

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240621176GZU-019

ISSUE DATE

15 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.: 240621176GZU-019
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLWS31427XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

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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: QGZ240620045.
<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 SLWS31427XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240621176-023.
<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>	26 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:	SLWS31427XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLWS31427XX

Criteria	Result
Total Lumen Output	786.7 lm
Total Power	15.2 W
Luminaire Efficacy	51.8 lm/W
S/MH(C0/180)	2.78
S/MH(C90/270)	1.53
Correlated Color Temperature (CCT)	2602 K
Color Rendering Index (CRI)	92
R9	52
Chromaticity Coordinate (x)	0.4682
Chromaticity Coordinate (y)	0.4124
Chromaticity Coordinate (u')	0.2670
Chromaticity Coordinate (v')	0.5293

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240621176GZU-019 issued on 15 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on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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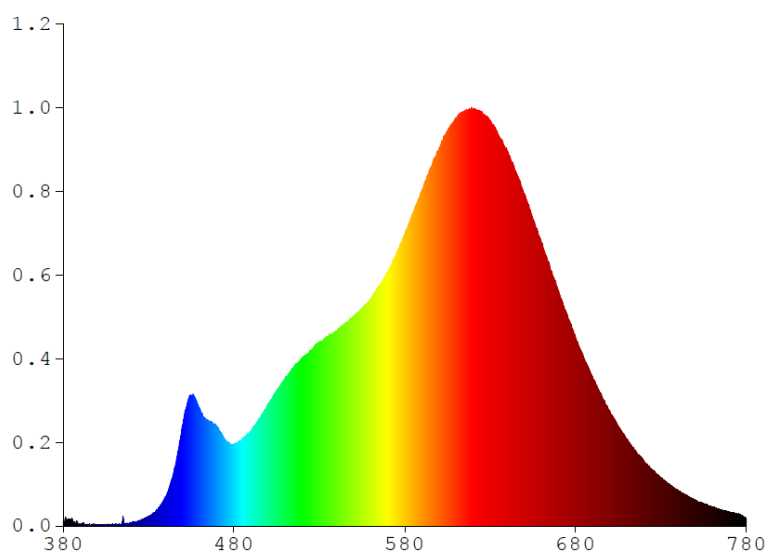
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLWS31427XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1747	480	2.2158	580	7.9247	680	5.0946	780	0.2006
385	0.2036	485	2.3758	585	8.5184	685	4.5350		
390	0.0175	490	2.5754	590	9.1154	690	4.0261		
395	0.0263	495	2.9124	595	9.7150	695	3.5524		
400	0.0192	500	3.3086	600	10.2380	700	3.1180		
405	0.0353	505	3.6776	605	10.7130	705	2.7019		
410	0.0430	510	4.0234	610	11.0730	710	2.3568		
415	0.2541	515	4.3114	615	11.2500	715	2.0428		
420	0.0962	520	4.5768	620	11.3090	720	1.7624		
425	0.1333	525	4.7463	625	11.2480	725	1.5189		
430	0.2506	530	4.9815	630	11.0000	730	1.3068		
435	0.4483	535	5.1390	635	10.5800	735	1.1289		
440	0.7925	540	5.2787	640	10.1790	740	0.9710		
445	1.5154	545	5.5094	645	9.6011	745	0.8349		
450	2.7362	550	5.6862	650	9.0028	750	0.7120		
455	3.5347	555	5.9118	655	8.3215	755	0.5988		
460	3.1794	560	6.1562	660	7.6868	760	0.5072		
465	2.8249	565	6.5319	665	7.0242	765	0.4352		
470	2.6878	570	6.8993	670	6.3599	770	0.3809		
475	2.3309	575	7.3767	675	5.5952	775	0.3191		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS31427XX

