

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

231010029GZU-008

ISSUE DATE

21-November-2023

REVISION DATE

None

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13

DOCUMENT CONTROL NUMBER

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Report No.: 231010029GZU-008

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWPD18827XX

(Remark: "XX" are denoted finish color)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>STATEMENT OF LIMITATION:</u>	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.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ231007116.
<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: 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
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model KWPD18827XX. The sample was received in undamaged condition. The sample designation was S231010029-008.
<u>DATES OF TESTS:</u>	27-October-2023
<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 Science City, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	KWPD18827XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWPD18827XX

Criteria	Result
Total Lumen Output	398.8 lm
Total Power	18.6 W
Luminaire Efficacy	21.4 lm/W
S/MH(C0/180)	1.49
S/MH(C90/270)	1.47
Correlated Color Temperature (CCT)	2611 K
Color Rendering Index (CRI)	95
R9	77
Chromaticity Coordinate (x)	0.4646
Chromaticity Coordinate (y)	0.4076
Chromaticity Coordinate (u')	0.2670
Chromaticity Coordinate (v')	0.5269

Remark:

Measurement uncertainty for applicable tests has been established.

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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	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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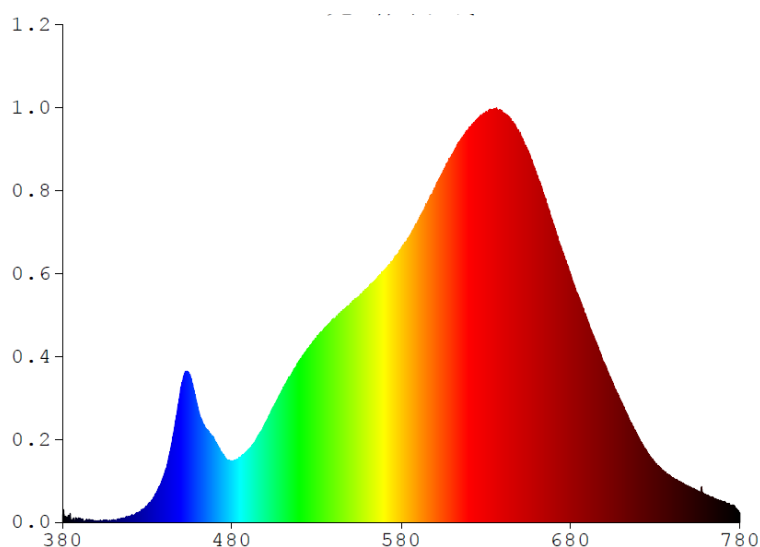
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWPD18827XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0190	480	0.1300	580	0.5829	680	0.5259	780	0.0187
385	0.0000	485	0.1383	585	0.6088	685	0.4766		
390	0.0082	490	0.1557	590	0.6420	690	0.4287		
395	0.0033	495	0.1809	595	0.6750	695	0.3822		
400	0.0032	500	0.2126	600	0.7093	700	0.3367		
405	0.0045	505	0.2481	605	0.7468	705	0.2948		
410	0.0059	510	0.2828	610	0.7812	710	0.2546		
415	0.0081	515	0.3124	615	0.8127	715	0.2153		
420	0.0131	520	0.3432	620	0.8363	720	0.1811		
425	0.0214	525	0.3699	625	0.8576	725	0.1500		
430	0.0353	530	0.3908	630	0.8727	730	0.1251		
435	0.0606	535	0.4140	635	0.8795	735	0.1093		
440	0.1016	540	0.4328	640	0.8708	740	0.0949		
445	0.1778	545	0.4484	645	0.8534	745	0.0855		
450	0.2866	550	0.4645	650	0.8261	750	0.0753		
455	0.3146	555	0.4791	655	0.7872	755	0.0662		
460	0.2413	560	0.4979	660	0.7373	760	0.0585		
465	0.1964	565	0.5147	665	0.6883	765	0.0497		
470	0.1726	570	0.5351	670	0.6321	770	0.0437		
475	0.1441	575	0.5563	675	0.5663	775	0.0374		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWPD18827XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

