

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230717030GZU-004

ISSUE DATE

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REVISION DATE

None

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Report No.: 230717030GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLPD28530XX

(Remark: "xx" are denoted finish color)

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: QGZ230714100.
<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 IES LM-79: 2019 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 SLPD28530XX. The sample was received in undamaged condition. The sample designation was S230717030-004.
<u>DATES OF TESTS:</u>	18-July-2023
<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 Science City, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	SLPD28530XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLPD28530XX

Criteria	Result
Total Lumen Output	4423.3 lm
Total Power	85.5 W
Luminaire Efficacy	51.7 lm/W
S/MH(C0/180)	3.18
S/MH(C90/270)	3.16
Correlated Color Temperature (CCT)	2724 K
Color Rendering Index (CRI)	93
R9	63
Chromaticity Coordinate (x)	0.4567
Chromaticity Coordinate (y)	0.4079
Chromaticity Coordinate (u')	0.2616
Chromaticity Coordinate (v')	0.5258

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 DC

Standard lamp used for integrating sphere:

Model: D204

Current: 3.9480A DC

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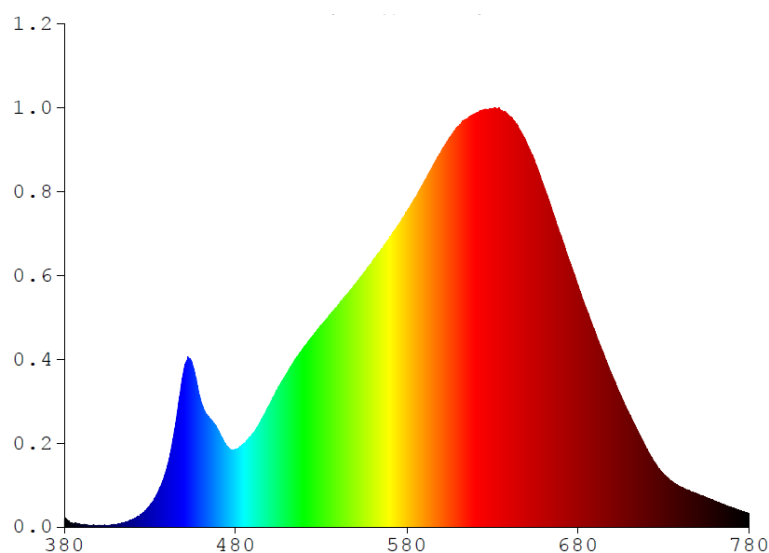
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLPD28530XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0461	480	0.4716	580	1.9191	680	1.4690	780	0.0808
385	0.0183	485	0.5105	585	2.0111	685	1.3218		
390	0.0110	490	0.5689	590	2.1030	690	1.1838		
395	0.0083	495	0.6538	595	2.1981	695	1.0476		
400	0.0087	500	0.7496	600	2.2892	700	0.9191		
405	0.0108	505	0.8538	605	2.3739	705	0.8004		
410	0.0143	510	0.9391	610	2.4414	710	0.6836		
415	0.0274	515	1.0221	615	2.4879	715	0.5785		
420	0.0471	520	1.0983	620	2.5227	720	0.4741		
425	0.0782	525	1.1660	625	2.5417	725	0.3889		
430	0.1323	530	1.2299	630	2.5498	730	0.3191		
435	0.2186	535	1.2932	635	2.5355	735	0.2747		
440	0.3663	540	1.3566	640	2.5031	740	0.2441		
445	0.6291	545	1.4195	645	2.4379	745	0.2204		
450	0.9629	550	1.4834	650	2.3405	750	0.1997		
455	0.9775	555	1.5515	655	2.2146	755	0.1772		
460	0.7551	560	1.6201	660	2.0745	760	0.1567		
465	0.6619	565	1.6904	665	1.9231	765	0.1374		
470	0.5849	570	1.7678	670	1.7761	770	0.1170		
475	0.4911	575	1.8408	675	1.5861	775	0.0991		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28530XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

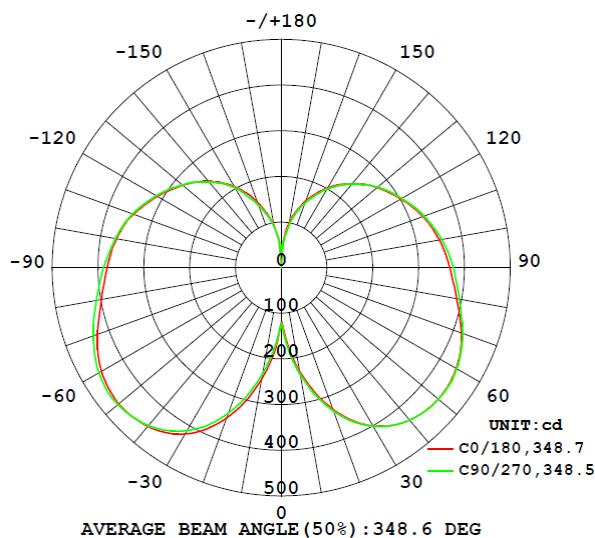
Photometric Measurements at 25°C – Distribution Method

