

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230306086GZU-001

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REVISION DATE

None

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Report No.: 230306086GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLPD12727XX

(Remark: "XX" 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: QGZ230306038.
<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 SLPD12727XX. The sample was received, in undamaged condition. The sample designation was S230306086-003.
<u>DATES OF TESTS:</u>	23 March 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:	SLPD12727XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLPD12727XX

Criteria	Result
Total Lumen Output	814.4 lm
Total Power	19.1 W
Luminaire Efficacy	42.6 lm/W
S/MH(C0/180)	0.76
S/MH(C90/270)	0.88
Correlated Color Temperature (CCT)	2504 K
Color Rendering Index (CRI)	91
R9	63
Chromaticity Coordinate (x)	0.4767
Chromaticity Coordinate (y)	0.4137
Chromaticity Coordinate (u')	0.2720
Chromaticity Coordinate (v')	0.5311

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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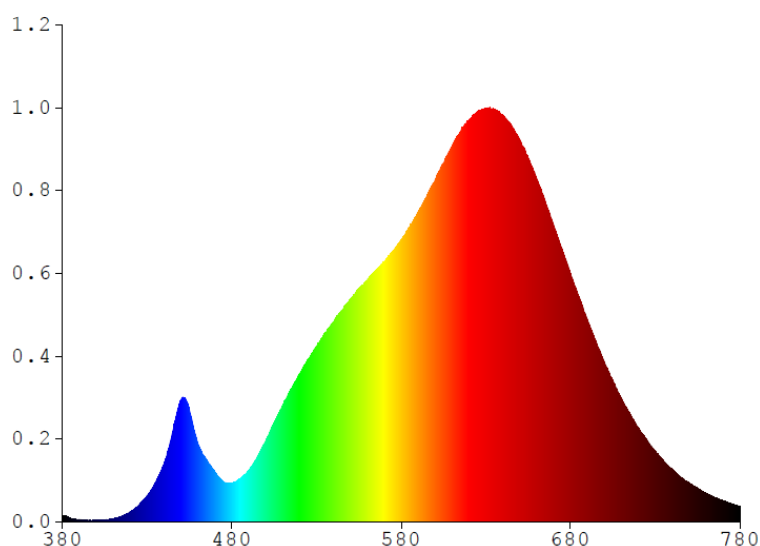
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLPD12727XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1420	480	0.8811	580	6.3924	680	5.6270	780	0.3494
385	0.0617	485	0.9785	585	6.6824	685	5.0968		
390	0.0413	490	1.1715	590	7.0225	690	4.5896		
395	0.0285	495	1.4749	595	7.3765	695	4.0848		
400	0.0319	500	1.8349	600	7.7467	700	3.6224		
405	0.0428	505	2.2499	605	8.1409	705	3.2021		
410	0.0681	510	2.6392	610	8.5101	710	2.8040		
415	0.1289	515	3.0100	615	8.8423	715	2.4544		
420	0.2334	520	3.3663	620	9.1111	720	2.1335		
425	0.3774	525	3.6963	625	9.3064	725	1.8564		
430	0.5990	530	3.9814	630	9.3650	730	1.6089		
435	0.8947	535	4.2783	635	9.3469	735	1.3826		
440	1.3286	540	4.5350	640	9.2285	740	1.1911		
445	2.0312	545	4.7974	645	8.9983	745	1.0207		
450	2.7697	550	5.0590	650	8.6702	750	0.8821		
455	2.5092	555	5.2835	655	8.2515	755	0.7624		
460	1.7709	560	5.4788	660	7.7852	760	0.6552		
465	1.4082	565	5.6995	665	7.2805	765	0.5593		
470	1.1290	570	5.9084	670	6.7223	770	0.4821		
475	0.9064	575	6.1388	675	6.0706	775	0.4136		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD12727XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

