

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

231010029GZU-002

ISSUE DATE

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REVISION DATE

None

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13

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Report No.: 231010029GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWCH19027XX

(Remark: "XX" are denoted finish color)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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TEST: Electrical and Photometric as required to the IES LM-79 test standard.

STATEMENT OF LIMITATION: The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ231007116.

STANDARDS USED: 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: 2008; Approved Method for the Electrical and Photometric
IES LM-79: 2019 Measurements of Solid-State Lighting Products
ANSI C78.377:2017 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model KWCH19027XX. The sample was received in undamaged condition. The sample designation was S231010029-002.

DATES OF TESTS: 10-October-2023

ISSUED BY: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

TEST LOCATION: Room101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu Science City, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	KWCH19027XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWCH19027XX

Criteria	Result
Total Lumen Output	2289.0 lm
Total Power	53.8 W
Luminaire Efficacy	42.6 lm/W
S/MH(C0/180)	1.37
S/MH(C90/270)	1.42
Correlated Color Temperature (CCT)	2673 K
Color Rendering Index (CRI)	96
R9	80
Chromaticity Coordinate (x)	0.4594
Chromaticity Coordinate (y)	0.4063
Chromaticity Coordinate (u')	0.2641
Chromaticity Coordinate (v')	0.5256

Remark:

Measurement uncertainty for applicable tests has been established.

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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	RC-HT601A	SA047-62

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 EVERFINE - Digital Power Meter., model PLM3000.

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: 3.9480A DC

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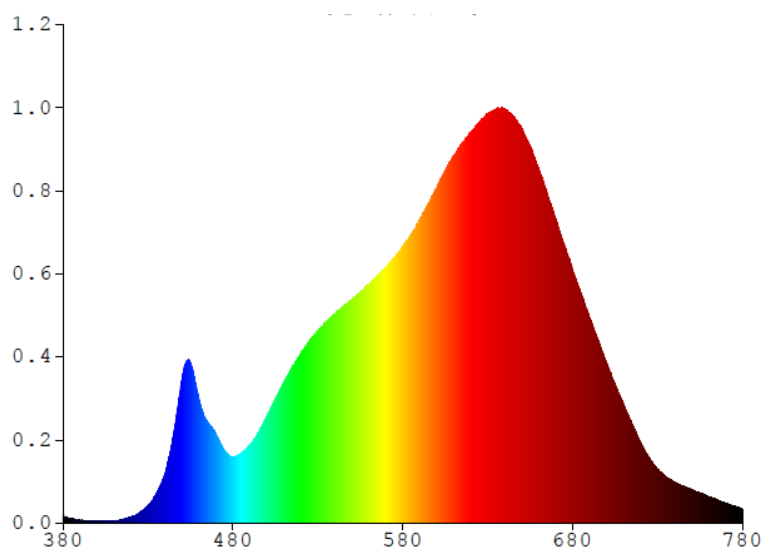
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWCH19027XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1010	480	0.9947	580	4.1458	680	3.8011	780	0.2065
385	0.0515	485	1.0493	585	4.3329	685	3.4454		
390	0.0458	490	1.1702	590	4.5523	690	3.0855		
395	0.0306	495	1.3603	595	4.7950	695	2.7458		
400	0.0271	500	1.6000	600	5.0208	700	2.4072		
405	0.0250	505	1.8623	605	5.2908	705	2.0866		
410	0.0360	510	2.1106	610	5.5125	710	1.7843		
415	0.0536	515	2.3317	615	5.7019	715	1.4880		
420	0.0928	520	2.5395	620	5.8631	720	1.2140		
425	0.1576	525	2.7243	625	6.0069	725	0.9808		
430	0.2618	530	2.8728	630	6.1301	730	0.8091		
435	0.4374	535	3.0217	635	6.2194	735	0.6941		
440	0.7412	540	3.1372	640	6.2135	740	0.6159		
445	1.3211	545	3.2533	645	6.1038	745	0.5545		
450	2.1515	550	3.3492	650	5.9222	750	0.5054		
455	2.4052	555	3.4586	655	5.6551	755	0.4548		
460	1.8622	560	3.5710	660	5.3144	760	0.3999		
465	1.5231	565	3.7013	665	4.9588	765	0.3496		
470	1.3288	570	3.8345	670	4.5666	770	0.2985		
475	1.0946	575	3.9755	675	4.1152	775	0.2571		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWCH19027XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

