

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230717030GZU-002

ISSUE DATE

01-August-2023

REVISION DATE

None

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Report No.: 230717030GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWBA27627XX

(Remark: "xx" are denoted finish color)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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TEST: Electrical and Photometric as required to the IES LM-79 test standard.

STATEMENT OF LIMITATION: The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ230714100.

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: 2008; Approved Method for the Electrical and Photometric
IES LM-79: 2019 Measurements of Solid-State Lighting Products
ANSI C78.377:2017 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model KWBA27627XX. The sample was received in undamaged condition. The sample designation was S230717030-002.

DATES OF TESTS: 19-July-2023

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 Science City, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	KWBA27627XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWBA27627XX

Criteria	Result
Total Lumen Output	3142.2 lm
Total Power	35.8 W
Luminaire Efficacy	87.7 lm/W
S/MH(C0/180)	1.06
S/MH(C90/270)	1.05
Correlated Color Temperature (CCT)	2678 K
Color Rendering Index (CRI)	91
R9	66
Chromaticity Coordinate (x)	0.4626
Chromaticity Coordinate (y)	0.4126
Chromaticity Coordinate (u')	0.2634
Chromaticity Coordinate (v')	0.5285

Remark:

Measurement uncertainty for applicable tests has been established.

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

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	RC-HT601A	SA047-62

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 EVERFINE - Digital Power Meter., model PLM3000.

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: 3.9480A DC

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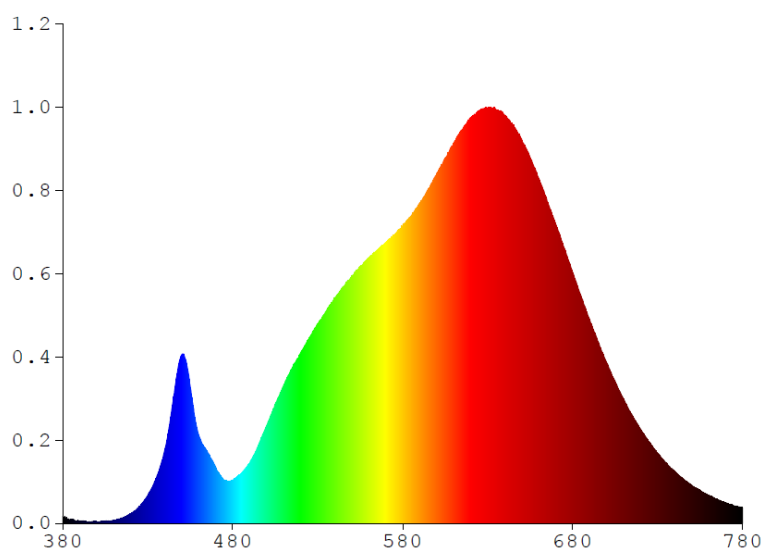
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWBA27627XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1819	480	1.0318	580	7.0675	680	5.9415	780	0.3698
385	0.0922	485	1.1877	585	7.3098	685	5.3710		
390	0.0429	490	1.4370	590	7.6086	690	4.8355		
395	0.0420	495	1.8402	595	7.9396	695	4.3005		
400	0.0442	500	2.3255	600	8.3143	700	3.8096		
405	0.0393	505	2.8255	605	8.6737	705	3.3531		
410	0.0754	510	3.2847	610	9.0309	710	2.9320		
415	0.1276	515	3.6901	615	9.3500	715	2.5561		
420	0.2367	520	4.0366	620	9.6368	720	2.2252		
425	0.3993	525	4.4188	625	9.8009	725	1.9249		
430	0.6659	530	4.7356	630	9.8659	730	1.6581		
435	1.0678	535	5.0362	635	9.8066	735	1.4367		
440	1.7451	540	5.3473	640	9.6851	740	1.2295		
445	2.9532	545	5.6223	645	9.4621	745	1.0516		
450	4.0023	550	5.8702	650	9.1100	750	0.9051		
455	3.2082	555	6.1026	655	8.6696	755	0.7751		
460	2.0817	560	6.2905	660	8.1889	760	0.6643		
465	1.7008	565	6.4927	665	7.6382	765	0.5684		
470	1.3205	570	6.6694	670	7.1168	770	0.4876		
475	1.0296	575	6.8488	675	6.4127	775	0.4170		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWBA27627XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

