



## Verification Services


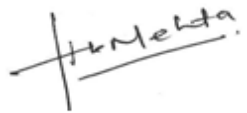
Project No.: 6013-000222-04

Report No.: 6013-000222-04-01

# Test Report

Certificate No.: T-2233

Report Issued Date: 13.02.2013

<b>Customer Company &amp; Address:</b>			
M/s.Eco Lite Technologies, Sec-7-II, IMT Manesar Gurgaon-122050 , Haryana, India			
<b>Contact Person:</b>	Mr. Ram Shankar Singh		
<b>Telephone:</b>	+91 124-4845451	<b>Fax:</b>	N.A.
<b>Manufacturer:</b>	M/s. Eco Lite Technologies		
<b>Country of Origin:</b>	India		
<b>Country of Export:</b>	India		
<b>Product Description:</b>	Led Street Light		
<b>Model Number:</b>	ELT/SL-100/CCW		
<b>Electrical Specification:</b>	Rated Voltage (V)	230	
	Frequency (Hz)	50	
	Rated Power(W)	100	
<b>Test Laboratory &amp; Address:</b>			
UL India Private Limited, Plot No. 413, Sector 8, IMT Manesar, Gurgaon, Haryana 122050, India			
<b>Telephone:</b>	+91 124-4215709	<b>Fax:</b>	N.A.
<b>Condition of samples on receipt:</b>	Good.		
<b>Receipt of Test Samples:</b>	05.02.2013	<b>Test Period:</b>	11.02.2013 to 13.02.2013
<b>Test Personnel Name &amp; Sign:</b>			Hari Om
<b>Approver Name &amp; Sign:</b>			Abhay Mehta
<b>The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.</b>			



## Verification Services

Project No.: 6013-000222-04

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# Test Report

Certificate No.: T-2233

### Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No	Pass/Fail/NA
1	Electrical and Photometric measurements as per LM-79-08.	6013-000222-04-01	SLT1001301001	Evaluate by customer
2	Colorimetric measurements as per LM-79-08.			Evaluate by customer

### Deviation from Test Method (if any)

N.A.

### Remark (if any)

N.A.



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Project No.: 6013-000222-04

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# Test Report

Certificate No.: T-2233

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### Test No.1 Electrical and Photometric measurements as per LM-79-08 using Goniophotometer.

#### Environmental conditions:

Temperature (°C)	24.9
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#### Test equipment:

Sr. No.	Equipment ID	Equipment name	Last calibration date	Next calibration date
1	GON01	Goniophotometer	Before use	Before use
2	SL04	Measured standard lamp	02.08.2012	02.08.2013
3	PM03	Digital Power Meter	03.10.2012	02.10.2013

#### Test sample:

6013-000222-04-01
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#### Test method

- The sample was tested according to the IES LM-79-2008.
- The condition of the sample tested was new. Stabilization time before testing was 120 minutes.
- Orientation (burning position) of SSL product during testing was its normal burning position i.e. at zero degree inclination to horizontal.
- Electrical measurements were obtained with a Yokogawa WT210 digital power meter.
- Photometric parameters were obtained using a Type-C Goniophotometer and software. Photometric distance was 8.7 meters.
- The ambient temperature was maintained at  $(25 \pm 1)^\circ\text{C}$  during testing.
- The sample was operated at 230 Volts AC. It was stabilized before measurement. Luminous flux, luminaries efficacy, zonal lumen were calculated from the software taken at  $5.0^\circ$  vertical intervals and  $22.5^\circ$  horizontal intervals.



