

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241128212GZU-001

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None

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Report No.: 241128212GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKBA687WDXX

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

<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: QGZ241127042.
<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 AKBA687WDXX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241128212-001.
<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>	16 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:	AKBA687WDXX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKBA687WDXX

Criteria	Result
Total Lumen Output	167.8 lm
Total Power	15.5 W
Luminaire Efficacy	10.8 lm/W
S/MH(C0/180)	1.32
S/MH(C90/270)	1.10
Correlated Color Temperature (CCT)	2628 K
Color Rendering Index (CRI)	94
R9	75
Chromaticity Coordinate (x)	0.4676
Chromaticity Coordinate (y)	0.4150
Chromaticity Coordinate (u')	0.2655
Chromaticity Coordinate (v')	0.5302

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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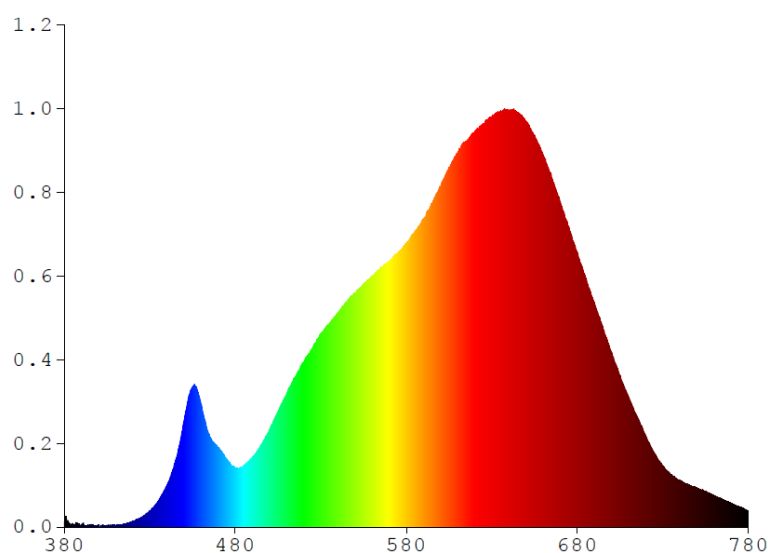
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKBA687WDXX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1510	480	2.2359	580	10.6710	680	10.3130	780	0.5908
385	0.1177	485	2.3174	585	11.1340	685	9.3495		
390	0.0590	490	2.6444	590	11.6310	690	8.4227		
395	0.0708	495	3.0833	595	12.1780	695	7.4429		
400	0.0819	500	3.6764	600	12.8210	700	6.5669		
405	0.0593	505	4.3436	605	13.5380	705	5.6820		
410	0.0646	510	5.0151	610	14.1090	710	4.8613		
415	0.1140	515	5.6545	615	14.5260	715	4.1461		
420	0.2282	520	6.2172	620	14.8900	720	3.4172		
425	0.3649	525	6.7344	625	15.1900	725	2.7725		
430	0.6030	530	7.2843	630	15.4600	730	2.2970		
435	0.9793	535	7.6800	635	15.6750	735	1.9669		
440	1.5572	540	8.0765	640	15.6750	740	1.7522		
445	2.4909	545	8.4748	645	15.6210	745	1.5894		
450	3.9767	550	8.8220	650	15.2750	750	1.4626		
455	5.2848	555	9.1458	655	14.7080	755	1.3428		
460	4.6097	560	9.4005	660	14.0070	760	1.1719		
465	3.4095	565	9.7766	665	13.1370	765	1.0197		
470	2.9893	570	9.9884	670	12.2180	770	0.8896		
475	2.5539	575	10.3190	675	11.0820	775	0.7528		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKBA687WDXX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

