

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241115147GZU-007

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REVISION DATE

None

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Report format for LM-79_G

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Report No.: 241115147GZU-007

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS498XX

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 KWWS498XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115147-010.
<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>	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:	KWWS498XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS498XX

Criteria	Result
Total Lumen Output	391.5 lm
Total Power	10.4 W
Luminaire Efficacy	37.6 lm/W
S/MH(C0/180)	2.54
S/MH(C90/270)	1.55
Correlated Color Temperature (CCT)	2436 K
Color Rendering Index (CRI)	91
R9	64
Chromaticity Coordinate (x)	0.4836
Chromaticity Coordinate (y)	0.4157
Chromaticity Coordinate (u')	0.2756
Chromaticity Coordinate (v')	0.5328

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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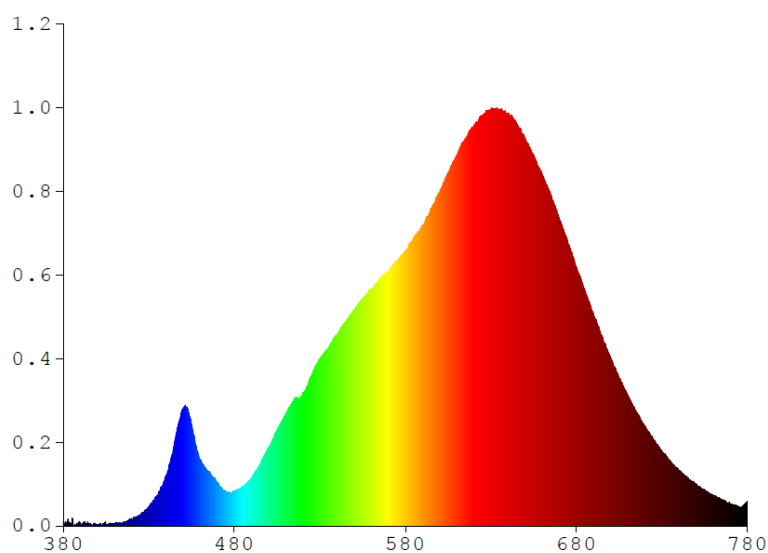
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS498XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1239	480	0.5984	580	4.7397	680	4.4533	780	0.4282
385	0.0587	485	0.6846	585	4.9830	685	4.0497		
390	0.0478	490	0.8255	590	5.1869	690	3.6457		
395	0.0227	495	1.0673	595	5.4831	695	3.2771		
400	0.0183	500	1.3500	600	5.7562	700	2.8987		
405	0.0108	505	1.6442	605	6.0735	705	2.5496		
410	0.0493	510	1.9248	610	6.4050	710	2.2511		
415	0.0596	515	2.1977	615	6.6746	715	1.9653		
420	0.1161	520	2.2957	620	6.8951	720	1.7263		
425	0.1876	525	2.5895	625	7.0867	725	1.4929		
430	0.3308	530	2.8971	630	7.1679	730	1.2840		
435	0.5076	535	3.0747	635	7.1699	735	1.1129		
440	0.8677	540	3.2978	640	7.1112	740	0.9585		
445	1.4404	545	3.5275	645	6.9395	745	0.8269		
450	2.0235	550	3.7259	650	6.6858	750	0.7120		
455	1.7277	555	3.9072	655	6.3799	755	0.6129		
460	1.1360	560	4.0720	660	6.0601	760	0.5249		
465	0.9306	565	4.2586	665	5.6967	765	0.4491		
470	0.7468	570	4.3934	670	5.2694	770	0.3809		
475	0.5934	575	4.5681	675	4.7995	775	0.3280		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS498XX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

