

# Visual Comfort & Co.

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

241115139GZU-004

**ISSUE DATE**

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**REVISION DATE**

None

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13

**DOCUMENT CONTROL NUMBER**

Report format for LM-79\_G

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Report No.: 241115139GZU-004

## TEST REPORT

### TEST OF ONE LED LUMINAIRE

MODEL NO. KWOWS69427XXXCG

Remark: "XXX" are denoted appearance color.

#### RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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Email: jrivero@visualcomfort.com

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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: 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 KWOWS69427XXXCG. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115139-005.
<u>MANUFACTURER /FACTORY &amp; 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>	03 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

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## TEST REPORT

### SUMMARY

Model Number:	KWOWS69427XXXCG
Description:	LED Luminaries
Brand Name:	--

#### Test Condition: 120V, 60Hz For KWOWS69427XXXCG

Criteria	Result
Total Lumen Output	316.7 lm
Total Power	26.2 W
Luminaire Efficacy	12.1 lm/W
S/MH(C0/180)	3.43
S/MH(C90/270)	0.59
Correlated Color Temperature (CCT)	2078 K
Color Rendering Index (CRI)	87
R9	44
Chromaticity Coordinate (x)	0.5240
Chromaticity Coordinate (y)	0.4222
Chromaticity Coordinate (u')	0.2987
Chromaticity Coordinate (v')	0.5414

#### 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

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.

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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 $\pi$  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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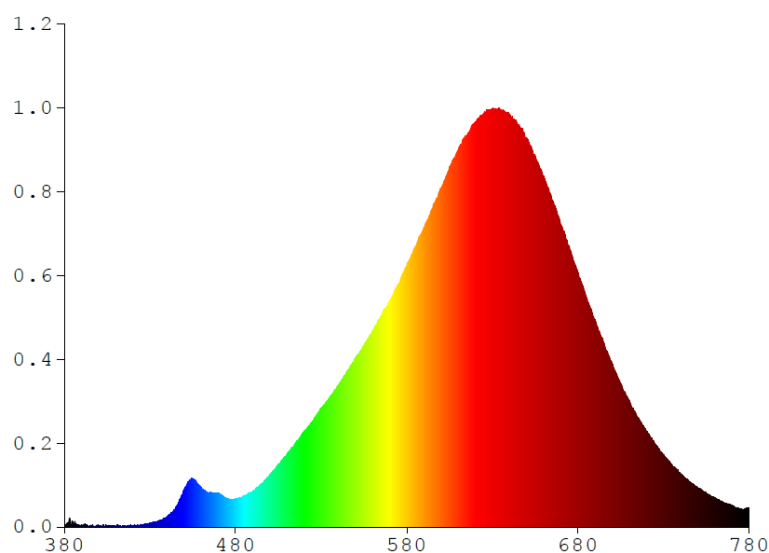
## TEST REPORT

### RESULTS OF TESTS

**Test Condition: 120V, 60Hz For KWOWS69427XXXCG**

#### Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.5262	580	4.8675	680	4.7172	780	0.3644
385	0.0747	485	0.5807	585	5.2138	685	4.2526		
390	0.0404	490	0.6674	590	5.5719	690	3.8448		
395	0.0178	495	0.7964	595	5.9266	695	3.4298		
400	0.0093	500	0.9726	600	6.2781	700	3.0245		
405	0.0282	505	1.1652	605	6.6975	705	2.6599		
410	0.0063	510	1.3528	610	7.0194	710	2.3338		
415	0.0176	515	1.5668	615	7.2807	715	2.0355		
420	0.0263	520	1.7805	620	7.5250	720	1.7781		
425	0.0368	525	1.9729	625	7.6905	725	1.5430		
430	0.0753	530	2.2204	630	7.7464	730	1.3426		
435	0.1098	535	2.4179	635	7.7551	735	1.1458		
440	0.1907	540	2.6318	640	7.6756	740	0.9880		
445	0.3569	545	2.8942	645	7.4772	745	0.8457		
450	0.6960	550	3.1417	650	7.2277	750	0.7210		
455	0.8879	555	3.3868	655	6.8844	755	0.6230		
460	0.7327	560	3.6549	660	6.5177	760	0.5412		
465	0.6338	565	3.9210	665	6.0551	765	0.4557		
470	0.6274	570	4.2092	670	5.6123	770	0.3946		
475	0.5289	575	4.5123	675	5.0888	775	0.3351		



