

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241212122GZU-002

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REVISION DATE

None

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Report format for LM-79_G

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Report No.: 241212122GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWTB22027XX

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 KWTB22027XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241212122-002.
<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>	06 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:	KWTB22027XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWTB22027XX

Criteria	Result
Total Lumen Output	161.8 lm
Total Power	8.7 W
Luminaire Efficacy	18.6 lm/W
S/MH(C0/180)	1.18
S/MH(C90/270)	2.35
Correlated Color Temperature (CCT)	2503 K
Color Rendering Index (CRI)	88
R9	55
Chromaticity Coordinate (x)	0.4829
Chromaticity Coordinate (y)	0.4237
Chromaticity Coordinate (u')	0.2713
Chromaticity Coordinate (v')	0.5357

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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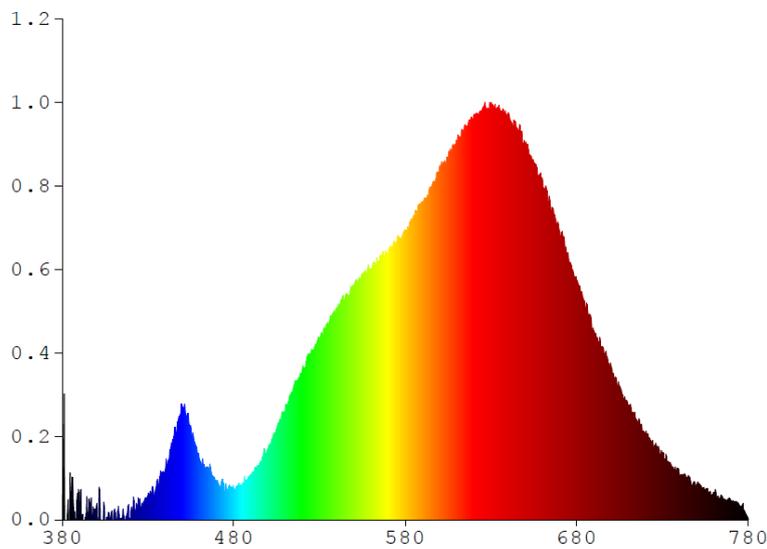
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWTB22027XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm								
380	0.0493	480	0.0703	580	0.7744	680	0.6396	780	0.0004
385	0.0215	485	0.0960	585	0.8124	685	0.5607		
390	0.0331	490	0.1208	590	0.8364	690	0.4996		
395	0.0183	495	0.1491	595	0.8876	695	0.4511		
400	0.0429	500	0.1907	600	0.9459	700	0.4082		
405	0.0000	505	0.2416	605	0.9681	705	0.3550		
410	0.0186	510	0.2959	610	1.0104	710	0.3011		
415	0.0003	515	0.3565	615	1.0543	715	0.2661		
420	0.0202	520	0.3964	620	1.0787	720	0.2242		
425	0.0540	525	0.4489	625	1.0975	725	0.1924		
430	0.0672	530	0.4809	630	1.1154	730	0.1677		
435	0.0959	535	0.5180	635	1.0945	735	0.1461		
440	0.1309	540	0.5649	640	1.0871	740	0.1163		
445	0.2147	545	0.5988	645	1.0432	745	0.1166		
450	0.2866	550	0.6268	650	1.0047	750	0.0930		
455	0.2310	555	0.6559	655	0.9481	755	0.0797		
460	0.1584	560	0.6693	660	0.9064	760	0.0742		
465	0.1407	565	0.6927	665	0.8183	765	0.0572		
470	0.0972	570	0.7104	670	0.7689	770	0.0502		
475	0.0620	575	0.7439	675	0.6874	775	0.0350		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWTB22027XX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

