

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240924210GZU-001

ISSUE DATE

30 October 2024

REVISION DATE

Modification 1: 06 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 240924210GZU-001
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS49227XX

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: QGZ240920005.
<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 KWWS49227XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240924210-003.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Guangzhou Xiongyi Precision Metalworking Co., Ltd Hantang Industrial Zone, Langbian Village, Shiji Town, Panyu District, Guangzhou City, Guangdong Province, China 511450
<u>DATES OF TESTS:</u>	22 October 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

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

TEST REPORT

SUMMARY

Model Number:	KWWS49227XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS49227XX

Criteria	Result
Total Lumen Output	435.4 lm
Total Power	8.2 W
Luminaire Efficacy	53.2 lm/W
S/MH(C0/180)	1.31
S/MH(C90/270)	1.45
Correlated Color Temperature (CCT)	2498 K
Color Rendering Index (CRI)	90
R9	50
Chromaticity Coordinate (x)	0.4803
Chromaticity Coordinate (y)	0.4189
Chromaticity Coordinate (u')	0.2719
Chromaticity Coordinate (v')	0.5335

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240924210GZU-001 issued on 30 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page 1 and 2 of the report.

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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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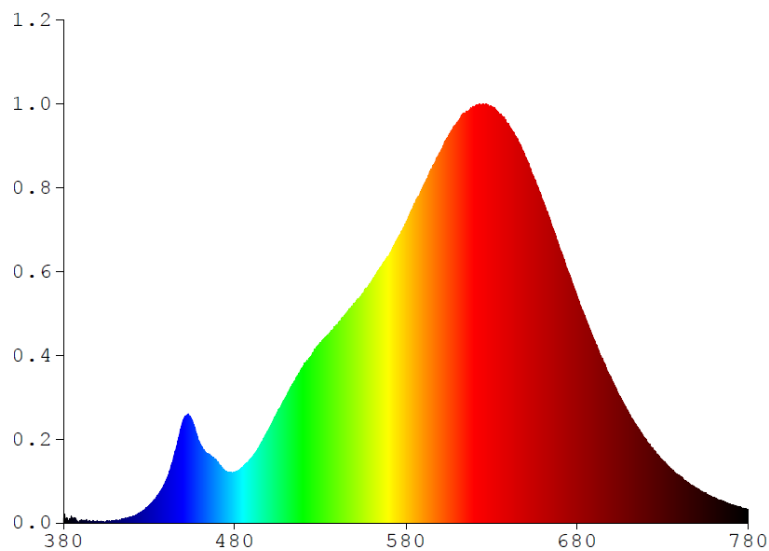
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS49227XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1430	480	1.4781	580	8.7903	680	6.6083	780	0.3959
385	0.1244	485	1.6548	585	9.3404	685	5.9516		
390	0.0699	490	1.9027	590	9.8353	690	5.3466		
395	0.0708	495	2.3021	595	10.3570	695	4.7466		
400	0.0515	500	2.7497	600	10.8440	700	4.1940		
405	0.0362	505	3.2475	605	11.3320	705	3.6913		
410	0.0495	510	3.7012	610	11.7050	710	3.2144		
415	0.1086	515	4.1585	615	11.9950	715	2.8036		
420	0.1842	520	4.5810	620	12.1460	720	2.4526		
425	0.3154	525	4.9037	625	12.1950	725	2.1219		
430	0.5126	530	5.2685	630	12.1410	730	1.8226		
435	0.7978	535	5.5165	635	11.9310	735	1.5795		
440	1.2543	540	5.7931	640	11.6340	740	1.3722		
445	2.0594	545	6.1308	645	11.2400	745	1.1704		
450	3.0050	550	6.4218	650	10.6760	750	1.0092		
455	3.0035	555	6.7173	655	10.0500	755	0.8696		
460	2.2800	560	7.0566	660	9.4102	760	0.7384		
465	1.9897	565	7.4690	665	8.7152	765	0.6379		
470	1.7784	570	7.8110	670	7.9896	770	0.5366		
475	1.5067	575	8.3083	675	7.1829	775	0.4646		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49227XX

