

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241128212GZU-004

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None

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Report format for LM-79_G

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Report No.: 241128212GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKPC684WDXX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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<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 AKPC684WDXX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241128212-004.
<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>	03 January 2025
<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:	AKPC684WDXX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKPC684WDXX

Criteria	Result
Total Lumen Output	85.9 lm
Total Power	16.4 W
Luminaire Efficacy	5.2 lm/W
S/MH(C0/180)	1.24
S/MH(C90/270)	1.14
Correlated Color Temperature (CCT)	2682 K
Color Rendering Index (CRI)	92
R9	69
Chromaticity Coordinate (x)	0.4619
Chromaticity Coordinate (y)	0.4120
Chromaticity Coordinate (u')	0.2632
Chromaticity Coordinate (v')	0.5282

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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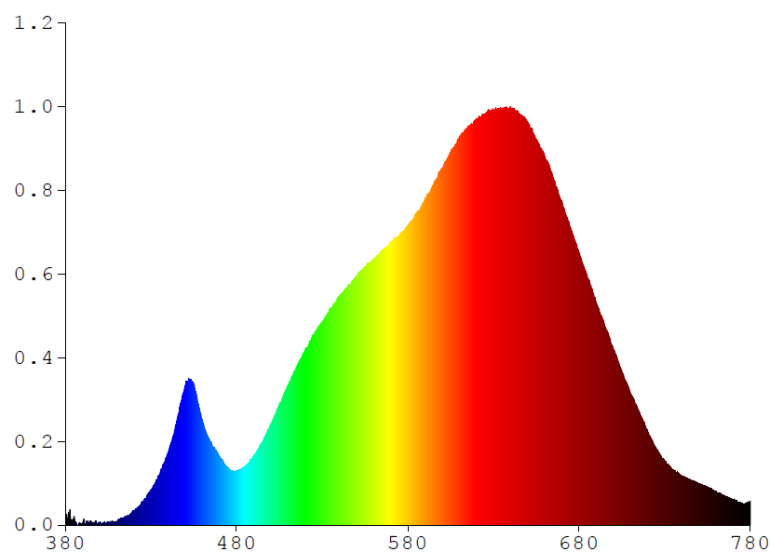
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKPC684WDXX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	1.4102	580	7.7584	680	7.0385	780	0.6180
385	0.2245	485	1.5210	585	8.0597	685	6.3907		
390	0.0111	490	1.7960	590	8.4260	690	5.7582		
395	0.0490	495	2.1559	595	8.8167	695	5.1342		
400	0.0655	500	2.6081	600	9.2464	700	4.5396		
405	0.0874	505	3.1254	605	9.6465	705	3.9650		
410	0.0809	510	3.5988	610	10.0300	710	3.4007		
415	0.2326	515	4.0934	615	10.2930	715	2.9322		
420	0.3762	520	4.5067	620	10.4760	720	2.4338		
425	0.5979	525	4.9381	625	10.6330	725	1.9710		
430	0.9127	530	5.2472	630	10.7280	730	1.6637		
435	1.2975	535	5.6160	635	10.7910	735	1.4307		
440	1.8769	540	5.9361	640	10.7950	740	1.2701		
445	2.6713	545	6.1689	645	10.6150	745	1.1634		
450	3.5950	550	6.4479	650	10.4130	750	1.0794		
455	3.6373	555	6.6798	655	9.9845	755	0.9684		
460	2.7047	560	6.8673	660	9.5299	760	0.8647		
465	2.1228	565	7.0999	665	8.9774	765	0.7595		
470	1.7690	570	7.3304	670	8.3668	770	0.6501		
475	1.4694	575	7.4826	675	7.5610	775	0.5630		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC684WDXX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

