

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241115139GZU-003

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None

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DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 241115139GZU-003

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWOWS69227XXXCG

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 KWOWS69227XXXCG. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115139-003.
<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>	05 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:	KWOWS69227XXXCG
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWOWS69227XXXCG

Criteria	Result
Total Lumen Output	219.4 lm
Total Power	11.9 W
Luminaire Efficacy	18.5 lm/W
S/MH(C0/180)	3.91
S/MH(C90/270)	3.35
Correlated Color Temperature (CCT)	2109 K
Color Rendering Index (CRI)	87
R9	43
Chromaticity Coordinate (x)	0.5222
Chromaticity Coordinate (y)	0.4246
Chromaticity Coordinate (u')	0.2962
Chromaticity Coordinate (v')	0.5420

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

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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 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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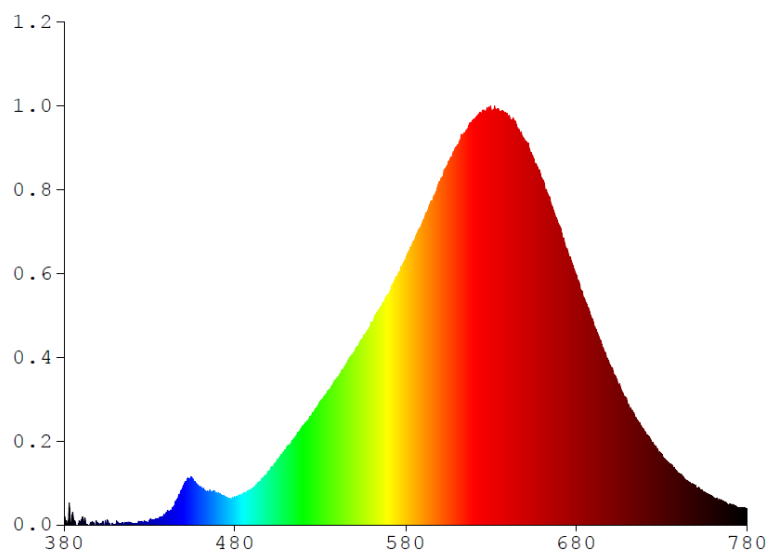
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWOWS69227XXXCG

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.2304	580	2.2482	680	2.1052	780	0.1401
385	0.1018	485	0.2704	585	2.4038	685	1.8883		
390	0.0415	490	0.3108	590	2.5622	690	1.6956		
395	0.0000	495	0.3704	595	2.7393	695	1.4998		
400	0.0006	500	0.4533	600	2.8922	700	1.3346		
405	0.0150	505	0.5534	605	3.0658	705	1.1863		
410	0.0000	510	0.6439	610	3.2049	710	1.0220		
415	0.0000	515	0.7355	615	3.3199	715	0.8987		
420	0.0130	520	0.8352	620	3.4284	720	0.7861		
425	0.0256	525	0.9273	625	3.5018	725	0.6798		
430	0.0376	530	1.0429	630	3.5023	730	0.5969		
435	0.0532	535	1.1406	635	3.4889	735	0.5132		
440	0.1019	540	1.2397	640	3.4479	740	0.4342		
445	0.1869	545	1.3561	645	3.3618	745	0.3687		
450	0.3336	550	1.4624	650	3.2412	750	0.3154		
455	0.3911	555	1.5843	655	3.0840	755	0.2771		
460	0.3209	560	1.7023	660	2.9179	760	0.2282		
465	0.2839	565	1.8297	665	2.7149	765	0.2004		
470	0.2659	570	1.9445	670	2.5236	770	0.1742		
475	0.2336	575	2.0915	675	2.2626	775	0.1447		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69227XXXCG

