

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240621176GZU-005

ISSUE DATE

08 October 2024

REVISION DATE

Modification 1: 06 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 240621176GZU-005
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWFM30927XX

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: QGZ240620045.
<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 KWFM30927XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240621176-004.
<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>	25 July 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:	KWFM30927XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWFM30927XX

Criteria	Result
Total Lumen Output	627.1 lm
Total Power	10.8 W
Luminaire Efficacy	58.2 lm/W
S/MH(C0/180)	0.76
S/MH(C90/270)	0.76
Correlated Color Temperature (CCT)	2694 K
Color Rendering Index (CRI)	92
R9	70
Chromaticity Coordinate (x)	0.4616
Chromaticity Coordinate (y)	0.4129
Chromaticity Coordinate (u')	0.2626
Chromaticity Coordinate (v')	0.5285

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240621176GZU-005 issued on 08 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page 1 and 2 of the report.

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

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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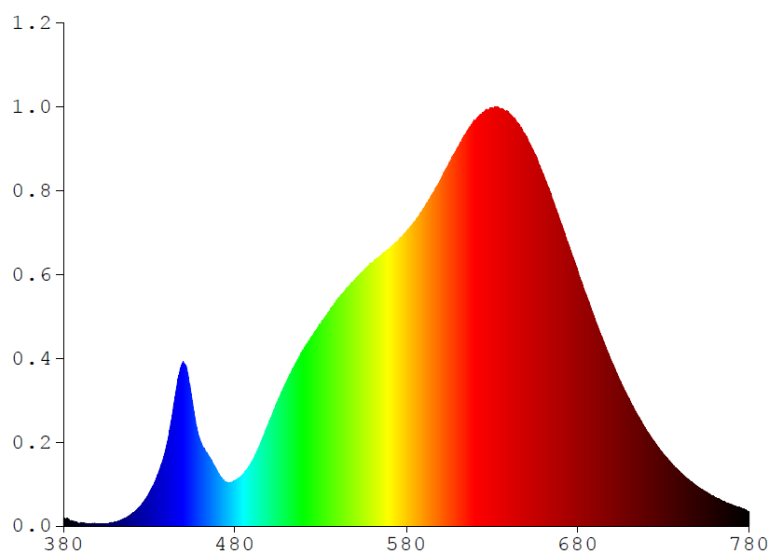
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWFM30927XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.2369	480	1.2281	580	7.9474	680	6.8743	780	0.3812
385	0.1260	485	1.4145	585	8.2299	685	6.2096		
390	0.0938	490	1.7457	590	8.5772	690	5.5830		
395	0.0584	495	2.2406	595	8.9575	695	4.9783		
400	0.0659	500	2.8227	600	9.3500	700	4.3917		
405	0.0749	505	3.3768	605	9.8058	705	3.8828		
410	0.1028	510	3.8857	610	10.2410	710	3.4078		
415	0.1832	515	4.3510	615	10.6280	715	2.9725		
420	0.3277	520	4.7551	620	10.9440	720	2.5830		
425	0.5511	525	5.1300	625	11.1710	725	2.2408		
430	0.8893	530	5.4567	630	11.2870	730	1.9329		
435	1.3877	535	5.8043	635	11.2750	735	1.6698		
440	2.1399	540	6.1399	640	11.1540	740	1.4351		
445	3.4551	545	6.4194	645	10.8790	745	1.2323		
450	4.4172	550	6.6439	650	10.5190	750	1.0565		
455	3.3614	555	6.8870	655	10.0290	755	0.9180		
460	2.2676	560	7.0926	660	9.4787	760	0.7825		
465	1.8607	565	7.2989	665	8.8384	765	0.6629		
470	1.4459	570	7.4926	670	8.1809	770	0.5692		
475	1.1777	575	7.7028	675	7.4035	775	0.4923		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30927XX

