

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240924210GZU-002

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-002
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS49327XX

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 KWWS49327XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240924210-002.
<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>	30 September 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:	KWWS49327XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS49327XX

Criteria	Result
Total Lumen Output	615.5 lm
Total Power	11.1 W
Luminaire Efficacy	55.4 lm/W
S/MH(C0/180)	1.27
S/MH(C90/270)	1.60
Correlated Color Temperature (CCT)	2566 K
Color Rendering Index (CRI)	92
R9	57
Chromaticity Coordinate (x)	0.4720
Chromaticity Coordinate (y)	0.4142
Chromaticity Coordinate (u')	0.2687
Chromaticity Coordinate (v')	0.5305

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240924210GZU-002 issued on 30 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on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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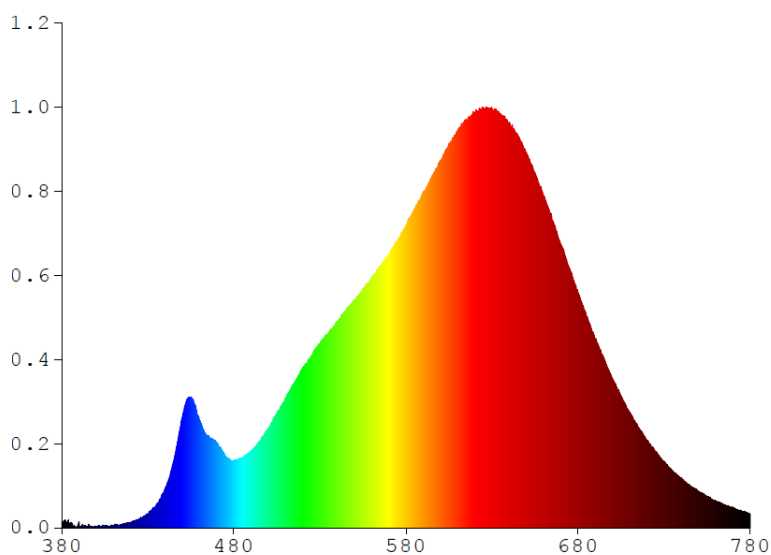
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS49327XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1430	480	1.4259	580	6.5084	680	5.0498	780	0.2946
385	0.0338	485	1.5296	585	6.8666	685	4.5413		
390	0.1122	490	1.6547	590	7.2261	690	4.0722		
395	0.0079	495	1.8454	595	7.5619	695	3.6314		
400	0.0065	500	2.1340	600	7.9088	700	3.2067		
405	0.0421	505	2.4575	605	8.2635	705	2.8224		
410	0.0401	510	2.7912	610	8.5605	710	2.4801		
415	0.0665	515	3.1204	615	8.7773	715	2.1539		
420	0.1042	520	3.4453	620	8.9045	720	1.8809		
425	0.1909	525	3.7115	625	9.0229	725	1.6352		
430	0.2925	530	3.9654	630	9.0146	730	1.4253		
435	0.4932	535	4.2016	635	8.9065	735	1.2125		
440	0.8426	540	4.4326	640	8.7155	740	1.0680		
445	1.4403	545	4.6652	645	8.4302	745	0.9083		
450	2.3620	550	4.9004	650	8.0656	750	0.7816		
455	2.8024	555	5.1506	655	7.6186	755	0.6696		
460	2.3138	560	5.3664	660	7.1403	760	0.5810		
465	1.9622	565	5.6391	665	6.6049	765	0.4927		
470	1.8417	570	5.8826	670	6.0842	770	0.4270		
475	1.5393	575	6.1757	675	5.4955	775	0.3617		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49327XX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

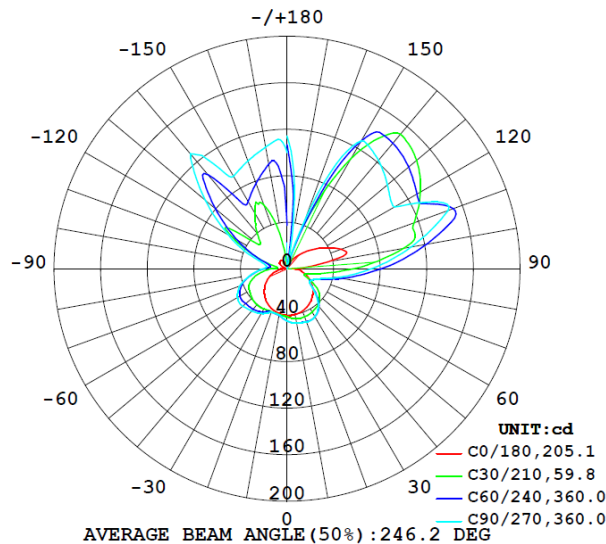
Photometric Measurements at 25°C – Distribution Method

