

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240124048GZU-008

ISSUE DATE

22 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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Report No.: 240124048GZU-008
Modification 1: 07 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKCH33527XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

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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: QGZ240122060.

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 AKCH33527XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240124048-002.

MANUFACTURER /FACTORY & ADDRESS: Dongguan Denghuang HomeFurnishing Co., Ltd.
No.5, Central Road, Yayuan IndustrialZone, Nancheng District
Dongguan City, Guangdong Province, 523000

DATES OF TESTS: 22 July 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:	AKCH33527XX
Description:	LED luminaire
Brand Name:	NA

Test Condition: 120V, 60Hz For AKCH33527XX

Criteria	Result
Total Lumen Output	682.6 lm
Total Power	16.2 W
Luminaire Efficacy	42.2 lm/W
S/MH(C0/180)	0.51
S/MH(C90/270)	0.57
Correlated Color Temperature (CCT)	2698 K
Color Rendering Index (CRI)	92
R9	59
Chromaticity Coordinate (x)	0.4525
Chromaticity Coordinate (y)	0.3972
Chromaticity Coordinate (u')	0.2638
Chromaticity Coordinate (v')	0.5210

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240124048GZU-008 issued on 22 July 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page 1 and 2 of the report.

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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	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.

***** 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

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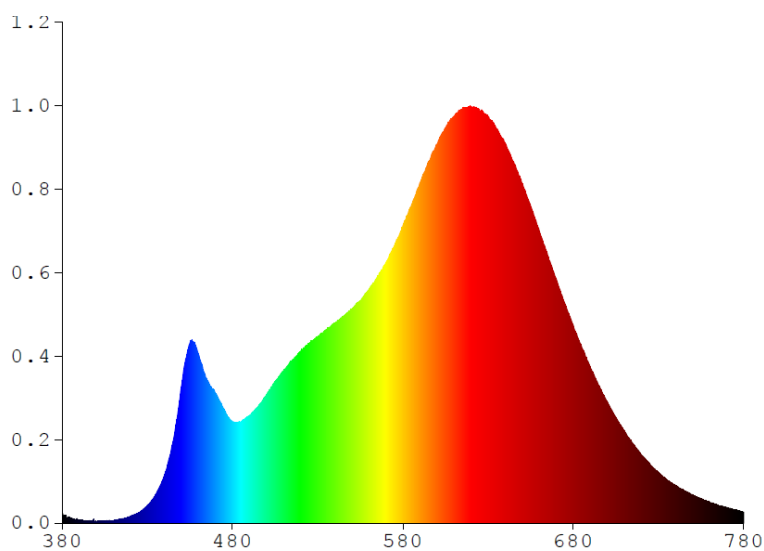
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKCH33527XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.3826	480	4.0829	580	11.9850	680	7.9265	780	0.4364
385	0.1730	485	4.1063	585	12.8120	685	7.0497		
390	0.1277	490	4.3375	590	13.7210	690	6.2576		
395	0.0868	495	4.7106	595	14.5690	695	5.5240		
400	0.0625	500	5.1815	600	15.2730	700	4.8685		
405	0.0906	505	5.6978	605	15.9500	705	4.2484		
410	0.1101	510	6.1577	610	16.4150	710	3.6991		
415	0.1671	515	6.5548	615	16.7280	715	3.2017		
420	0.2649	520	6.9147	620	16.7880	720	2.7380		
425	0.4275	525	7.2525	625	16.6150	725	2.3611		
430	0.7062	530	7.5113	630	16.3950	730	2.0297		
435	1.1591	535	7.8031	635	15.9080	735	1.7472		
440	1.9130	540	8.0651	640	15.3100	740	1.5183		
445	3.2542	545	8.3453	645	14.5390	745	1.3099		
450	5.4740	550	8.6317	650	13.6910	750	1.1287		
455	7.2677	555	8.9756	655	12.7480	755	0.9778		
460	6.8008	560	9.4088	660	11.7730	760	0.8396		
465	5.7681	565	9.9186	665	10.7680	765	0.7275		
470	5.2394	570	10.4910	670	9.8064	770	0.6240		
475	4.5793	575	11.1860	675	8.6578	775	0.5379		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKCH33527XX

