

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

221205125GZU-014

ISSUE DATE

29 January 2023

REVISION DATE

None

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13

DOCUMENT CONTROL NUMBER

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Report No.: 221205125GZU-014

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLBA14730*

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

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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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: QGZ221129088.
<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 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 SLBA14730*. The sample was received, in undamaged condition. The sample designation was S221205125-014.
<u>DATES OF TESTS:</u>	11 January 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:	SLBA14730*
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLBA14730*

Criteria	Result
Total Lumen Output	2629.7 lm
Total Power	34.0 W
Luminaire Efficacy	77.3 lm/W
S/MH(C0/180)	1.25
S/MH(C90/270)	1.19
Correlated Color Temperature (CCT)	2964 K
Color Rendering Index (CRI)	94
R9	69
Chromaticity Coordinate (x)	0.4366
Chromaticity Coordinate (y)	0.3991
Chromaticity Coordinate (u')	0.2526
Chromaticity Coordinate (v')	0.5194

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

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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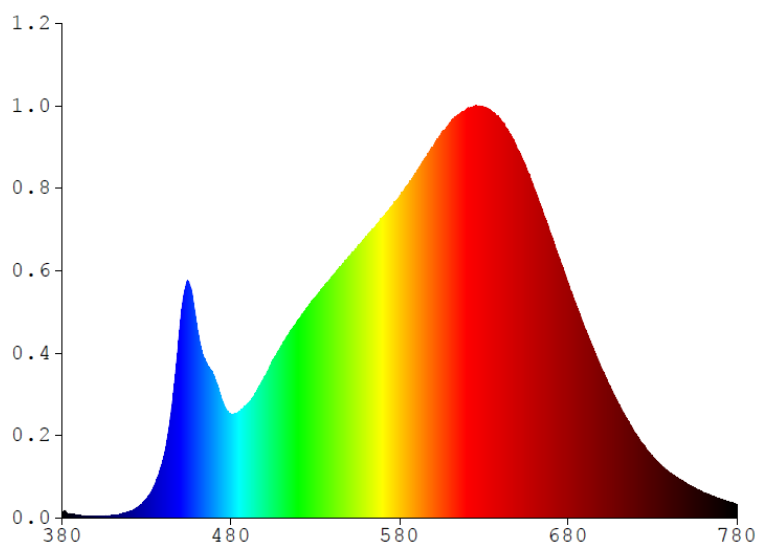
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLBA14730*

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0228	480	0.4202	580	1.3057	680	0.9522	780	0.0556
385	0.0122	485	0.4341	585	1.3510	685	0.8567		
390	0.0114	490	0.4660	590	1.4017	690	0.7673		
395	0.0089	495	0.5098	595	1.4544	695	0.6839		
400	0.0084	500	0.5747	600	1.5073	700	0.6036		
405	0.0076	505	0.6405	605	1.5654	705	0.5303		
410	0.0107	510	0.7004	610	1.6003	710	0.4615		
415	0.0156	515	0.7558	615	1.6343	715	0.3978		
420	0.0276	520	0.8015	620	1.6600	720	0.3429		
425	0.0452	525	0.8505	625	1.6704	725	0.2931		
430	0.0783	530	0.8941	630	1.6659	730	0.2489		
435	0.1373	535	0.9390	635	1.6462	735	0.2150		
440	0.2440	540	0.9785	640	1.6136	740	0.1856		
445	0.4521	545	1.0195	645	1.5607	745	0.1614		
450	0.7887	550	1.0609	650	1.4948	750	0.1411		
455	0.9553	555	1.1014	655	1.4207	755	0.1221		
460	0.7687	560	1.1408	660	1.3340	760	0.1048		
465	0.6349	565	1.1773	665	1.2404	765	0.0909		
470	0.5777	570	1.2188	670	1.1451	770	0.0780		
475	0.4726	575	1.2616	675	1.0295	775	0.0666		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLBA14730*

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

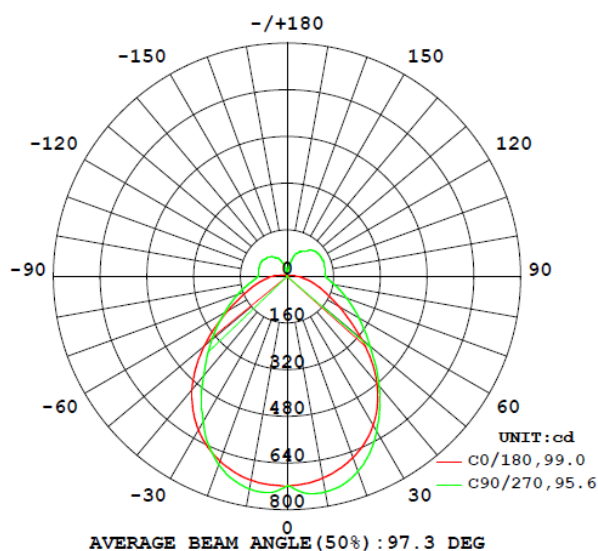
Photometric Measurements at 25°C – Integrating Sphere Method

