

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

231010029GZU-007

ISSUE DATE

21-November-2023

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79:2008_F

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Report No.: 231010029GZU-007

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWFM19527XX

(Remark: "XX" are denoted finish color)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

7400 LINDER AVE. SKOKIE, IL, 60077

Email: Tgallagher@visualcomfortco.com
Phone No.: 8474104774

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 KWFM19527XX. The sample was received in undamaged condition. The sample designation was S231010029-007.

DATES OF TESTS: 12-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:	KWFM19527XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWFM19527XX

Criteria	Result
Total Lumen Output	2288.6 lm
Total Power	34.3 W
Luminaire Efficacy	66.7 lm/W
S/MH(C0/180)	1.37
S/MH(C90/270)	1.40
Correlated Color Temperature (CCT)	2659 K
Color Rendering Index (CRI)	95
R9	72
Chromaticity Coordinate (x)	0.4601
Chromaticity Coordinate (y)	0.4057
Chromaticity Coordinate (u')	0.2649
Chromaticity Coordinate (v')	0.5255

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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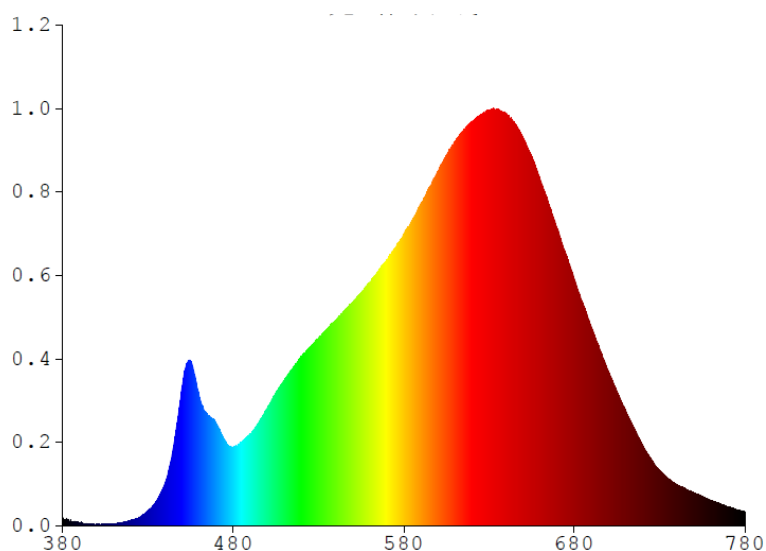
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWFM19527XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.2149	480	1.9974	580	7.3866	680	6.2362	780	0.3593
385	0.0905	485	2.1182	585	7.7372	685	5.6223		
390	0.0733	490	2.3288	590	8.1541	690	5.0252		
395	0.0525	495	2.6224	595	8.5644	695	4.4483		
400	0.0431	500	2.9833	600	8.9597	700	3.8928		
405	0.0439	505	3.3614	605	9.3764	705	3.3957		
410	0.0583	510	3.6935	610	9.7217	710	2.9266		
415	0.0841	515	3.9921	615	10.0100	715	2.4697		
420	0.1309	520	4.2744	620	10.2390	720	2.0459		
425	0.2261	525	4.5352	625	10.3920	725	1.6918		
430	0.3794	530	4.7423	630	10.5020	730	1.4039		
435	0.6288	535	4.9869	635	10.5320	735	1.2014		
440	1.0847	540	5.2055	640	10.4410	740	1.0556		
445	2.0076	545	5.4304	645	10.1900	745	0.9411		
450	3.5094	550	5.6510	650	9.8218	750	0.8340		
455	4.1647	555	5.8990	655	9.3426	755	0.7471		
460	3.2855	560	6.1594	660	8.7568	760	0.6512		
465	2.8026	565	6.4248	665	8.1432	765	0.5694		
470	2.5916	570	6.7332	670	7.5155	770	0.4823		
475	2.1681	575	7.0350	675	6.7461	775	0.4157		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19527XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