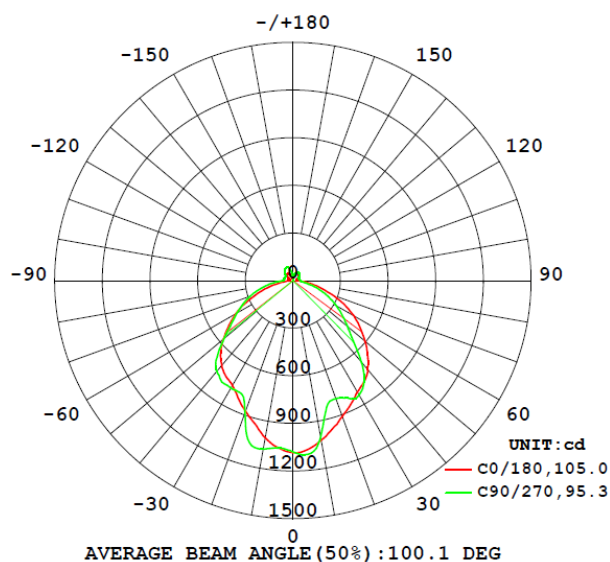
Photometric Measurements at 25°C – Distribution Method

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')
KWBA27627XX								
S2307170 30-002	--	2678	91	66	0.4626	0.4126	0.2634	0.5285

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)
KWBA27627XX							
S2307170 30-002	--	120.2	300.2	35.8	0.993	3142.2	87.7

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWBA27627XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	1084.1	1082.1	1080.3	1079.8	1079.8
5	1068.9	1085.8	1095.1	1103.3	1098.8
10	1021.5	1049.4	1055.6	1031.4	1003.6
15	965.7	985.1	944.1	874.9	824.7
20	910.8	901.0	829.5	811.2	792.8
25	861.7	827.2	797.7	806.0	818.0
30	811.0	789.8	780.3	810.7	832.8
35	779.2	769.5	744.4	759.9	781.9
40	735.6	723.5	672.3	662.4	672.6
45	666.5	654.1	579.9	545.1	539.3
50	592.2	570.9	496.0	454.9	447.8
55	517.3	495.2	426.5	387.2	379.3
60	441.0	425.8	363.2	323.2	314.9
65	354.7	359.2	301.6	261.1	252.0
70	263.1	292.8	239.0	198.9	190.7
75	182.4	223.8	174.8	137.3	128.7
80	108.9	153.3	112.9	83.4	74.9
85	51.6	95.4	68.9	52.9	46.8
90	32.5	76.9	63.3	50.0	46.9
95	31.0	73.8	62.3	49.5	46.3
100	23.1	70.2	59.4	47.1	43.9
105	23.1	66.5	57.5	45.4	42.4
110	28.8	64.8	56.7	44.5	41.9
115	35.8	61.1	56.6	44.3	41.3
120	41.3	65.2	60.6	47.6	44.8
125	47.1	71.7	67.6	53.6	51.0
130	51.7	78.1	74.6	60.3	57.7
135	55.0	82.4	79.0	63.4	60.8
140	57.1	82.2	79.6	63.0	62.1
145	58.7	77.6	76.7	63.2	62.3
150	56.5	69.5	70.6	61.1	60.5
155	48.3	57.7	64.4	56.9	56.5
160	34.0	45.9	52.4	49.7	49.6
165	26.5	31.0	37.5	39.4	40.1
170	12.0	7.7	22.4	25.9	27.2
175	18.3	8.5	11.3	13.5	14.2
180	11.5	12.4	11.4	11.2	5.7

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWBA27627XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWBA27627XX		
0-30	748.2	23.8
0-40	1224.1	39.0
0-60	2132.8	67.9
0-90	2760.1	87.8
60-90	627.3	19.9
0-180	3142.2	100.0

Beam Angle

Total Beam Angle (°)