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWOWS69427XXXCG**

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

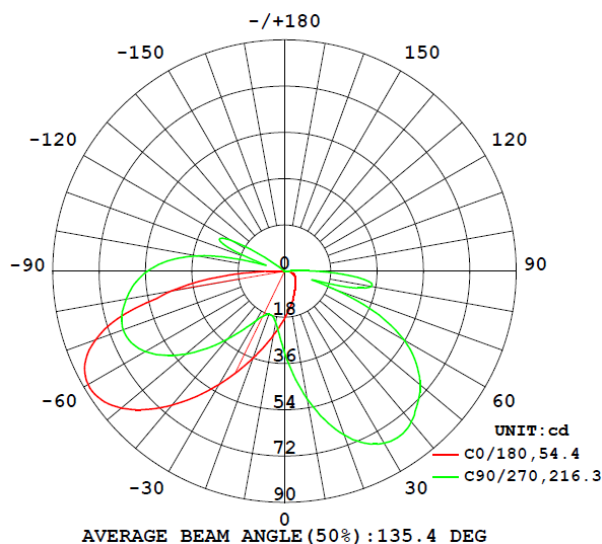
#### Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
KWOWS69427XXXCG								
S2411151 39-005	base-up	2078	87	44	0.5240	0.4222	0.2987	0.5414

#### 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)
KWOWS69427XXXCG							
S2411151 39-005	base-up	120.0	221.5	26.2	0.984	316.7	12.1

#### Intensity (Candlepower) Summary at 25°C - Candelas



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWOWS69427XXXCG**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	18.4	15.0	18.5	25.0	31.7
5	16.0	13.8	19.4	29.8	40.6
10	13.9	12.7	20.6	35.3	50.3
15	12.0	11.7	21.9	40.6	59.7
20	10.4	10.9	23.0	45.5	67.9
25	9.1	10.1	23.8	49.3	73.9
30	8.1	9.3	24.2	51.5	77.3
35	7.2	8.5	24.0	51.9	78.2
40	6.5	7.8	23.1	50.5	76.6
45	6.0	7.0	21.7	47.6	73.0
50	5.5	6.2	19.6	43.9	68.6
55	5.1	5.4	17.3	39.3	62.4
60	4.7	4.5	14.6	34.0	53.5
65	4.4	3.5	10.9	26.2	40.5
70	4.0	2.7	6.1	13.4	20.2
75	3.4	1.7	3.4	6.8	22.0
80	2.4	0.9	2.9	11.8	34.2
85	1.0	0.3	2.9	14.3	28.8
90	0.1	0.1	0.6	6.0	12.5
95	0.1	0.1	0.1	0.6	1.5
100	0.1	0.1	0.1	0.1	0.1
105	0.1	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	0.2	0.1	0.1	0.1	0.1
130	0.2	0.1	0.1	0.1	0.1
135	0.2	0.1	0.1	0.1	0.1
140	0.2	0.1	0.1	0.1	0.1
145	0.2	0.2	0.1	0.1	0.1
150	0.2	0.2	0.2	0.1	0.1
155	0.2	0.2	0.2	0.2	0.1
160	0.2	0.2	0.2	0.1	0.1
165	0.3	0.2	0.1	0.2	0.3
170	0.3	0.2	0.4	0.5	0.5
175	0.3	0.4	0.5	0.5	0.4
180	0.2	0.5	0.3	0.2	0.2

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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWOWS69427XXXCG**

#### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWOWS69427XXXCG		
0-30	29.7	9.4
0-40	57.9	18.3
0-60	144.2	45.6
0-90	272.7	86.1
60-90	128.5	40.5
0-180	316.7	100.0

