

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241115139GZU-005

ISSUE DATE

18 December 2024

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

© 2024 INTERTEK



Report No.: 241115139GZU-005

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWOWS69527XXXCG

Remark: "XXX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

7400 LINDER AVE. SKOKIE, IL, 60077

Email: jrivero@visualcomfort.com

Phone No.: 847-410-4552

<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: QGZ241114023.
<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 KWOWS69527XXXCG. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115139-006.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Union Star Collection-Dongguan Denghuang HomeFurnishing Co., Ltd. No.5, Central Road, Yayuan Industrial Zone, Nancheng District, Dongguan City, Guangdong Province, 523000
<u>DATES OF TESTS:</u>	04 December 2024
<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

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

TEST REPORT

SUMMARY

Model Number:	KWOWS69527XXXCG
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWOWS69527XXXCG

Criteria	Result
Total Lumen Output	262.0 lm
Total Power	26.3 W
Luminaire Efficacy	10.0 lm/W
S/MH(C0/180)	0.77
S/MH(C90/270)	3.52
Correlated Color Temperature (CCT)	1984 K
Color Rendering Index (CRI)	87
R9	43
Chromaticity Coordinate (x)	0.5343
Chromaticity Coordinate (y)	0.4208
Chromaticity Coordinate (u')	0.3062
Chromaticity Coordinate (v')	0.5425

Remark:

N/A

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

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

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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

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

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

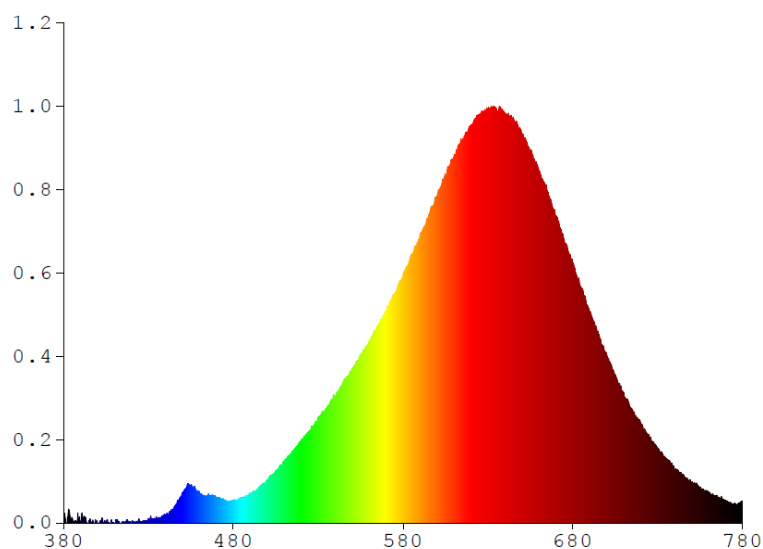
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWOWS69527XXXCG

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.1686	580	1.8269	680	1.9143	780	0.1639
385	0.0385	485	0.1821	585	1.9754	685	1.7284		
390	0.0000	490	0.2126	590	2.1218	690	1.5606		
395	0.0160	495	0.2620	595	2.2664	695	1.3754		
400	0.0000	500	0.3214	600	2.4103	700	1.2328		
405	0.0073	505	0.3839	605	2.5687	705	1.0877		
410	0.0000	510	0.4556	610	2.7095	710	0.9459		
415	0.0005	515	0.5316	615	2.8280	715	0.8339		
420	0.0000	520	0.6109	620	2.9295	720	0.7343		
425	0.0087	525	0.6820	625	3.0141	725	0.6330		
430	0.0280	530	0.7821	630	3.0548	730	0.5514		
435	0.0298	535	0.8460	635	3.0496	735	0.4750		
440	0.0588	540	0.9346	640	3.0154	740	0.3938		
445	0.1114	545	1.0454	645	2.9798	745	0.3538		
450	0.2209	550	1.1355	650	2.8663	750	0.2979		
455	0.2768	555	1.2415	655	2.7457	755	0.2640		
460	0.2266	560	1.3429	660	2.5963	760	0.2289		
465	0.1985	565	1.4478	665	2.4494	765	0.1925		
470	0.1871	570	1.5568	670	2.2648	770	0.1639		
475	0.1667	575	1.6923	675	2.0563	775	0.1390		