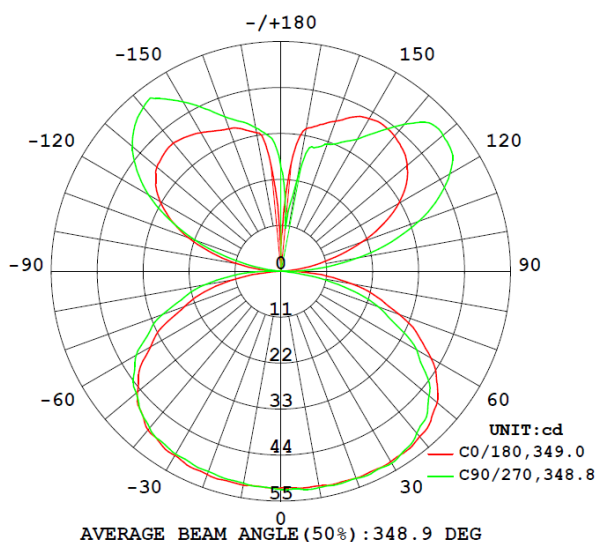
Photometric Measurements at 25°C – Distribution Method

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')
KWPD18827XX								
S2310100 29-008	--	2611	95	77	0.4646	0.4076	0.2670	0.5269

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)
KWPD18827XX							
S2310100 29-008	--	120.1	160.3	18.6	0.967	398.8	21.4

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWPD18827XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	51.8	52.0	52.1	52.2	52.2
5	52.1	52.2	52.5	52.3	52.3
10	52.1	52.7	52.5	52.9	52.6
15	52.5	52.8	53.1	52.8	52.8
20	52.7	53.1	53.0	53.0	52.7
25	52.5	53.0	53.2	53.2	52.9
30	52.6	52.8	53.2	53.2	53.1
35	52.5	52.6	52.7	52.7	52.0
40	51.7	51.4	51.6	51.1	50.6
45	50.7	49.8	50.0	49.8	49.3
50	48.9	47.3	46.9	46.9	46.3
55	45.5	43.0	43.3	43.4	42.2
60	41.5	38.4	38.6	37.4	37.5
65	36.3	32.4	32.1	32.6	30.5
70	30.1	26.8	26.8	25.4	24.9
75	24.0	20.0	19.7	18.5	17.4
80	17.2	12.8	12.8	11.3	9.3
85	9.9	4.5	3.8	1.5	0.8
90	0.8	2.4	1.7	1.0	0.8
95	0.6	7.8	8.7	9.1	9.5
100	7.1	14.8	16.6	17.8	18.6
105	13.5	21.9	24.6	26.9	27.3
110	20.7	28.1	31.5	34.8	35.2
115	27.2	33.2	37.3	41.3	41.6
120	32.5	34.9	41.4	46.4	46.7
125	36.7	35.2	43.9	49.8	49.9
130	39.5	36.8	44.8	50.8	50.7
135	41.3	38.7	43.5	48.4	50.3
140	42.3	40.1	40.3	44.2	46.0
145	42.8	40.9	38.2	39.8	40.9
150	42.3	40.6	37.0	36.5	36.5
155	40.7	39.4	36.6	35.1	34.1
160	38.3	35.7	34.6	32.5	32.3
165	36.4	33.4	32.1	30.8	30.6
170	34.6	25.7	24.1	22.3	22.1
175	24.2	8.1	11.8	4.2	13.1
180	6.3	0.6	21.4	25.5	24.8

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWPD18827XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWPD18827XX		
0-30	43.8	11.0
0-40	75.9	19.0
0-60	151.5	38.0
0-90	215.8	54.1
60-90	64.3	16.1
0-180	398.8	100.0

Beam Angle

Total Beam Angle (°)

