

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240124027GZU-009

ISSUE DATE

29 August 2024

REVISION DATE

Modification 1: 01 November 2024

NUMBER OF PAGES

12

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 240124027GZU-009
Modification 1: 01 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLOWS30230XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ240119029.
<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-79-19	Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI C78.377-2017 (R2022)	Specifications of the Chromaticity of Solid State Lighting Products
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model SLOWS30230XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240124027-009.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Guangzhou Xiongyi Precision Metalworking Co., Ltd Hantang Industrial Zone, Langbian Village, Shiji Town, Panyu District, Guangzhou City, Guangdong Province, China 511450
<u>DATES OF TESTS:</u>	04 March 2024
<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 District, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	SLOWS30230XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLOWS30230XX

Criteria	Result
Total Lumen Output	1213.8 lm
Total Power	38.1 W
Luminaire Efficacy	31.9 lm/W
S/MH(C0/180)	1.40
S/MH(C90/270)	4.68
Correlated Color Temperature (CCT)	2276 K
Color Rendering Index (CRI)	96
R9	81
Chromaticity Coordinate (x)	0.5009
Chromaticity Coordinate (y)	0.4195
Chromaticity Coordinate (u')	0.2849
Chromaticity Coordinate (v')	0.5369

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240124027GZU-009 issued on 29 August 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page 1 and 2 of the report.

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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	S500-TH	SA047-182

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 YOKOGAWA - Digital Power Meter., model WT310E.

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: 3.948A DC

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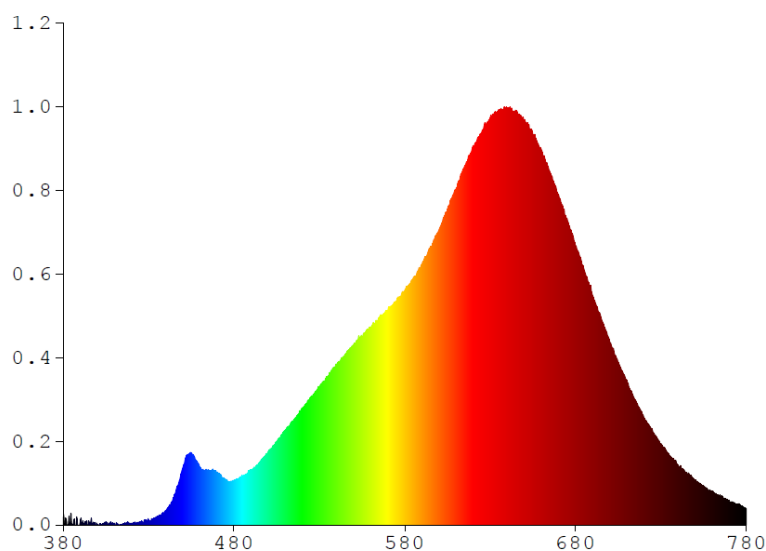
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLOWS30230XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0037	480	0.0362	580	0.1935	680	0.2301	780	0.0133
385	0.0000	485	0.0401	585	0.2039	685	0.2097		
390	0.0028	490	0.0453	590	0.2149	690	0.1887		
395	0.0031	495	0.0516	595	0.2297	695	0.1697		
400	0.0000	500	0.0602	600	0.2433	700	0.1504		
405	0.0027	505	0.0689	605	0.2603	705	0.1336		
410	0.0014	510	0.0783	610	0.2776	710	0.1183		
415	0.0010	515	0.0867	615	0.2959	715	0.1028		
420	0.0015	520	0.0952	620	0.3127	720	0.0881		
425	0.0026	525	0.1059	625	0.3236	725	0.0771		
430	0.0040	530	0.1132	630	0.3360	730	0.0668		
435	0.0068	535	0.1227	635	0.3429	735	0.0573		
440	0.0117	540	0.1324	640	0.3433	740	0.0487		
445	0.0241	545	0.1407	645	0.3405	745	0.0428		
450	0.0467	550	0.1482	650	0.3342	750	0.0372		
455	0.0593	555	0.1550	655	0.3216	755	0.0318		
460	0.0472	560	0.1635	660	0.3091	760	0.0279		
465	0.0455	565	0.1697	665	0.2905	765	0.0234		
470	0.0432	570	0.1768	670	0.2716	770	0.0195		
475	0.0371	575	0.1843	675	0.2469	775	0.0171		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS30230XX

