

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241115147GZU-006

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REVISION DATE

None

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13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 241115147GZU-006

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS497XX

Remark: "XX" 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: QGZ241112051.
<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 KWWS497XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115147-009.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Shao Guan Weng Yuan Pearly Gates Furniture Manufacturing Co., Ltd. GuanYing Industrial Park, GuanDu Economic Development Experimental Zone, Weng Yuan County, Guang Dong Province, PRC. 512625.
<u>DATES OF TESTS:</u>	10 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:	KWWS497XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS497XX

Criteria	Result
Total Lumen Output	496.3 lm
Total Power	10.6 W
Luminaire Efficacy	47.0 lm/W
S/MH(C0/180)	0.55
S/MH(C90/270)	1.05
Correlated Color Temperature (CCT)	2598 K
Color Rendering Index (CRI)	91
R9	66
Chromaticity Coordinate (x)	0.4691
Chromaticity Coordinate (y)	0.4136
Chromaticity Coordinate (u')	0.2671
Chromaticity Coordinate (v')	0.5299

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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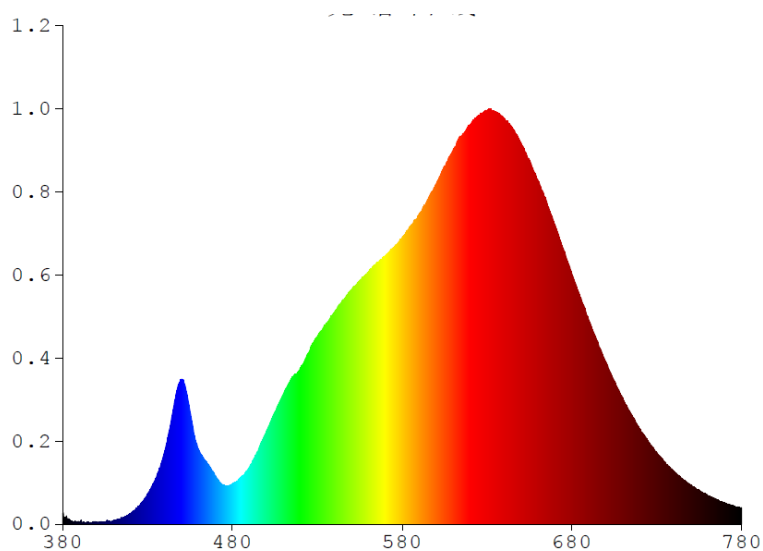
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS497XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.4514	480	1.8274	580	13.0200	680	11.3270	780	0.7380
385	0.1425	485	2.1219	585	13.5710	685	10.2920		
390	0.0976	490	2.5888	590	14.0910	690	9.2286		
395	0.0929	495	3.3150	595	14.7730	695	8.2996		
400	0.0711	500	4.2318	600	15.4540	700	7.3487		
405	0.0952	505	5.0811	605	16.2290	705	6.4845		
410	0.1692	510	5.9145	610	17.0220	710	5.6783		
415	0.2752	515	6.6411	615	17.6280	715	4.9747		
420	0.4973	520	7.1094	620	18.1350	720	4.3281		
425	0.8156	525	7.8257	625	18.5740	725	3.7490		
430	1.3573	530	8.5537	630	18.7610	730	3.2421		
435	2.0881	535	9.1010	635	18.7300	735	2.7847		
440	3.2754	540	9.6163	640	18.4590	740	2.4017		
445	5.1538	545	10.1910	645	17.9870	745	2.0473		
450	6.5775	550	10.6460	650	17.3110	750	1.7878		
455	5.0845	555	11.0600	655	16.5040	755	1.5278		
460	3.3915	560	11.4410	660	15.6070	760	1.2936		
465	2.7740	565	11.8970	665	14.6790	765	1.1302		
470	2.1852	570	12.1810	670	13.5730	770	0.9622		
475	1.7654	575	12.5780	675	12.2470	775	0.8303		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS497XX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

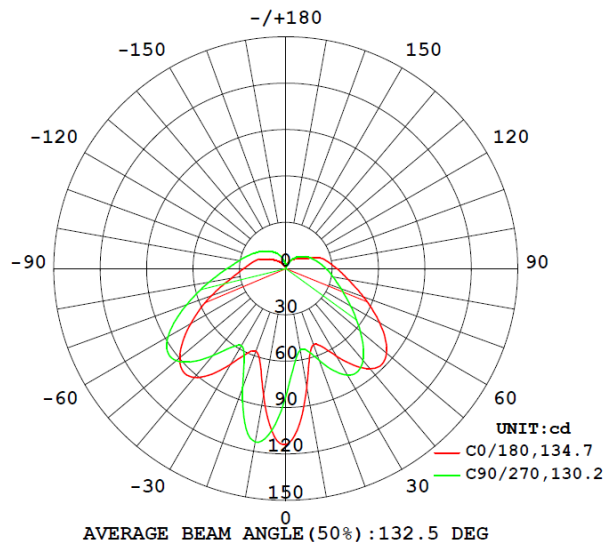
Photometric Measurements at 25°C – Distribution Method