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')
SLBA14730*								
S2212051 25-014	--	2964	94	69	0.4366	0.3991	0.2526	0.5194

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)
SLBA14730*							
S2212051 25-014	--	120.3	284.3	34.0	0.994	2629.7	77.3

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLBA14730*

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	717.7	717.6	717.8	717.8	717.7
5	713.3	726.0	738.6	744.6	745.9
10	702.0	730.4	744.3	749.9	750.0
15	684.0	719.9	733.3	737.7	739.0
20	660.5	699.9	709.2	707.7	711.3
25	629.6	668.8	672.5	668.9	669.4
30	589.5	626.5	628.9	616.7	613.3
35	539.8	576.5	573.8	558.7	553.3
40	479.3	518.7	515.0	497.5	490.0
45	408.0	458.0	456.8	436.0	429.6
50	332.1	397.6	399.1	378.2	370.6
55	262.2	343.8	351.4	331.7	324.4
60	204.6	299.3	308.4	291.3	284.6
65	159.6	261.0	272.6	255.0	248.2
70	124.8	228.2	241.3	224.2	217.4
75	96.4	199.9	212.4	196.0	189.4
80	72.0	174.0	186.5	171.5	164.8
85	53.7	150.1	164.0	150.9	145.0
90	39.3	131.3	148.9	135.9	132.8
95	27.5	118.3	138.9	132.2	130.8
100	17.3	108.5	133.8	131.0	131.4
105	10.7	100.2	130.8	132.0	133.1
110	6.9	93.8	127.8	133.4	135.0
115	4.2	89.7	125.9	131.9	134.9
120	3.0	84.4	123.9	132.1	134.5
125	2.2	78.1	121.1	131.0	133.7
130	1.4	75.1	115.9	128.3	131.0
135	1.1	65.1	106.3	123.9	127.1
140	1.2	61.9	97.9	113.5	119.1
145	1.3	53.6	91.4	103.0	106.3
150	1.4	43.0	80.0	96.2	99.4
155	1.4	29.5	71.2	84.0	91.5
160	1.5	17.5	53.4	73.6	79.2
165	1.4	6.7	32.2	49.7	54.8
170	1.4	1.5	11.6	22.9	26.5
175	1.3	1.3	1.3	3.4	3.4
180	1.2	1.2	1.2	1.2	1.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLBA14730*

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLBA14730*		
0-30	576.8	21.9
0-40	925.4	35.2
0-60	1552.1	59.0
0-90	2114.3	80.4
60-90	562.2	21.4
0-180	2629.7	100.0

Beam Angle

Total Beam Angle (°)

