

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240428155GZU-006

ISSUE DATE

12 July 2024

REVISION DATE

Modification 1: 01 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

© 2024 INTERTEK



Report No.: 240428155GZU-006
Modification 1: 01 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLOWS28827XX

Remark: "XX" denoted the appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

7400 LINDER AVE. SKOKIE, IL, 60077

Email: asame@visualcomfort.com
Phone No.: 8474104402

<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: QGZ240425048
<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 SLOWS28827XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240428155-009.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Guangzhou Xiongyi Precision Metalworking Co., Ltd. Hantang Industrial Zone, Langbian Village, Shiji Town, Panyu District, Guangzhou City, Guangdong Province, China 511450
<u>DATES OF TESTS:</u>	13 June 2024
<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

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

TEST REPORT

SUMMARY

Model Number:	SLOWS28827XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLOWS28827XX

Criteria	Result
Total Lumen Output	681.6 lm
Total Power	10.2 W
Luminaire Efficacy	67.2 lm/W
S/MH(C0/180)	17.20
S/MH(C90/270)	0.93
Correlated Color Temperature (CCT)	2629 K
Color Rendering Index (CRI)	90
R9	63
Chromaticity Coordinate (x)	0.4678
Chromaticity Coordinate (y)	0.4154
Chromaticity Coordinate (u')	0.2655
Chromaticity Coordinate (v')	0.5304

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240428155GZU-006 issued on 12 July 2024, correct the applicant name on page 1 and 2 of the report.

***** 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	DS215S	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

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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

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

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

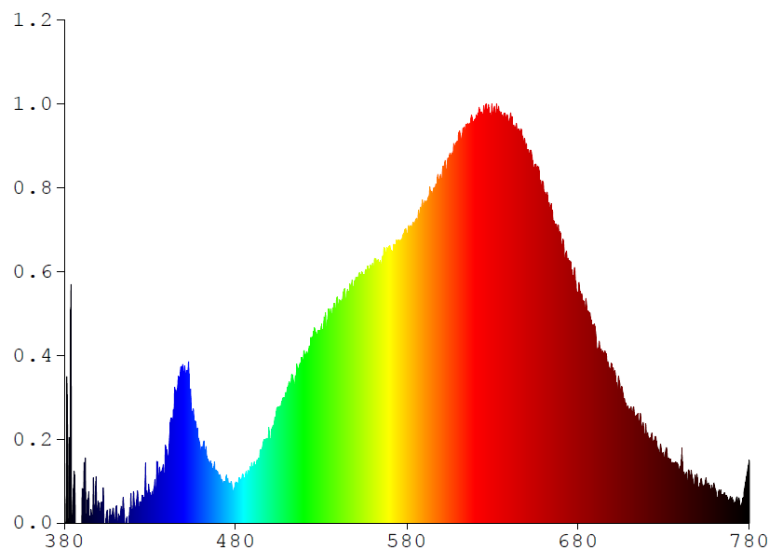
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLOWS28827XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.0026	580	0.0181	680	0.0144	780	0.0040
385	0.0014	485	0.0028	585	0.0191	685	0.0135		
390	0.0000	490	0.0035	590	0.0197	690	0.0122		
395	0.0004	495	0.0045	595	0.0204	695	0.0107		
400	0.0004	500	0.0052	600	0.0217	700	0.0095		
405	0.0008	505	0.0073	605	0.0232	705	0.0079		
410	0.0009	510	0.0084	610	0.0242	710	0.0070		
415	0.0005	515	0.0092	615	0.0248	715	0.0067		
420	0.0009	520	0.0109	620	0.0254	720	0.0054		
425	0.0013	525	0.0112	625	0.0262	725	0.0054		
430	0.0016	530	0.0126	630	0.0259	730	0.0042		
435	0.0028	535	0.0131	635	0.0259	735	0.0038		
440	0.0044	540	0.0136	640	0.0253	740	0.0035		
445	0.0078	545	0.0145	645	0.0247	745	0.0030		
450	0.0095	550	0.0152	650	0.0235	750	0.0023		
455	0.0071	555	0.0156	655	0.0226	755	0.0024		
460	0.0047	560	0.0163	660	0.0209	760	0.0021		
465	0.0035	565	0.0158	665	0.0197	765	0.0017		
470	0.0027	570	0.0175	670	0.0175	770	0.0015		
475	0.0024	575	0.0178	675	0.0159	775	0.0011		