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

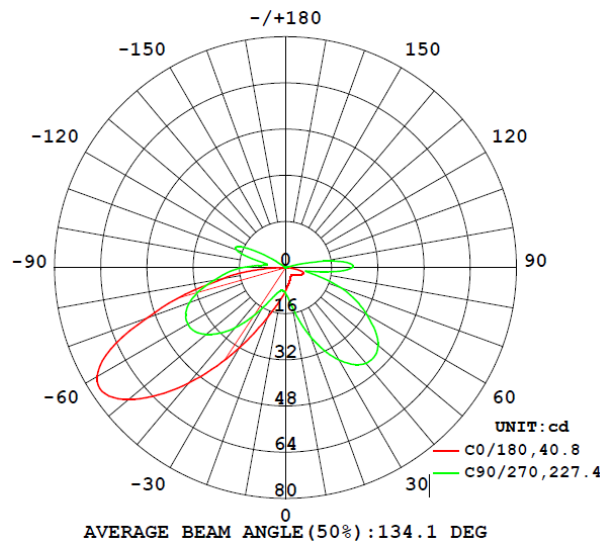
Photometric Measurements at 25°C – Distribution Method

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')
KWOWS69227XXXCG								
S2411151 39-003	base-up	2109	87	43	0.5222	0.4246	0.2962	0.5420

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)
KWOWS69227XXXCG							
S2411151 39-003	base-up	120.1	99.9	11.9	0.988	219.4	18.5

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69227XXXCG

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	8.1	6.5	6.5	7.5	8.9
5	6.9	5.7	6.1	8.0	10.7
10	5.9	5.0	5.9	8.9	14.1
15	5.1	4.5	5.8	10.5	19.4
20	4.5	4.1	5.8	12.9	25.6
25	4.0	3.8	5.8	15.6	31.6
30	3.7	3.6	5.9	18.1	36.9
35	3.5	3.5	6.1	20.1	41.0
40	3.4	3.5	6.2	21.2	43.3
45	3.5	3.6	6.1	21.1	43.6
50	3.8	3.9	5.7	20.2	41.8
55	4.3	4.2	5.2	18.1	37.9
60	5.0	4.6	4.6	15.2	32.5
65	5.8	4.9	3.8	11.7	26.9
70	6.5	5.1	2.9	8.0	20.2
75	6.3	4.9	1.8	5.4	12.2
80	4.4	4.2	1.0	4.2	7.1
85	1.7	3.0	0.8	4.1	16.6
90	0.2	1.8	1.5	5.7	23.0
95	0.1	0.6	1.4	8.0	21.3
100	0.1	0.1	0.8	5.6	13.3
105	0.1	0.1	0.4	1.8	4.5
110	0.1	0.1	0.1	0.6	0.9
115	0.1	0.1	0.1	0.2	0.4
120	0.1	0.1	0.1	0.1	0.0
125	0.1	0.1	0.1	0.1	0.0
130	0.1	0.1	0.1	0.1	0.0
135	0.1	0.1	0.1	0.1	0.0
140	0.1	0.1	0.1	0.0	0.0
145	0.1	0.1	0.0	0.0	0.0
150	0.1	0.1	0.0	0.0	0.0
155	0.1	0.1	0.0	0.0	0.0
160	0.1	0.1	0.1	0.0	0.0
165	0.1	0.1	0.1	0.1	0.1
170	0.1	0.1	0.0	0.1	0.1
175	0.1	0.0	0.1	0.1	0.1
180	0.1	0.0	0.0	0.0	0.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69227XXXCG

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWOWS69227XXXCG		
0-30	14.0	6.4
0-40	32.7	14.9
0-60	98.5	44.9
0-90	189.0	86.2
60-90	90.5	41.3
0-180	219.4	100.0

Beam Angle

Total Beam Angle(°)

