

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241111186GZU-004

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None

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Report No.: 241111186GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS70927XXXALB

Remark: "XXX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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<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 KWWS70927XXXALB. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241111186-006.
<u>MANUFACTURER /FACTORY & 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>	26 November 2024, 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:	KWWS70927XXXALB
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS70927XXXALB

Criteria	Result
Total Lumen Output	566.8 lm
Total Power	15.1 W
Luminaire Efficacy	37.5 lm/W
S/MH(C0/180)	1.29
S/MH(C90/270)	2.02
Correlated Color Temperature (CCT)	2394 K
Color Rendering Index (CRI)	92
R9	57
Chromaticity Coordinate (x)	0.4871
Chromaticity Coordinate (y)	0.4152
Chromaticity Coordinate (u')	0.2780
Chromaticity Coordinate (v')	0.5332

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 π 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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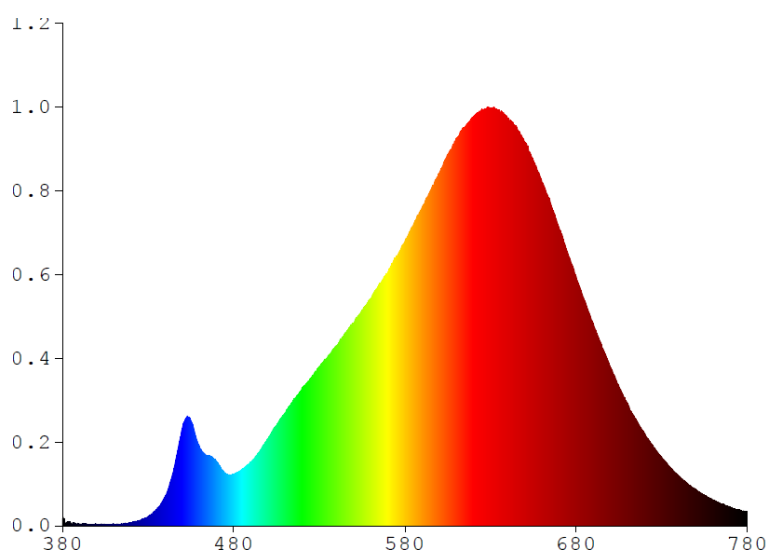
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS70927XXXALB

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.2321	480	2.1316	580	11.8250	680	10.2950	780	0.5834
385	0.1042	485	2.3480	585	12.5180	685	9.3229		
390	0.0665	490	2.6495	590	13.2200	690	8.3944		
395	0.0609	495	3.0879	595	13.9670	695	7.4034		
400	0.0248	500	3.6387	600	14.6590	700	6.5652		
405	0.0593	505	4.1683	605	15.4220	705	5.7663		
410	0.0589	510	4.7104	610	16.1050	710	5.0499		
415	0.0638	515	5.2347	615	16.5750	715	4.3987		
420	0.1344	520	5.7421	620	16.9980	720	3.8217		
425	0.2235	525	6.1473	625	17.3060	725	3.2764		
430	0.3837	530	6.6281	630	17.3250	730	2.8327		
435	0.6727	535	7.0357	635	17.2710	735	2.4156		
440	1.2251	540	7.4874	640	16.9600	740	2.0612		
445	2.3422	545	8.0159	645	16.5970	745	1.7479		
450	4.0439	550	8.4203	650	15.9340	750	1.4849		
455	4.3409	555	8.9698	655	15.1320	755	1.2704		
460	3.2657	560	9.4455	660	14.2650	760	1.0671		
465	2.9181	565	10.0400	665	13.4050	765	0.9093		
470	2.6407	570	10.5240	670	12.3500	770	0.7729		
475	2.1780	575	11.2110	675	11.1430	775	0.6652		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS70927XXXALB

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

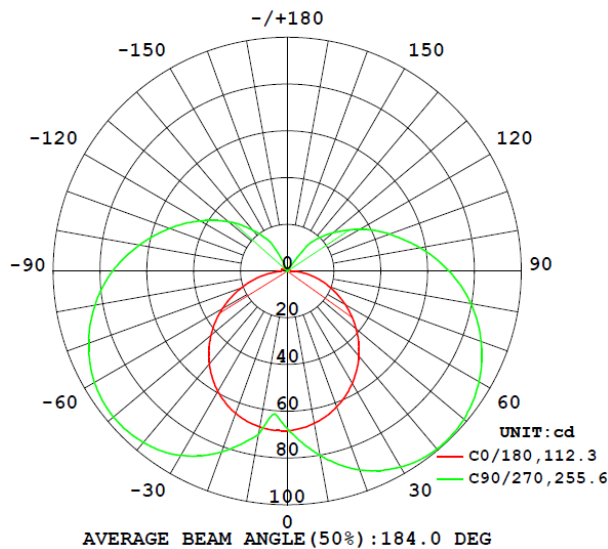
Photometric Measurements at 25°C – Distribution Method

