

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240621176GZU-003

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-003
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWFM30827XX

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 KWFM30827XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240621176-003.
<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>	20 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:	KWFM30827XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWFM30827XX

Criteria	Result
Total Lumen Output	750.3 lm
Total Power	10.8 W
Luminaire Efficacy	69.3 lm/W
S/MH(C0/180)	0.96
S/MH(C90/270)	0.95
Correlated Color Temperature (CCT)	2693 K
Color Rendering Index (CRI)	92
R9	70
Chromaticity Coordinate (x)	0.4615
Chromaticity Coordinate (y)	0.4127
Chromaticity Coordinate (u')	0.2626
Chromaticity Coordinate (v')	0.5284

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240621176GZU-003 issued on 08 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on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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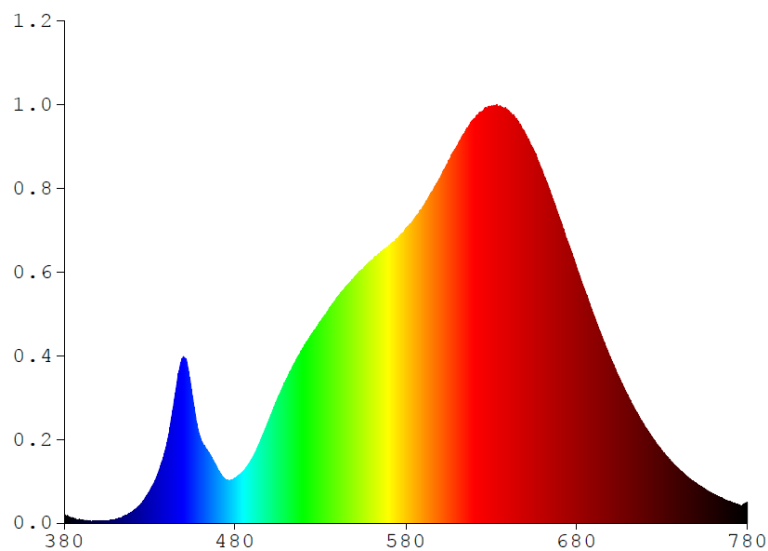
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWFM30827XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1704	480	0.9347	580	6.1335	680	5.3087	780	0.4365
385	0.1000	485	1.0871	585	6.3344	685	4.8051		
390	0.0665	490	1.3431	590	6.5913	690	4.3193		
395	0.0497	495	1.7284	595	6.8871	695	3.8453		
400	0.0479	500	2.1589	600	7.1745	700	3.4060		
405	0.0505	505	2.5983	605	7.5359	705	3.0108		
410	0.0844	510	2.9878	610	7.8526	710	2.6404		
415	0.1473	515	3.3366	615	8.1597	715	2.3073		
420	0.2441	520	3.6421	620	8.4166	720	1.9993		
425	0.4036	525	3.9414	625	8.5752	725	1.7374		
430	0.6648	530	4.1860	630	8.6776	730	1.5004		
435	1.0411	535	4.4635	635	8.6909	735	1.2918		
440	1.6325	540	4.7090	640	8.5813	740	1.1133		
445	2.6834	545	4.9252	645	8.3918	745	0.9571		
450	3.4507	550	5.1143	650	8.0953	750	0.8223		
455	2.6105	555	5.2893	655	7.7383	755	0.7064		
460	1.7316	560	5.4611	660	7.3179	760	0.6089		
465	1.4422	565	5.6088	665	6.8420	765	0.5186		
470	1.1074	570	5.7738	670	6.3334	770	0.4433		
475	0.9034	575	5.9116	675	5.7225	775	0.3825		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30827XX