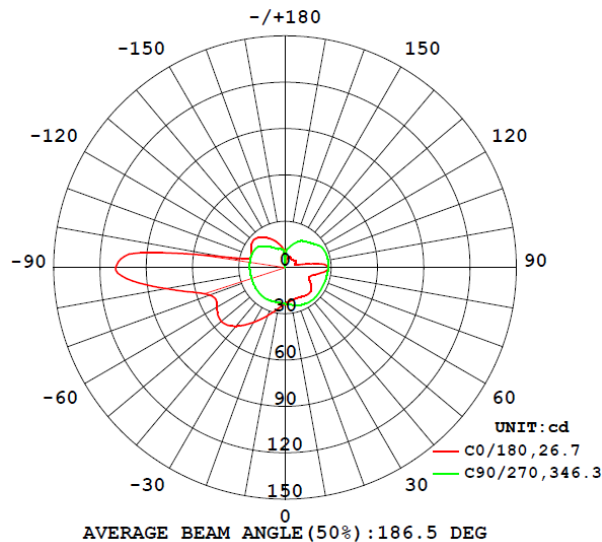
Photometric Measurements at 25°C – Distribution Method

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')
KWWS498XX								
S2411151 47-010	base-up	2436	91	64	0.4836	0.4157	0.2756	0.5328

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)
KWWS498XX							
S2411151 47-010	base-up	120.1	87.7	10.4	0.988	391.5	37.6

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS498XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	23.6	23.5	23.5	23.5	23.5
5	22.6	22.7	23.1	23.5	23.9
10	21.9	22.2	22.7	23.6	24.6
15	21.5	21.8	22.5	23.7	25.3
20	21.3	21.6	22.4	23.8	26.0
25	21.3	21.6	22.3	23.8	26.6
30	21.7	21.9	22.2	23.8	27.0
35	22.3	22.5	22.3	23.7	27.3
40	22.8	23.2	22.4	23.6	27.5
45	22.8	23.9	22.6	23.4	27.5
50	22.1	24.4	22.9	23.2	27.5
55	20.6	24.5	23.2	23.1	27.4
60	18.8	24.2	23.5	22.8	27.3
65	17.3	23.5	23.8	22.7	27.3
70	17.2	22.5	24.0	22.6	27.4
75	18.9	21.5	24.2	22.5	27.5
80	22.4	20.6	24.4	22.5	27.6
85	26.6	20.0	24.5	22.6	27.8
90	28.2	19.8	24.4	22.6	27.9
95	25.4	19.9	24.1	22.7	28.1
100	13.6	20.2	23.9	22.7	28.2
105	7.3	20.9	23.6	22.6	28.2
110	6.7	22.0	23.2	22.3	28.1
115	7.4	23.1	22.6	21.9	27.7
120	8.0	23.5	22.0	21.4	27.1
125	8.1	22.7	21.4	20.6	25.8
130	7.6	21.2	20.7	19.7	24.1
135	7.2	19.4	19.5	18.9	22.8
140	7.0	17.3	18.5	18.3	21.9
145	7.0	14.9	17.1	17.8	21.0
150	7.3	12.4	15.6	17.0	20.0
155	7.6	11.4	14.1	15.9	18.3
160	7.4	10.6	12.9	14.5	16.4
165	6.7	10.1	11.9	13.2	14.7
170	4.5	6.2	10.7	12.1	13.0
175	2.0	2.0	4.2	10.4	11.6
180	4.1	3.4	1.2	0.0	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS498XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS498XX		
0-30	22.0	5.6
0-40	40.7	10.4
0-60	95.7	24.4
0-90	207.8	53.1
60-90	112.1	28.7
0-180	391.5	100.0

Beam Angle

Total Beam Angle(°)

