

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220722013GZU-003

ISSUE DATE

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REVISION DATE

None

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13

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Report No.: 220722013GZU-003

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700OWANTN92724xUNV

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

7400 LINDER AVE. SKOKIE, IL, 60077

Email: Tgallagher@visualcomfortco.com

Phone No.: 8474104774

<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: QGZ220719001.
<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 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 700OWANTN92724xUNV. The sample was received, in undamaged condition. The sample designation was S220722013-002.
<u>DATES OF TESTS:</u>	09 August 2022 to 10 August 2022
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	700OWANTN92724xUNV (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700OWANTN92724xUNV

Criteria	Result
Total Lumen Output	353.33 lm
Total Power	20.25 W
Luminaire Efficacy	17.45 lm/W
S/MH(C0/180)	1.23
S/MH(C90/270)	1.15
Correlated Color Temperature (CCT)	2232 K
Color Rendering Index (CRI)	93
R9	62
Chromaticity Coordinate (x)	0.5125
Chromaticity Coordinate (y)	0.4300
Chromaticity Coordinate (u')	0.2873
Chromaticity Coordinate (v')	0.5424

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	DS215S	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 YOKOGAWA - Digital Power Meter., model WT210.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D908S

Current: 7.255A

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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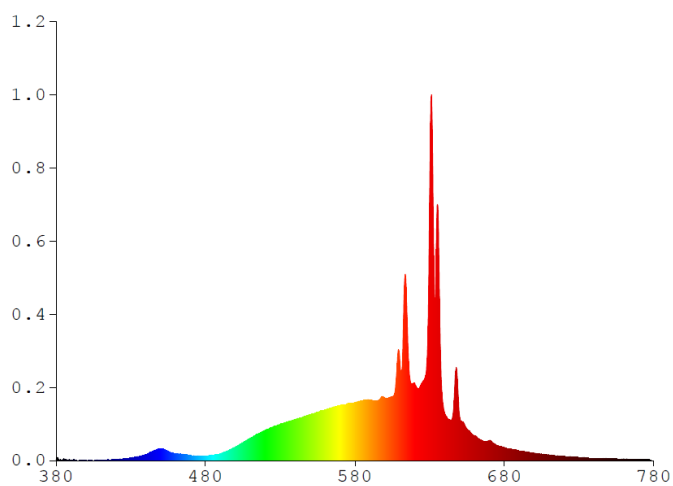
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700OWANTN92724xUNV

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0023	480	0.0070	580	0.0850	680	0.0190	780	0.0000
385	0.0026	485	0.0080	585	0.0875	685	0.0162		
390	0.0000	490	0.0102	590	0.0878	690	0.0141		
395	0.0001	495	0.0143	595	0.0873	695	0.0124		
400	0.0003	500	0.0196	600	0.0905	700	0.0106		
405	0.0001	505	0.0260	605	0.0932	705	0.0095		
410	0.0003	510	0.0325	610	0.1408	710	0.0080		
415	0.0009	515	0.0389	615	0.1924	715	0.0070		
420	0.0017	520	0.0443	620	0.1121	720	0.0060		
425	0.0025	525	0.0489	625	0.1139	725	0.0052		
430	0.0039	530	0.0529	630	0.3975	730	0.0044		
435	0.0056	535	0.0565	635	0.3701	735	0.0040		
440	0.0087	540	0.0600	640	0.0684	740	0.0034		
445	0.0138	545	0.0631	645	0.0608	745	0.0031		
450	0.0172	550	0.0668	650	0.0643	750	0.0027		
455	0.0133	555	0.0705	655	0.0455	755	0.0025		
460	0.0098	560	0.0739	660	0.0366	760	0.0019		
465	0.0089	565	0.0778	665	0.0293	765	0.0019		
470	0.0074	570	0.0806	670	0.0295	770	0.0015		
475	0.0064	575	0.0828	675	0.0214	775	0.0013		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWANTN92724xUNV

