

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

221205125GZU-010

ISSUE DATE

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REVISION DATE

None

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13

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Report No.: 221205125GZU-010

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS10027*

(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 KWWS10027*. The sample was received, in undamaged condition. The sample designation was S221205125-010.
<u>DATES OF TESTS:</u>	03 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:	KWWS10027*
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS10027*

Criteria	Result
Total Lumen Output	189.3 lm
Total Power	7.6 W
Luminaire Efficacy	25.1 lm/W
S/MH(C0/180)	9.94
S/MH(C90/270)	3.99
Correlated Color Temperature (CCT)	2626 K
Color Rendering Index (CRI)	90
R9	62
Chromaticity Coordinate (x)	0.4708
Chromaticity Coordinate (y)	0.4202
Chromaticity Coordinate (u')	0.2652
Chromaticity Coordinate (v')	0.5326

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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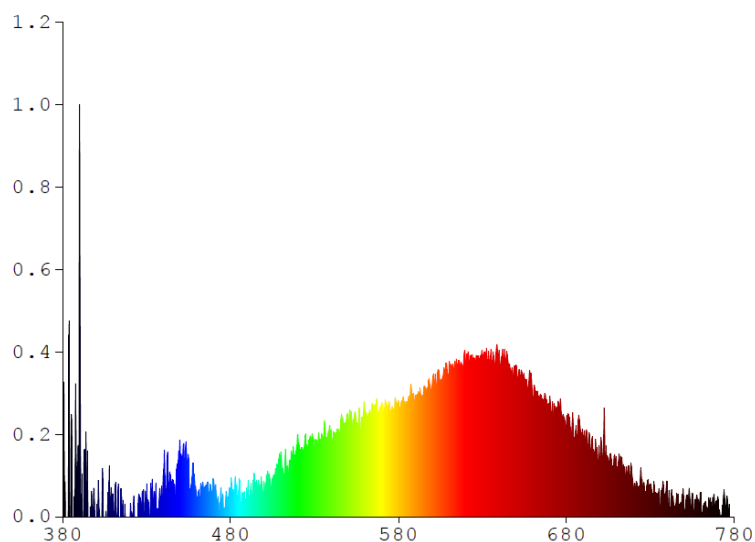
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS10027*

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.0000	580	0.0003	680	0.0002	780	0.0000
385	0.0002	485	0.0001	585	0.0003	685	0.0002		
390	0.0011	490	0.0000	590	0.0003	690	0.0002		
395	0.0000	495	0.0001	595	0.0003	695	0.0002		
400	0.0000	500	0.0001	600	0.0003	700	0.0002		
405	0.0000	505	0.0001	605	0.0004	705	0.0001		
410	0.0000	510	0.0002	610	0.0004	710	0.0001		
415	0.0001	515	0.0001	615	0.0004	715	0.0001		
420	0.0000	520	0.0002	620	0.0004	720	0.0001		
425	0.0000	525	0.0002	625	0.0004	725	0.0001		
430	0.0001	530	0.0002	630	0.0004	730	0.0001		
435	0.0000	535	0.0002	635	0.0004	735	0.0001		
440	0.0001	540	0.0002	640	0.0004	740	0.0001		
445	0.0001	545	0.0002	645	0.0004	745	0.0000		
450	0.0002	550	0.0003	650	0.0004	750	0.0000		
455	0.0001	555	0.0002	655	0.0004	755	0.0001		
460	0.0000	560	0.0003	660	0.0003	760	0.0001		
465	0.0001	565	0.0003	665	0.0003	765	0.0000		
470	0.0001	570	0.0003	670	0.0003	770	0.0000		
475	0.0000	575	0.0003	675	0.0003	775	0.0000		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10027*

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

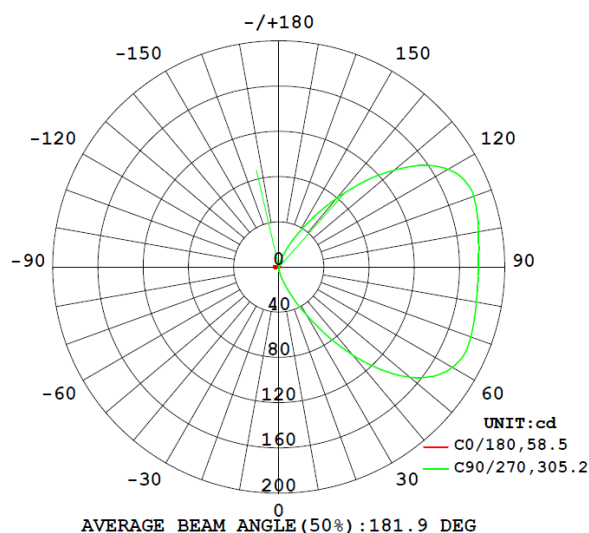
Photometric Measurements at 25°C – Integrating Sphere Method