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

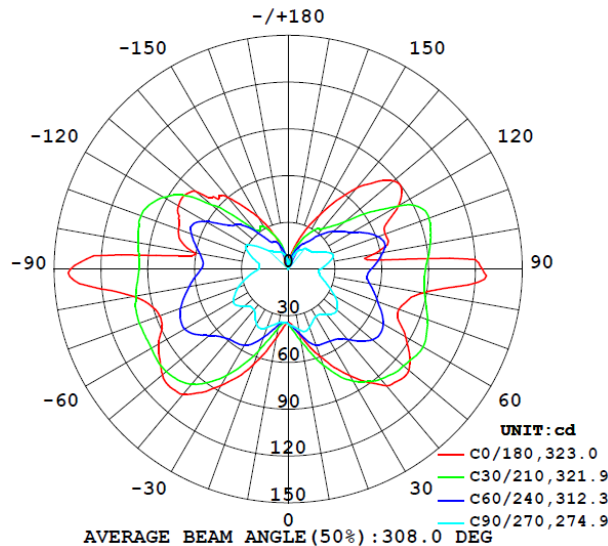
Photometric Measurements at 25°C – Distribution Method

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')
SLWS31427XX								
S2406211 76-023	base-up	2602	92	52	0.4682	0.4124	0.2670	0.5293

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)
SLWS31427XX							
S2406211 76-023	base-up	120.0	128.2	15.2	0.988	786.7	51.8

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS31427XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	34.5	35.1	35.0	35.4	34.5
5	37.1	40.1	37.8	37.0	37.1
10	43.0	46.9	42.1	39.3	43.0
15	51.0	55.6	47.7	41.5	51.0
20	59.4	65.5	51.8	39.8	59.4
25	69.6	75.1	52.8	37.2	69.6
30	78.7	82.9	53.5	35.3	78.7
35	88.7	88.1	54.8	35.4	88.7
40	97.8	92.2	59.0	37.8	97.8
45	100.8	94.9	65.4	40.4	100.8
50	100.7	96.5	70.4	40.8	100.7
55	94.8	98.6	72.0	38.5	94.8
60	86.8	99.8	70.4	34.5	86.8
65	78.0	97.8	66.1	29.6	78.0
70	75.5	95.1	61.1	25.6	75.5
75	78.9	91.4	56.8	22.4	78.9
80	87.9	88.7	52.9	20.4	87.9
85	115.8	87.5	50.8	19.9	115.8
90	124.4	88.0	53.1	20.6	124.4
95	75.6	90.1	57.4	23.4	75.6
100	55.6	92.5	61.5	26.6	55.6
105	66.2	94.5	64.1	29.6	66.2
110	66.2	95.9	61.3	29.6	66.2
115	69.4	93.6	55.2	26.2	69.4
120	81.5	80.8	47.9	22.0	81.5
125	88.8	63.9	42.4	19.2	88.8
130	88.2	47.4	38.2	18.5	88.2
135	79.2	39.0	32.7	18.0	79.2
140	67.9	34.0	27.1	17.5	67.9
145	53.6	31.5	21.6	15.3	53.6
150	40.3	26.4	18.9	14.0	40.3
155	29.7	21.1	15.8	11.6	29.7
160	20.8	15.4	12.1	7.9	20.8
165	13.7	9.9	8.3	5.5	13.7
170	8.1	4.8	4.2	3.0	8.1
175	3.3	0.5	0.6	0.1	3.3
180	0.1	2.3	2.1	5.2	0.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS31427XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLWS31427XX		
0-30	45.5	5.8
0-40	89.9	11.4
0-60	222.6	28.3
0-90	454.9	57.8
60-90	232.3	29.5
0-180	786.7	100.0

