

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240124027GZU-001

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-001
Modification 1: 01 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKLS15027XX

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 AKLS15027XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240124027-001.
<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>	29 February 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:	AKLS15027XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKLS15027XX

Criteria	Result
Total Lumen Output	2442.2 lm
Total Power	25.4 W
Luminaire Efficacy	96.2 lm/W
S/MH(C0/180)	1.30
S/MH(C90/270)	1.58
Correlated Color Temperature (CCT)	2643 K
Color Rendering Index (CRI)	94
R9	68
Chromaticity Coordinate (x)	0.4616
Chromaticity Coordinate (y)	0.4064
Chromaticity Coordinate (u')	0.2655
Chromaticity Coordinate (v')	0.5260

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240124027GZU-001 issued on 29 August 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page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.

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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	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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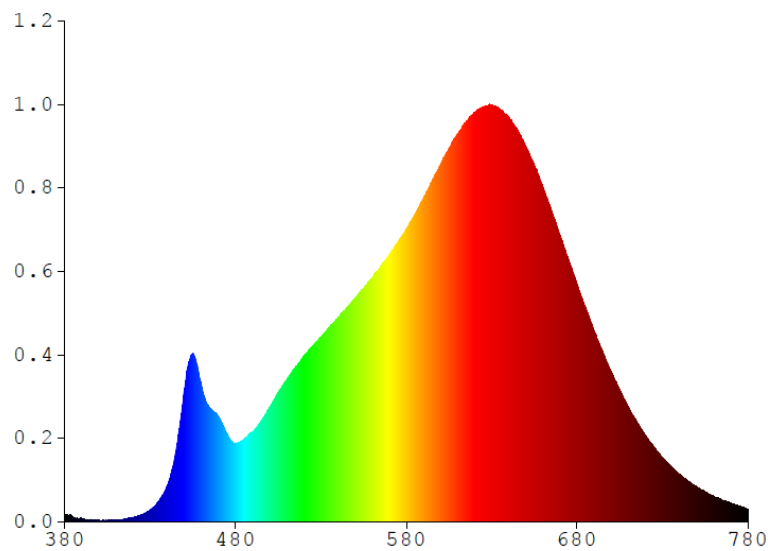
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKLS15027XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0788	480	0.7660	580	2.8598	680	2.3183	780	0.1235
385	0.0369	485	0.8037	585	3.0000	685	2.0908		
390	0.0344	490	0.8807	590	3.1548	690	1.8616		
395	0.0235	495	0.9842	595	3.3238	695	1.6576		
400	0.0175	500	1.1205	600	3.4735	700	1.4622		
405	0.0160	505	1.2655	605	3.6422	705	1.2875		
410	0.0194	510	1.3907	610	3.7876	710	1.1238		
415	0.0276	515	1.5054	615	3.9072	715	0.9770		
420	0.0403	520	1.6078	620	3.9921	720	0.8430		
425	0.0701	525	1.7099	625	4.0450	725	0.7326		
430	0.1180	530	1.8004	630	4.0540	730	0.6276		
435	0.2019	535	1.9009	635	4.0231	735	0.5447		
440	0.3534	540	1.9933	640	3.9492	740	0.4653		
445	0.6853	545	2.0901	645	3.8290	745	0.3991		
450	1.2843	550	2.1820	650	3.6651	750	0.3421		
455	1.6402	555	2.2756	655	3.4763	755	0.2938		
460	1.3284	560	2.3750	660	3.2656	760	0.2513		
465	1.1031	565	2.4849	665	3.0330	765	0.2123		
470	1.0239	570	2.6069	670	2.7933	770	0.1820		
475	0.8606	575	2.7241	675	2.5113	775	0.1555		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKLS15027XX

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

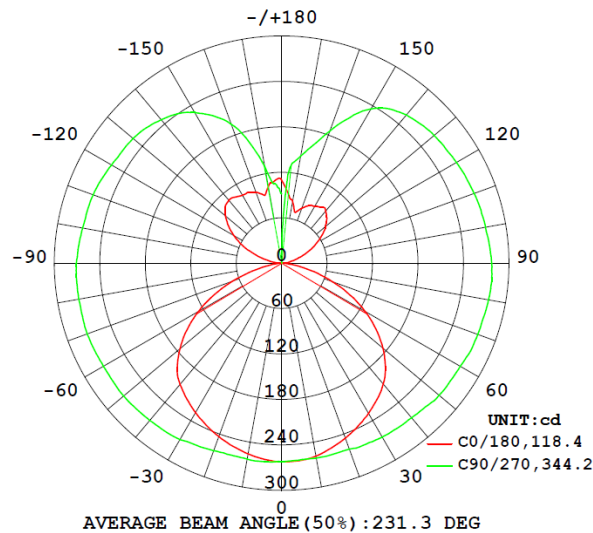
Photometric Measurements at 25°C – Distribution Method