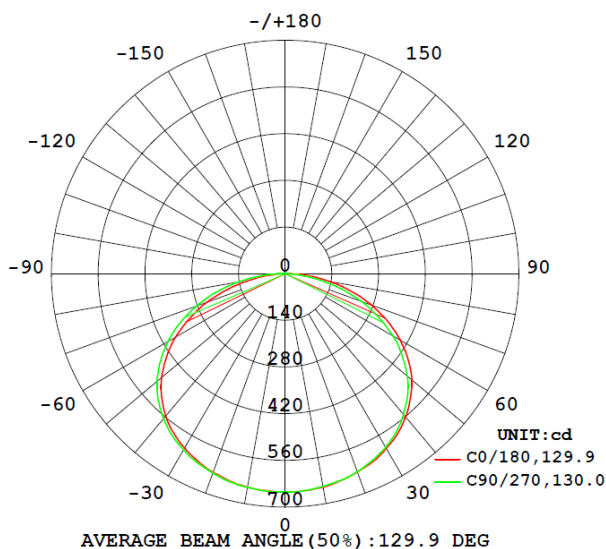
Photometric Measurements at 25°C – Distribution Method

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')
KWFM19527XX								
S2310100 29-007	--	2659	95	72	0.4601	0.4057	0.2649	0.5255

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)
KWFM19527XX							
S2310100 29-007	--	120.1	294.6	34.3	0.970	2288.6	66.7

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19527XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	655.5	655.5	655.6	655.4	655.6
5	653.4	652.7	652.6	653.1	653.1
10	650.4	649.5	648.7	649.2	647.7
15	642.8	641.7	641.7	641.4	641.6
20	632.4	633.0	632.6	631.2	631.5
25	621.8	619.0	617.6	618.5	617.8
30	604.8	604.0	601.8	599.9	600.8
35	586.0	582.5	580.5	580.3	579.6
40	561.2	558.9	555.3	552.1	551.1
45	529.9	526.6	522.8	520.1	518.1
50	495.1	489.4	484.7	480.2	477.4
55	449.8	444.1	436.8	431.9	427.3
60	397.6	390.6	383.1	377.2	372.6
65	338.9	333.2	322.9	315.1	308.0
70	274.6	265.6	254.1	248.0	242.6
75	205.8	196.3	188.2	177.9	169.6
80	135.4	128.6	117.6	106.6	97.4
85	69.6	60.6	49.9	39.8	31.2
90	5.9	6.6	4.1	0.3	0.2
95	0.2	0.2	0.2	0.2	0.3
100	0.2	0.3	0.3	0.3	0.3
105	0.3	0.3	0.3	0.3	0.3
110	0.3	0.3	0.3	0.3	0.3
115	0.3	0.3	0.3	0.3	0.3
120	0.4	0.4	0.4	0.4	0.4
125	0.5	0.5	0.5	0.5	0.5
130	0.6	0.6	0.6	0.6	0.6
135	0.7	0.7	0.7	0.7	0.7
140	0.8	0.8	0.8	0.8	0.8
145	0.9	0.9	0.9	0.9	0.9
150	0.9	0.9	0.9	0.9	0.9
155	1.0	1.0	1.0	1.0	1.0
160	1.0	1.0	1.0	1.0	1.0
165	1.0	1.0	1.0	1.0	1.0
170	1.0	1.0	1.0	1.0	1.0
175	1.0	1.0	1.0	1.0	1.0
180	1.0	1.0	1.0	1.0	1.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19527XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFM19527XX		
0-30	530.9	23.2
0-40	897.1	39.2
0-60	1698.8	74.2
0-90	2285.6	99.9
60-90	586.8	25.7
0-180	2288.6	100.0

Beam Angle

Total Beam Angle (°)