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

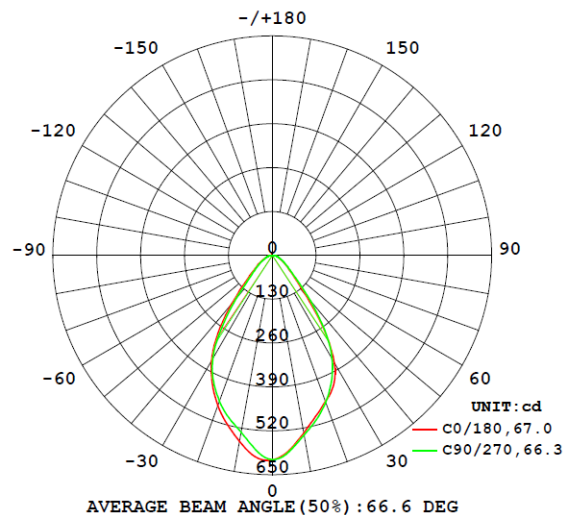
Photometric Measurements at 25°C – Distribution Method

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')
KWFM30827XX								
S2406211 76-003	base-up	2693	92	70	0.4615	0.4127	0.2626	0.5284

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)
KWFM30827XX							
S2406211 76-003	base-up	120.0	91.1	10.8	0.990	750.3	69.3

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30827XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	605.7	605.8	605.7	605.8	605.2
5	579.5	580.9	581.6	581.5	582.9
10	535.0	539.6	541.5	541.4	540.9
15	495.0	502.1	504.7	505.6	504.5
20	461.2	467.5	465.4	463.9	462.6
25	427.8	428.7	424.1	416.4	414.2
30	367.5	364.1	361.5	356.9	354.5
35	266.0	262.0	265.6	270.8	270.8
40	158.1	157.5	164.6	174.4	176.8
45	94.3	93.8	96.2	102.9	105.7
50	65.4	64.7	64.9	67.8	69.2
55	48.2	47.9	47.9	50.1	51.9
60	37.0	36.8	36.1	37.1	38.4
65	27.1	27.3	27.2	27.8	28.5
70	19.8	19.8	20.0	20.3	20.9
75	15.1	15.2	15.6	15.6	15.4
80	11.3	11.5	11.8	11.9	11.9
85	9.0	9.5	9.5	9.9	9.5
90	7.2	7.5	7.5	7.7	7.5
95	5.6	5.6	5.7	5.9	5.8
100	4.1	4.1	4.4	4.4	4.5
105	3.0	3.0	3.3	3.4	3.5
110	2.2	2.3	2.4	2.6	2.6
115	1.6	1.6	1.7	1.9	1.9
120	0.5	1.1	1.3	1.4	1.4
125	0.4	0.7	0.9	1.0	1.0
130	0.4	0.6	0.7	0.7	0.7
135	0.5	0.6	0.6	0.6	0.6
140	0.5	0.6	0.6	0.6	0.6
145	0.5	0.6	0.6	0.6	0.6
150	0.6	0.6	0.6	0.6	0.6
155	0.6	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	0.7	0.7	0.7	0.7	0.7
175	0.6	0.6	0.6	0.6	0.6
180	0.5	0.5	0.5	0.5	0.5

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30827XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFM30827XX		
0-30	386.9	51.6
0-40	552.3	73.6
0-60	682.4	91.0
0-90	736.9	98.2
60-90	54.5	7.2
0-180	750.2	100.0