Total operation burning time: 60 minutes
Stabilization time: 30 minutes

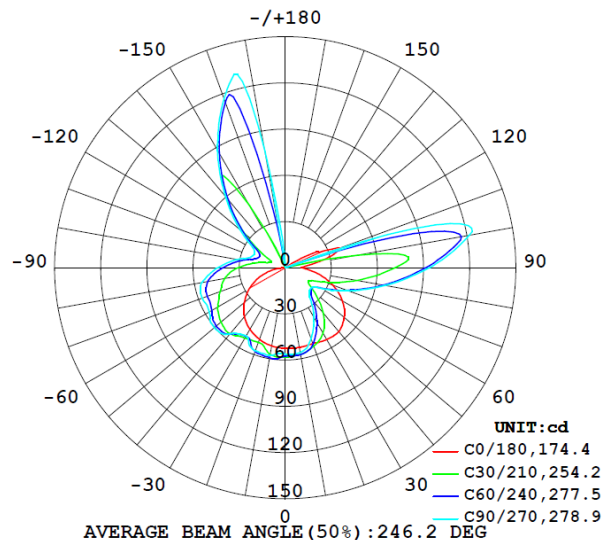
Photometric Measurements at 25°C – Distribution Method

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')
KWWS49227XX								
S2409242 10-003	base-up	2498	90	50	0.4803	0.4189	0.2719	0.5335

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)
KWWS49227XX							
S2409242 10-003	base-up	120.1	69.1	8.2	0.987	435.4	53.2

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49227XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	52.3	58.1	57.2	56.0	52.3
5	52.5	57.6	57.3	56.4	52.5
10	52.4	57.2	57.2	55.9	52.4
15	52.4	55.9	56.1	54.0	52.4
20	52.4	54.1	52.8	49.0	52.4
25	53.2	52.1	47.3	43.4	53.2
30	53.8	49.0	41.3	37.4	53.8
35	54.2	44.5	35.0	31.1	54.2
40	54.2	38.4	28.4	24.9	54.2
45	52.4	31.7	23.7	22.4	52.4
50	50.0	24.9	22.0	21.4	50.0
55	46.9	19.1	22.1	22.1	46.9
60	42.9	17.3	26.0	26.9	42.9
65	38.2	20.1	33.9	35.0	38.2
70	32.9	27.5	42.8	44.0	32.9
75	27.1	36.5	52.9	54.2	27.1
80	21.2	47.3	64.7	66.1	21.2
85	15.4	59.1	77.5	79.3	15.4
90	10.6	71.3	91.2	93.5	10.6
95	13.3	80.4	104.8	107.6	13.3
100	21.3	47.6	116.3	121.4	21.3
105	31.4	5.9	86.6	111.1	31.4
110	38.2	0.3	6.3	29.1	38.2
115	24.3	0.1	0.3	0.5	24.3
120	14.8	0.1	0.1	0.1	14.8
125	3.4	0.1	0.1	0.1	3.4
130	0.1	0.1	0.1	0.1	0.1
135	0.1	0.1	0.1	0.1	0.1
140	0.1	0.1	0.1	0.1	0.1
145	0.1	0.1	0.1	0.1	0.1
150	0.1	0.1	0.1	0.1	0.1
155	0.1	0.1	0.1	0.1	0.1
160	0.1	0.1	0.1	0.1	0.1
165	0.1	0.1	0.1	0.1	0.1
170	0.1	0.1	0.1	0.1	0.1
175	0.1	0.1	0.1	0.1	0.1
180	0.1	0.1	0.2	0.1	0.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49227XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS49227XX		
0-30	42.1	9.7
0-40	69.2	15.9
0-60	135.2	31.1
0-90	278.7	64.0
60-90	143.5	32.9
0-180	435.4	100.0

