

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

231010029GZU-004

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REVISION DATE

None

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13

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Report No.: 231010029GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWFM19227XX

(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 KWFM19227XX. The sample was received in undamaged condition. The sample designation was S231010029-004.

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:	KWFM19227XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWFM19227XX

Criteria	Result
Total Lumen Output	332.1 lm
Total Power	8.9 W
Luminaire Efficacy	37.4 lm/W
S/MH(C0/180)	1.43
S/MH(C90/270)	1.48
Correlated Color Temperature (CCT)	2548 K
Color Rendering Index (CRI)	94
R9	67
Chromaticity Coordinate (x)	0.4694
Chromaticity Coordinate (y)	0.4075
Chromaticity Coordinate (u')	0.2701
Chromaticity Coordinate (v')	0.5276

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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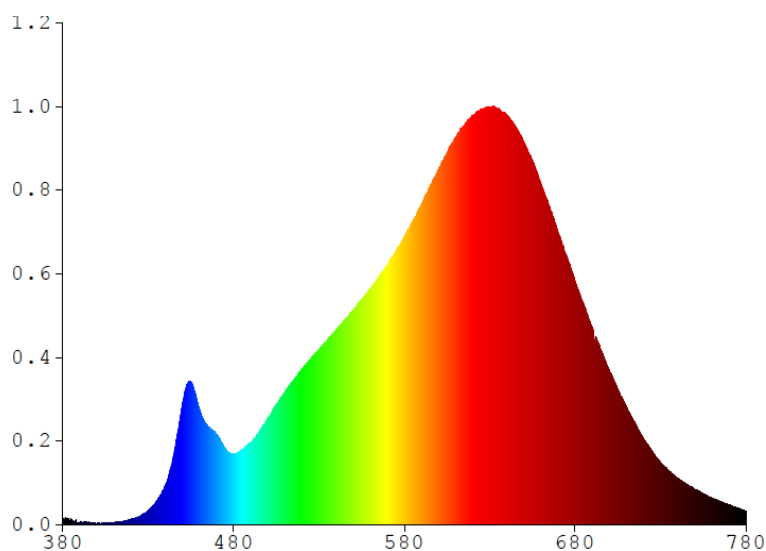
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWFM19227XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0223	480	0.2519	580	1.0269	680	0.8687	780	0.0480
385	0.0195	485	0.2680	585	1.0845	685	0.7855		
390	0.0077	490	0.2923	590	1.1424	690	0.7046		
395	0.0106	495	0.3320	595	1.2068	695	0.6253		
400	0.0047	500	0.3793	600	1.2643	700	0.5505		
405	0.0054	505	0.4273	605	1.3242	705	0.4829		
410	0.0091	510	0.4730	610	1.3803	710	0.4209		
415	0.0118	515	0.5135	615	1.4243	715	0.3631		
420	0.0201	520	0.5547	620	1.4577	720	0.3086		
425	0.0303	525	0.5904	625	1.4806	725	0.2632		
430	0.0512	530	0.6243	630	1.4891	730	0.2233		
435	0.0843	535	0.6609	635	1.4831	735	0.1921		
440	0.1408	540	0.6950	640	1.4619	740	0.1676		
445	0.2511	545	0.7304	645	1.4221	745	0.1454		
450	0.4287	550	0.7637	650	1.3660	750	0.1268		
455	0.5086	555	0.8025	655	1.2979	755	0.1114		
460	0.4121	560	0.8397	660	1.2181	760	0.0969		
465	0.3499	565	0.8794	665	1.1346	765	0.0828		
470	0.3222	570	0.9262	670	1.0430	770	0.0716		
475	0.2737	575	0.9739	675	0.9398	775	0.0612		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19227XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

