

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241115139GZU-002

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None

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Report format for LM-79_G

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Report No.: 241115139GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWOWS69327XXXCG

Remark: "XXX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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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 KWOWS69327XXXCG. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241115139-004.
<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:	KWOWS69327XXXCG
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWOWS69327XXXCG

Criteria	Result
Total Lumen Output	106.6 lm
Total Power	8.4 W
Luminaire Efficacy	12.7 lm/W
S/MH(C0/180)	0.68
S/MH(C90/270)	3.03
Correlated Color Temperature (CCT)	2043 K
Color Rendering Index (CRI)	87
R9	45
Chromaticity Coordinate (x)	0.5286
Chromaticity Coordinate (y)	0.4228
Chromaticity Coordinate (u')	0.3013
Chromaticity Coordinate (v')	0.5423

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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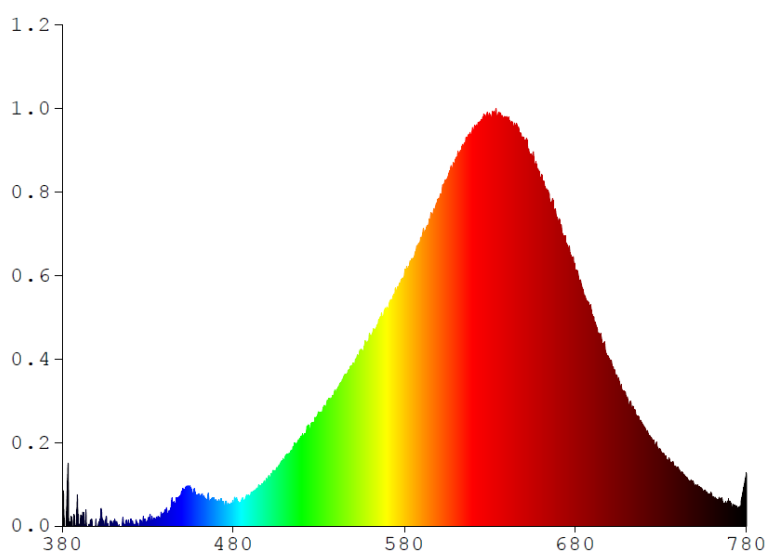
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWOWS69327XXXCG

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.0589	580	0.6439	680	0.6551	780	0.1363
385	0.0045	485	0.0696	585	0.6860	685	0.5923		
390	0.0048	490	0.0791	590	0.7332	690	0.5404		
395	0.0000	495	0.1037	595	0.7830	695	0.4843		
400	0.0000	500	0.1182	600	0.8372	700	0.4265		
405	0.0073	505	0.1431	605	0.8887	705	0.3773		
410	0.0121	510	0.1694	610	0.9421	710	0.3272		
415	0.0021	515	0.2036	615	0.9805	715	0.2937		
420	0.0174	520	0.2287	620	1.0171	720	0.2546		
425	0.0000	525	0.2498	625	1.0384	725	0.2180		
430	0.0165	530	0.2906	630	1.0542	730	0.1907		
435	0.0211	535	0.3220	635	1.0585	735	0.1704		
440	0.0409	540	0.3436	640	1.0462	740	0.1483		
445	0.0597	545	0.3869	645	1.0184	745	0.1221		
450	0.0888	550	0.4163	650	0.9901	750	0.1025		
455	0.0979	555	0.4520	655	0.9520	755	0.0898		
460	0.0794	560	0.4818	660	0.8964	760	0.0721		
465	0.0715	565	0.5286	665	0.8316	765	0.0659		
470	0.0662	570	0.5590	670	0.7795	770	0.0623		
475	0.0528	575	0.6059	675	0.7095	775	0.0461		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69327XXXCG

