

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230410218GZU-002

ISSUE DATE

23-May-2023

REVISION DATE

None

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13

DOCUMENT CONTROL NUMBER

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Report No.: 230410218GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLFM13627X

(Remark: "X" denote other appearance colors for the characters that change)

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: QGZ230406068.
<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 SLFM13627X. The sample was received in undamaged condition. The sample designation was S230410218-002.
<u>DATES OF TESTS:</u>	15-May-2023
<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:	SLFM13627X
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLFM13627X

Criteria	Result
Total Lumen Output	205.6 lm
Total Power	19.5 W
Luminaire Efficacy	10.6 lm/W
S/MH(C0/180)	0.82
S/MH(C90/270)	0.71
Correlated Color Temperature (CCT)	2638 K
Color Rendering Index (CRI)	92
R9	58
Chromaticity Coordinate (x)	0.4606
Chromaticity Coordinate (y)	0.4039
Chromaticity Coordinate (u')	0.2660
Chromaticity Coordinate (v')	0.5249

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: 110V/100W

Current: 0.8851A

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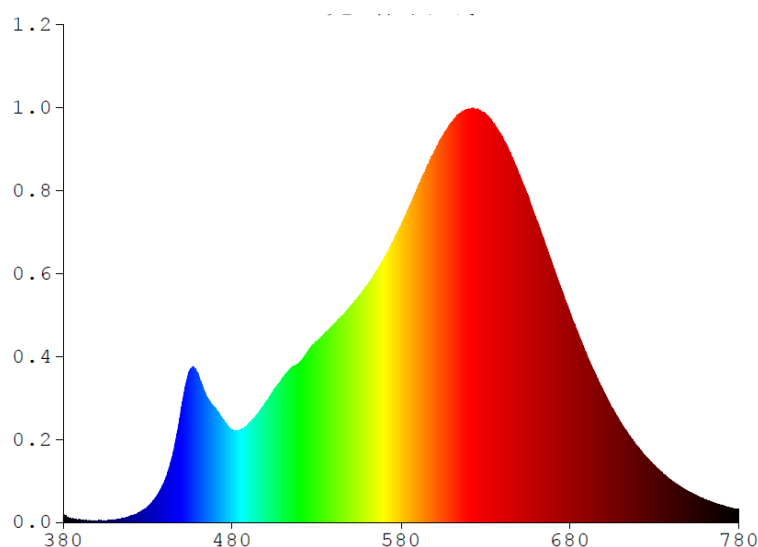
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLFM13627X

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0275	480	0.4124	580	1.3247	680	0.9315	780	0.0584
385	0.0122	485	0.4152	585	1.4117	685	0.8366		
390	0.0104	490	0.4433	590	1.4979	690	0.7419		
395	0.0067	495	0.4843	595	1.5819	695	0.6579		
400	0.0067	500	0.5380	600	1.6593	700	0.5808		
405	0.0025	505	0.5951	605	1.7285	705	0.5096		
410	0.0103	510	0.6457	610	1.7850	710	0.4438		
415	0.0170	515	0.6901	615	1.8239	715	0.3870		
420	0.0286	520	0.7143	620	1.8452	720	0.3378		
425	0.0443	525	0.7662	625	1.8437	725	0.2899		
430	0.0698	530	0.8088	630	1.8213	730	0.2523		
435	0.1135	535	0.8449	635	1.7803	735	0.2163		
440	0.1837	540	0.8828	640	1.7159	740	0.1855		
445	0.3080	545	0.9206	645	1.6398	745	0.1607		
450	0.5126	550	0.9628	650	1.5501	750	0.1374		
455	0.6802	555	1.0083	655	1.4564	755	0.1181		
460	0.6584	560	1.0607	660	1.3504	760	0.1025		
465	0.5581	565	1.1176	665	1.2480	765	0.0868		
470	0.5095	570	1.1831	670	1.1365	770	0.0749		
475	0.4561	575	1.2492	675	1.0167	775	0.0644		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLFM13627X

