

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230223104GZU-005

ISSUE DATE

21-March-2023

REVISION DATE

None

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Report No.: 230223104GZU-005

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLPC12030X

(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 SLPC12030X. The sample was received, in undamaged condition. The sample designation was S230223104-005.
<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:	SLPC12030X
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLPC12030X

Criteria	Result
Total Lumen Output	1046.4 lm
Total Power	25.8 W
Luminaire Efficacy	40.5 lm/W
S/MH(C0/180)	1.29
S/MH(C90/270)	1.15
Correlated Color Temperature (CCT)	2804 K
Color Rendering Index (CRI)	94
R9	69
Chromaticity Coordinate (x)	0.4485
Chromaticity Coordinate (y)	0.4028
Chromaticity Coordinate (u')	0.2586
Chromaticity Coordinate (v')	0.5226

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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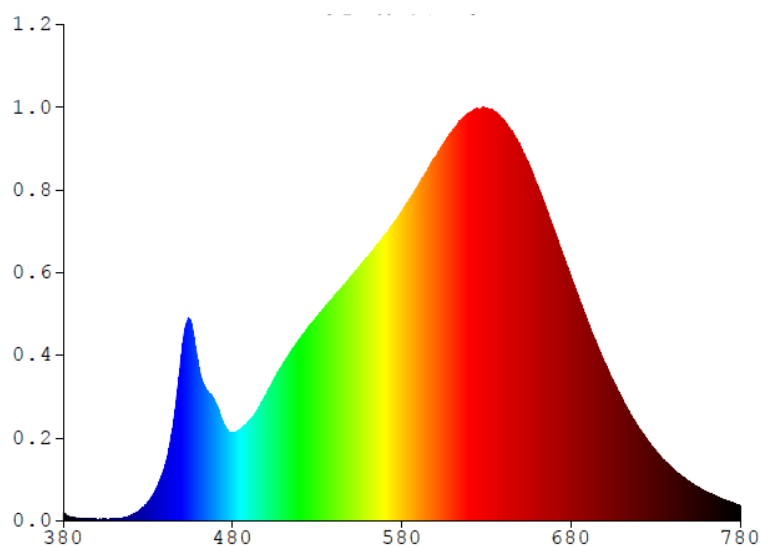
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLPC12030X

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0756	480	0.0117	580	0.0469	680	0.4921	780	1.3837
385	0.0636	485	0.0122	585	0.0571	685	0.5478		
390	0.0452	490	0.0116	590	0.0636	690	0.6090		
395	0.0422	495	0.0139	595	0.0712	695	0.6881		
400	0.0369	500	0.0135	600	0.0804	700	0.7825		
405	0.0315	505	0.0146	605	0.0942	705	0.8703		
410	0.0277	510	0.0128	610	0.1022	710	0.9875		
415	0.0292	515	0.0125	615	0.1180	715	1.1174		
420	0.0241	520	0.0162	620	0.1320	720	1.2509		
425	0.0230	525	0.0144	625	0.1456	725	1.3818		
430	0.0194	530	0.0147	630	0.1670	730	1.5143		
435	0.0205	535	0.0165	635	0.1860	735	1.6319		
440	0.0199	540	0.0191	640	0.2090	740	1.7333		
445	0.0149	545	0.0185	645	0.2314	745	1.7840		
450	0.0165	550	0.0217	650	0.2574	750	1.8250		
455	0.0148	555	0.0237	655	0.2873	755	1.8039		
460	0.0146	560	0.0268	660	0.3193	760	1.7399		
465	0.0141	565	0.0328	665	0.3603	765	1.6642		
470	0.0154	570	0.0344	670	0.3993	770	1.5665		
475	0.0162	575	0.0417	675	0.4420	775	1.4774		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC12030X