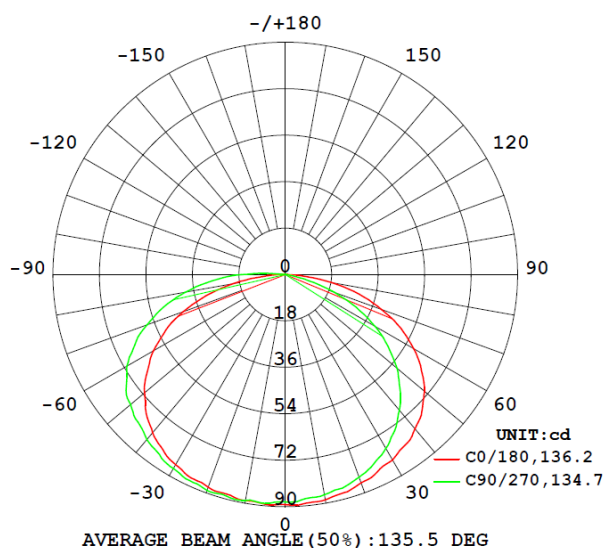
Photometric Measurements at 25°C – Distribution Method

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')
KWFM19227XX								
S2310100 29-004	--	2548	94	67	0.4694	0.4075	0.2701	0.5276

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)
KWFM19227XX							
S2310100 29-004	--	120.2	116.6	8.9	0.633	332.1	37.4

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19227XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	89.1	88.2	88.2	88.4	88.2
5	89.0	87.0	87.2	87.6	87.2
10	88.7	86.4	86.1	85.9	86.7
15	87.5	84.8	84.5	84.2	85.6
20	85.9	82.9	82.6	83.0	83.5
25	84.3	81.2	80.2	80.5	81.0
30	83.0	78.0	77.2	77.3	77.9
35	80.7	74.4	73.1	73.4	73.9
40	78.1	70.3	68.5	68.0	68.6
45	74.9	64.0	62.6	62.5	62.8
50	70.4	57.3	56.0	56.2	56.5
55	64.3	49.2	47.9	48.1	48.5
60	57.4	40.3	38.3	39.4	40.0
65	49.4	30.2	28.9	29.3	30.4
70	39.7	19.6	18.5	19.2	20.2
75	29.6	8.2	7.4	8.7	9.6
80	18.2	0.1	0.0	0.2	0.3
85	6.6	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	0.1	0.1	0.1	0.1
110	0.1	0.1	0.1	0.1	0.1
115	0.1	0.1	0.1	0.1	0.1
120	0.1	0.1	0.1	0.1	0.1
125	0.1	0.1	0.1	0.1	0.1
130	0.1	0.1	0.1	0.1	0.1
135	0.1	0.1	0.1	0.1	0.1
140	0.1	0.1	0.1	0.1	0.1
145	0.1	0.1	0.1	0.1	0.2
150	0.1	0.2	0.2	0.2	0.2
155	0.1	0.2	0.2	0.2	0.2
160	0.2	0.2	0.2	0.2	0.2
165	0.2	0.1	0.1	0.1	0.1
170	0.2	0.1	0.1	0.1	0.1
175	0.1	0.1	0.1	0.1	0.1
180	0.1	0.1	0.1	0.1	0.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19227XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWFM19227XX		
0-30	72.3	21.8
0-40	122.4	36.9
0-60	234.8	70.7
0-90	328.2	98.8
60-90	93.4	28.1
0-180	332.1	100.0

Beam Angle

Total Beam Angle (°)