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

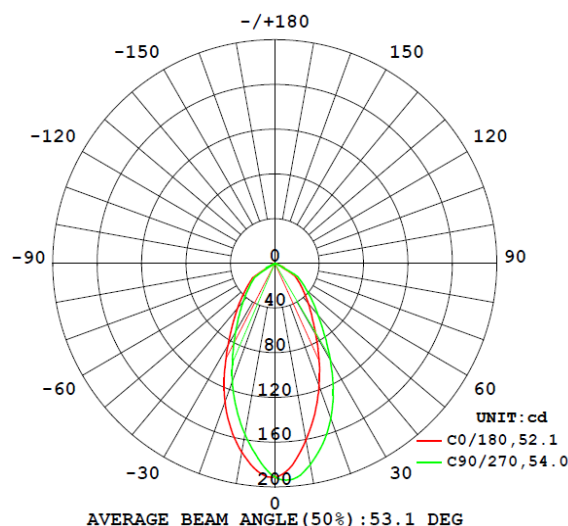
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color 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')
SLFM13627X								
S2304102 18-002	--	2638	92	58	0.4606	0.4039	0.2660	0.5249

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)
SLFM13627X							
S2304102 18-002	--	120.0	163.6	19.5	0.992	205.6	10.6

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLFM13627X

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	191.1	191.1	191.1	191.2	191.1
5	181.0	185.1	188.9	191.9	193.4
10	160.9	167.3	174.1	179.8	182.8
15	139.1	147.1	155.9	163.3	167.0
20	116.6	125.7	135.9	143.9	147.6
25	94.1	103.6	113.8	121.4	124.7
30	74.0	82.1	91.0	97.6	100.1
35	58.7	64.5	71.4	76.5	78.2
40	47.0	51.6	56.3	59.7	60.8
45	37.7	41.2	44.5	47.0	48.0
50	30.4	32.9	35.2	36.9	37.6
55	24.7	26.5	28.1	29.2	29.7
60	13.2	17.9	21.6	23.3	23.6
65	9.2	5.1	7.4	6.5	5.7
70	0.6	0.6	0.7	0.7	0.7
75	0.4	0.4	0.5	0.5	0.5
80	0.3	0.3	0.3	0.3	0.3
85	0.2	0.2	0.2	0.2	0.2
90	0.1	0.1	0.1	0.1	0.1
95	0.1	0.1	0.1	0.1	0.1
100	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0
130	0.1	0.1	0.1	0.1	0.1
135	0.1	0.1	0.1	0.1	0.1
140	0.1	0.1	0.1	0.1	0.1
145	0.1	0.1	0.1	0.1	0.1
150	0.2	0.2	0.2	0.2	0.2
155	0.2	0.2	0.2	0.2	0.2
160	0.2	0.2	0.2	0.2	0.2
165	0.2	0.2	0.2	0.2	0.2
170	0.2	0.2	0.2	0.2	0.2
175	0.2	0.2	0.2	0.2	0.2
180	0.2	0.2	0.2	0.2	0.2

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLFM13627X

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLFM13627X		
0-30	106.1	51.6
0-40	147.0	71.5
0-60	200.4	97.5
0-90	205.2	99.8
60-90	4.8	2.3
0-180	205.6	100.0

Beam Angle

Total Beam Angle (°)

