

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241128208GZU-002

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None

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Report format for LM-79_G

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Report No.: 241128208GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKPD593WDXX

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 AKPD593WDXX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241128208-002.

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:	AKPD593WDXX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKPD593WDXX

Criteria	Result
Total Lumen Output	1240.3 lm
Total Power	15.8 W
Luminaire Efficacy	78.5 lm/W
S/MH(C0/180)	1.10
S/MH(C90/270)	0.99
Correlated Color Temperature (CCT)	2898 K
Color Rendering Index (CRI)	93
R9	72
Chromaticity Coordinate (x)	0.4462
Chromaticity Coordinate (y)	0.4101
Chromaticity Coordinate (u')	0.2539
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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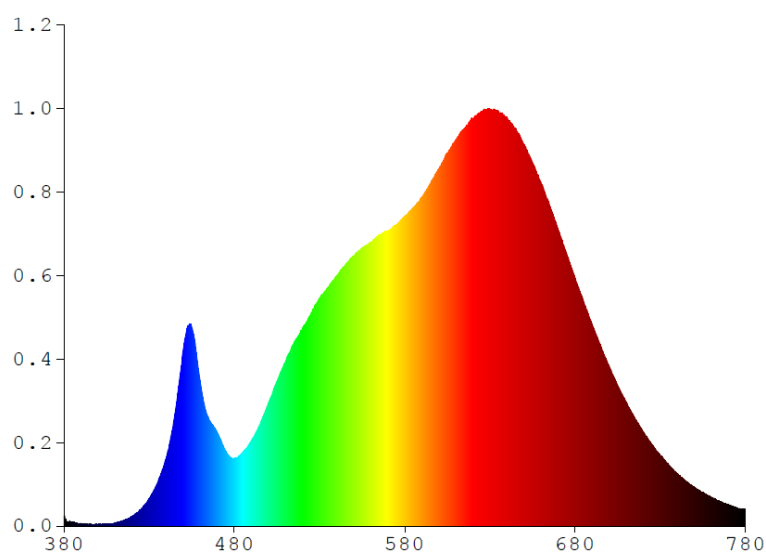
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKPD593WDXX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	2.0071	480	13.4380	580	62.0080	680	49.5320	780	3.3422
385	0.7463	485	14.7890	585	63.8230	685	44.8180		
390	0.4452	490	17.1110	590	65.9200	690	40.2910		
395	0.3736	495	20.3670	595	68.6350	695	35.9800		
400	0.3691	500	24.6110	600	71.5170	700	31.9000		
405	0.4207	505	28.9120	605	74.6510	705	28.0690		
410	0.6684	510	32.9610	610	77.4190	710	24.6990		
415	1.1712	515	36.7290	615	79.6780	715	21.5780		
420	1.9984	520	39.6720	620	81.5880	720	18.8350		
425	3.3144	525	42.6390	625	83.0890	725	16.2910		
430	5.5001	530	45.6910	630	83.5070	730	14.1010		
435	8.7003	535	47.8530	635	82.9900	735	12.1730		
440	13.7080	540	50.1240	640	81.7810	740	10.4760		
445	22.2510	545	52.3130	645	79.6790	745	8.9930		
450	35.1880	550	54.0940	650	76.4550	750	7.7815		
455	39.6720	555	55.7180	655	72.6980	755	6.7245		
460	28.6890	560	56.6720	660	68.7030	760	5.7842		
465	21.3380	565	58.3250	665	64.2040	765	4.9230		
470	18.6520	570	59.0350	670	59.3220	770	4.2249		
475	15.0140	575	60.3910	675	53.5810	775	3.6564		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD593WDXX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

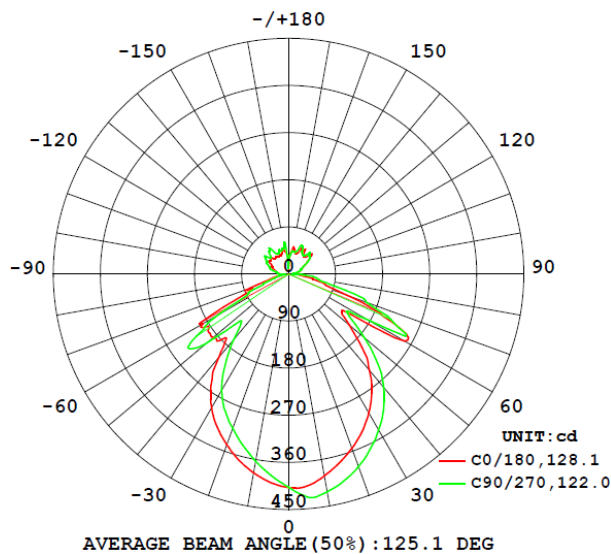
Photometric Measurements at 25°C – Distribution Method