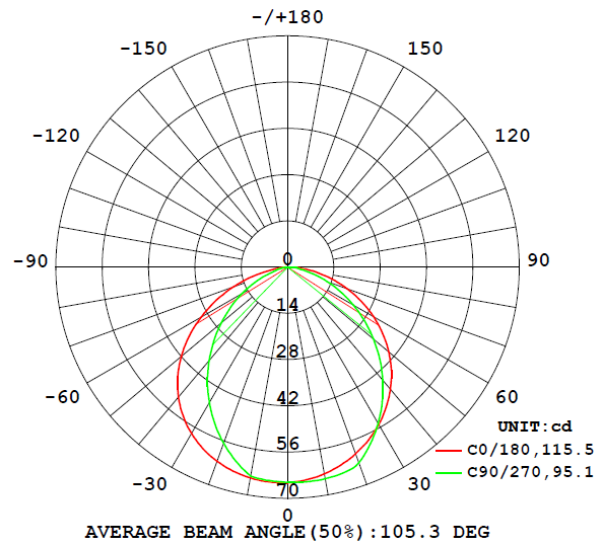
Photometric Measurements at 25°C – Distribution Method

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')
AKBA687WDXX								
S2411282 12-001	base-up	2628	94	75	0.4676	0.4150	0.2655	0.5302

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	Lumen Efficacy
						Flux (Lumens)	(Lumens Per Watt)
AKBA687WDXX							
S2411282 12-001	base-up	120.1	130.8	15.5	0.988	167.8	10.8

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKBA687WDXX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	65.2	65.2	65.1	65.1	65.1
5	64.6	64.7	64.9	65.1	65.2
10	63.5	63.8	64.3	64.7	65.0
15	62.0	62.5	63.3	64.0	64.5
20	60.1	60.8	61.9	62.7	63.0
25	57.8	58.7	59.8	58.9	59.1
30	55.0	56.3	55.9	54.5	54.6
35	51.9	53.4	51.4	49.7	49.8
40	48.3	49.8	46.6	44.7	44.7
45	44.3	45.0	41.4	39.4	39.4
50	39.9	39.8	36.1	34.1	33.9
55	35.0	34.3	30.7	28.6	28.3
60	29.9	28.6	25.2	23.2	22.9
65	24.6	22.8	19.7	18.0	17.6
70	19.1	17.1	14.5	13.1	12.6
75	13.8	11.6	9.6	8.5	8.0
80	8.6	6.7	5.3	4.4	4.1
85	3.9	2.6	2.3	2.5	2.5
90	0.5	0.6	0.9	1.0	0.9
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	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0
135	0.1	0.1	0.0	0.0	0.0
140	0.1	0.1	0.1	0.1	0.1
145	0.1	0.1	0.1	0.1	0.1
150	0.1	0.1	0.1	0.1	0.1
155	0.1	0.1	0.1	0.1	0.1
160	0.1	0.1	0.1	0.1	0.1
165	0.1	0.1	0.1	0.1	0.1
170	0.1	0.1	0.1	0.1	0.1
175	0.1	0.1	0.1	0.1	0.1
180	0.1	0.1	0.1	0.1	0.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKBA687WDXX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKBA687WDXX		
0-30	50.6	30.1
0-40	81.8	48.8
0-60	139.2	83.0
0-90	167.5	99.9
60-90	28.6	16.9
0-180	167.8	100.0

