

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240621176GZU-007

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-007
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWFM31827XX

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 KWFM31827XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240621176-005.
<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>	30 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:	KWFM31827XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWFM31827XX

Criteria	Result
Total Lumen Output	509.7 lm
Total Power	10.4 W
Luminaire Efficacy	48.9 lm/W
S/MH(C0/180)	0.62
S/MH(C90/270)	0.66
Correlated Color Temperature (CCT)	2702 K
Color Rendering Index (CRI)	92
R9	70
Chromaticity Coordinate (x)	0.4604
Chromaticity Coordinate (y)	0.4119
Chromaticity Coordinate (u')	0.2623
Chromaticity Coordinate (v')	0.5279

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240621176GZU-007 issued on 08 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on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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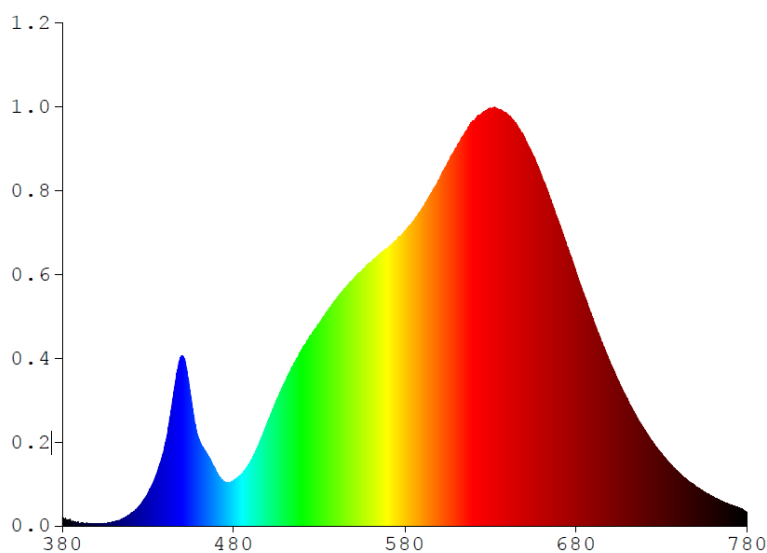
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWFM31827XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.3949	480	1.8882	580	12.2540	680	10.5200	780	0.5455
385	0.1564	485	2.1855	585	12.6800	685	9.5211		
390	0.1108	490	2.6973	590	13.2030	690	8.5718		
395	0.0944	495	3.4608	595	13.7980	695	7.6316		
400	0.0924	500	4.3523	600	14.3930	700	6.7485		
405	0.1122	505	5.2072	605	15.0900	705	5.9797		
410	0.1578	510	5.9868	610	15.7260	710	5.2366		
415	0.2942	515	6.7017	615	16.3380	715	4.5750		
420	0.5034	520	7.3115	620	16.8320	720	3.9884		
425	0.8487	525	7.9214	625	17.1580	725	3.4489		
430	1.3667	530	8.4133	630	17.3400	730	2.9957		
435	2.1479	535	8.9598	635	17.3100	735	2.5746		
440	3.3981	540	9.4430	640	17.1290	740	2.2183		
445	5.5218	545	9.8794	645	16.7150	745	1.8939		
450	7.0837	550	10.2660	650	16.1220	750	1.6346		
455	5.3189	555	10.6210	655	15.3670	755	1.4026		
460	3.5481	560	10.9460	660	14.5220	760	1.2020		
465	2.9126	565	11.2840	665	13.5770	765	1.0321		
470	2.2466	570	11.5370	670	12.5790	770	0.8797		
475	1.8248	575	11.8660	675	11.3610	775	0.7578		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM31827XX

