

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240124027GZU-004

ISSUE DATE

29 August 2024

REVISION DATE

Modification 1: 01 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 240124027GZU-004
Modification 1: 01 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKPD15327XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

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<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: QGZ240119029.
<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 AKPD15327XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240124027-004.
<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>	27 August 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

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TEST REPORT

SUMMARY

Model Number:	AKPD15327XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKPD15327XX

Criteria	Result
Total Lumen Output	2040.5 lm
Total Power	26.0 W
Luminaire Efficacy	78.4 lm/W
S/MH(C0/180)	6.22
S/MH(C90/270)	5.39
Correlated Color Temperature (CCT)	2462 K
Color Rendering Index (CRI)	92
R9	59
Chromaticity Coordinate (x)	0.4810
Chromaticity Coordinate (y)	0.4149
Chromaticity Coordinate (u')	0.2742
Chromaticity Coordinate (v')	0.5322

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240124027GZU-004 issued on 29 August 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page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	D215S	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

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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 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

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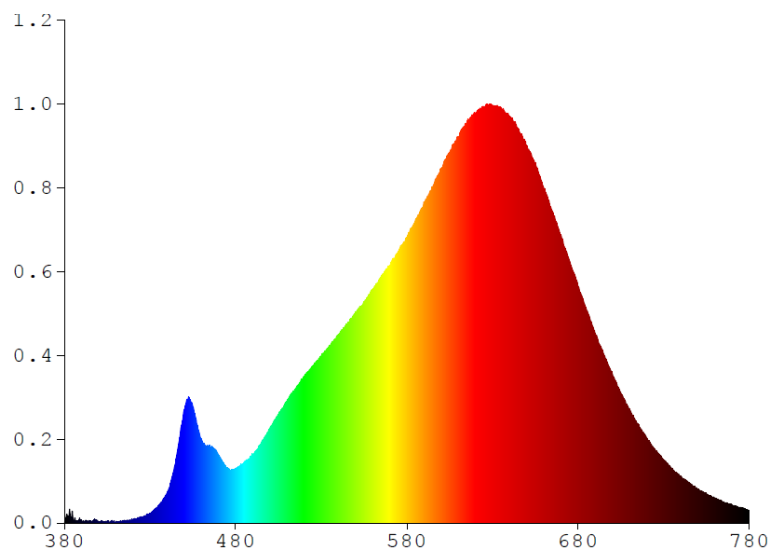
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKPD15327XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0059	480	0.0674	580	0.3554	680	0.2935	780	0.0150
385	0.0010	485	0.0760	585	0.3762	685	0.2635		
390	0.0031	490	0.0852	590	0.3984	690	0.2336		
395	0.0025	495	0.0998	595	0.4174	695	0.2085		
400	0.0004	500	0.1179	600	0.4410	700	0.1838		
405	0.0025	505	0.1351	605	0.4601	705	0.1606		
410	0.0020	510	0.1520	610	0.4792	710	0.1406		
415	0.0035	515	0.1672	615	0.4968	715	0.1229		
420	0.0043	520	0.1816	620	0.5083	720	0.1052		
425	0.0075	525	0.1945	625	0.5170	725	0.0900		
430	0.0115	530	0.2070	630	0.5174	730	0.0780		
435	0.0217	535	0.2201	635	0.5151	735	0.0672		
440	0.0378	540	0.2339	640	0.5026	740	0.0576		
445	0.0773	545	0.2473	645	0.4895	745	0.0492		
450	0.1403	550	0.2613	650	0.4683	750	0.0423		
455	0.1442	555	0.2749	655	0.4460	755	0.0359		
460	0.1036	560	0.2885	660	0.4150	760	0.0309		
465	0.0944	565	0.3060	665	0.3866	765	0.0263		
470	0.0840	570	0.3199	670	0.3563	770	0.0220		
475	0.0686	575	0.3369	675	0.3179	775	0.0193		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD15327XX