Beam Angle

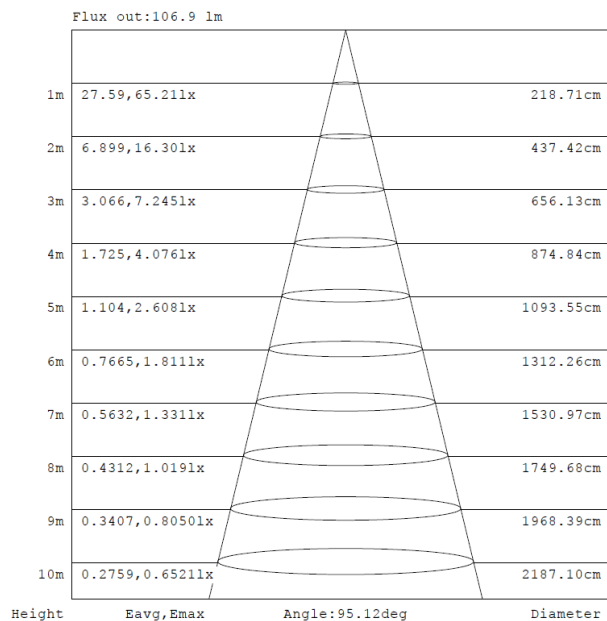
Total Beam Angle(°)
105.3

Illumination Plots

Model No.: AKBA687WDXX

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

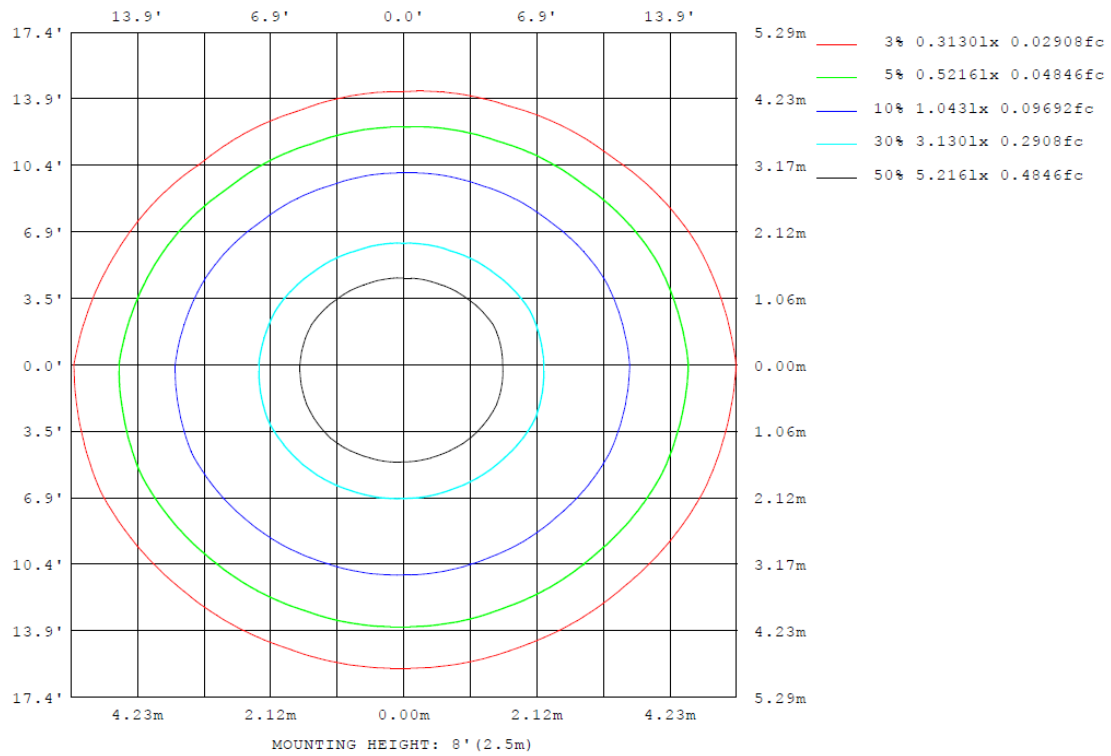
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKBA687WDXX

Model No.: AKBA687WDXX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKBA687WDXX