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Report No.: 6013-000222-04-01

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# Test Report

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### Test Results

Input				
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
230.040	50	0.449	102.270	0.991

Output	
Flux (lm)	Efficacy (lm/W)
8154.82	79.74



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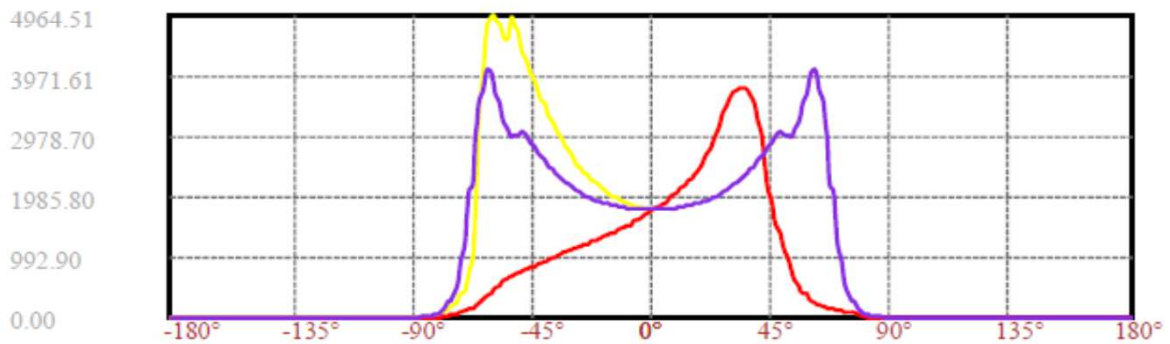
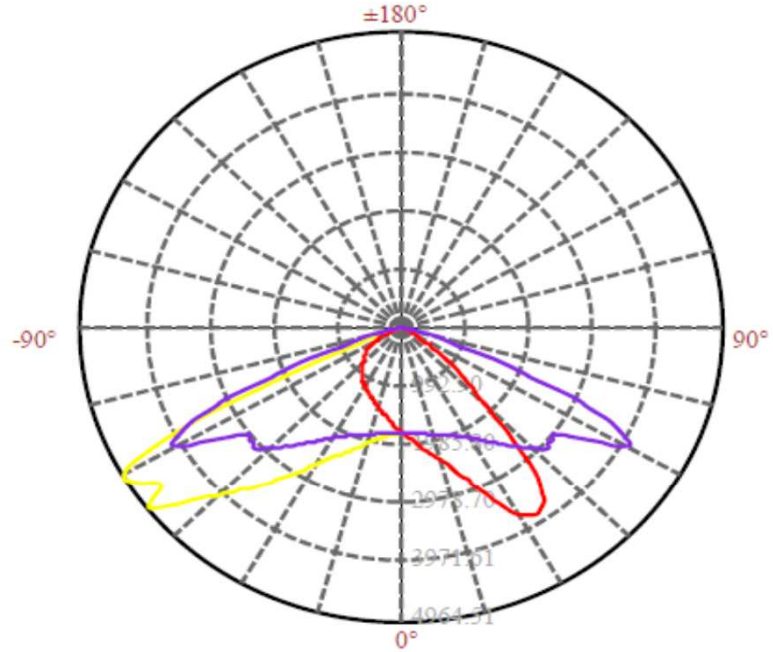
Report No.: 6013-000222-04-01

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## Light Distribution Curve:[Unit : cd]