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

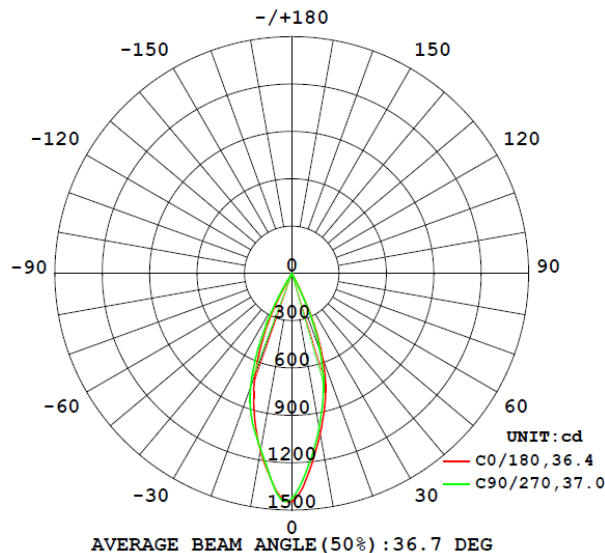
Photometric Measurements at 25°C – Distribution Method

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')
KWFM31827XX								
S2406211 76-005	base-up	2702	92	70	0.4604	0.4119	0.2623	0.5279

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)
KWFM31827XX							
S2406211 76-005	base-up	120.1	87.7	10.4	0.989	509.7	48.9

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM31827XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	1444.7	1402.4	1413.5	1419.0	1426.1
5	1259.4	1181.1	1193.1	1207.3	1220.3
10	1033.7	961.4	970.8	982.2	996.0
15	823.1	747.7	757.9	770.0	776.8
20	574.0	477.3	488.8	504.1	520.5
25	282.3	126.0	158.6	192.9	230.1
30	0.5	0.3	0.3	0.3	12.0
35	0.2	0.1	0.2	0.2	0.2
40	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0
65	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0
75	0.0	0.0	0.0	0.0	0.0
80	0.0	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	0.1	0.2	0.2	0.1	0.1
115	0.4	0.3	0.3	0.4	0.5
120	0.3	0.3	0.3	0.3	0.5
125	0.3	0.3	0.3	0.3	0.5
130	0.3	0.3	0.3	0.4	0.4
135	0.4	0.4	0.4	0.4	0.5
140	0.5	0.6	0.6	0.6	0.6
145	0.6	0.7	0.7	0.7	0.7
150	0.8	0.8	0.8	0.8	0.8
155	0.9	0.9	0.9	0.9	0.9
160	0.9	0.9	0.9	0.9	0.9
165	0.8	0.8	0.8	0.8	0.8
170	0.7	0.7	0.7	0.7	0.7
175	0.5	0.5	0.5	0.5	0.5
180	0.4	0.4	0.4	0.4	0.4

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM31827XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFM31827XX		
0-30	502.7	98.6
0-40	507.8	99.6
0-60	507.9	99.6
0-90	508.0	99.7
60-90	0.1	0.1
0-180	509.7	100.0

Beam Angle

Total Beam Angle(°)

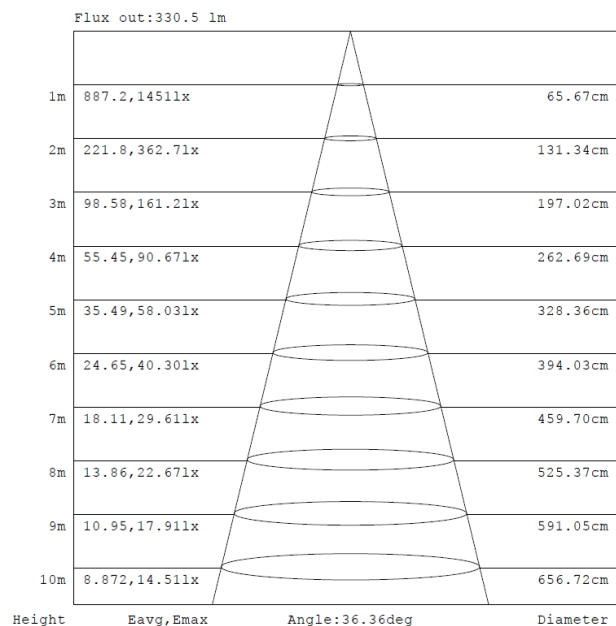
36.7

Illumination Plots

Model No.: KWFM31827XX

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.