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')
AKLS15027XX								
S2401240 27-001	base-up	2643	94	68	0.4616	0.4064	0.2655	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 Luminous	Lumen Efficacy
						Flux (Lumens)	(Lumens Per Watt)
AKLS15027XX							
S2401240 27-001	base-up	120.0	212.8	25.4	0.995	2442.2	96.2

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKLS15027XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	262.1	262.0	262.3	261.8	261.7
5	261.6	261.5	261.4	260.8	260.7
10	258.6	259.1	259.6	260.9	260.9
15	252.8	253.7	256.7	260.4	261.2
20	245.7	247.4	252.1	258.1	261.3
25	237.7	240.4	246.5	259.0	263.6
30	228.9	232.6	242.3	257.9	265.2
35	219.4	224.6	237.7	256.5	265.9
40	208.5	215.5	232.9	254.8	266.6
45	193.6	205.1	228.0	253.1	268.3
50	174.3	191.9	222.5	253.6	271.3
55	152.0	176.0	216.7	253.0	271.5
60	127.0	158.1	212.6	250.5	272.1
65	99.7	138.8	206.5	250.0	274.8
70	71.4	119.3	200.7	250.3	275.4
75	44.5	100.8	195.7	249.3	275.9
80	21.6	84.9	190.5	249.3	277.1
85	6.7	73.2	187.5	249.4	278.0
90	1.6	67.4	186.8	248.6	277.0
95	3.7	68.0	185.9	246.6	275.0
100	9.4	75.1	186.0	244.8	273.1
105	17.7	87.5	188.8	244.3	272.2
110	28.3	102.1	193.4	243.8	270.2
115	40.9	117.7	198.6	243.6	268.2
120	53.3	131.8	203.5	244.0	266.3
125	65.2	141.7	206.8	244.8	264.2
130	75.5	145.5	209.8	244.4	262.6
135	84.3	145.8	210.8	242.9	259.7
140	90.6	142.6	205.2	240.0	255.9
145	90.9	138.7	193.5	233.6	248.6
150	86.9	134.2	179.7	219.5	235.4
155	84.3	129.8	165.2	198.1	212.2
160	77.3	125.7	151.8	175.7	186.0
165	69.6	109.0	138.8	153.8	161.6
170	83.6	91.0	127.9	136.0	144.0
175	93.5	89.8	100.3	110.7	126.7
180	109.5	104.5	100.6	93.5	10.8

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKLS15027XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKLS15027XX		
0-30	212.9	8.7
0-40	364.9	14.9
0-60	740.8	30.3
0-90	1320.2	54.1
60-90	579.4	23.8
0-180	2442.2	100.0

Beam Angle

Total Beam Angle(°)