Beam Angle

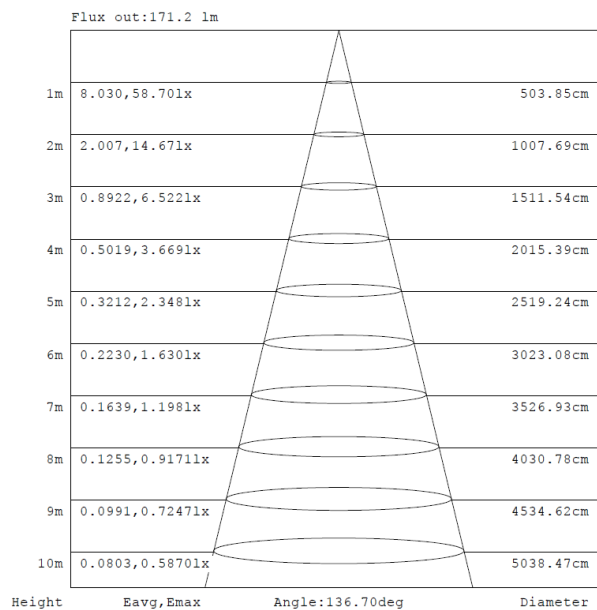
Total Beam Angle(°)
246.2

Illumination Plots

Model No.: KWWS49227XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

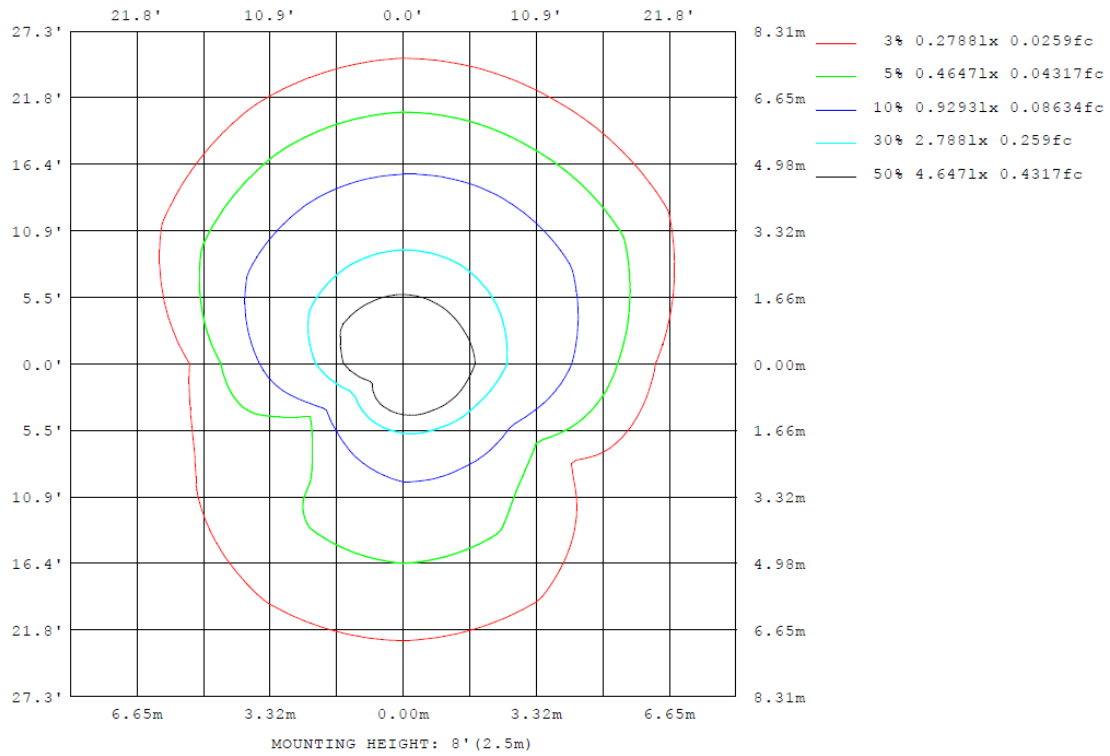
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49227XX