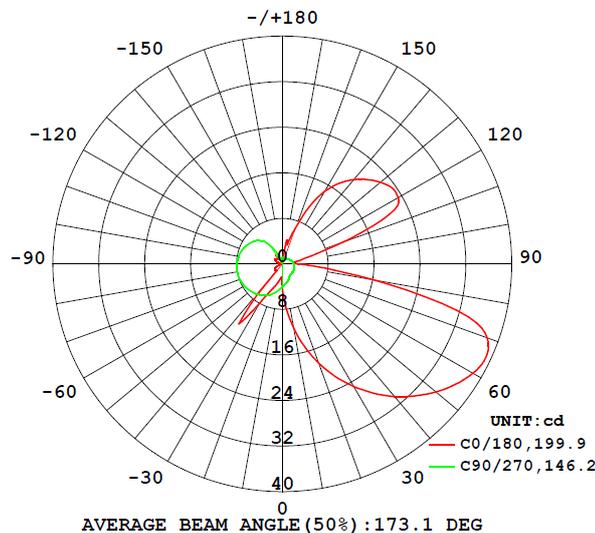
Photometric Measurements at 25°C – Distribution Method

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')
KWTB22027XX								
S2412121 22-002	base-up	2503	88	55	0.4829	0.4237	0.2713	0.5357

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)
KWTB22027XX							
S2412121 22-002	base-up	120.1	85.3	8.7	0.852	161.8	18.6

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWTB22027XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	4.2	4.2	5.1	4.6	4.0
5	7.8	7.4	7.4	5.7	3.7
10	11.4	10.6	9.8	6.8	3.5
15	15.0	13.9	12.2	7.9	3.3
20	18.5	17.1	14.5	8.9	3.1
25	21.8	20.1	16.7	9.9	2.8
30	24.8	23.0	18.8	10.8	2.6
35	27.7	25.8	20.7	11.7	2.4
40	30.4	28.2	22.4	12.5	2.4
45	32.8	30.5	24.1	13.2	2.3
50	35.0	32.5	25.5	13.9	2.3
55	36.9	34.2	26.8	14.5	2.3
60	38.4	35.7	28.0	15.0	2.3
65	39.1	37.0	29.0	15.5	2.2
70	38.0	38.0	29.8	15.8	2.2
75	31.4	38.7	30.4	16.1	2.1
80	16.1	39.1	30.9	16.3	2.1
85	6.4	39.2	31.1	16.4	2.0
90	3.0	39.0	31.2	16.3	2.0
95	2.0	38.9	31.0	16.2	1.9
100	2.3	38.6	30.7	16.0	1.8
105	4.5	38.3	30.1	15.7	1.8
110	11.1	37.4	29.2	15.2	1.7
115	20.5	36.0	28.1	14.7	1.6
120	23.3	34.0	26.7	14.0	1.5
125	23.3	31.6	25.1	13.2	1.5
130	22.3	28.7	23.1	12.3	1.4
135	21.0	25.6	20.9	11.2	1.3
140	19.4	22.4	18.3	10.1	1.2
145	17.3	19.1	15.5	8.8	1.1
150	14.7	15.6	12.7	7.4	1.1
155	11.1	11.5	9.6	6.1	1.1
160	6.8	6.4	7.2	4.9	1.1
165	3.7	4.4	5.1	3.5	1.1
170	4.2	3.6	3.0	2.6	1.2
175	0.2	0.4	0.5	0.8	0.8
180	0.4	0.5	0.8	0.3	0.3

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWTB22027XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWTB22027XX		
0-30	7.1	4.4
0-40	15.2	9.4
0-60	39.1	24.2
0-90	87.2	53.9
60-90	48.1	29.7
0-180	161.8	100.0