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')
KWWS70927XXXALB								
S2411111 86-006	base-up	2394	92	57	0.4871	0.4152	0.2780	0.5332

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)
KWWS70927XXXALB							
S2411111 86-006	base-up	120.1	127.7	15.1	0.987	566.8	37.5

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS70927XXXALB

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	68.3	60.5	63.7	66.6	67.4
5	67.5	61.2	67.6	72.2	73.7
10	66.1	62.4	71.2	77.7	79.9
15	64.2	62.9	74.5	82.7	85.6
20	61.8	62.9	77.3	87.1	90.5
25	58.9	62.6	79.4	90.4	94.2
30	55.4	61.9	80.7	92.5	96.8
35	51.7	60.7	81.2	94.0	98.6
40	47.6	59.2	80.7	94.5	99.3
45	43.1	57.2	79.7	94.3	99.4
50	38.4	54.7	78.2	93.2	98.5
55	33.5	51.4	76.1	91.5	96.8
60	28.6	48.0	73.5	89.2	94.6
65	23.6	44.4	70.5	86.2	91.6
70	18.8	40.8	67.1	82.9	88.1
75	14.2	37.2	63.4	79.0	84.1
80	9.7	33.5	59.3	74.6	79.6
85	5.6	29.7	54.8	69.7	74.6
90	2.4	25.9	50.0	64.4	69.1
95	1.6	22.1	45.1	59.0	63.5
100	1.4	19.5	39.7	53.3	57.7
105	1.3	16.2	35.7	47.5	51.8
110	1.3	13.8	31.6	42.7	46.5
115	1.2	11.4	27.2	37.9	41.3
120	1.0	6.0	23.1	32.7	35.9
125	0.9	0.9	19.3	27.7	30.5
130	0.8	0.6	15.7	23.2	25.7
135	0.7	0.5	9.4	18.6	20.9
140	0.6	0.4	0.9	14.2	16.3
145	0.5	0.3	0.3	1.9	5.6
150	0.4	0.3	0.2	0.2	0.1
155	0.3	0.2	0.2	0.1	0.1
160	0.3	0.2	0.1	0.1	0.1
165	0.2	0.1	0.1	0.1	0.1
170	0.2	0.1	0.1	0.1	0.1
175	0.1	0.1	0.1	0.1	0.1
180	0.1	0.1	0.1	0.1	0.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS70927XXXALB

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS70927XXXALB		
0-30	63.4	11.2
0-40	113.1	20.0
0-60	239.5	42.3
0-90	426.8	75.3
60-90	187.3	33.0
0-180	566.8	100.0