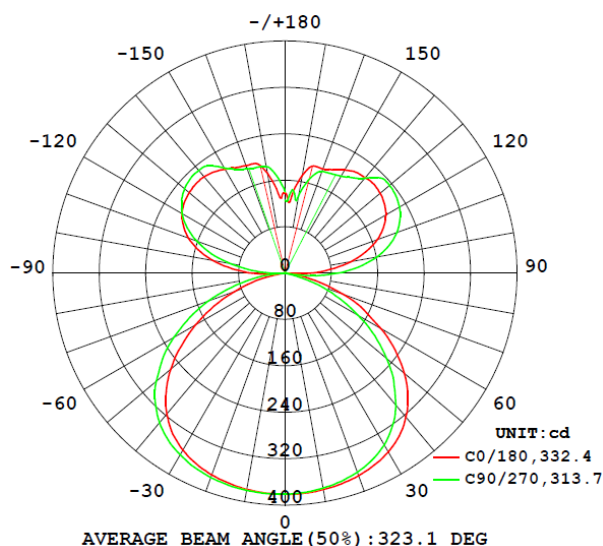
Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (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')
KWCH19027XX								
S2310100 29-002	--	2673	96	80	0.4594	0.4063	0.2641	0.5256

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	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
KWCH19027XX							
S2310100 29-002	--	120.1	450.7	53.8	0.993	2289.0	42.6

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWCH19027XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	381.5	381.3	380.8	380.9	380.9
5	380.9	380.1	379.5	379.3	379.2
10	378.9	377.5	376.4	376.4	376.2
15	375.9	373.7	372.2	372.0	371.7
20	371.4	368.3	365.8	365.5	365.0
25	365.1	360.6	356.7	356.1	355.3
30	355.8	349.5	344.0	343.1	341.9
35	342.8	333.7	325.7	324.6	322.6
40	324.3	311.5	301.0	298.9	297.0
45	299.6	283.4	269.6	268.0	265.5
50	268.3	248.3	233.3	231.6	228.8
55	231.7	209.9	193.3	190.6	189.2
60	190.3	167.7	150.9	149.7	145.2
65	150.2	126.1	108.9	105.3	103.4
70	106.0	84.7	67.3	65.6	63.3
75	62.3	42.3	21.9	18.9	14.9
80	18.0	4.3	10.5	10.1	10.7
85	5.0	31.7	48.6	50.7	52.5
90	43.5	68.4	85.6	88.6	90.4
95	78.9	104.0	122.1	126.6	127.9
100	115.0	136.1	153.4	159.0	160.4
105	144.6	163.1	178.0	185.0	185.8
110	169.5	183.8	196.3	204.5	205.1
115	187.4	198.6	209.0	218.5	218.7
120	200.8	200.1	216.5	227.4	227.8
125	209.2	202.9	219.9	231.3	233.1
130	214.2	205.4	216.5	228.0	235.4
135	216.8	207.3	209.6	221.5	232.1
140	214.9	206.5	205.2	210.8	213.9
145	212.6	203.7	200.2	200.2	201.1
150	205.2	198.9	193.9	192.5	193.2
155	196.6	192.3	188.9	188.2	189.4
160	191.5	190.2	187.4	187.0	187.0
165	191.4	180.8	168.1	169.3	170.1
170	170.4	152.6	137.4	134.5	134.7
175	133.2	132.2	139.5	140.4	144.9
180	139.0	128.3	134.8	135.4	125.4

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWCH19027XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWCH19027XX		
0-30	309.6	13.5
0-40	520.8	22.8
0-60	945.1	41.3
0-90	1187.7	51.9
60-90	242.6	10.6
0-180	2289.0	100.0

Beam Angle

Total Beam Angle (°)