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')
KWWS49327XX								
S2409242 10-002	base-up	2566	92	57	0.4720	0.4142	0.2687	0.5305

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)
KWWS49327XX							
S2409242 10-002	base-up	120.1	93.6	11.1	0.990	615.5	55.4

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49327XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	40.1	41.3	45.0	44.9	43.8
5	40.2	42.5	46.5	46.5	44.9
10	40.0	43.5	47.4	47.5	45.4
15	39.5	44.0	48.0	48.2	45.5
20	38.7	44.1	48.3	48.8	45.3
25	37.7	43.7	48.7	48.9	45.1
30	36.4	43.0	47.7	47.6	44.0
35	34.9	42.1	45.8	45.4	41.8
40	33.1	41.1	42.6	41.9	38.7
45	31.1	39.4	37.7	36.6	34.4
50	28.9	36.7	31.8	30.9	28.8
55	26.4	32.7	25.7	25.2	22.9
60	23.9	27.0	22.2	22.5	18.2
65	21.2	20.5	23.1	23.3	17.4
70	18.3	15.7	26.9	26.3	19.3
75	15.2	17.0	34.6	32.4	24.7
80	12.6	24.2	47.9	43.9	35.5
85	9.5	38.4	63.1	57.1	48.2
90	4.7	56.7	80.8	72.1	63.1
95	15.4	78.1	100.4	89.3	79.9
100	36.0	101.1	121.2	107.9	97.7
105	53.1	113.8	142.2	127.3	114.1
110	49.5	115.9	151.7	146.9	89.3
115	42.9	124.3	132.5	136.5	68.0
120	36.3	132.1	128.7	106.7	73.6
125	30.2	139.2	132.5	108.0	80.6
130	24.6	145.1	136.2	112.5	88.1
135	19.8	149.4	139.1	117.4	95.8
140	15.6	151.3	141.2	122.0	103.2
145	12.1	137.3	141.9	125.8	110.0
150	9.0	109.3	126.9	127.2	99.1
155	6.5	69.5	83.1	99.5	29.1
160	4.5	33.2	30.0	44.6	0.1
165	3.2	10.1	4.3	3.6	0.5
170	2.4	2.6	0.1	19.6	22.4
175	2.0	0.7	62.9	72.3	67.7
180	2.3	0.2	106.7	114.1	110.7

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49327XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS49327XX		
0-30	35.2	5.7
0-40	60.9	9.9
0-60	120.3	19.6
0-90	212.7	34.6
60-90	92.4	15.0
0-180	615.5	100.0

Beam Angle

Total Beam Angle(°)