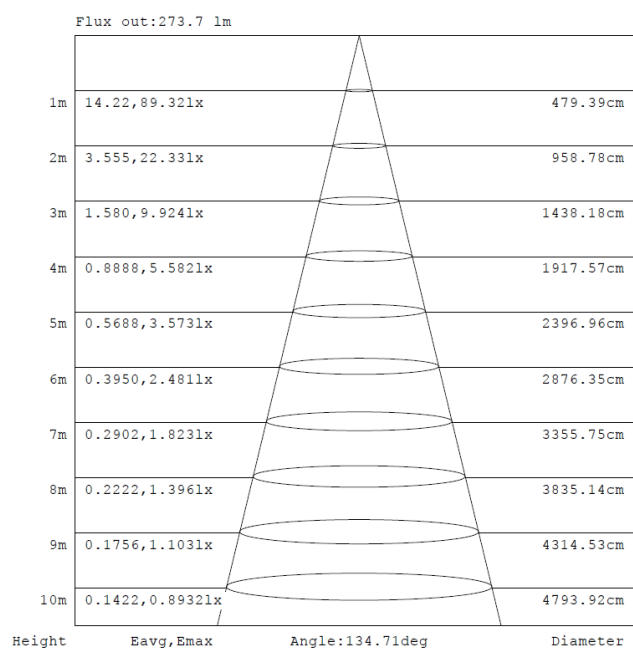
135.5

Illumination Plots

Model No.: KWFM19227XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

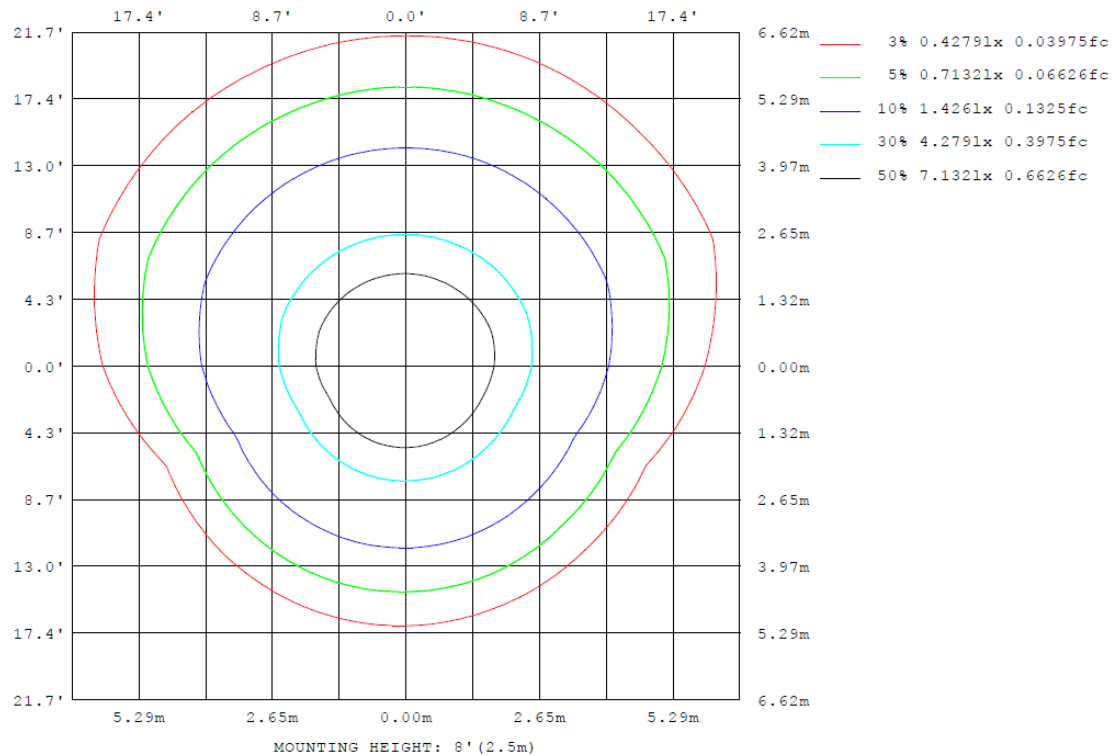
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19227XX

Model No.: KWFM19227XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWFM19227XX

