

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240124048GZU-004

ISSUE DATE

18 July 2024

REVISION DATE

Modification 1: 07 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKWS33927XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

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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: QGZ240122060.
<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 AKWS33927XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240124048-007.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Dongguan Denghuang HomeFurnishing Co., Ltd. No.5, Central Road, Yayuan IndustrialZone, Nancheng District Dongguan City, Guangdong Province, 523000
<u>DATES OF TESTS:</u>	12 July 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:	AKWS33927XX
Description:	LED luminaire
Brand Name:	NA

Test Condition: 120V, 60Hz For AKWS33927XX

Criteria	Result
Total Lumen Output	352.1 lm
Total Power	8.7 W
Luminaire Efficacy	40.4 lm/W
S/MH(C0/180)	0.67
S/MH(C90/270)	0.67
Correlated Color Temperature (CCT)	2681 K
Color Rendering Index (CRI)	92
R9	61
Chromaticity Coordinate (x)	0.4534
Chromaticity Coordinate (y)	0.3966
Chromaticity Coordinate (u')	0.2647
Chromaticity Coordinate (v')	0.5209

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240124048GZU-004 issued on 18 July 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page 1 and 2 of the report.

***** 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	DS215S	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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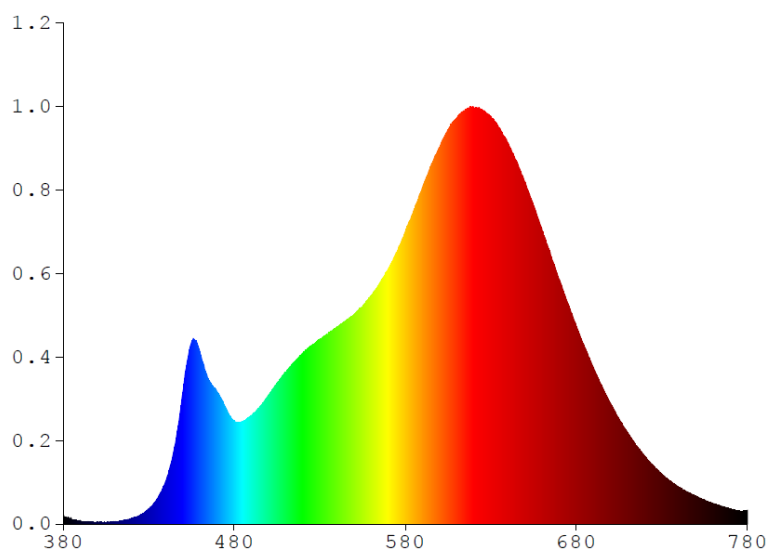
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKWS33927XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1934	480	2.4750	580	7.0129	680	4.7314	780	0.3297
385	0.0830	485	2.4585	585	7.5330	685	4.2239		
390	0.0837	490	2.6087	590	8.0712	690	3.7489		
395	0.0366	495	2.8197	595	8.6018	695	3.2962		
400	0.0494	500	3.0932	600	9.0394	700	2.8829		
405	0.0436	505	3.3816	605	9.4602	705	2.5098		
410	0.0521	510	3.6332	610	9.7479	710	2.1843		
415	0.0855	515	3.8765	615	9.9470	715	1.8889		
420	0.1380	520	4.0821	620	10.0010	720	1.6169		
425	0.2173	525	4.2611	625	9.9321	725	1.3937		
430	0.3654	530	4.4302	630	9.7794	730	1.1939		
435	0.6048	535	4.5840	635	9.5113	735	1.0319		
440	1.0292	540	4.7358	640	9.1459	740	0.8860		
445	1.8219	545	4.8746	645	8.7069	745	0.7641		
450	3.1547	550	5.0281	650	8.2035	750	0.6644		
455	4.3549	555	5.2246	655	7.6282	755	0.5733		
460	4.0990	560	5.4622	660	7.0405	760	0.4899		
465	3.4592	565	5.7780	665	6.4403	765	0.4182		
470	3.1675	570	6.1197	670	5.8619	770	0.3650		
475	2.7825	575	6.5310	675	5.1792	775	0.3128		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKWS33927XX

Total operation burning time: 60 minutes
Stabilization time: 30 minutes

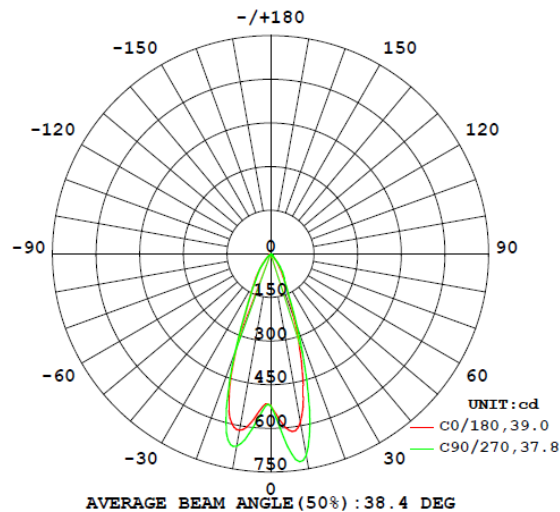
Photometric Measurements at 25°C – Distribution Method

