

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220601200GZU-004

ISSUE DATE

23 June 2022

REVISION DATE

None

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13

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Report No.: 220601200GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700OWINGA93015x120

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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TEST: Electrical and Photometric as required to the IES LM-79 test standard.

STATEMENT OF LIMITATION: 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.

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ211208009.

STANDARDS USED: 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 Measurements of Solid-State Lighting Products

ANSI C78.377:2017 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model 700OWINGA93015x120. The sample was received, in undamaged condition. The sample designation was S220601200-004.

DATES OF TESTS: 14 June 2022

ISSUED BY: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

TEST LOCATION: 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:	700OWINGA93015x120 (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700OWINGA93015x120

Criteria	Result
Total Lumen Output	91.77 lm
Total Power	14.91 W
Luminaire Efficacy	6.15 lm/W
S/MH(C0/180)	0.26
S/MH(C90/270)	0.01
Correlated Color Temperature (CCT)	3041 K
Color Rendering Index (CRI)	91
R9	51
Chromaticity Coordinate (x)	0.4334
Chromaticity Coordinate (y)	0.4017
Chromaticity Coordinate (u')	0.2493
Chromaticity Coordinate (v')	0.5199

Remark:

Measurement uncertainty for applicable tests has been established.

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TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Temperature Meter	RS210	SA047-126
Sensing - DC Power Supply	IT6122	SA063-12-09
Sensing- AC power source for Integrating Sphere System	APW-105N	SA063-12-05
Everfine - AC power source for Goniophotometer System	DPS1060	SA063-16-03
Two meter integrating sphere unit	Sensing – 2M	SA063-12-01
YOKOGAWA – Digital Power Meter	WT-210	SA011-122
Everfine – Goniophotometer	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard lamp	S82134	SA063-12-13
Standard lamp	S1320039	SA063-12-24
Standard lamp	D908S	SA063-16-05
Standard lamp	D215S	SA063-16-06

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 WT210.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D908S

Current: 7.255A

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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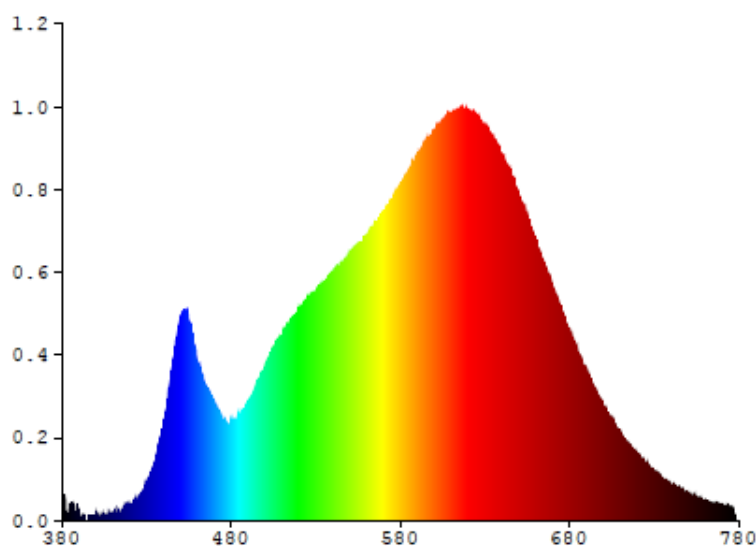
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700OWINGA93015x120

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.0346	580	0.1147	680	0.0636	780	0.0000
385	0.0000	485	0.0355	585	0.1193	685	0.0570		
390	0.0032	490	0.0410	590	0.1244	690	0.0509		
395	0.0000	495	0.0468	595	0.1296	695	0.0444		
400	0.0027	500	0.0528	600	0.1331	700	0.0385		
405	0.0017	505	0.0580	605	0.1359	705	0.0338		
410	0.0026	510	0.0631	610	0.1386	710	0.0297		
415	0.0023	515	0.0677	615	0.1397	715	0.0261		
420	0.0039	520	0.0728	620	0.1398	720	0.0226		
425	0.0076	525	0.0762	625	0.1379	725	0.0190		
430	0.0119	530	0.0777	630	0.1349	730	0.0165		
435	0.0189	535	0.0808	635	0.1298	735	0.0141		
440	0.0332	540	0.0849	640	0.1236	740	0.0118		
445	0.0519	545	0.0876	645	0.1187	745	0.0106		
450	0.0694	550	0.0910	650	0.1105	750	0.0090		
455	0.0671	555	0.0943	655	0.1034	755	0.0076		
460	0.0534	560	0.0974	660	0.0951	760	0.0067		
465	0.0447	565	0.1013	665	0.0865	765	0.0057		
470	0.0397	570	0.1053	670	0.0792	770	0.0052		
475	0.0341	575	0.1092	675	0.0699	775	0.0041		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWINGA93015x120

