

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241128208GZU-003

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REVISION DATE

None

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Report format for LM-79_G

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Report No.: 241128208GZU-003

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKPD594WDXX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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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 AKPD594WDXX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241128208-003.

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

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TEST REPORT

SUMMARY

Model Number:	AKPD594WDXX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKPD594WDXX

Criteria	Result
Total Lumen Output	1257.9 lm
Total Power	15.9 W
Luminaire Efficacy	79.2 lm/W
S/MH(C0/180)	1.10
S/MH(C90/270)	1.30
Correlated Color Temperature (CCT)	2891 K
Color Rendering Index (CRI)	93
R9	72
Chromaticity Coordinate (x)	0.4466
Chromaticity Coordinate (y)	0.4100
Chromaticity Coordinate (u')	0.2543
Chromaticity Coordinate (v')	0.5251

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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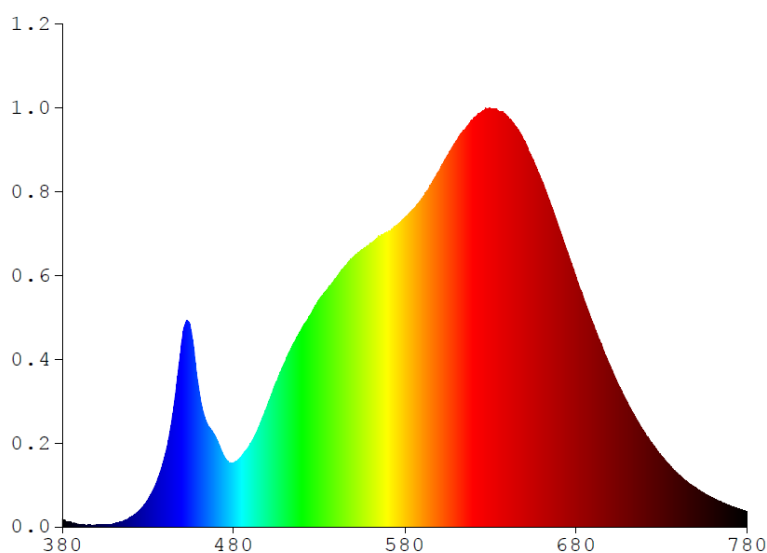
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKPD594WDXX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	1.6690	480	13.7480	580	66.0700	680	53.2230	780	3.2282
385	1.0163	485	15.2560	585	67.9890	685	48.0650		
390	0.5228	490	17.8640	590	70.2200	690	43.2650		
395	0.4204	495	21.5450	595	72.9650	695	38.6250		
400	0.4069	500	26.2700	600	76.0320	700	34.1610		
405	0.4217	505	30.9770	605	79.4030	705	30.0410		
410	0.6622	510	35.2000	610	82.5200	710	26.4020		
415	1.1120	515	39.1820	615	84.8240	715	23.0910		
420	2.0827	520	42.5150	620	87.1140	720	20.1610		
425	3.5182	525	45.4790	625	88.6990	725	17.4540		
430	5.8275	530	48.5700	630	89.3380	730	15.1040		
435	9.4502	535	50.9610	635	88.7940	735	12.9500		
440	15.3560	540	53.1770	640	87.6690	740	11.1020		
445	25.3880	545	55.7680	645	85.4310	745	9.5348		
450	40.0030	550	57.6160	650	82.3880	750	8.2597		
455	41.9040	555	59.0140	655	78.1930	755	7.1166		
460	28.4190	560	60.5710	660	73.8600	760	6.0686		
465	21.5370	565	62.0070	665	69.0420	765	5.1636		
470	18.6340	570	62.8110	670	63.7900	770	4.4830		
475	14.6450	575	64.4260	675	57.4300	775	3.8553		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD594WDXX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