Total operation burning time: 60 minutes
Stabilization time: 30 minutes

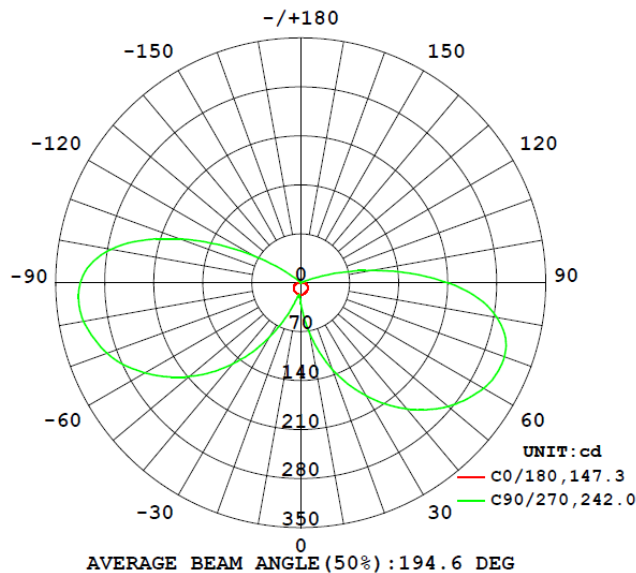
Photometric Measurements at 25°C – Distribution Method

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')
SLOWS30230XX								
S2401240 27-009	base-up	2276	96	81	0.5009	0.4195	0.2849	0.5369

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)
SLOWS30230XX							
S2401240 27-009	base-up	120.1	321.5	38.1	0.986	1313.8	31.9

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS30230XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	17.3	18.2	22.4	27.6	29.5
5	17.2	19.6	29.6	43.1	48.0
10	17.0	21.6	41.6	65.1	73.5
15	16.7	24.4	57.7	90.5	102.0
20	16.3	28.6	76.2	117.3	131.4
25	15.8	34.4	95.9	143.5	159.6
30	15.2	41.4	116.0	168.6	186.4
35	14.8	49.8	135.3	192.5	211.7
40	14.3	58.9	154.3	214.8	235.3
45	13.7	67.9	172.3	235.7	256.4
50	13.0	77.0	188.9	253.4	274.7
55	12.2	85.5	203.5	268.3	289.5
60	11.4	93.6	216.1	280.7	301.5
65	10.4	100.9	227.4	288.6	308.3
70	9.3	108.4	233.3	290.7	309.4
75	8.2	116.5	231.7	284.7	302.4
80	6.9	119.8	217.1	266.6	284.1
85	5.7	106.0	187.7	236.5	254.3
90	4.3	73.8	142.5	191.6	210.2
95	3.7	29.9	89.4	138.8	157.9
100	2.8	3.6	40.8	85.6	103.7
105	1.7	0.6	5.4	41.2	57.1
110	0.6	0.2	0.3	8.4	19.1
115	0.2	0.2	0.3	1.0	4.0
120	0.2	0.2	0.3	0.4	0.3
125	0.2	0.2	0.3	0.4	0.4
130	0.2	0.2	0.3	0.3	0.3
135	0.2	0.2	0.3	0.3	0.3
140	0.2	0.3	0.3	0.3	0.3
145	0.3	0.3	0.3	0.3	0.2
150	0.3	0.3	0.2	0.2	0.2
155	0.3	0.3	0.2	0.2	0.2
160	0.3	0.2	0.2	0.2	0.2
165	0.2	0.3	0.3	0.2	0.2
170	0.3	0.2	0.2	0.2	0.2
175	0.3	0.3	0.2	0.2	0.2
180	0.3	0.2	0.2	0.2	0.2

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS30230XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLOWS30230XX		
0-30	46.0	3.8
0-40	108.9	9.0
0-60	357.8	29.5
0-90	947.0	78.0
60-90	589.2	48.5
0-180	1213.8	100.0

Beam Angle

Total Beam Angle(°)

