

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241212122GZU-001

ISSUE DATE

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REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWFL21927XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

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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: QGZ241210128.
<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 KWFL21927XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241212122-001.
<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>	03 January 2025
<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:	KWFL21927XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWFL21927XX

Criteria	Result
Total Lumen Output	142.5 lm
Total Power	9.3 W
Luminaire Efficacy	15.4 lm/W
S/MH(C0/180)	0.28
S/MH(C90/270)	0.16
Correlated Color Temperature (CCT)	2492 K
Color Rendering Index (CRI)	89
R9	57
Chromaticity Coordinate (x)	0.4820
Chromaticity Coordinate (y)	0.4208
Chromaticity Coordinate (u')	0.2721
Chromaticity Coordinate (v')	0.5345

Remark:

N/A

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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, 4π 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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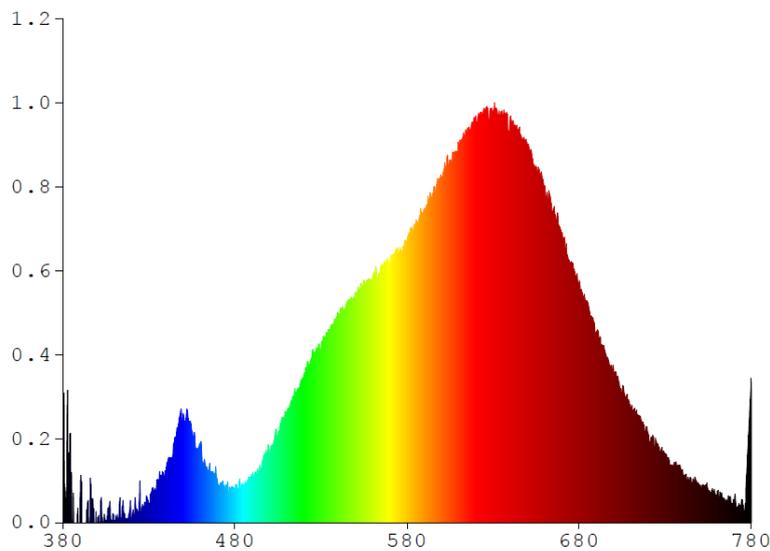
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWFL21927XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm								
380	0.0000	480	0.0569	580	0.5341	680	0.4553	780	0.2732
385	0.0889	485	0.0698	585	0.5637	685	0.4145		
390	0.0000	490	0.0866	590	0.5932	690	0.3553		
395	0.0000	495	0.0939	595	0.6239	695	0.3231		
400	0.0000	500	0.1356	600	0.6527	700	0.2857		
405	0.0045	505	0.1633	605	0.6865	705	0.2487		
410	0.0046	510	0.2075	610	0.7140	710	0.2136		
415	0.0416	515	0.2500	615	0.7452	715	0.2022		
420	0.0044	520	0.2766	620	0.7644	720	0.1684		
425	0.0290	525	0.3277	625	0.7835	725	0.1434		
430	0.0364	530	0.3295	630	0.7738	730	0.1261		
435	0.0815	535	0.3644	635	0.7793	735	0.1092		
440	0.1001	540	0.3914	640	0.7686	740	0.0965		
445	0.1581	545	0.4175	645	0.7389	745	0.0800		
450	0.2041	550	0.4334	650	0.7133	750	0.0693		
455	0.1715	555	0.4575	655	0.6594	755	0.0569		
460	0.1397	560	0.4538	660	0.6369	760	0.0415		
465	0.0928	565	0.4856	665	0.5880	765	0.0373		
470	0.0734	570	0.4878	670	0.5494	770	0.0416		
475	0.0707	575	0.5067	675	0.4815	775	0.0357		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFL21927XX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