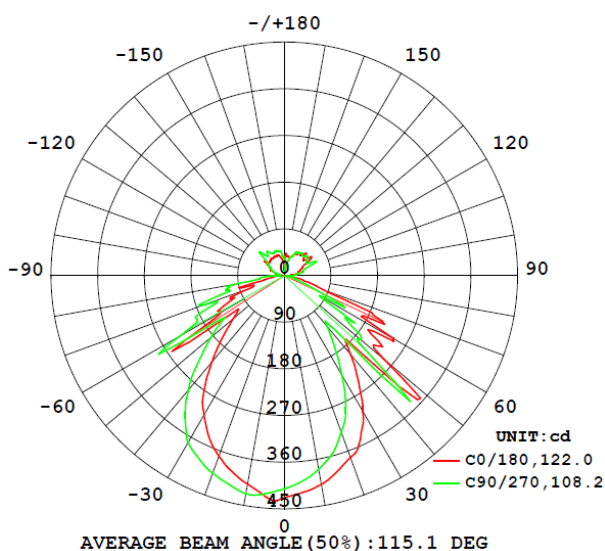
Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
AKPD594WDXX								
S2411282 08-003	base-up	2891	93	72	0.4466	0.4100	0.2543	0.5251

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)
AKPD594WDXX							
S2411282 08-003	base-up	120.0	133.6	15.9	0.991	1257.9	79.2

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD594WDXX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	428.6	413.5	411.0	411.1	410.9
5	419.4	399.3	396.1	397.2	398.0
10	408.7	378.7	376.1	379.0	379.6
15	391.9	365.6	350.9	355.3	356.2
20	373.4	324.2	330.3	322.1	321.1
25	347.4	279.2	271.4	282.2	280.0
30	303.0	224.1	215.7	219.8	221.2
35	249.4	176.0	169.3	169.8	170.2
40	199.3	326.8	304.8	127.9	129.3
45	225.1	227.8	211.3	272.7	342.8
50	248.5	201.9	210.9	224.2	191.4
55	222.7	175.7	117.7	163.8	142.2
60	244.0	162.0	167.8	135.3	77.3
65	208.4	63.9	59.5	56.3	74.7
70	78.2	26.3	25.1	33.7	32.1
75	39.8	13.3	11.2	13.5	14.5
80	17.9	10.4	9.0	7.6	6.5
85	8.1	11.6	11.6	10.6	9.2
90	10.8	19.4	18.8	16.8	15.1
95	16.0	32.0	29.3	25.5	22.9
100	24.9	34.2	35.6	36.2	33.1
105	29.0	39.1	39.5	40.2	38.2
110	32.6	45.1	46.3	47.9	45.9
115	38.3	67.8	76.9	75.5	66.2
120	50.8	53.3	51.8	51.4	50.1
125	63.9	57.3	59.0	55.1	52.9
130	47.1	57.5	58.4	60.1	58.4
135	60.5	53.2	54.6	53.1	52.7
140	50.4	51.9	55.5	56.0	54.6
145	53.0	50.6	52.4	51.9	53.0
150	48.0	50.5	53.4	51.5	51.0
155	45.2	40.1	39.9	44.1	48.2
160	38.2	39.5	38.7	39.6	39.6
165	36.8	38.1	35.7	32.7	31.3
170	38.4	27.2	14.5	14.1	13.4
175	43.3	20.2	22.8	24.6	26.7
180	14.0	30.4	32.5	33.8	34.7

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD594WDXX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKPD594WDXX		
0-30	301.5	24.0
0-40	462.0	36.7
0-60	791.4	62.9
0-90	1019.4	81.1
60-90	228.0	18.2
0-180	1257.9	100.0

Beam Angle

Total Beam Angle(°)

