

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230223104GZU-004

ISSUE DATE

21-March-2023

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79:2008_F

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Report No.: 230223104GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLPC11930X

(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: QGZ230214004.
<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 SLPC11930X. The sample was received, in undamaged condition. The sample designation was S230223104-004.
<u>DATES OF TESTS:</u>	28 February 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:	SLPC11930X
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLPC11930X

Criteria	Result
Total Lumen Output	1008.9 lm
Total Power	25.9 W
Luminaire Efficacy	39.0 lm/W
S/MH(C0/180)	1.27
S/MH(C90/270)	1.22
Correlated Color Temperature (CCT)	2804 K
Color Rendering Index (CRI)	94
R9	68
Chromaticity Coordinate (x)	0.4483
Chromaticity Coordinate (y)	0.4025
Chromaticity Coordinate (u')	0.2587
Chromaticity Coordinate (v')	0.5225

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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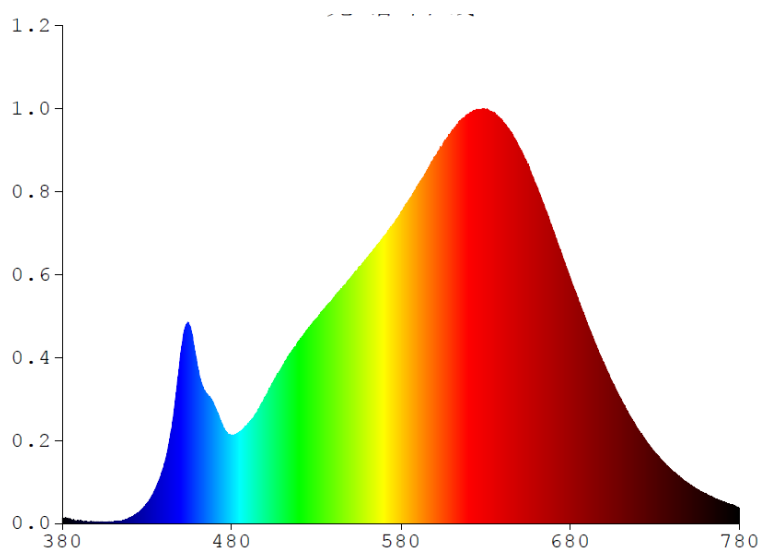
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLPC11930X

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0525	480	0.0152	580	0.0520	680	0.5053	780	1.3487
385	0.0443	485	0.0140	585	0.0577	685	0.5566		
390	0.0486	490	0.0127	590	0.0649	690	0.6159		
395	0.0436	495	0.0107	595	0.0749	695	0.6945		
400	0.0358	500	0.0117	600	0.0835	700	0.7875		
405	0.0257	505	0.0132	605	0.0957	705	0.8703		
410	0.0234	510	0.0117	610	0.1073	710	0.9788		
415	0.0250	515	0.0139	615	0.1236	715	1.1024		
420	0.0240	520	0.0130	620	0.1383	720	1.2354		
425	0.0264	525	0.0151	625	0.1540	725	1.3565		
430	0.0158	530	0.0145	630	0.1733	730	1.4799		
435	0.0208	535	0.0172	635	0.1931	735	1.5745		
440	0.0176	540	0.0172	640	0.2155	740	1.6726		
445	0.0118	545	0.0192	645	0.2430	745	1.7231		
450	0.0174	550	0.0220	650	0.2691	750	1.7506		
455	0.0144	555	0.0232	655	0.2998	755	1.7232		
460	0.0114	560	0.0293	660	0.3356	760	1.6674		
465	0.0151	565	0.0326	665	0.3697	765	1.6026		
470	0.0159	570	0.0385	670	0.4085	770	1.5131		
475	0.0138	575	0.0441	675	0.4544	775	1.4387		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC11930X

