2559		
455	0.7214	555	1.6033	655	2.5188	755	0.2186		
460	0.5977	560	1.6996	660	2.3740	760	0.1819		
465	0.5137	565	1.7824	665	2.2152	765	0.1580		
470	0.4632	570	1.8932	670	2.0382	770	0.1326		
475	0.4023	575	1.9954	675	1.8495	775	0.1174		



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWWS71227XXXALB**

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

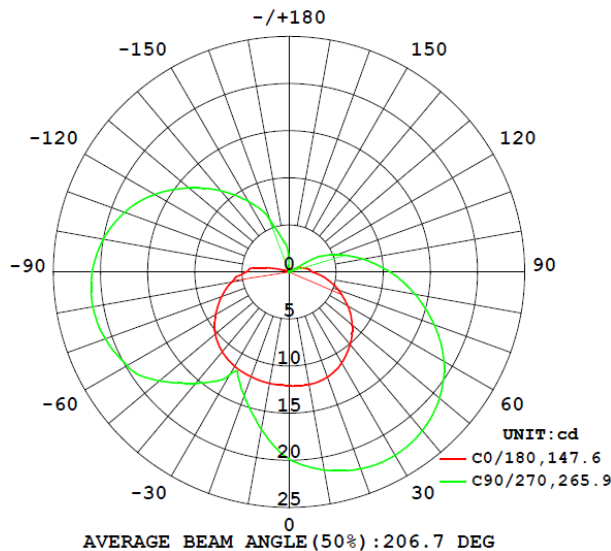
#### Photometric Measurements at 25°C – Distribution Method

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')
KWWS71227XXXALB								
S2411111 86-009	base-up	2451	91	53	0.4815	0.4144	0.2748	0.5320

#### 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	Lumen Efficacy
						Flux (Lumens)	(Lumens Per Watt)
KWWS71227XXXALB							
S2411111 86-009	base-up	120.1	60.7	7.2	0.982	130.4	18.2

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



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWWS71227XXXALB**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	12.1	14.0	17.0	19.3	19.9
5	12.1	14.2	17.8	20.1	20.7
10	12.1	14.4	18.4	20.7	21.3
15	12.1	14.5	18.6	21.1	21.8
20	11.9	14.5	18.6	21.4	22.2
25	11.6	14.4	18.5	21.5	22.4
30	11.2	14.1	18.4	21.5	22.5
35	10.6	13.5	18.1	21.3	22.3
40	10.1	12.9	17.7	20.9	22.0
45	9.5	12.3	17.2	20.4	21.5
50	8.8	11.6	16.5	19.7	20.8
55	8.0	10.9	15.8	18.9	20.0
60	7.2	10.1	14.9	17.9	19.0
65	6.3	9.3	13.9	16.7	17.7
70	5.6	8.4	12.7	15.4	16.4
75	4.8	7.4	11.6	14.1	15.0
80	4.0	6.6	10.4	12.8	13.5
85	3.2	5.8	9.3	11.4	12.1
90	2.5	5.1	8.2	10.1	10.7
95	2.3	4.4	7.1	8.8	9.3
100	2.0	3.7	6.1	7.5	8.0
105	1.7	2.2	5.1	6.3	6.7
110	1.4	1.5	4.2	5.1	5.4
115	1.2	1.1	1.8	4.0	4.2
120	1.0	0.8	0.7	1.1	1.9
125	0.5	0.6	0.5	0.2	0.0
130	0.2	0.4	0.4	0.2	0.0
135	0.0	0.3	0.3	0.1	0.0
140	0.0	0.2	0.2	0.1	0.0
145	0.0	0.1	0.1	0.0	0.0
150	0.0	0.1	0.0	0.0	0.0
155	0.0	0.0	0.0	0.0	0.0
160	0.0	0.0	0.0	0.0	0.0
165	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.1	0.1	0.0
175	0.0	0.1	0.2	0.1	0.1
180	0.0	0.2	0.4	0.0	0.2

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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWWS71227XXXALB**

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

Zone	Lumens (lm)	% Luminaire (%)
KWWS71227XXXALB		
0-30	13.0	10.0
0-40	22.7	17.4
0-60	48.5	37.2
0-90	90.6	69.4
60-90	42.1	32.2
0-180	130.4	100.0

#### Beam Angle

**Total Beam Angle(°)**

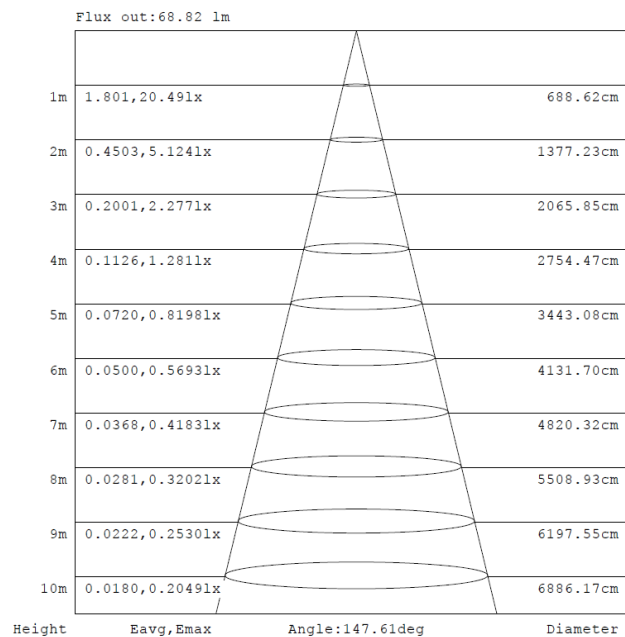
206.7

#### Illumination Plots

Model No.: KWWS71227XXXALB

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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# TEST REPORT