Beam Angle

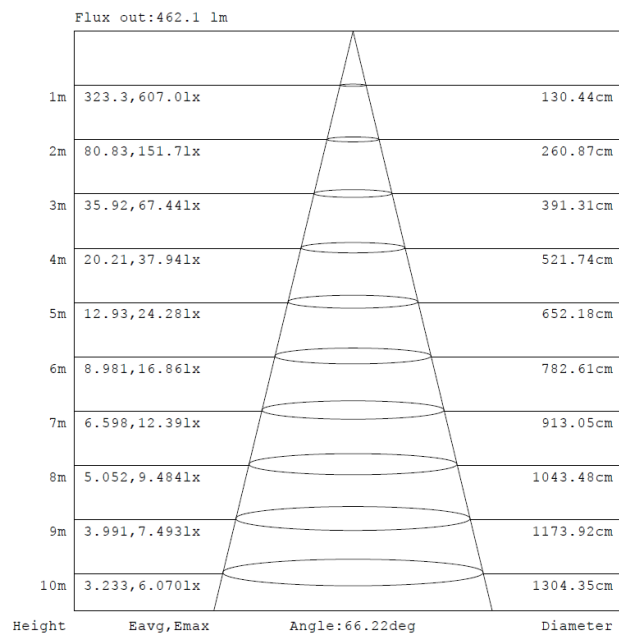
Total Beam Angle(°)
66.6

Illumination Plots

Model No.: KWFM30827XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

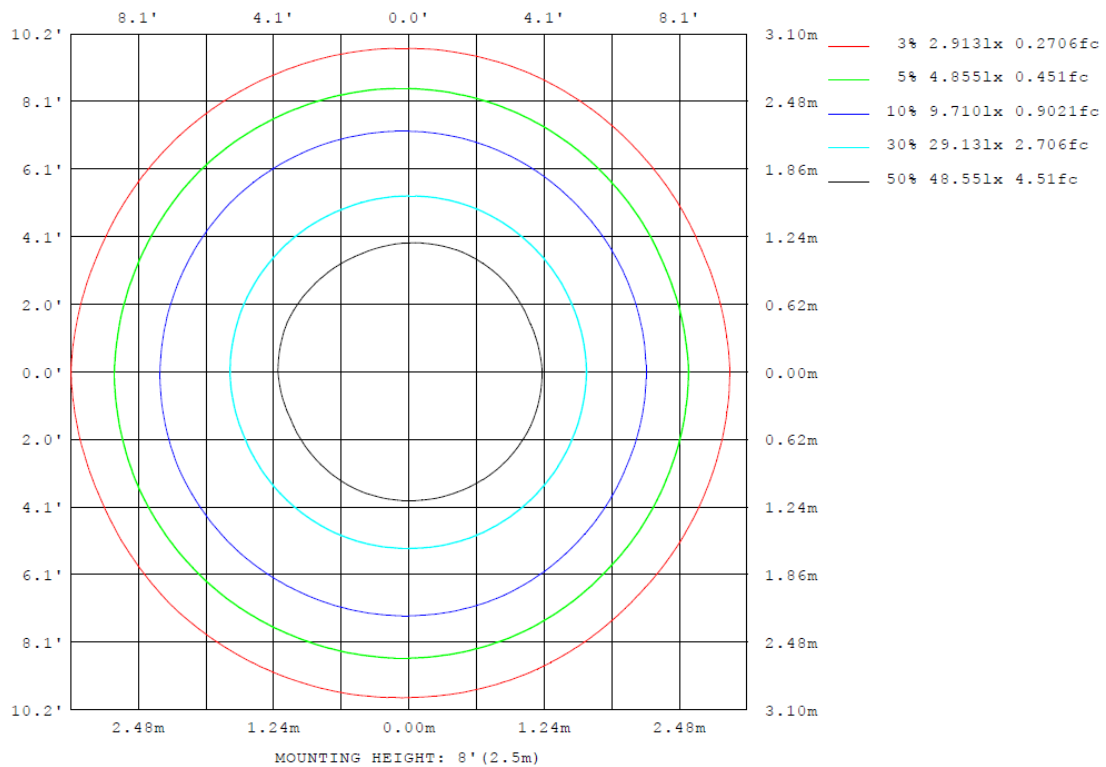
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30827XX

Model No.: KWFM30827XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM30827XX