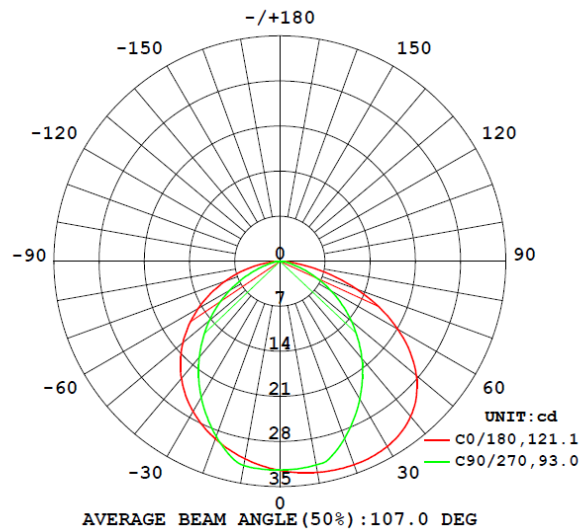
Photometric Measurements at 25°C – Distribution Method

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')
AKPC684WDXX								
S2411282 12-004	base-up	2682	92	69	0.4619	0.4120	0.2632	0.5282

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)
AKPC684WDXX							
S2411282 12-004	base-up	120.1	138.1	16.4	0.990	85.9	5.2

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC684WDXX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	32.5	32.7	32.6	32.5	32.4
5	33.0	33.0	32.9	32.6	32.3
10	33.3	33.3	33.0	32.6	32.1
15	33.5	33.4	33.0	32.2	31.3
20	33.6	33.4	32.6	30.5	29.3
25	33.5	33.3	31.2	28.6	27.1
30	33.2	32.9	29.5	26.4	24.7
35	32.6	31.8	27.5	24.0	22.3
40	31.5	30.0	25.2	21.5	19.7
45	29.9	27.8	22.6	18.7	17.1
50	27.6	24.9	19.5	15.9	14.5
55	24.6	21.4	16.3	13.0	11.8
60	21.1	17.5	12.7	10.0	9.1
65	17.0	13.2	9.2	7.2	6.6
70	12.7	8.8	5.9	4.6	4.2
75	8.2	4.8	3.1	2.4	2.2
80	4.1	1.6	1.3	1.3	1.2
85	1.0	0.3	0.4	0.4	0.4
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	0.0	0.0	0.0	0.0	0.0
145	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0
155	0.0	0.0	0.0	0.0	0.0
160	0.0	0.0	0.0	0.0	0.0
165	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC684WDXX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKPC684WDXX		
0-30	25.4	29.6
0-40	41.4	48.2
0-60	71.5	83.3
0-90	85.7	99.9
60-90	14.2	16.6
0-180	85.9	100.0

Beam Angle

Total Beam Angle(°)