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

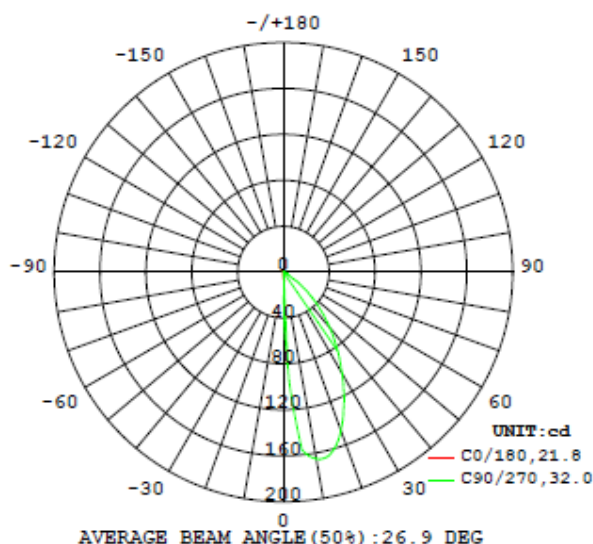
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
700OWINGA93015x120								
S2206012 00-004	--	3041	91	51	0.4334	0.4017	0.2493	0.5199

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)
700OWINGA93015x120							
S2206012 00-004	--	120.0	137.0	14.91	0.906	91.77	6.15

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWINGA93015x120

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	6.82	9.04	14.90	19.36	20.52
5	7.56	60.12	109.66	132.16	135.29
10	6.38	108.72	153.73	164.16	165.08
15	3.84	113.83	151.16	162.44	162.65
20	1.58	100.70	139.61	147.87	146.65
25	0.62	87.07	122.83	127.22	124.90
30	0.32	74.30	104.61	105.38	102.42
35	0.16	62.55	87.08	84.86	81.48
40	0.07	52.03	70.76	66.10	62.35
45	0.03	42.46	55.80	49.08	44.86
50	0.01	33.79	41.92	33.32	28.68
55	0.00	25.88	29.20	19.05	14.09
60	0.00	18.65	17.60	6.81	4.80
65	0.00	12.17	7.43	3.00	2.82
70	0.00	6.61	2.19	1.86	1.74
75	0.00	2.41	1.17	1.03	0.98
80	0.00	0.54	0.54	0.53	0.53
85	0.00	0.29	0.25	0.28	0.30
90	0.00	0.15	0.14	0.17	0.19
95	0.00	0.09	0.10	0.12	0.13
100	0.00	0.06	0.08	0.10	0.10
105	0.00	0.04	0.07	0.08	0.08
110	0.01	0.03	0.06	0.07	0.07
115	0.01	0.03	0.05	0.06	0.06
120	0.01	0.02	0.04	0.05	0.05
125	0.01	0.02	0.04	0.04	0.04
130	0.02	0.02	0.03	0.04	0.04
135	0.03	0.02	0.03	0.03	0.03
140	0.04	0.03	0.03	0.03	0.03
145	0.06	0.04	0.03	0.02	0.02
150	0.07	0.06	0.04	0.03	0.03
155	0.08	0.07	0.06	0.05	0.05
160	0.09	0.09	0.08	0.07	0.07
165	0.10	0.10	0.10	0.09	0.09
170	0.10	0.11	0.11	0.11	0.10
175	0.10	0.11	0.11	0.12	0.11
180	0.09	0.10	0.11	0.11	0.10

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WINGA93015x120

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
7000WINGA93015x120		
0-30	43.60	47.51
0-40	64.09	69.84
0-60	88.01	95.91
0-90	91.51	99.71
60-90	3.5	3.8
0-180	91.77	100

Beam Angle

Total Beam Angle (°)