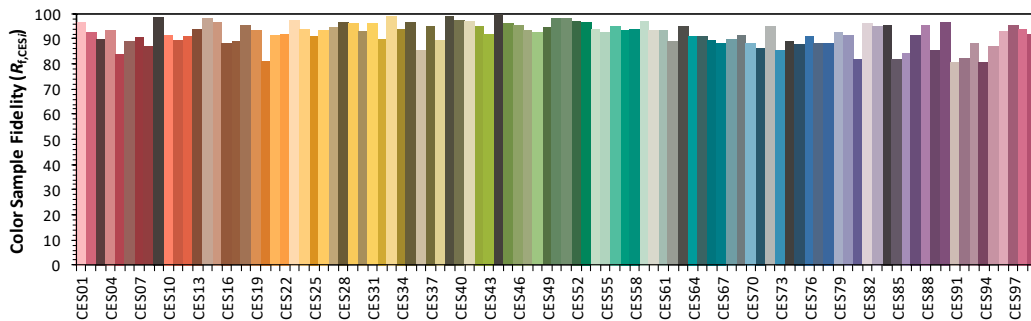
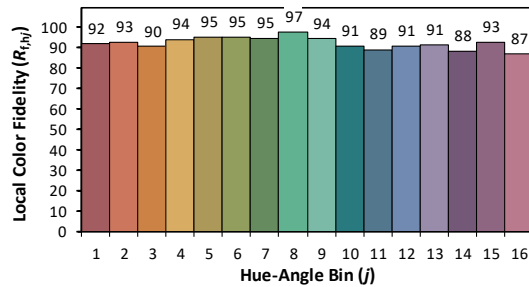
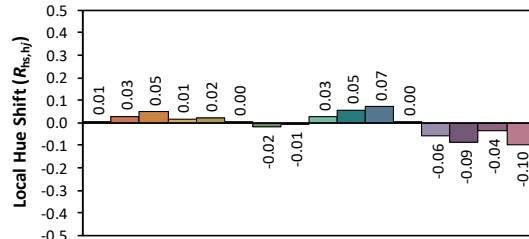
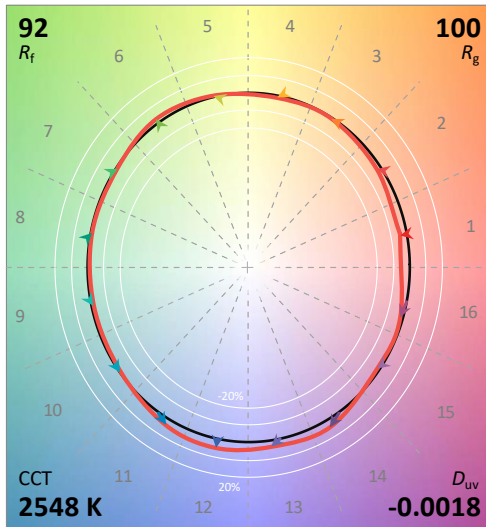
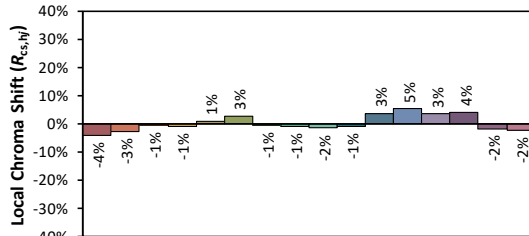
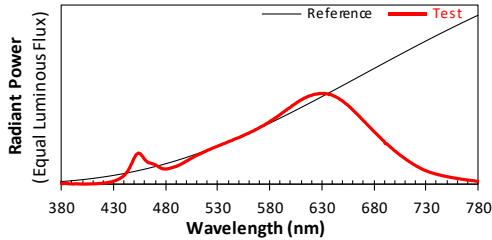
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/10/10

Model: KWFM19227xx



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

x 0.4694
 y 0.4075
 u' 0.2701
 v' 0.5276

CIE 13.3-1995
(CRI)

R_a 94
 R_g 67

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

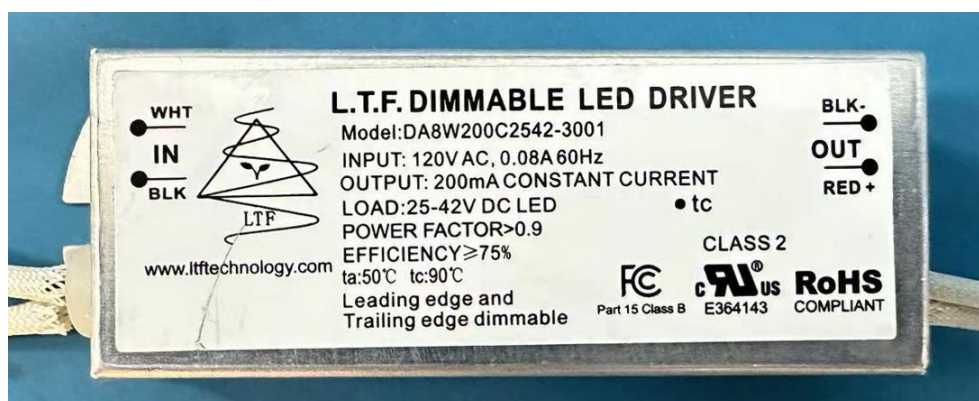
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWFM19227XX



View of LED driver DA8W200C2542-3001

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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 *****