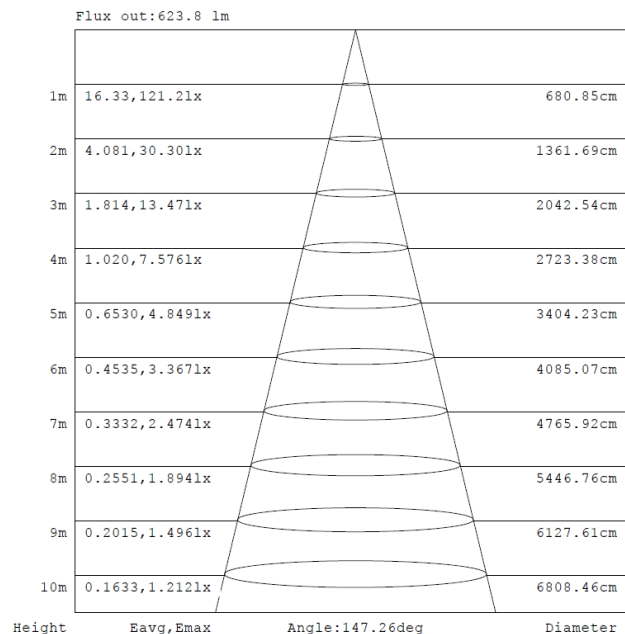
194.6

Illumination Plots

Model No.: SLOWS30230XX

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.

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

TEST REPORT

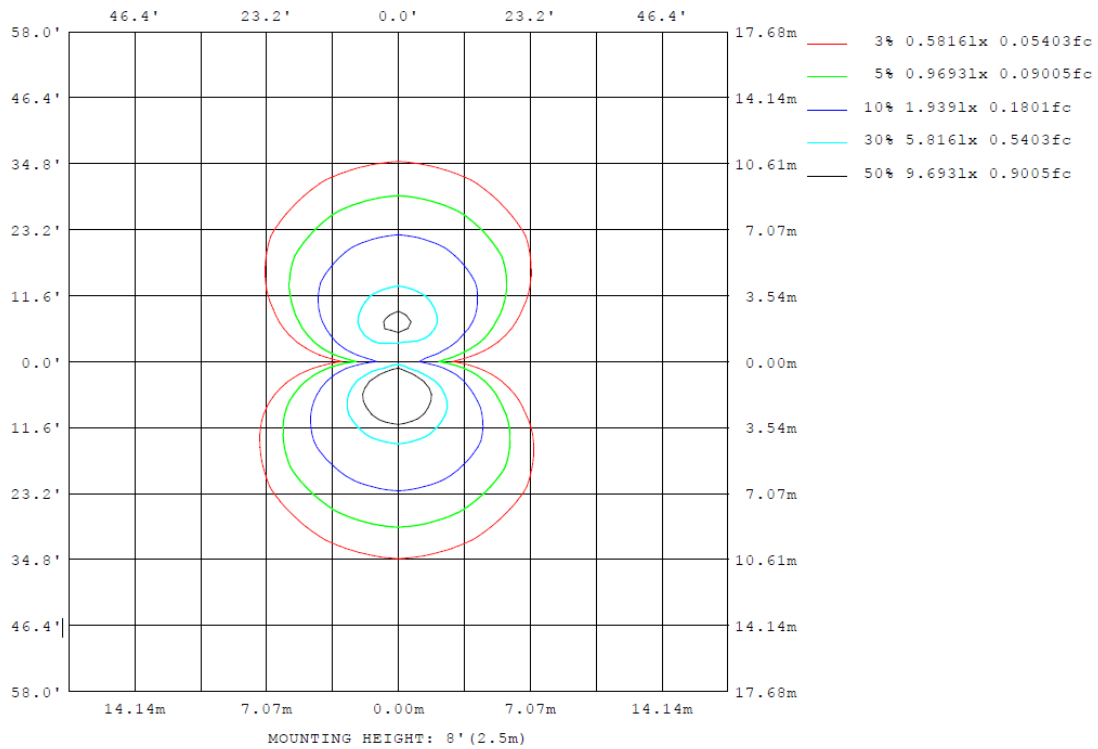
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS30230XX

