

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241115147GZU-009

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None

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Report format for LM-79_G

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Report No.: 241115147GZU-009

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWFM499XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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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: QGZ241112051.
<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 KWFM499XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115147-014.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Shao Guan Weng Yuan Pearly Gates Furniture Manufacturing Co., Ltd. GuanYing Industrial Park, GuanDu Economic Development Experimental Zone, Weng Yuan County, Guang Dong Province, PRC. 512625.
<u>DATES OF TESTS:</u>	17 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:	KWFM499XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWFM499XX

Criteria	Result
Total Lumen Output	648.1 lm
Total Power	11.0 W
Luminaire Efficacy	59.2 lm/W
S/MH(C0/180)	0.46
S/MH(C90/270)	0.58
Correlated Color Temperature (CCT)	2637 K
Color Rendering Index (CRI)	91
R9	61
Chromaticity Coordinate (x)	0.4647
Chromaticity Coordinate (y)	0.4109
Chromaticity Coordinate (u')	0.2654
Chromaticity Coordinate (v')	0.5282

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, 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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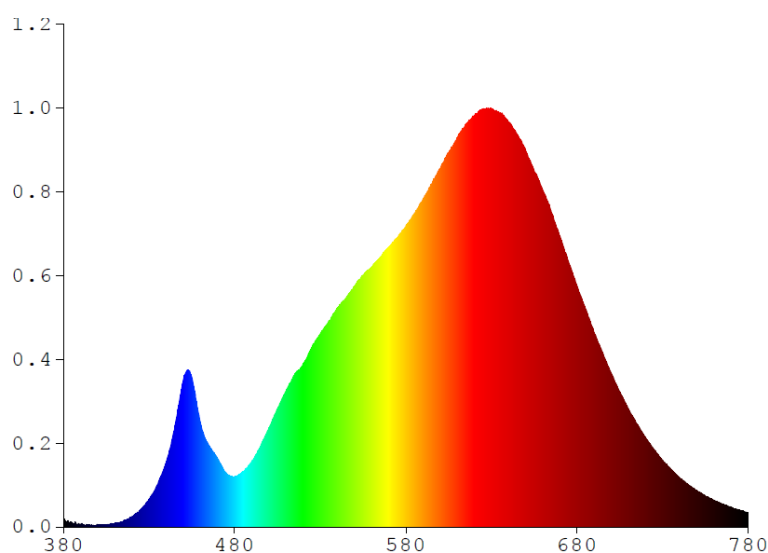
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWFM499XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.5820	480	5.0783	580	30.3890	680	24.2390	780	1.3962
385	0.4705	485	5.6329	585	31.6850	685	21.9350		
390	0.2833	490	6.6235	590	33.0940	690	19.5270		
395	0.2193	495	8.1122	595	34.6200	695	17.4940		
400	0.2105	500	9.9864	600	36.2440	700	15.4550		
405	0.2523	505	11.9140	605	37.7380	705	13.5770		
410	0.3656	510	13.7620	610	39.3210	710	11.8350		
415	0.5824	515	15.3820	615	40.6770	715	10.3540		
420	1.0340	520	16.4490	620	41.5460	720	8.9782		
425	1.7245	525	18.1860	625	42.1080	725	7.7671		
430	2.7764	530	19.5220	630	42.1480	730	6.7037		
435	4.2551	535	20.8030	635	41.8400	735	5.7635		
440	6.5241	540	22.1190	640	40.9170	740	4.9205		
445	10.0700	545	23.1250	645	39.5850	745	4.2327		
450	14.7470	550	24.3000	650	37.9690	750	3.6380		
455	14.9850	555	25.4420	655	35.8550	755	3.0888		
460	10.4570	560	26.2840	660	33.9790	760	2.6756		
465	8.2130	565	27.2320	665	31.7170	765	2.3086		
470	6.8717	570	28.2880	670	29.2750	770	1.9875		
475	5.4435	575	29.2150	675	26.2670	775	1.6771		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM499XX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