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')
AKPD593WDXX								
S2411282 08-002	base-up	2898	93	72	0.4462	0.4101	0.2539	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	Lumen Efficacy
						Flux (Lumens)	(Lumens Per Watt)
AKPD593WDXX							
S2411282 08-002	base-up	120.1	133.0	15.8	0.990	1240.3	78.5

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD593WDXX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	408.2	408.2	407.9	407.8	407.5
5	406.5	416.3	427.6	437.4	427.9
10	391.9	405.3	418.0	425.8	422.7
15	373.8	388.5	401.9	409.1	409.1
20	354.2	370.0	382.2	389.3	391.2
25	332.3	348.9	360.1	365.9	369.3
30	307.0	325.3	336.3	340.6	344.4
35	276.9	297.2	310.4	314.0	316.5
40	240.6	263.0	277.1	281.6	282.8
45	198.3	222.2	236.7	241.7	240.2
50	151.1	174.0	190.4	192.9	189.5
55	123.7	133.3	143.8	147.7	142.4
60	255.9	178.1	136.6	165.2	177.1
65	218.7	252.3	247.5	237.1	223.3
70	120.9	166.7	189.4	184.9	158.1
75	69.4	71.0	86.7	103.8	93.4
80	40.2	51.5	61.9	58.3	57.5
85	19.6	26.4	33.0	38.5	34.1
90	8.0	12.9	17.1	18.8	16.8
95	10.5	8.5	7.4	7.3	8.0
100	16.9	14.4	12.5	12.3	14.3
105	22.5	20.9	19.2	20.0	20.9
110	26.0	26.1	26.5	25.5	25.5
115	30.1	31.0	29.8	29.0	29.4
120	37.3	36.2	35.0	34.3	36.9
125	46.8	43.9	40.3	46.2	47.9
130	59.3	60.6	62.4	52.4	53.6
135	46.3	52.3	57.6	65.6	58.7
140	45.1	45.8	46.6	48.3	46.7
145	54.7	47.9	47.5	47.7	46.5
150	49.4	50.7	50.9	54.9	55.2
155	48.6	60.9	66.0	64.6	61.2
160	42.2	45.2	45.5	45.8	46.6
165	45.8	45.7	44.6	44.2	43.8
170	51.7	47.9	50.3	47.8	44.3
175	39.1	41.6	42.2	39.1	35.5
180	9.7	5.7	11.5	13.1	11.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD593WDXX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKPD593WDXX		
0-30	293.3	23.7
0-40	460.2	37.1
0-60	769.7	62.1
0-90	1004.7	81.0
60-90	235.0	18.9
0-180	1240.3	100.0

Beam Angle

Total Beam Angle(°)

