

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241128208GZU-005

ISSUE DATE

03 January 2025

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

© 2024 INTERTEK



Report No.: 241128208GZU-005

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKTB681WDXX

Remark: "XX" 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

TEST: Electrical and Photometric as required to the IES LM-79 test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ241127042.

STANDARDS USED: 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

DESCRIPTION OF SAMPLE: The client submitted one sample of model AKTB681WDXX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241128208-005.

MANUFACTURER /FACTORY & ADDRESS: Union Star Collection-Dongguan Denghuang HomeFurnishing Co., Ltd.
No.5, Central Road, Yayuan Industrial Zone, Nancheng District,Dongguan City, Guangdong Province, 523000

DATES OF TESTS: 19 December 2024

ISSUED BY: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

TEST LOCATION: 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:	AKTB681WDXX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKTB681WDXX

Criteria	Result
Total Lumen Output	694.4 lm
Total Power	14.4 W
Luminaire Efficacy	48.2 lm/W
S/MH(C0/180)	1.18
S/MH(C90/270)	1.32
Correlated Color Temperature (CCT)	2492 K
Color Rendering Index (CRI)	93
R9	72
Chromaticity Coordinate (x)	0.4768
Chromaticity Coordinate (y)	0.4122
Chromaticity Coordinate (u')	0.2727
Chromaticity Coordinate (v')	0.5305

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 *****

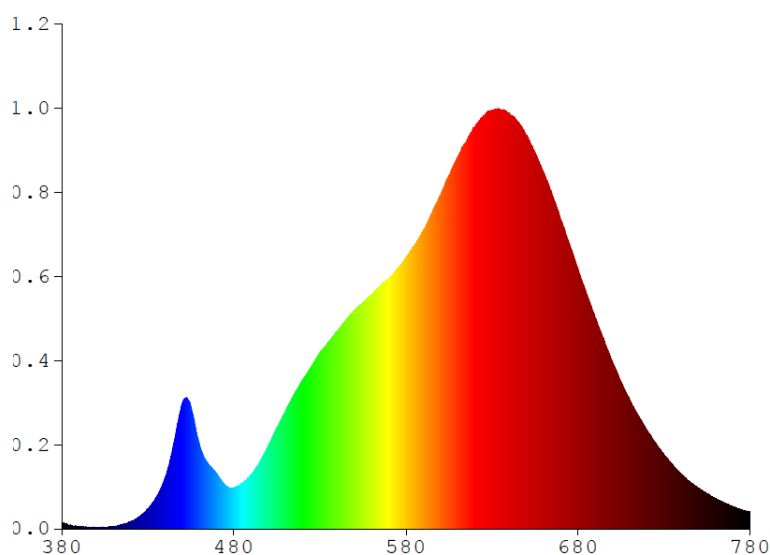
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKTB681WDXX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.6810	480	4.1815	580	27.6610	680	26.3830	780	1.7338
385	0.4198	485	4.6820	585	28.9320	685	23.8820		
390	0.1800	490	5.5385	590	30.4430	690	21.4710		
395	0.1366	495	6.7935	595	32.1790	695	19.2250		
400	0.1772	500	8.5046	600	34.0150	700	16.9470		
405	0.1901	505	10.2980	605	36.0630	705	14.9150		
410	0.2176	510	12.0020	610	37.9620	710	13.0990		
415	0.4047	515	13.7290	615	39.4990	715	11.5230		
420	0.7564	520	15.2030	620	40.9840	720	10.0340		
425	1.2174	525	16.5990	625	42.1890	725	8.7515		
430	2.0323	530	17.9670	630	42.7040	730	7.5218		
435	3.2269	535	19.0760	635	42.7600	735	6.4969		
440	5.2154	540	20.1670	640	42.3790	740	5.5732		
445	8.6655	545	21.3170	645	41.5450	745	4.8030		
450	12.7860	550	22.2690	650	40.1300	750	4.1510		
455	12.3470	555	23.1030	655	38.3020	755	3.5740		
460	8.5441	560	23.8940	660	36.3480	760	3.0691		
465	6.5746	565	24.8510	665	34.0430	765	2.6235		
470	5.5688	570	25.5240	670	31.4570	770	2.2487		
475	4.4438	575	26.5410	675	28.5050	775	1.9295		