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

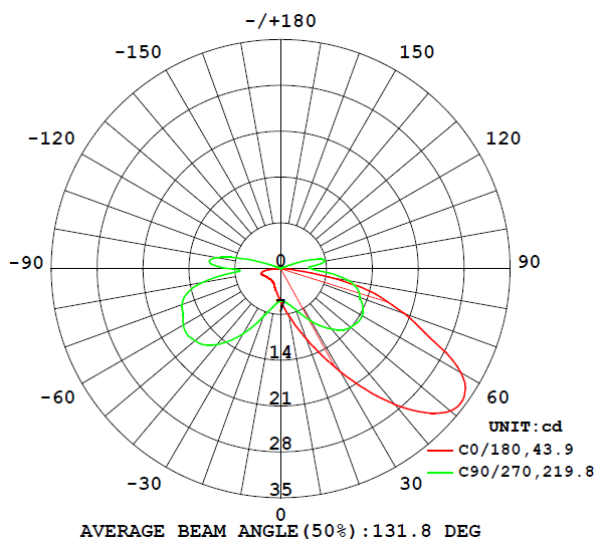
Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
KWOWS69327XXXCG								
S2411151 39-004	base-up	2043	87	45	0.5286	0.4228	0.3013	0.5423

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)
KWOWS69327XXXCG							
S2411151 39-004	base-up	120.0	70.9	8.4	0.984	106.6	12.7

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69327XXXCG

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	5.0	5.2	5.1	5.0	5.0
5	6.0	6.1	5.8	5.4	5.0
10	7.3	7.4	6.9	6.2	5.3
15	9.1	9.2	8.6	7.4	5.8
20	11.4	11.9	11.3	9.3	6.6
25	14.4	15.7	15.3	12.0	7.8
30	18.1	20.7	20.2	15.3	9.2
35	22.5	26.5	25.6	18.7	10.7
40	27.0	32.4	30.7	22.0	12.1
45	31.1	37.7	34.9	24.7	13.2
50	33.8	41.6	37.8	26.6	13.9
55	34.1	43.5	39.2	27.3	14.3
60	31.7	42.3	38.6	27.5	14.4
65	25.3	38.0	36.4	27.1	13.8
70	20.0	35.0	32.0	25.3	12.9
75	15.0	36.5	27.7	21.9	12.1
80	7.5	38.0	29.1	16.7	10.5
85	1.6	38.9	31.2	12.3	7.3
90	0.4	34.6	34.0	15.6	4.7
95	0.0	13.2	28.2	18.6	4.9
100	0.0	1.9	15.5	15.2	6.8
105	0.0	0.5	5.8	8.9	5.7
110	0.0	0.0	1.4	3.4	3.0
115	0.0	0.0	0.5	0.9	1.0
120	0.0	0.0	0.1	0.4	0.4
125	0.0	0.0	0.0	0.2	0.2
130	0.1	0.0	0.0	0.0	0.0
135	0.1	0.0	0.0	0.0	0.0
140	0.1	0.0	0.0	0.0	0.0
145	0.1	0.0	0.0	0.0	0.0
150	0.2	0.0	0.0	0.0	0.0
155	0.2	0.0	0.0	0.1	0.1
160	0.2	0.0	0.0	0.1	0.1
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	0.0	0.0	0.0	0.0	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69327XXXCG

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWOWS69327XXXCG		
0-30	6.6	6.2
0-40	15.1	14.2
0-60	46.2	43.4
0-90	93.5	87.7
60-90	47.3	44.3
0-180	106.6	100.0

Beam Angle

Total Beam Angle(°)