Beam Angle

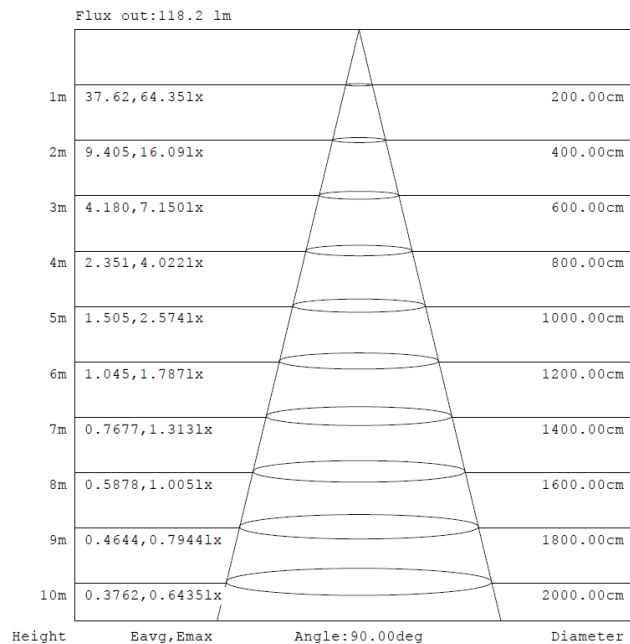
Total Beam Angle(°)
308.0

Illumination Plots

Model No.: SLWS31427XX

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

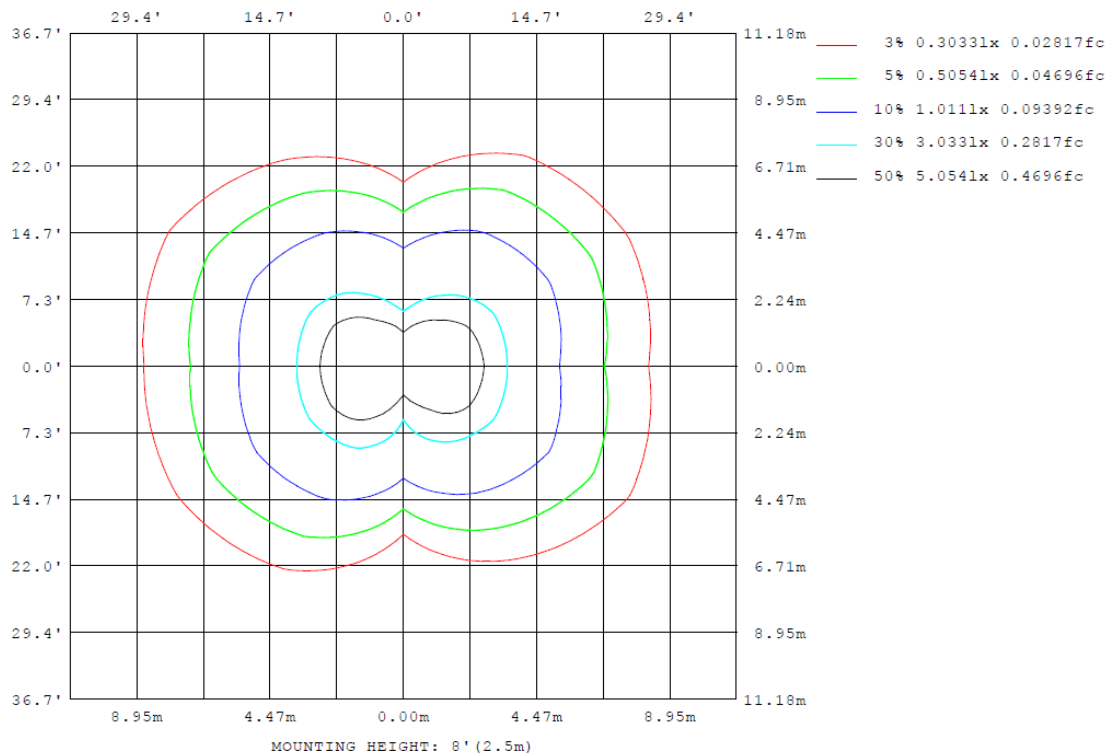
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS31427XX

Model No.: SLWS31427XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS31427XX