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')
AKWS33927XX								
S2401240 48-007	base-up	2681	92	61	0.4534	0.3966	0.2647	0.5209

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)
AKWS33927XX							
S2401240 48-007	base-up	120.1	73.8	8.7	0.983	352.1	40.4

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKWS33927XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	522.2	522.0	521.8	521.6	521.8
5	599.1	625.3	649.7	668.4	661.9
10	588.4	599.6	625.0	666.5	703.7
15	425.9	414.8	416.4	439.3	504.0
20	243.9	210.8	192.6	209.9	271.5
25	132.8	123.5	115.9	114.6	134.8
30	80.4	77.4	78.4	86.1	95.5
35	48.2	49.4	53.3	54.0	63.3
40	28.1	28.4	26.2	24.0	32.2
45	11.0	10.2	10.2	10.9	13.0
50	8.3	8.3	8.7	8.8	8.9
55	8.1	7.5	7.9	7.8	8.0
60	8.2	6.8	7.1	7.6	7.8
65	8.7	5.9	6.2	7.3	7.9
70	8.5	5.0	5.3	6.9	8.2
75	3.6	2.9	3.3	4.9	5.5
80	1.0	1.0	1.0	1.1	1.2
85	0.4	0.4	0.5	0.5	0.6
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	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0
125	0.1	0.1	0.1	0.1	0.1
130	0.1	0.1	0.1	0.1	0.1
135	0.2	0.2	0.2	0.2	0.2
140	0.3	0.3	0.3	0.3	0.3
145	0.4	0.4	0.4	0.4	0.4
150	0.5	0.5	0.5	0.5	0.5
155	0.6	0.6	0.6	0.6	0.6
160	0.6	0.6	0.6	0.6	0.6
165	0.6	0.6	0.6	0.6	0.6
170	0.5	0.5	0.5	0.5	0.6
175	0.4	0.4	0.4	0.5	0.5
180	0.3	0.3	0.3	0.3	0.4

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKWS33927XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKWS33927XX		
0-30	281.1	79.8
0-40	320.9	91.2
0-60	340.5	96.7
0-90	351.4	99.8
60-90	10.9	3.1
0-180	352.1	100.0

Beam Angle

Total Beam Angle(°)

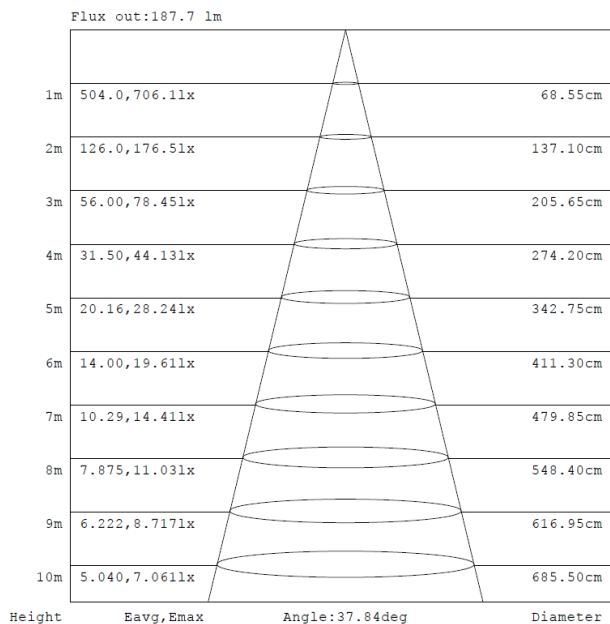
38.4

Illumination Plots

Model No.: AKWS33927XX

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.