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')
KWWS10027*								
S2212051 25-010	--	2526	90	62	0.4708	0.4202	0.2652	0.5326

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)
KWWS10027*							
S2212051 25-010	--	120.1	64.0	7.6	0.982	189.3	25.1

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10027*

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	0.1	0.1	0.1	0.1	0.1
5	0.2	0.3	0.5	0.9	1.2
10	0.3	0.5	1.3	2.9	4.4
15	0.4	0.8	2.1	5.6	9.9
20	0.6	1.0	2.9	8.3	18.1
25	0.7	1.1	3.2	10.6	30.6
30	0.7	1.4	3.1	12.6	48.6
35	0.8	1.6	3.7	14.3	73.1
40	0.9	1.8	4.8	16.5	101.3
45	1.0	2.2	5.9	19.9	128.7
50	1.1	2.6	6.9	25.2	151.6
55	1.2	2.8	7.9	31.3	167.9
60	1.2	3.1	9.0	38.2	177.4
65	1.3	3.4	9.9	45.8	181.4
70	1.2	3.7	10.5	53.3	180.8
75	0.8	3.8	10.9	60.1	179.1
80	0.8	4.0	11.2	65.3	177.4
85	0.9	4.1	11.4	68.7	176.6
90	1.0	4.0	11.4	69.4	176.6
95	1.3	4.2	11.2	67.3	177.6
100	1.4	4.2	10.9	62.8	179.3
105	1.5	4.0	10.4	56.5	181.7
110	1.5	3.5	9.9	48.9	183.6
115	1.3	3.1	9.1	40.6	181.5
120	1.0	2.7	8.1	32.5	173.0
125	0.9	2.5	7.1	24.9	156.9
130	0.9	2.2	6.1	19.5	133.8
135	0.8	1.9	5.0	16.5	107.4
140	0.6	1.5	3.8	14.8	79.6
145	0.6	1.2	3.4	13.6	54.8
150	0.4	1.1	3.6	12.0	34.7
155	0.5	0.9	2.9	9.8	20.8
160	0.4	0.9	2.1	6.8	11.4
165	0.3	0.7	1.4	3.6	5.3
170	0.2	0.4	0.6	1.2	1.5
175	0.0	0.0	0.0	0.0	0.1
180	0.0	0.0	0.0	0.0	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10027*

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS10027*		
0-30	2.9	1.5
0-40	8.2	4.3
0-60	33.2	17.5
0-90	97.9	51.7
60-90	64.7	34.2
0-180	189.3	100

Beam Angle

Total Beam Angle (°)