Beam Angle

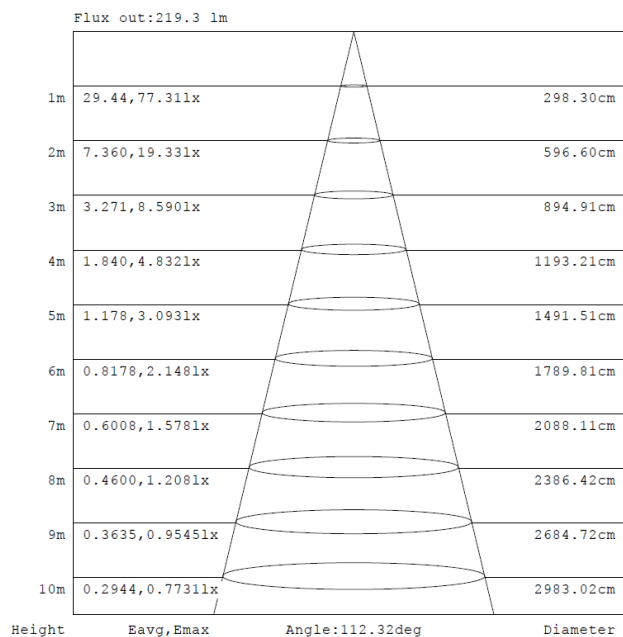
Total Beam Angle(°)
184.0

Illumination Plots

Model No.: KWWS70927XXXALB

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

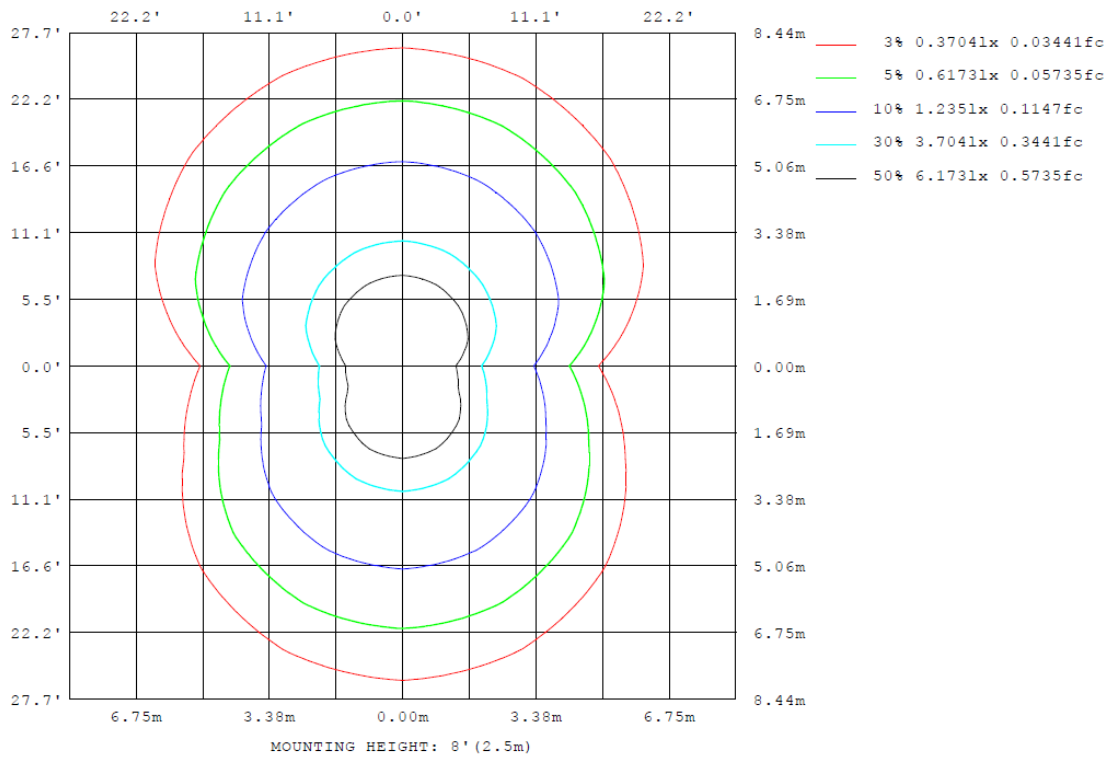
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS70927XXXALB

Model No.: KWWS70927XXXALB

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS70927XXXALB

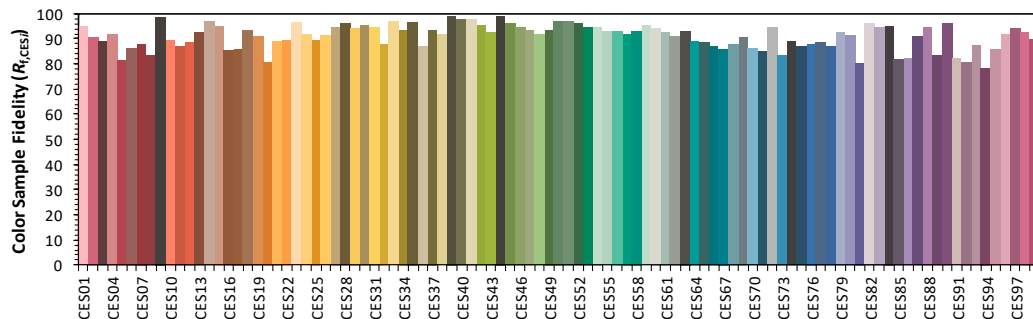
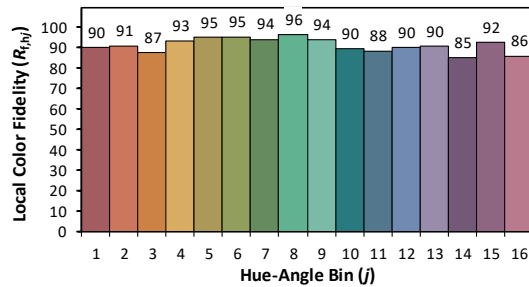
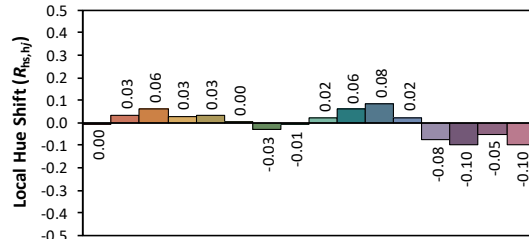
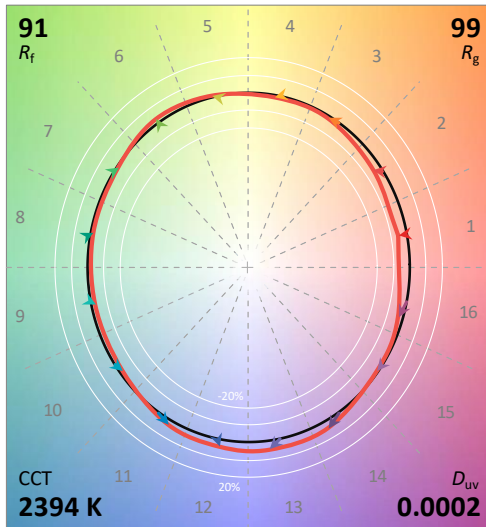
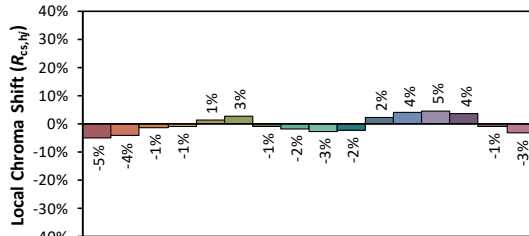
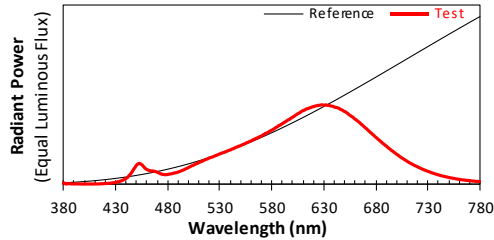
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/11/27