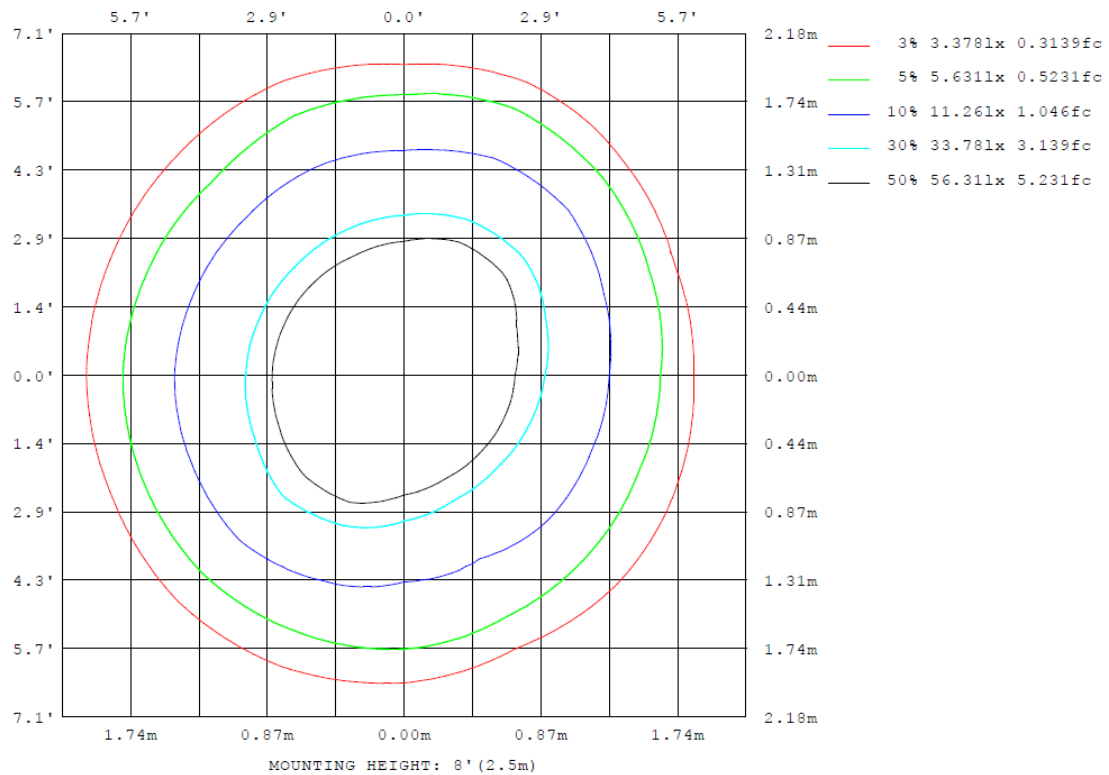
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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKWS33927XX

Model No.: AKWS33927XX
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKWS33927XX

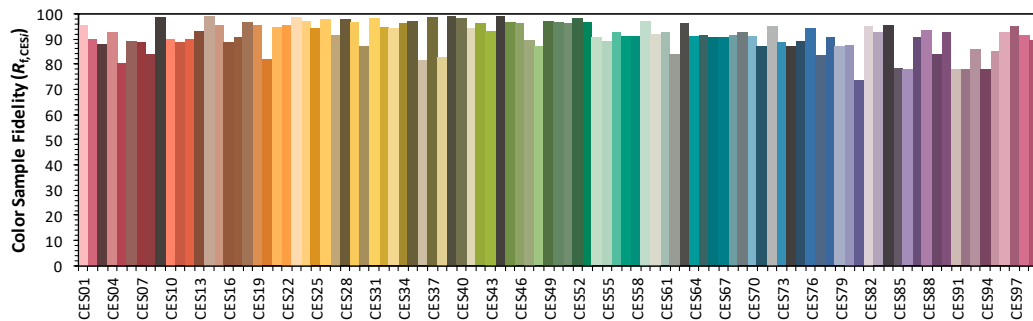
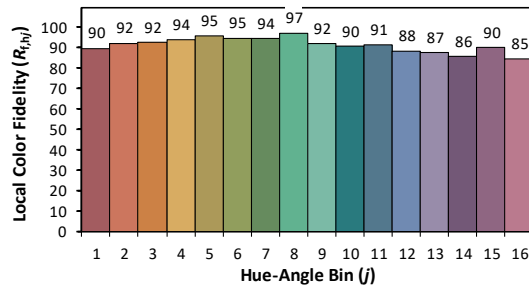
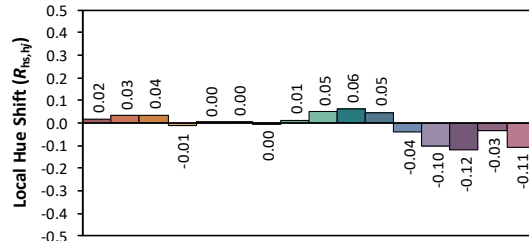
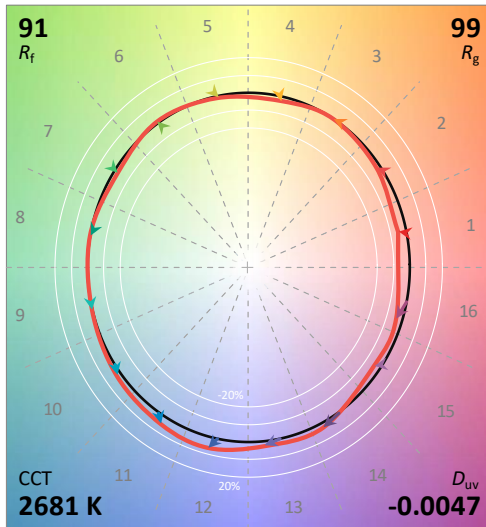
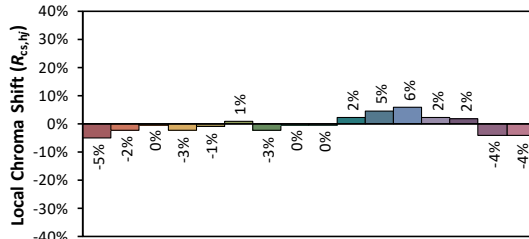
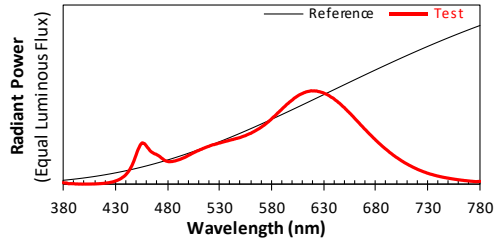
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/7/12