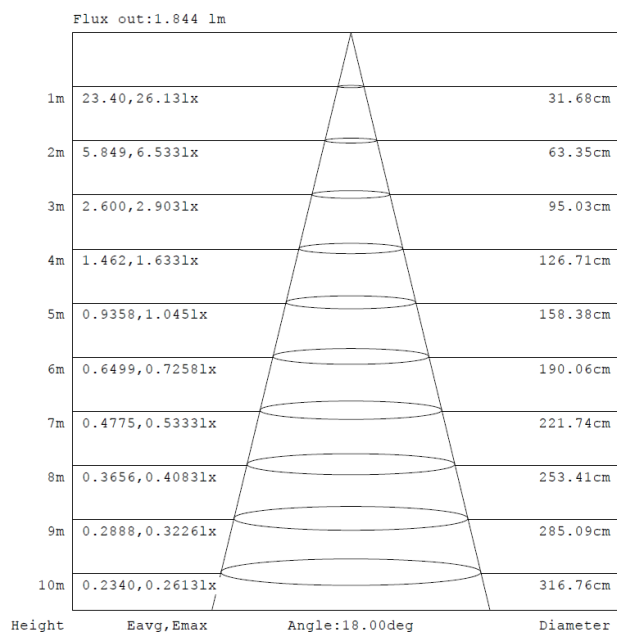
186.5

Illumination Plots

Model No.: KWWS498XX

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

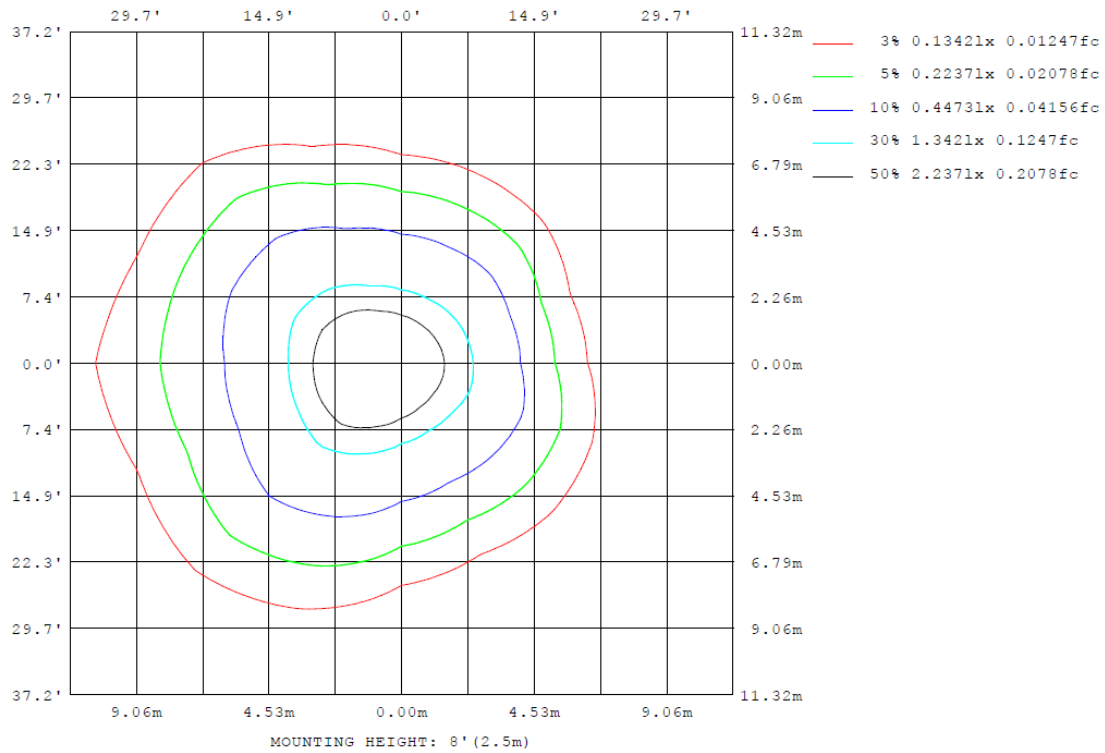
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS498XX