Beam Angle

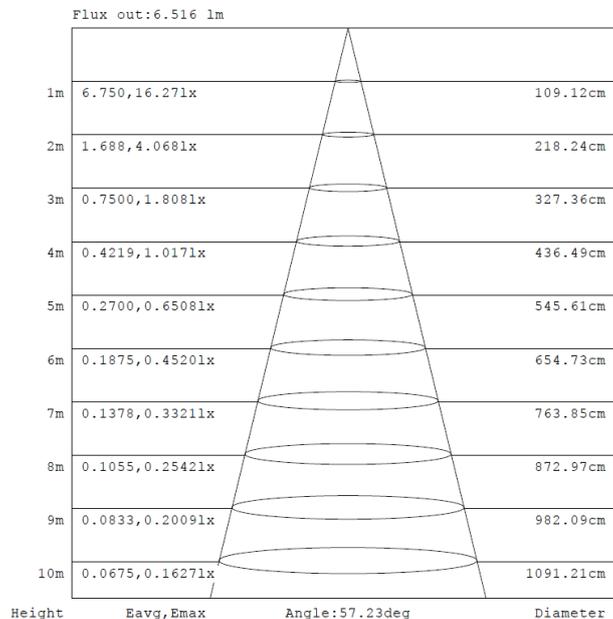
Total Beam Angle(°)
173.1

Illumination Plots

Model No.: KWTB22027XX

Mount Height: 2.5 m

Illuminance - Cone of Light



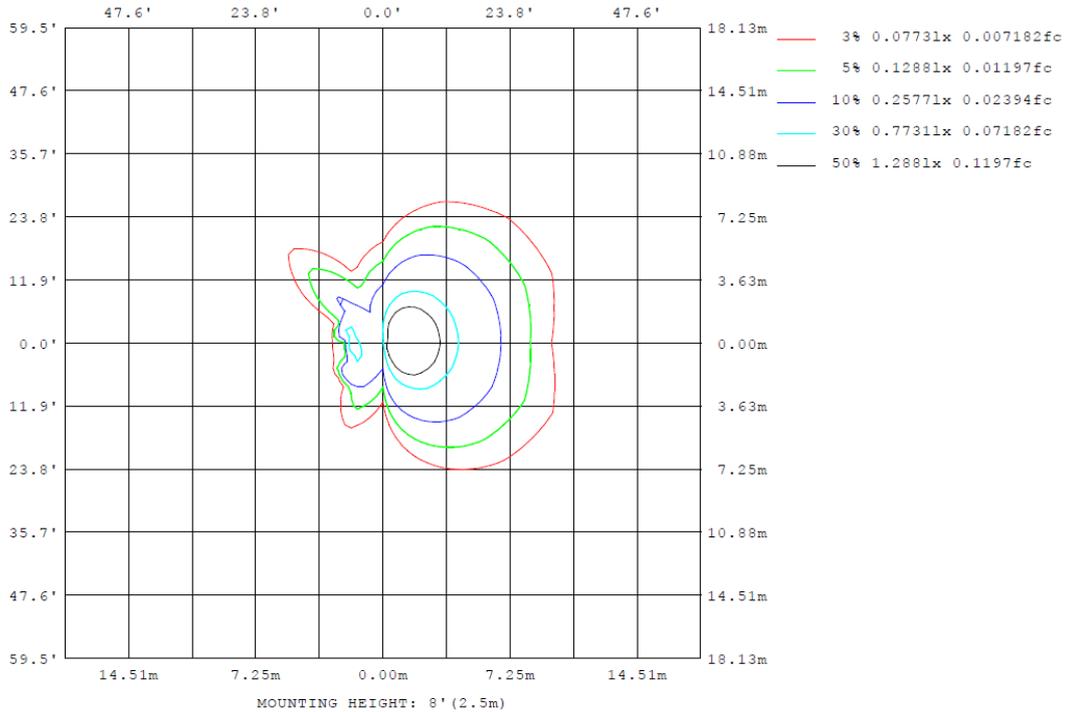
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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TEST REPORT
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWTB22027XX