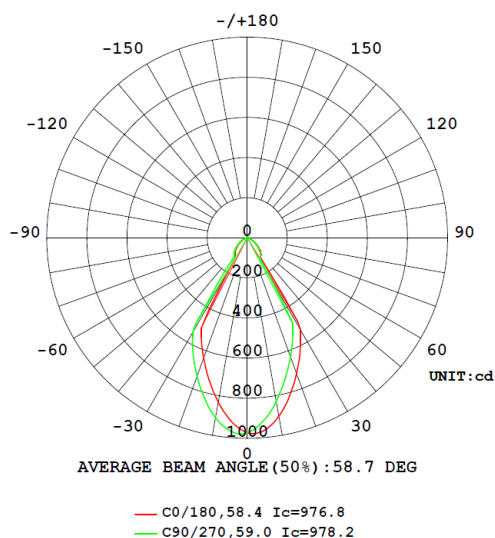
Photometric Measurements at 25°C – Integrating Sphere Method

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')
SLPD12727XX								
S2303060 86-003	--	2504	91	63	0.4767	0.4137	0.2720	0.5311

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)
SLPD12727XX							
S2303060 86-003	--	120.2	160.6	19.1	0.991	814.4	42.6

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD12727XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	971.4	971.4	971.4	971.4	971.4
5	964.9	953.1	928.0	923.9	917.6
10	904.7	886.0	847.9	840.1	830.4
15	816.8	794.7	749.8	741.3	728.8
20	720.5	697.2	652.4	643.5	631.5
25	624.8	601.8	558.3	549.8	538.3
30	532.2	510.7	296.1	283.3	225.9
35	116.9	116.7	114.2	114.5	113.9
40	106.9	106.1	102.4	102.7	101.8
45	92.9	91.6	86.0	86.0	84.7
50	75.3	73.8	67.6	67.5	65.8
55	57.3	55.8	50.1	49.9	48.3
60	41.1	39.6	34.5	34.2	32.8
65	27.2	25.9	21.6	21.3	20.1
70	15.8	14.8	11.3	11.0	10.0
75	6.8	6.0	3.2	2.9	2.2
80	0.1	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.1	0.1
120	0.1	0.1	0.1	0.1	0.1
125	0.1	0.1	0.2	0.2	0.2
130	0.2	0.2	0.3	0.3	0.3
135	0.3	0.3	0.4	0.4	0.4
140	0.5	0.5	0.5	0.5	0.6
145	0.6	0.6	0.7	0.7	0.7
150	0.7	0.7	0.8	0.8	0.8
155	0.8	0.8	0.9	0.9	0.9
160	0.9	0.9	0.9	0.9	0.9
165	0.9	0.9	0.9	0.9	0.9
170	0.9	0.9	0.9	0.9	0.9
175	0.9	0.8	0.8	0.8	0.8
180	0.8	0.7	0.6	0.6	0.6

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD12727XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLPD12727XX		
0-30	564.2	69.3
0-40	670.8	82.4
0-60	784.3	96.3
0-90	813.2	99.9
60-90	28.9	3.6
0-180	814.4	100.0

Beam Angle

Total Beam Angle (°)