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

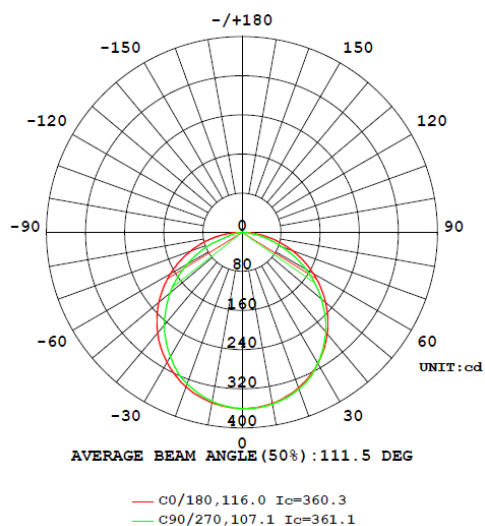
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color 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')
SLPC11930X								
S2302231 04-004	--	2804	94	68	0.4483	0.4025	0.2587	0.5225

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)
SLPC11930X							
S2302231 04-004	--	120.1	216.2	25.9	0.995	1008.9	39.0

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC11930X

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	360.3	360.3	360.3	360.3	360.3
5	359.1	358.5	359.7	360.1	360.0
10	354.8	353.6	356.1	356.7	357.0
15	347.8	346.0	349.0	350.2	350.3
20	337.9	335.7	339.0	340.9	340.8
25	325.5	322.3	325.8	328.1	328.5
30	309.9	306.1	310.5	310.5	309.4
35	292.0	287.5	291.8	290.3	289.6
40	271.2	265.9	268.2	266.9	265.7
45	248.4	242.4	243.3	240.9	240.1
50	223.2	216.6	216.1	212.9	211.9
55	196.5	188.1	186.5	183.5	182.0
60	168.3	158.4	155.8	152.2	151.1
65	139.2	127.6	124.0	120.2	118.8
70	109.7	96.1	91.5	87.6	86.6
75	79.9	64.6	59.4	56.5	56.5
80	51.3	34.0	31.0	28.7	28.2
85	23.0	6.7	5.3	7.5	7.7
90	2.5	0.2	0.3	0.4	0.5
95	0.1	0.4	0.8	0.5	0.4
100	0.1	0.2	2.0	1.4	1.2
105	0.2	0.2	0.1	0.1	3.4
110	0.2	0.2	0.2	0.1	0.1
115	0.2	0.2	0.2	0.2	0.1
120	0.2	0.3	0.2	0.2	0.2
125	0.3	0.3	0.3	0.2	0.2
130	0.3	0.4	0.3	0.3	0.3
135	0.4	0.4	0.4	0.4	0.4
140	0.4	0.4	0.4	0.4	0.4
145	0.5	0.5	0.5	0.5	0.5
150	0.5	0.5	0.5	0.5	0.5
155	0.5	0.6	0.6	0.6	0.6
160	0.6	0.6	0.6	0.6	0.6
165	0.6	0.6	0.6	0.6	0.6
170	0.6	0.6	0.6	0.6	0.6
175	0.6	0.5	0.6	0.6	0.6
180	0.5	0.5	0.5	0.5	0.5

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC11930X

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLPC11930X		
0-30	280.5	27.8
0-40	459.5	45.5
0-60	808.4	80.1
0-90	1006.7	99.8
60-90	198.3	19.7
0-180	1008.9	100.0

Beam Angle

Total Beam Angle (°)

