

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

221205125GZU-018

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29 January 2023

REVISION DATE

None

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13

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Report No.: 221205125GZU-018

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLWS10627**

(Remark: “**” denote other appearance colors for the characters that change)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>STATEMENT OF LIMITATION:</u>	The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ221129088.
<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: 2008	Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI C78.377:2017	Specifications of the Chromaticity of Solid State Lighting Products
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model SLWS10627**. The sample was received, in undamaged condition. The sample designation was S221205125-018.
<u>DATES OF TESTS:</u>	05 January 2023
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	SLWS10627**
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLWS10627**

Criteria	Result
Total Lumen Output	295.9 lm
Total Power	10.6 W
Luminaire Efficacy	27.9 lm/W
S/MH(C0/180)	1.30
S/MH(C90/270)	0.76
Correlated Color Temperature (CCT)	2597 K
Color Rendering Index (CRI)	93
R9	62
Chromaticity Coordinate (x)	0.4647
Chromaticity Coordinate (y)	0.4058
Chromaticity Coordinate (u')	0.2678
Chromaticity Coordinate (v')	0.5262

Remark:

Measurement uncertainty for applicable tests has been established.

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

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	RC-HT601A	SA047-62

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 EVERFINE - Digital Power Meter., model PLM3000.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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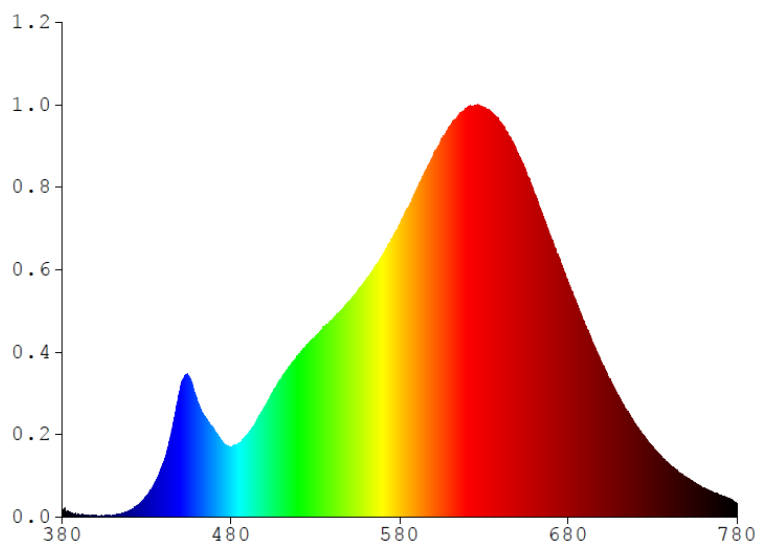
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLWS10627**

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0014	480	0.0146	580	0.0608	680	0.0487	780	0.0028
385	0.0008	485	0.0155	585	0.0642	685	0.0443		
390	0.0005	490	0.0173	590	0.0679	690	0.0399		
395	0.0003	495	0.0199	595	0.0714	695	0.0357		
400	0.0003	500	0.0230	600	0.0751	700	0.0319		
405	0.0003	505	0.0261	605	0.0787	705	0.0285		
410	0.0004	510	0.0289	610	0.0811	710	0.0251		
415	0.0007	515	0.0316	615	0.0834	715	0.0219		
420	0.0014	520	0.0337	620	0.0850	720	0.0193		
425	0.0026	525	0.0358	625	0.0855	725	0.0168		
430	0.0044	530	0.0375	630	0.0851	730	0.0146		
435	0.0072	535	0.0395	635	0.0840	735	0.0127		
440	0.0112	540	0.0410	640	0.0818	740	0.0109		
445	0.0182	545	0.0429	645	0.0789	745	0.0095		
450	0.0268	550	0.0448	650	0.0756	750	0.0083		
455	0.0293	555	0.0470	655	0.0717	755	0.0071		
460	0.0242	560	0.0493	660	0.0672	760	0.0061		
465	0.0206	565	0.0517	665	0.0625	765	0.0054		
470	0.0182	570	0.0544	670	0.0579	770	0.0045		
475	0.0156	575	0.0577	675	0.0525	775	0.0039		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS10627**