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69527XXXCG

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

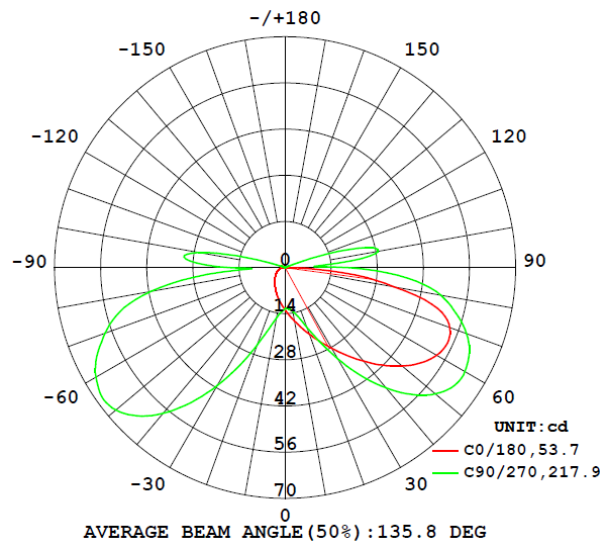
Photometric Measurements at 25°C – Distribution Method

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')
KWOWS69527XXXCG								
S2411151 39-006	base-up	1984	87	43	0.5343	0.4208	0.3062	0.5425

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)
KWOWS69527XXXCG							
S2411151 39-006	base-up	120.0	222.7	26.3	0.985	262.0	10.0

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69527XXXCG

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	12.8	13.3	13.0	12.8	12.6
5	14.5	14.6	14.0	13.3	12.6
10	16.5	16.5	15.8	14.9	13.5
15	18.8	18.9	18.8	17.9	15.5
20	21.5	22.1	23.6	23.1	19.2
25	24.6	26.5	30.5	30.5	24.7
30	28.2	32.4	39.5	39.9	31.9
35	32.4	39.6	49.3	49.8	39.8
40	37.0	47.5	59.0	59.2	47.6
45	41.8	55.3	67.7	67.3	54.4
50	46.4	62.2	74.4	73.1	59.6
55	50.3	67.6	78.7	76.3	62.6
60	53.2	71.3	80.5	76.9	63.0
65	54.3	73.2	80.2	75.0	61.7
70	53.2	73.4	77.5	71.7	58.6
75	47.9	69.9	73.0	67.2	53.7
80	33.3	58.6	64.1	59.2	47.9
85	17.5	57.1	49.2	45.5	37.4
90	0.6	51.9	50.4	28.0	19.5
95	0.0	20.7	49.8	39.8	16.2
100	0.0	1.2	27.7	39.7	28.7
105	0.1	0.0	6.0	22.8	22.9
110	0.2	0.0	0.9	6.1	8.2
115	0.2	0.0	0.0	1.0	1.3
120	0.2	0.0	0.0	0.0	0.2
125	0.2	0.0	0.0	0.0	0.1
130	0.2	0.0	0.0	0.0	0.1
135	0.3	0.0	0.0	0.1	0.1
140	0.3	0.0	0.0	0.1	0.1
145	0.3	0.1	0.1	0.1	0.1
150	0.3	0.1	0.1	0.1	0.1
155	0.4	0.1	0.1	0.1	0.1
160	0.4	0.1	0.1	0.1	0.1
165	0.4	0.2	0.1	0.1	0.1
170	0.4	0.4	0.2	0.1	0.1
175	0.2	0.4	0.3	0.4	0.3
180	0.3	0.3	0.2	0.1	0.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69527XXXCG

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWOWS69527XXXCG		
0-30	16.4	6.3
0-40	37.1	14.2
0-60	113.1	43.2
0-90	235.0	89.7
60-90	121.9	46.5
0-180	262.0	100.0

Beam Angle

Total Beam Angle(°)

