

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241128212GZU-006

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None

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Report format for LM-79_G

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Report No.: 241128212GZU-006

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKPC686WDXX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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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 AKPC686WDXX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241128212-006.

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: 14 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

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TEST REPORT

SUMMARY

Model Number:	AKPC686WDXX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKPC686WDXX

Criteria	Result
Total Lumen Output	139.5 lm
Total Power	15.7 W
Luminaire Efficacy	8.9 lm/W
S/MH(C0/180)	1.38
S/MH(C90/270)	1.17
Correlated Color Temperature (CCT)	2608 K
Color Rendering Index (CRI)	93
R9	74
Chromaticity Coordinate (x)	0.4703
Chromaticity Coordinate (y)	0.4169
Chromaticity Coordinate (u')	0.2664
Chromaticity Coordinate (v')	0.5313

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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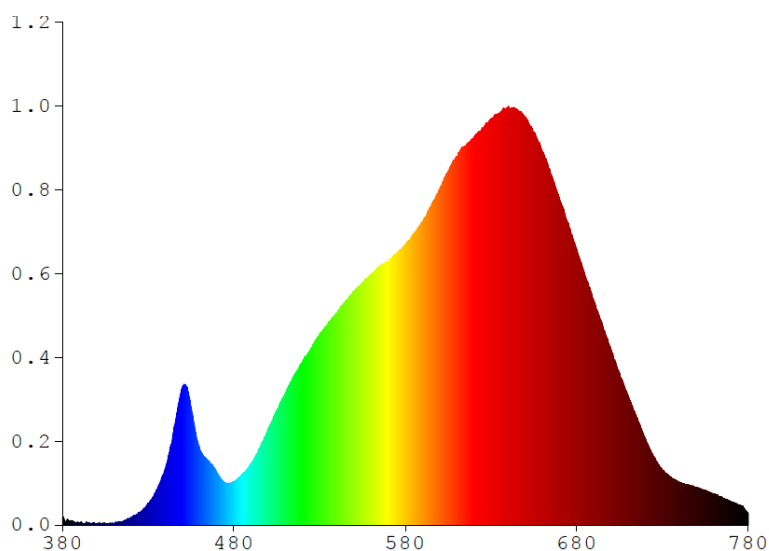
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKPC686WDXX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1717	480	1.3298	580	8.6598	680	8.4808	780	0.3468
385	0.1200	485	1.5707	585	8.9734	685	7.6623		
390	0.0713	490	1.8964	590	9.3605	690	6.9105		
395	0.0382	495	2.3692	595	9.8195	695	6.1507		
400	0.0444	500	2.9674	600	10.3580	700	5.3913		
405	0.0386	505	3.5312	605	10.9040	705	4.6622		
410	0.0434	510	4.0644	610	11.3720	710	3.9683		
415	0.1029	515	4.6072	615	11.6900	715	3.3077		
420	0.2371	520	5.0422	620	11.9320	720	2.6660		
425	0.3833	525	5.4617	625	12.2640	725	2.1155		
430	0.6716	530	5.8879	630	12.5420	730	1.6970		
435	1.0790	535	6.2422	635	12.7280	735	1.4703		
440	1.7469	540	6.5326	640	12.9040	740	1.3170		
445	2.9706	545	6.9030	645	12.8300	745	1.2383		
450	4.2482	550	7.1803	650	12.5930	750	1.1616		
455	3.6045	555	7.4700	655	12.1140	755	1.0700		
460	2.3639	560	7.7147	660	11.5180	760	0.9600		
465	1.9722	565	7.9938	665	10.8160	765	0.8278		
470	1.6137	570	8.1134	670	10.0380	770	0.7269		
475	1.3019	575	8.3928	675	9.1516	775	0.6180		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC686WDXX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

