

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230410218GZU-006

ISSUE DATE

23-May-2023

REVISION DATE

None

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13

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Report No.: 230410218GZU-006

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLPD13427X

(Remark: "X" 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: QGZ230406068.
<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 SLPD13427X. The sample was received in undamaged condition. The sample designation was S230410218-006.
<u>DATES OF TESTS:</u>	06-May-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:	SLPD13427X
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLPD13427X

Criteria	Result
Total Lumen Output	301.6 lm
Total Power	19.8 W
Luminaire Efficacy	15.2 lm/W
S/MH(C0/180)	0.60
S/MH(C90/270)	0.62
Correlated Color Temperature (CCT)	2522 K
Color Rendering Index (CRI)	92
R9	56
Chromaticity Coordinate (x)	0.4707
Chromaticity Coordinate (y)	0.4062
Chromaticity Coordinate (u')	0.2715
Chromaticity Coordinate (v')	0.5273

Remark:

Measurement uncertainty for applicable tests has been established.

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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	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: 110V/100W

Current: 0.8851A

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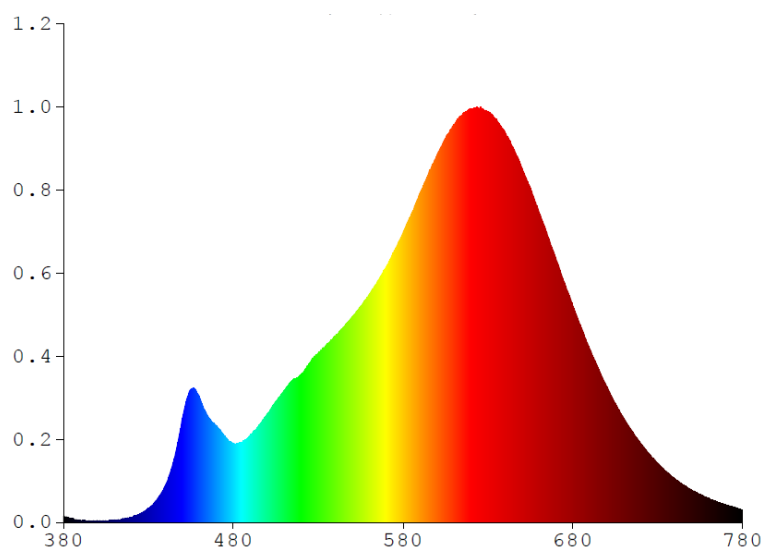
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLPD13427X

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0450	480	0.6268	580	2.3099	680	1.7188	780	0.0946
385	0.0297	485	0.6394	585	2.4641	685	1.5451		
390	0.0153	490	0.6972	590	2.6270	690	1.3794		
395	0.0130	495	0.7717	595	2.7834	695	1.2198		
400	0.0122	500	0.8644	600	2.9314	700	1.0788		
405	0.0139	505	0.9630	605	3.0587	705	0.9443		
410	0.0185	510	1.0536	610	3.1699	710	0.8237		
415	0.0293	515	1.1316	615	3.2508	715	0.7236		
420	0.0435	520	1.1790	620	3.2945	720	0.6237		
425	0.0681	525	1.2750	625	3.3012	725	0.5420		
430	0.1133	530	1.3483	630	3.2733	730	0.4685		
435	0.1805	535	1.4165	635	3.2117	735	0.4041		
440	0.2953	540	1.4857	640	3.1055	740	0.3459		
445	0.4989	545	1.5563	645	2.9773	745	0.2991		
450	0.8262	550	1.6369	650	2.8230	750	0.2558		
455	1.0609	555	1.7231	655	2.6581	755	0.2213		
460	0.9970	560	1.8157	660	2.4710	760	0.1912		
465	0.8431	565	1.9244	665	2.2861	765	0.1637		
470	0.7689	570	2.0370	670	2.0936	770	0.1403		
475	0.6853	575	2.1684	675	1.8673	775	0.1208		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD13427X