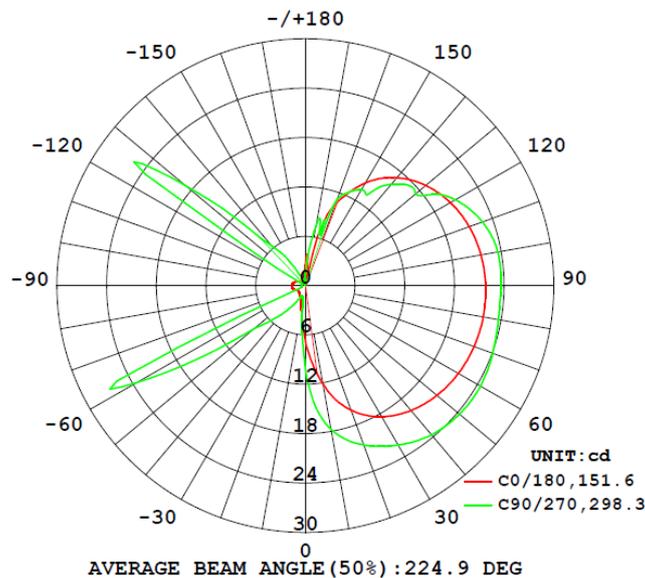
Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticity Coordinate (x)	Chromaticity Coordinate (y)	Chromaticity Coordinate (u')	Chromaticity Coordinate (v')
KWFL21927XX								
S2412121 22-001	base-up	2492	89	57	0.4820	0.4208	0.2721	0.5345

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)
KWFL21927XX							
S2412121 22-001	base-up	120.1	90.0	9.3	0.857	142.5	15.4

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFL21927XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	6.8	7.8	8.3	8.8	10.2
5	9.5	12.5	13.9	14.4	15.0
10	12.1	16.1	17.4	17.7	17.7
15	14.4	18.3	19.5	19.6	19.4
20	16.1	19.8	20.9	20.8	20.6
25	17.4	20.9	21.9	21.7	21.5
30	18.4	21.7	22.8	22.5	22.4
35	19.2	22.3	23.4	23.1	23.1
40	19.8	22.8	23.9	23.6	23.7
45	20.3	23.2	24.3	24.0	24.0
50	20.7	23.6	24.7	24.3	24.3
55	21.1	23.9	24.9	24.4	24.4
60	21.3	24.1	25.0	24.3	24.4
65	21.5	24.3	25.1	24.1	24.3
70	21.7	24.4	25.0	23.8	24.1
75	21.8	24.5	25.0	22.8	23.8
80	21.8	24.5	25.0	3.1	23.6
85	21.8	24.5	24.9	0.0	23.6
90	21.8	24.5	24.8	0.0	23.6
95	21.7	24.4	24.7	0.3	23.6
100	21.5	24.2	24.5	11.4	23.6
105	21.3	23.9	24.1	15.5	23.3
110	21.0	23.6	23.6	15.6	22.7
115	20.7	23.2	22.8	14.1	21.9
120	20.2	22.6	21.9	12.7	20.9
125	19.7	22.0	20.9	13.0	19.4
130	19.0	21.2	19.8	12.4	17.4
135	18.2	20.2	18.6	13.8	17.4
140	17.2	19.1	17.6	14.7	16.1
145	15.9	17.8	16.5	14.6	13.9
150	14.4	16.4	13.0	6.2	13.5
155	12.5	14.6	3.9	0.4	12.6
160	10.6	6.3	0.0	0.2	11.2
165	7.3	0.4	5.9	0.0	6.4
170	0.4	8.7	10.0	9.5	7.4
175	3.6	5.2	5.7	5.3	3.7
180	2.8	2.2	1.9	1.7	1.0

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFL21927XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFL21927XX		
0-30	8.5	6.0
0-40	15.8	11.1
0-60	39.2	27.5
0-90	78.4	55.0
60-90	39.2	27.5
0-180	142.5	100.0