#### Beam Angle

**Total Beam Angle(°)**

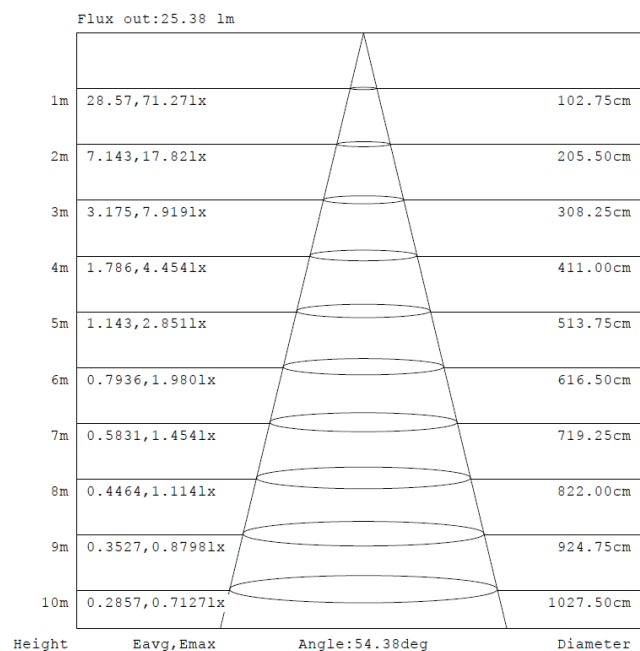
135.4

#### Illumination Plots

Model No.: KWOWS69427XXXCG

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

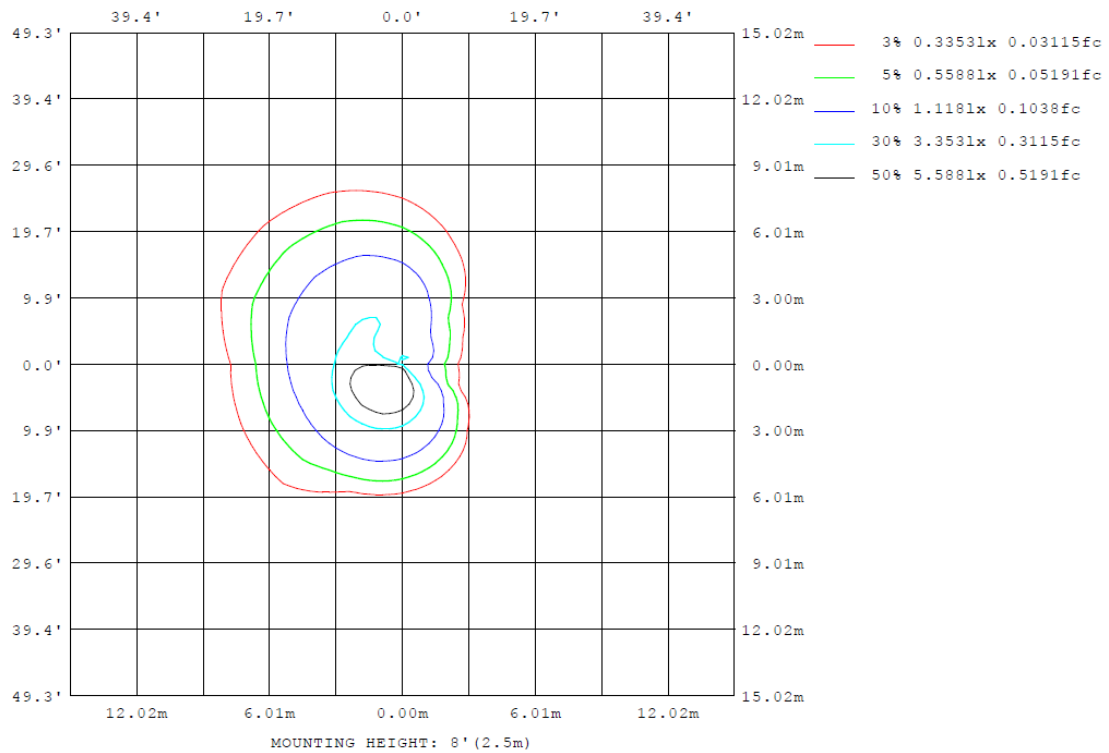
### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For KWOWS69427XXXCG**