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

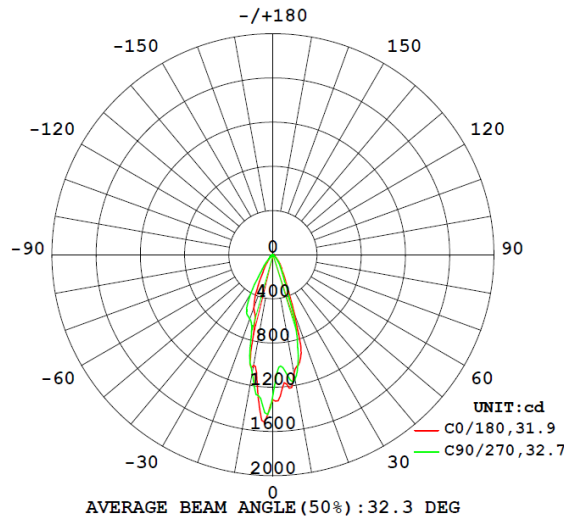
Photometric Measurements at 25°C – Distribution Method

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')
AKCH33527XX								
S2401240 48-002	base-up	2698	92	59	0.4525	0.3972	0.2638	0.5210

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
						Flux (Lumens)	Efficacy (Lumens Per Watt)
AKCH33527XX							
S2401240 48-002	base-up	120.1	136.3	16.2	0.987	682.6	42.2

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKCH33527XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	1314.1	1209.4	1128.4	1070.9	1265.7
5	1162.8	962.4	1008.3	800.3	1026.5
10	1097.1	1034.5	1031.2	1126.7	1147.8
15	965.9	802.1	1025.4	1109.2	871.8
20	561.5	311.4	498.3	488.8	484.0
25	289.2	184.3	204.0	200.2	223.5
30	169.8	127.1	127.2	133.9	145.8
35	122.8	88.5	89.4	94.5	91.4
40	81.2	61.2	54.8	55.7	55.3
45	47.0	24.0	27.0	29.4	29.6
50	21.0	13.4	11.6	13.1	15.4
55	13.9	12.1	10.4	10.5	11.8
60	13.1	11.1	9.9	9.0	12.0
65	11.9	6.9	6.5	5.4	7.8
70	7.6	1.6	1.7	1.7	1.7
75	1.6	1.0	1.0	1.0	1.1
80	0.9	0.3	0.3	0.3	0.3
85	0.3	0.0	0.0	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	0.1	0.1	0.1	0.1
125	0.1	0.2	0.2	0.2	0.2
130	0.2	0.3	0.3	0.3	0.3
135	0.3	0.5	0.5	0.5	0.5
140	0.5	0.7	0.7	0.6	0.6
145	0.7	0.9	0.9	0.8	0.8
150	0.9	1.0	1.0	1.0	1.0
155	1.0	1.2	1.2	1.1	1.2
160	1.1	1.2	1.2	1.2	1.2
165	1.1	1.1	1.1	1.1	1.1
170	1.0	0.9	0.9	0.9	0.9
175	0.9	0.7	0.7	0.7	0.7
180	0.7	0.5	0.5	0.5	0.4

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKCH33527XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKCH33527XX		
0-30	521.2	76.4
0-40	608.9	89.2
0-60	664.7	97.4
0-90	681.2	99.8
60-90	16.5	2.4
0-180	682.6	100.0

Beam Angle

Total Beam Angle(°)