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

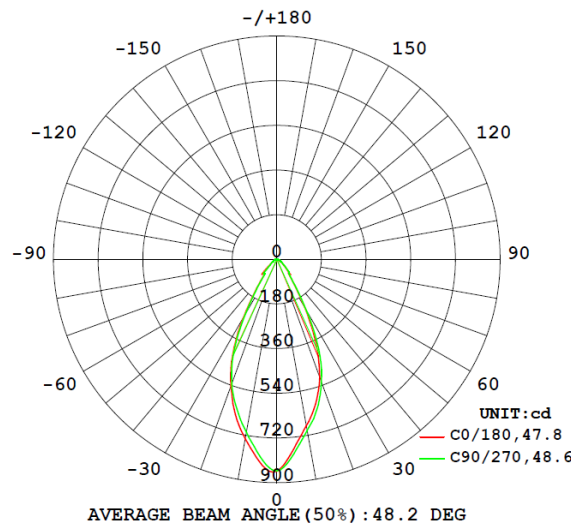
Photometric Measurements at 25°C – Distribution Method

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')
KWFM30927XX								
S2406211 76-004	base-up	2694	92	70	0.4616	0.4129	0.2626	0.5285

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)
KWFM30927XX							
S2406211 76-004	base-up	120.0	90.7	10.8	0.990	627.1	58.2

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30927XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	853.5	852.8	852.2	852.3	852.3
5	768.6	767.4	771.3	778.9	787.3
10	681.3	681.3	684.2	691.5	702.0
15	603.4	605.8	609.2	617.2	625.8
20	503.9	505.4	508.8	519.6	526.2
25	375.0	374.7	377.4	389.5	400.0
30	226.4	227.4	230.8	236.2	243.5
35	122.6	121.4	120.4	124.3	126.1
40	73.0	72.3	71.7	76.4	78.6
45	56.1	53.0	57.8	61.5	63.0
50	36.8	36.2	37.4	38.7	39.7
55	25.8	25.9	25.6	26.2	26.8
60	18.6	18.4	18.3	18.5	18.7
65	13.8	13.9	14.2	14.9	15.6
70	10.4	10.7	11.2	12.0	12.5
75	8.8	9.0	9.1	9.3	9.4
80	6.4	6.5	6.6	6.7	6.8
85	5.0	5.0	5.2	5.2	5.2
90	3.7	3.9	4.1	4.2	4.3
95	2.8	3.0	3.1	3.2	3.3
100	2.1	2.1	2.2	2.4	2.5
105	1.5	1.4	1.6	1.8	1.8
110	1.0	1.0	1.1	1.4	1.4
115	0.7	0.7	0.8	1.2	1.3
120	0.5	0.7	0.8	1.0	1.4
125	0.5	0.8	0.8	1.1	1.7
130	0.4	0.8	1.0	1.6	2.3
135	0.4	0.8	1.3	1.7	1.8
140	0.5	0.9	0.9	1.0	1.2
145	0.6	0.6	0.7	0.8	0.9
150	0.6	0.6	0.6	0.6	0.6
155	0.7	0.7	0.7	0.7	0.7
160	0.7	0.7	0.7	0.7	0.7
165	0.7	0.7	0.7	0.7	0.7
170	0.6	0.6	0.7	0.7	0.7
175	0.5	0.5	0.5	0.6	0.6
180	0.4	0.4	0.5	0.5	0.5

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30927XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFM30927XX		
0-30	427.1	68.1
0-40	514.3	82.0
0-60	587.5	93.7
0-90	617.6	98.5
60-90	30.1	4.8
0-180	627.1	100.0

Beam Angle

Total Beam Angle(°)

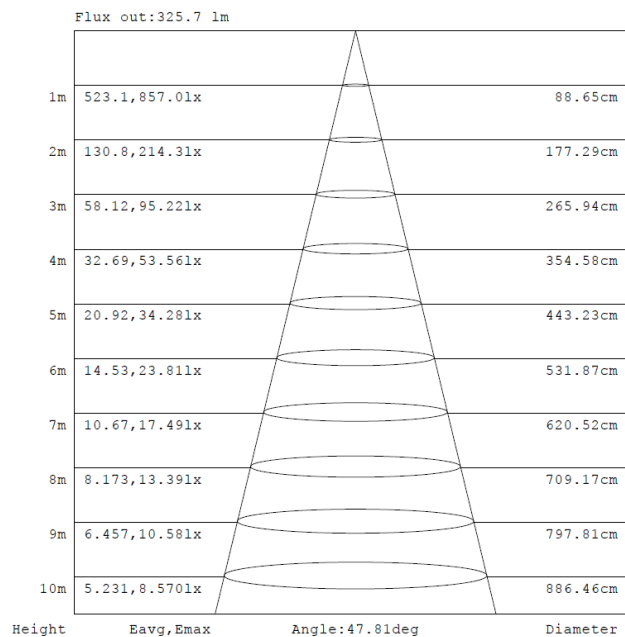
48.2

Illumination Plots

Model No.: KWFM30927XX

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.