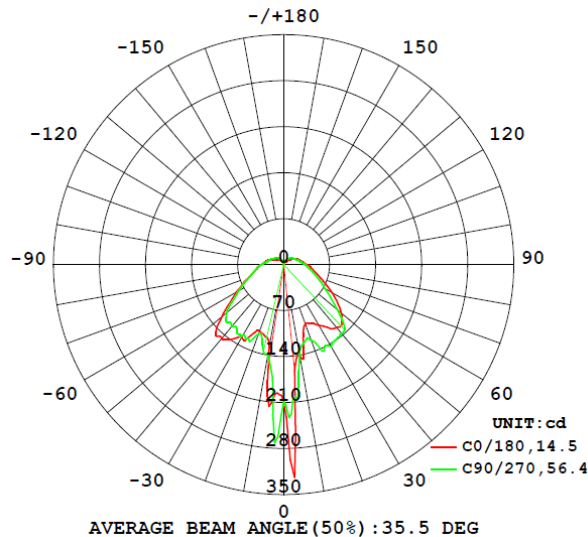
Photometric Measurements at 25°C – Distribution Method

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')
KWFM499XX								
S2411151 47-014	base-up	2637	91	61	0.4647	0.4109	0.2654	0.5282

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	Lumen Efficacy
						Flux (Lumens)	(Lumens Per Watt)
KWFM499XX							
S2411151 47-014	base-up	120.1	92.2	11.0	0.990	648.1	59.2

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM499XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	210.5	209.9	208.6	208.1	207.5
5	195.7	187.3	186.1	190.2	202.4
10	139.8	142.6	156.0	151.6	137.5
15	114.1	115.9	129.3	133.3	122.6
20	96.6	93.2	102.2	118.1	122.4
25	98.8	98.3	114.3	137.4	145.3
30	106.5	108.1	126.1	153.6	144.5
35	117.2	124.8	140.2	149.3	138.7
40	125.1	132.2	143.3	148.4	137.4
45	125.7	128.5	133.8	140.5	129.8
50	114.2	114.6	117.1	116.8	106.6
55	99.5	98.7	97.3	93.4	86.8
60	84.4	83.6	80.8	77.0	72.4
65	70.9	71.2	69.9	66.9	63.2
70	59.5	59.0	57.4	55.6	53.5
75	51.4	50.1	48.7	47.9	46.4
80	45.3	44.1	44.2	41.9	40.3
85	41.5	39.3	38.1	37.1	36.1
90	35.5	35.1	34.4	33.6	32.5
95	31.4	31.1	30.5	30.2	29.2
100	29.0	28.7	28.1	27.6	26.8
105	26.0	25.9	25.6	25.1	24.4
110	23.8	23.8	23.4	22.8	22.3
115	20.6	21.3	21.0	20.6	20.3
120	17.7	19.8	19.5	19.1	18.8
125	15.2	18.4	18.1	17.7	17.4
130	12.8	16.8	16.2	16.1	15.9
135	10.3	15.2	14.1	14.4	14.3
140	8.0	13.4	12.3	12.7	12.6
145	6.1	11.3	10.3	10.9	10.9
150	4.5	8.8	8.6	9.1	9.1
155	3.0	6.5	7.1	7.4	7.3
160	2.2	4.5	5.4	5.6	5.5
165	1.7	2.8	3.4	3.6	3.4
170	0.6	0.7	1.0	1.1	1.0
175	0.2	0.2	0.2	0.2	0.2
180	0.2	0.2	0.2	0.2	0.2

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM499XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFM499XX		
0-30	105.4	16.3
0-40	185.7	28.7
0-60	368.3	56.8
0-90	529.2	81.7
60-90	160.9	24.9
0-180	648.1	100.0

Beam Angle

Total Beam Angle(°)

