

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230717030GZU-003

ISSUE DATE

01-August-2023

REVISION DATE

None

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Report No.: 230717030GZU-003

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLPD28430XX

(Remark: "xx" are denoted finish color)

RENDERED TO

Visual Comfort and Company

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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: QGZ230714100.
<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 SLPD28430XX. The sample was received in undamaged condition. The sample designation was S230717030-003.
<u>DATES OF TESTS:</u>	18-July-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:	SLPD28430XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLPD28430XX

Criteria	Result
Total Lumen Output	2707.0 lm
Total Power	55.1 W
Luminaire Efficacy	49.1 lm/W
S/MH(C0/180)	3.03
S/MH(C90/270)	2.94
Correlated Color Temperature (CCT)	2692 K
Color Rendering Index (CRI)	93
R9	62
Chromaticity Coordinate (x)	0.4587
Chromaticity Coordinate (y)	0.4075
Chromaticity Coordinate (u')	0.2632
Chromaticity Coordinate (v')	0.5260

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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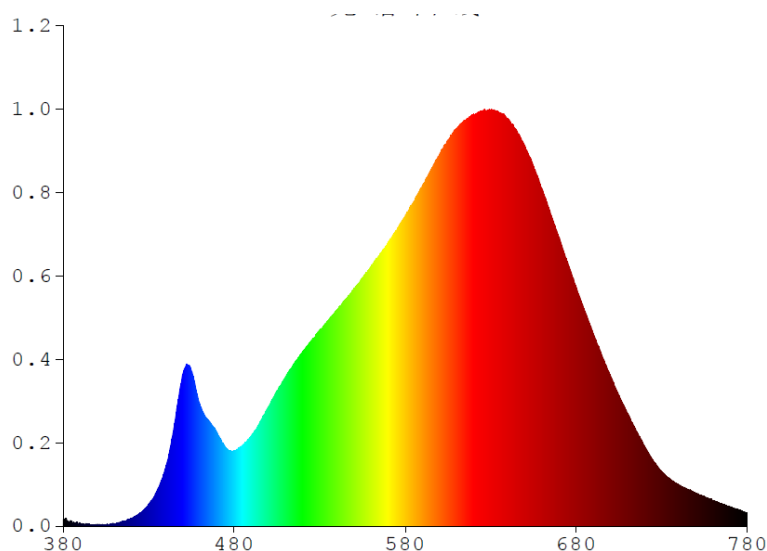
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLPD28430XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0255	480	0.2605	580	1.0738	680	0.8227	780	0.0437
385	0.0141	485	0.2803	585	1.1233	685	0.7416		
390	0.0089	490	0.3125	590	1.1775	690	0.6622		
395	0.0067	495	0.3591	595	1.2342	695	0.5871		
400	0.0055	500	0.4127	600	1.2870	700	0.5178		
405	0.0064	505	0.4691	605	1.3361	705	0.4506		
410	0.0098	510	0.5167	610	1.3764	710	0.3882		
415	0.0173	515	0.5625	615	1.4039	715	0.3286		
420	0.0276	520	0.6023	620	1.4255	720	0.2746		
425	0.0459	525	0.6423	625	1.4366	725	0.2240		
430	0.0749	530	0.6789	630	1.4396	730	0.1878		
435	0.1240	535	0.7115	635	1.4296	735	0.1621		
440	0.2045	540	0.7482	640	1.4082	740	0.1420		
445	0.3501	545	0.7843	645	1.3692	745	0.1275		
450	0.5258	550	0.8209	650	1.3132	750	0.1138		
455	0.5351	555	0.8606	655	1.2412	755	0.1015		
460	0.4172	560	0.8974	660	1.1661	760	0.0891		
465	0.3649	565	0.9375	665	1.0783	765	0.0772		
470	0.3221	570	0.9823	670	0.9966	770	0.0665		
475	0.2725	575	1.0242	675	0.8914	775	0.0563		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28430XX