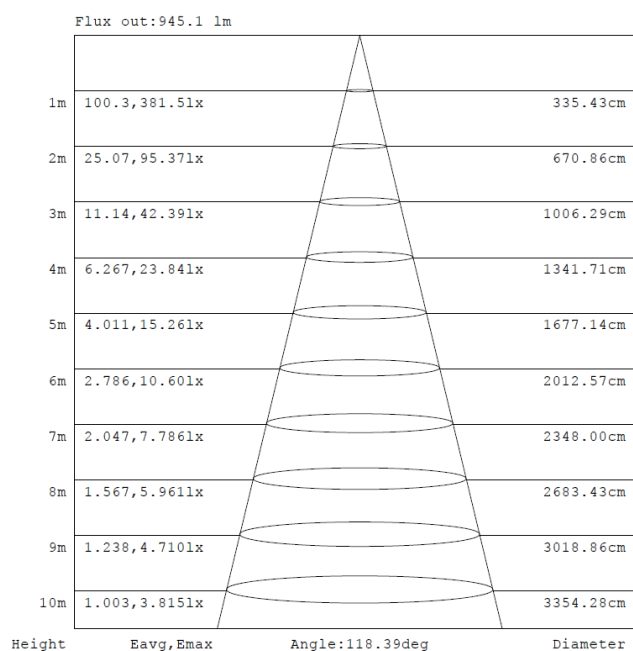
323.1

Illumination Plots

Model No.: KWCH19027XX

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

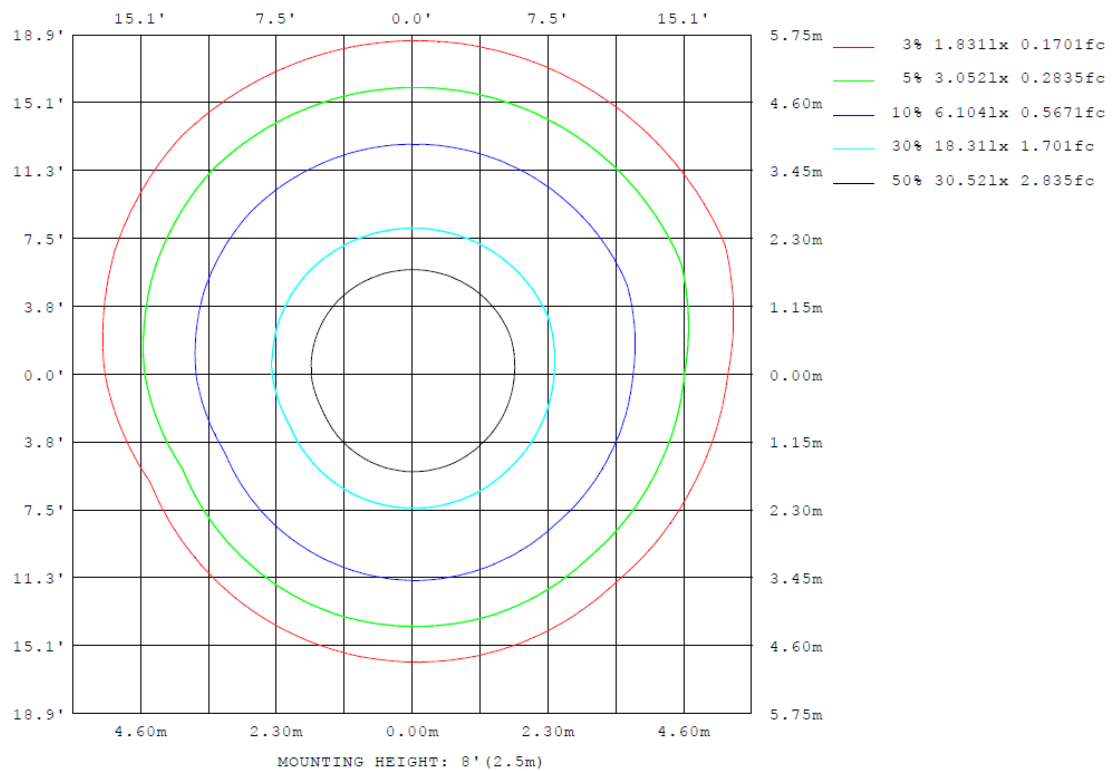
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWCH19027XX

Model No.: KWCH19027XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWCH19027XX