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

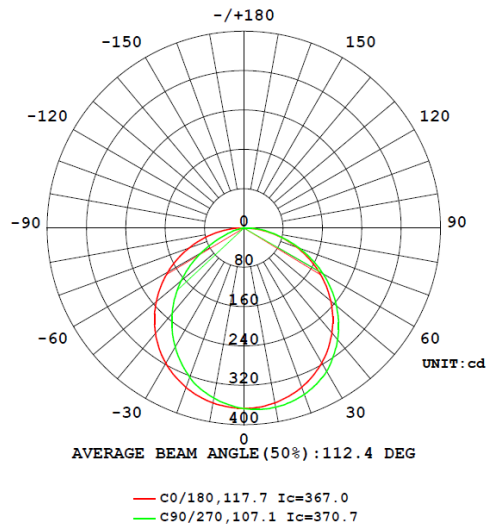
Photometric Measurements at 25°C – Integrating Sphere Method

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')
SLPC12030X								
S2302231 04-005	--	2804	94	69	0.4485	0.4028	0.2586	0.5226

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	Lumen Efficacy
						Flux (Lumens)	(Lumens Per Watt)
SLPC12030X							
S2302231 04-005	--	120.2	215.9	25.8	0.996	1046.4	40.5

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC12030X

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	367.0	367.0	367.0	367.0	367.0
5	365.5	367.0	368.8	369.5	370.2
10	361.0	364.5	367.1	368.2	370.1
15	354.0	359.1	362.2	363.8	366.6
20	344.3	350.4	354.4	356.4	359.6
25	331.8	338.7	343.5	345.8	349.9
30	316.6	324.5	329.9	332.4	337.1
35	299.2	307.9	313.5	313.3	317.6
40	278.5	288.2	293.6	292.0	296.9
45	255.6	266.4	269.3	267.3	272.5
50	230.6	242.0	243.4	240.5	245.8
55	203.9	215.6	214.6	211.2	216.5
60	175.3	185.5	183.9	180.2	185.7
65	145.4	154.9	152.0	147.7	153.2
70	114.8	122.4	118.6	114.1	119.9
75	83.8	89.4	84.7	80.8	86.8
80	53.2	55.8	52.6	51.5	56.9
85	23.9	25.0	25.6	24.1	31.1
90	2.5	3.2	4.2	5.0	7.7
95	0.1	0.1	0.1	0.1	0.4
100	0.2	0.1	0.1	0.1	0.1
105	0.2	0.2	0.1	0.1	0.1
110	0.2	0.2	0.1	0.1	0.1
115	0.2	0.2	0.2	0.1	0.1
120	0.2	0.2	0.2	0.1	0.1
125	0.3	0.3	0.2	0.2	0.2
130	0.3	0.3	0.3	0.3	0.2
135	0.4	0.4	0.3	0.3	0.3
140	0.5	0.4	0.4	0.4	0.4
145	0.5	0.5	0.5	0.5	0.4
150	0.5	0.5	0.5	0.5	0.5
155	0.6	0.6	0.6	0.6	0.5
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	0.6	0.6	0.6	0.6
180	0.6	0.6	0.6	0.6	0.6

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC12030X

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLPC12030X		
0-30	286.4	27.4
0-40	469.9	44.9
0-60	829.8	79.3
0-90	1044.4	99.8
60-90	214.6	20.5
0-180	1046.4	100.0

Beam Angle

Total Beam Angle (°)