C292.5(Max): —  
 C0/C180: —  
 C90/C270: —



# Verification Services

Project No.: 6013-000222-04

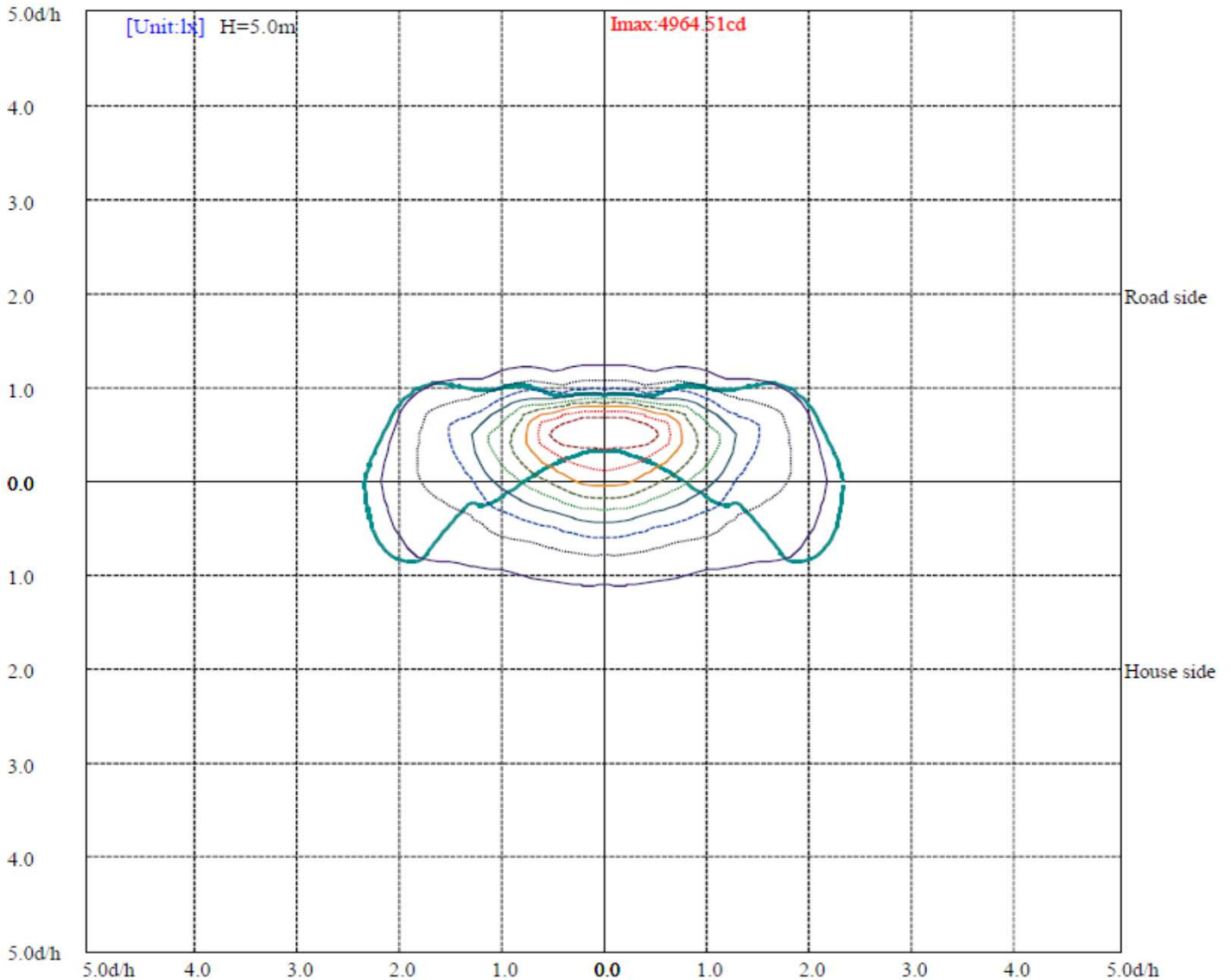
Report No.: 6013-000222-04-01

## Test Report

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### Isolux Plot :



(10%Emax) 9.50404	———
(20%Emax) 19.00808	.....
(30%Emax) 28.51208	- - - - -
(40%Emax) 38.01612	———
(50%Emax) 47.52	———
(60%Emax) 57.024	———
(70%Emax) 66.5284	———
(80%Emax) 76.0324	.....
(90%Emax) 85.5364	.....



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Report No.: 6013-000222-04-01

# Test Report

Certificate No.: T-2233

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### Zonal Lumen Tabulation:

Zonal Lumen Summary			
Zone	Lumens	%Lamp	%Fixt
0-30	1668.2	N.A.	20.5%
0-40	3219.4	N.A.	39.5%
0-60	6779.8	N.A.	83.1%
0-90	8151.2	N.A.	100.0%
90-120	1.2	N.A.	0.0%
90-130	1.8	N.A.	0.0%
90-150	3.0	N.A.	0.0%
90-180	3.6	N.A.	0.0%
0-180	8154.8	N.A.	100.0%