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

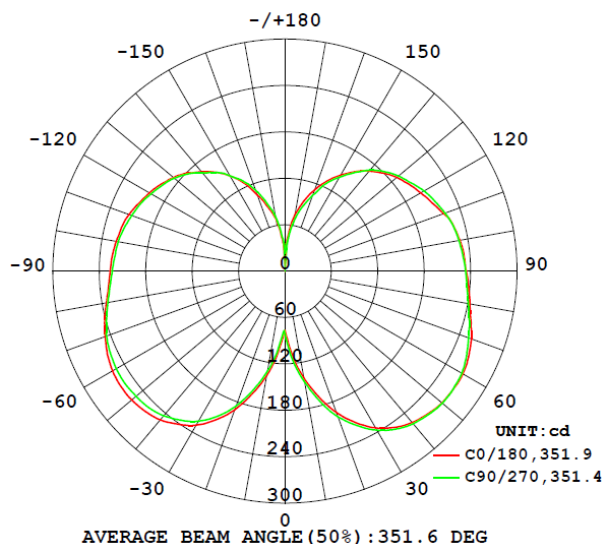
Photometric Measurements at 25°C – Distribution Method

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')
SLPD28430XX								
S2307170 30-003	--	2692	93	62	0.4587	0.4075	0.2632	0.5260

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)
SLPD28430XX							
S2307170 30-003	--	120.2	465.8	55.1	0.985	2707.0	49.1

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28430XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	77.0	82.4	82.3	82.1	81.9
5	109.2	115.8	115.8	116.0	115.5
10	140.1	145.4	145.4	145.4	145.2
15	168.1	174.3	173.3	173.3	174.2
20	194.5	200.6	199.0	199.1	200.3
25	215.9	220.9	219.6	219.3	220.2
30	234.0	237.9	235.7	236.0	237.5
35	246.5	249.6	246.6	247.3	249.3
40	255.6	257.8	255.6	255.7	257.5
45	261.0	262.3	260.4	260.7	262.0
50	264.8	265.9	263.2	263.3	265.5
55	265.7	266.1	263.4	263.6	265.3
60	265.6	265.0	261.8	262.7	263.8
65	261.6	260.1	258.7	258.4	258.7
70	256.3	253.6	253.7	252.9	252.4
75	248.6	246.9	246.5	245.5	246.3
80	242.6	240.9	240.5	240.2	240.5
85	238.4	236.5	235.9	236.2	236.0
90	234.2	233.5	232.4	232.6	233.3
95	232.2	231.2	230.2	231.1	231.0
100	229.6	228.3	226.8	228.2	228.2
105	225.6	225.2	222.2	224.4	225.3
110	218.1	220.1	217.0	219.3	220.2
115	209.7	213.1	211.4	212.6	214.0
120	202.7	203.7	205.2	206.0	207.6
125	196.0	194.5	197.6	198.3	199.2
130	188.7	186.2	188.7	189.7	191.5
135	179.5	173.0	176.4	179.1	182.1
140	169.0	161.8	165.2	166.9	170.8
145	157.0	148.3	152.7	154.9	155.4
150	143.3	134.9	136.0	141.0	140.3
155	128.8	120.8	120.1	123.5	125.1
160	112.0	104.6	103.4	104.7	104.0
165	93.7	88.0	86.8	86.9	86.3
170	74.0	69.1	66.9	66.5	65.2
175	45.7	39.5	38.2	40.9	39.0
180	26.0	20.2	23.3	25.9	23.4

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28430XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLPD28430XX		
0-30	158.3	5.9
0-40	311.0	11.5
0-60	744.4	27.5
0-90	1514.4	55.9
60-90	770.0	28.4
0-180	2707.0	100.0

Beam Angle

Total Beam Angle (°)