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')
KWWS497XX								
S2411151 47-009	base-up	2598	91	66	0.4691	0.4136	0.2671	0.5299

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)
KWWS497XX							
S2411151 47-009	base-up	120.0	89.1	10.6	0.987	496.3	47.0

Intensity (Candlepower) Summary at 25°C - Candelas



***** End of Page *****

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS497XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	113.8	77.5	77.7	82.3	82.6
5	101.1	59.3	59.6	62.4	62.5
10	78.0	52.7	53.0	53.4	53.6
15	59.4	56.4	56.6	55.1	55.3
20	52.5	66.1	66.2	63.3	63.3
25	55.9	77.1	77.0	73.2	72.7
30	65.3	85.2	84.8	80.7	79.6
35	76.2	87.8	86.8	82.8	81.2
40	84.6	84.6	83.2	79.7	77.7
45	87.7	77.6	75.6	72.9	70.7
50	85.0	69.0	66.8	64.9	62.8
55	78.3	60.4	58.4	56.9	55.2
60	70.0	52.3	50.9	49.9	48.4
65	61.3	45.7	44.8	43.8	42.7
70	53.3	40.4	39.8	38.9	38.0
75	46.6	36.3	35.9	34.9	34.1
80	41.0	33.0	32.7	31.7	31.1
85	36.6	30.0	29.9	28.2	28.5
90	33.0	27.4	27.1	25.0	26.1
95	30.0	25.0	24.7	22.5	23.9
100	27.4	22.8	22.6	20.5	22.0
105	24.9	20.7	20.8	18.9	20.3
110	20.5	18.9	19.1	17.5	18.7
115	16.2	17.3	17.5	16.1	17.1
120	13.2	15.9	15.9	14.7	15.6
125	11.4	14.5	14.3	13.3	14.1
130	10.3	12.9	12.6	11.8	12.6
135	9.3	11.4	11.0	10.3	11.0
140	8.3	9.8	9.4	8.8	9.4
145	7.3	7.8	7.6	7.2	7.6
150	6.2	5.6	5.8	5.5	5.8
155	5.1	3.5	3.7	3.7	3.9
160	3.9	1.2	1.6	1.9	2.0
165	2.4	0.2	0.2	0.4	0.4
170	1.1	0.1	0.1	0.1	0.1
175	0.3	0.1	0.2	0.3	0.3
180	0.1	0.2	0.6	1.2	1.7

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS497XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS497XX		
0-30	61.8	12.5
0-40	108.8	21.9
0-60	239.5	48.3
0-90	389.7	78.5
60-90	150.2	30.2
0-180	496.3	100.0

Beam Angle

Total Beam Angle(°)