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

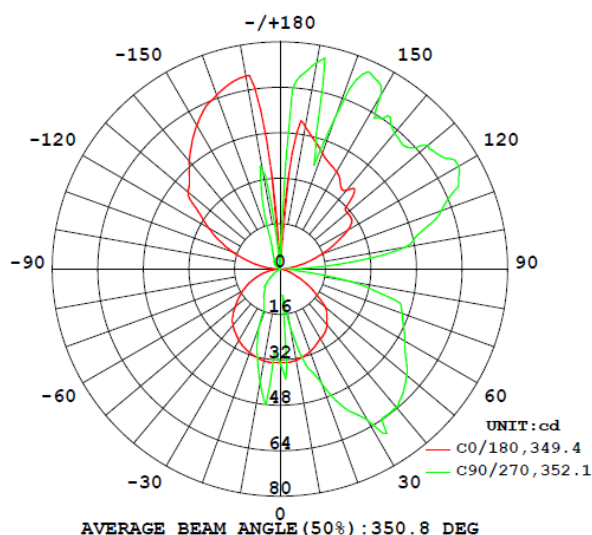
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
SLWS10627**								
S2212051 25-018	--	2597	93	62	0.4647	0.4058	0.2678	0.5262

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)
SLWS10627**							
S2212051 25-018	--	120.3	89.1	10.6	0.989	295.9	27.9

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS10627**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	33.0	33.0	33.0	33.0	33.0
5	32.9	35.8	39.1	24.5	17.0
10	32.6	39.7	10.7	18.5	20.8
15	31.9	22.6	22.1	32.1	34.6
20	30.9	20.7	32.3	40.1	42.7
25	29.7	25.3	38.9	50.7	54.0
30	28.4	27.9	45.5	57.3	61.2
35	27.4	30.1	51.3	67.1	63.6
40	25.8	32.1	54.4	62.1	63.6
45	23.3	34.6	55.2	60.1	61.3
50	20.8	37.0	52.0	57.0	58.1
55	15.7	37.8	48.7	53.0	53.9
60	11.5	33.5	44.4	48.7	50.8
65	7.5	28.2	39.4	45.5	47.9
70	4.6	23.2	35.3	42.5	45.7
75	3.2	16.7	31.7	40.2	41.5
80	1.9	9.7	27.4	26.2	24.8
85	0.9	6.1	11.7	5.8	6.4
90	0.8	1.8	2.8	1.9	1.6
95	0.8	3.9	8.6	17.8	20.7
100	4.9	13.1	28.3	40.6	44.6
105	10.0	18.9	35.8	47.7	51.5
110	15.6	20.7	43.3	55.8	60.2
115	21.4	23.0	48.3	63.6	69.1
120	27.4	27.9	47.3	66.4	72.5
125	30.8	34.0	45.8	64.2	69.2
130	30.9	40.7	47.7	59.9	68.0
135	36.0	45.9	51.9	58.7	61.5
140	36.3	44.7	55.4	60.3	62.5
145	37.0	47.9	62.0	60.8	66.1
150	39.7	56.8	65.1	70.3	71.0
155	41.2	66.8	51.6	72.2	75.8
160	43.5	66.8	50.7	45.2	57.1
165	46.9	65.8	75.6	57.4	49.1
170	51.1	64.7	71.1	72.6	73.8
175	30.7	50.2	67.0	66.3	66.6
180	0.0	0.0	0.0	0.0	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS10627**

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLWS10627**		
0-30	26.6	9.0
0-40	46.4	15.7
0-60	91.4	30.9
0-90	129.9	43.9
60-90	38.5	13.0
0-180	295.9	100.0

Beam Angle

Total Beam Angle (°)