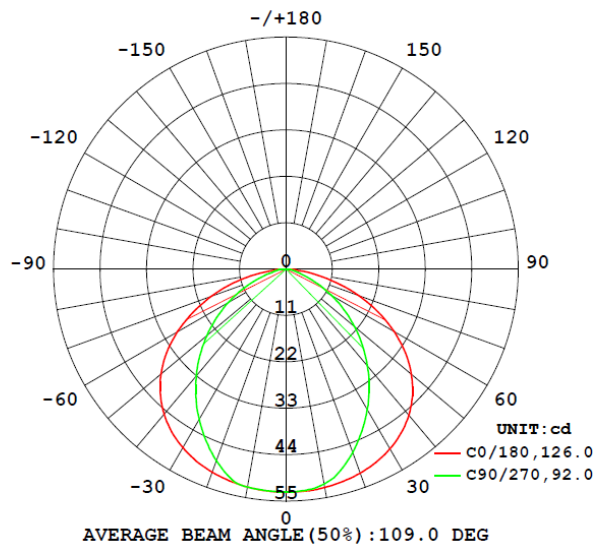
Photometric Measurements at 25°C – Distribution Method

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')
AKPC686WDXX								
S2411282 12-006	base-up	2608	93	74	0.4706	0.4169	0.2664	0.5313

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	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
AKPC686WDXX							
S2411282 12-006	base-up	120.1	131.8	15.7	0.989	139.5	8.9

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC686WDXX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	52.9	52.9	52.8	52.8	52.8
5	52.8	52.8	52.7	52.7	52.6
10	52.6	52.5	52.3	51.9	51.7
15	52.1	51.9	51.2	50.0	49.5
20	51.4	51.0	49.1	46.9	46.2
25	50.5	49.7	46.2	43.3	42.4
30	49.2	47.7	43.0	39.5	38.5
35	47.5	45.0	39.4	35.5	34.4
40	45.2	41.8	35.5	31.2	30.1
45	42.3	38.0	31.2	26.8	25.6
50	38.8	33.5	26.6	22.3	21.2
55	34.5	28.6	21.7	17.7	16.7
60	29.5	23.1	16.7	13.2	12.4
65	24.1	17.4	11.7	9.0	8.3
70	18.2	11.6	7.2	5.3	4.8
75	12.3	6.3	3.5	2.9	2.8
80	6.5	2.3	1.6	1.3	1.2
85	1.7	0.4	0.1	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0
135	0.0	0.0	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 AKPC686WDXX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKPC686WDXX		
0-30	41.3	29.6
0-40	67.2	48.2
0-60	115.9	83.1
0-90	139.3	99.9
60-90	23.4	16.8
0-180	139.5	100.0

Beam Angle

Total Beam Angle(°)