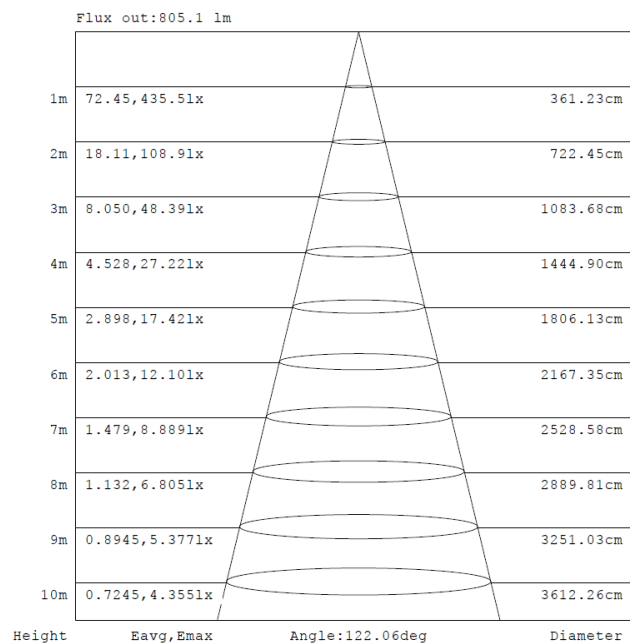
125.1

Illumination Plots

Model No.: AKPD593WDXX

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

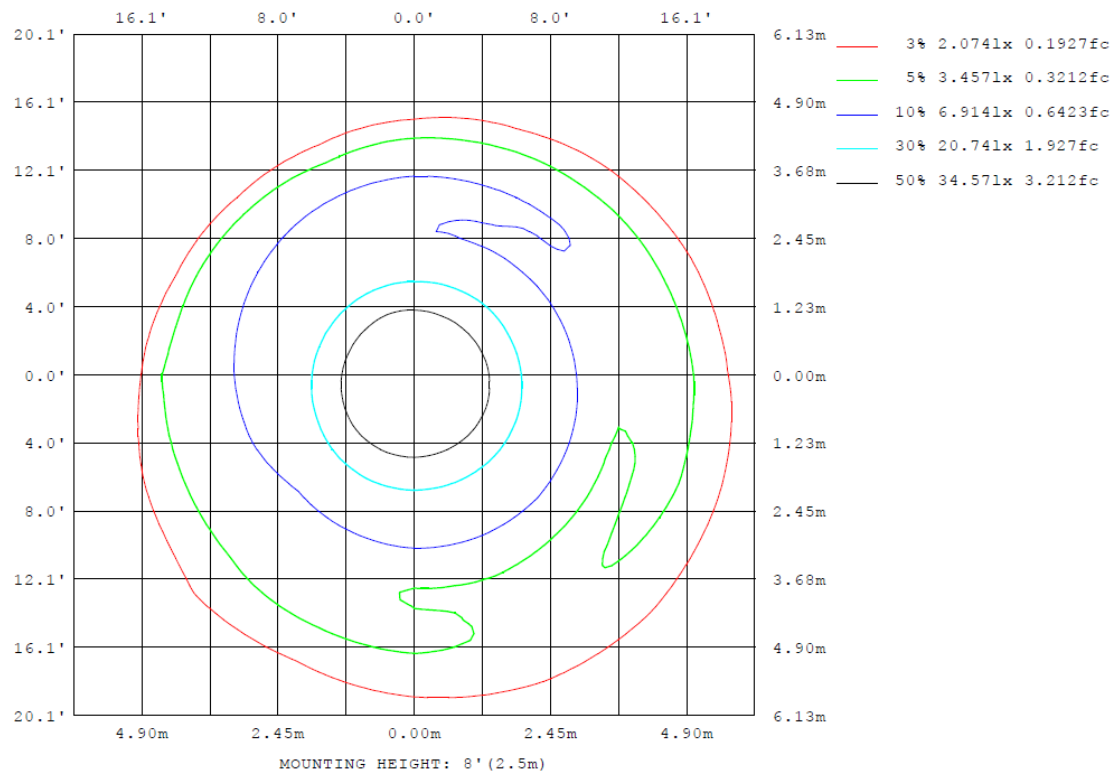
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD593WDXX