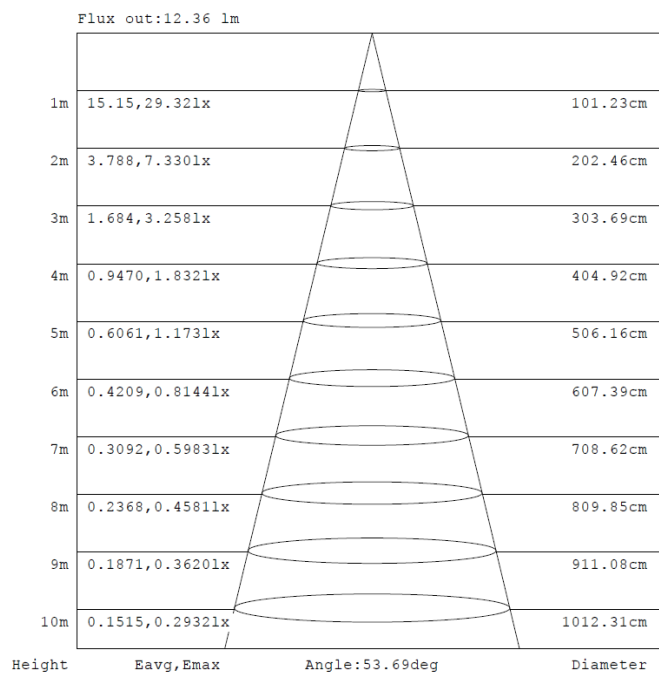
135.8

Illumination Plots

Model No.: KWOWS69527XXXCG

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.

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

TEST REPORT

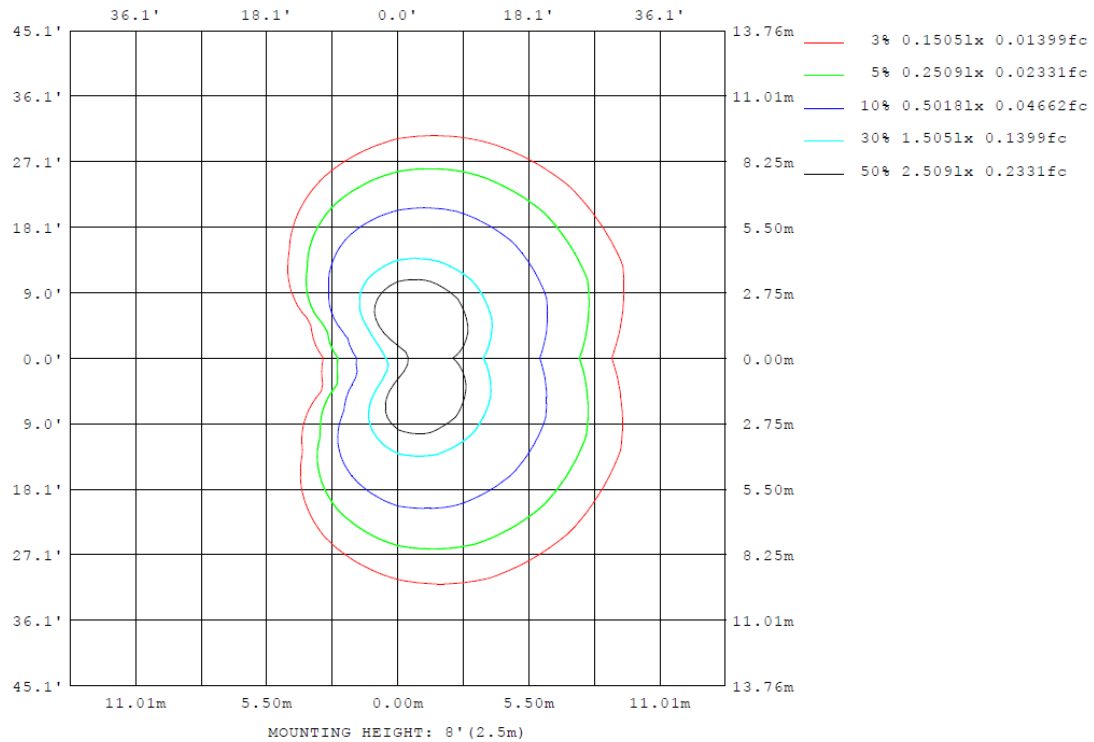
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69527XXXCG