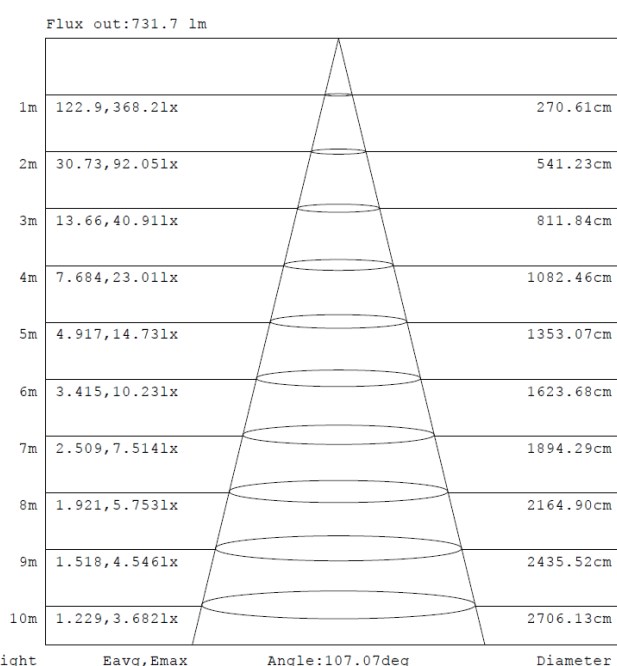
112.4

Illumination Plots

Model No.: SLPC12030X

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

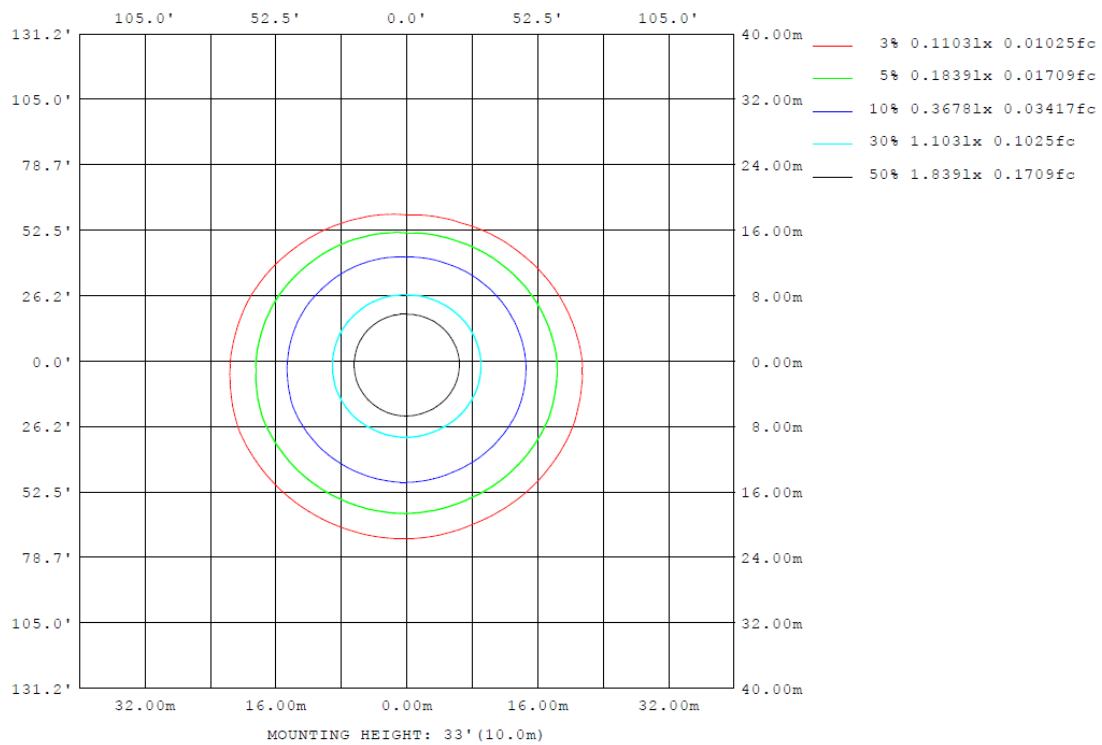
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC12030X