Model: KWWS70927XXXALB



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

x 0.4871
 y 0.4152
 u' 0.2780
 v' 0.5332

CIE 13.3-1995
(CRI)

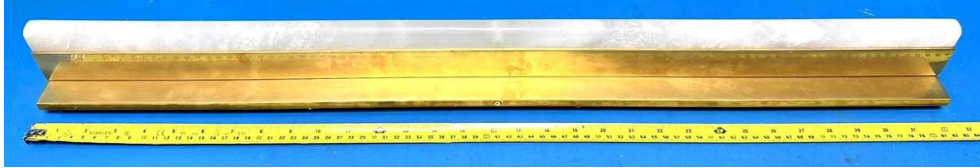
R_a 92
 R_g 57

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

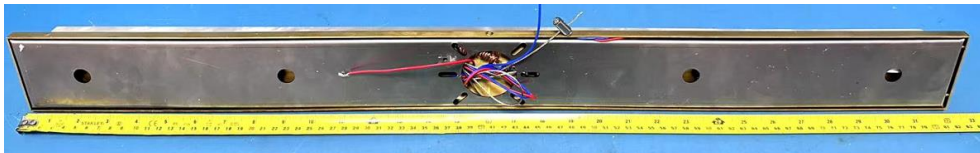
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TEST REPORT

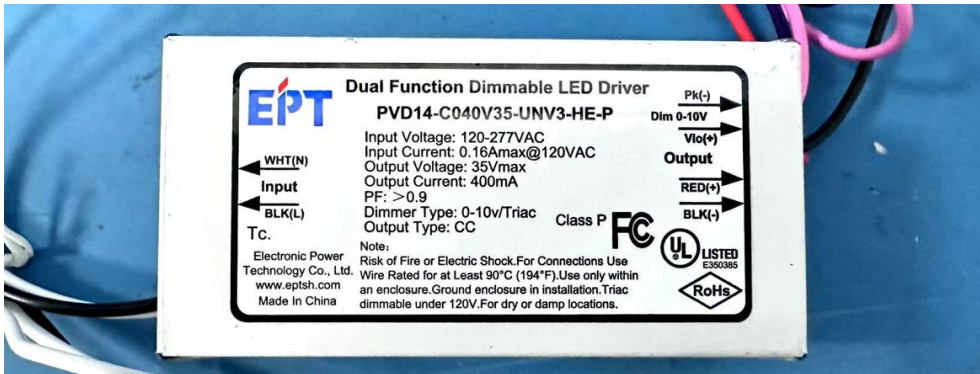
PRODUCT PICTURE (not to scale)



External view of KWW570927XXXALB



External view of KWW570927XXXALB



View of LED driver PVD14-C040V35-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 *****