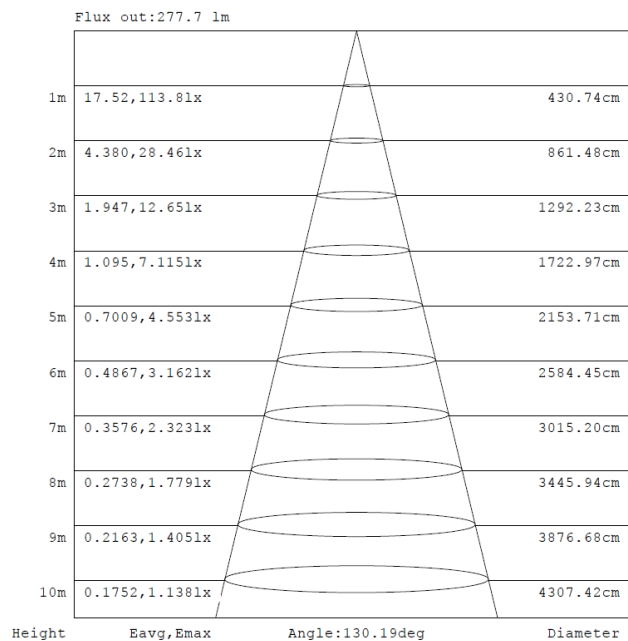
132.5

Illumination Plots

Model No.: KWWS497XX

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

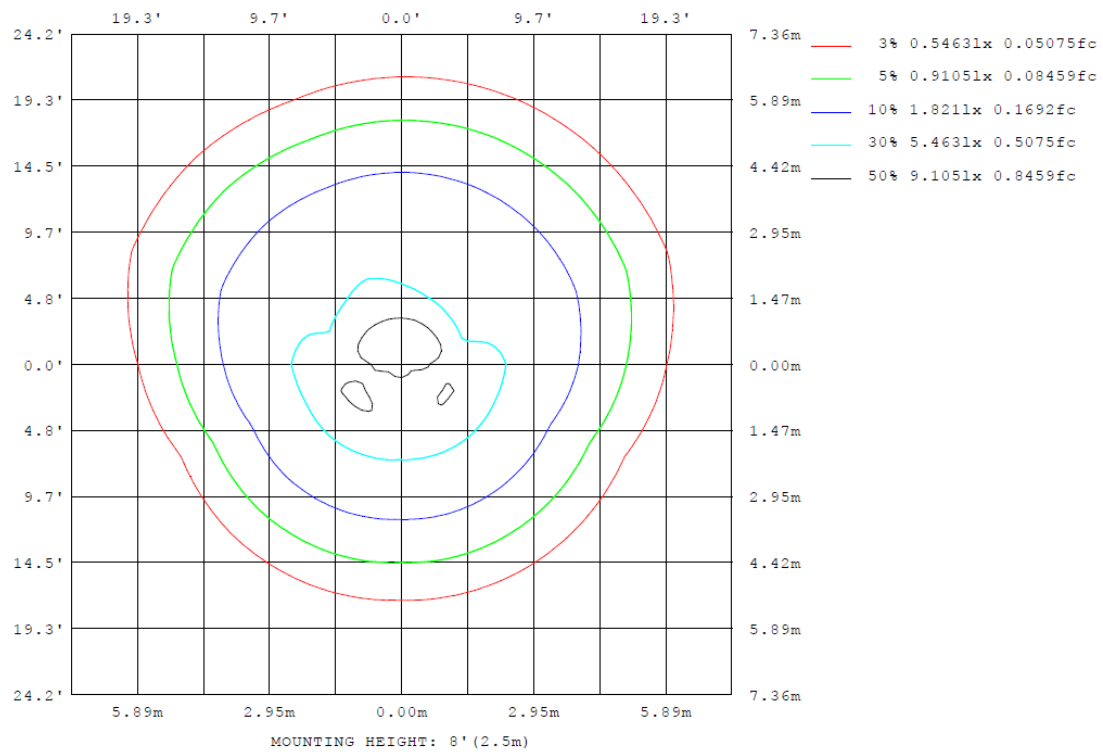
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS497XX

Model No.: KWWS497XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS497XX

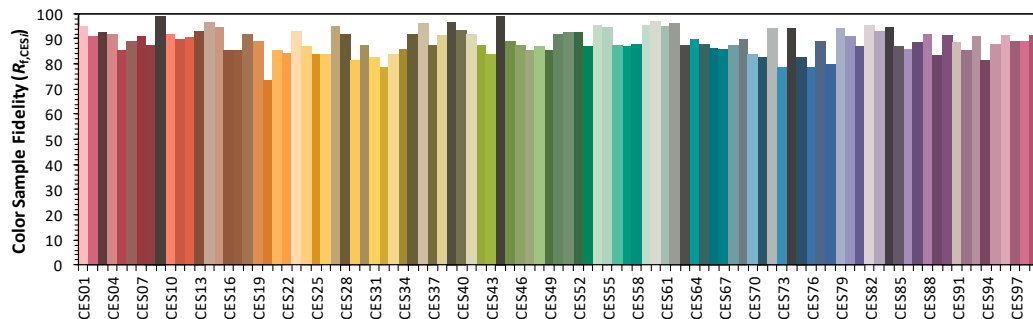
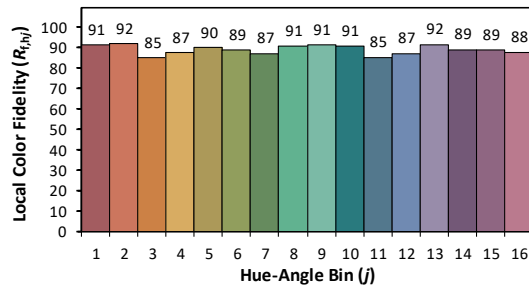
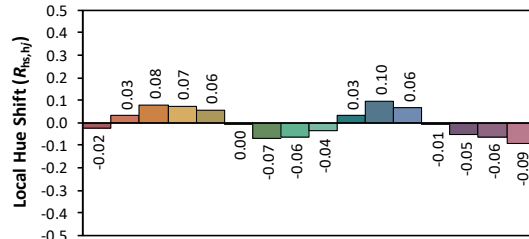
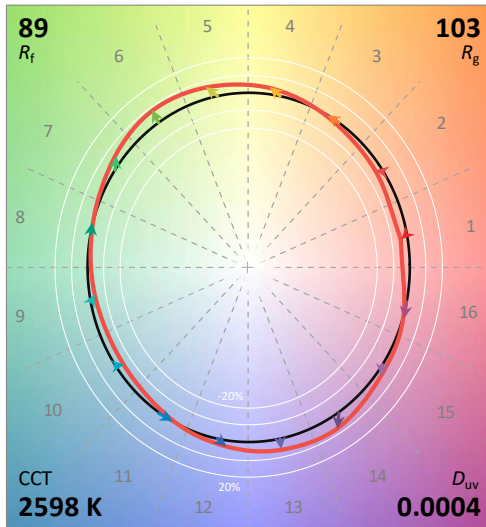
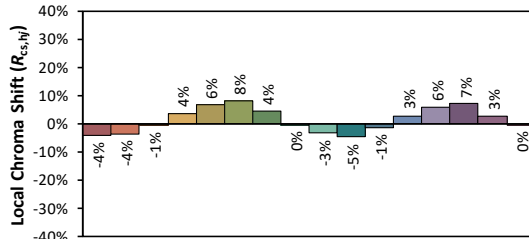
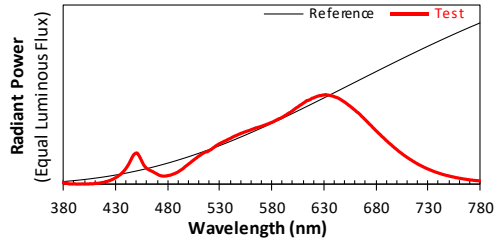
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/10