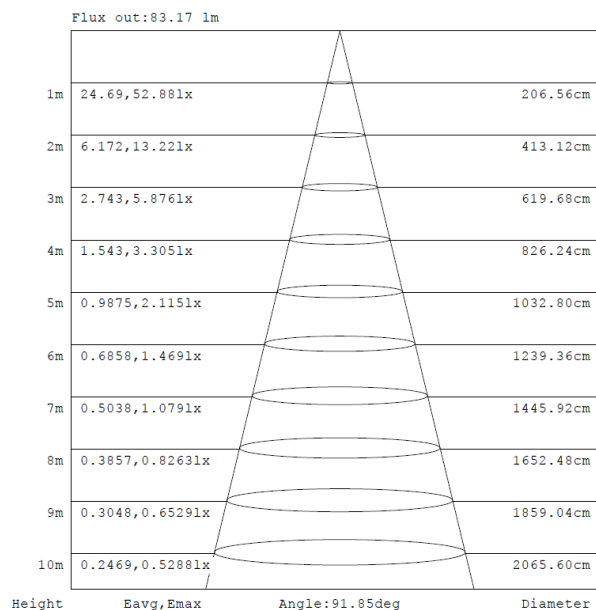
109.0

Illumination Plots

Model No.: AKPC686WDXX

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

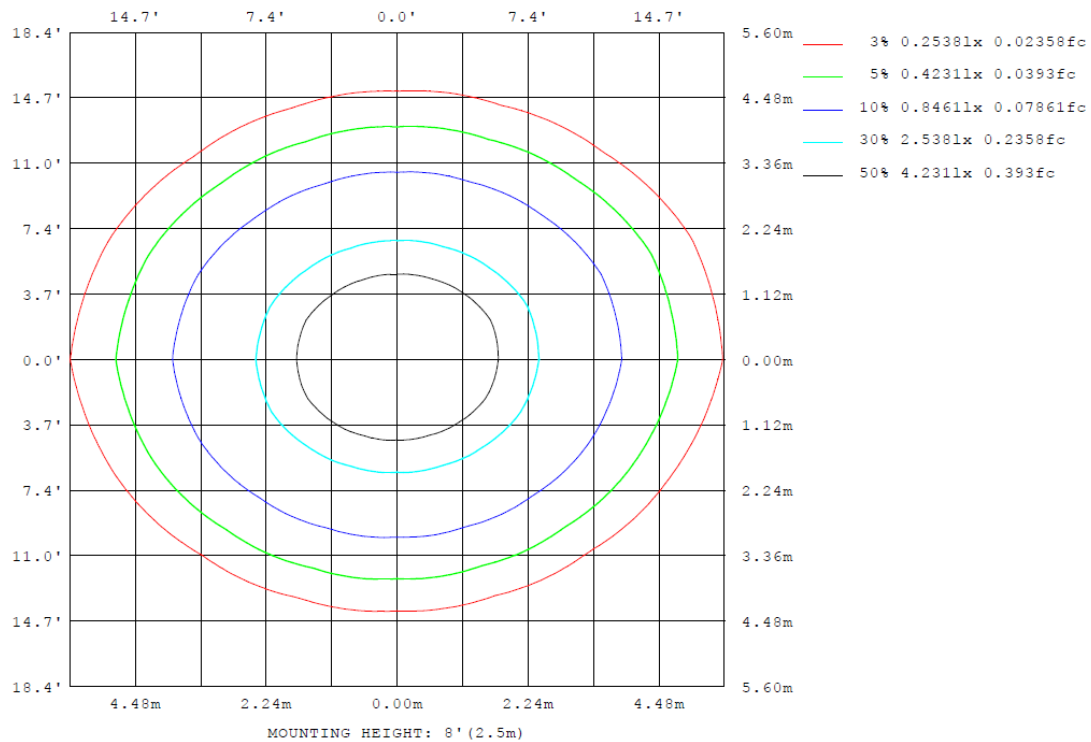
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC686WDXX

Model No.: AKPC686WDXX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC686WDXX