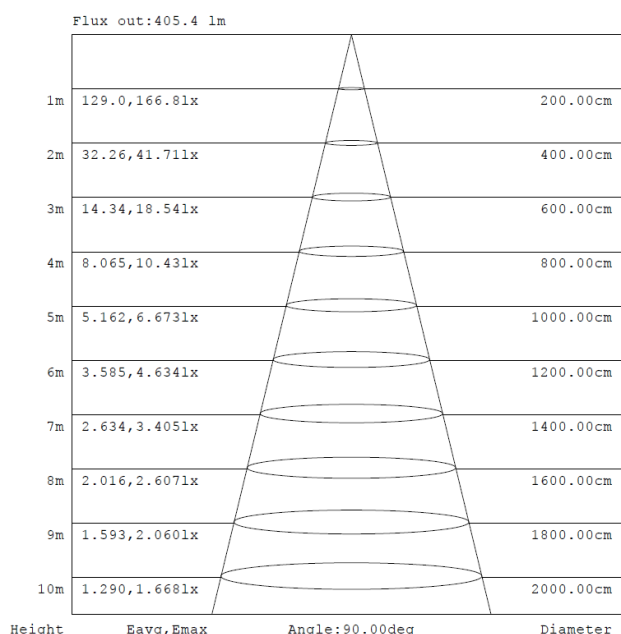
351.6

Illumination Plots

Model No.: SLPD28430XX

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

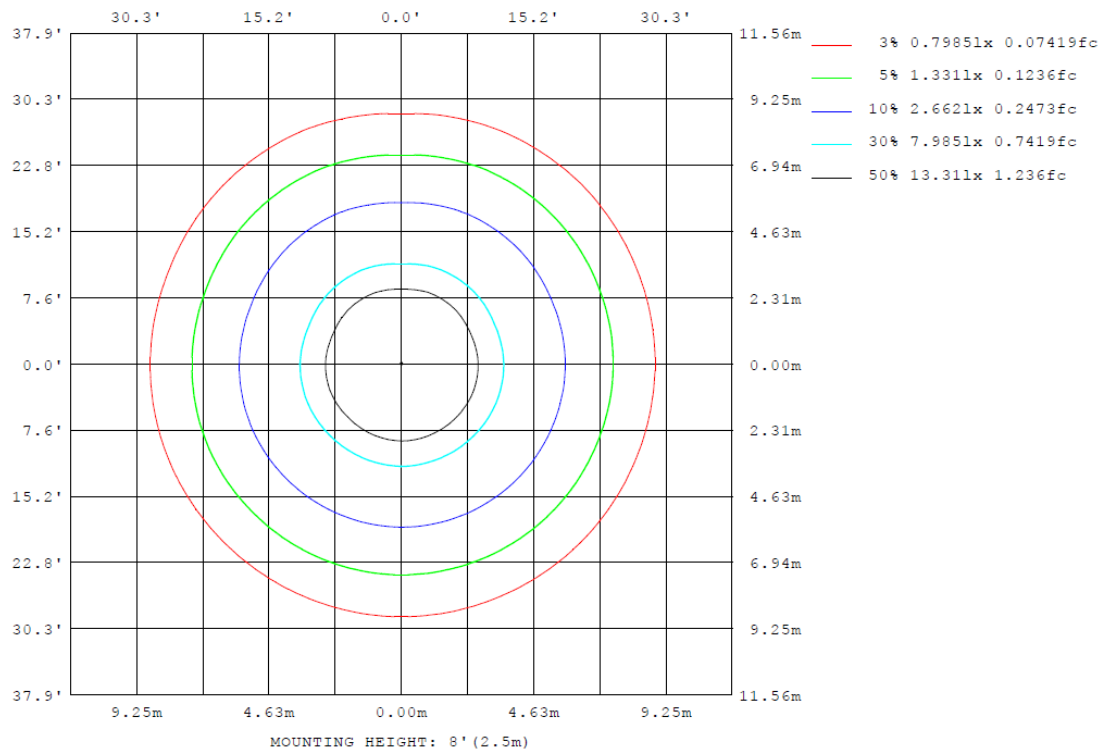
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28430XX

Model No.: SLPD28430XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLPD28430XX