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

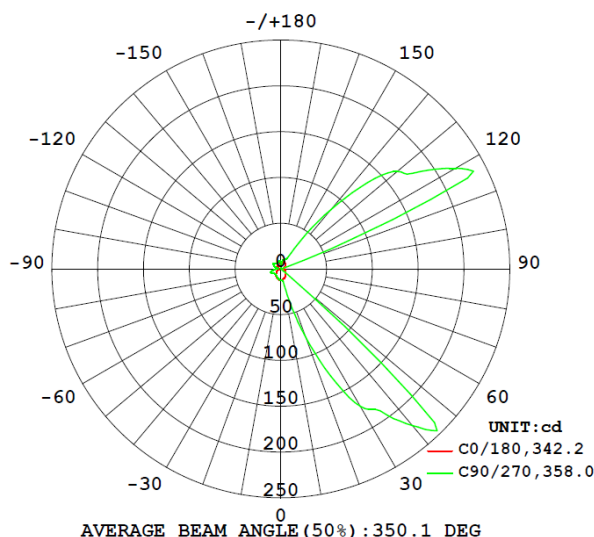
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700OWANTN92724xUNV								
S2207220 13-002	--	2232	93	62	0.5125	0.4300	0.2873	0.5424

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)
700OWANTN92724xUNV							
S2207220 13-002	--	120.0	172.1	20.25	0.979	353.33	17.45

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WANTN92724xUNV

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	12.3	12.3	12.3	12.3	12.3
5	12.1	12.3	12.4	12.5	12.6
10	11.9	12.1	12.5	13.3	13.7
15	11.4	11.9	14.9	29.9	37.3
20	10.8	11.7	33.7	66.3	78.8
25	10.2	11.8	63.0	111.6	128.9
30	9.4	21.4	98.9	158.4	173.0
35	8.6	37.1	137.2	180.0	189.1
40	7.9	56.4	163.0	205.3	223.2
45	7.1	79.1	172.5	233.5	237.1
50	6.5	103.6	194.1	93.3	6.1
55	5.9	120.0	162.7	0.1	0.1
60	5.5	117.4	7.5	0.1	0.1
65	5.0	126.7	6.1	0.1	0.0
70	4.3	38.6	2.9	0.1	0.0
75	3.3	22.7	0.2	0.1	0.0
80	4.7	6.3	0.1	0.1	0.0
85	5.0	0.1	0.1	0.1	0.0
90	0.1	0.1	0.1	0.1	0.0
95	0.9	22.7	3.7	0.1	0.0
100	1.6	49.8	9.1	0.1	0.1
105	2.7	86.8	29.3	0.1	0.1
110	3.6	82.0	173.1	34.8	0.6
115	4.4	57.9	152.0	219.2	180.5
120	5.1	30.1	133.4	193.5	220.7
125	5.7	10.0	116.5	161.1	186.0
130	6.3	8.8	78.4	147.8	166.1
135	7.0	8.7	42.4	108.4	133.6
140	7.7	8.9	15.0	63.7	84.7
145	8.1	8.8	11.6	26.8	41.4
150	8.6	8.7	10.9	12.8	13.5
155	8.9	8.3	10.7	11.6	12.1
160	9.0	7.5	10.4	11.0	11.2
165	8.1	6.9	8.8	10.3	10.4
170	6.6	6.2	5.6	7.6	8.9
175	5.2	5.0	4.4	3.0	2.2
180	6.1	5.6	4.9	1.2	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWANTN92724xUNV

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700OWANTN92724xUNV		
0-30	23.04	6.52
0-40	60.82	17.21
0-60	151.02	42.74
0-90	181.26	51.30
60-90	30.24	8.56
0-180	353.33	100

Beam Angle

Total Beam Angle (°)