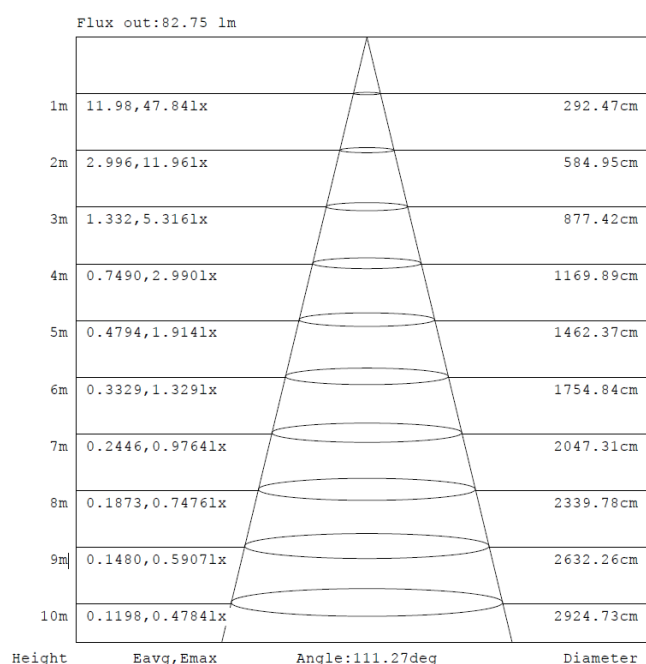
350.8

Illumination Plots

Model No.: SLWS10627**

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

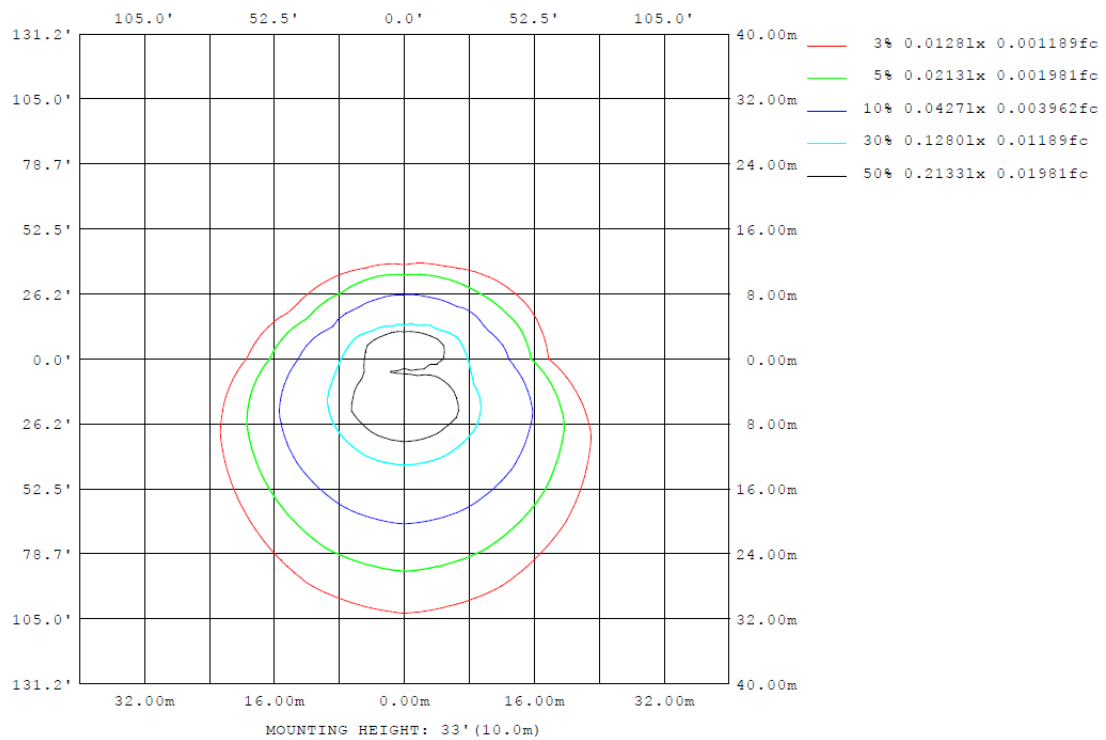
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS10627**