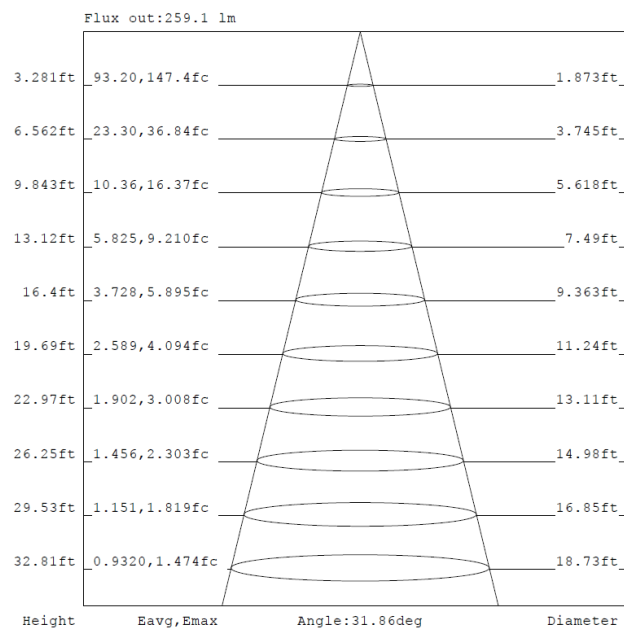
32.3

Illumination Plots

Model No.: AKCH33527XX

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.

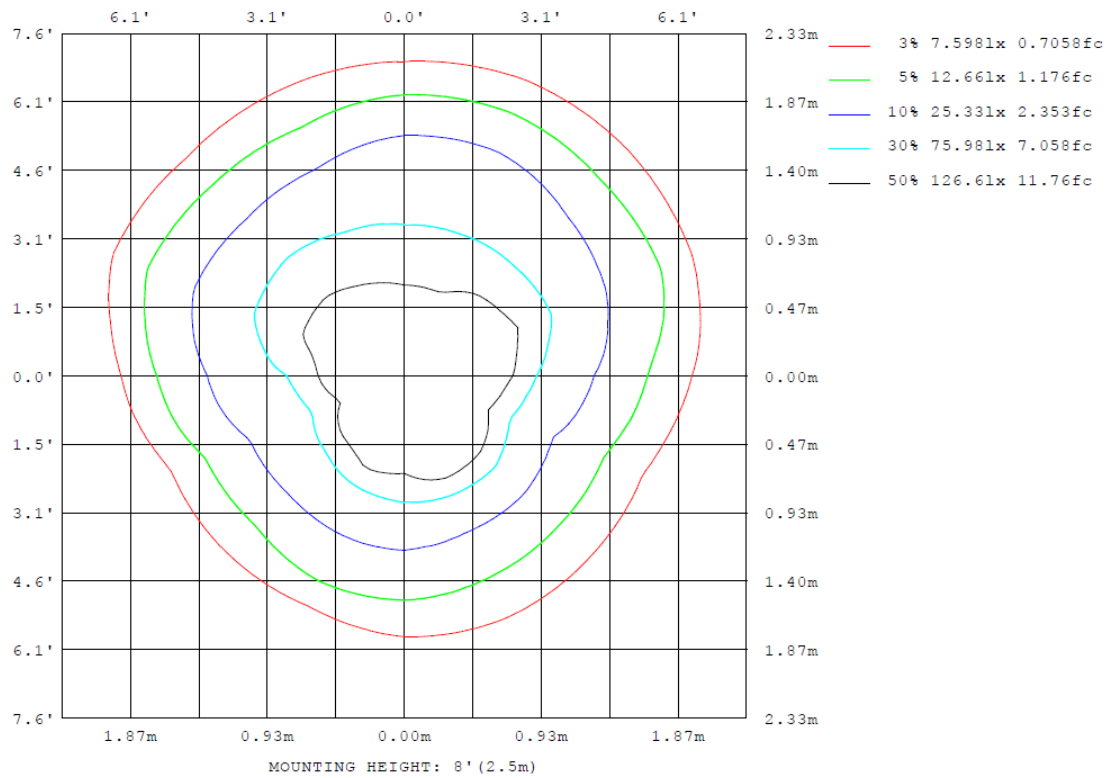
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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKCH33527XX

Model No.: AKCH33527XX
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKCH33527XX