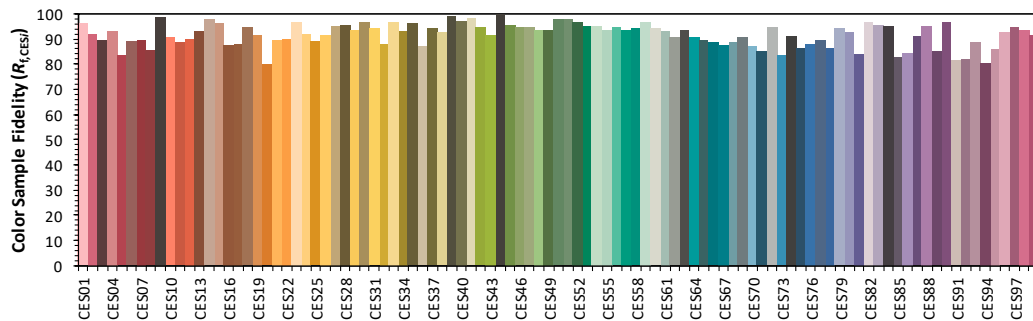
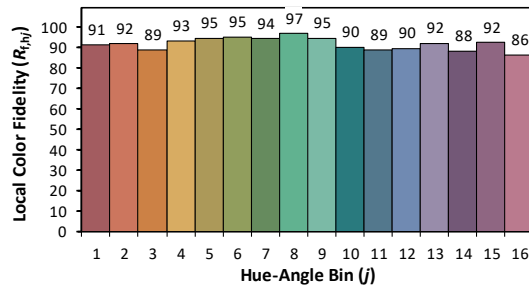
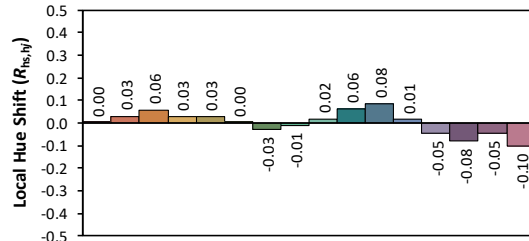
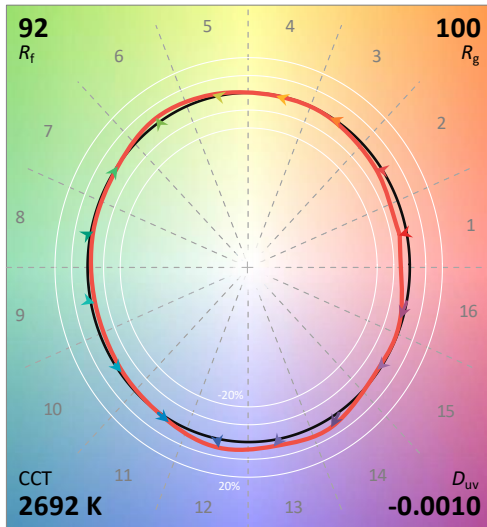
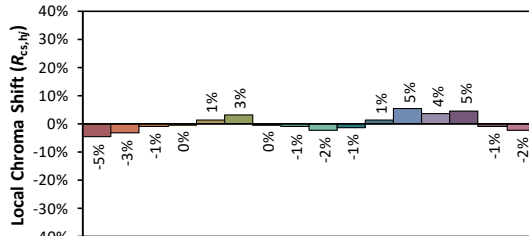
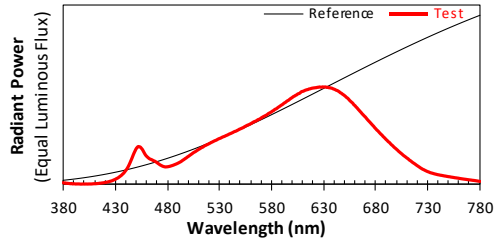
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/7/18

Model: SLPD28430xx



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

x 0.4587
 y 0.4075
 u' 0.2632
 v' 0.5260

CIE 13.3-1995
(CRI)

R_a 93

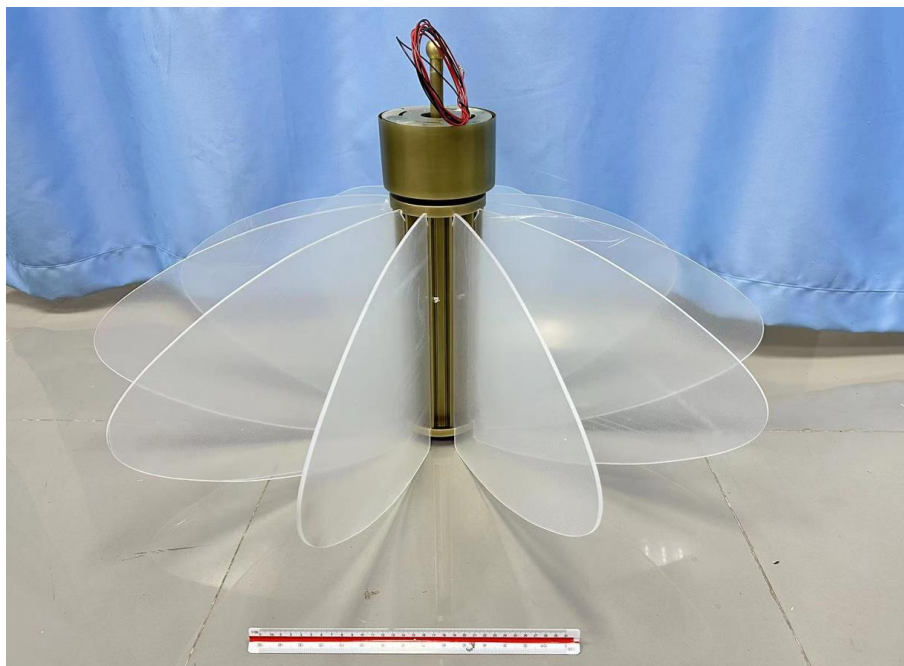
R_g 62

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 SLPD28430XX



External view of SLPD28430XX

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver



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 *****