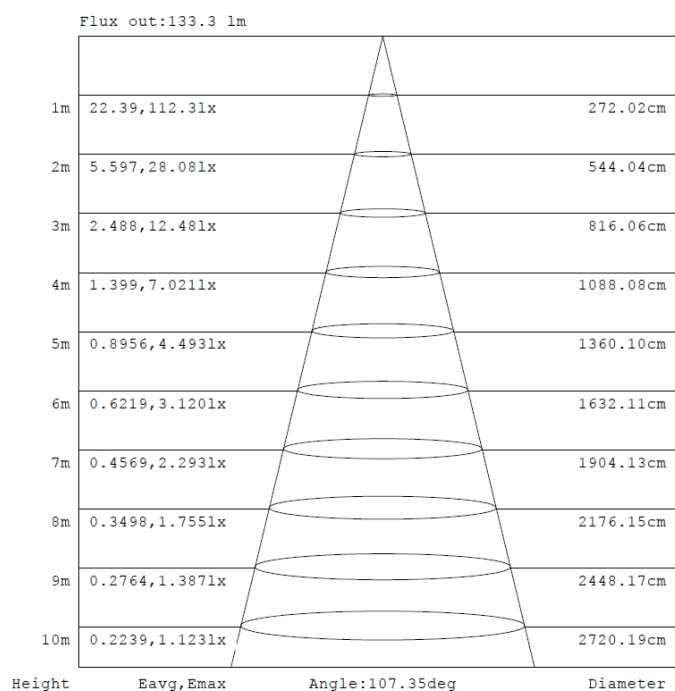
350.1

Illumination Plots

Model No.: 700OWANTN92724xUNV

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

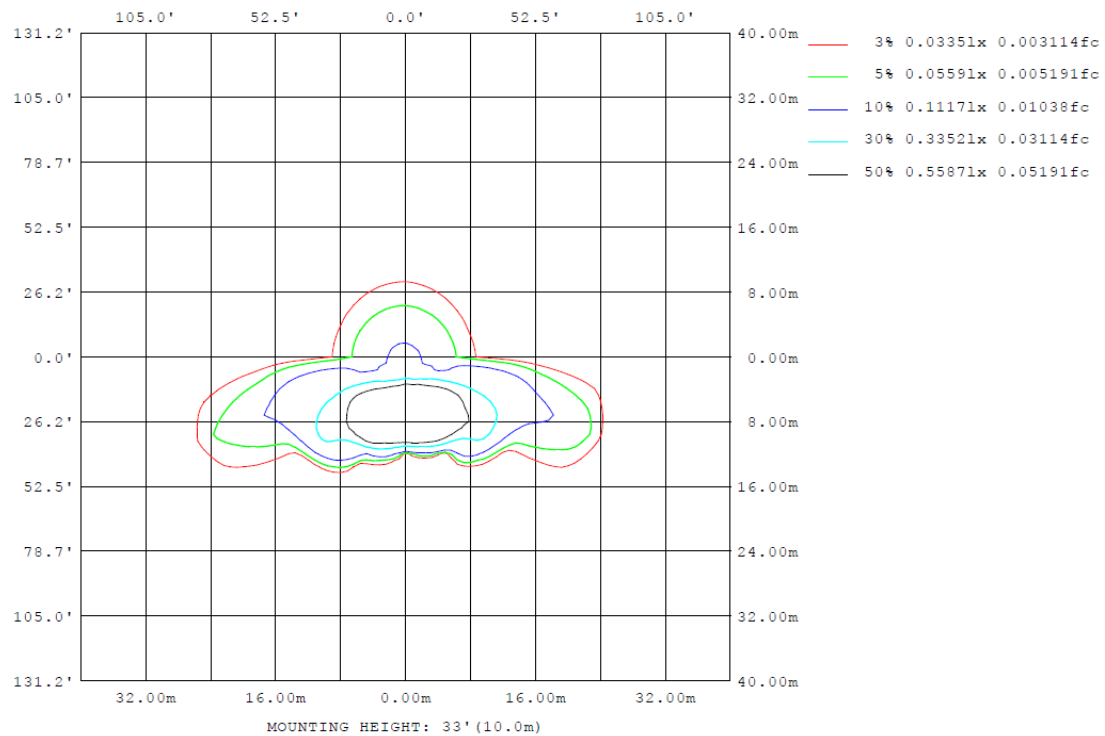
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WANTN92724xUNV