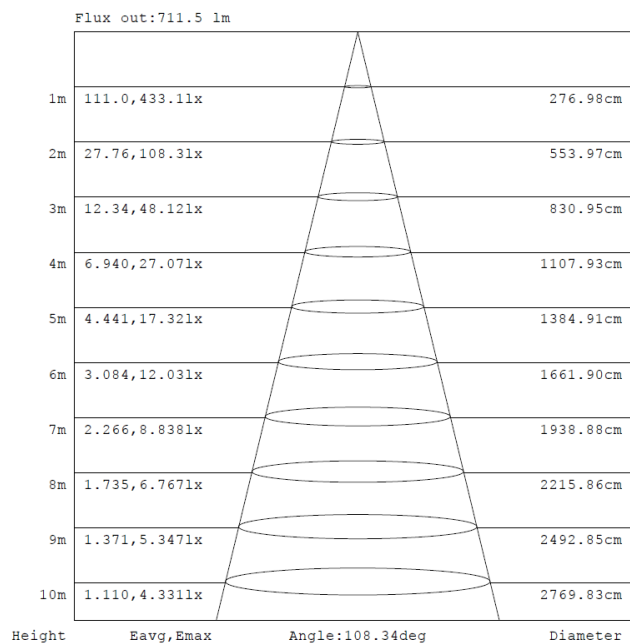
115.1

Illumination Plots

Model No.: AKPD594WDXX

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

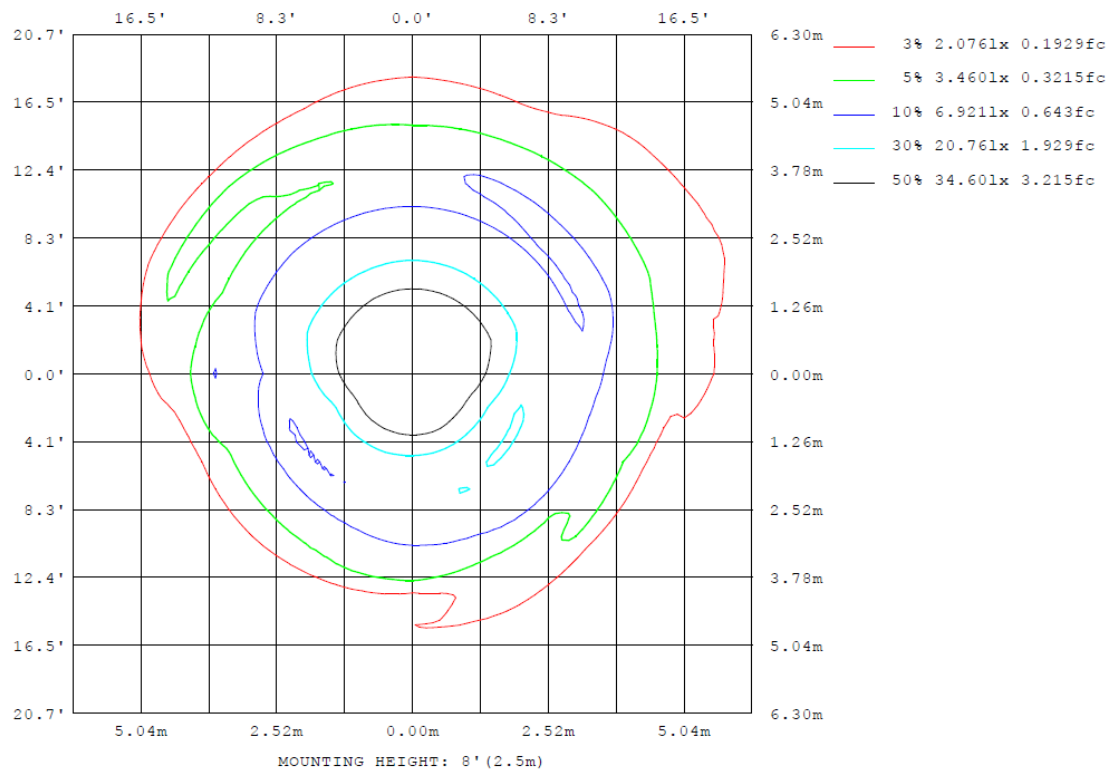
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD594WDXX