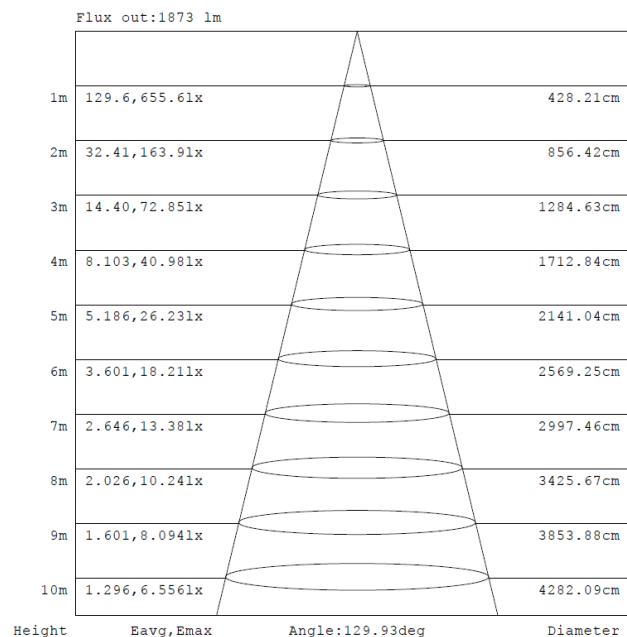
129.9

Illumination Plots

Model No.: KWFM19527XX

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

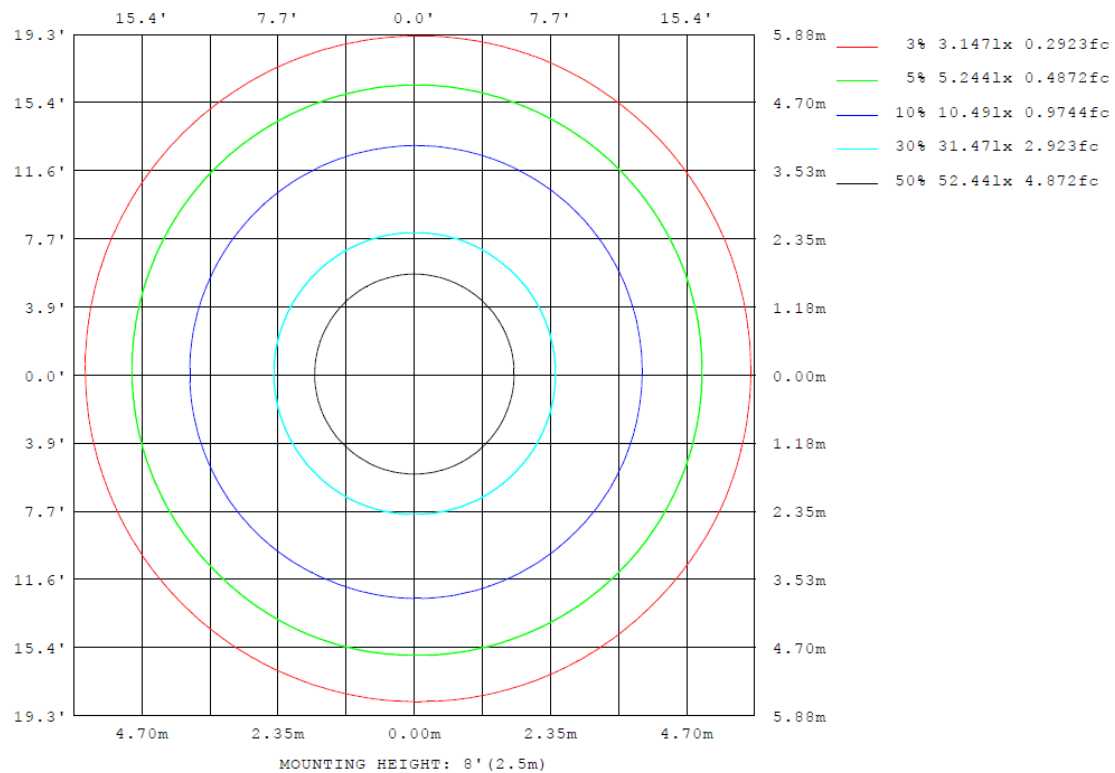
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19527XX