Model No.: SLWS10627**

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLWS10627**

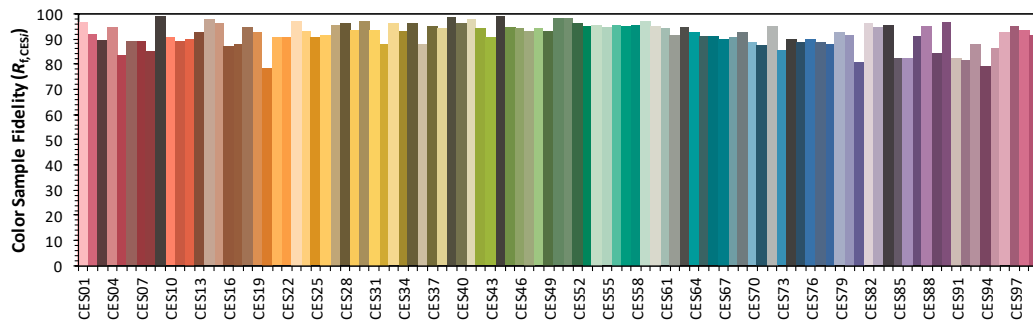
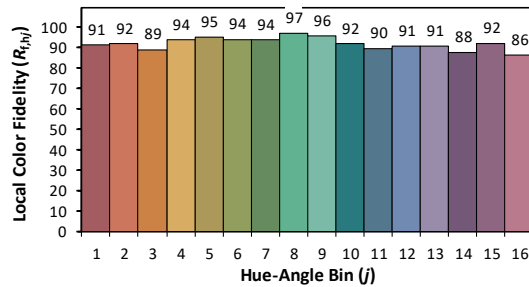
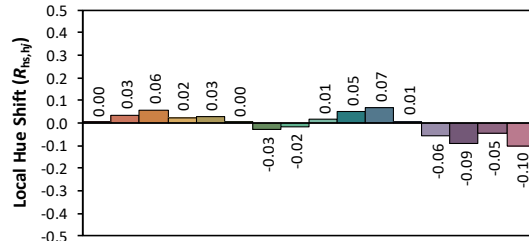
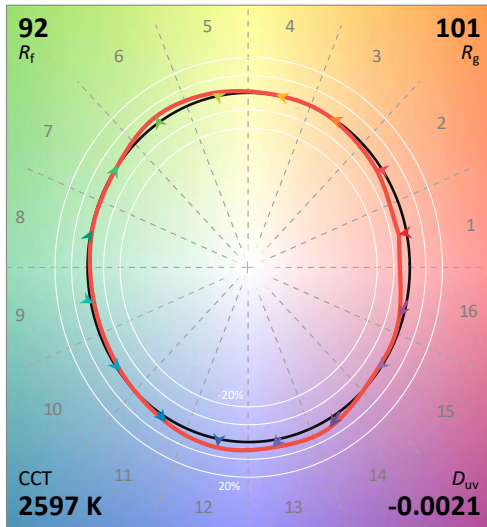
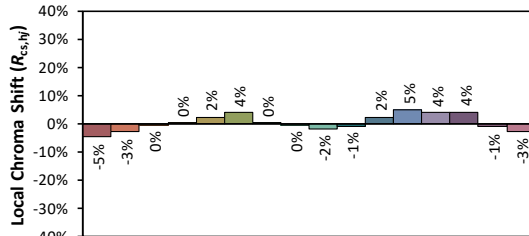
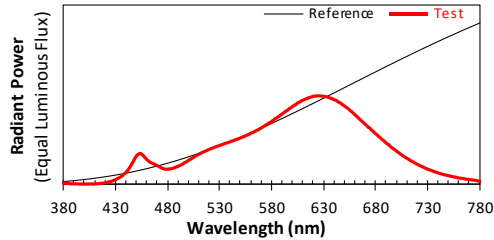
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/1/5