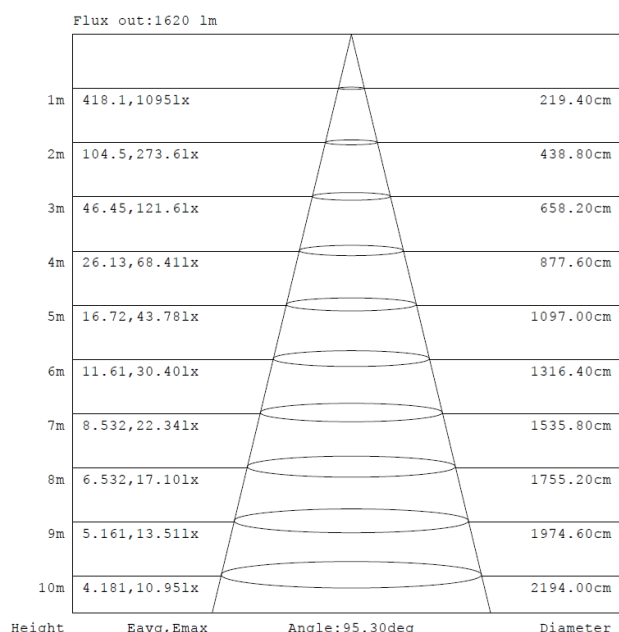
100.1

Illumination Plots

Model No.: KWBA27627XX

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

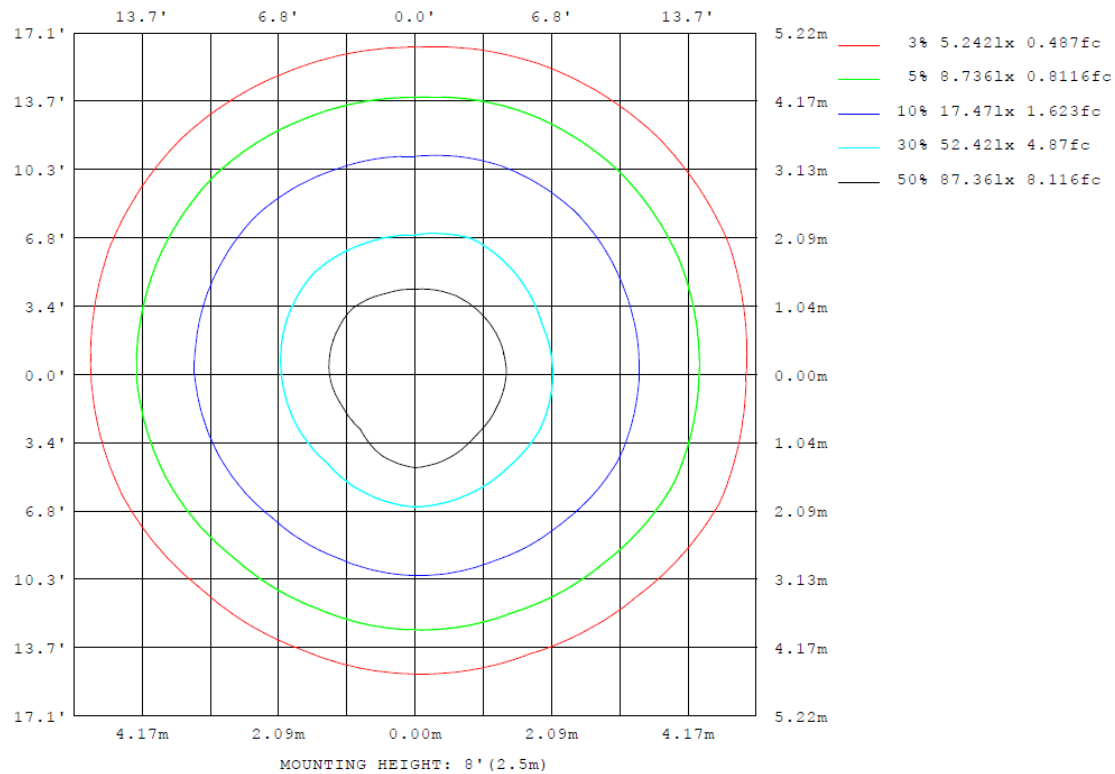
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWBA27627XX

Model No.: KWBA27627XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWBA27627XX