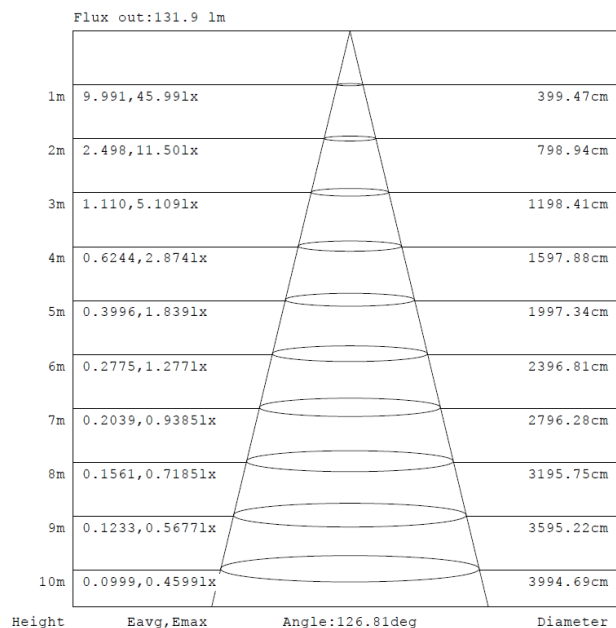
246.2

Illumination Plots

Model No.: KWWS49327XX

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

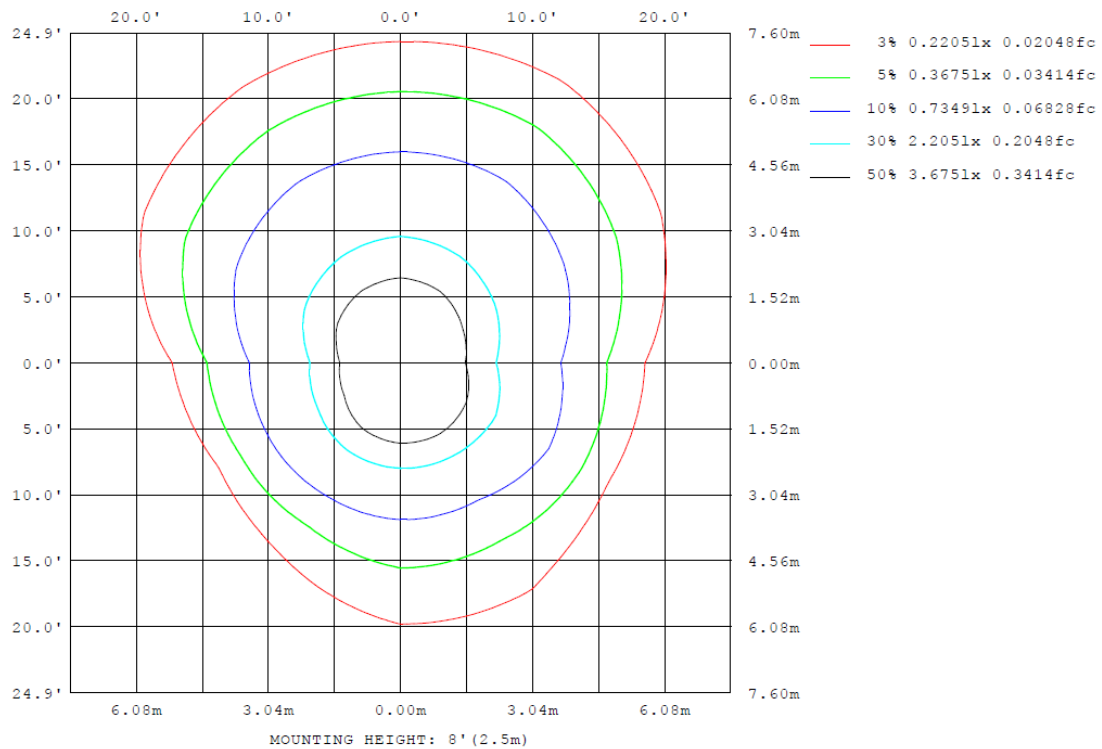
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49327XX

Model No.: KWWS49327XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS49327XX