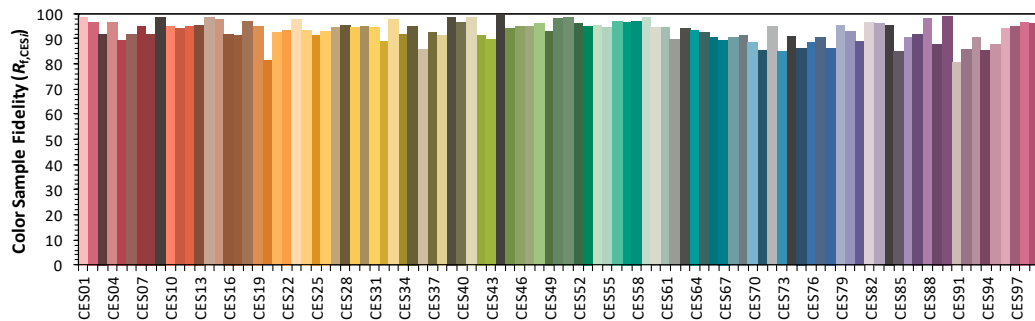
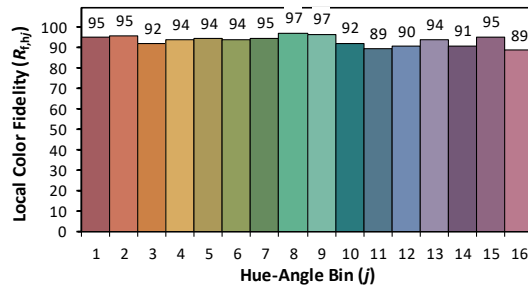
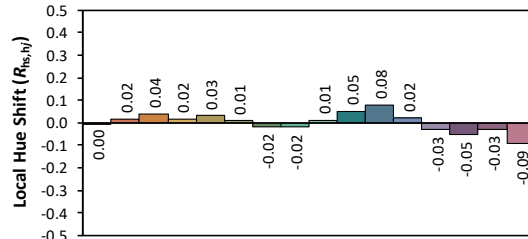
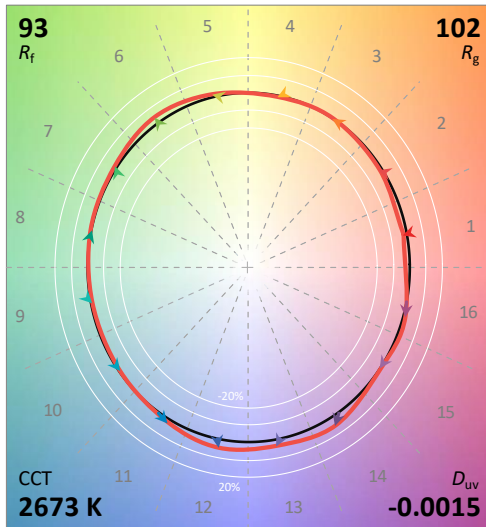
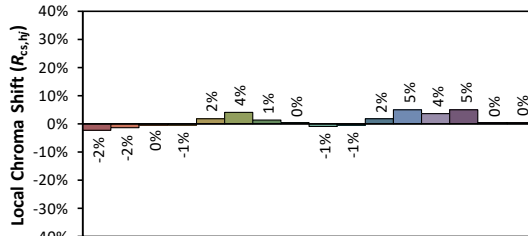
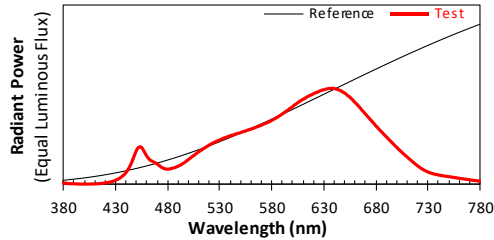
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/10/10

Model: KWCH19027xx



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

x 0.4594
 y 0.4063
 u' 0.2641
 v' 0.5256

CIE 13.3-1995
(CRI)

R_a 96

R_g 80

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 KWCH19027XX

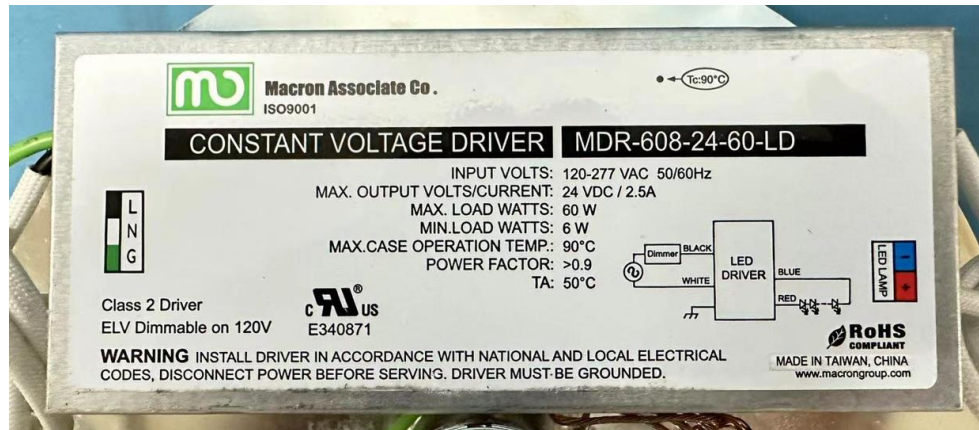


External view of KWCH19027XX

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver MDR-608-24-60-LD



View of LED board

In Charge Of Tests:

Done Ye

Done Ye
Engineer

Report Reviewed By

Shelley Ying

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****