Model No.: KWFM19527XX

Mount Height: 2.5 m

Isoillumination Plot



TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19527XX

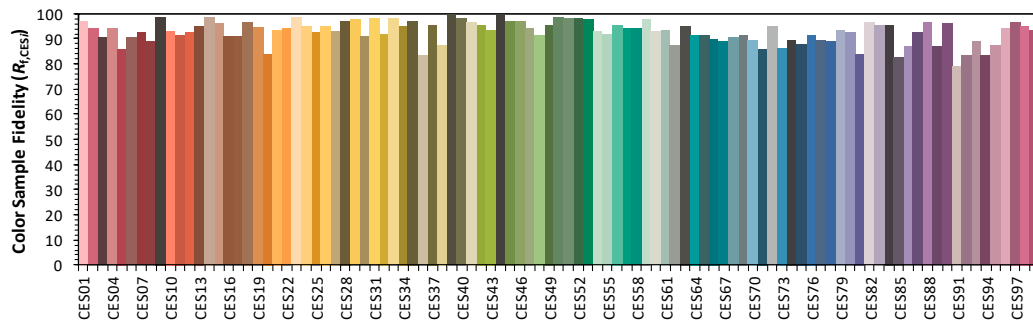
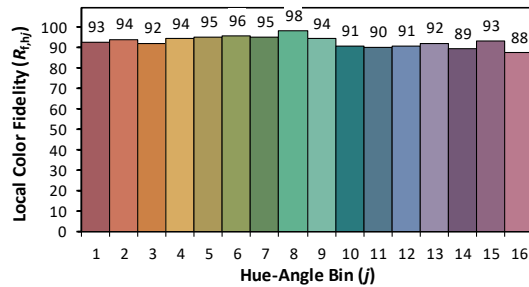
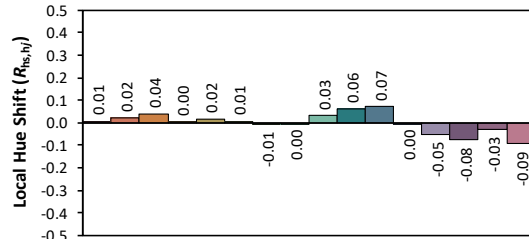
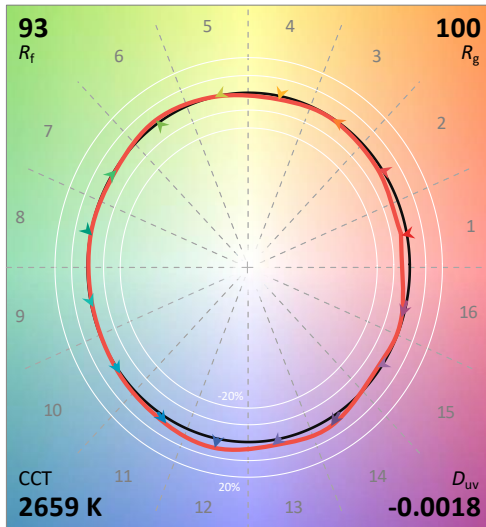
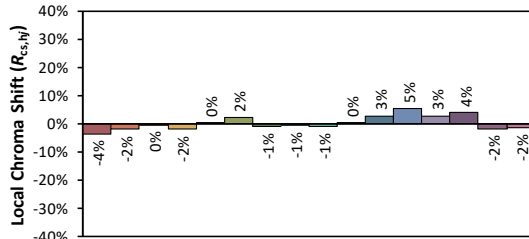
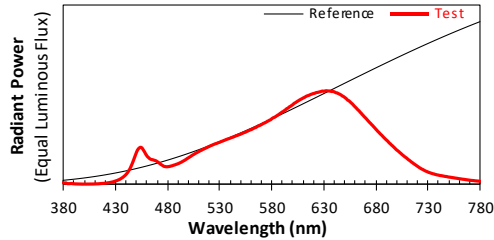
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/10/12

Model: KWFM19527xx



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

x 0.4601
 y 0.4057
 u' 0.2649
 v' 0.5255

CIE 13.3-1995
(CRI)

R_a 95

R_g 72

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

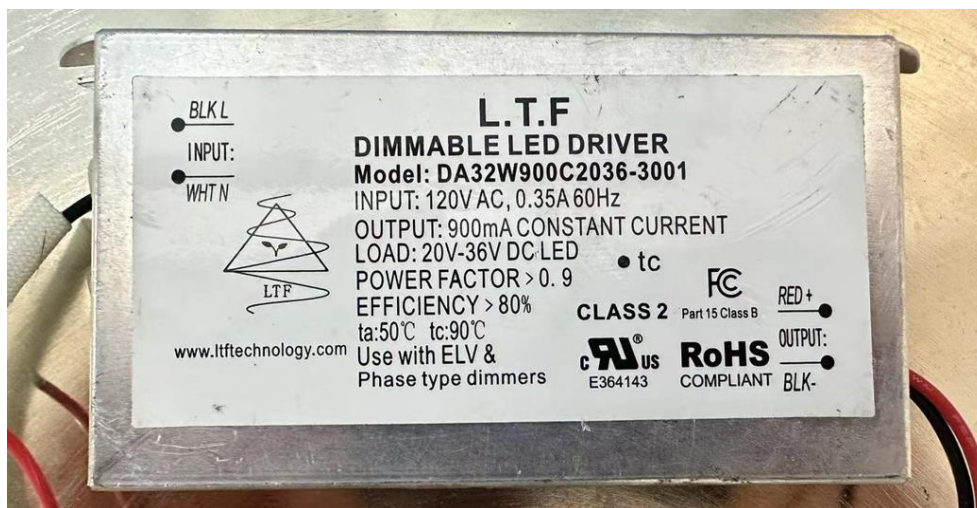
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWFM19527XX



View of LED driver DA32W900C2036-3001

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

TEST REPORT

PRODUCT PICTURE (not to scale)



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 *****