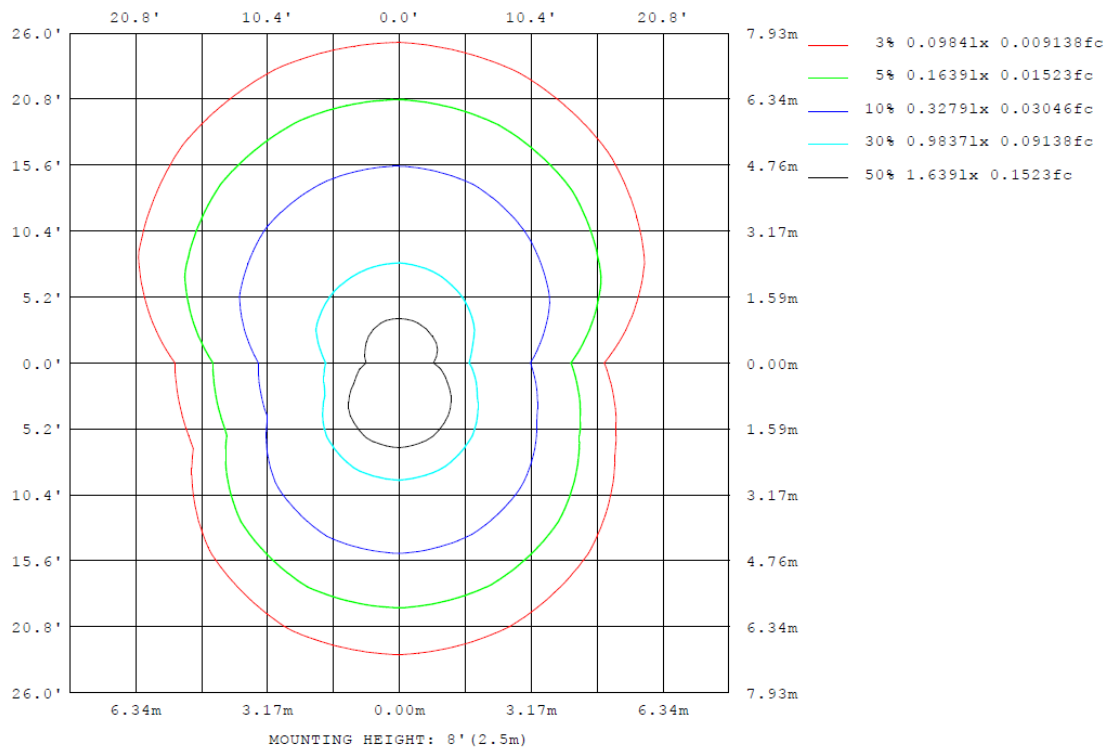
## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS71227XXXALB