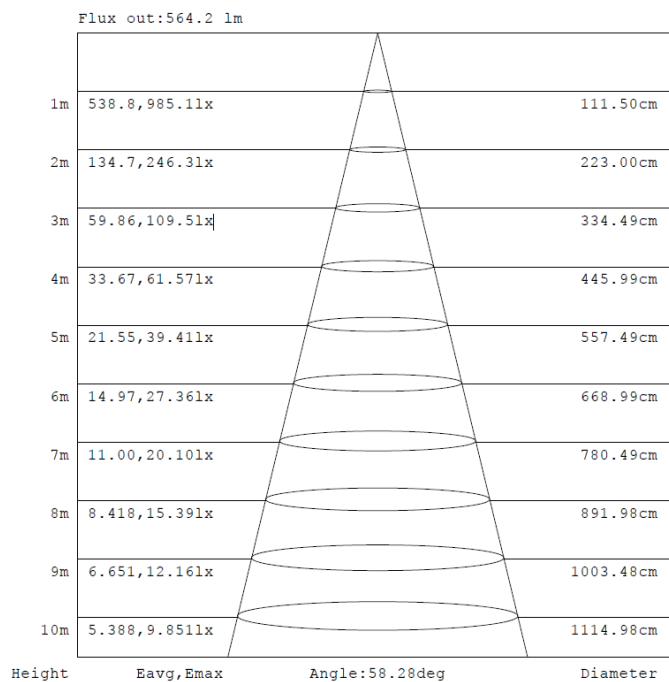
58.7

Illumination Plots

Model No.: SLPD12727XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

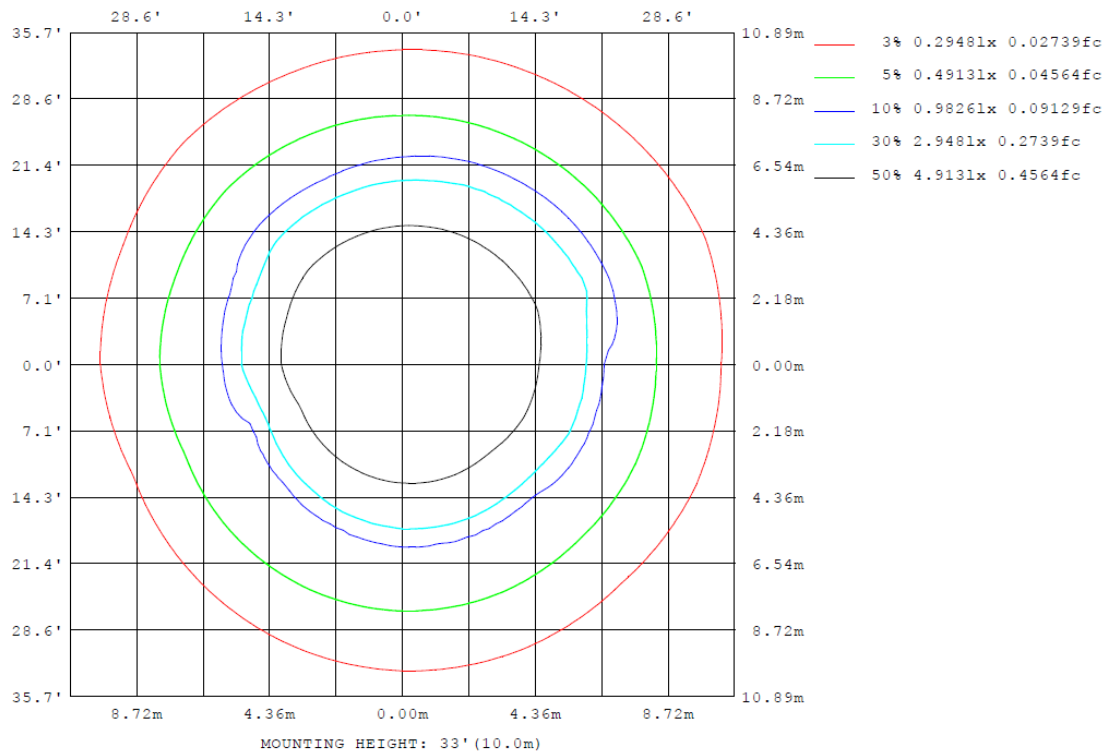
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD12727XX

Model No.: SLPD12727XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD12727XX