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKTB681WDXX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

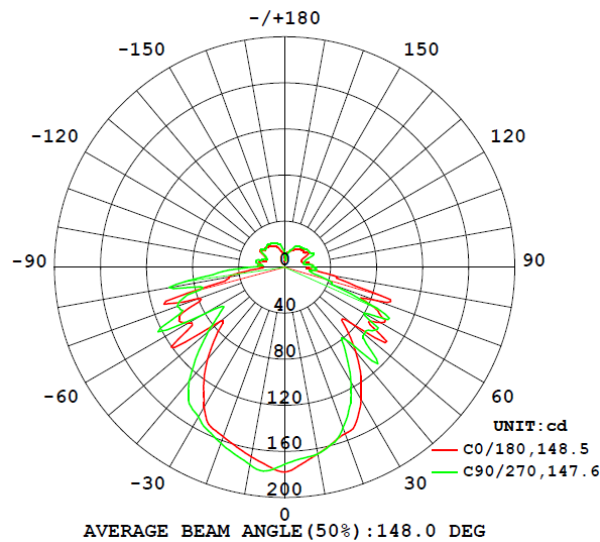
Photometric Measurements at 25°C – Distribution Method

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')
AKTB681WDXX								
S2411282 08-005	base-up	2492	93	72	0.4768	0.4122	0.2727	0.5305

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)
AKTB681WDXX							
S2411282 08-005	base-up	120.1	148.3	14.4	0.810	694.4	48.2

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKTB681WDXX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	177.8	170.5	170.0	168.8	171.1
5	171.3	164.4	165.6	166.4	166.8
10	164.7	160.3	163.7	162.3	164.6
15	158.6	156.9	155.7	155.1	158.8
20	153.8	145.4	145.9	142.5	148.3
25	147.6	130.6	130.7	126.5	133.6
30	132.7	113.9	112.5	105.9	115.3
35	116.0	92.8	90.3	84.6	93.2
40	96.3	72.7	73.3	91.5	82.0
45	76.4	95.4	113.2	98.0	112.8
50	75.6	88.9	88.5	88.6	90.3
55	99.5	94.2	88.6	95.9	95.2
60	96.4	87.3	88.1	93.4	79.5
65	89.3	87.8	91.9	66.1	96.7
70	85.0	56.9	50.7	43.6	43.4
75	63.9	39.6	31.7	26.2	32.9
80	44.1	19.5	20.2	21.1	23.1
85	22.8	27.1	26.9	26.7	28.2
90	23.4	24.8	22.8	24.6	23.6
95	24.5	22.7	23.0	19.9	23.6
100	21.2	16.2	16.3	17.0	16.8
105	16.7	17.4	17.6	18.7	17.5
110	15.6	21.1	23.2	25.7	20.6
115	17.2	27.0	26.6	26.6	27.9
120	24.4	24.0	24.7	25.5	25.2
125	21.8	25.3	25.4	24.9	25.3
130	21.8	23.7	23.9	23.7	24.3
135	21.6	22.3	22.8	22.8	23.3
140	20.4	21.6	22.4	22.4	22.7
145	19.2	20.8	21.9	21.9	22.3
150	17.9	19.7	21.1	21.0	21.4
155	16.5	17.4	17.4	17.0	18.9
160	15.0	14.0	14.9	15.2	16.2
165	13.8	13.1	13.1	12.7	13.1
170	12.8	11.4	11.2	6.7	11.9
175	11.5	6.2	8.6	10.5	8.9
180	5.8	11.4	11.9	12.3	11.2

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKTB681WDXX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKTB681WDXX		
0-30	128.5	18.5
0-40	202.1	29.1
0-60	354.4	51.0
0-90	557.2	80.2
60-90	202.8	29.2
0-180	694.4	100.0

Beam Angle

Total Beam Angle(°)