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

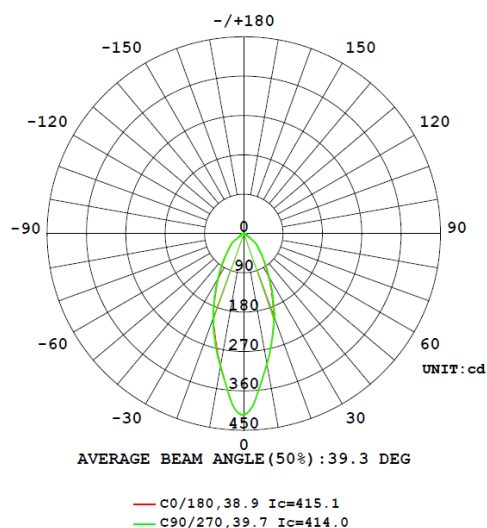
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
SLPD13427X								
S2304102 18-006	--	2522	92	56	0.4707	0.4062	0.2715	0.5273

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)
SLPD13427X							
S2304102 18-006	--	120.2	166.4	19.8	0.992	301.6	15.2

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD13427X

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	415.1	415.0	414.6	414.4	414.0
5	365.5	365.9	366.7	365.7	366.3
10	304.2	303.8	304.2	304.0	303.2
15	249.8	250.6	251.3	251.9	250.2
20	200.7	201.0	202.8	204.4	203.6
25	152.1	152.6	155.3	156.7	156.9
30	113.1	113.7	116.2	116.9	117.5
35	84.0	85.1	86.8	86.9	87.1
40	62.1	62.7	63.2	63.5	63.4
45	46.8	47.0	46.9	47.4	47.6
50	36.8	36.7	36.6	37.2	37.7
55	9.7	9.2	8.9	9.9	11.2
60	8.6	8.4	8.1	8.6	9.4
65	7.8	7.4	7.1	7.5	8.4
70	6.7	6.4	6.0	6.3	7.2
75	5.2	5.0	4.7	5.0	5.6
80	3.7	3.6	3.4	3.6	4.0
85	2.6	2.6	2.4	2.5	2.8
90	1.8	1.7	1.6	1.6	1.8
95	1.1	1.0	0.9	1.0	1.1
100	0.6	0.6	0.5	0.5	0.6
105	0.3	0.3	0.3	0.3	0.3
110	0.2	0.2	0.1	0.2	0.2
115	0.1	0.1	0.1	0.1	0.1
120	0.1	0.1	0.1	0.1	0.1
125	0.1	0.1	0.1	0.1	0.1
130	0.1	0.1	0.1	0.1	0.1
135	0.1	0.1	0.1	0.1	0.1
140	0.2	0.2	0.2	0.2	0.2
145	0.2	0.2	0.2	0.2	0.2
150	0.3	0.3	0.3	0.3	0.3
155	0.3	0.3	0.3	0.3	0.3
160	0.3	0.3	0.3	0.3	0.3
165	0.3	0.3	0.3	0.3	0.3
170	0.3	0.3	0.3	0.3	0.3
175	0.3	0.3	0.3	0.3	0.2
180	0.2	0.2	0.2	0.2	0.2

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD13427X

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLPD13427X		
0-30	175.4	58.2
0-40	230.0	76.3
0-60	283.7	94.1
0-90	299.5	99.3
60-90	15.8	5.2
0-180	301.6	100.0

Beam Angle

Total Beam Angle (°)