Model No.: 7000WANTN92724xUNV

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WANTN92724xUNV

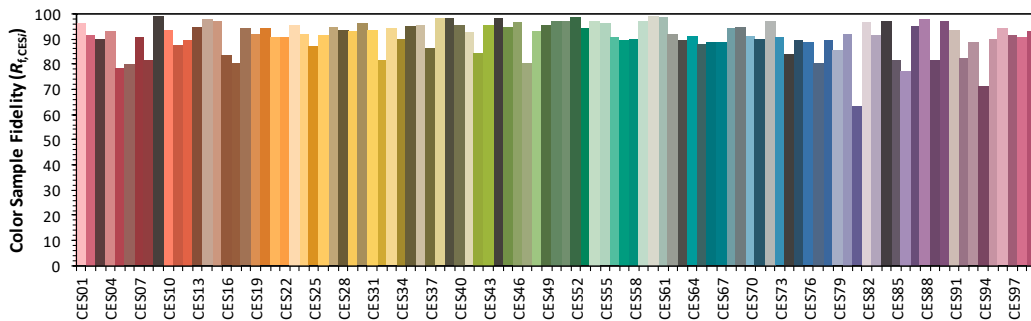
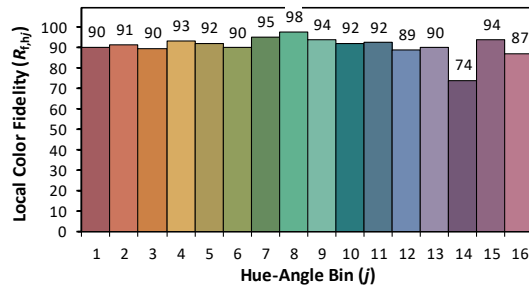
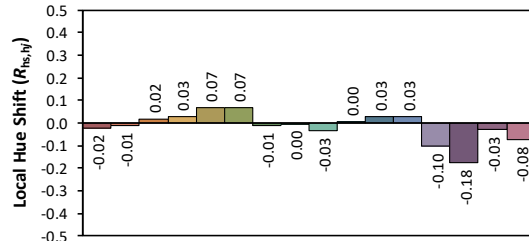
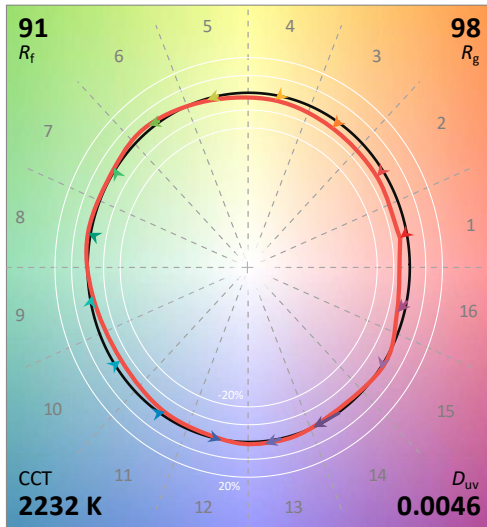
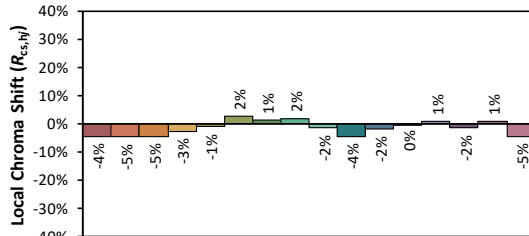
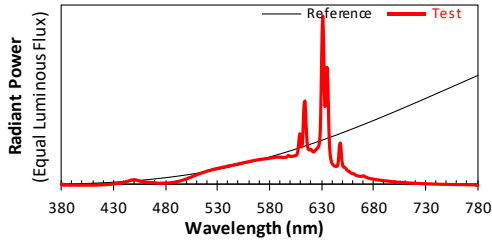
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/8/10

Model: 7000WANTN92724xUNV



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

x 0.5125
 y 0.4300
 u' 0.2873
 v' 0.5424

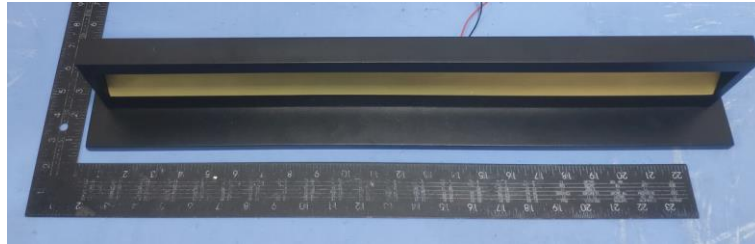
CIE 13.3-1995
(CRI)
 R_a 93
 R_g 62

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

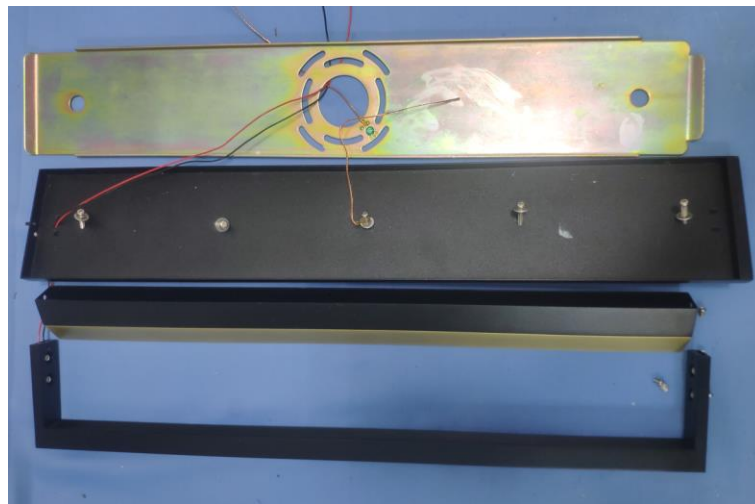
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700OWANTN92724xUNV



External view of 700OWANTN92724xUNV

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DS6W24VMB1UD-0000



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 *****