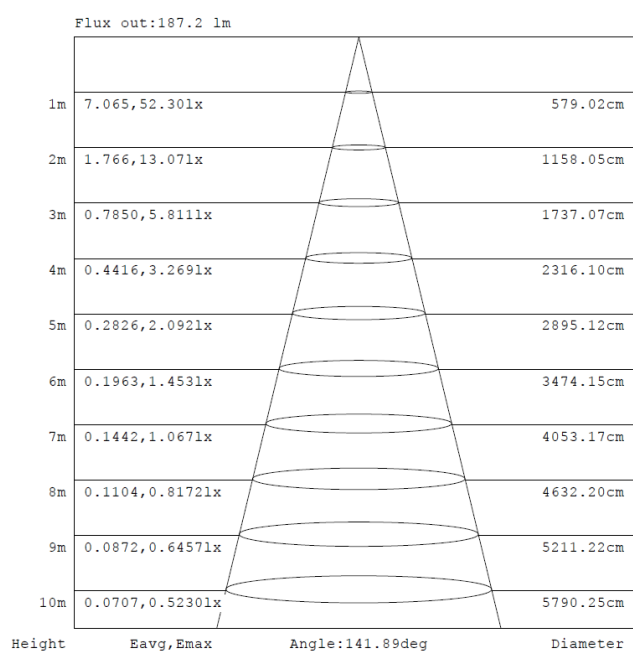
348.9

Illumination Plots

Model No.: KWPD18827XX

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

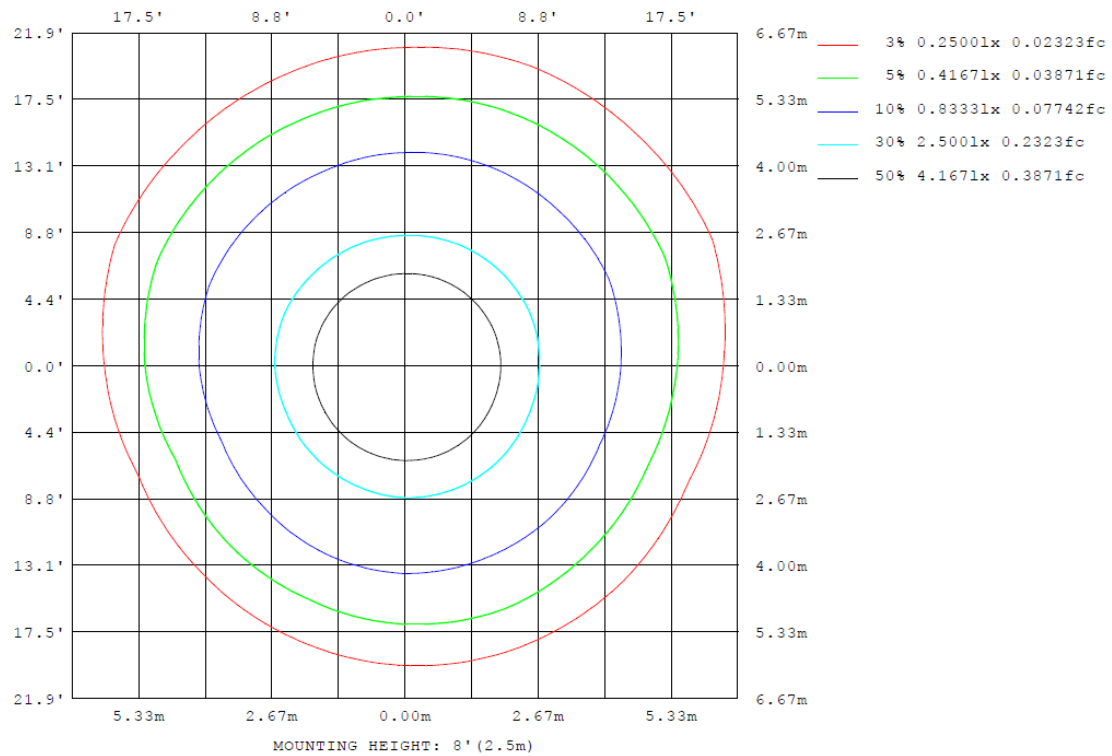
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWPD18827XX

Model No.: KWPD18827XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWPD18827XX