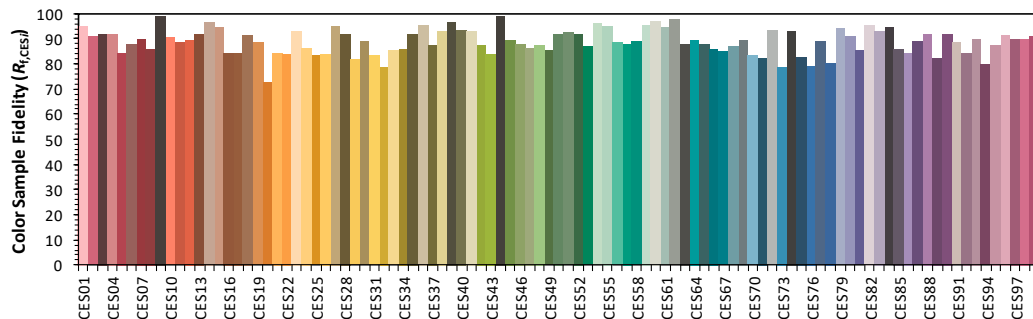
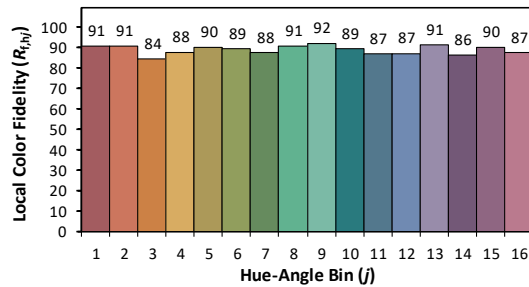
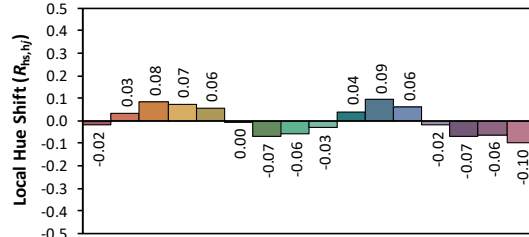
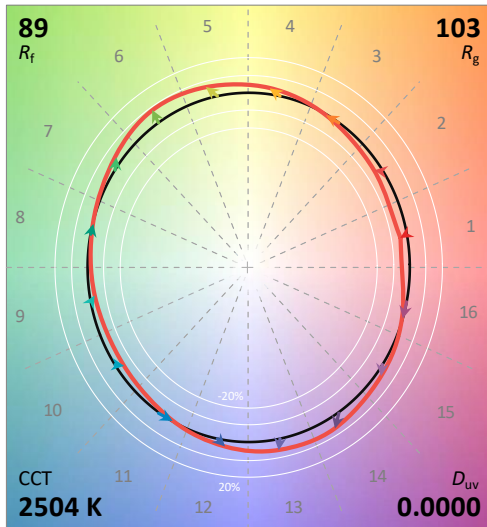
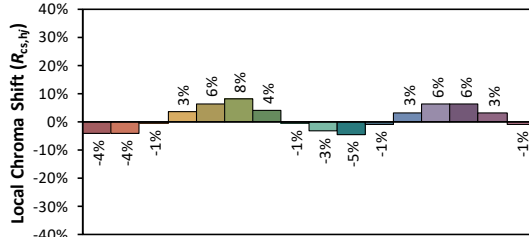
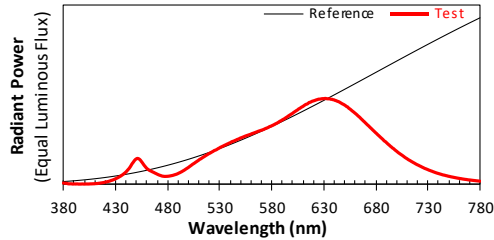
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/3/23

Model: SLPD12727XX



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

x 0.4767
 y 0.4137
 u' 0.2720
 v' 0.5311

CIE 13.3-1995
(CRI)

R_a 91

R_g 63

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

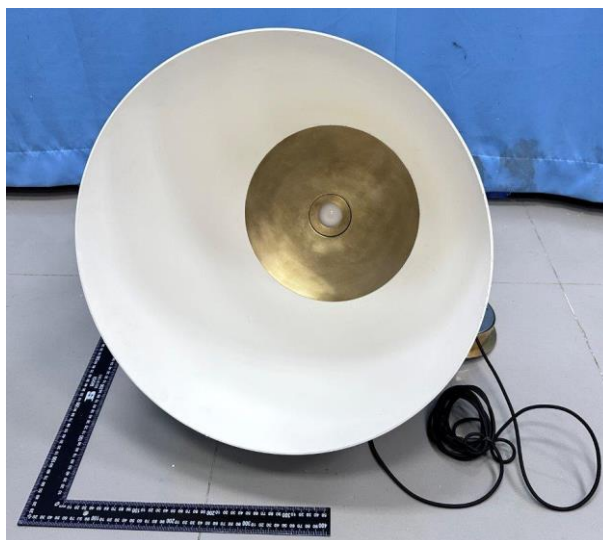
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLPD12727XX



External view of SLPD12727XX

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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 *****