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')
SLPD28530XX								
S2307170 30-004	--	2724	93	63	0.4567	0.4079	0.2616	0.5258

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)
SLPD28530XX							
S2307170 30-004	--	120.1	719.9	85.5	0.989	4423.3	51.7

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28530XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	119.2	119.8	120.7	121.7	122.0
5	172.1	171.9	174.5	177.6	181.3
10	229.5	227.7	231.6	234.2	237.3
15	282.6	279.6	285.9	288.6	289.3
20	329.7	325.9	334.4	336.8	334.5
25	369.4	364.3	374.8	377.0	372.0
30	400.3	394.0	405.7	408.4	400.8
35	421.5	416.2	427.8	429.9	421.9
40	435.6	431.3	442.7	444.6	435.5
45	443.7	441.1	451.3	453.6	444.1
50	447.2	446.3	455.7	457.6	448.0
55	446.2	447.1	454.7	456.6	447.7
60	440.9	442.8	449.1	450.1	442.7
65	431.2	432.9	439.2	439.5	433.4
70	417.6	419.3	425.2	426.6	421.2
75	402.8	405.3	411.0	413.3	407.4
80	388.7	391.8	397.7	399.2	394.9
85	377.1	379.9	386.2	387.8	384.2
90	367.9	369.9	376.7	379.0	375.7
95	359.5	361.4	368.3	369.2	366.6
100	350.4	353.1	359.5	359.0	356.0
105	340.5	343.2	349.2	349.3	344.4
110	328.9	331.3	337.6	338.5	332.0
115	315.9	316.2	324.0	325.1	318.8
120	301.7	299.4	310.3	311.3	304.0
125	287.4	282.9	295.0	296.5	290.2
130	273.4	267.0	278.1	281.5	274.9
135	259.0	249.8	261.2	265.0	257.7
140	241.4	231.2	243.3	245.1	240.0
145	222.9	212.8	224.0	223.6	219.8
150	202.1	193.4	201.9	200.4	198.8
155	179.5	168.3	178.4	176.3	174.4
160	155.9	144.7	152.4	152.4	150.4
165	130.0	122.2	122.1	125.3	123.8
170	100.7	94.9	90.7	90.8	90.6
175	63.1	63.2	60.9	58.8	57.7
180	33.8	29.9	33.2	34.3	30.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28530XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLPD28530XX		
0-30	277.5	6.3
0-40	547.3	12.4
0-60	1305.7	29.5
0-90	2599.1	58.8
60-90	1293.4	29.3
0-180	4423.3	100.0

Beam Angle

Total Beam Angle (°)