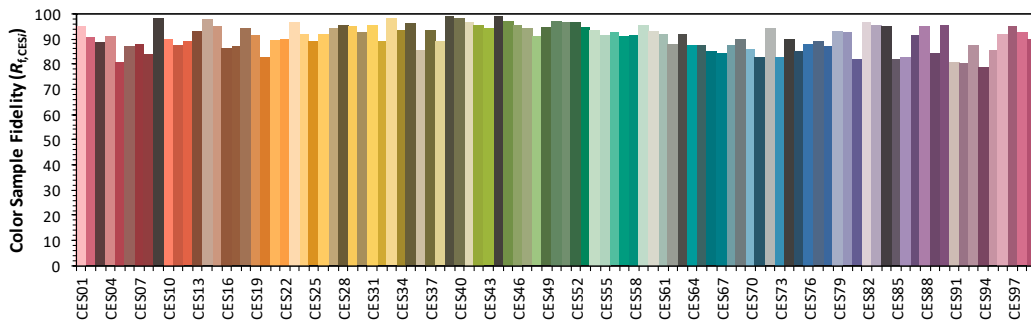
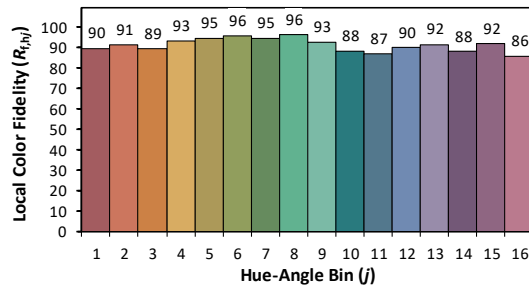
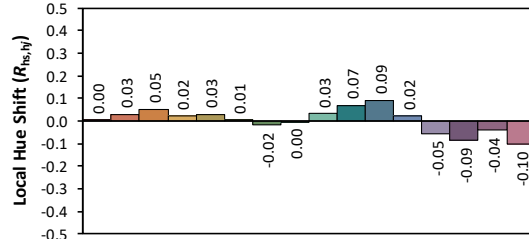
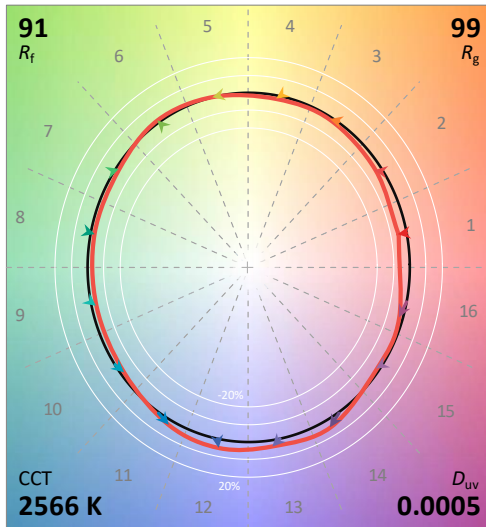
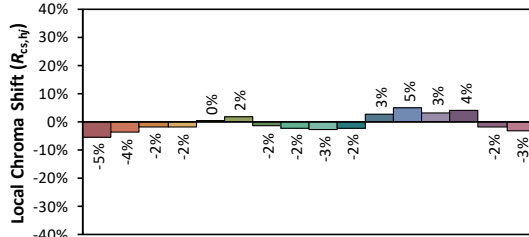
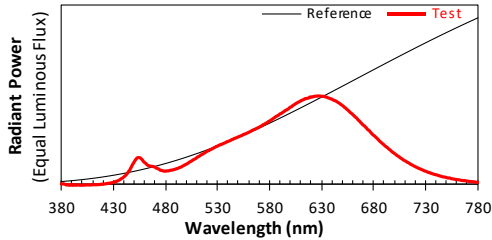
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/9/30

Model: kwws49327xx



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

x 0.4720
 y 0.4142
 u' 0.2687
 v' 0.5305

CIE 13.3-1995
(CRI)

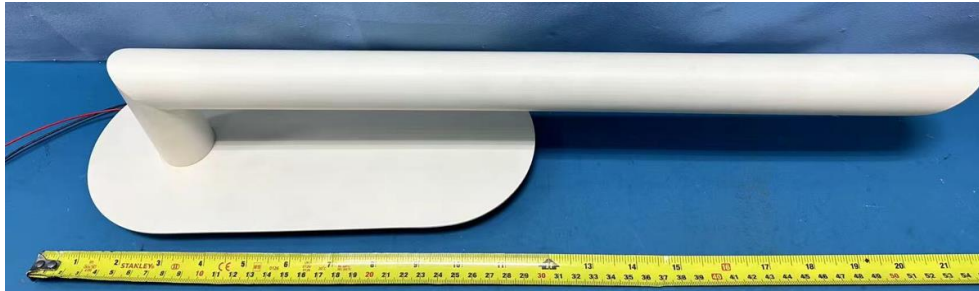
R_a 92
 R_g 57

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

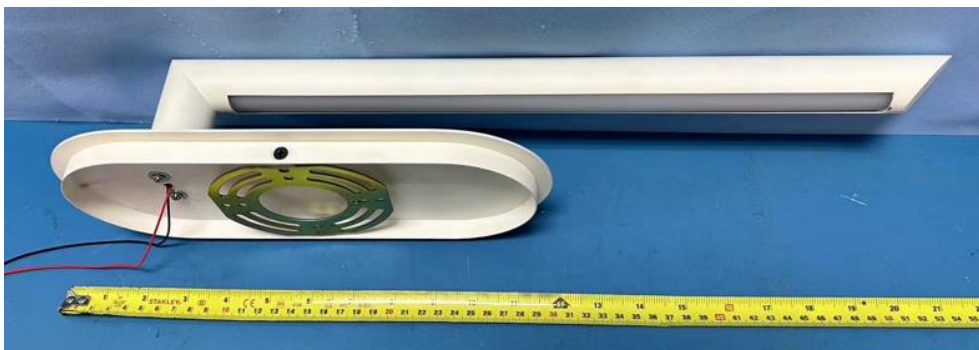
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWWS49327XX



External view of KWWS49327XX



View of LED driver PVD11-C030V33-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 *****