Model No.: KWWS49227XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49227XX

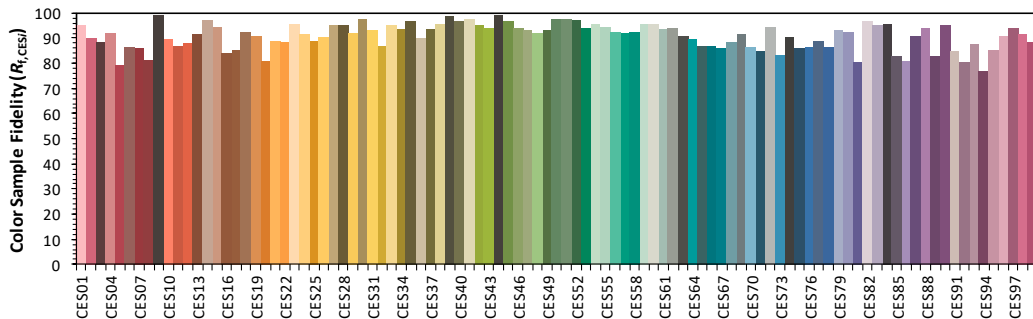
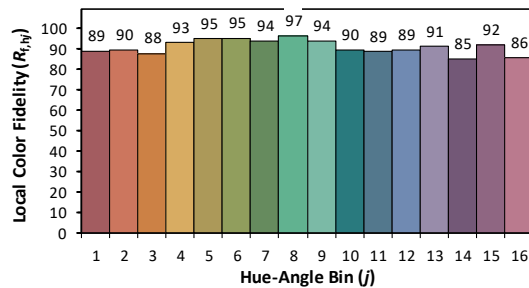
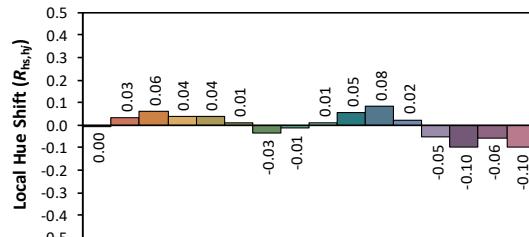
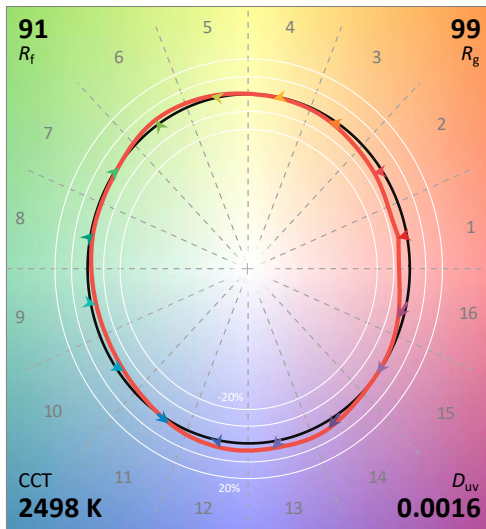
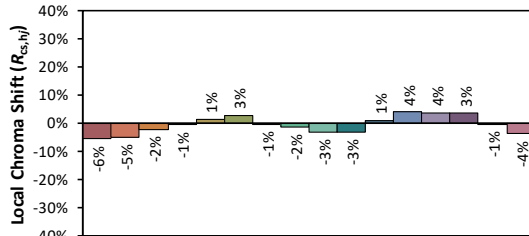
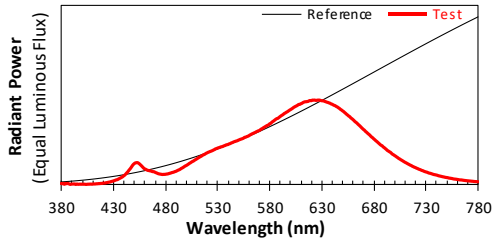
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/10/22