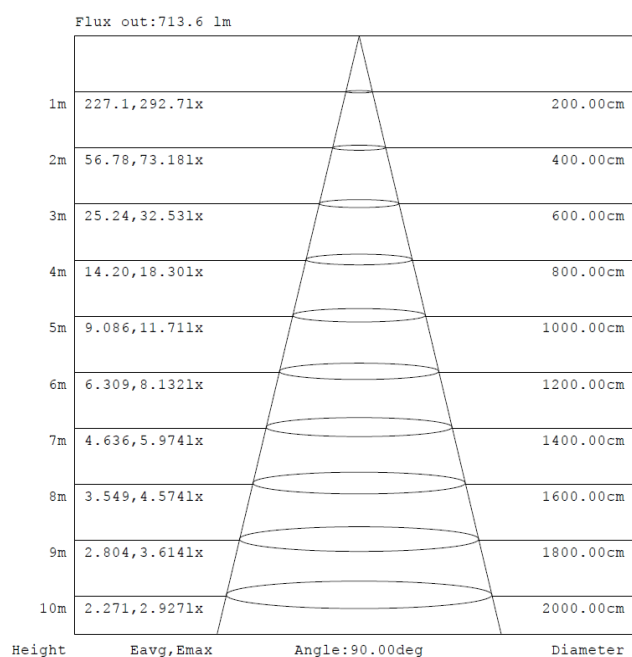
348.6

Illumination Plots

Model No.: SLPD28530XX

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

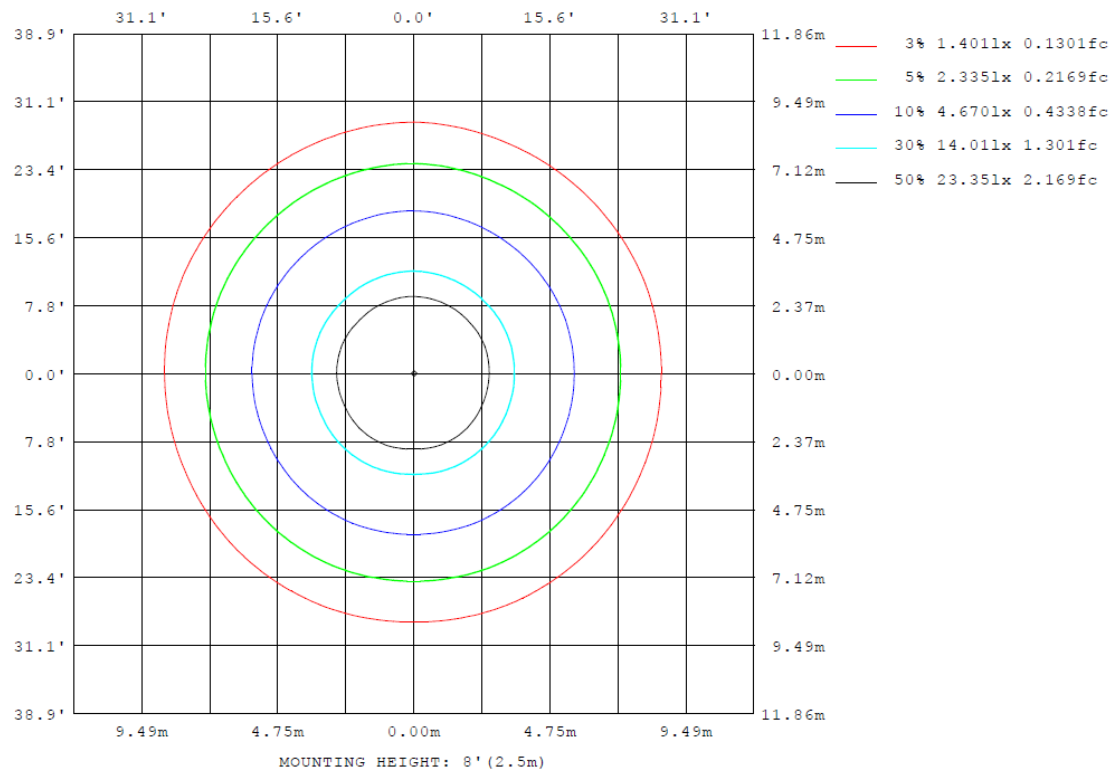
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28530XX

Model No.: SLPD28530XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28530XX

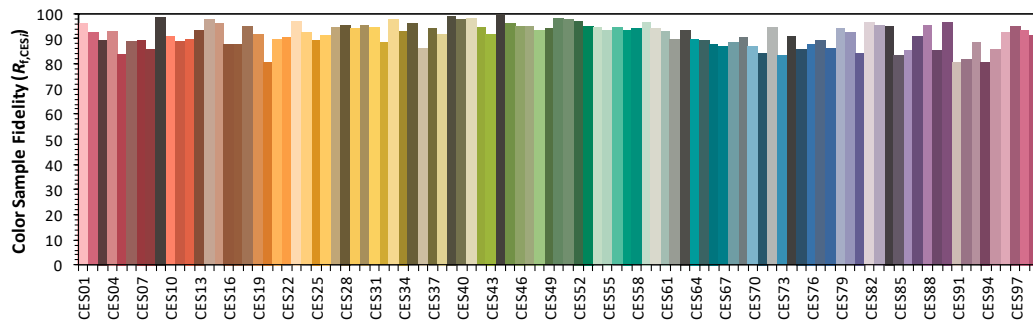
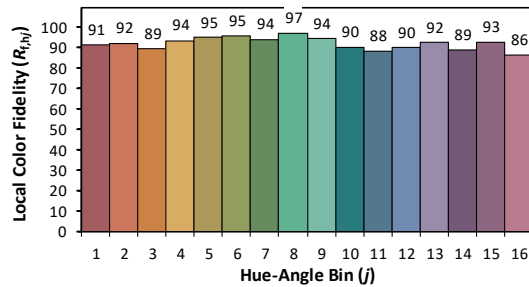
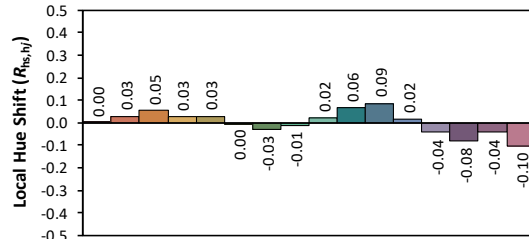
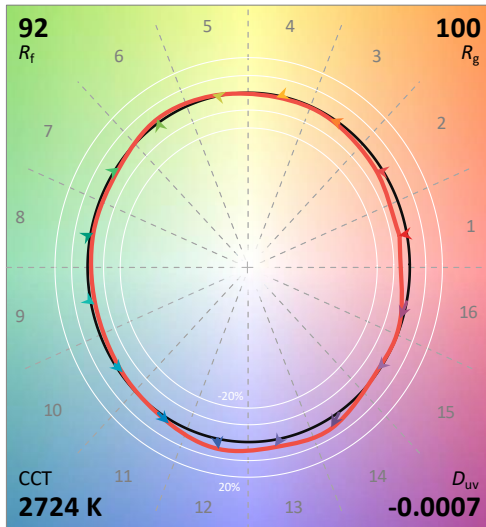
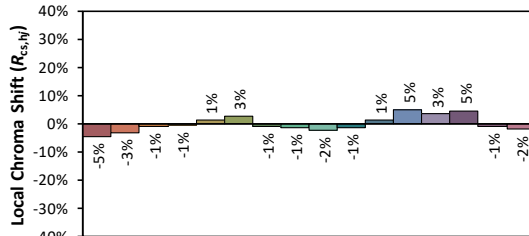
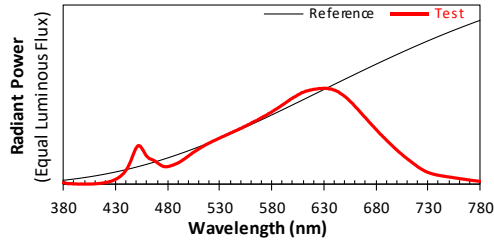
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/7/18