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS28827XX

Total operation burning time: 60 minutes
Stabilization time: 30 minutes

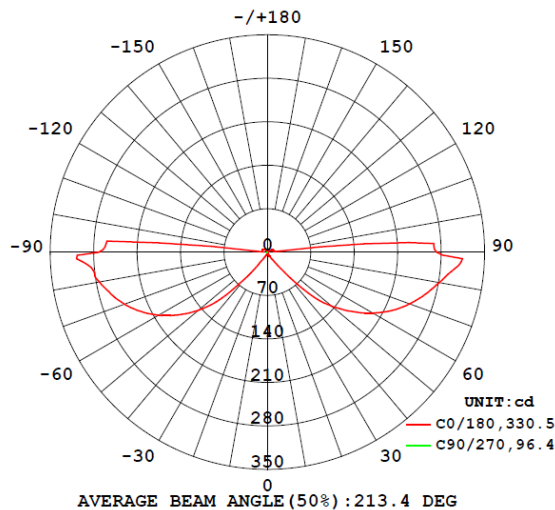
Photometric Measurements at 25°C – Distribution Method

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')
SLOWS28827XX								
S2404281 55-009	base-up	2629	90	63	0.4678	0.4154	0.2655	0.5304

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)
SLOWS28827XX							
S2404281 55-009	base-up	120.0	85.5	10.2	0.989	681.6	67.2

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS28827XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	0.2	0.2	0.2	0.2	0.2
5	0.2	0.2	0.2	0.2	0.2
10	0.3	0.3	0.2	0.2	0.1
15	0.6	0.5	0.4	0.2	0.1
20	1.0	0.9	0.5	0.2	0.1
25	1.5	1.3	0.8	0.3	0.1
30	2.2	1.8	1.1	0.4	0.1
35	4.0	2.9	1.4	0.5	0.1
40	10.1	5.4	1.8	0.6	0.1
45	22.4	13.0	2.4	0.7	0.1
50	32.3	24.4	3.3	0.8	0.1
55	39.9	32.3	5.1	0.9	0.1
60	46.9	38.5	8.5	1.0	0.1
65	53.0	43.9	13.1	1.0	0.1
70	58.2	48.5	17.7	1.1	0.1
75	62.8	52.0	21.6	1.2	0.1
80	67.2	54.6	24.4	1.2	0.0
85	72.5	56.1	25.9	1.2	0.0
90	65.1	56.5	26.3	1.2	0.0
95	37.3	55.8	25.5	1.2	0.0
100	2.5	54.1	23.5	1.2	0.0
105	2.4	51.2	20.6	1.1	0.0
110	2.4	47.1	16.5	1.1	0.0
115	2.2	42.1	12.2	1.0	0.0
120	2.1	36.3	7.9	0.9	0.0
125	1.6	29.8	4.7	0.8	0.0
130	0.9	16.7	3.0	0.7	0.0
135	0.4	7.9	2.0	0.5	0.0
140	0.3	2.8	1.4	0.4	0.0
145	0.2	1.2	1.0	0.3	0.0
150	0.1	0.6	0.7	0.2	0.0
155	0.1	0.4	0.4	0.1	0.0
160	0.1	0.2	0.2	0.1	0.0
165	0.0	0.1	0.1	0.0	0.0
170	0.1	0.1	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

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS28827XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLOWS28827XX		
0-30	2.1	0.3
0-40	7.0	1.0
0-60	84.1	12.3
0-90	404.4	59.3
60-90	320.3	47.0
0-180	681.6	100.0

Beam Angle

Total Beam Angle(°)

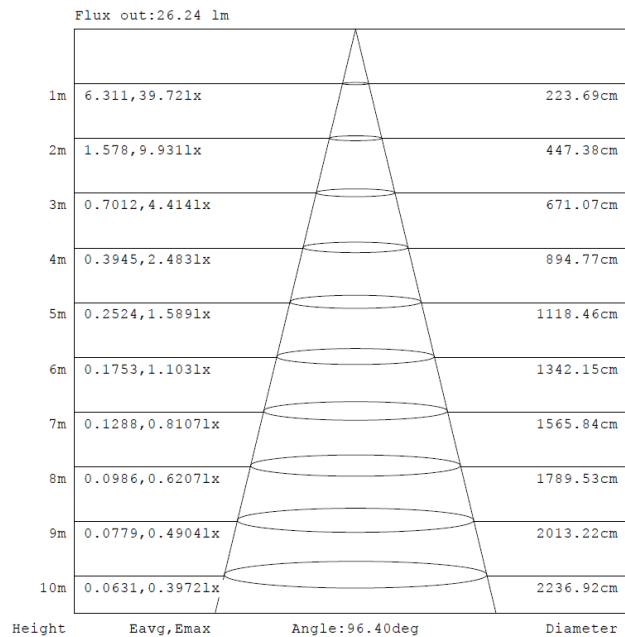
213.4

Illumination Plots

Model No.: SLOWS28827XX

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.