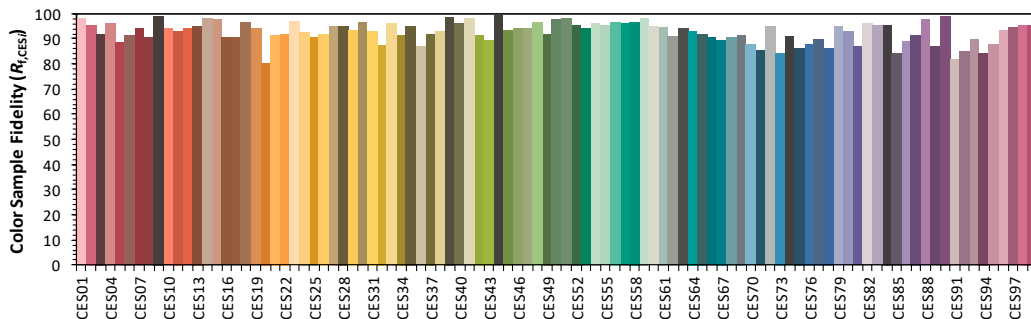
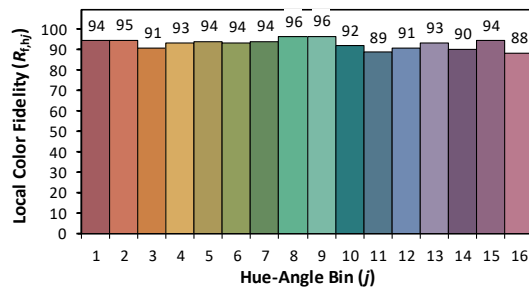
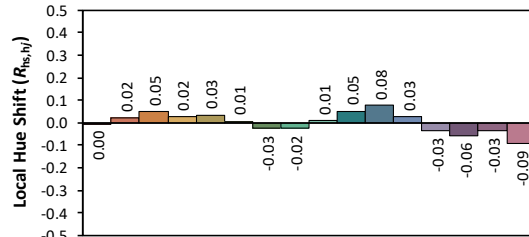
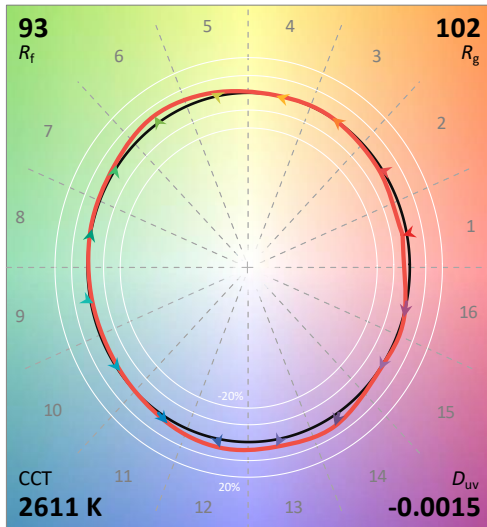
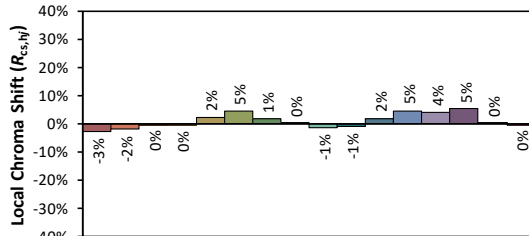
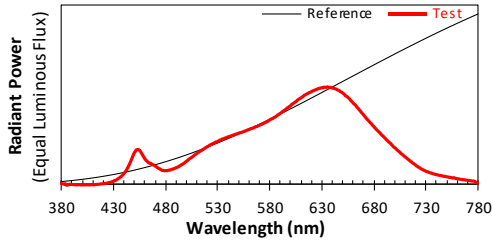
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/10/27

Model: KWPD18827xx



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

x 0.4646
 y 0.4076
 u' 0.2670
 v' 0.5269

CIE 13.3-1995
(CRI)

R_a 95

R_g 77

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

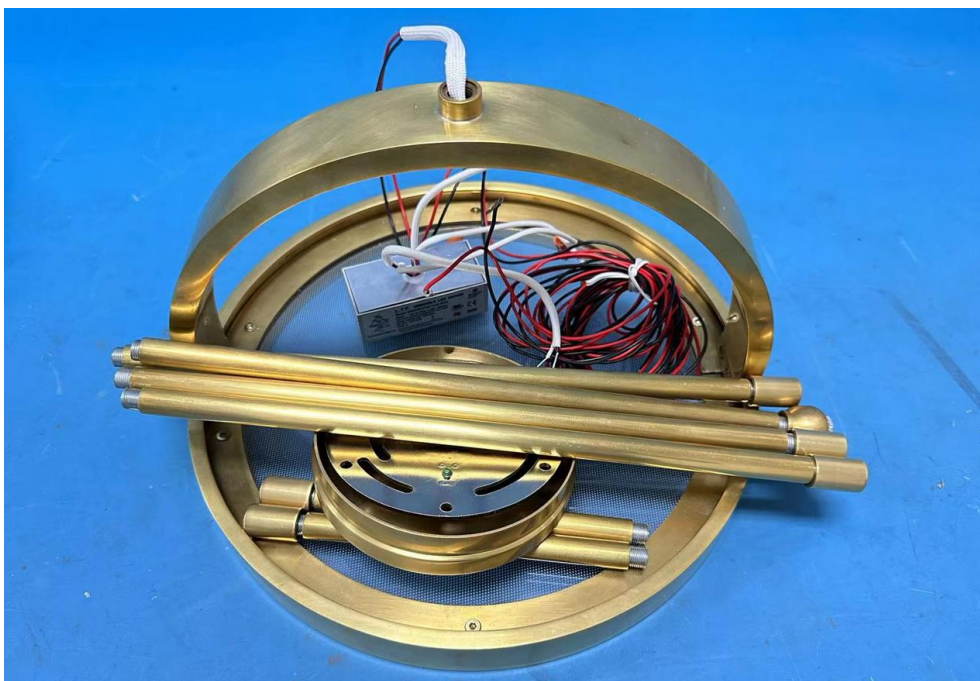
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of KWPD18827XX



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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver DS25W24VBF1UD-0000



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 *****