Beam Angle

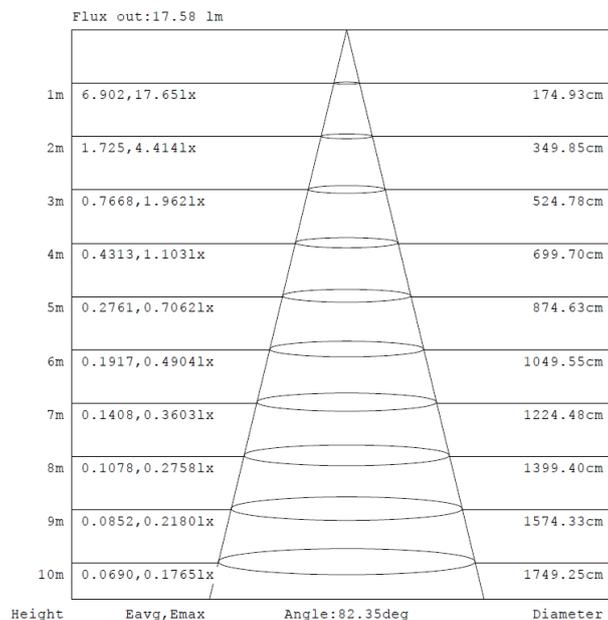
Total Beam Angle(°)
224.9

Illumination Plots

Model No.: KWFL21927XX

Mount Height: 2.5 m

Illuminance - Cone of Light



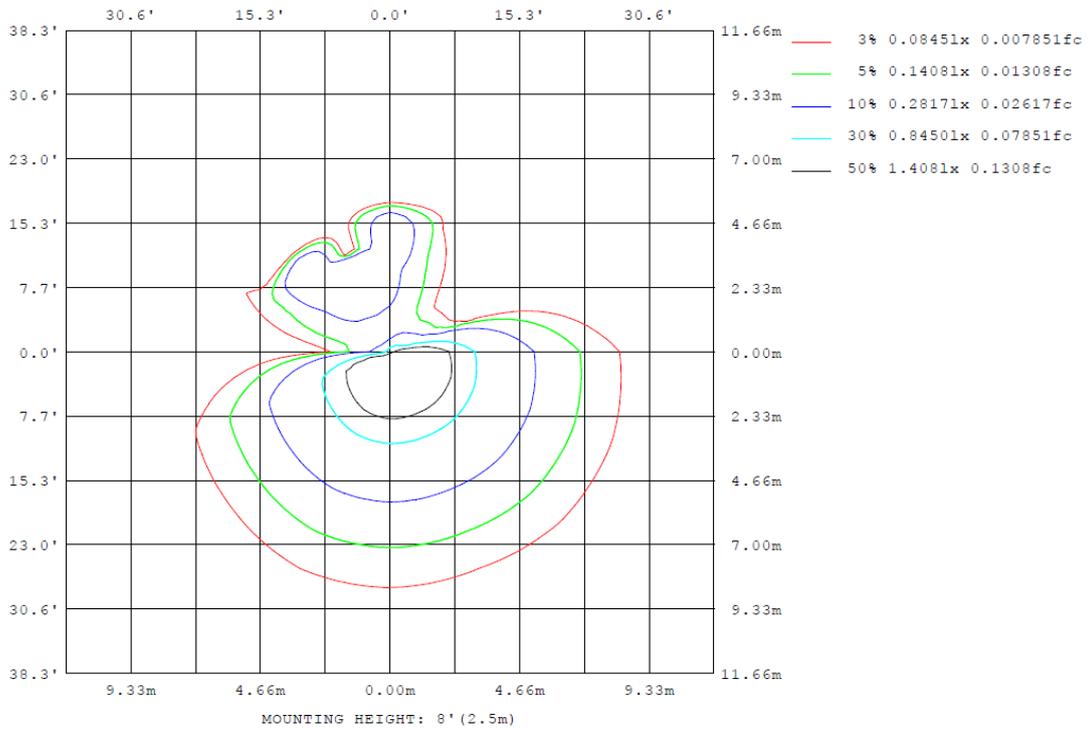
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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TEST REPORT
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFL21927XX