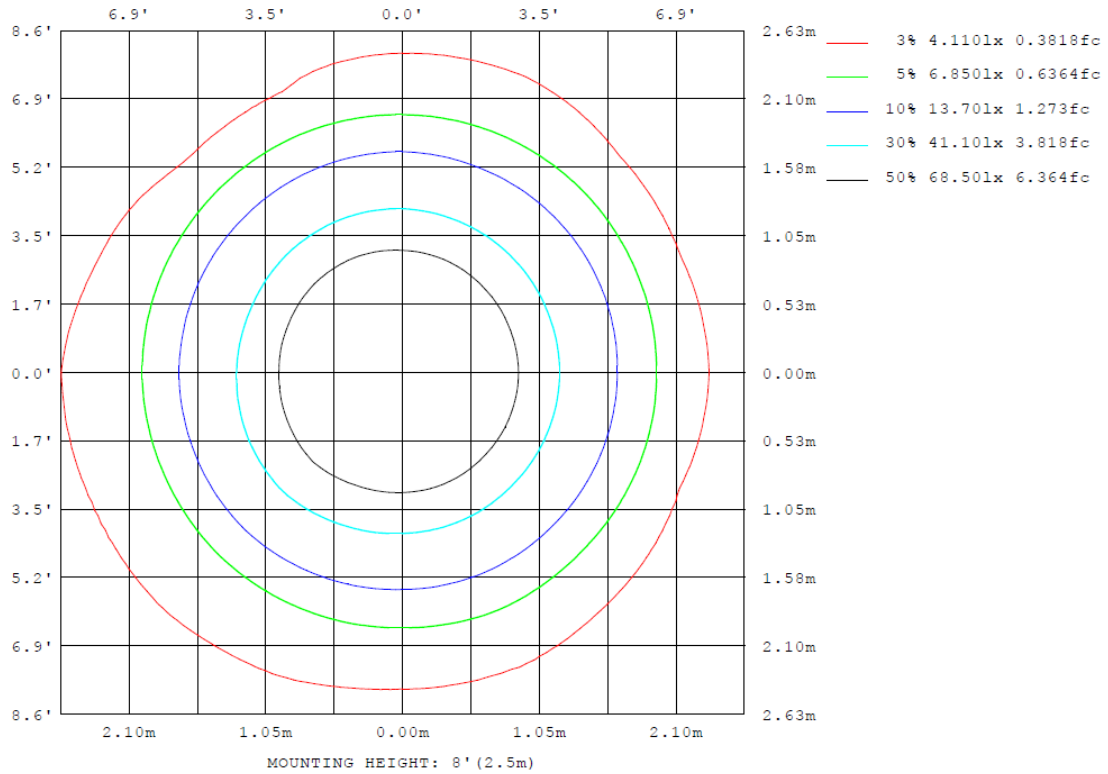
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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30927XX