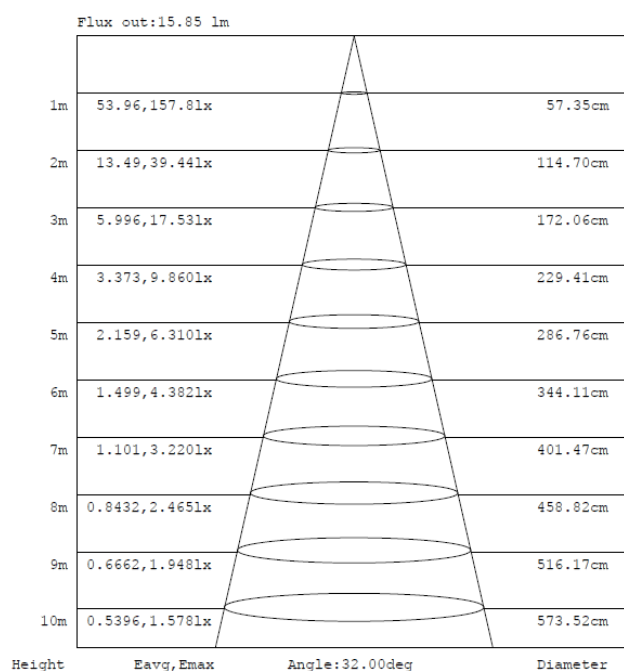
26.9

Illumination Plots

Model No.: 7000WINGA93015x120

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

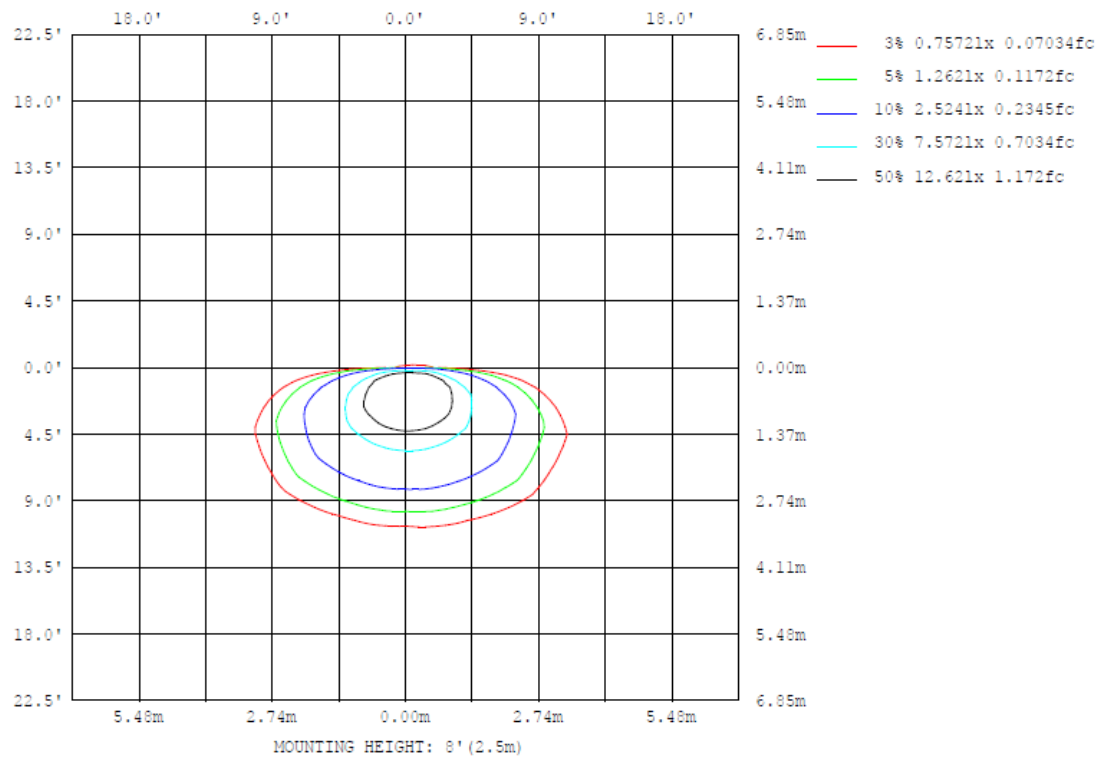
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WINGA93015x120