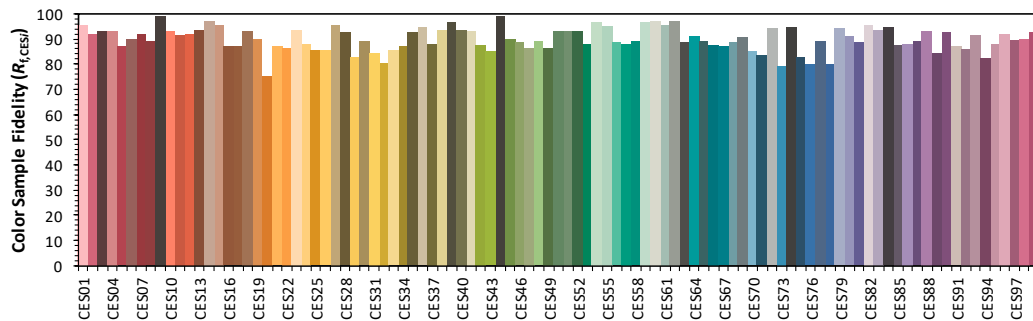
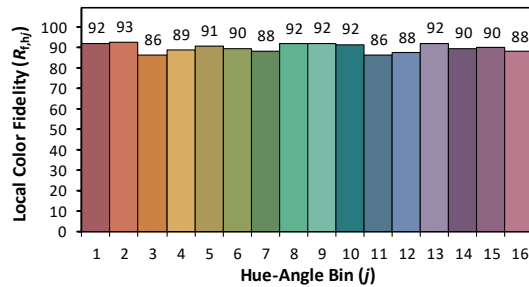
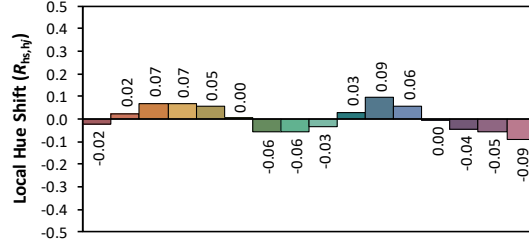
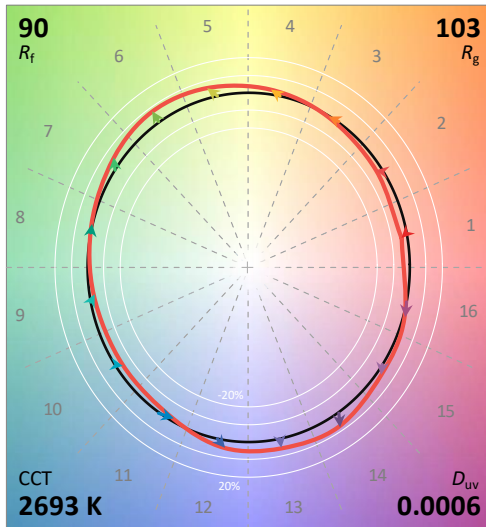
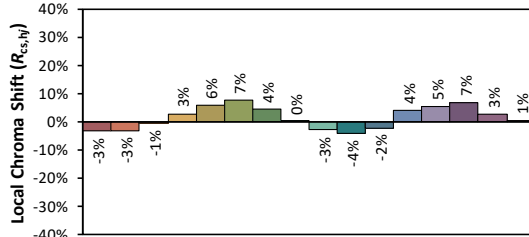
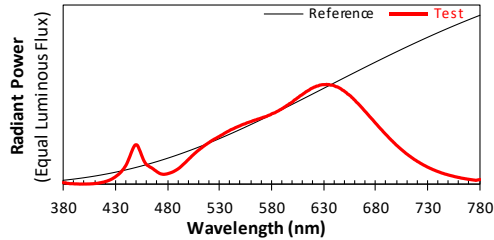
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/7/20

Model: KWFM30827XX



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

x 0.4615
 y 0.4127
 u' 0.2626
 v' 0.5284

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.

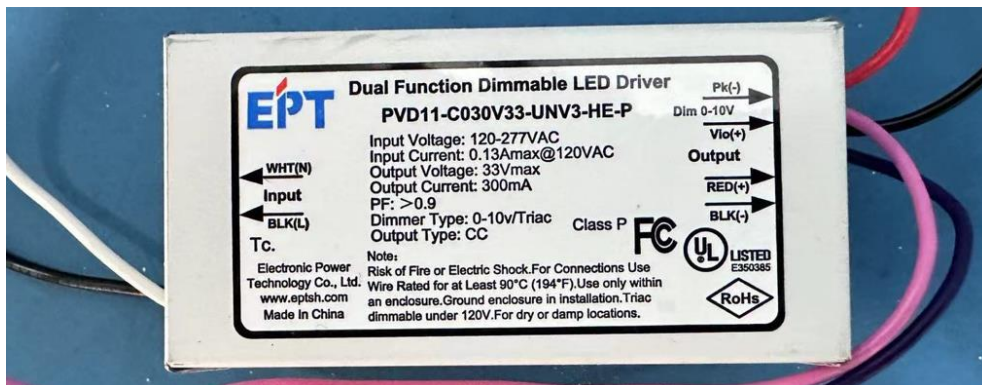
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWFM30827XX



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 *****