Model: AKWS33927XX



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

x 0.4534
 y 0.3966
 u' 0.2647
 v' 0.5209

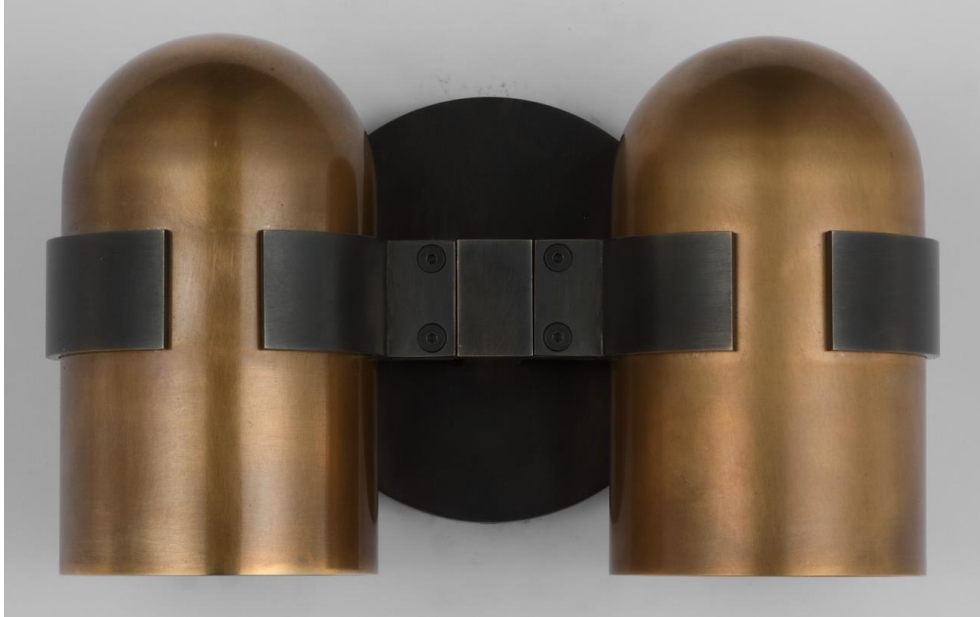
CIE 13.3-1995
(CRI)
 R_a 92
 R_g 61

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

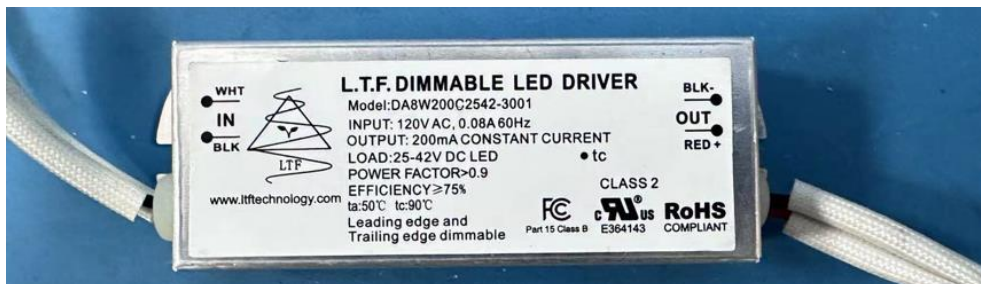
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of AKWS33927XX



View of LED driver DA8W200C2542-3001

***** 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 *****