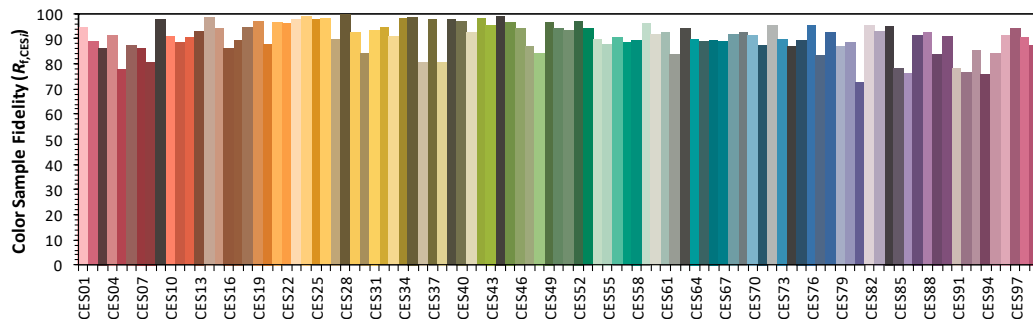
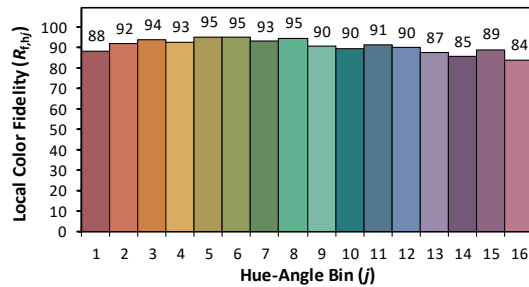
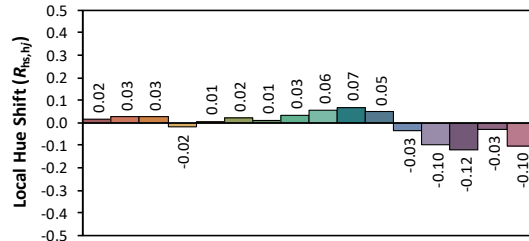
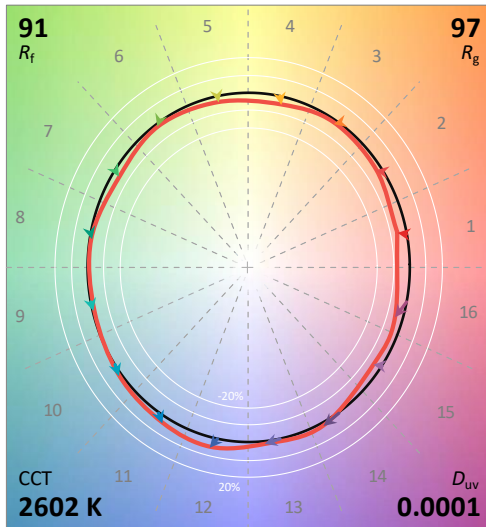
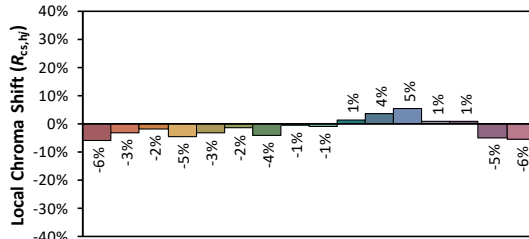
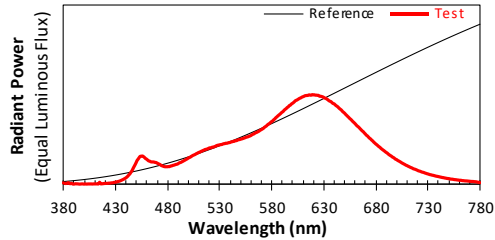
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/9/26

Model: SLWS31427XX



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

x 0.4682
 y 0.4124
 u' 0.2670
 v' 0.5293

CIE 13.3-1995
(CRI)