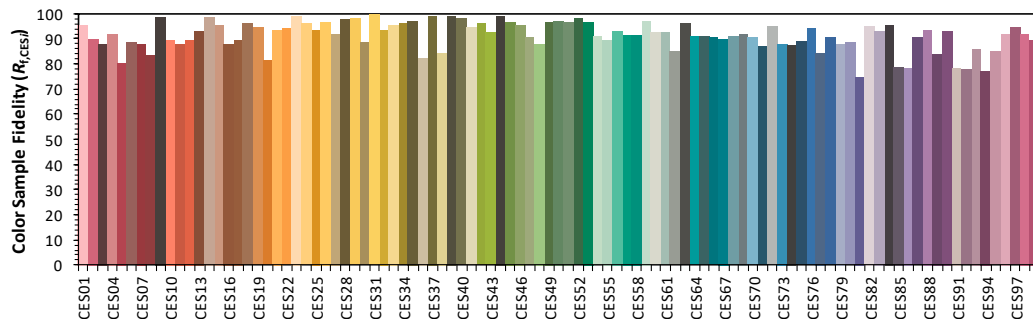
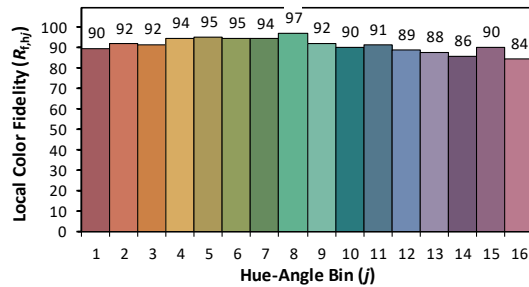
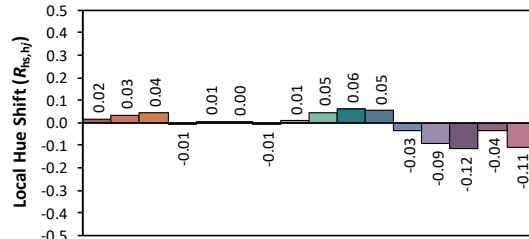
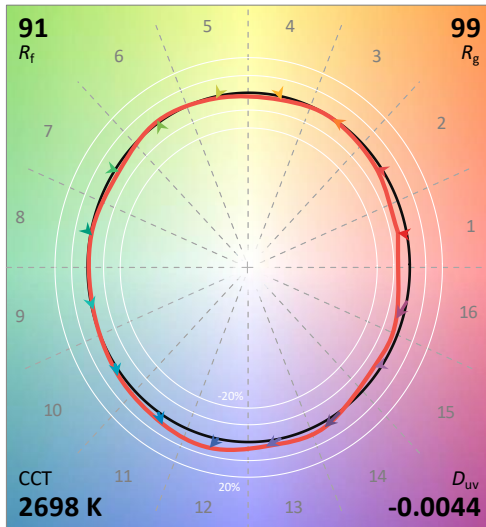
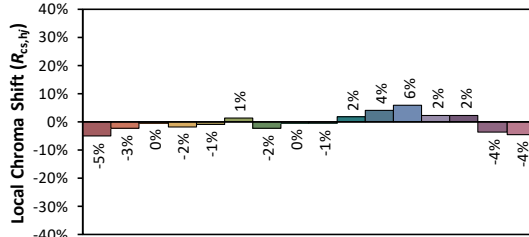
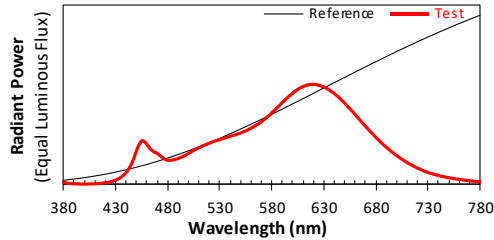
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/7/22

Model: AKCH33527XX



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

x 0.4525
 y 0.3972
 u' 0.2638
 v' 0.5210

CIE 13.3-1995
(CRI)

R_a 92

R_g 59

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 AKCH33527XX



View of LED driver PTB20W-0400-38-VCC

***** 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 *****