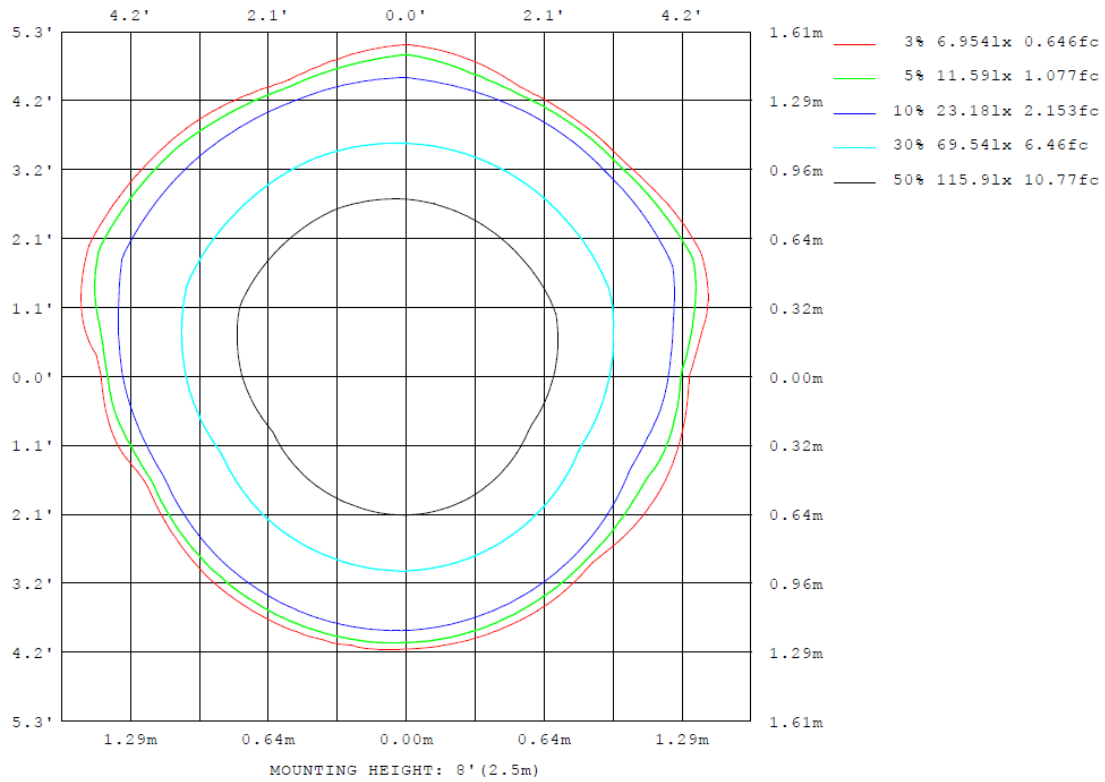
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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM31827XX

Model No.: KWFM31827XX
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM31827XX