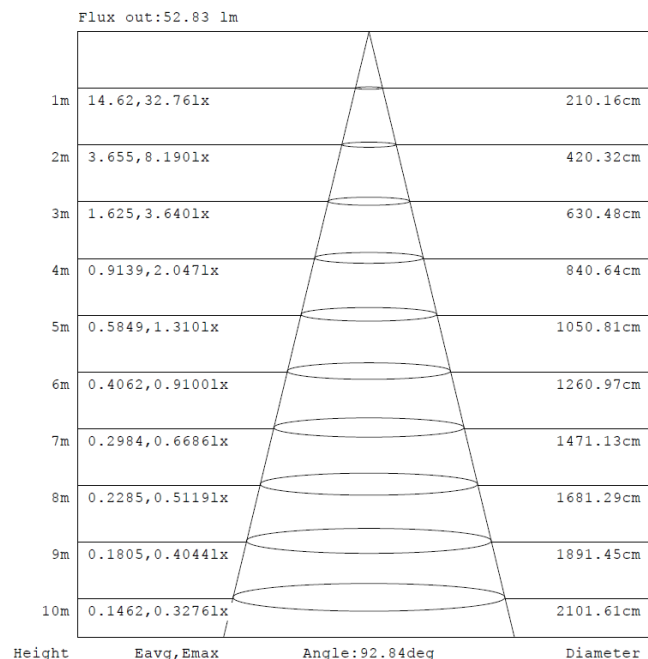
107.0

Illumination Plots

Model No.: AKPC684WDXX

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

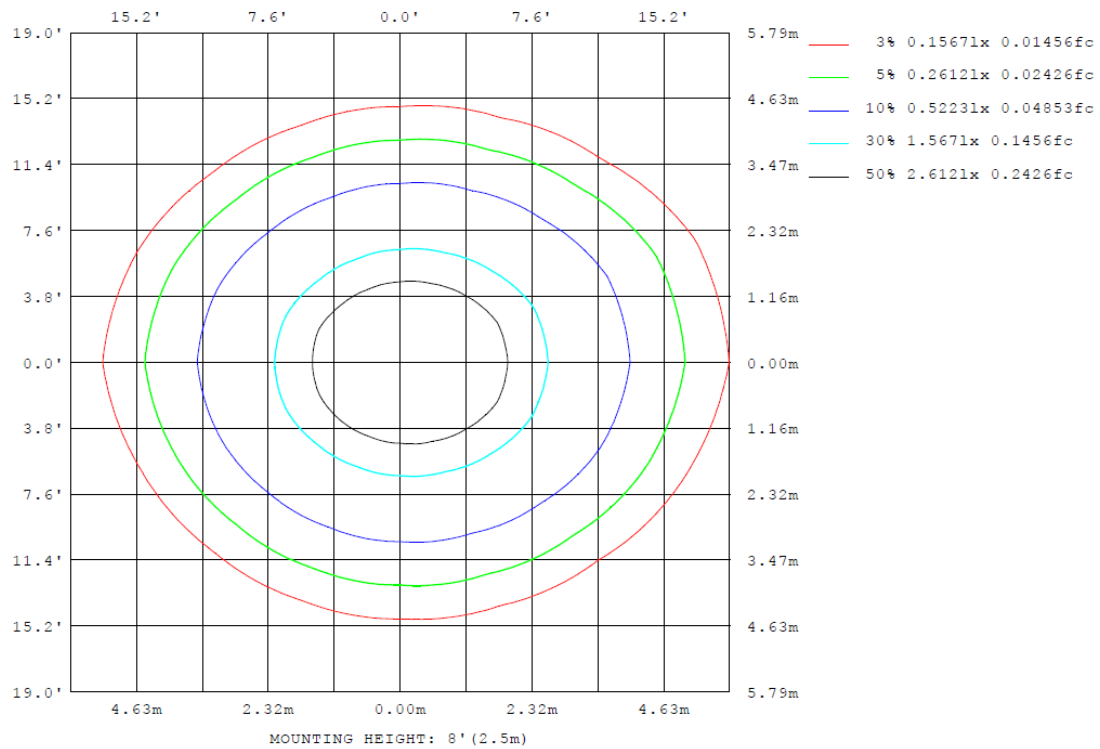
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC684WDXX

Model No.: AKPC684WDXX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPC684WDXX