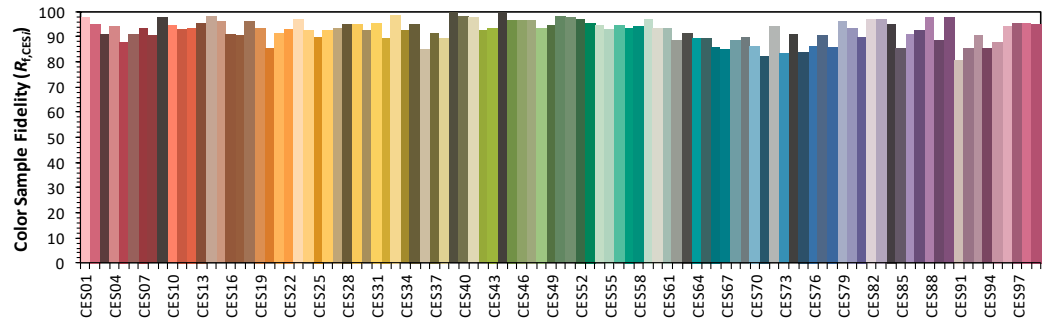
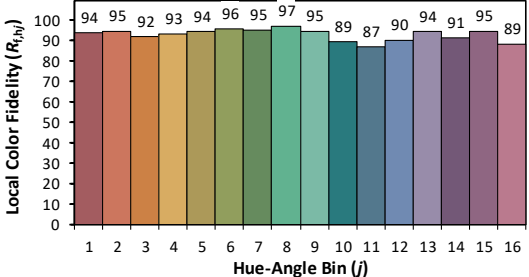
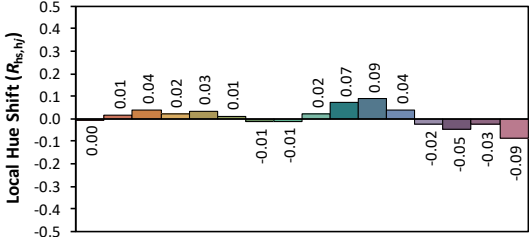
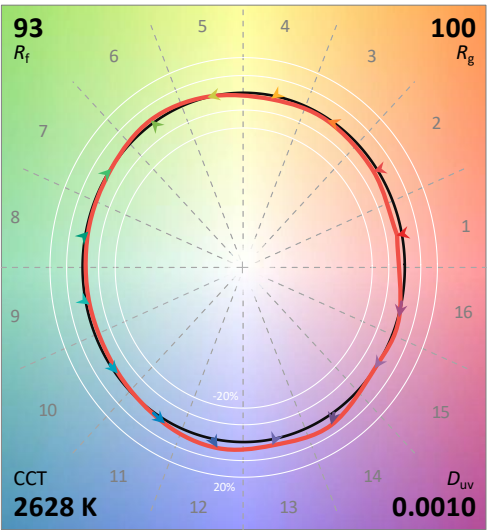
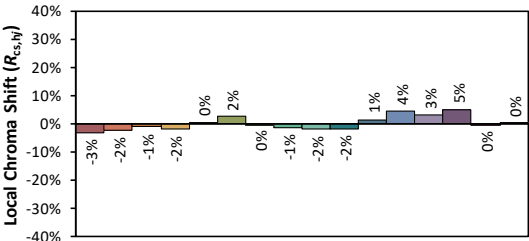
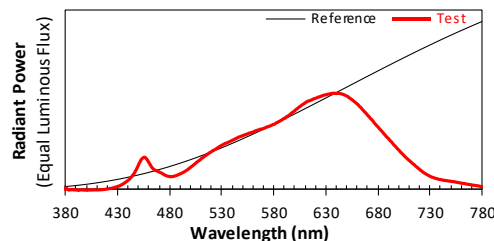
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/16

Model: AKBA687WDXX



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

x 0.4676
 y 0.4150
 u' 0.2655
 v' 0.5302

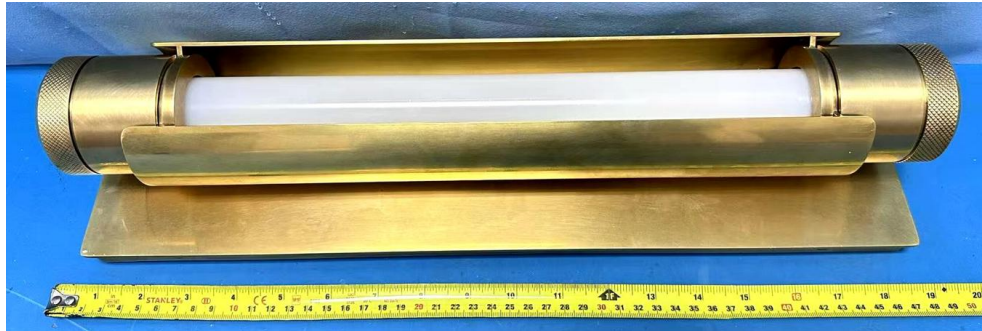
CIE 13.3-1995
(CRI)
 R_a 94
 R_g 75

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 AKBA687WDXX



View of LED driver PTB20W-0400-38-VCC1(AB0258)



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 *****