Model No.: KWOWS69527XXXCG

Mount Height: 2.5 m

Isoillumination Plot



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69527XXXCG

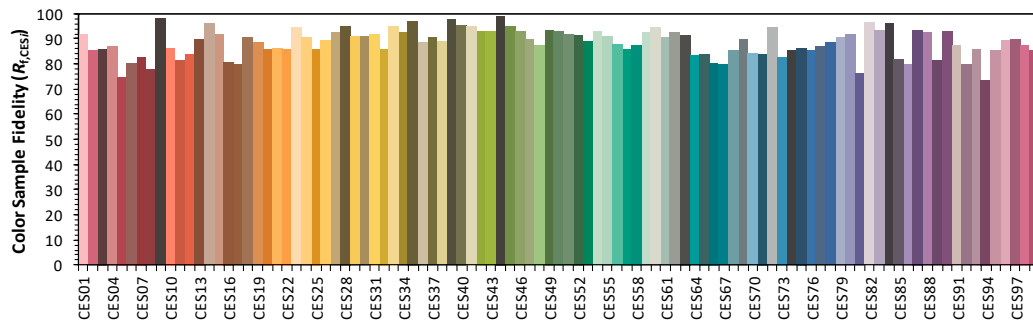
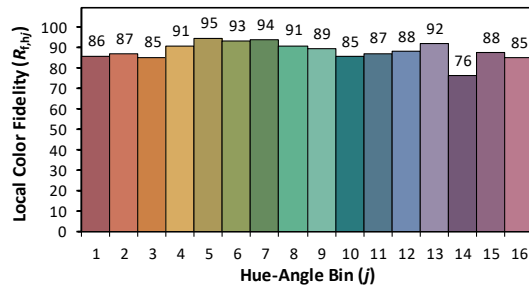
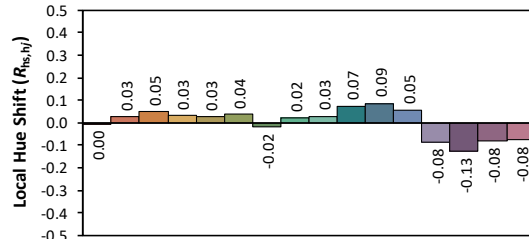
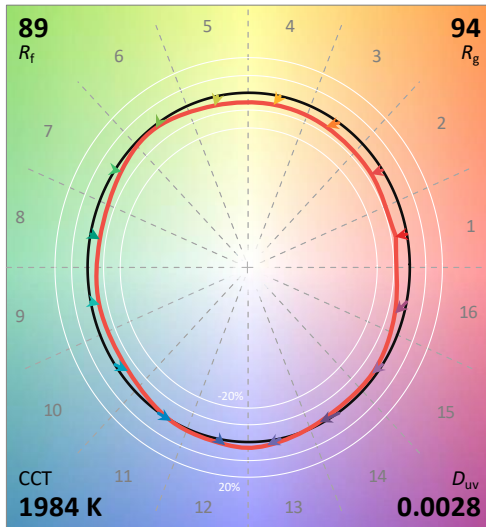
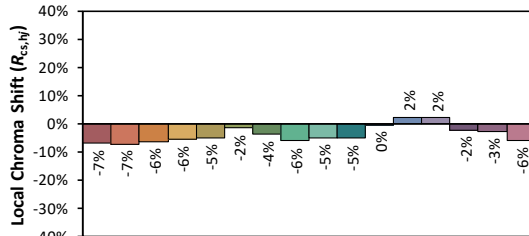
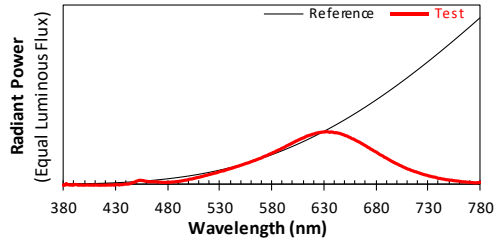
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/4

Model: KWOWS69527XXXCG



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

x 0.5343
 y 0.4208
 u' 0.3062
 v' 0.5425

CIE 13.3-1995
(CRI)

R_a 87

R_g 43

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

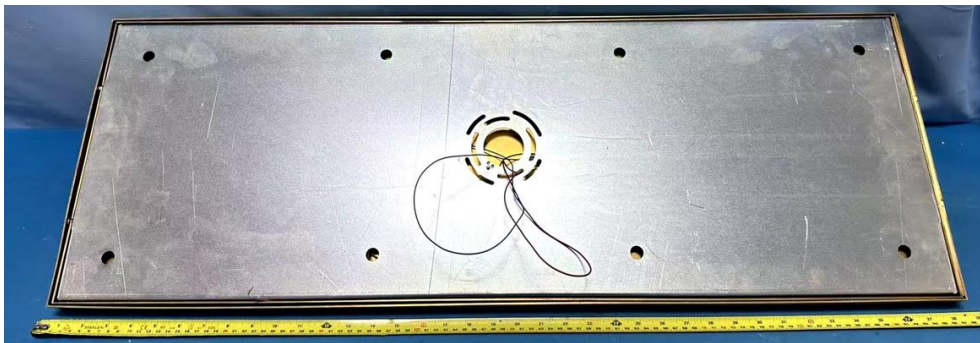
***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWOWS69527XXXCG



External view of KWOWS69527XXXCG



View of LED driver PSS30W-0700-38-VCC1 (AB2613)

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

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 *****