Model No.: AKPD594WDXX

Mount Height: 2.5 m

Isoillumination Plot



TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD594WDXX

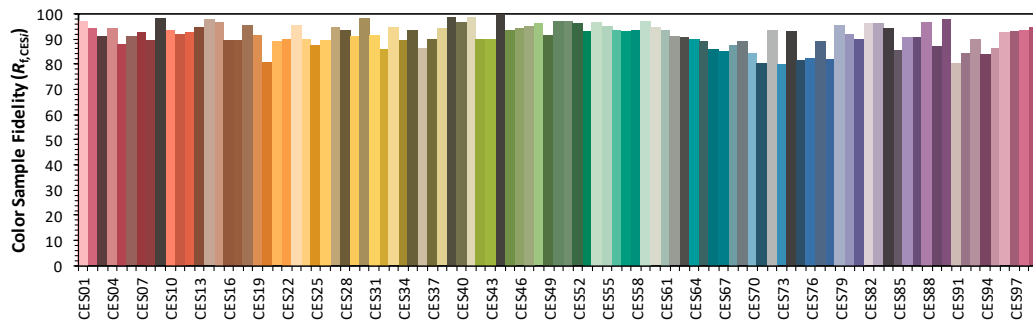
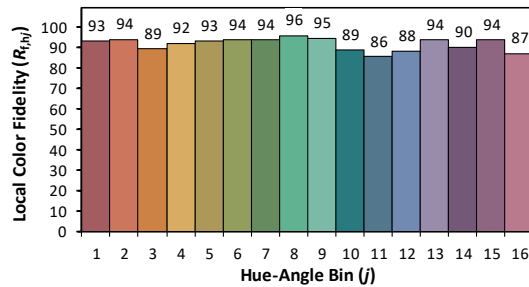
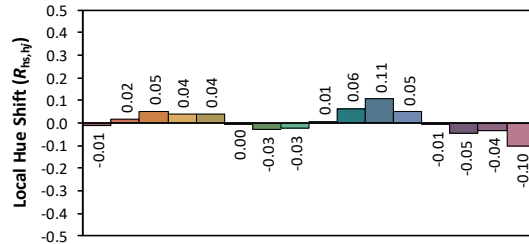
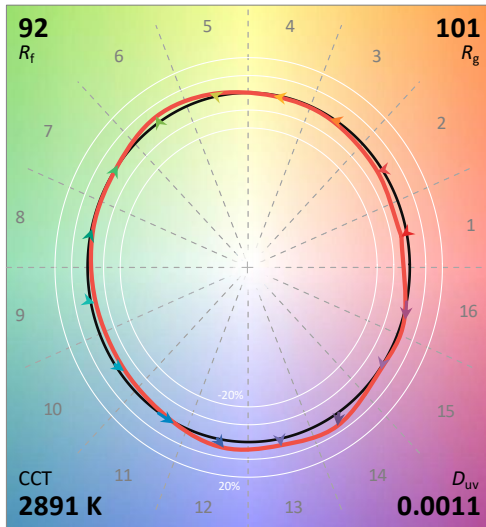
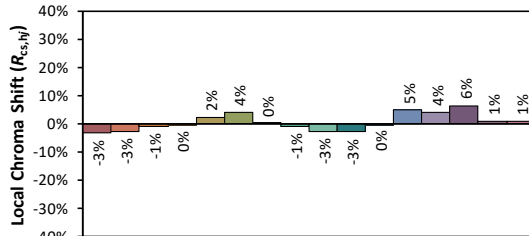
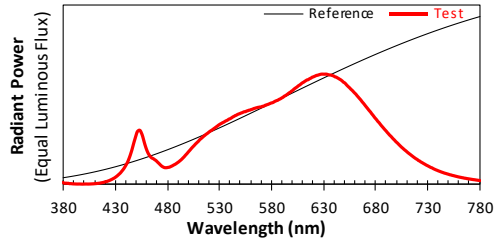
ANSI/IES T+B3:X17M-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/19

Model: AKPD594WDXX



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

x 0.4466
 y 0.4100
 u' 0.2543
 v' 0.5251

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 AKPD594WDXX



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 *****