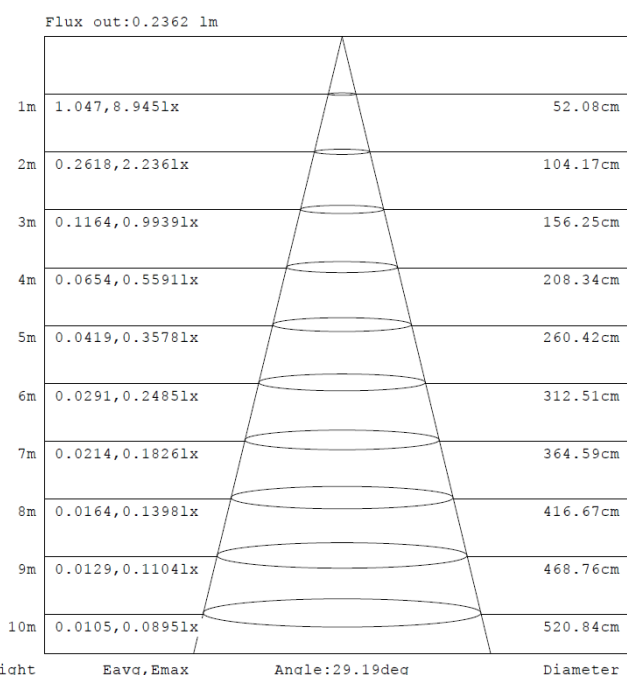
181.9

Illumination Plots

Model No.: KWWS10027*

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

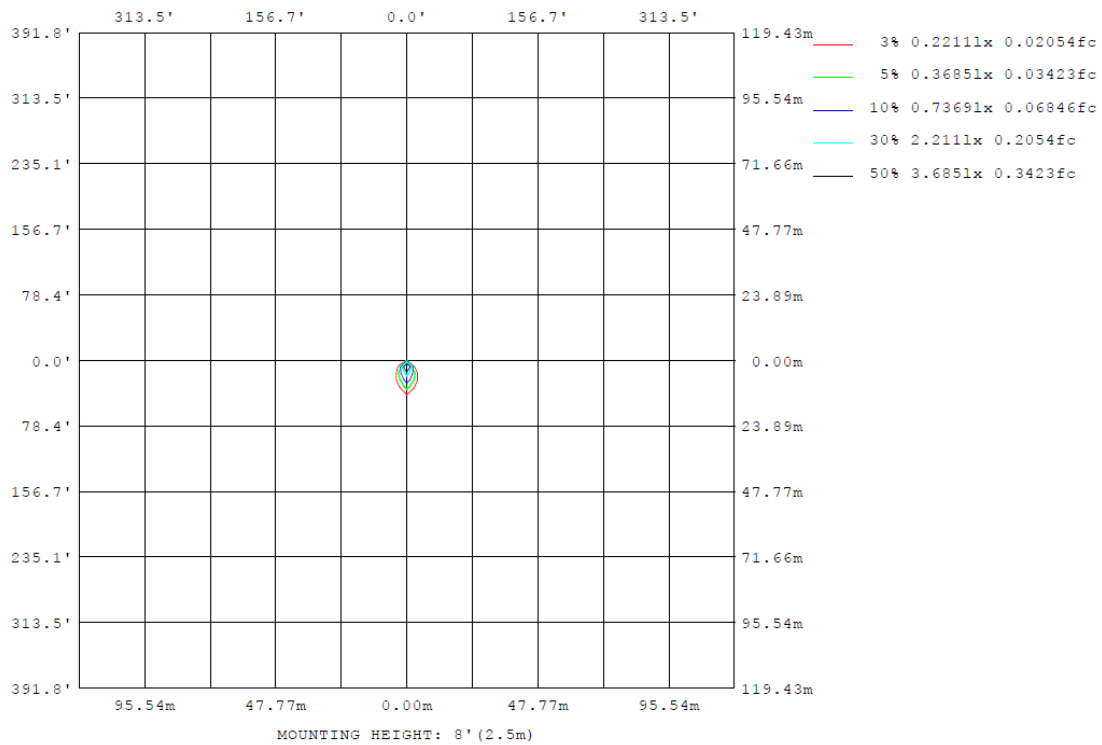
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10027*