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

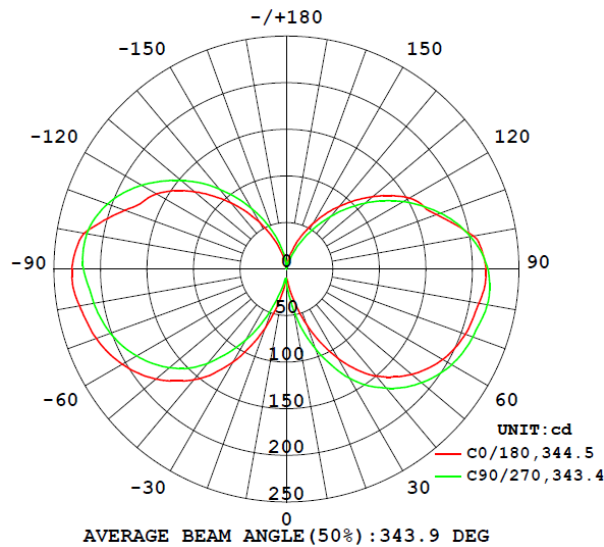
Photometric Measurements at 25°C – Distribution Method

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')
AKPD15327XX								
S2401240 27-004	base-up	2462	92	59	0.4810	0.4149	0.2742	0.5322

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)
AKPD15327XX							
S2401240 27-004	base-up	120.1	219.5	26.0	0.987	2040.5	78.4

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD15327XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	9.7	10.9	13.2	13.4	13.8
5	13.0	19.1	24.8	25.3	26.0
10	24.2	33.8	42.3	43.4	44.6
15	41.3	54.6	65.0	66.7	68.2
20	63.7	78.2	87.4	90.6	91.1
25	87.0	101.4	108.9	114.2	113.5
30	110.7	124.1	130.6	134.5	135.2
35	131.8	145.4	148.6	151.3	152.7
40	149.9	161.6	163.2	164.2	166.8
45	163.6	176.4	176.5	175.0	179.4
50	175.7	189.5	188.0	183.4	189.7
55	185.7	200.6	197.8	189.8	198.3
60	193.9	209.9	205.8	194.6	205.1
65	200.1	217.2	212.0	197.5	209.9
70	204.5	222.8	216.5	198.7	213.1
75	207.4	226.9	220.9	201.0	216.0
80	210.2	232.0	225.6	203.9	219.3
85	213.9	234.3	226.7	204.8	219.3
90	214.4	232.5	224.9	203.2	216.5
95	211.5	227.6	219.1	199.0	210.2
100	204.2	218.4	209.8	192.1	201.1
105	187.2	206.1	197.8	183.1	189.7
110	171.5	190.9	183.7	171.8	176.2
115	161.7	173.2	168.2	159.0	161.0
120	152.8	154.5	151.0	144.7	145.0
125	137.7	135.1	132.2	129.1	128.3
130	121.2	114.9	112.6	112.3	110.5
135	104.6	95.8	93.6	94.3	92.4
140	87.9	79.1	75.1	76.0	73.8
145	71.9	62.2	58.6	57.7	56.3
150	56.2	47.1	42.1	41.6	39.7
155	41.3	32.9	28.5	27.0	25.7
160	28.2	20.2	17.1	15.0	14.0
165	16.5	11.0	8.1	7.1	6.4
170	8.0	4.3	2.0	2.1	1.7
175	2.3	0.9	0.2	0.2	0.3
180	0.2	1.5	1.9	2.2	1.6

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD15327XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKPD15327XX		
0-30	57.3	2.8
0-40	140.7	6.9
0-60	440.2	21.6
0-90	1116.2	54.7
60-90	676.0	33.1
0-180	2040.5	100.0