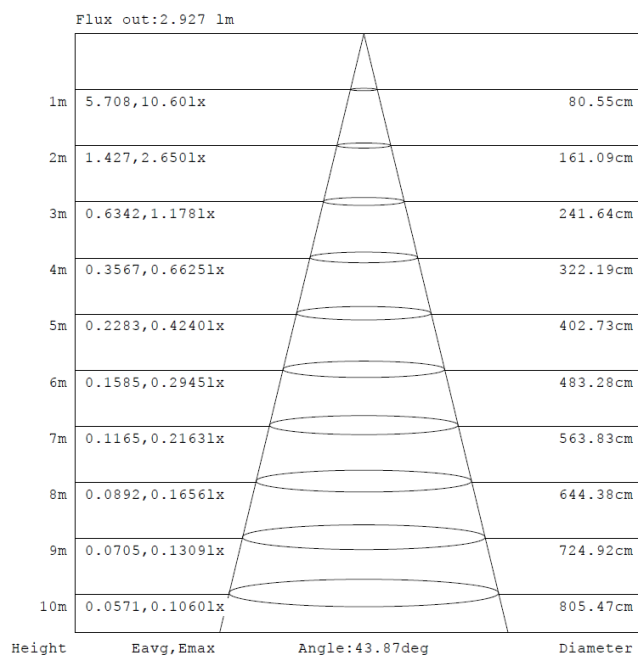
131.8

Illumination Plots

Model No.: KWOWS69327XXXCG

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

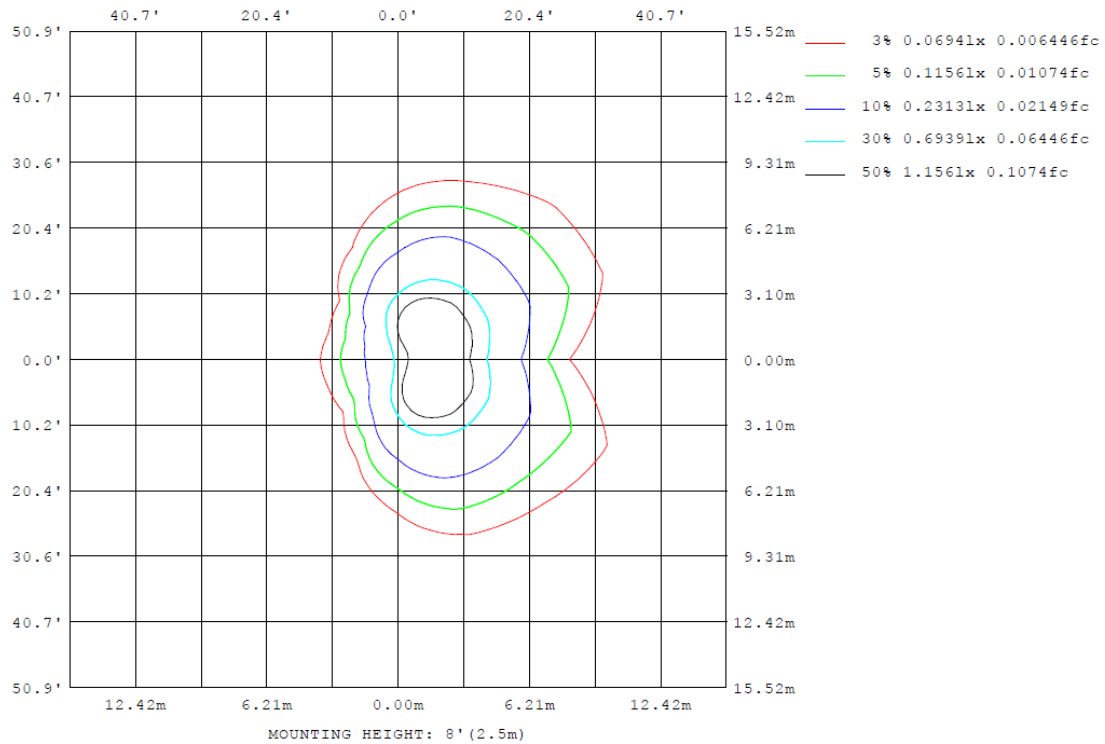
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69327XXXCG