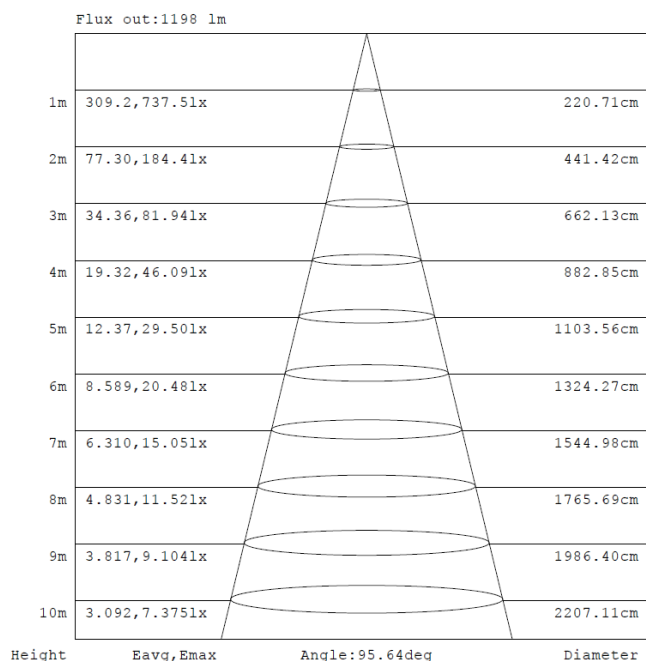
97.3

Illumination Plots

Model No.: SLBA14730*

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

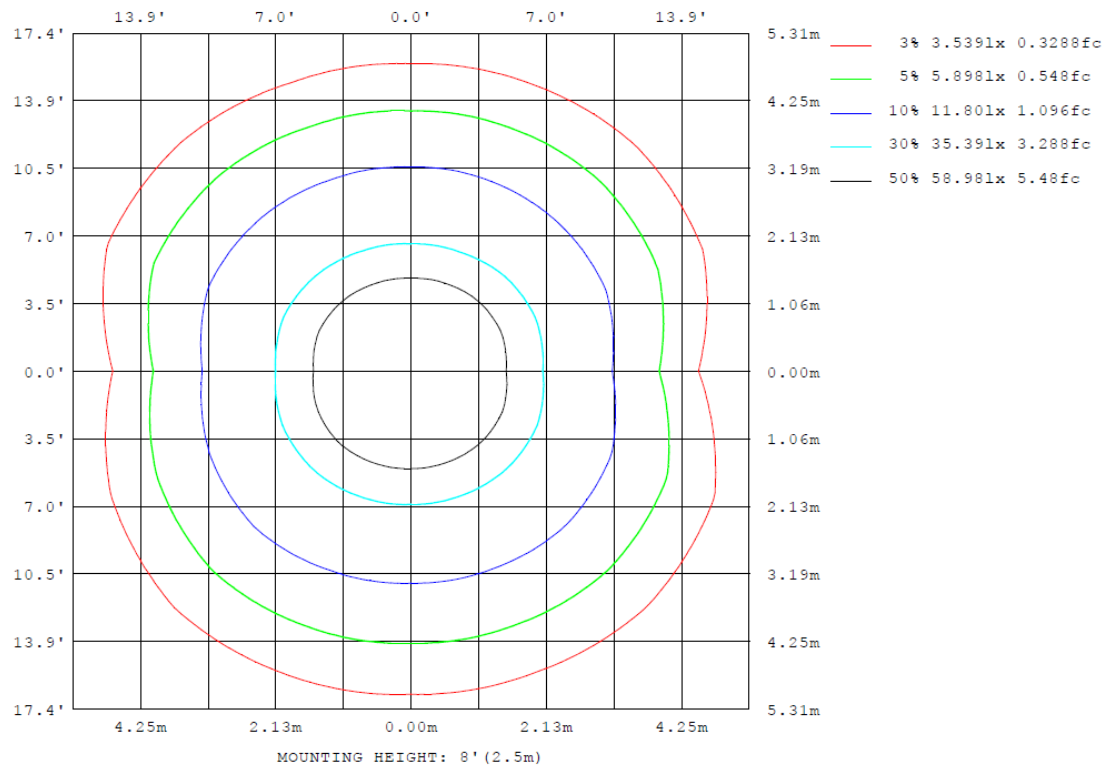
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLBA14730*