Model No.: AKPD593WDXX

Mount Height: 2.5 m

Isoillumination Plot



TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD593WDXX

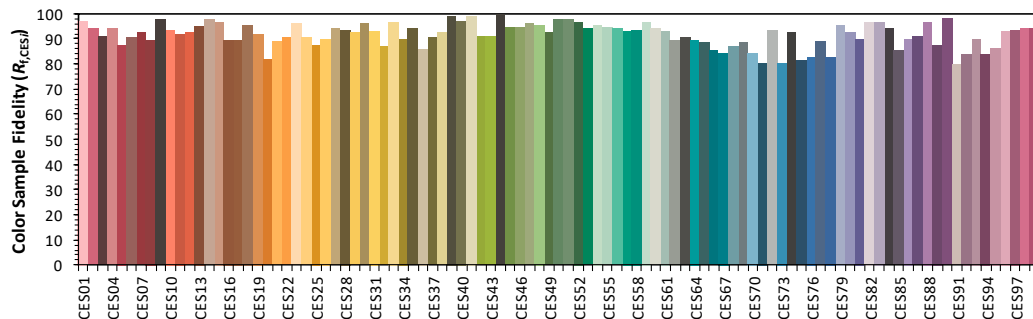
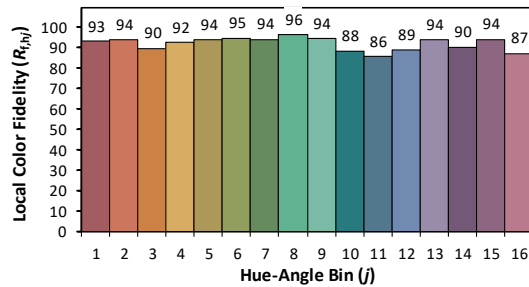
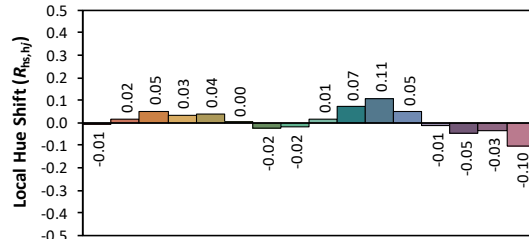
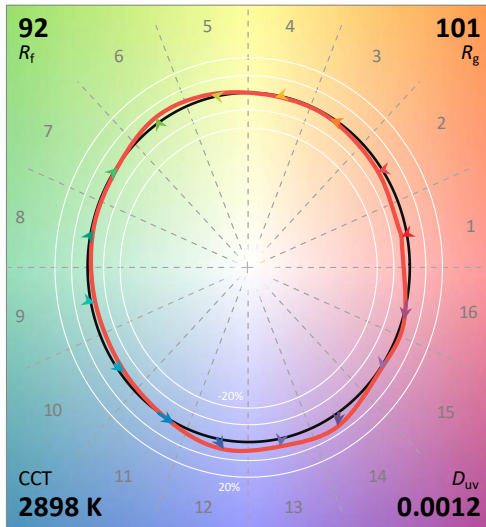
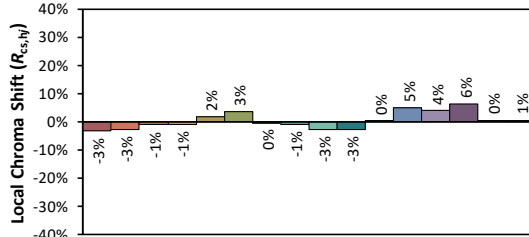
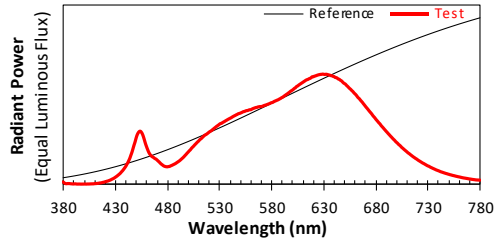
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/19

Model: AKPD593WDXX



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

x 0.4462
 y 0.4101
 u' 0.2539
 v' 0.5251

CIE 13.3-1995
(CRI)

R_a 93

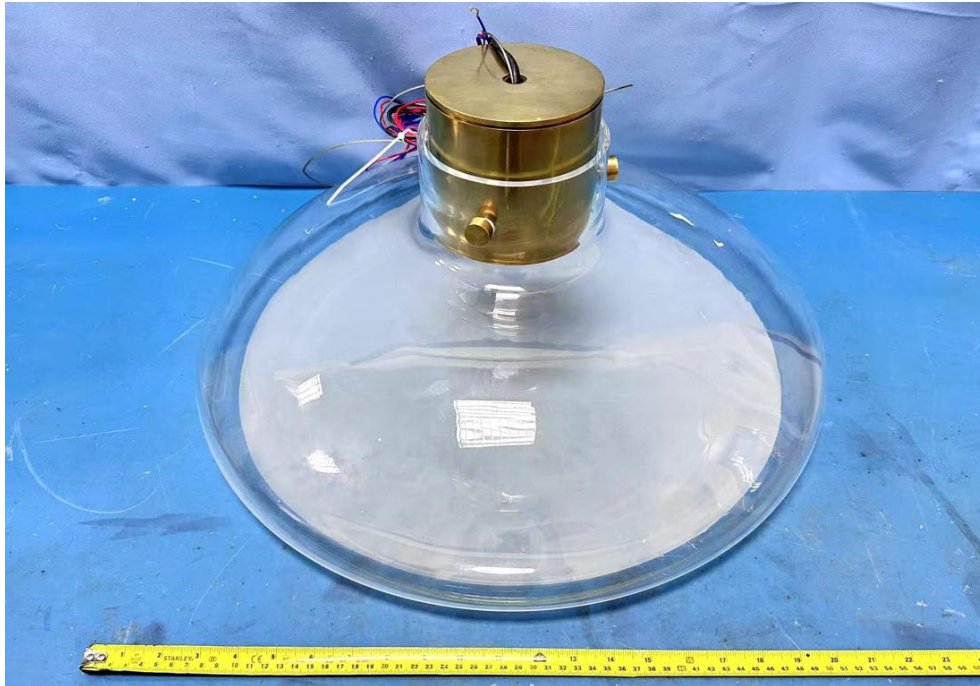
R_g 72

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 AKPD593WDXX



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 *****