Beam Angle

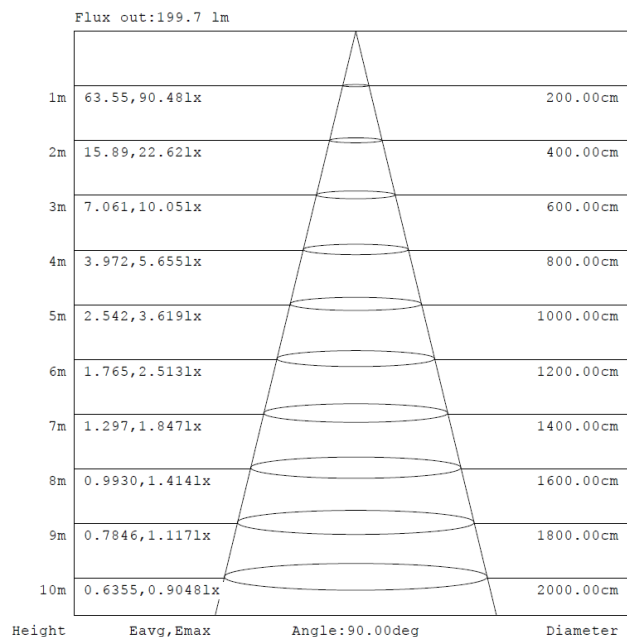
Total Beam Angle(°)
343.9

Illumination Plots

Model No.: AKPD15327XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

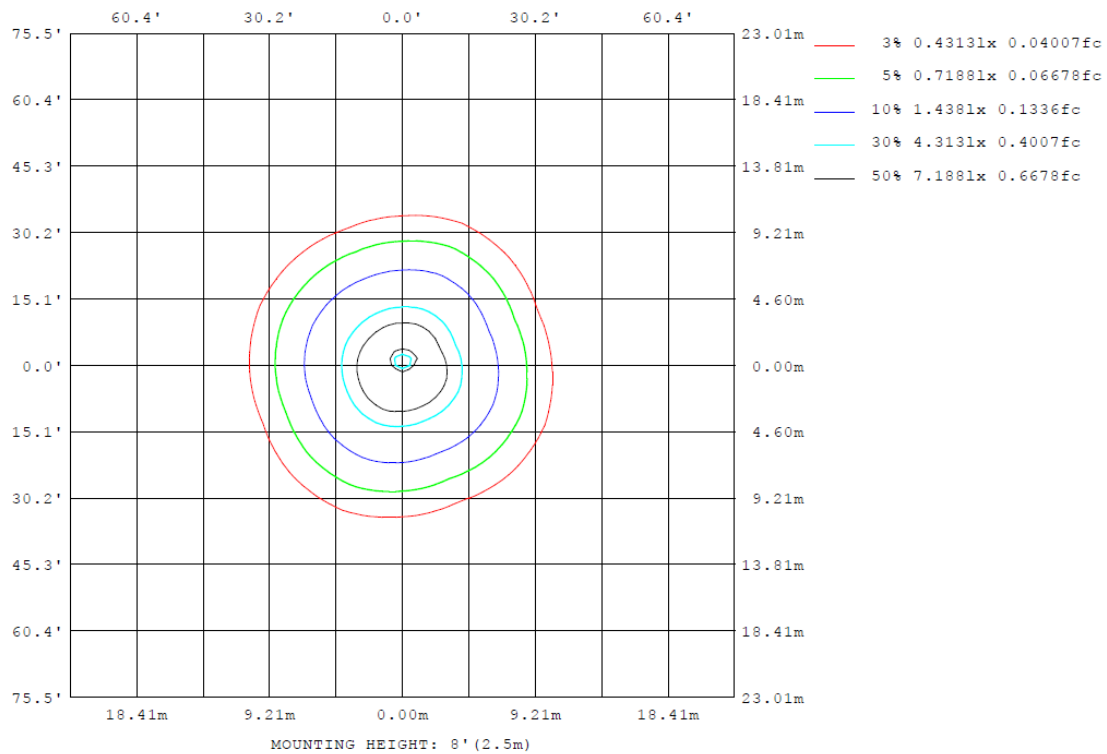
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD15327XX

Model No.: AKPD15327XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD15327XX