Model No.: KWWS71227XXXALB

Mount Height: 2.5 m

Isoillumination Plot



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS71227XXXALB

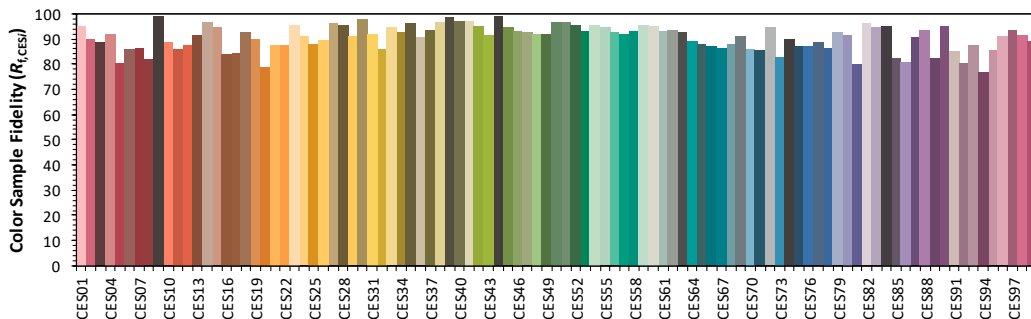
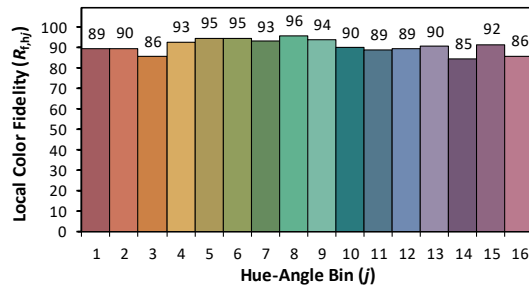
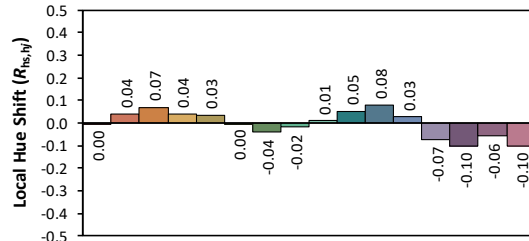
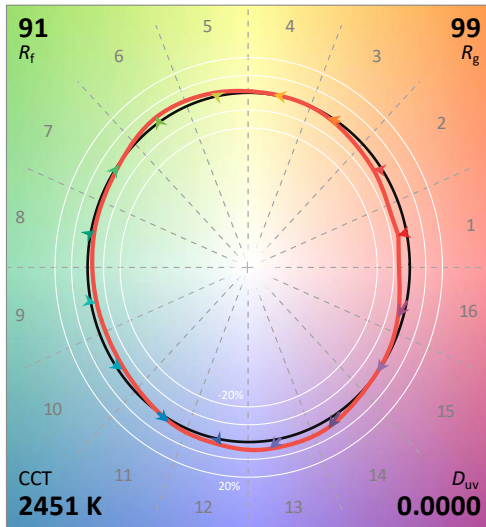
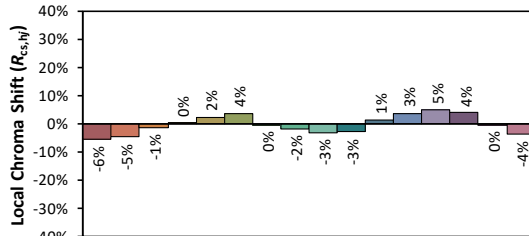
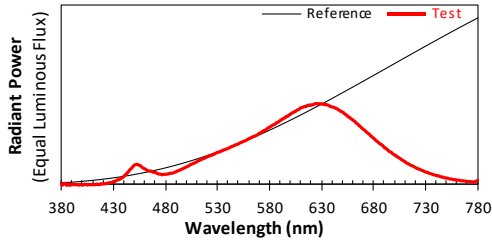
#### ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/11/22

Model: KWWS71227XXXALB



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

$x$  0.4815  
 $y$  0.4144  
 $u'$  0.2748  
 $v'$  0.5320

CIE 13.3-1995  
(CRI)

$R_a$  91  
 $R_g$  53

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

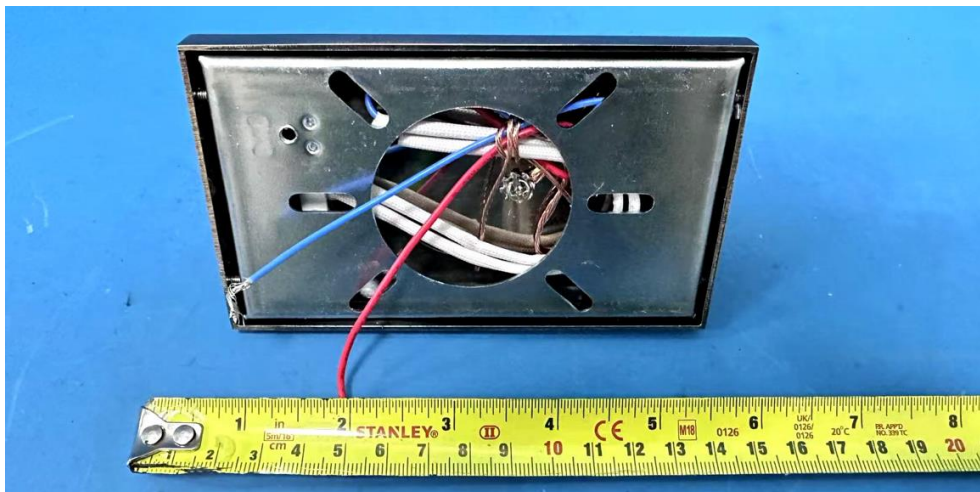
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## TEST REPORT

### PRODUCT PICTURE (not to scale)



**External view of KWW571227XXXALB**



**External view of KWW571227XXXALB**

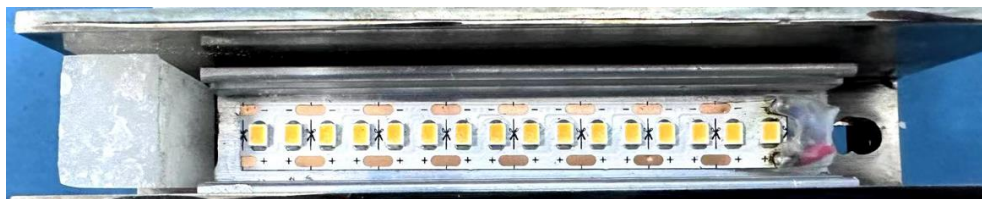
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## TEST REPORT

### PRODUCT PICTURE (not to scale)



View of LED driver DS12W250C2542MB1UD-0000



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 \*\*\*\*\*