Model No.: KWOWS69427XXXCG

Mount Height: 2.5 m

Isoillumination Plot

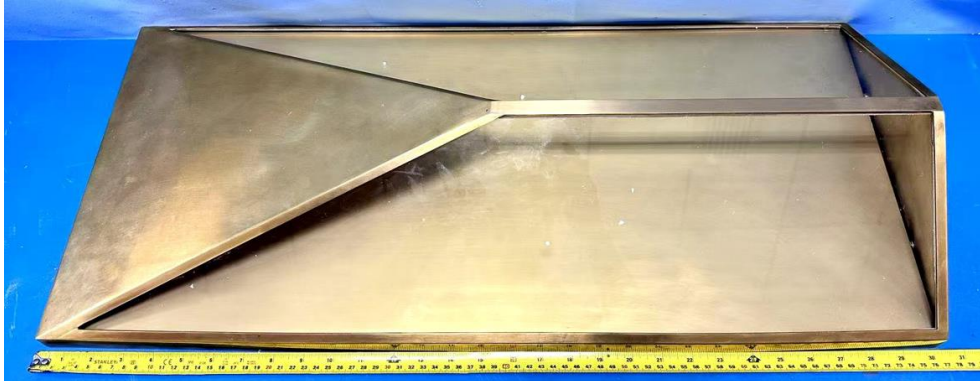


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## TEST REPORT

### PRODUCT PICTURE (not to scale)



External view of KWOWS69427XXXCG



External view of KWOWS69427XXXCG

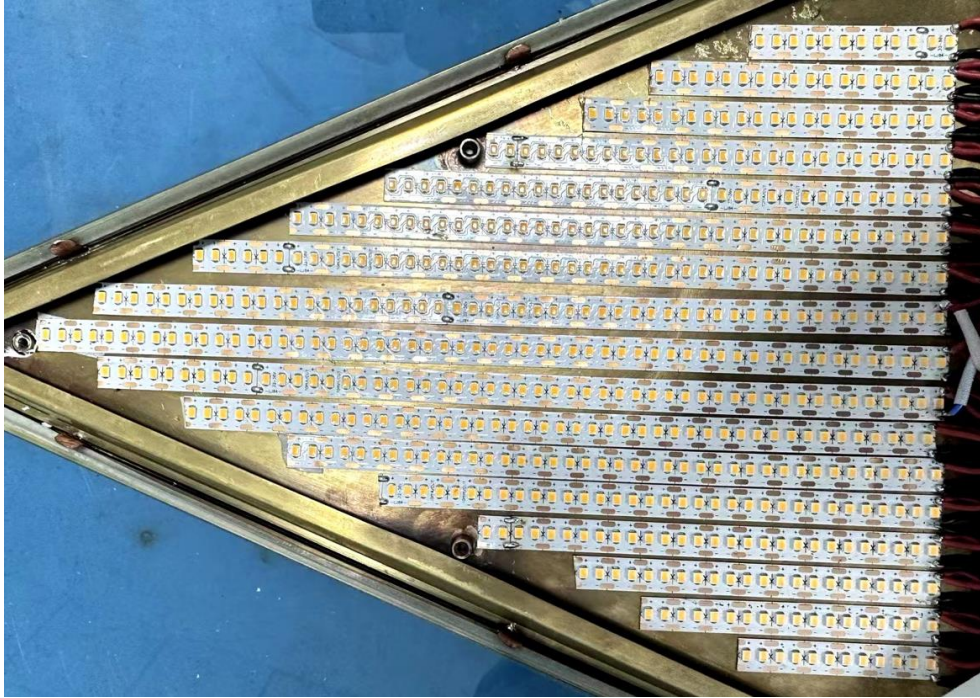


View of LED driver PSS30W-0700-38-VCC1 (AB2613)

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## 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 \*\*\*\*\*