Model No.: KWWS10027*

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10027*

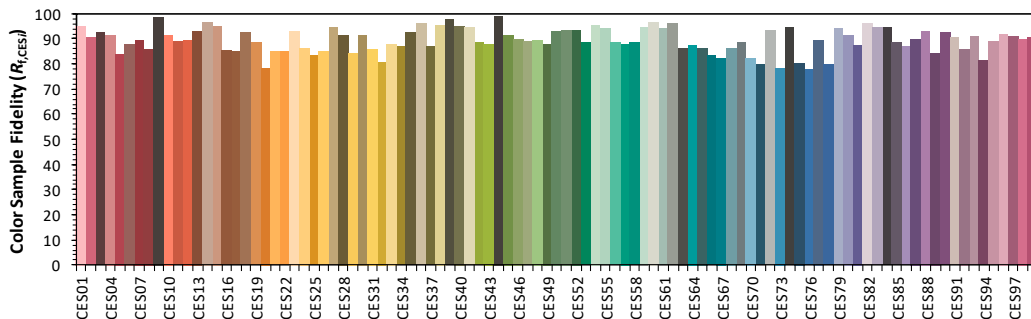
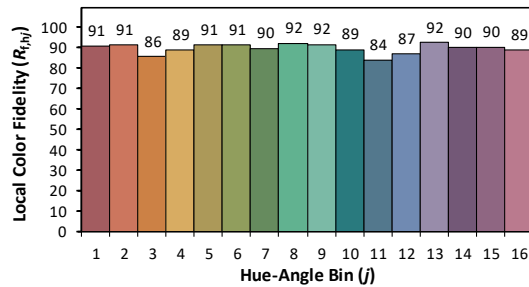
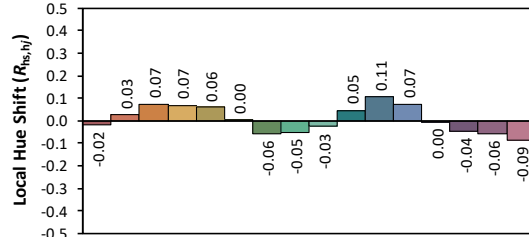
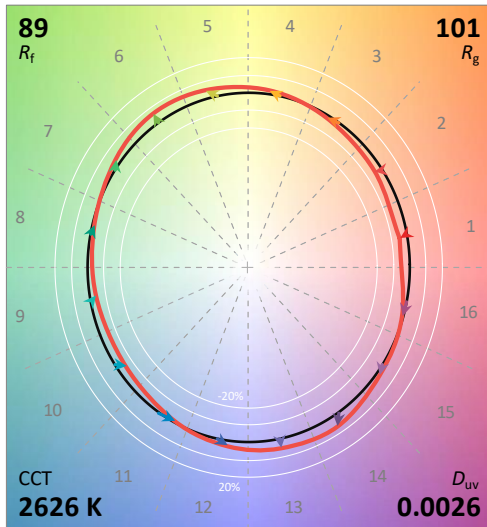
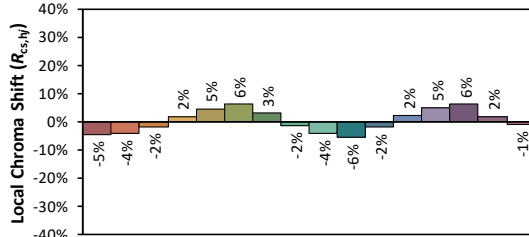
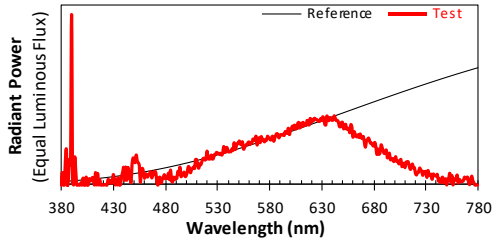
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/1/3

Model: KWWS10027*



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

x 0.4708
 y 0.4202
 u' 0.2652
 v' 0.5326

CIE 13.3-1995
(CRI)

R_a 90

R_g 62

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

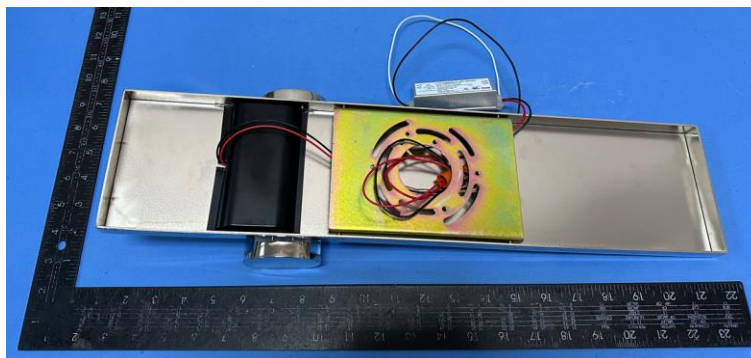
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TEST REPORT

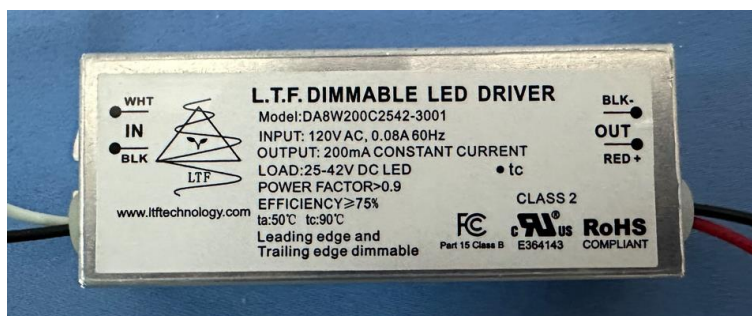
PRODUCT PICTURE (not to scale)



External view of KWWS10027*



External view of KWWS10027*



View of LED Driver DA8W200C2542-3001

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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 *****