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

TEST REPORT

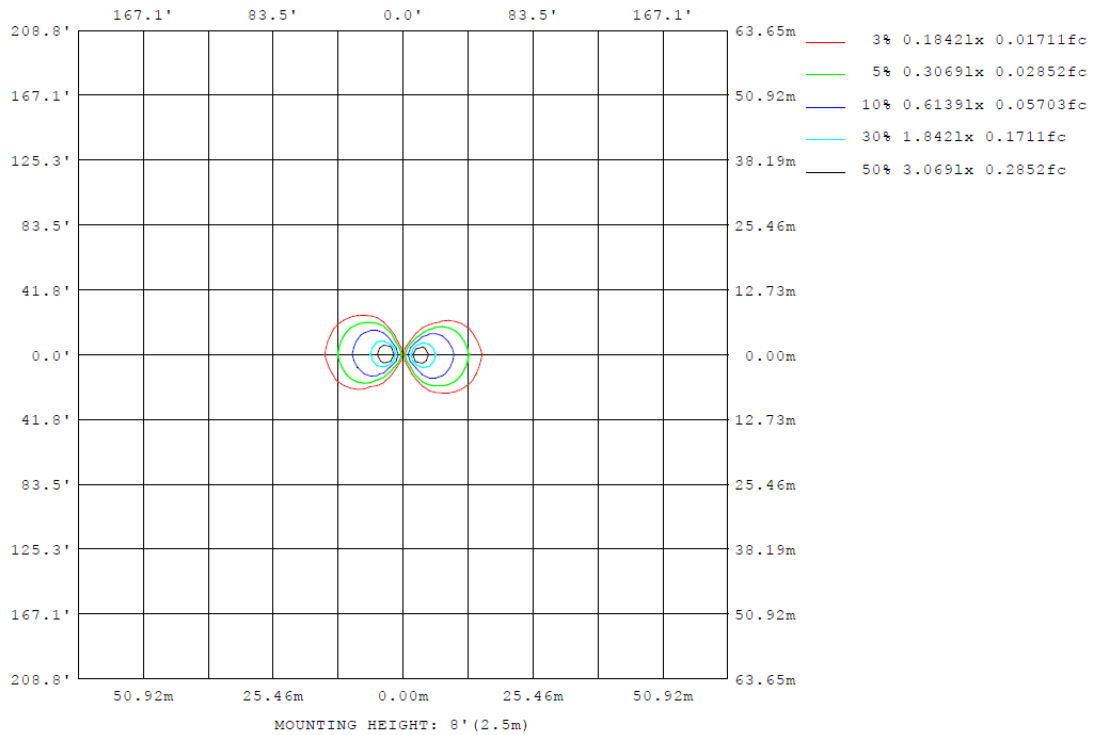
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS28827XX