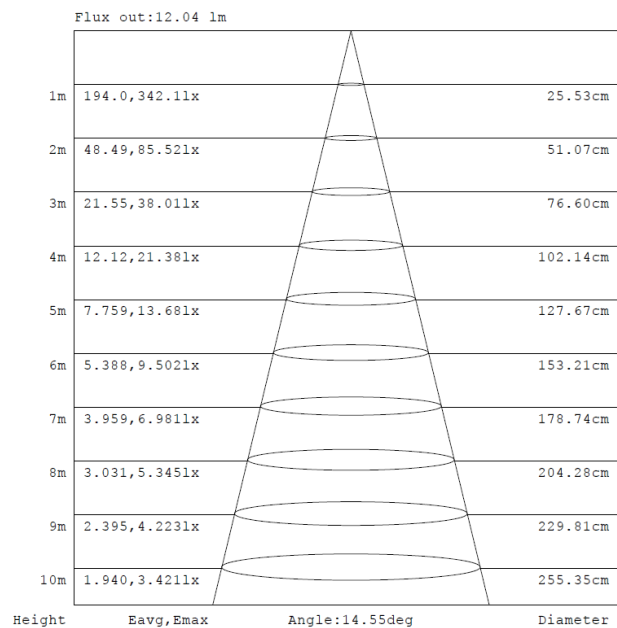
35.5

Illumination Plots

Model No.: KWFM499XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

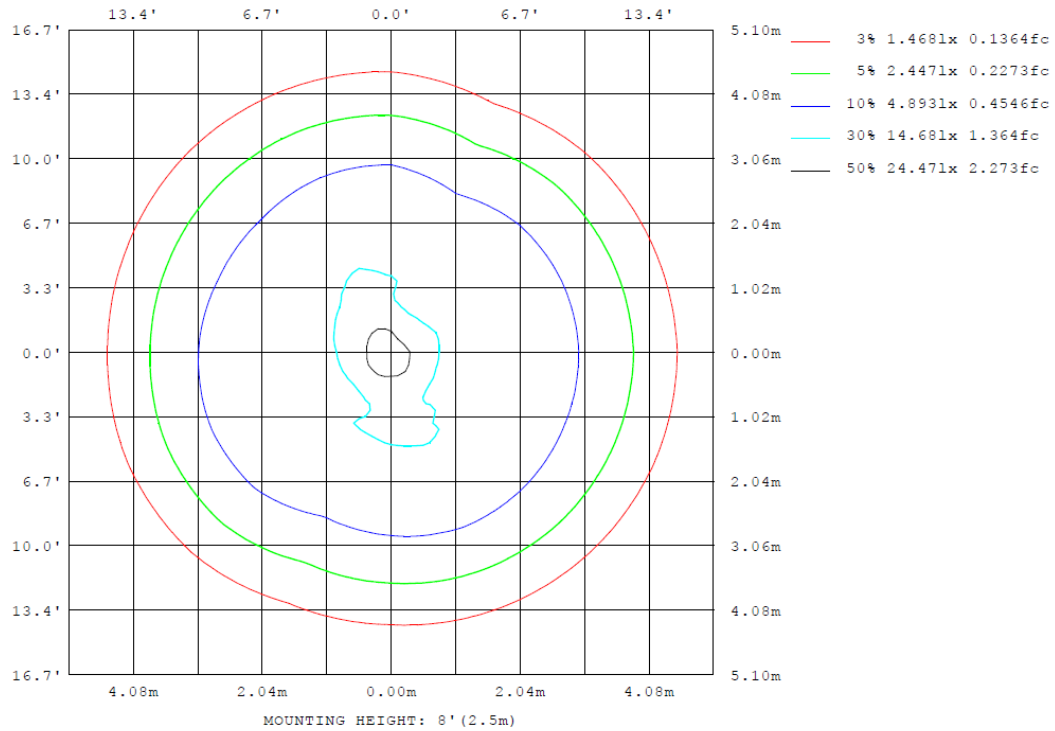
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM499XX