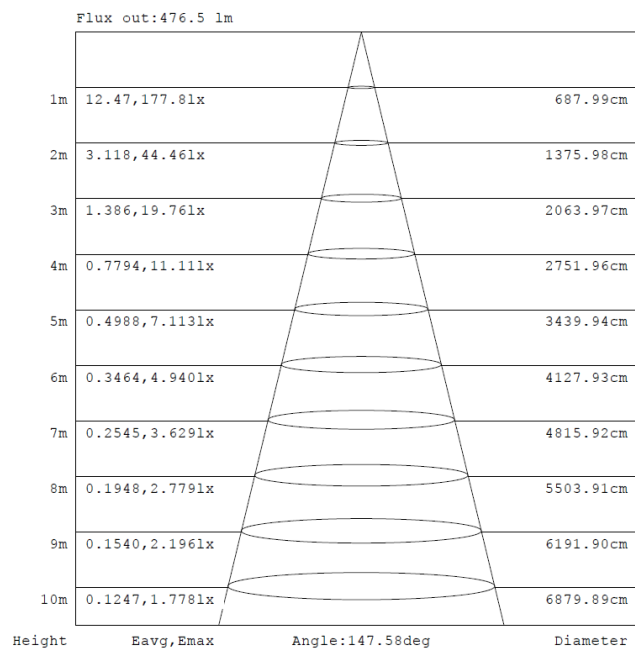
148.0

Illumination Plots

Model No.: AKTB681WDXX

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

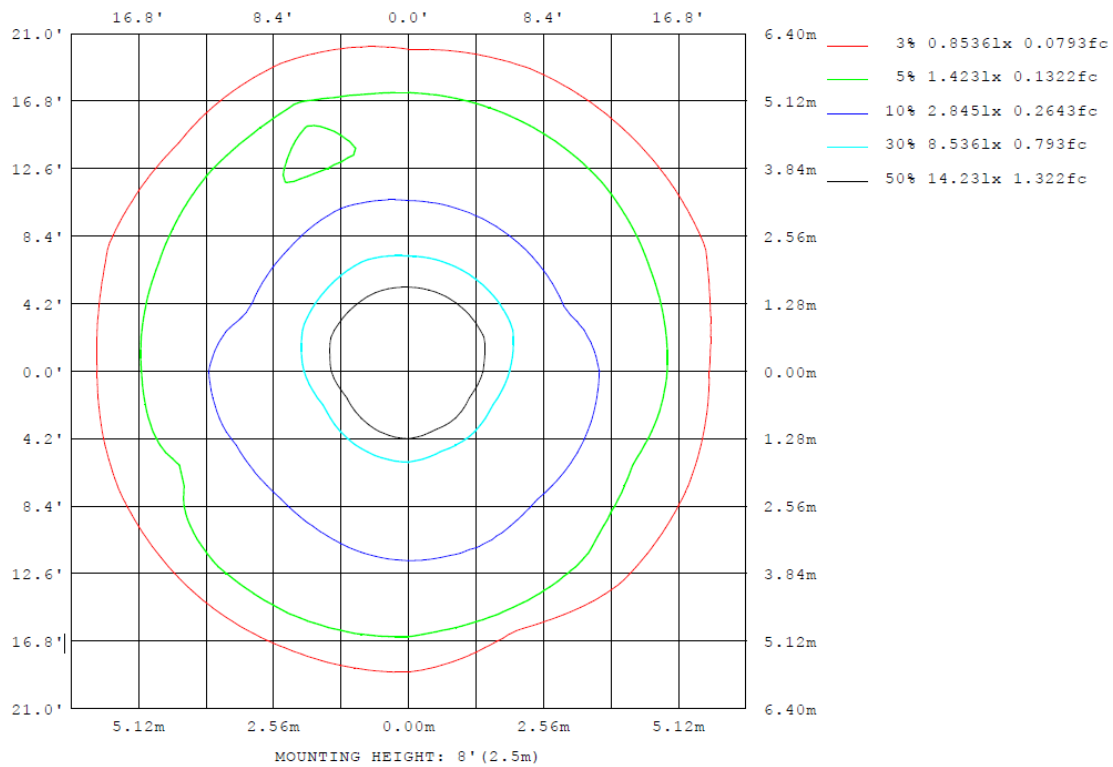
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKTB681WDXX