Model No.: SLPC12030X

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPC12030X

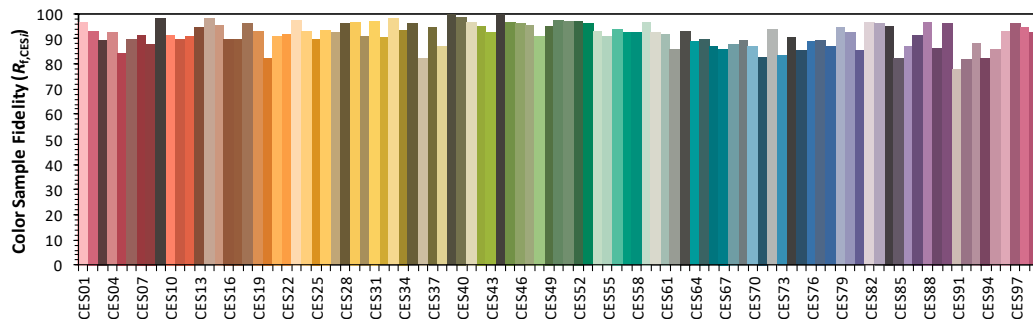
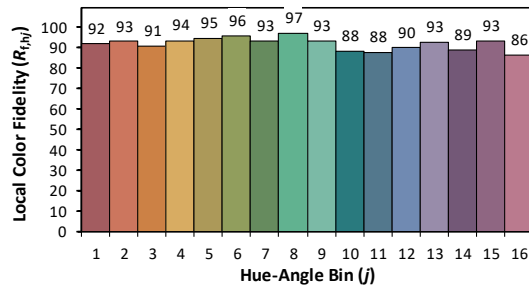
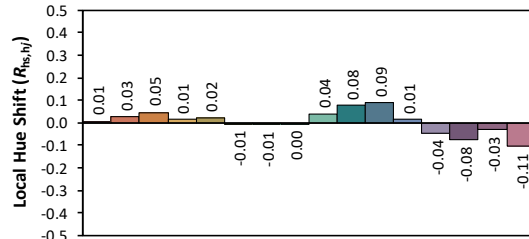
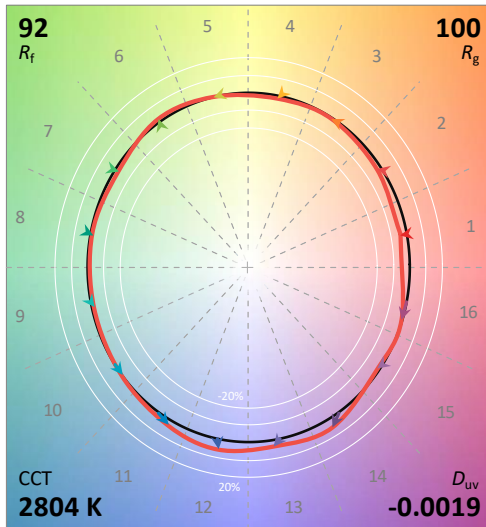
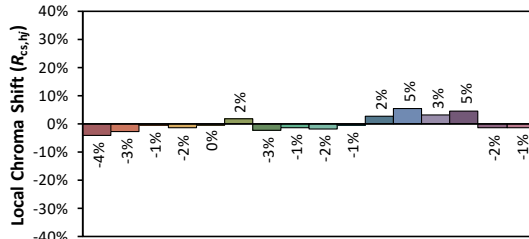
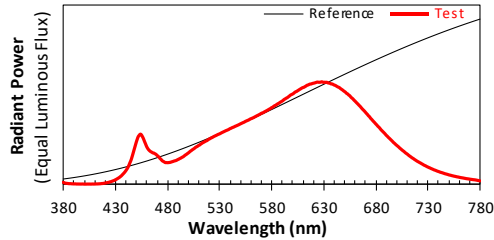
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/2/28