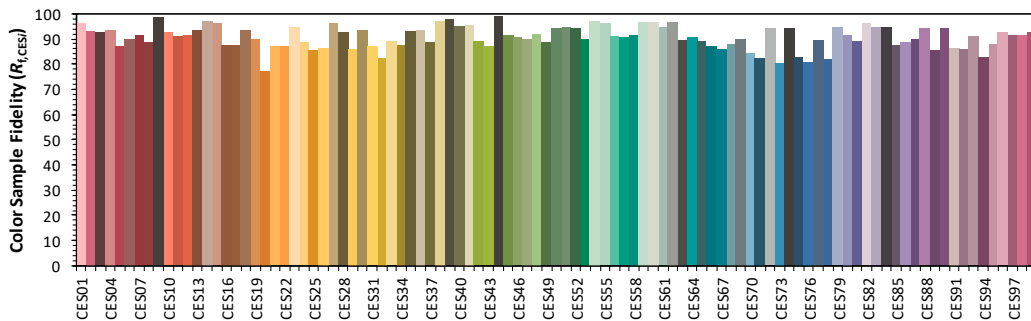
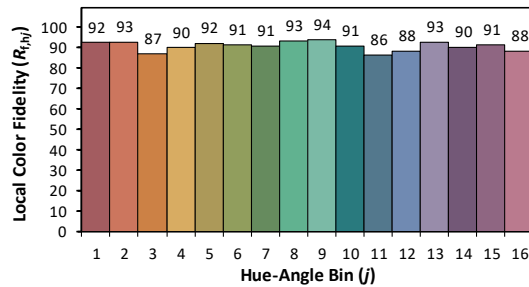
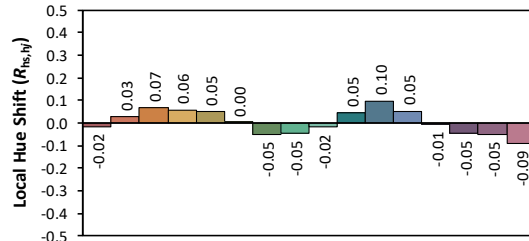
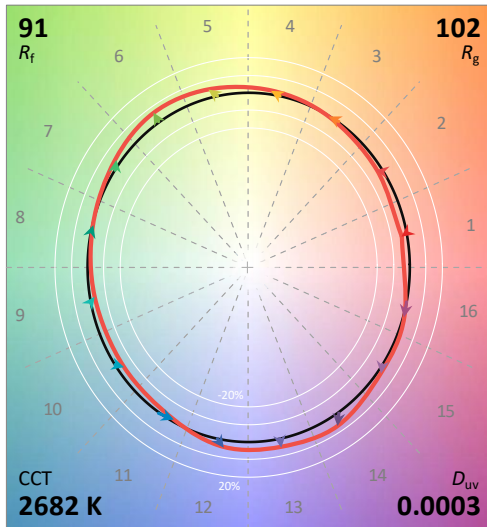
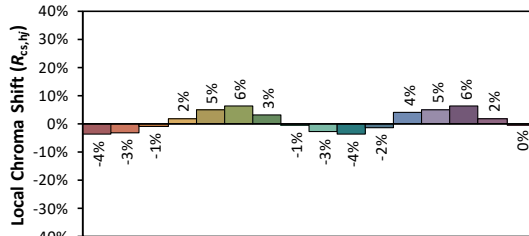
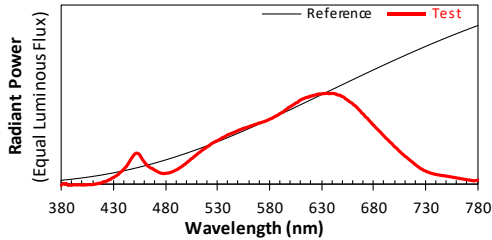
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2025/1/3

Model: AKPC684WDXX



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

x 0.4619
 y 0.4120
 u' 0.2632
 v' 0.5282

CIE 13.3-1995
(CRI)

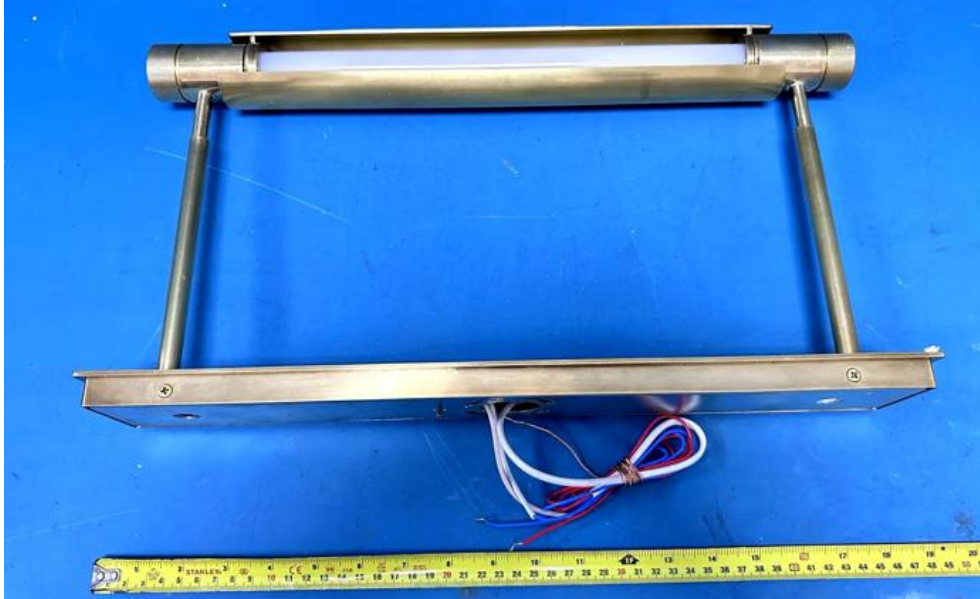
R_a 92
 R_g 69

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 AKPC684WDXX



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 *****