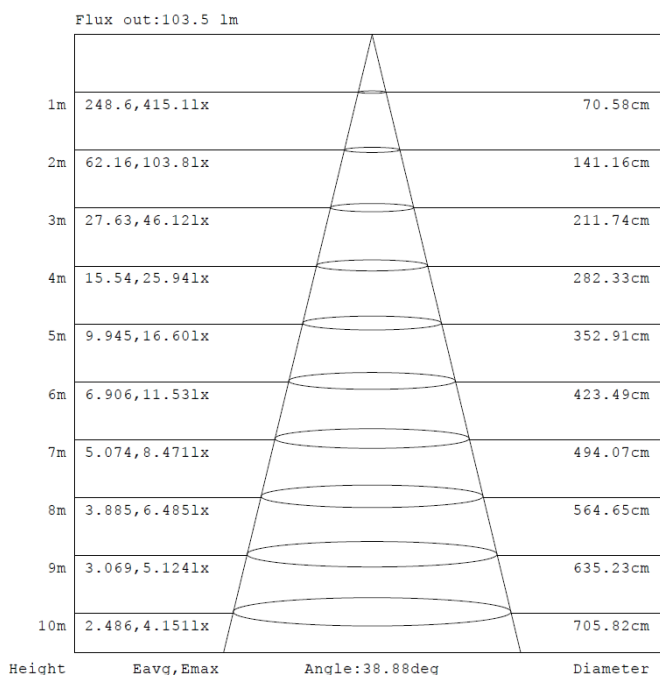
39.3

Illumination Plots

Model No.: SLPD13427X

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

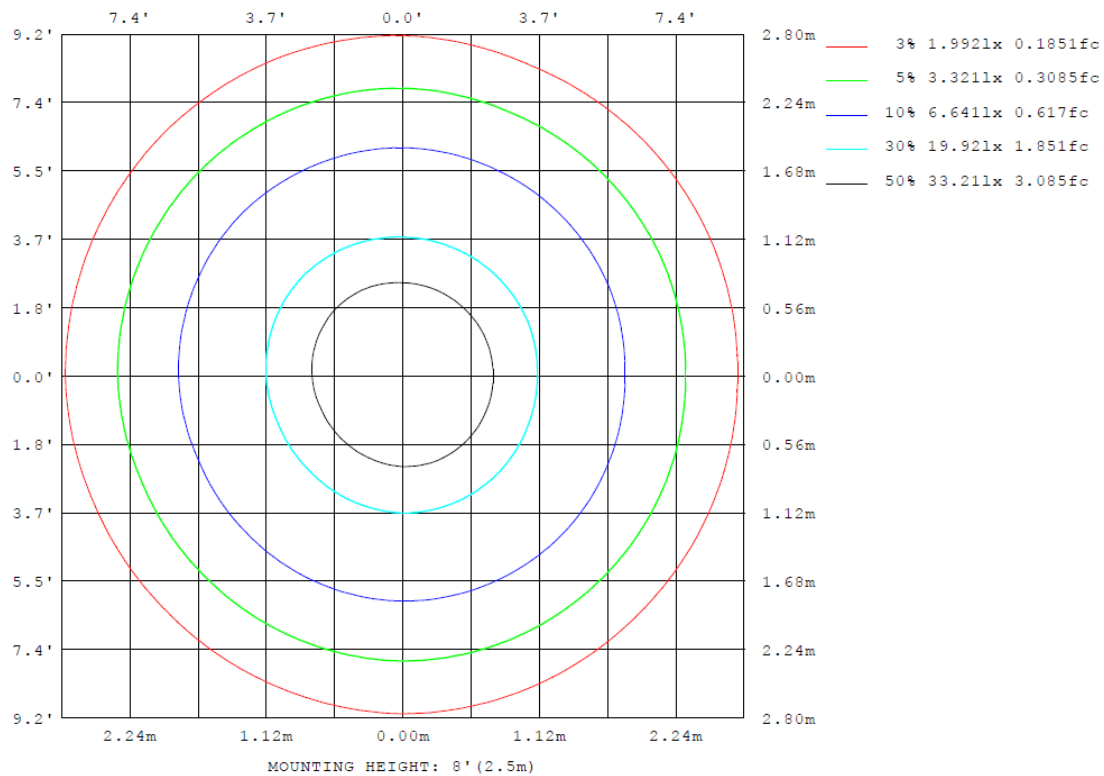
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD13427X