Model No.: AKTB681WDXX

Mount Height: 2.5 m

Isoillumination Plot



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

TEST REPORT

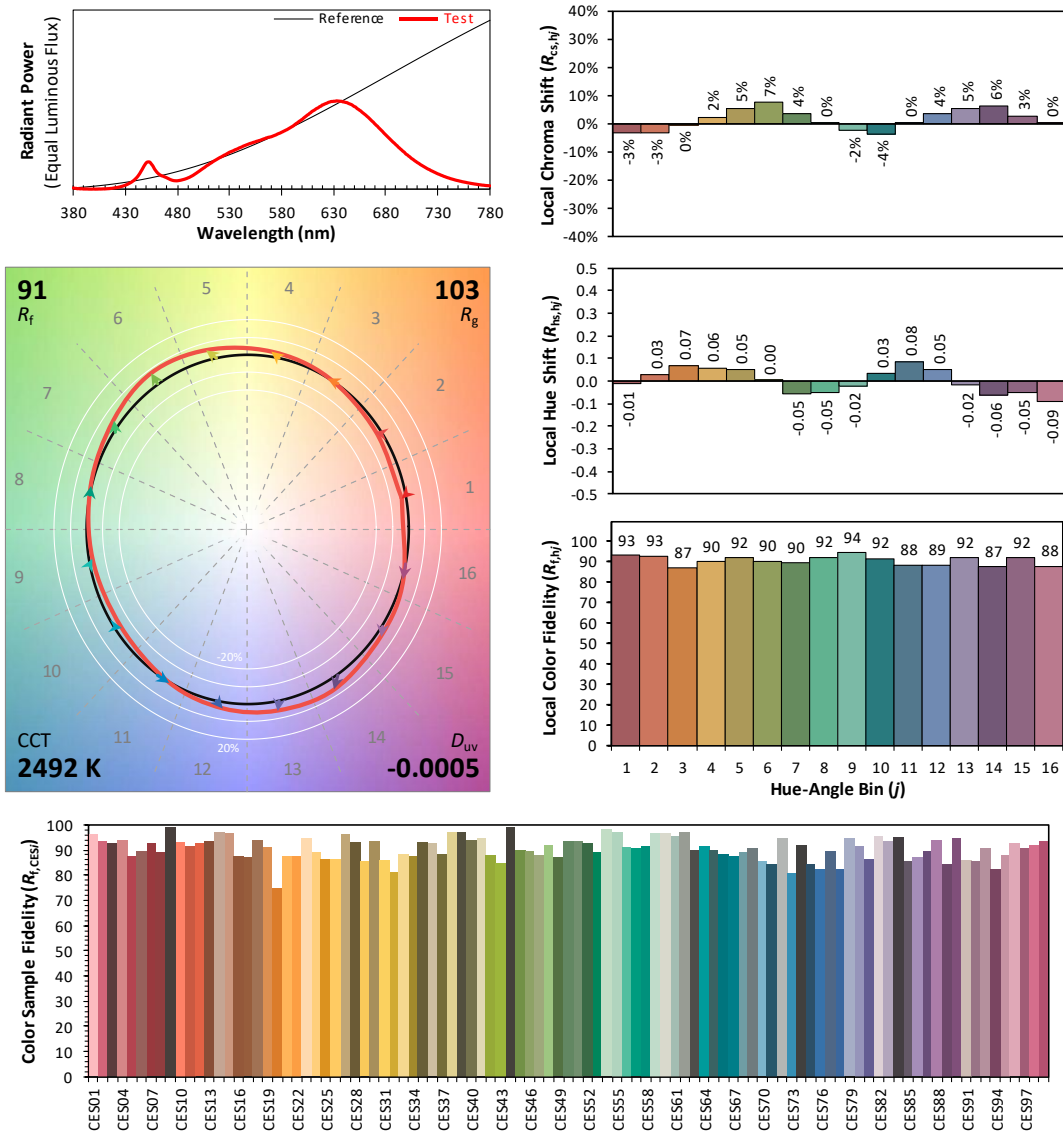
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKTB681WDXX