ZONAL LUMEN SUMMARY	
0-10	168.8
10-20	525.3
20-30	974.1
30-40	1551.3
40-50	1830.8
50-60	1729.6
60-70	1177.1
70-80	178.4
80-90	15.8
90-100	0.3
100-110	0.4
110-120	0.5
120-130	0.6
130-140	0.7
140-150	0.5
150-160	0.4
160-170	0.2
170-180	0.1



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Report No.: 6013-000222-04-01

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### Intensity data(cd):

$\gamma/C(^{\circ})$	0	22.5	45	67.5	90	112.5	135	157.5
0	1748.44	1752.98	1758.28	1767.74	1780.61	1767.74	1758.28	1752.98
5	1884.68	1879.76	1853.65	1817.32	1774.93	1714.76	1657.99	1625.44
10	2079.20	2049.31	1978.91	1888.09	1804.83	1697.73	1587.98	1508.24
15	2291.14	2248.75	2151.49	2011.84	1858.19	1682.21	1518.91	1409.27
20	2608.28	2554.54	2420.19	2184.03	1910.42	1662.15	1452.83	1322.19
25	3118.43	3025.71	2771.77	2385.75	2009.57	1659.12	1387.51	1237.57
30	3649.77	3702.38	3343.61	2674.51	2146.95	1676.53	1325.14	1163.85
35	3754.22	3991.89	4013.08	3055.98	2337.69	1734.81	1265.57	1084.71
40	3224.39	3714.86	4444.90	3499.91	2596.92	1809.37	1218.50	995.93
45	1875.60	2276.76	4407.05	4005.51	2867.89	1906.25	1162.18	916.61
50	1104.32	1183.03	3824.99	4678.78	2982.94	2043.25	1111.02	815.33
55	523.02	563.51	2359.26	4602.33	3206.99	1964.16	1079.53	709.10
60	265.60	285.92	746.68	4930.82	3998.32	2359.64	917.06	513.86
65	173.78	192.06	280.92	2448.57	3221.37	2489.82	642.31	303.63
70	127.54	137.42	151.57	433.33	1217.10	1468.80	150.40	126.13
75	80.69	90.26	91.17	169.77	272.59	165.27	83.20	61.98
80	19.04	44.47	43.52	55.03	73.51	48.03	26.70	18.07
85	5.27	7.50	11.36	20.81	26.83	15.99	7.94	4.37
90	0.17	0.53	1.19	2.81	4.05	0.39	0.34	0.26
95	0.03	0.04	0.08	0.16	0.47	0.45	0.14	0.10
100	0.05	0.06	0.10	0.28	0.61	0.72	0.18	0.11
105	0.08	0.10	0.17	0.45	0.76	0.83	0.30	0.12
110	0.11	0.14	0.24	0.53	0.86	1.01	0.48	0.17
115	0.16	0.19	0.29	0.53	0.86	1.09	0.66	0.27
120	0.20	0.23	0.34	0.61	0.90	1.09	0.76	0.42
125	0.24	0.27	0.39	0.74	1.02	1.25	0.93	0.67
130	0.29	0.31	0.44	0.76	1.10	1.39	1.14	0.88
135	0.32	0.34	0.45	0.70	1.04	1.39	1.26	1.01
140	0.34	0.36	0.44	0.62	0.95	1.33	1.31	1.13
145	0.36	0.37	0.42	0.56	0.87	1.22	1.28	1.20
150	0.38	0.38	0.41	0.51	0.79	1.11	1.20	1.20
155	0.39	0.40	0.41	0.47	0.74	1.03	1.12	1.15
160	0.42	0.41	0.42	0.45	0.73	1.01	1.07	1.08
165	0.45	0.45	0.45	0.49	0.77	1.00	1.02	1.00
170	0.50	0.51	0.54	0.59	0.82	0.99	0.98	0.94
175	0.58	0.60	0.65	0.73	0.89	0.96	0.90	0.84
180	0.67	0.71	0.78	0.86	0.91	0.86	0.78	0.71





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Project No.: 6013-000222-04

Report No.: 6013-000222-04-01

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Certificate No.: T-2233

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### Intensity data(cd):