Model No.: SLPD13427X

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD13427X

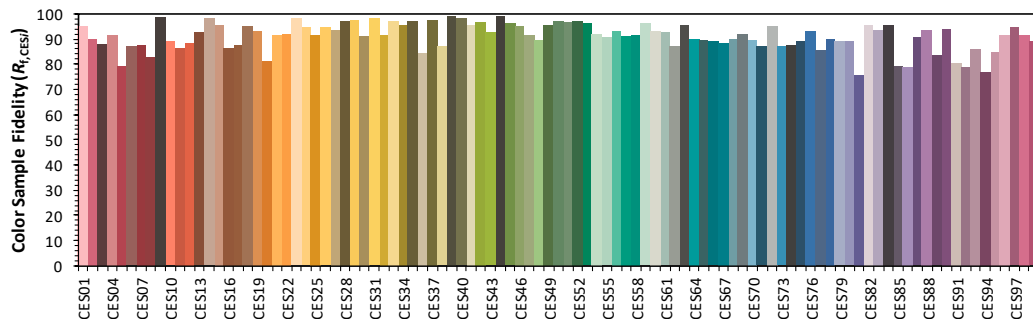
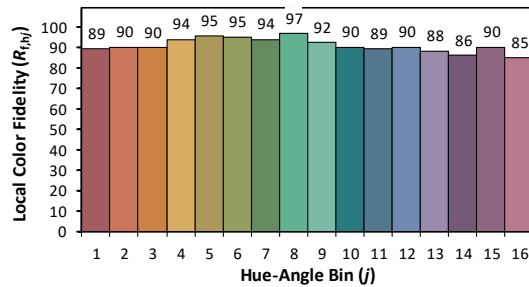
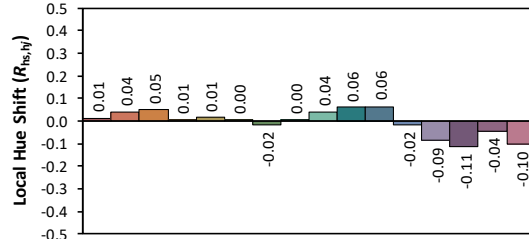
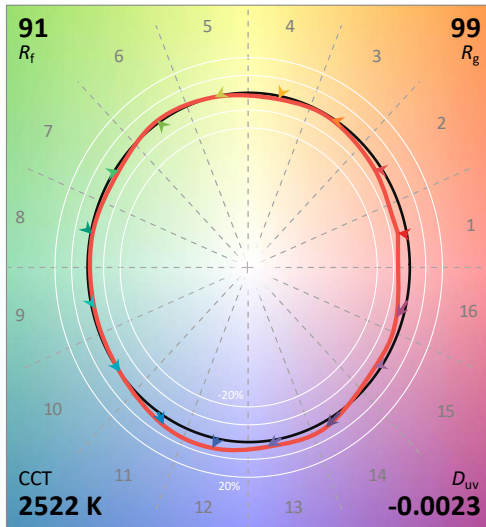
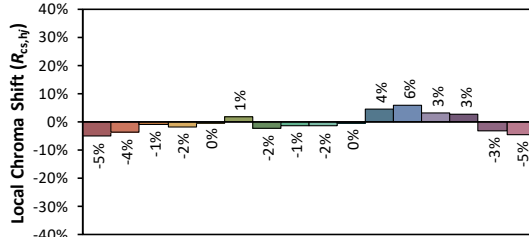
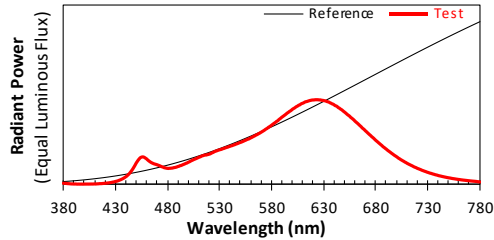
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/5/6

Model: SLPD13427X



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

x 0.4707
 y 0.4062
 u' 0.2715
 v' 0.5273

CIE 13.3-1995
(CRI)