Model No.: KWFM30927XX
Mount Height: 2.5 m
Isoillumination Plot



TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30927XX

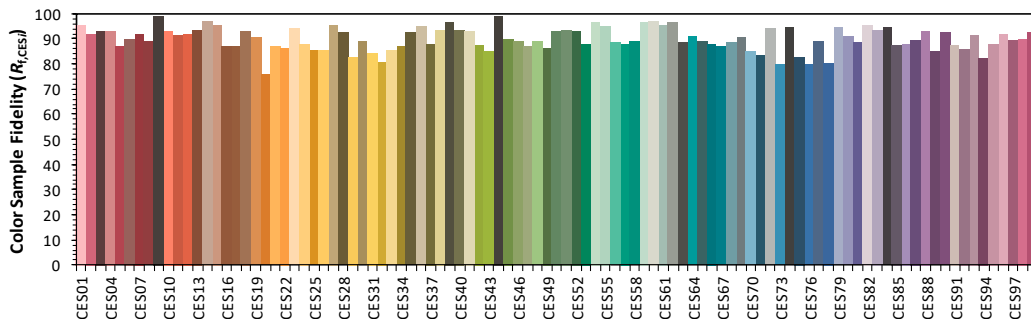
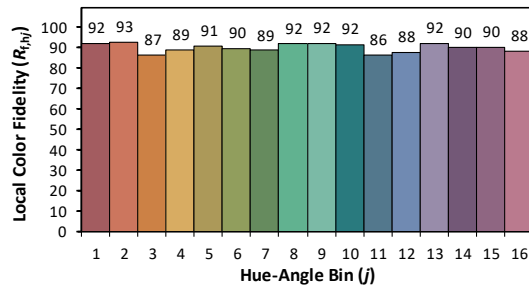
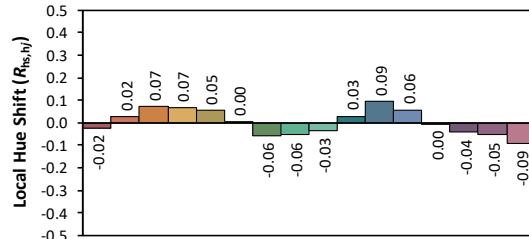
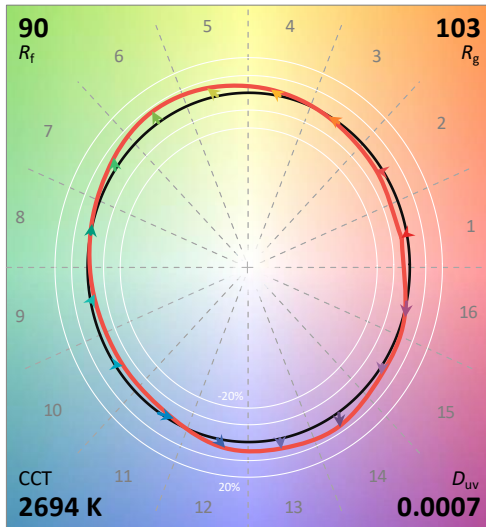
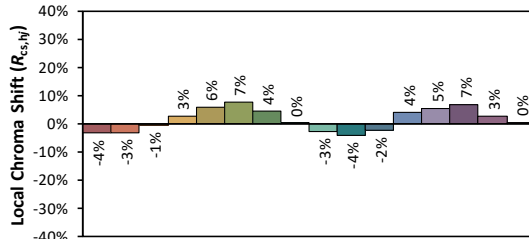
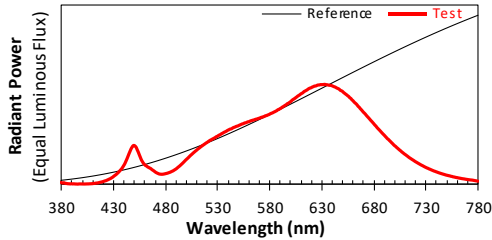
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/7/25

Model: KWFM30927XX



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

x 0.4616
 y 0.4129
 u' 0.2626
 v' 0.5285

CIE 13.3-1995
(CRI)
 R_a 92
 R_g 70

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

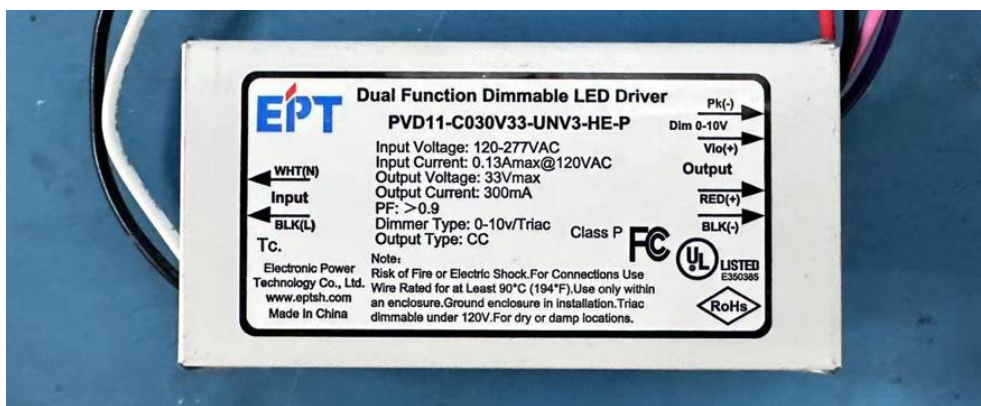
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWFM30927XX



View of LED driver PVD11-C030V33-UNV3-HE-P

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

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 *****