Model No.: KWFM499XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM499XX

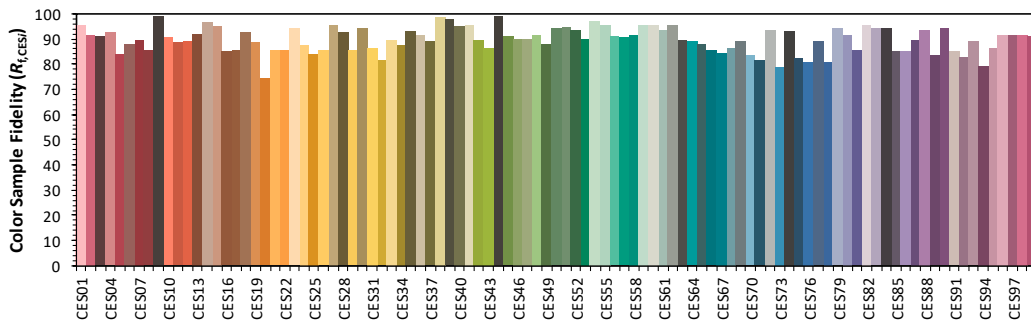
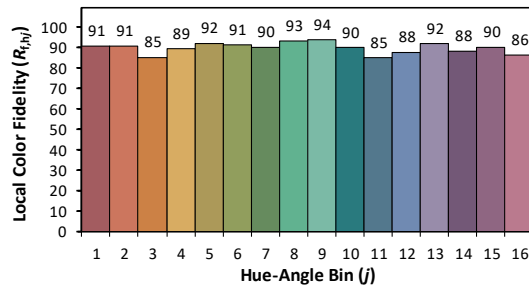
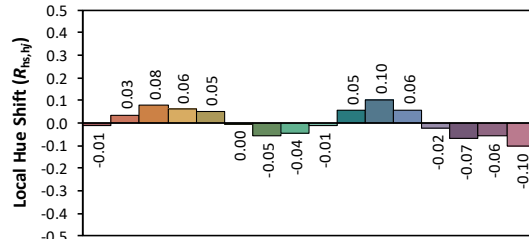
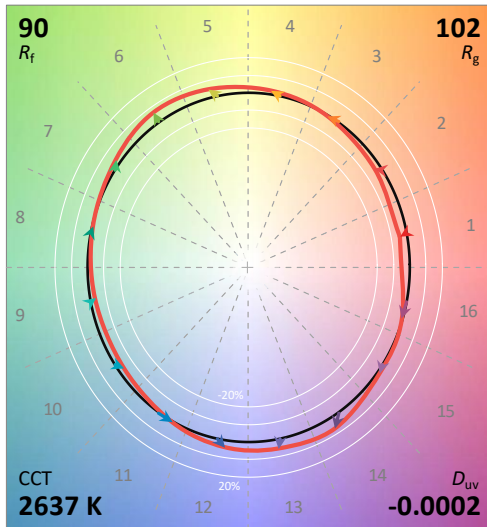
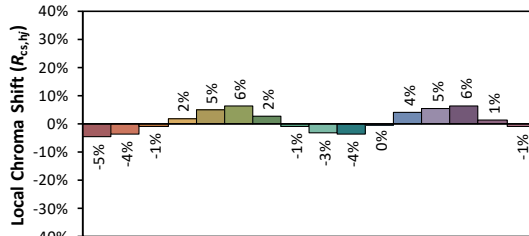
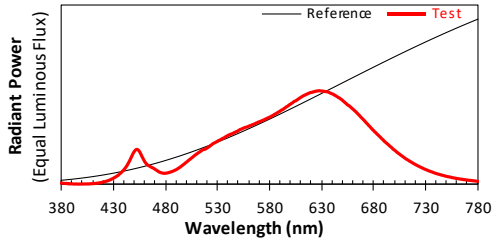
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2025/1/17

Model: KWFM499XX



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

x 0.4647
 y 0.4109
 u' 0.2654
 v' 0.5282

CIE 13.3-1995
(CRI)

R_a 91
 R_g 61

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

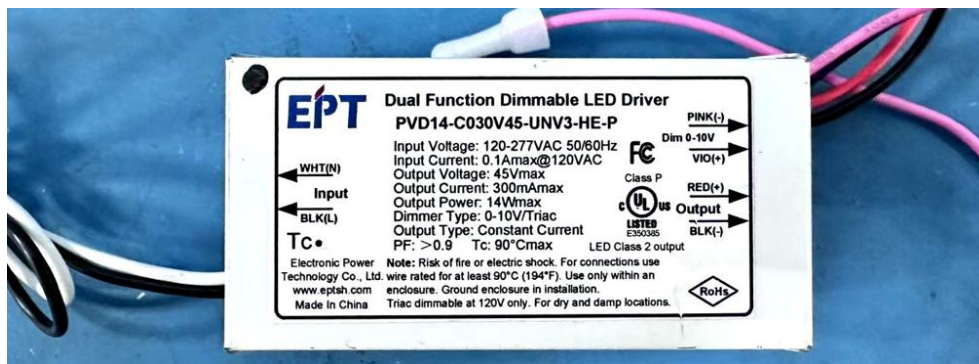
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWFM499XX



View of LED driver PVD14-C030V45-UNV3-HE-P

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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 *****