Model No.: SLOWS30230XX

Mount Height: 2.5 m

Isoillumination Plot



TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS30230XX

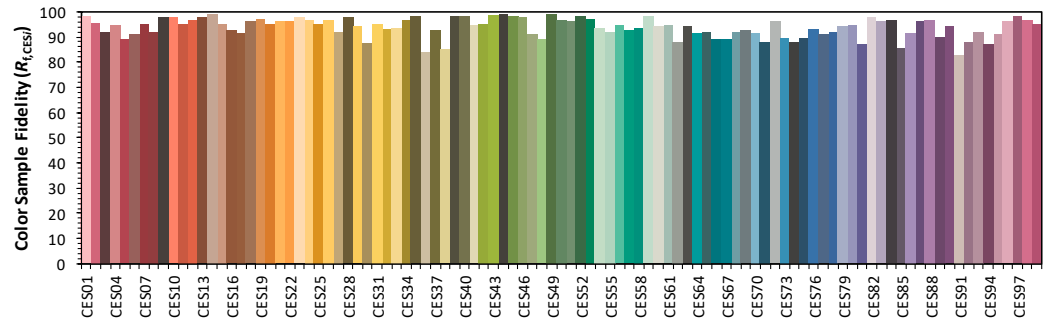
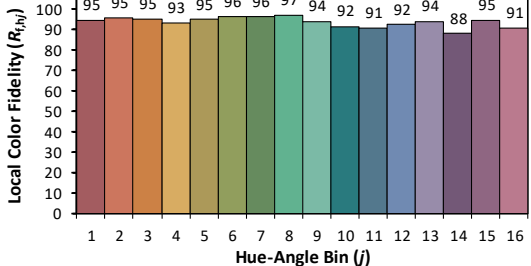
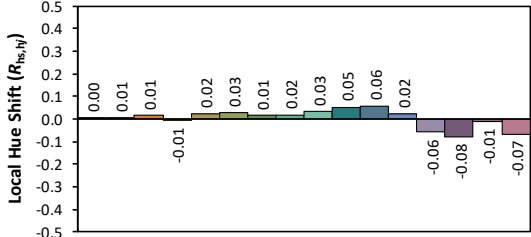
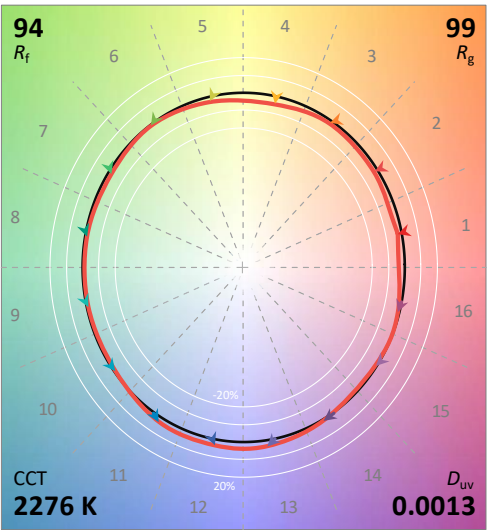
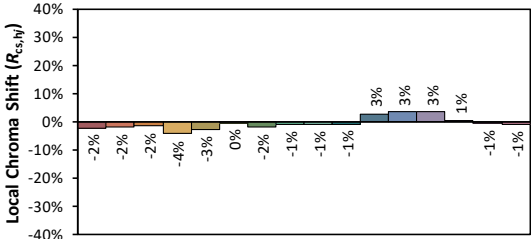
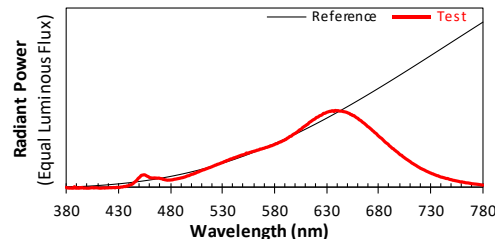
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/3/4

Model: SLOWS30230xx



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

x 0.5009
 y 0.4195
 u' 0.2849
 v' 0.5369

CIE 13.3-1995
(CRI)
 R_a 96
 R_g 81

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

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

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLOWS30230XX



View of LED driver ESST040W-1400-27



View of LED board

In Charge Of Tests:

Done Ye

Report Reviewed By

Shelley Ying

Done Ye
Engineer

Shelley Ying
Reviewer

Attachment: None

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