Model No.: KWOWS69327XXXCG

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWOWS69327XXXCG

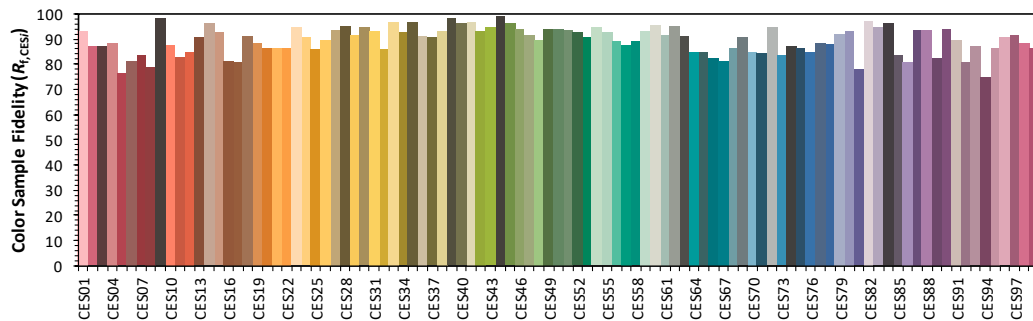
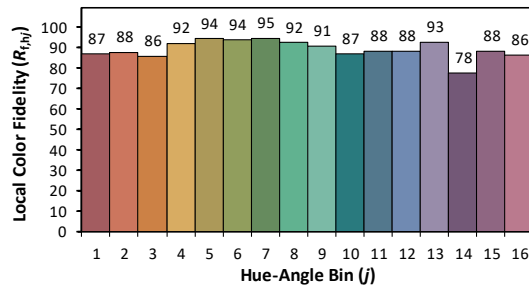
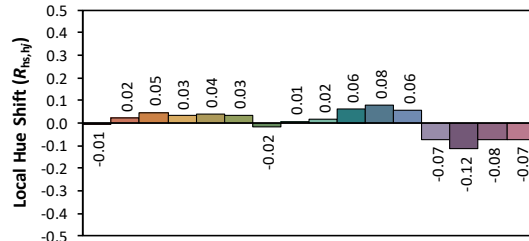
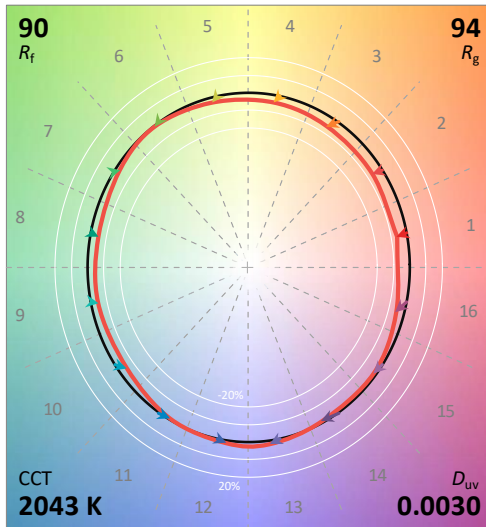
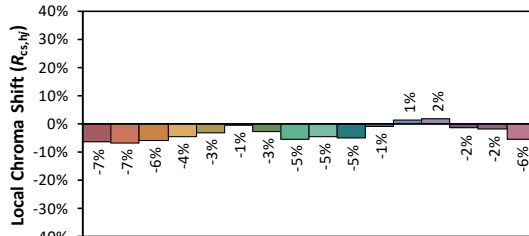
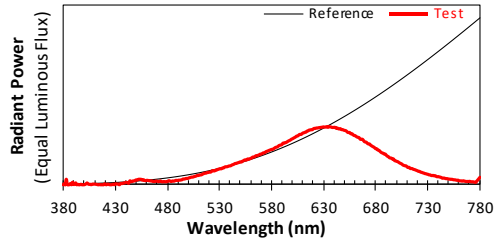
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/5

Model: KWOWS69327XXXCG



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

x 0.5286
 y 0.4228
 u' 0.3013
 v' 0.5423

CIE 13.3-1995
(CRI)