Model No.: KWFL21927XX
 Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

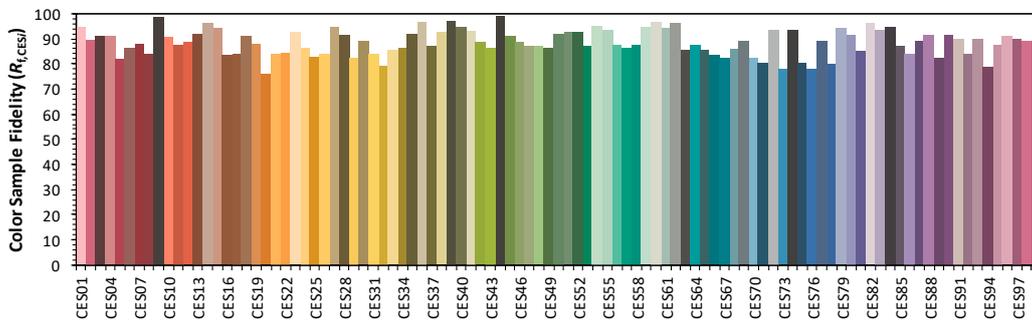
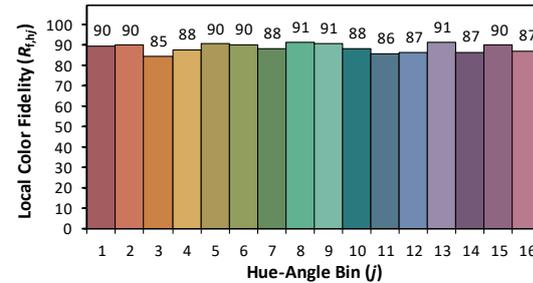
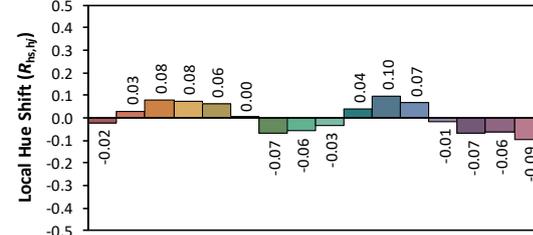
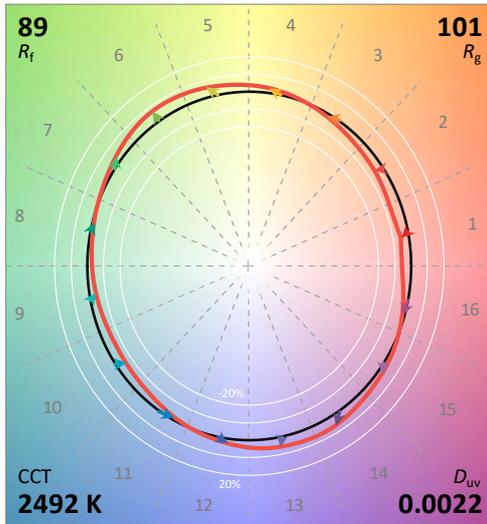
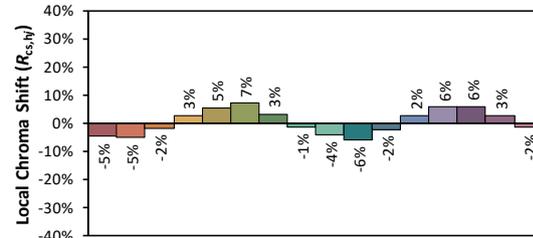
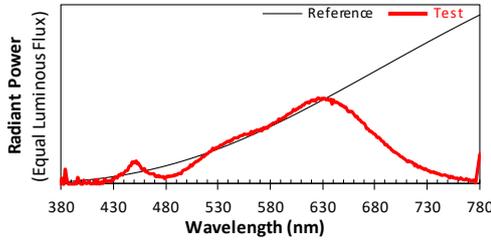
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFL21927XX

ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD
Date: 2025/1/3

Manufacturer: Visual Comfort & Co.
Model: KWFL21927XX



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

x 0.4820
 y 0.4208
 u' 0.2721
 v' 0.5345

CIE 13.3-1995 (CRI)	
R_a	89
R_g	57

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 KWFL21927XX

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver A122-1201000ID



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 *****