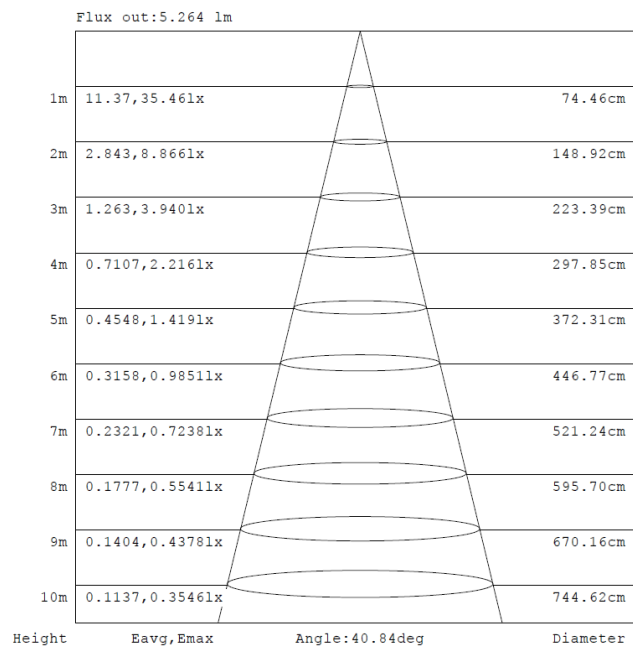
134.1

Illumination Plots

Model No.: KWOWS69227XXXCG

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

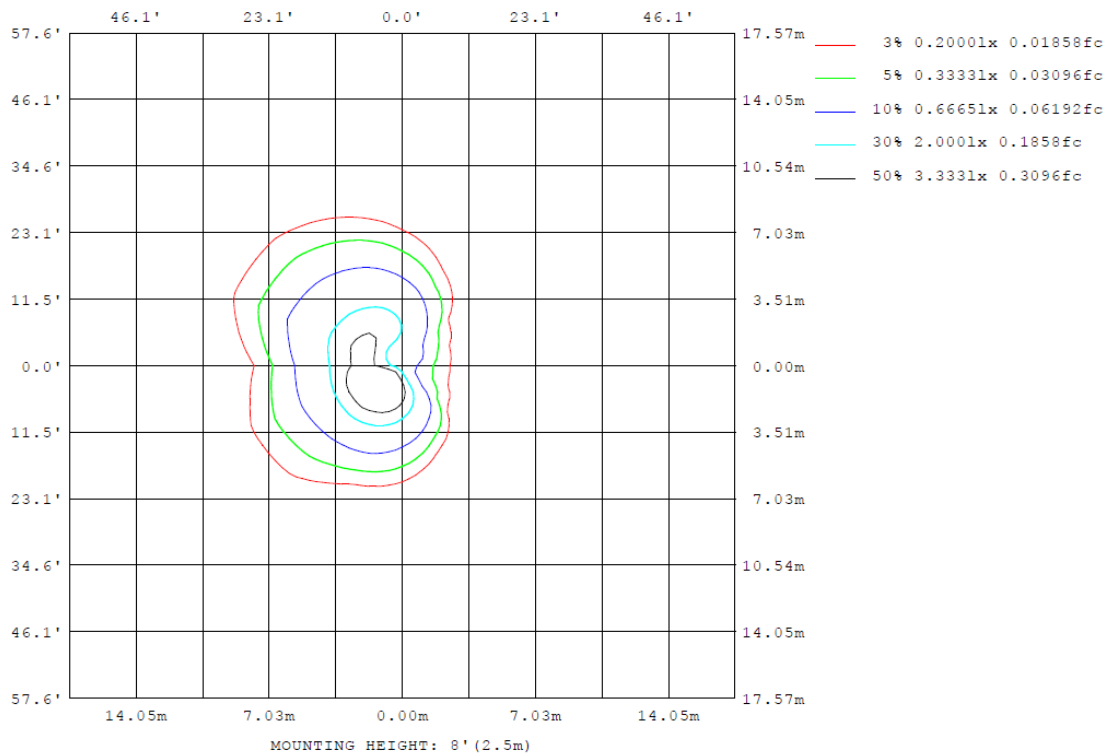
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69227XXXCG