Model No.: 7000WINGA93015x120

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WINGA93015x120

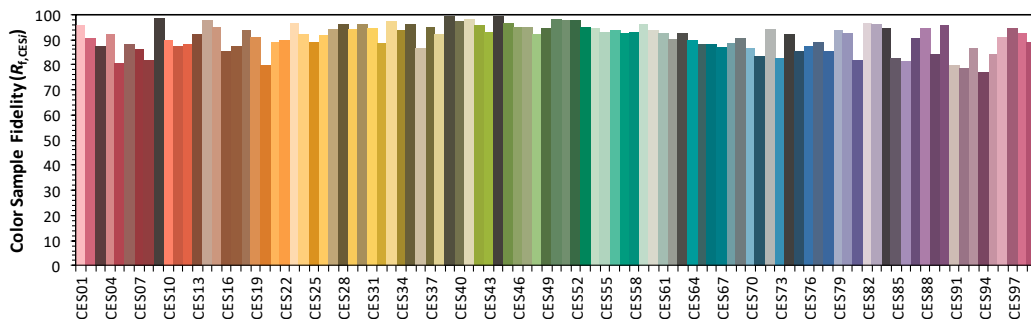
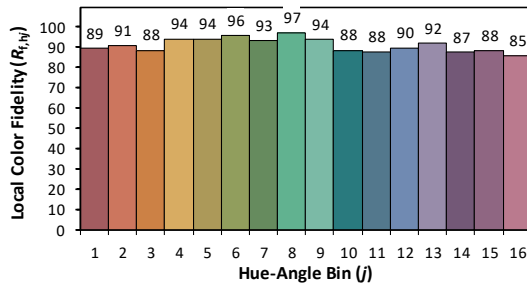
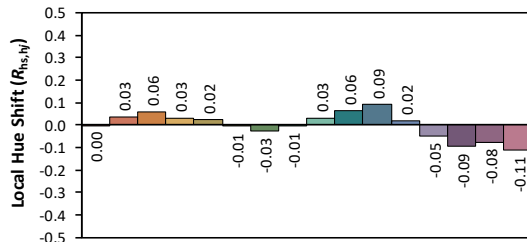
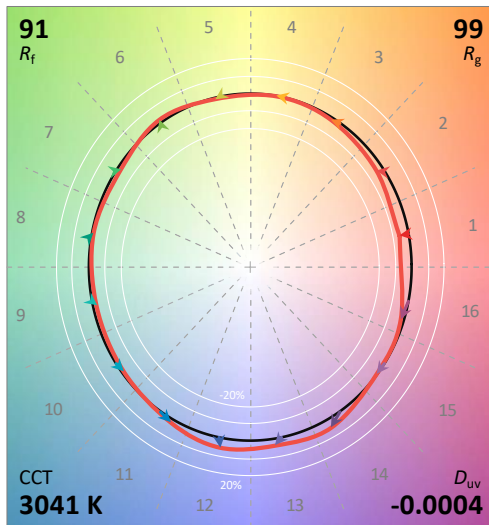
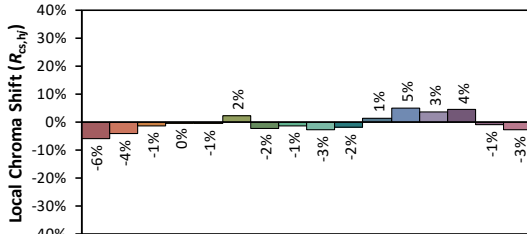
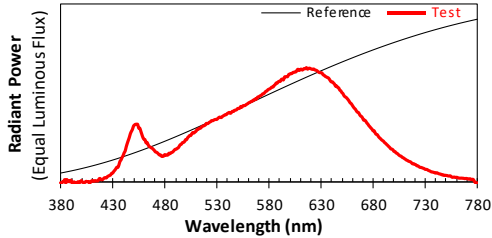
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/6/14

Model: 7000WINGA93015x120



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

x 0.4334
 y 0.4017
 u' 0.2493
 v' 0.5199

CIE 13.3-1995
(CRI)
 R_a 91
 R_g 51

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 700WINGA93015x120



External view of 700WINGA93015x120

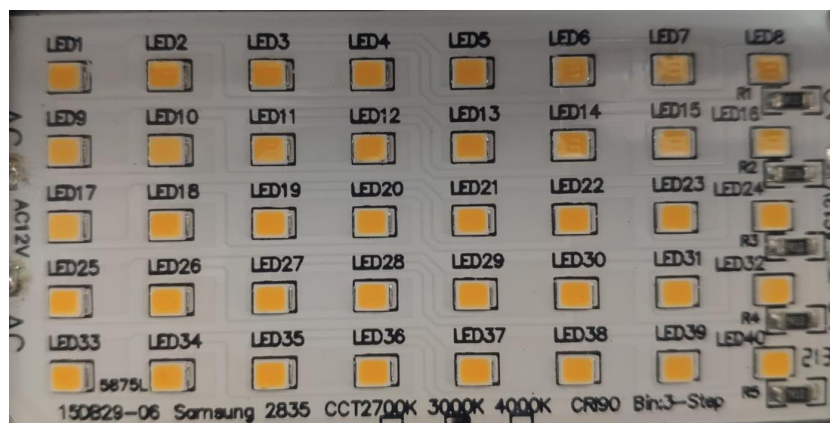
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DA25W600C2742BF1-3001



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 *****