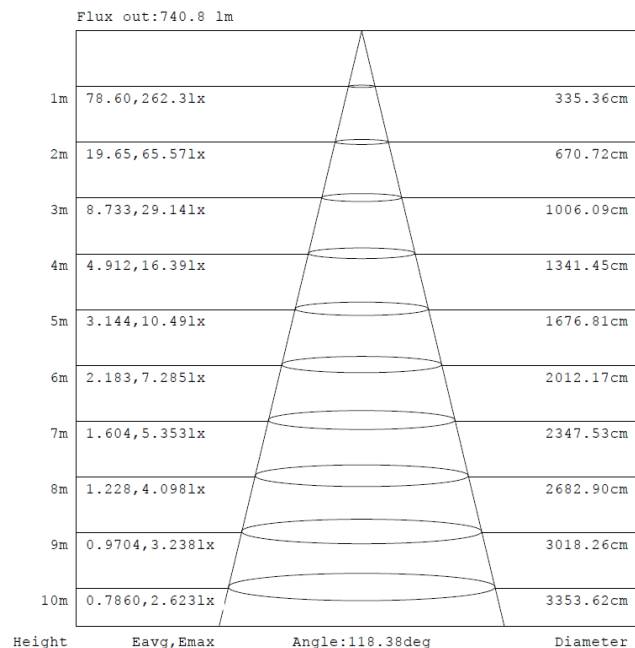
231.3

Illumination Plots

Model No.: AKLS15027XX

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

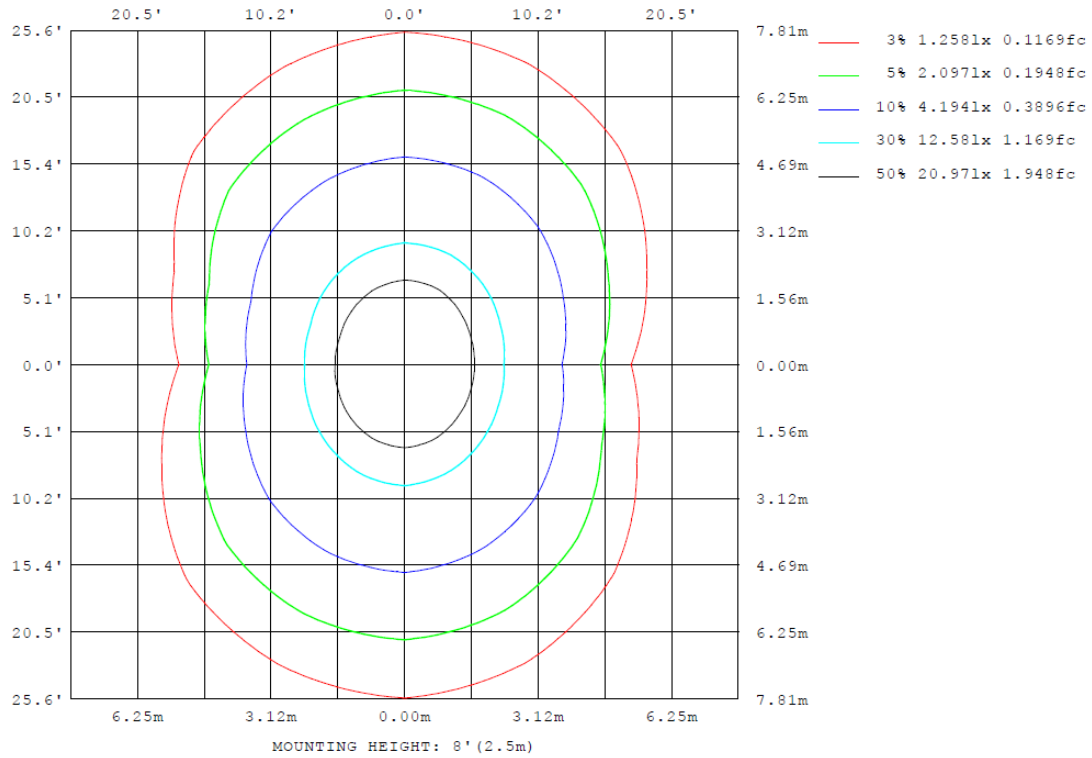
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKLS15027XX

Model No.: AKLS15027XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKLS15027XX