Model: KWWS497XX



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

x 0.4691
 y 0.4136
 u' 0.2671
 v' 0.5299

CIE 13.3-1995
(CRI)

R_a 91
 R_g 66

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

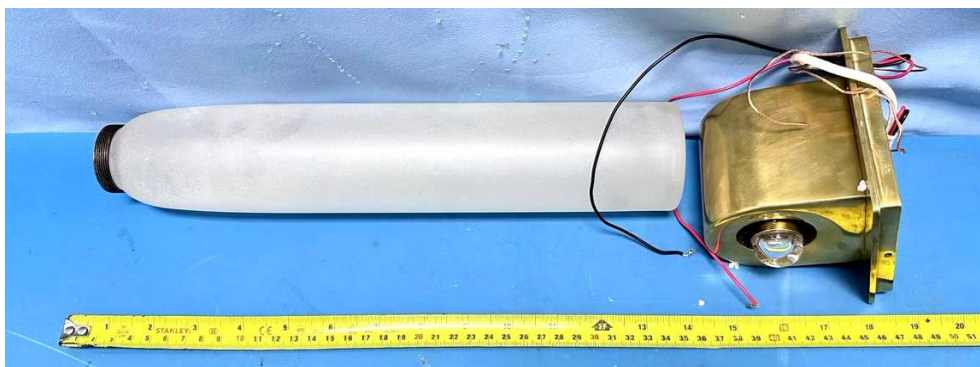
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TEST REPORT

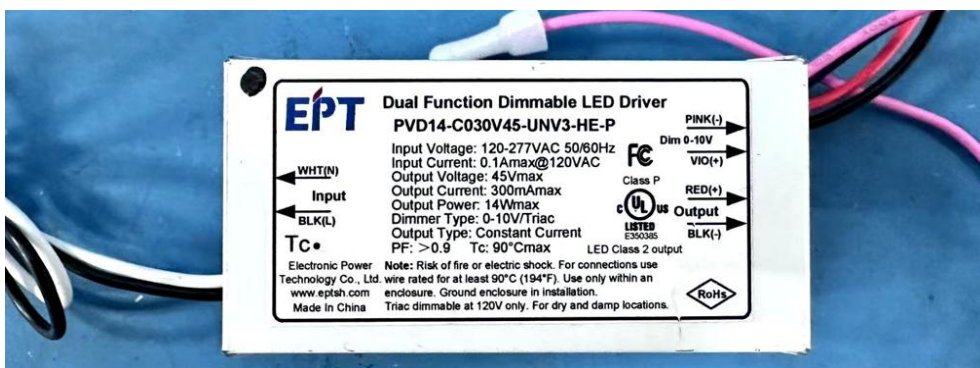
PRODUCT PICTURE (not to scale)



External view of KWWS497XX



Internal view of KWWS497XX



View of LED driver PVD14-C030V45-UNV3-HE-P

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TEST REPORT

PRODUCT PICTURE (not to scale)



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 *****