Model: SLPC12030X



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

x 0.4485
 y 0.4028
 u' 0.2586
 v' 0.5226

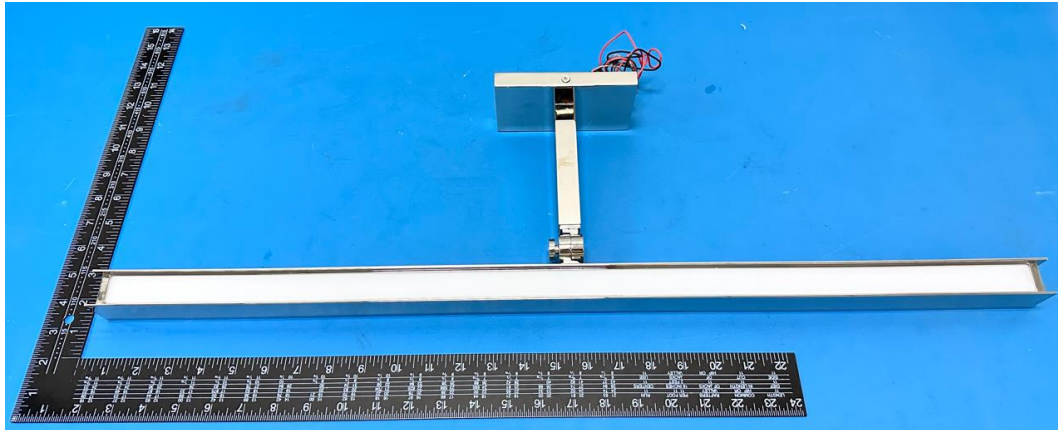
CIE 13.3-1995
(CRI)
 R_a 94
 R_g 69

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

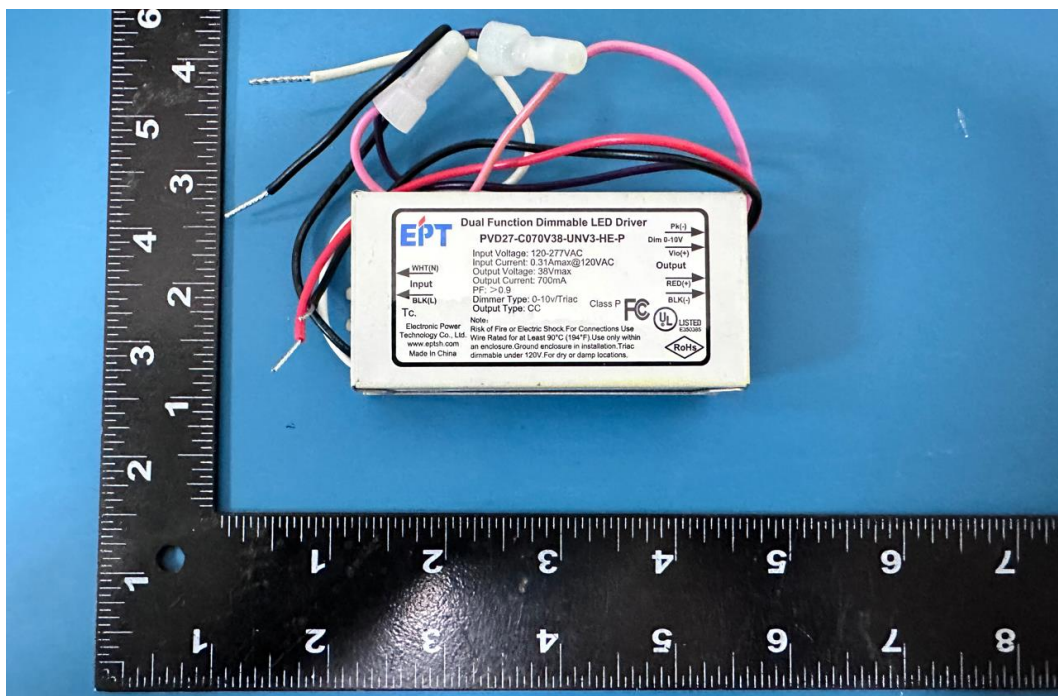
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLPC12030X

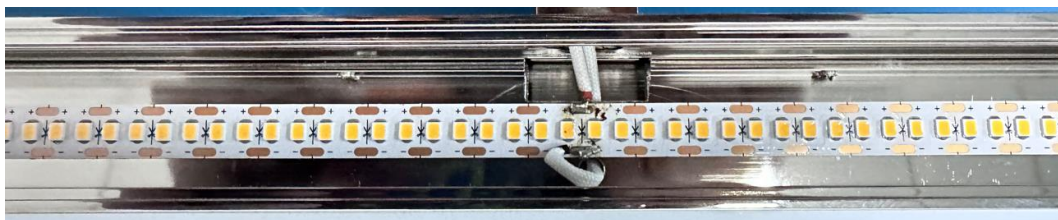


View of LED Driver PVD27-C070V38-UNV3-HE-P

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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 *****