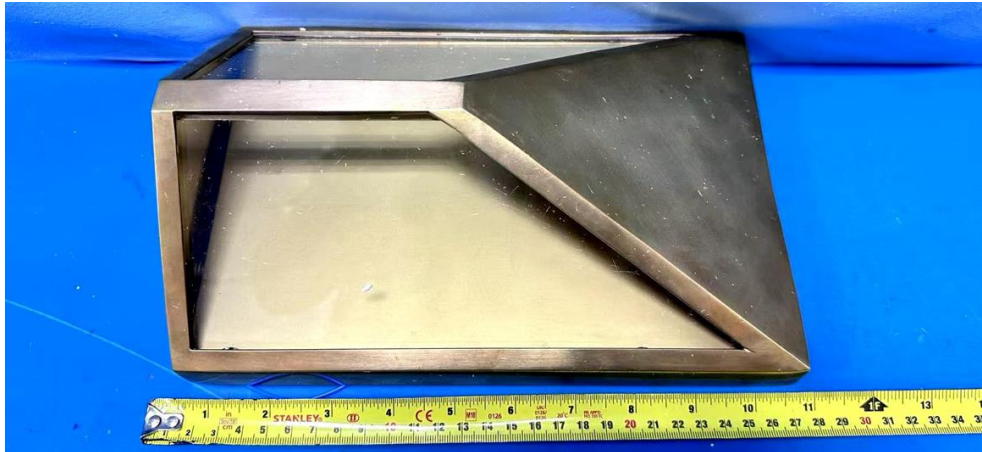
R_a 87
 R_g 45

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

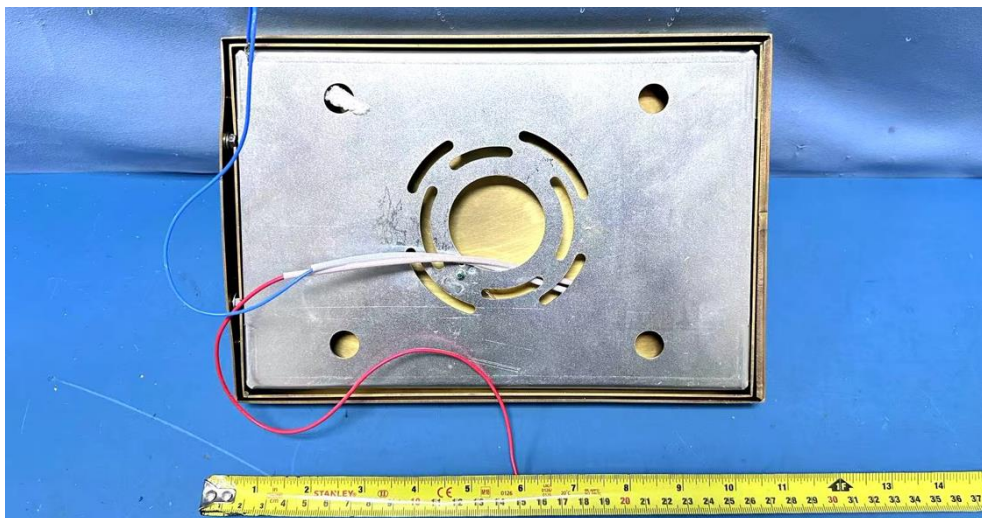
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWOWS69327XXXCG



External view of KWOWS69327XXXCG

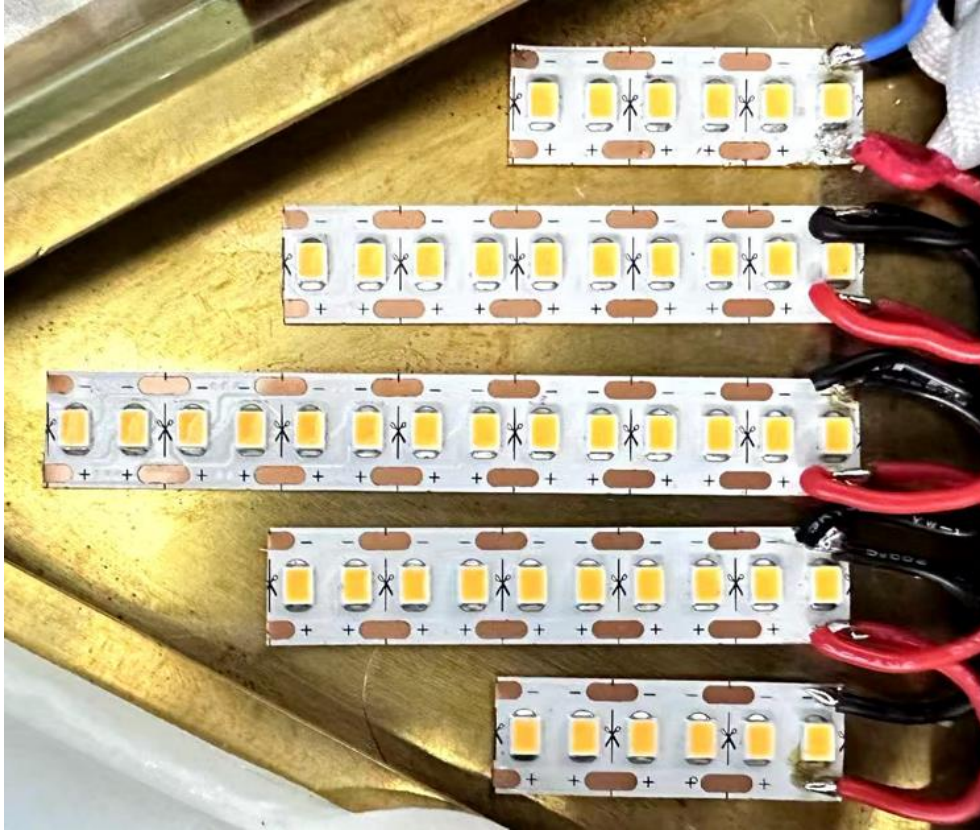


View of LED driver PTB10W-0200-38-VCC1 (AB2612)

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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 *****