ANSI/IES T+B3:X17+B3:X17M-30-18 Color Rendition Report

Source: User SPD
Date: 2024/12/19

Manufacturer: Visual Comfort & Co.
Model: AKTB681WDXX



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

x 0.4768
 y 0.4122
 u' 0.2727
 v' 0.5305

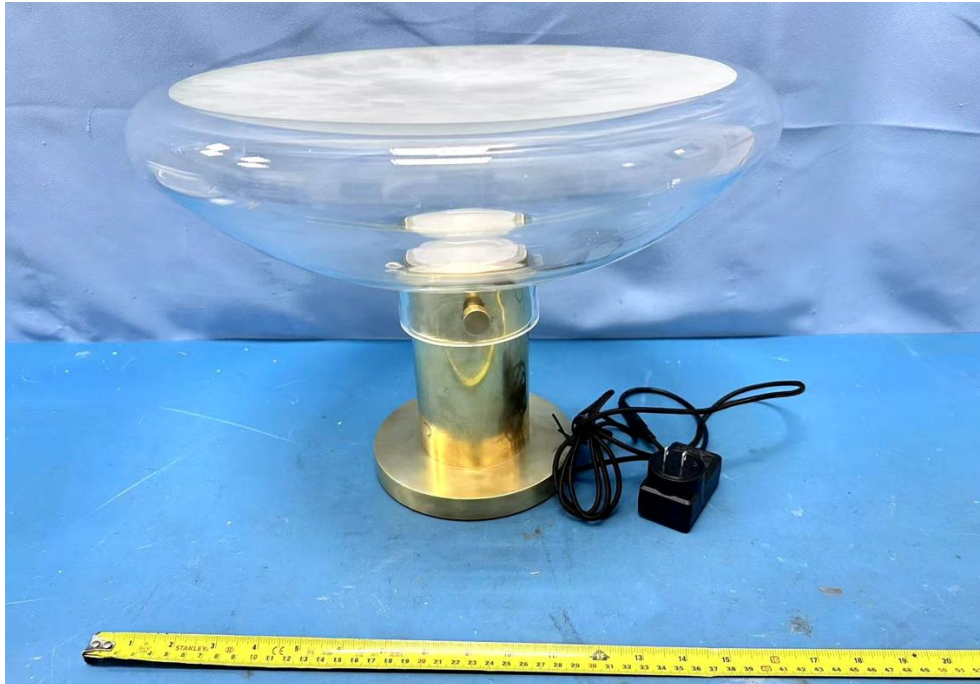
CIE 13.3-1995
(CRI)
 R_a 93
 R_g 72

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

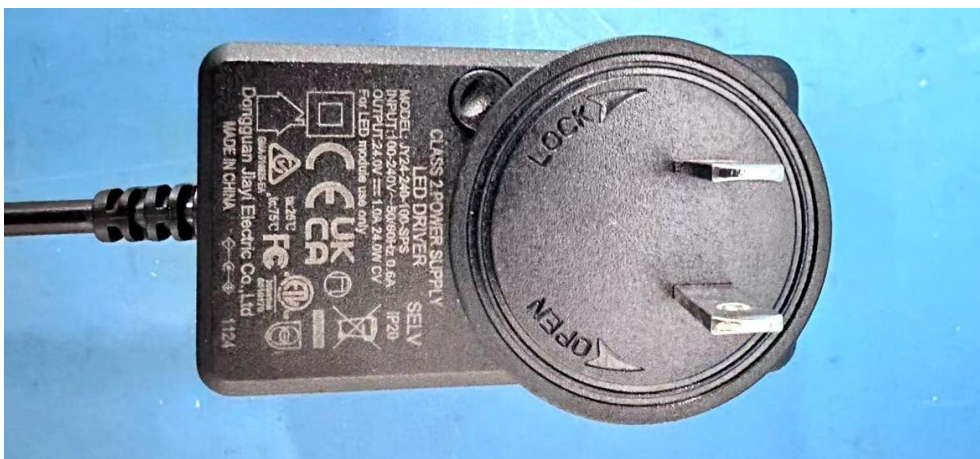
***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of AKTB681WDXX



View of LED driver JY24-240-100-SPS

***** 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 *****