Model No.: SLOWS28827XX

Mount Height: 2.5 m

Isoillumination Plot



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLOWS28827XX

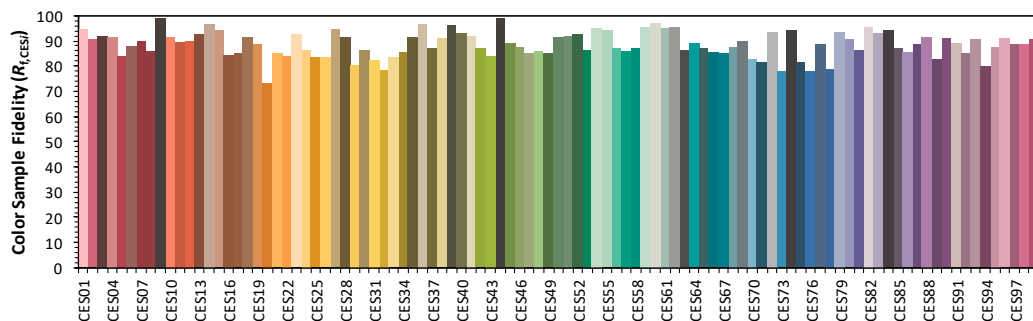
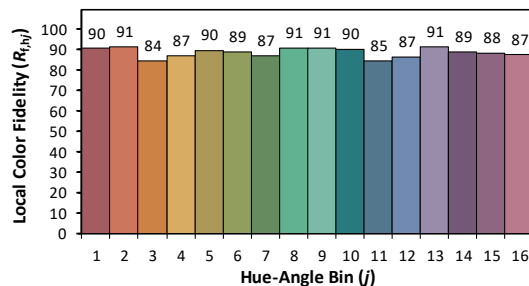
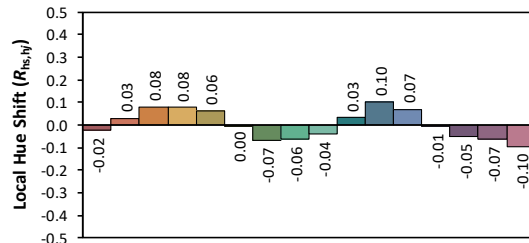
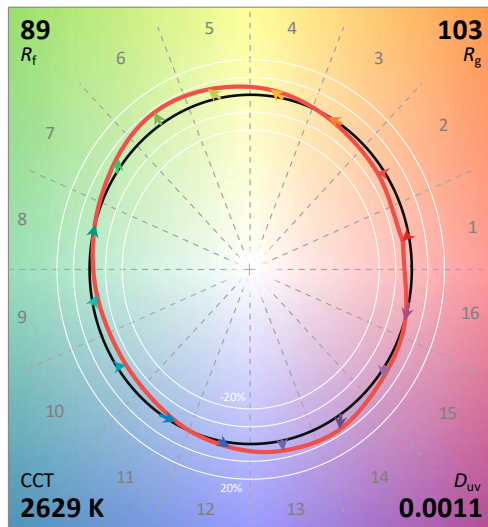
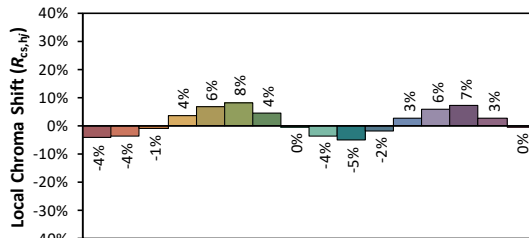
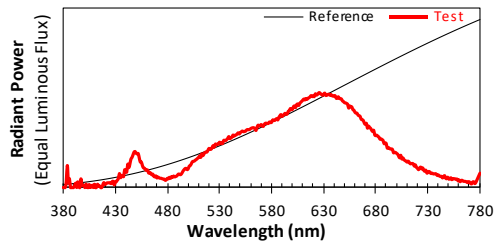
ANSI/IES +B3:X17TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/6/13

Model: SLOWS28827xx



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

x 0.4678
 y 0.4154
 u' 0.2655
 v' 0.5304

CIE 13.3-1995
(CRI)

R_a 90

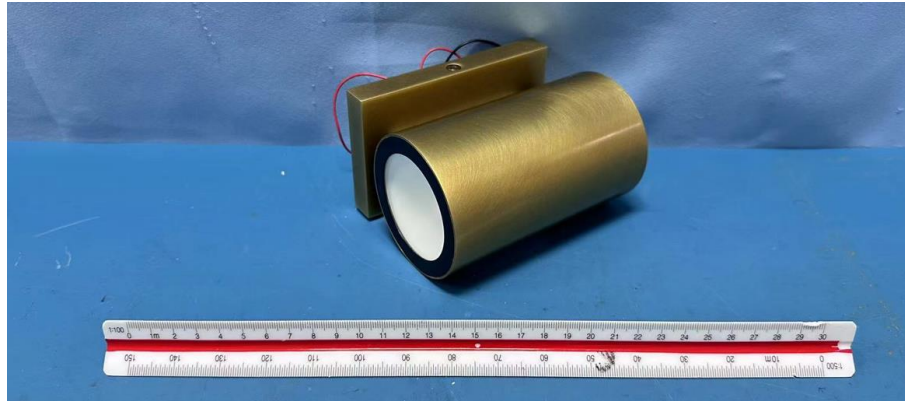
R_g 63

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 SLOWS28827XX

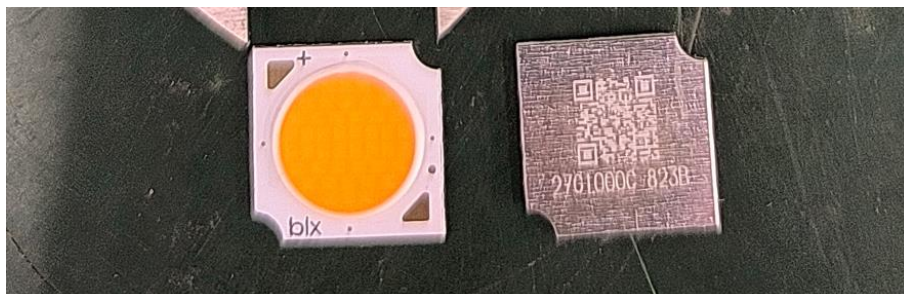


View of LED driver PVD11-C030V33-UNV3-HE-P

***** 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 *****