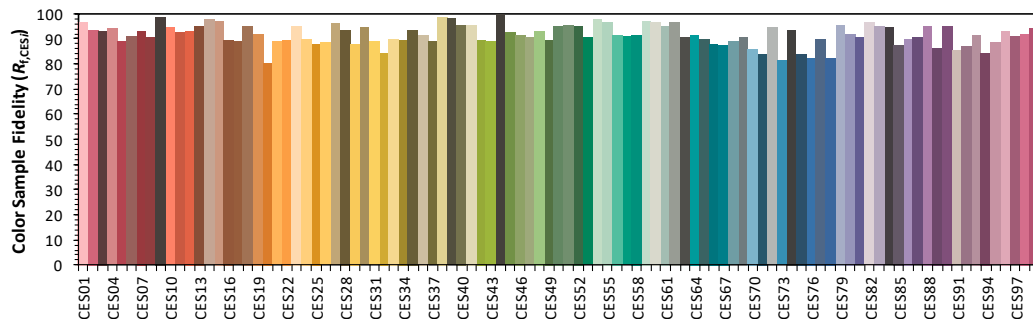
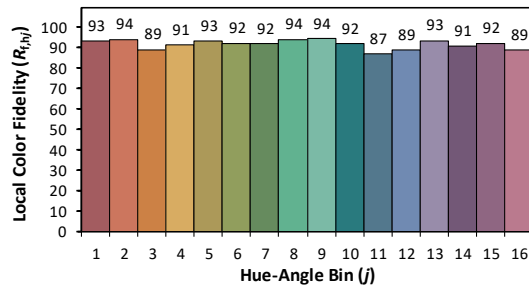
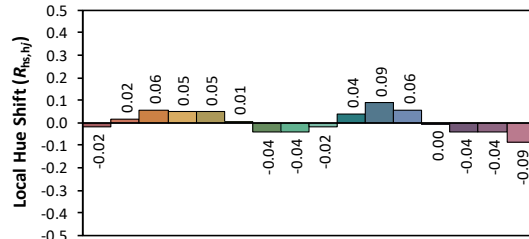
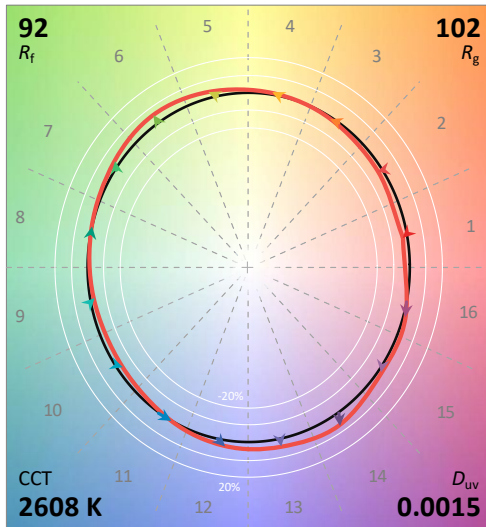
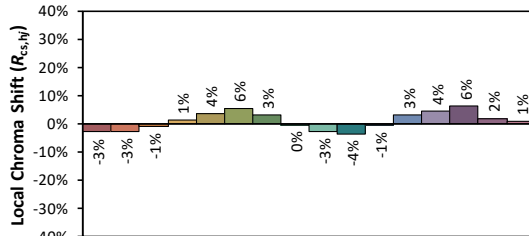
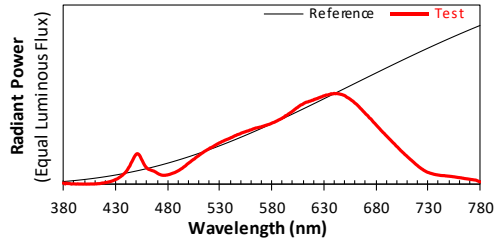
ANSI/IES T+B3:X17M-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/14

Model: AKPC686WDXX



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

x 0.4703
 y 0.4169
 u' 0.2664
 v' 0.5313

CIE 13.3-1995
(CRI)

R_a 93

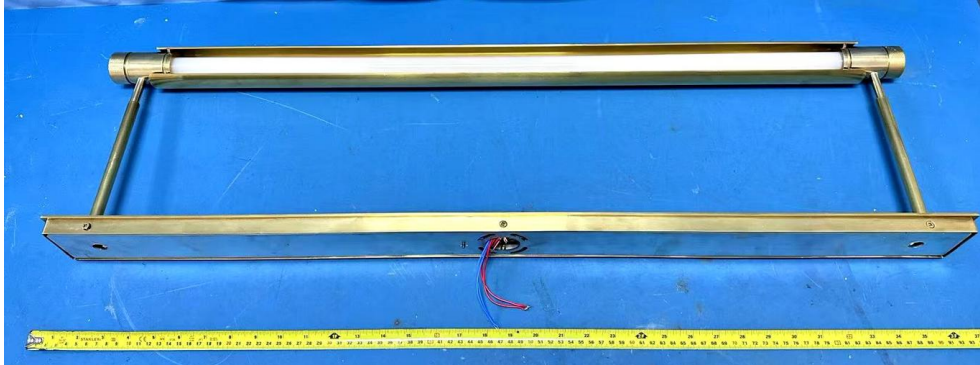
R_g 74

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 AKPC686WDXX



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

***** 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 *****