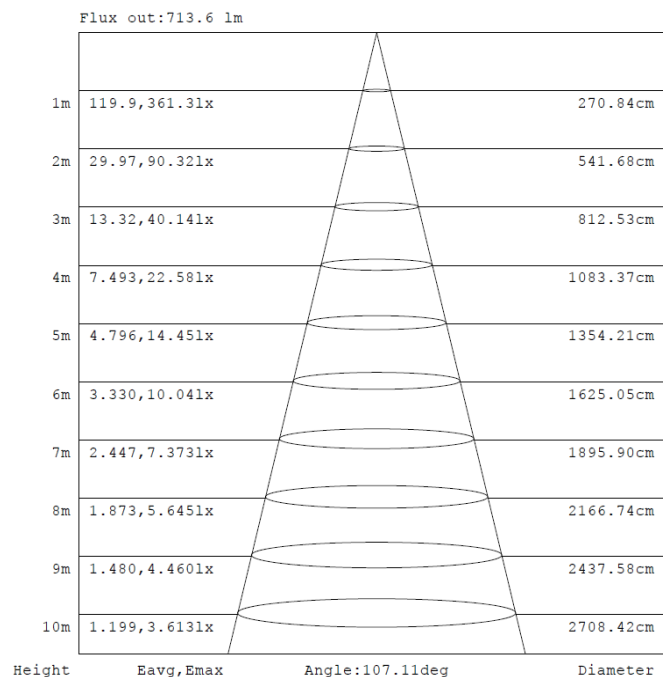
111.5

Illumination Plots

Model No.: SLPC11930X

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

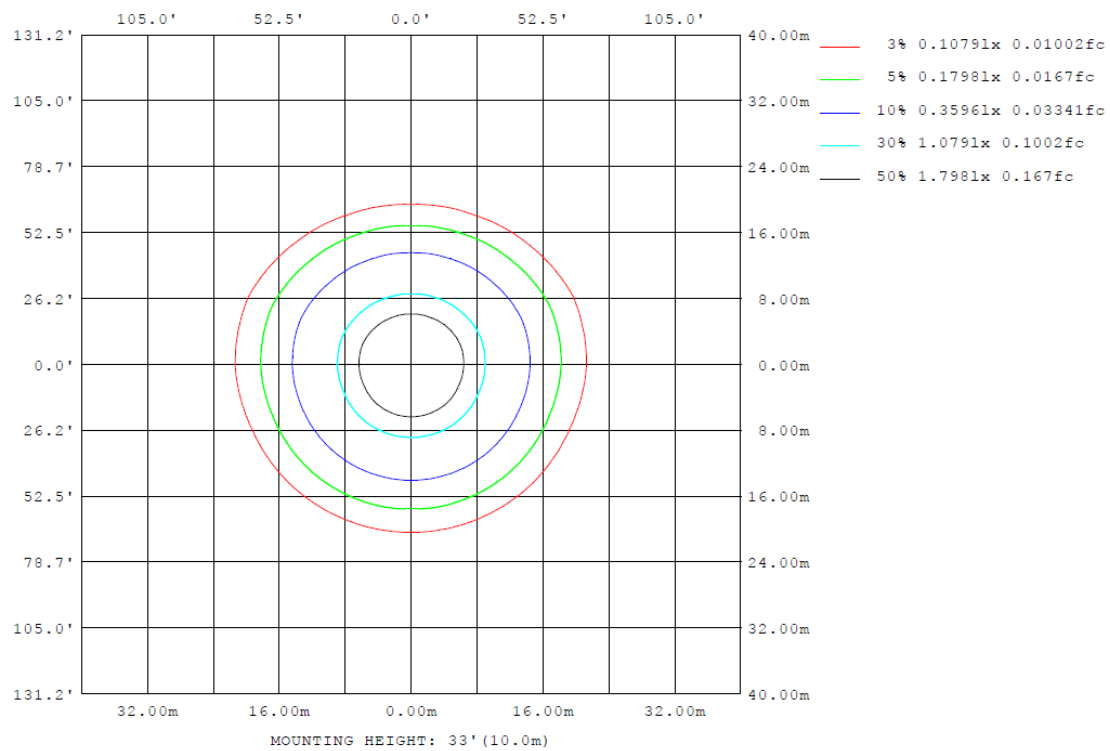
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC11930X