Model: SLWS10627**



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

x 0.4647
 y 0.4058
 u' 0.2678
 v' 0.5262

CIE 13.3-1995
(CRI)

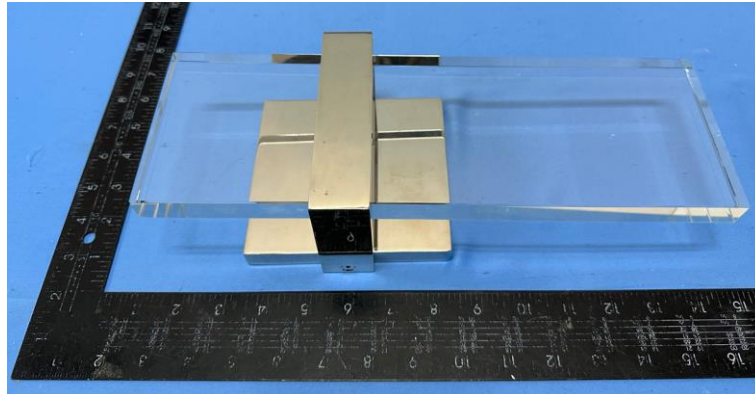
R_a 93
 R_g 62

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

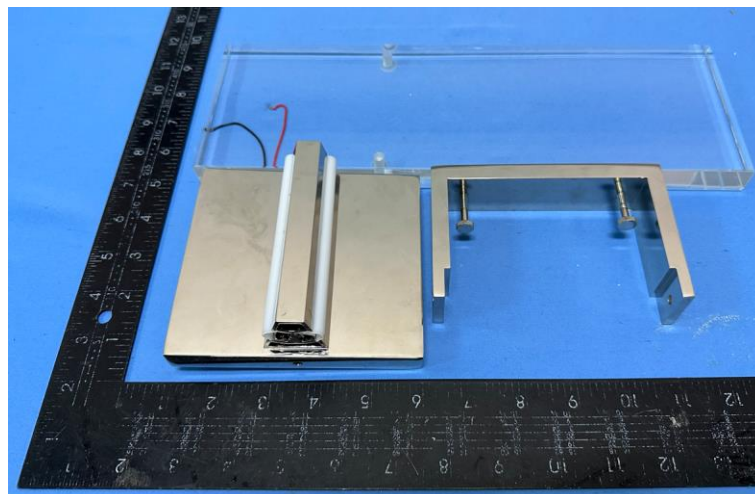
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TEST REPORT

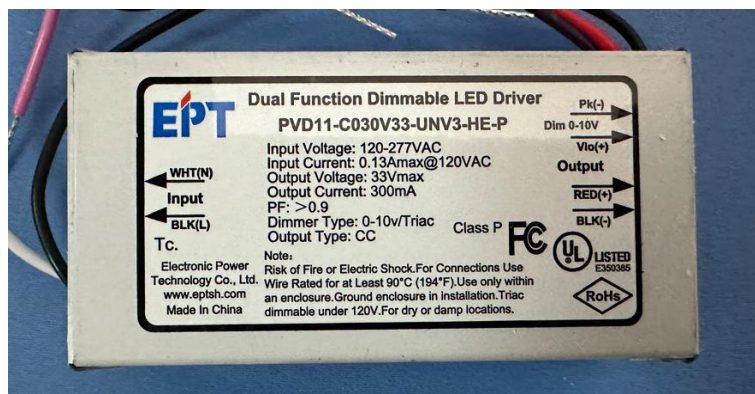
PRODUCT PICTURE (not to scale)



External view of SLWS10627**



External view of SLWS10627**



View of LED Driver PVD11-C030V33-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 *****