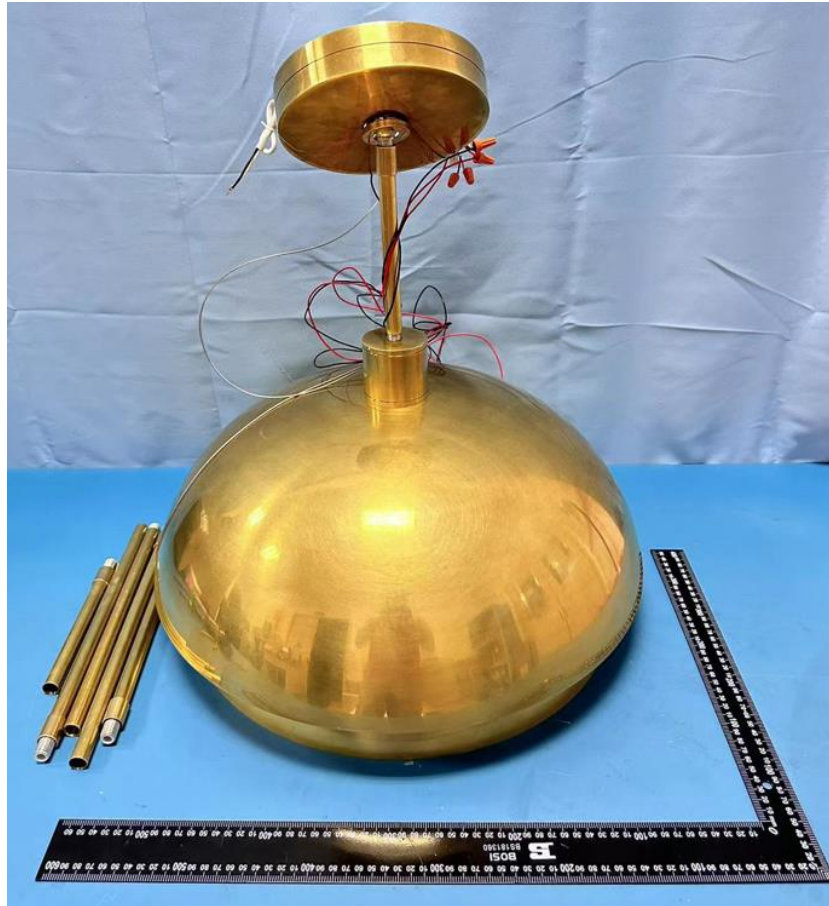
R_a 92
 R_g 56

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 SLPD13427X

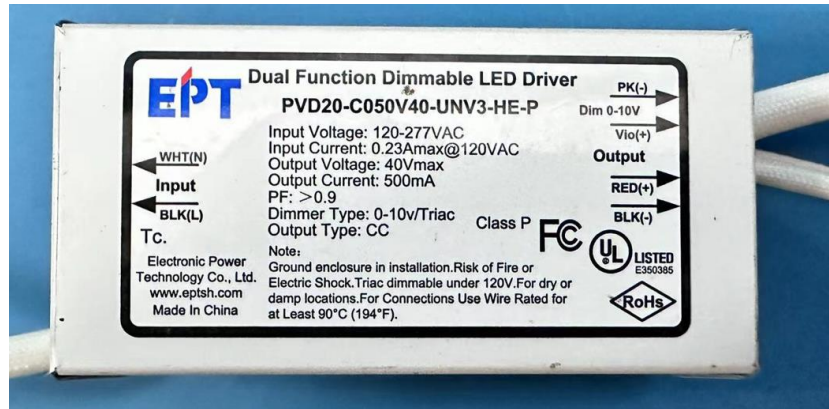


External view of SLPD13427X

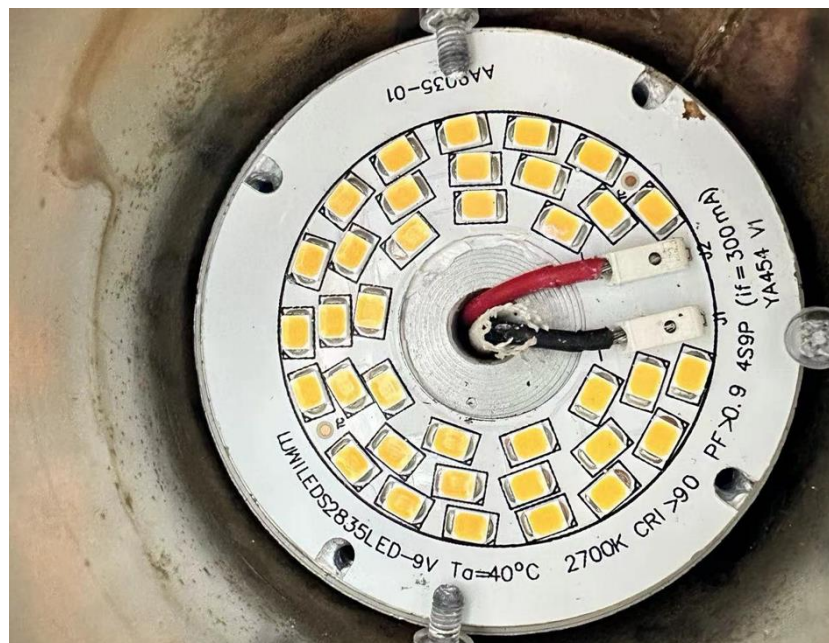
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver PVD20-C050V40-UNV3-HE-P



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 *****