Model No.: SLBA14730*

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLBA14730*

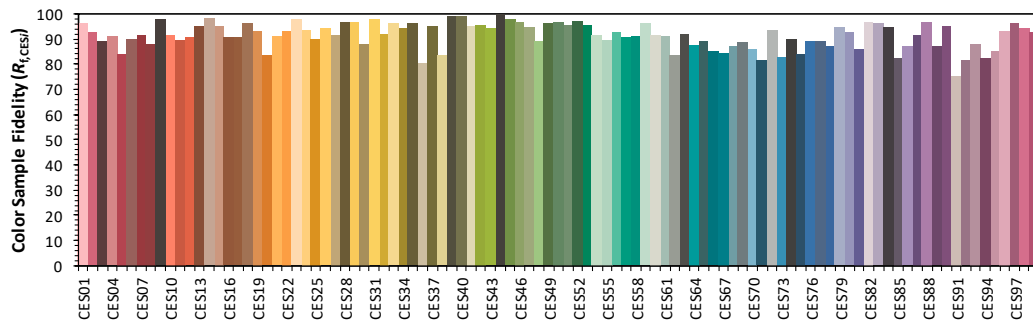
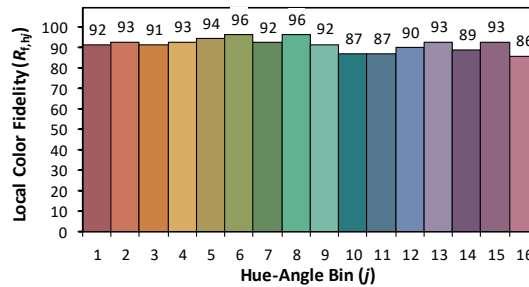
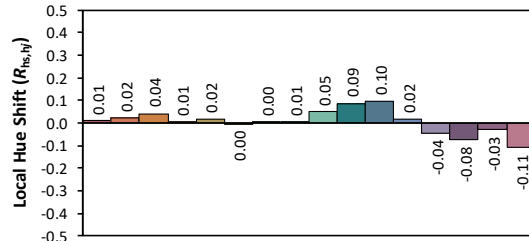
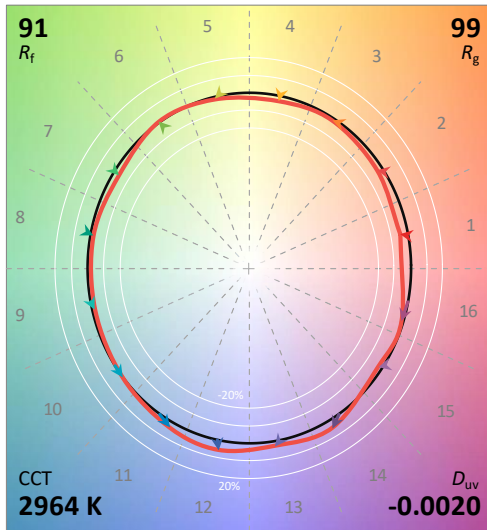
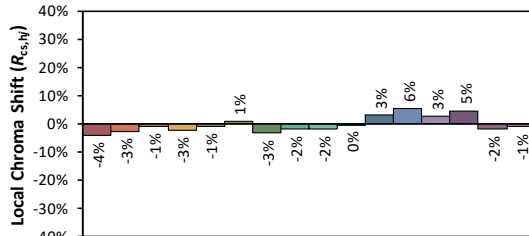
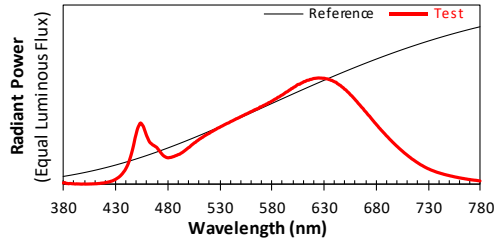
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/1/11

Model: SLBA14730*



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

x 0.4366
 y 0.3991
 u' 0.2526
 v' 0.5194

CIE 13.3-1995
(CRI)

R_a 94

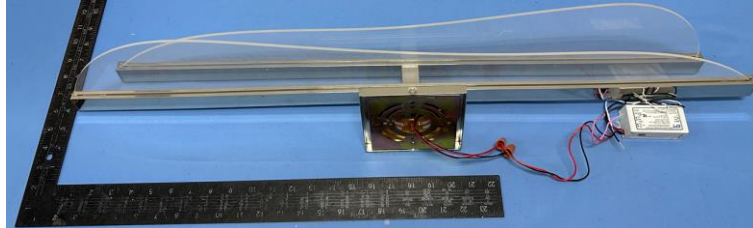
R_g 69

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

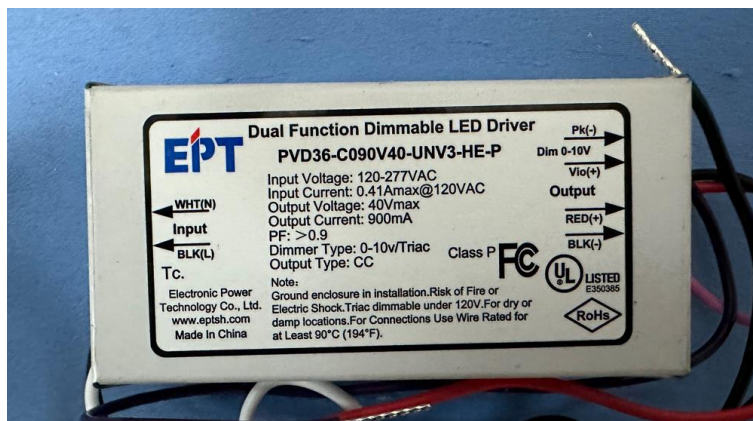
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLBA14730*



View of LED Driver PVD36-C090V40-UNV3-HE-P

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

TEST REPORT

PRODUCT PICTURE (not to scale)



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 *****