Model: kwws49227xx



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

x 0.4803
 y 0.4189
 u' 0.2719
 v' 0.5335

CIE 13.3-1995
(CRI)

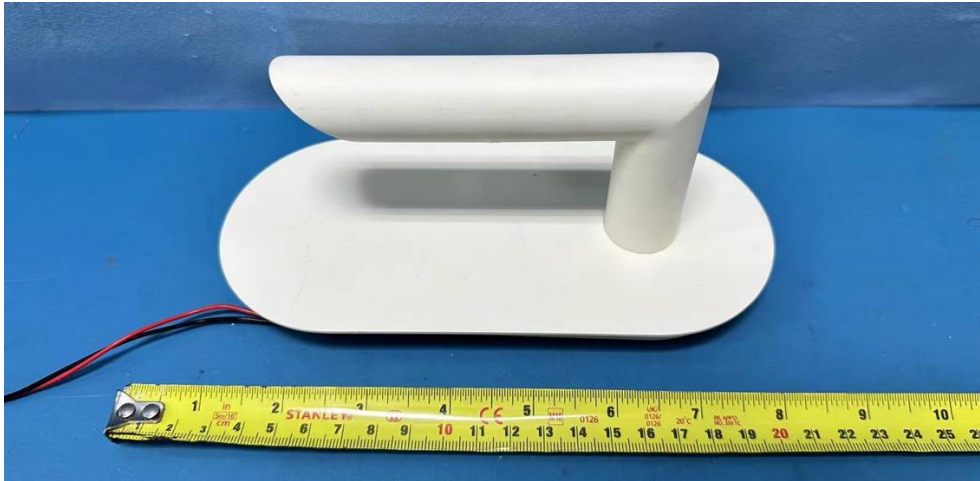
R_a 90
 R_9 50

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

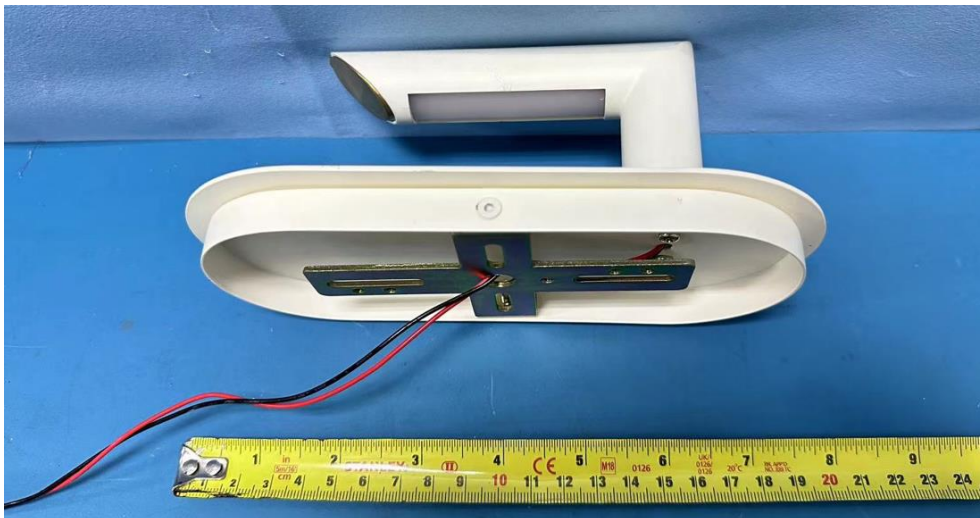
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWWS49227XX



External view of KWWS49227XX



View of LED driver PVD08-C020V42-UNV3-HE-P

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

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 *****