Model No.: KWWS498XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS498XX

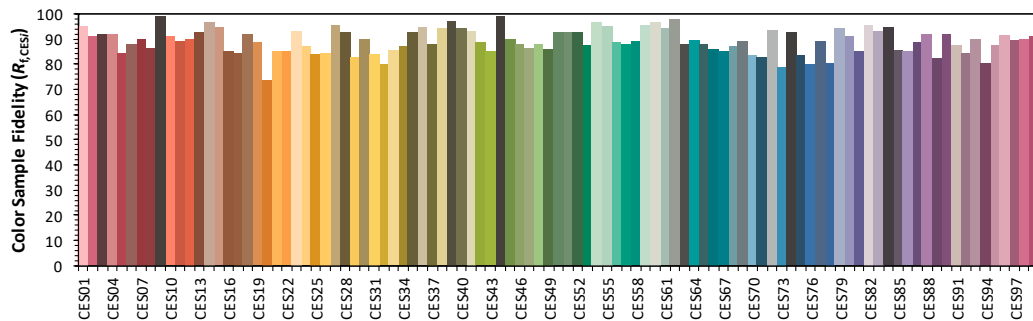
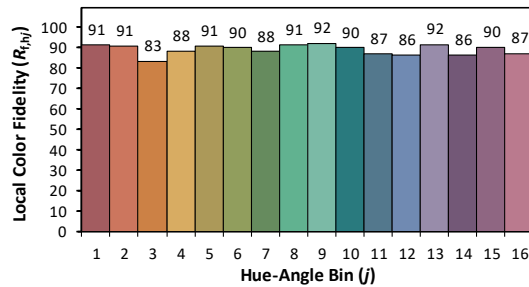
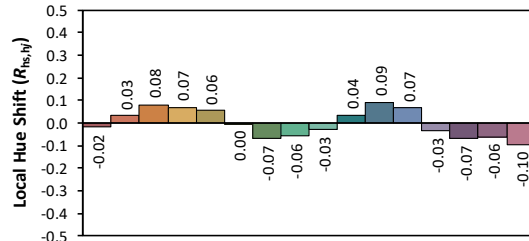
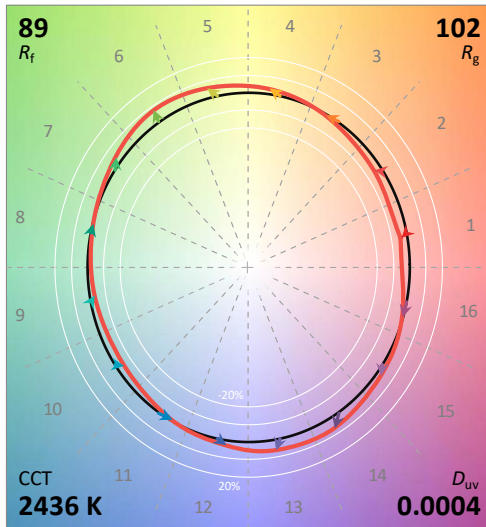
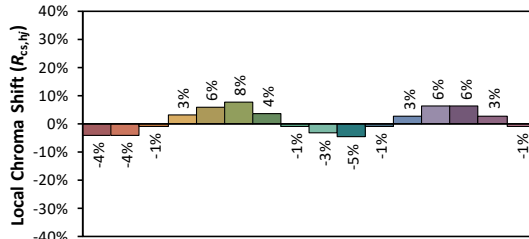
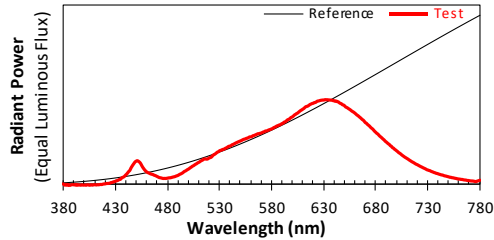
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/11

Model: KWWS498XX



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

x 0.4836
 y 0.4157
 u' 0.2756
 v' 0.5328

CIE 13.3-1995
(CRI)