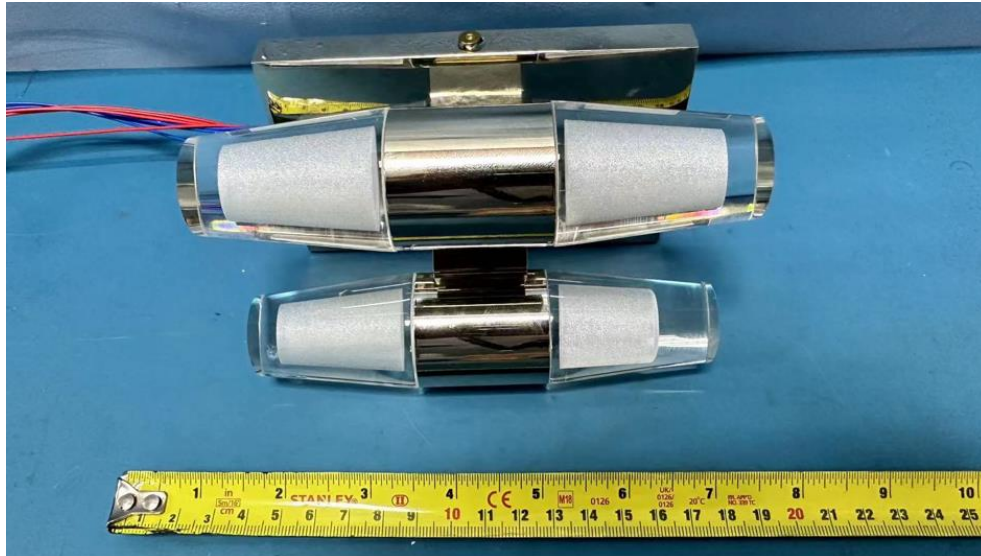
R_a 92
 R_g 52

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

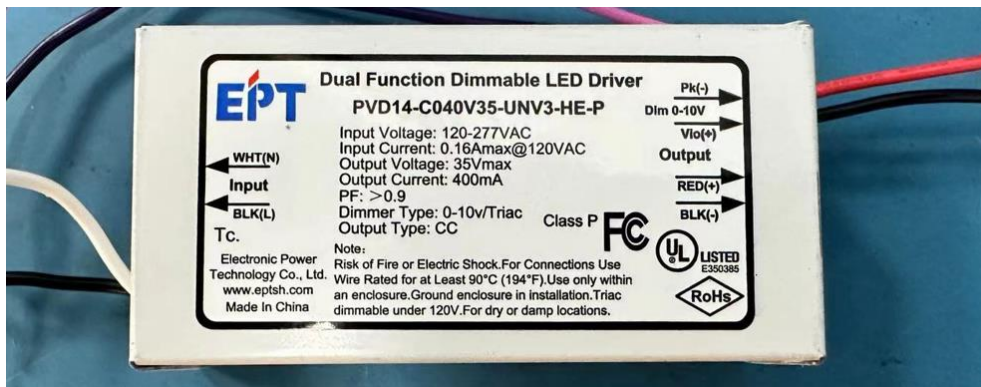
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLWS31427XX

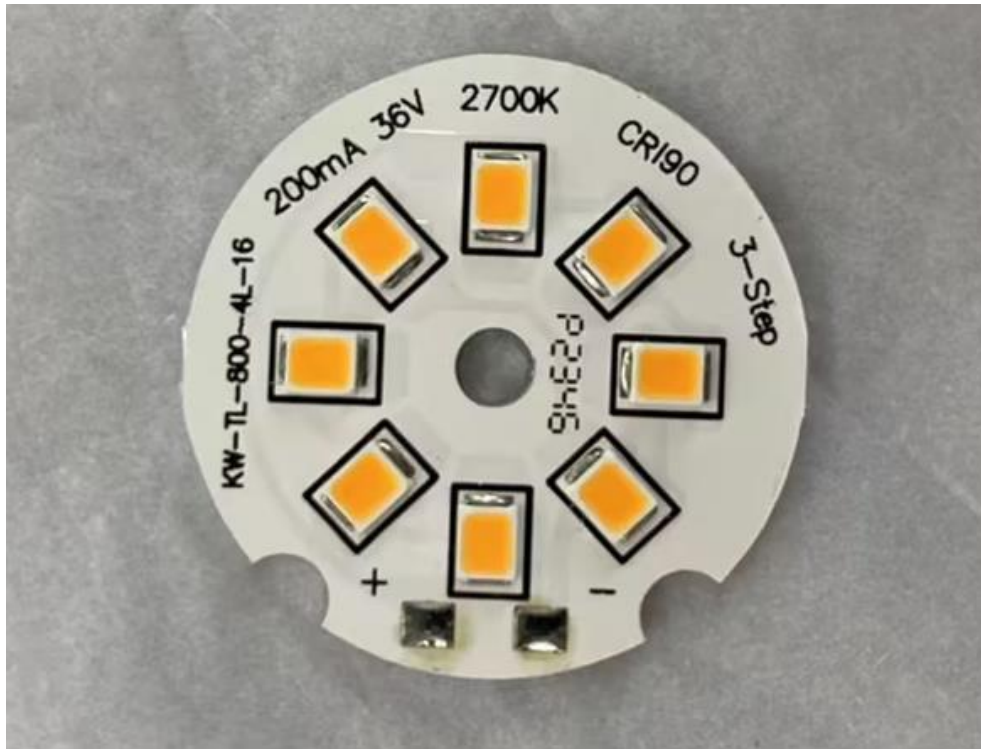


View of LED driver PVD14-C040V35-UNV3-HE-P

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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 *****