$\gamma/C(^{\circ})$	180	202.5	225	247.5	270	292.5	315	337.5
0	1748.44	1752.98	1758.28	1767.74	1780.61	1767.74	1758.28	1752.98
5	1617.50	1625.44	1657.99	1714.76	1774.93	1817.32	1853.65	1879.76
10	1489.35	1508.24	1587.98	1697.73	1804.83	1888.09	1978.91	2049.31
15	1376.88	1409.27	1518.91	1682.21	1858.19	2011.84	2151.49	2248.75
20	1284.08	1322.19	1452.83	1662.15	1910.42	2184.03	2420.19	2554.54
25	1198.02	1237.57	1387.51	1659.12	2009.57	2385.75	2771.77	3025.71
30	1119.00	1163.85	1325.14	1676.53	2146.95	2674.51	3343.61	3702.38
35	1025.90	1084.71	1265.57	1734.81	2337.69	3055.98	4013.08	3991.89
40	916.98	995.93	1218.50	1809.37	2596.92	3499.91	4444.90	3714.86
45	826.61	916.61	1162.18	1906.25	2867.89	4005.51	4407.05	2276.76
50	732.22	815.33	1111.02	2043.25	2982.94	4678.78	3824.99	1183.03
55	622.10	709.10	1079.53	1964.16	3206.99	4602.33	2359.26	563.51
60	414.02	513.86	917.06	2359.64	3998.32	4930.82	746.68	285.92
65	218.29	303.63	642.31	2489.82	3221.37	2448.57	280.92	192.06
70	113.84	126.13	150.40	1468.80	1217.10	433.33	151.57	137.42
75	48.15	61.98	83.20	165.27	272.59	169.77	91.17	90.26
80	10.45	18.07	26.70	48.03	73.51	55.03	43.52	44.47
85	3.19	4.37	7.94	15.99	26.83	20.81	11.36	7.50
90	0.10	0.26	0.34	0.39	4.05	2.81	1.19	0.53
95	0.09	0.10	0.14	0.45	0.47	0.16	0.08	0.04
100	0.09	0.11	0.18	0.72	0.61	0.28	0.10	0.06
105	0.11	0.12	0.30	0.83	0.76	0.45	0.17	0.10
110	0.14	0.17	0.48	1.01	0.86	0.53	0.24	0.14
115	0.21	0.27	0.66	1.09	0.86	0.53	0.29	0.19
120	0.33	0.42	0.76	1.09	0.90	0.61	0.34	0.23
125	0.56	0.67	0.93	1.25	1.02	0.74	0.39	0.27
130	0.79	0.88	1.14	1.39	1.10	0.76	0.44	0.31
135	0.94	1.01	1.26	1.39	1.04	0.70	0.45	0.34
140	1.09	1.13	1.31	1.33	0.95	0.62	0.44	0.36
145	1.17	1.20	1.28	1.22	0.87	0.56	0.42	0.37
150	1.20	1.20	1.20	1.11	0.79	0.51	0.41	0.38
155	1.15	1.15	1.12	1.03	0.74	0.47	0.41	0.40
160	1.10	1.08	1.07	1.01	0.73	0.45	0.42	0.41
165	0.99	1.00	1.02	1.00	0.77	0.49	0.45	0.45
170	0.91	0.94	0.98	0.99	0.82	0.59	0.54	0.51
175	0.80	0.84	0.90	0.96	0.89	0.73	0.65	0.60
180	0.67	0.71	0.78	0.86	0.91	0.86	0.78	0.71



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Report No.: 6013-000222-04-01

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**Test No.2 Colorimetric measurements as per LM-79-08 using Thermostatic integrating sphere.**

### Environmental conditions:

Temperature (°C)	24.7
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### Test equipment:

Sr. No.	Equipment ID	Equipment name	Last calibration date	Next calibration date
1	TIS 02	Integrating Sphere	Before use	Before use
2	WSL08	Measured standard lamp	30.07.2012	29.07.2013

### Test sample:

6013-000222-04-01
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### Test method:

- The sample was tested according to the IES LM-79-2008.
- Orientation (burning position) of SSL product during testing was its normal burning position i.e. at zero degree inclination to horizontal.
- Colorimetric parameters were measured using an integrating sphere, a spectroradiometer and software.  $4\pi$  geometry was used.
- The ambient temperature condition inside the sphere was maintained at  $(25 \pm 1)^\circ \text{C}$ .
- The sample measurements were made using a spectroradiometer connected by a fibre optic cable and detector through the detector port of the integrating sphere. The sample was operated at 230 Volts AC. It was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 350 to 800nm.