Model No.: KWTB22027XX
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

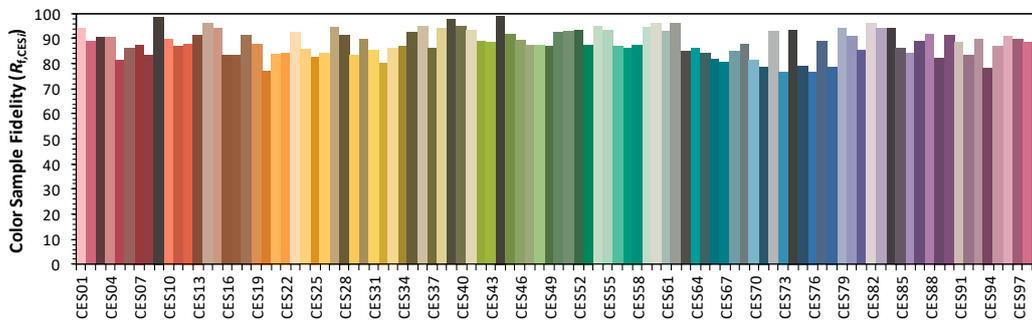
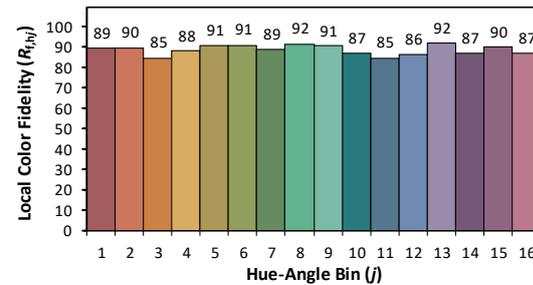
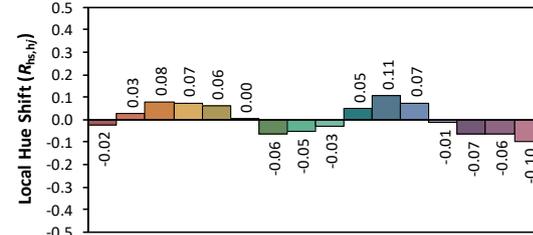
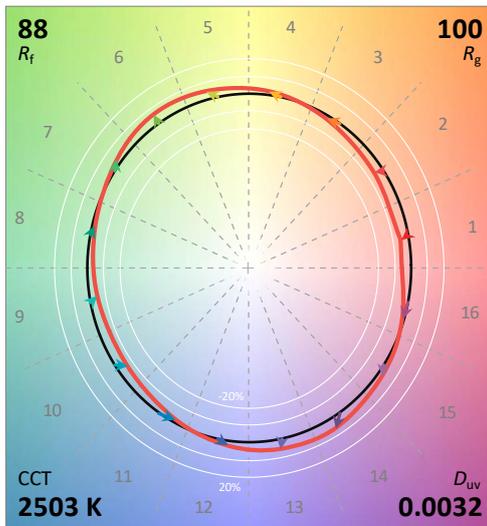
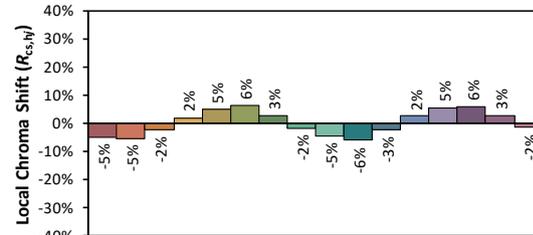
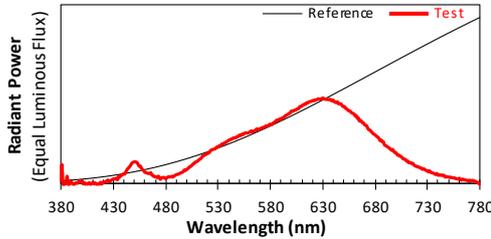
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWTB22027XX

ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD
Date: 2025/1/6

Manufacturer: Visual Comfort & Co.
Model: KWTB22027XX



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

x 0.4829
 y 0.4237
 u' 0.2713
 v' 0.5357

CIE 13.3-1995 (CRI)	
R_a	88
R_g	55

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 KWTB22027XX

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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 *****