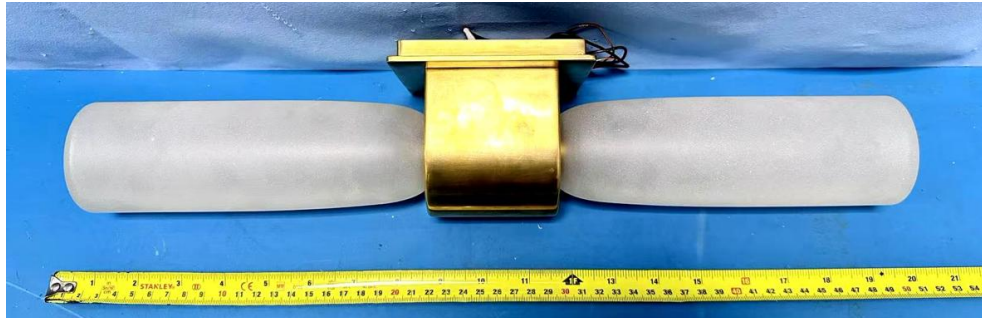
R_a 91
 R_g 64

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

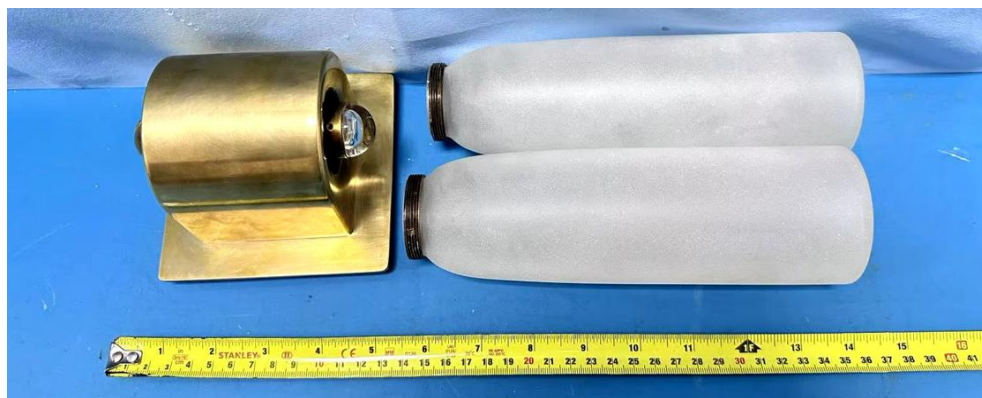
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TEST REPORT

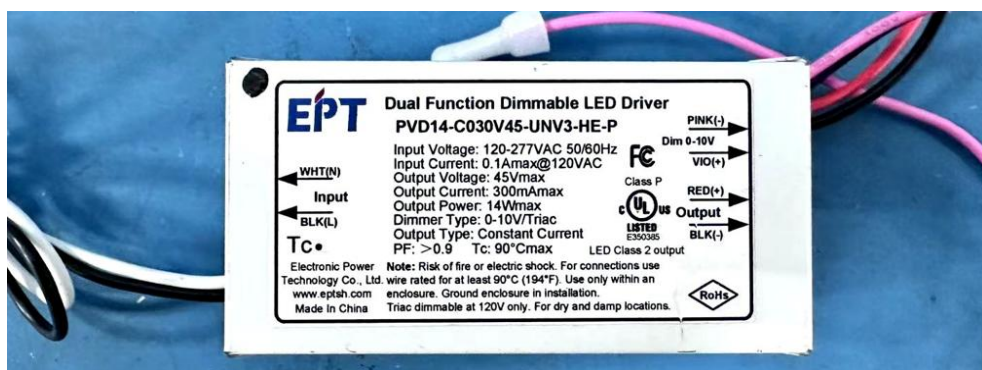
PRODUCT PICTURE (not to scale)



External view of KWWS498XX



Internal view of KWWS498XX



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 *****