Model No.: SLPC11930X

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC11930X

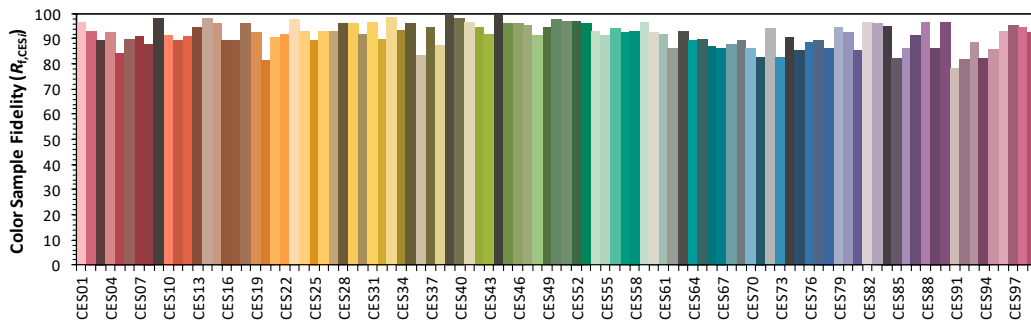
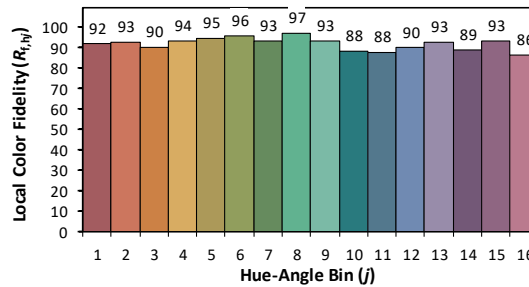
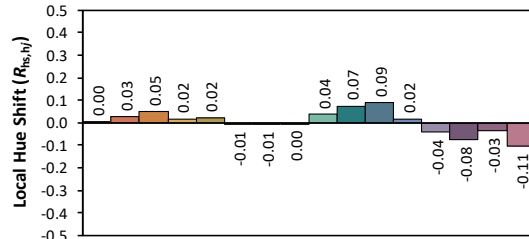
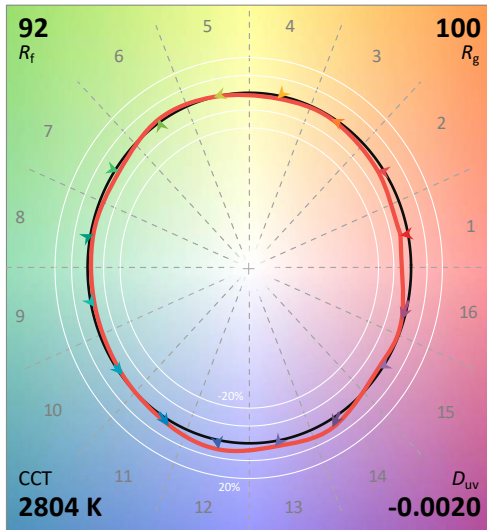
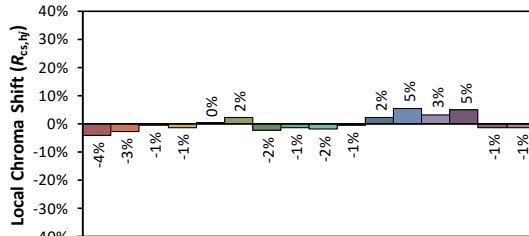
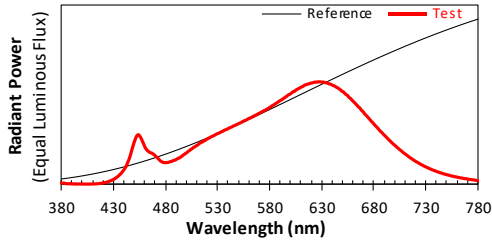
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/2/28