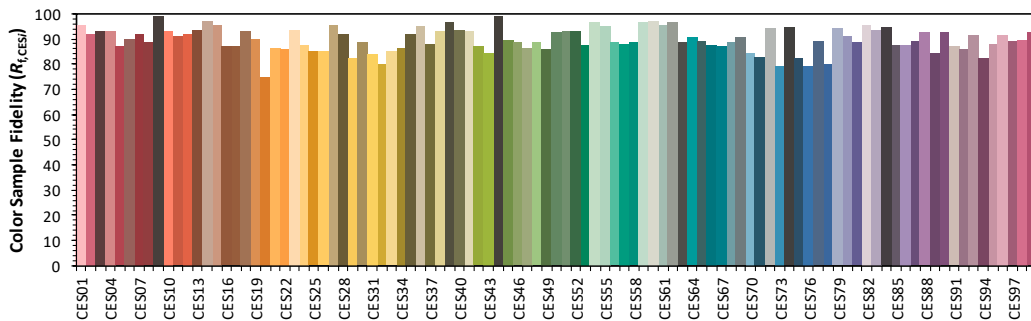
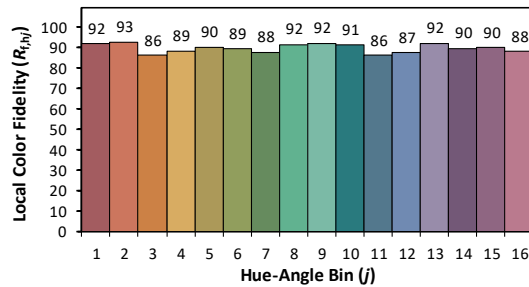
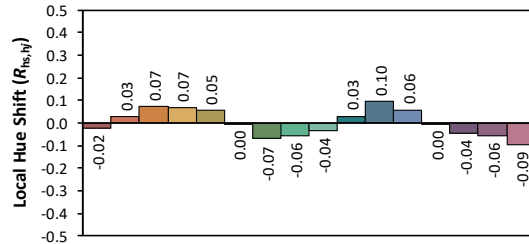
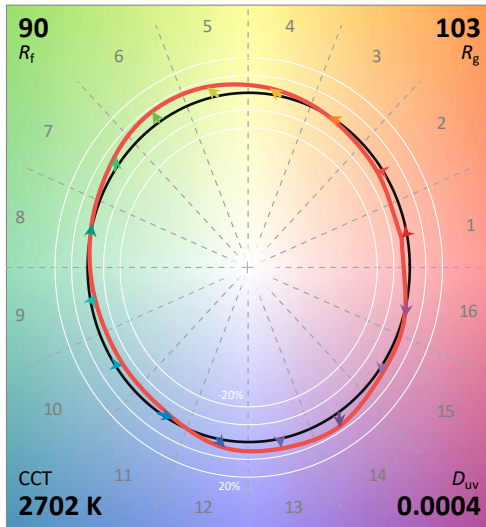
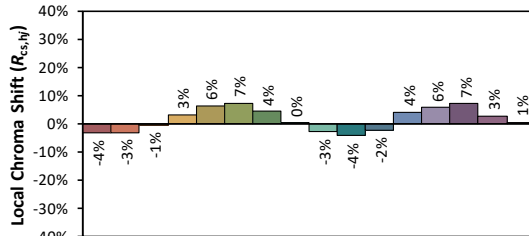
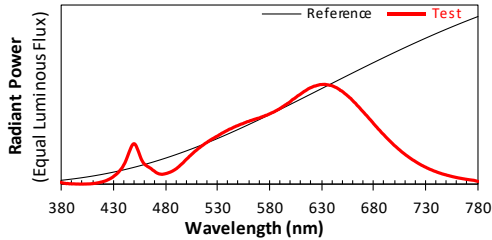
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/7/30

Model: KWFM31827XX



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

x 0.4604
 y 0.4119
 u' 0.2623
 v' 0.5279

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.

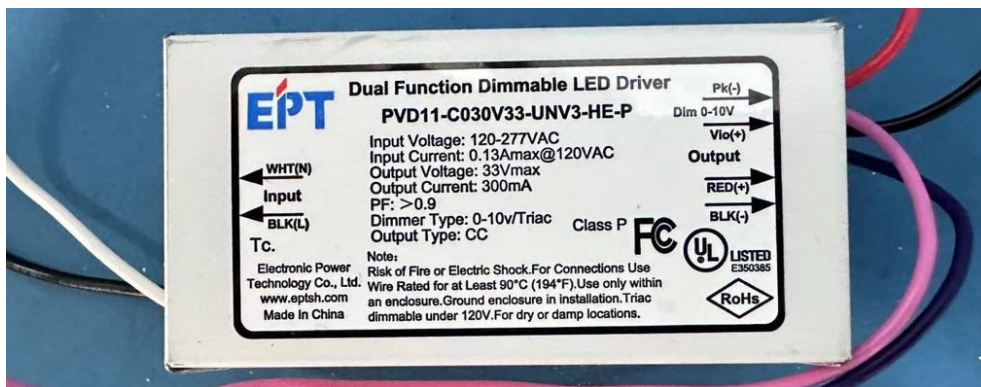
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWFM31827XX



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 *****