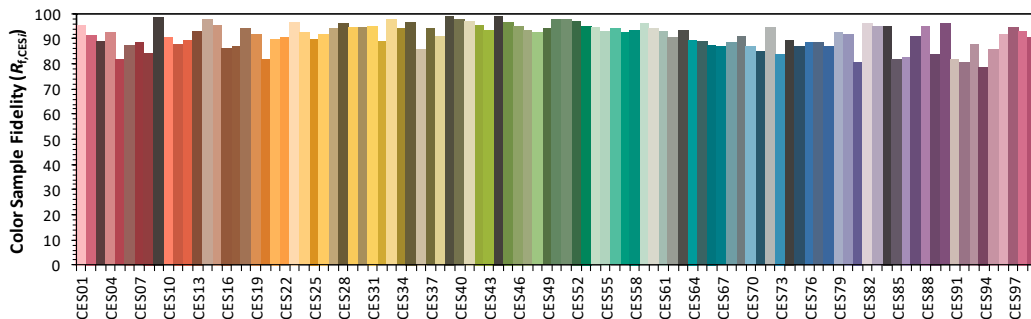
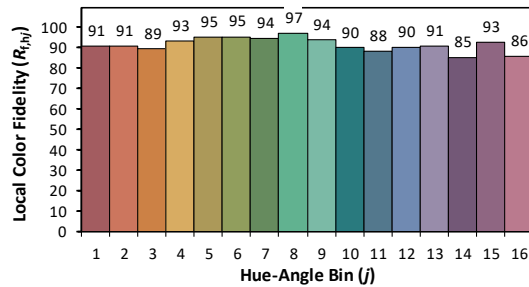
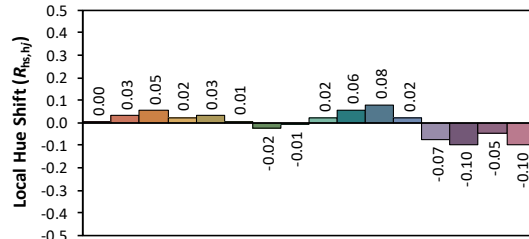
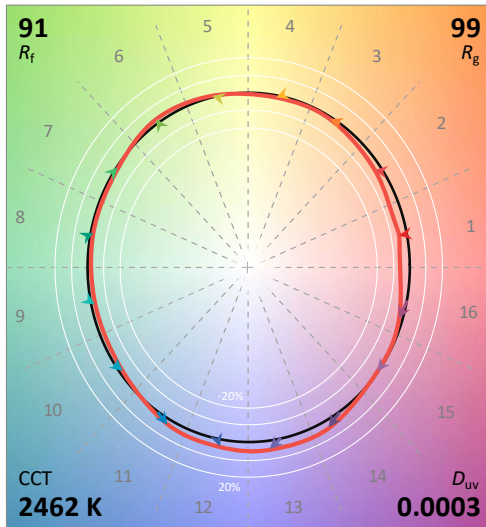
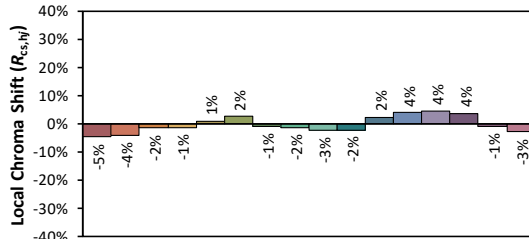
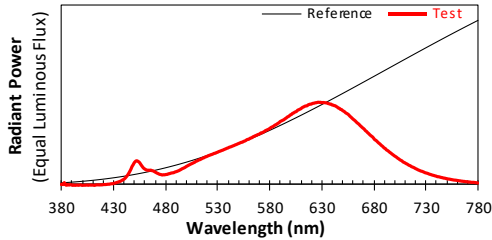
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/8/27

Model: AKPD15327xx



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

x 0.4810
 y 0.4149
 u' 0.2742
 v' 0.5322

CIE 13.3-1995
(CRI)

R_a 92
 R_g 59

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

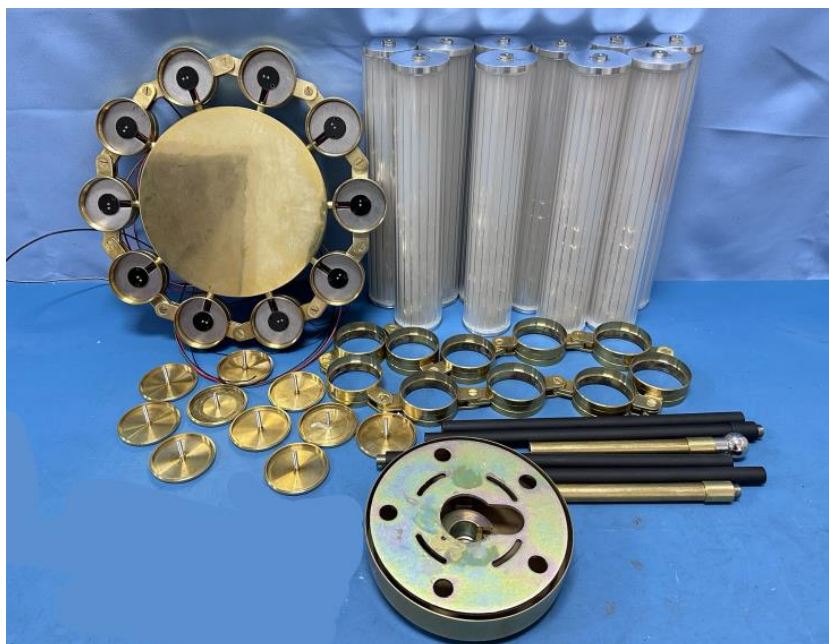
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of AKPD15327XX



External view of AKPD15327XX

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver PSS30W-0700-38-VCC1 (AB2613)



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 *****