Model: SLPD28530xx



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

x 0.4567
 y 0.4079
 u' 0.2616
 v' 0.5258

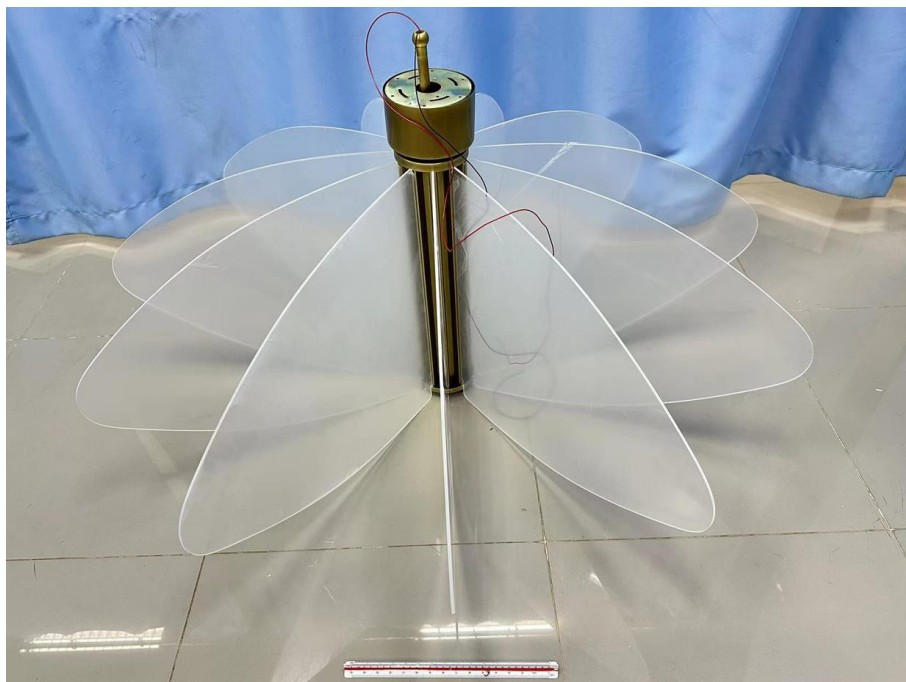
CIE 13.3-1995
(CRI)
 R_a 93
 R_g 63

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 SLPD28530XX



External view of SLPD28530XX

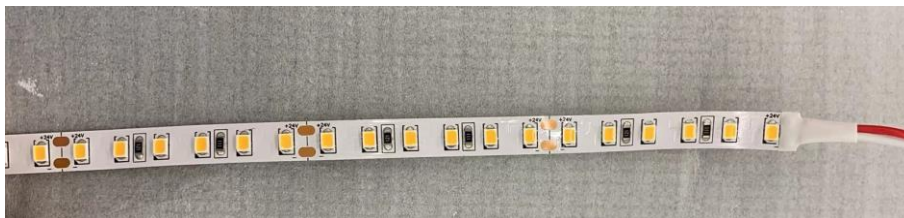
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver



View of LED board

In Charge Of Tests:

Done Ye

Done Ye
Engineer

Report Reviewed By

Shelley Ying

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****