Model: SLPC11930X



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

x 0.4483
 y 0.4025
 u' 0.2587
 v' 0.5225

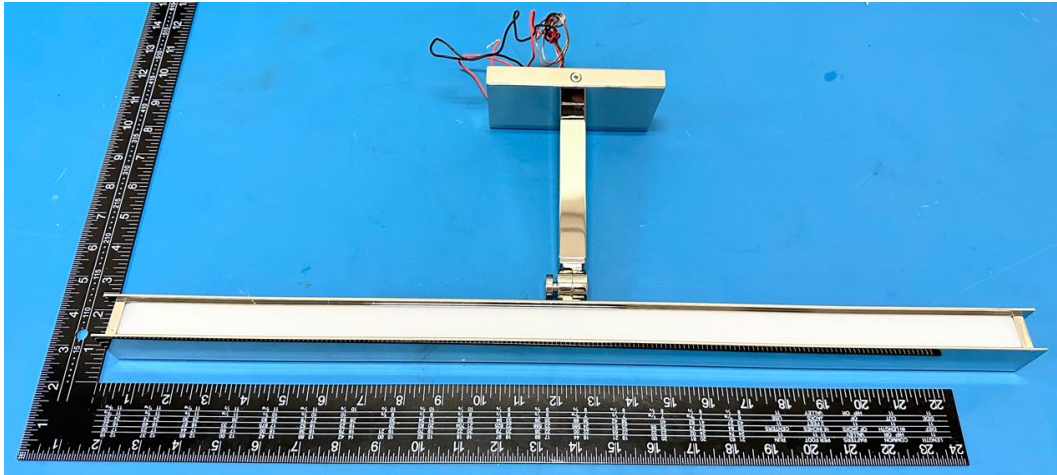
CIE 13.3-1995
(CRI)
 R_a 94
 R_g 68

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

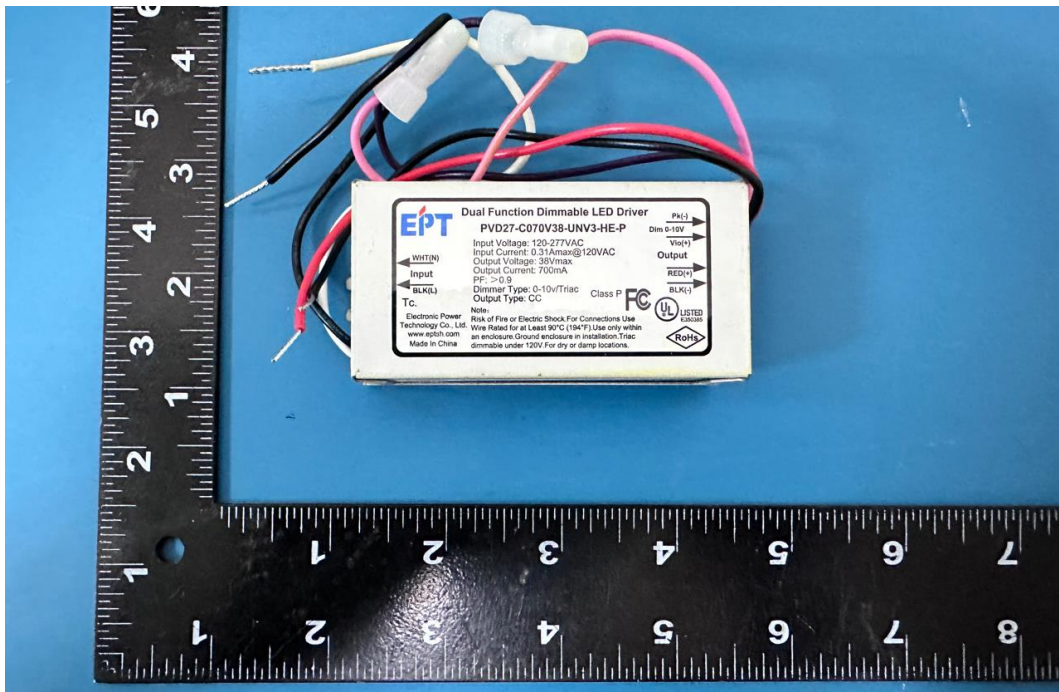
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLPC11930X

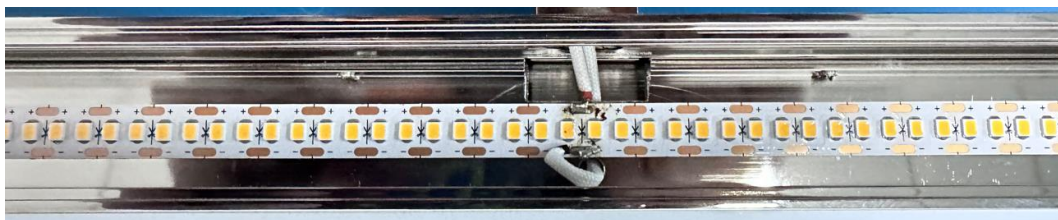


View of LED Driver PVD27-C070V38-UNV3-HE-P

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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 *****