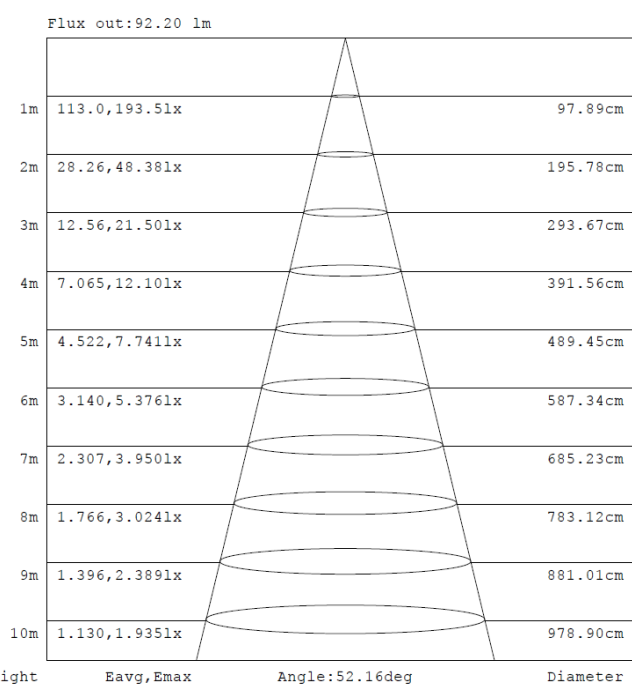
53.1

Illumination Plots

Model No.: SLFM13627X

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

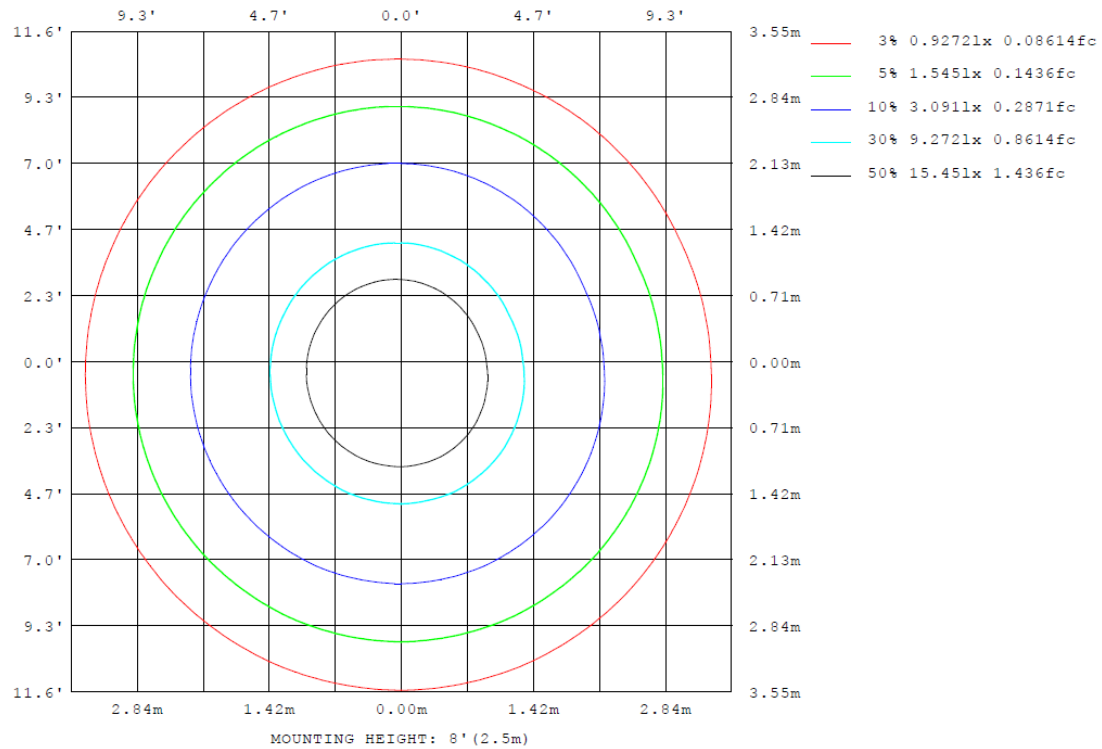
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLFM13627X