Model No.: KWOWS69227XXXCG

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69227XXXCG

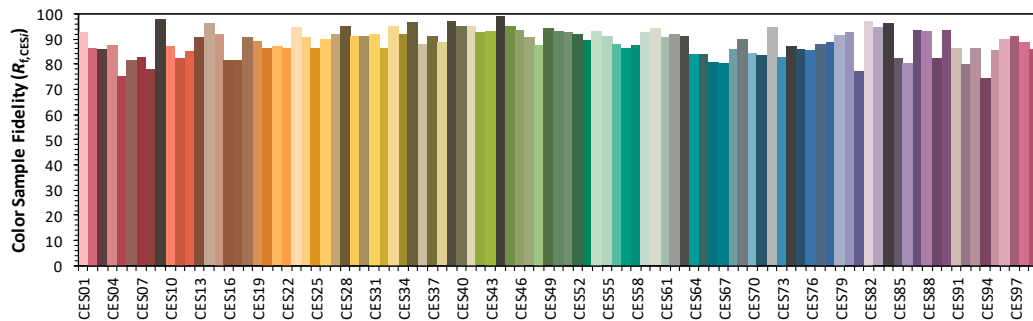
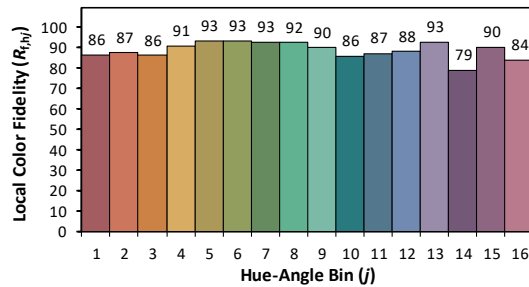
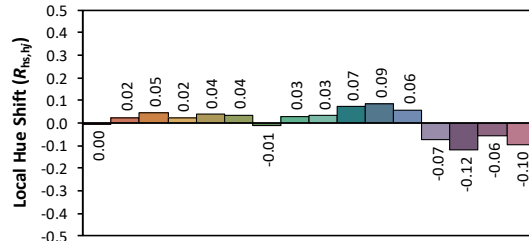
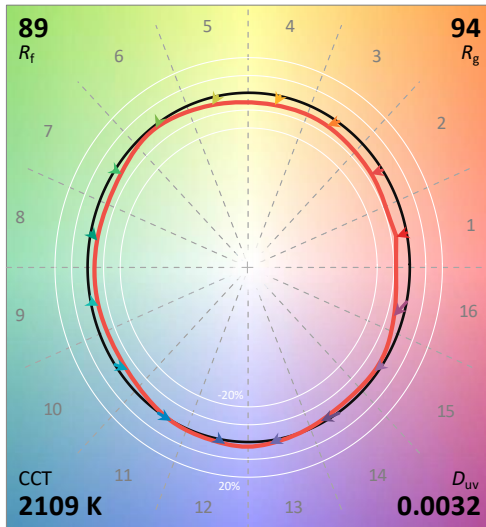
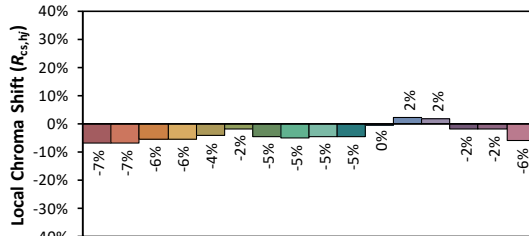
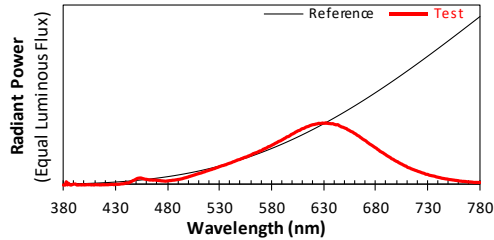
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/5

Model: KWOWS69227XXXCG



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

x 0.5222
 y 0.4246
 u' 0.2962
 v' 0.5420

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.