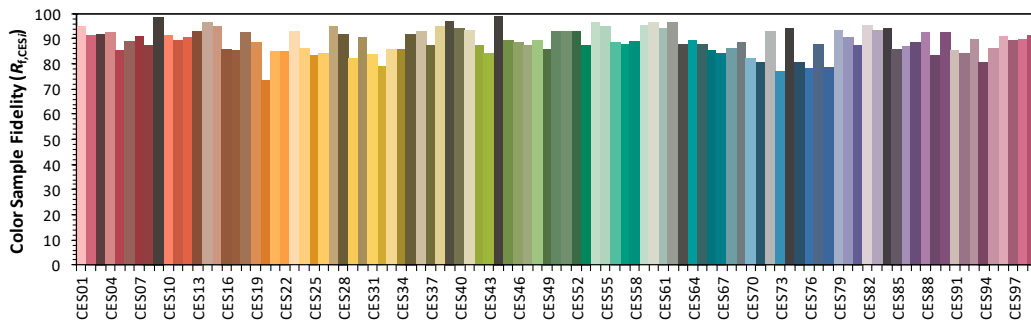
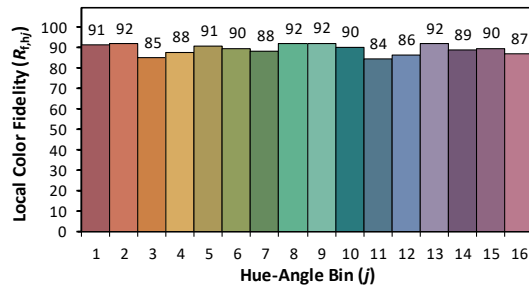
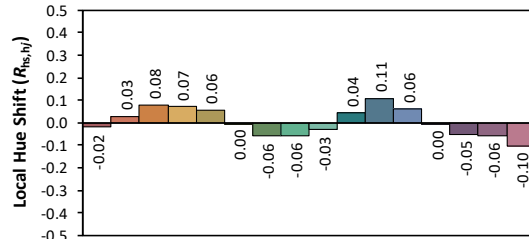
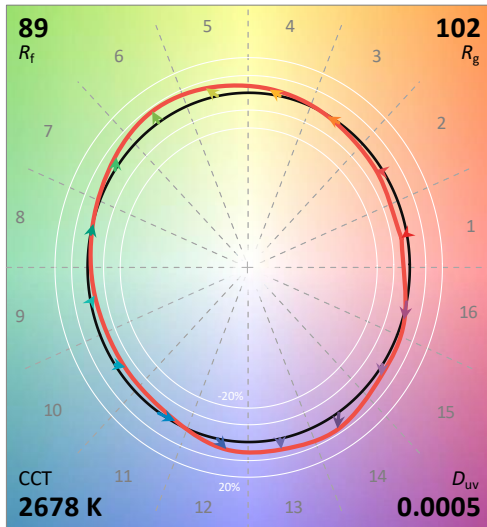
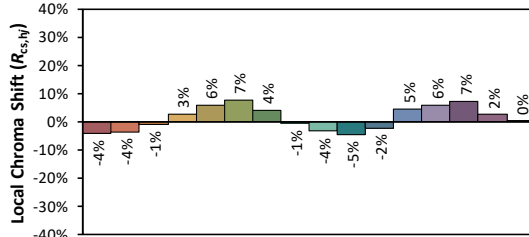
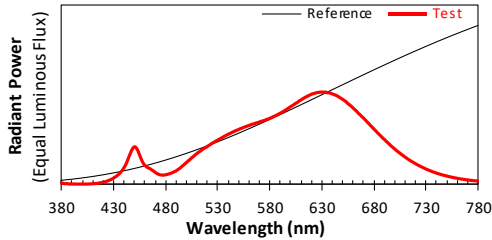
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/7/19

Model: KWBA27627xx



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

x 0.4626
 y 0.4126
 u' 0.2634
 v' 0.5285

CIE 13.3-1995
(CRI)

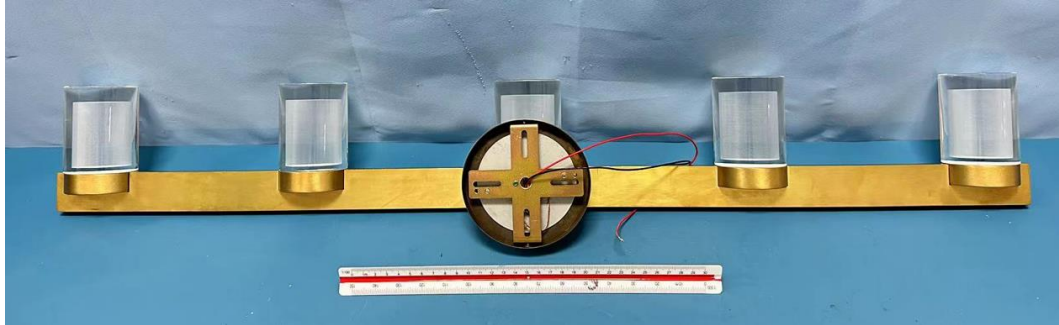
R_a 91
 R_g 66

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

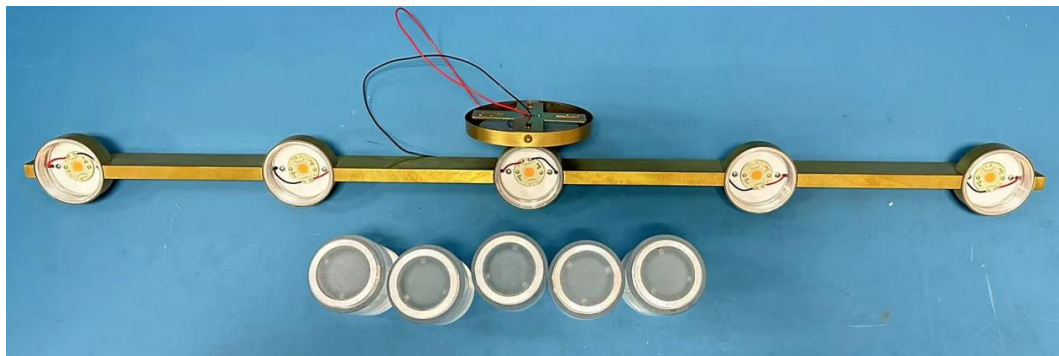
***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWBA27627XX



External view of KWBA27627XX

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver PVD36-C090V40-UNV3-HE-P



View of LED board

In Charge Of Tests:

Done Ye

Done Ye
Engineer

Report Reviewed By

Shelley Ying

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****