Model No.: SLFM13627X

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLFM13627X

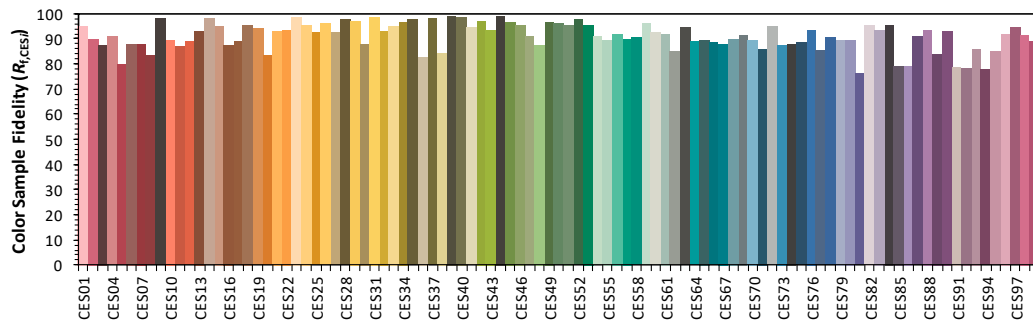
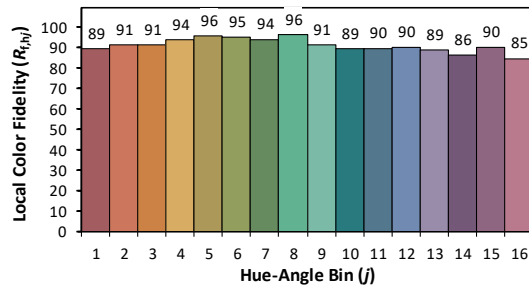
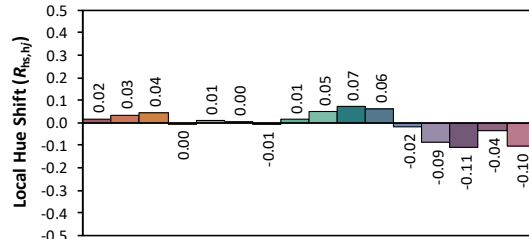
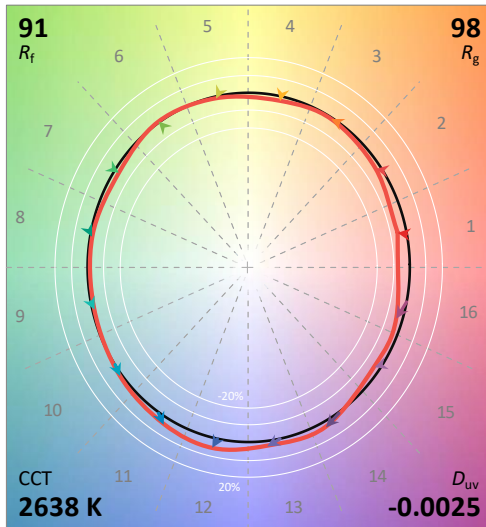
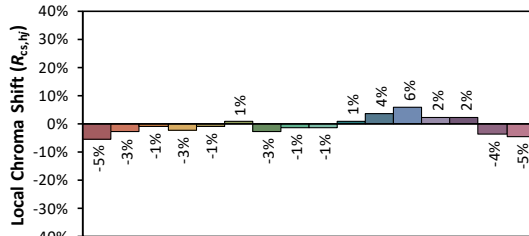
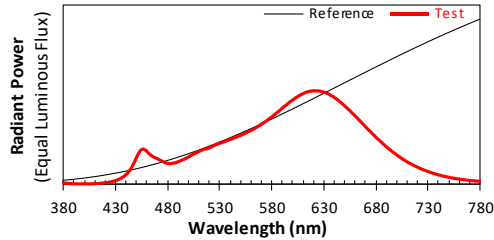
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/5/15

Model: SLFM13627X



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

x 0.4606
 y 0.4039
 u' 0.2660
 v' 0.5249

CIE 13.3-1995
(CRI)

R_a 92
 R_g 58

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 SLFM13627X



External view of SLFM13627X

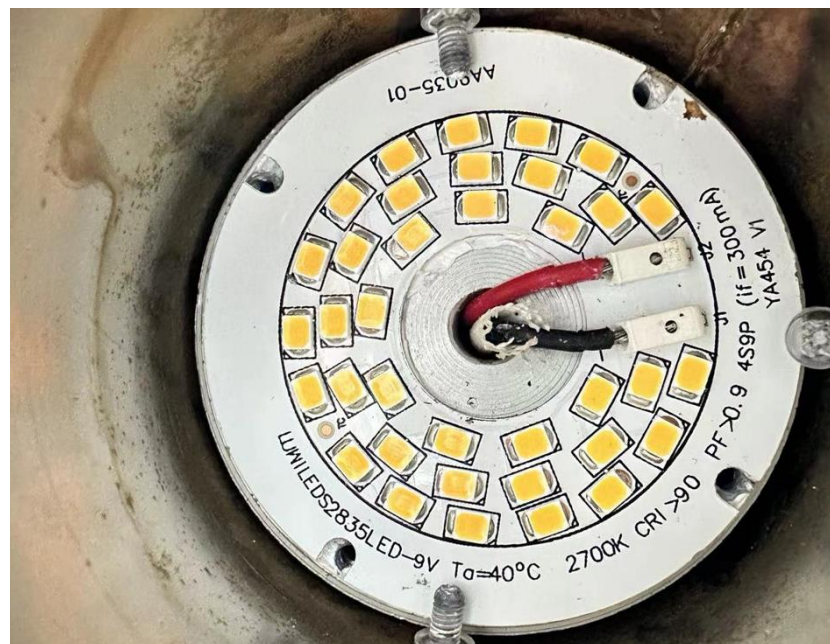
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver PVD20-C050V40-UNV3-HE-P



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 *****