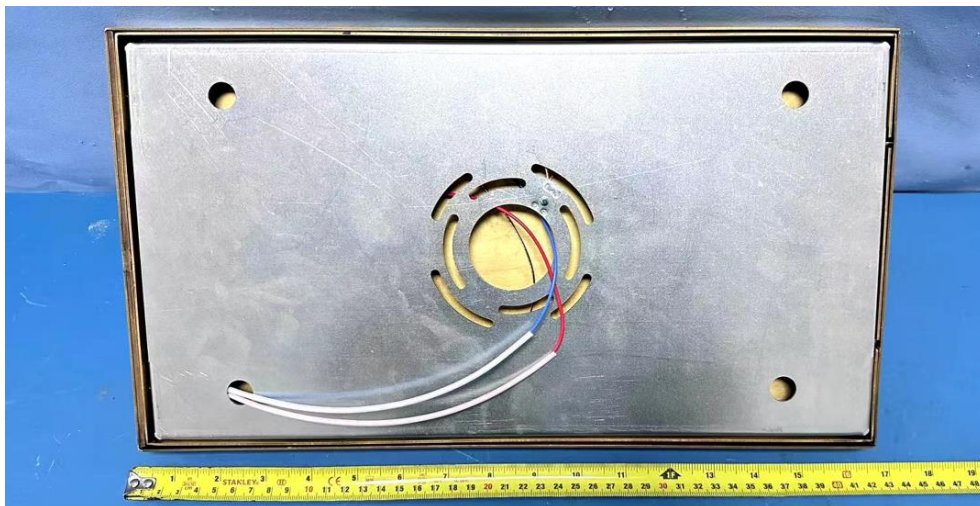
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWOWS69227XXXCG



External view of KWOWS69227XXXCG

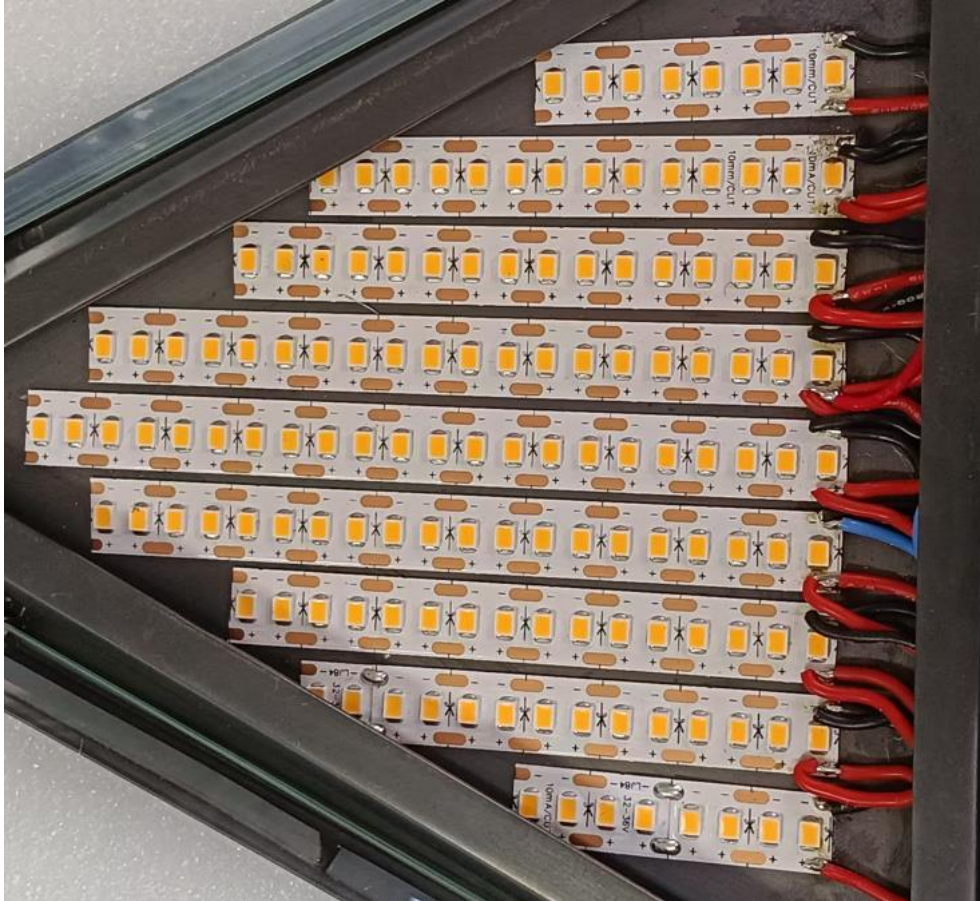


View of LED driver PTB15W-0300-38-VCC1 (AB0257)

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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 *****