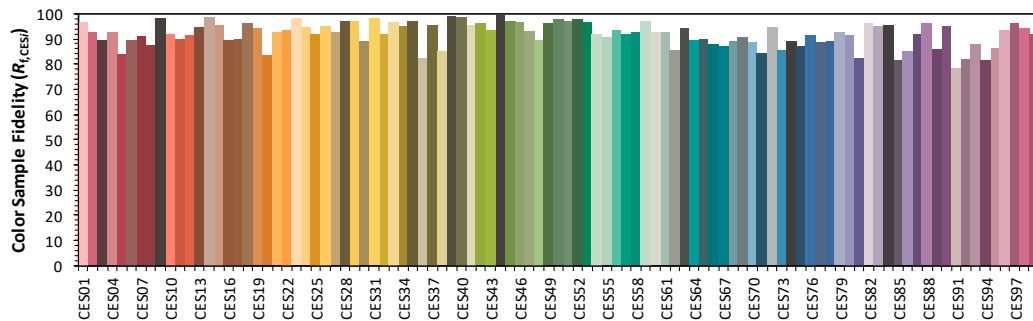
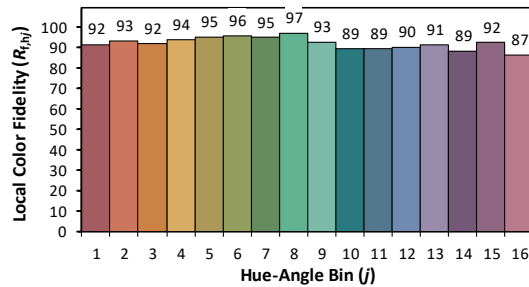
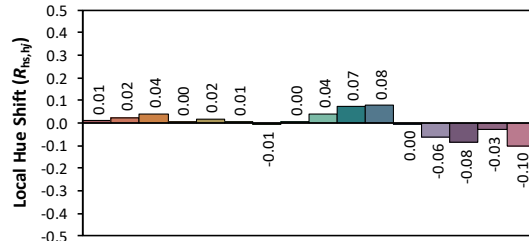
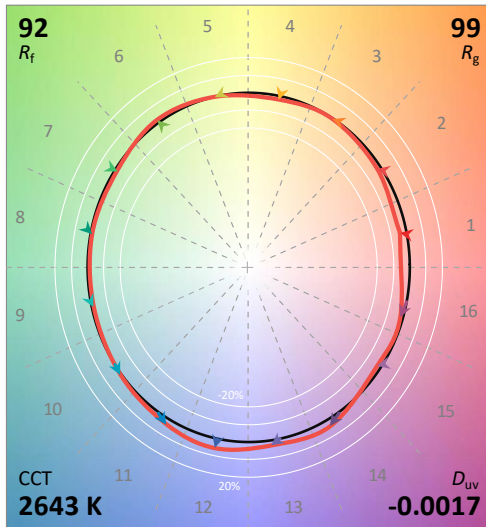
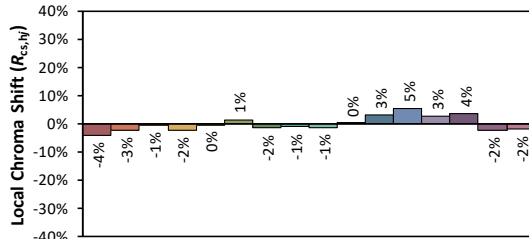
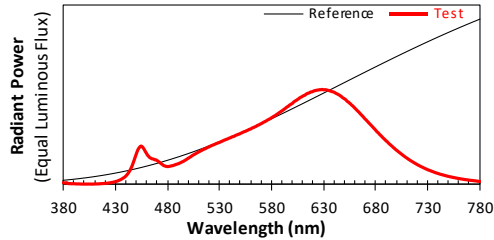
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/2/29

Model: AKLS15027xx



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

x 0.4616
 y 0.4064
 u' 0.2655
 v' 0.5260

CIE 13.3-1995
(CRI)

R_a 94
 R_g 68

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

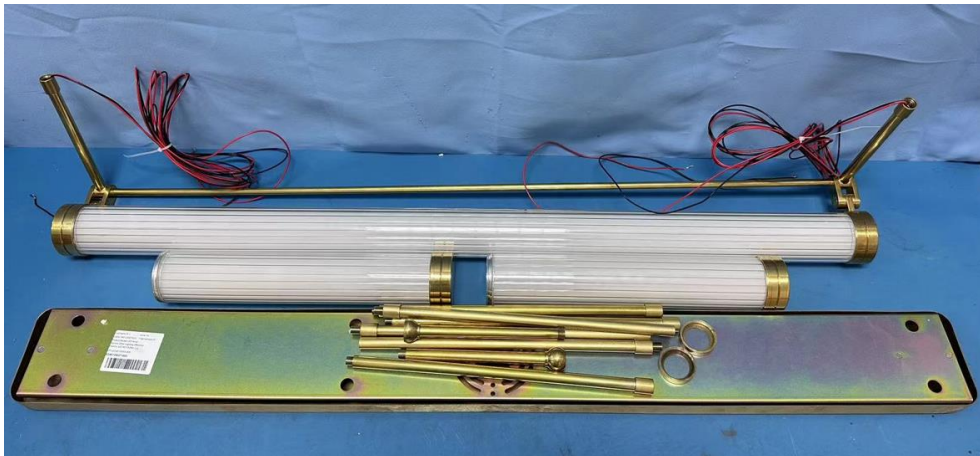
***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of AKLS15027XX



External view of AKLS15027XX

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

TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver PVD27-C070V38-UNV3-HE-P



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 *****