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Project No.: 6013-000222-04

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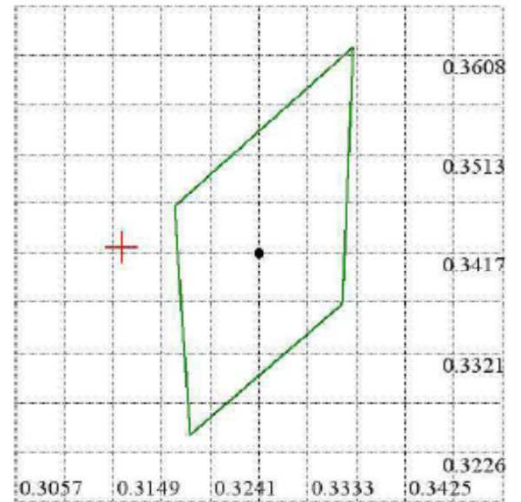
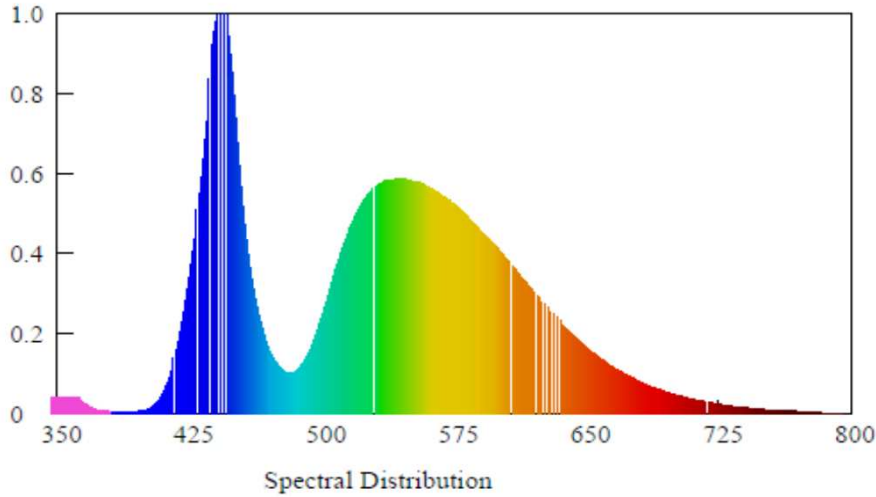
Report Issued Date: 13.02.2013

# Test Report

Certificate No.: T-2233

### Test results:

#### Spectroradiometric Parameters



Nominal CCT: LED\_5700K  
 $x_0=0.3157$   $y_0=0.3423$

#### Spectral Distribution

Chromaticity Coordinates:  $x=0.3157$   $y=0.3423$   $u'=0.195$   $v'=0.4757$

Correlated Color Temperature: 6266 K

Dominant Wavelength: 498.0 nm ( E )

Purity: 0.0556

Chromaticity Difference: +0.0084Duv

Peak Wavelength: 445.0 nm

Color Ratio:  $K_r=27.8\%$   $K_g=63.0\%$   $K_b=9.2\%$

Bandwidth: 24.1nm

Radiant Flux: 18.081 W

Rendering Index:  $R_a=67.3$

$R_1=65$   $R_2=70$   $R_3=73$   $R_4=69$   $R_5=67$   $R_6=61$   $R_7=77$   $R_8=57$

$R_9=-42$   $R_{10}=29$   $R_{11}=67$   $R_{12}=39$   $R_{13}=65$   $R_{14}=85$   $R_{15}=59$



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### Photos of sample:

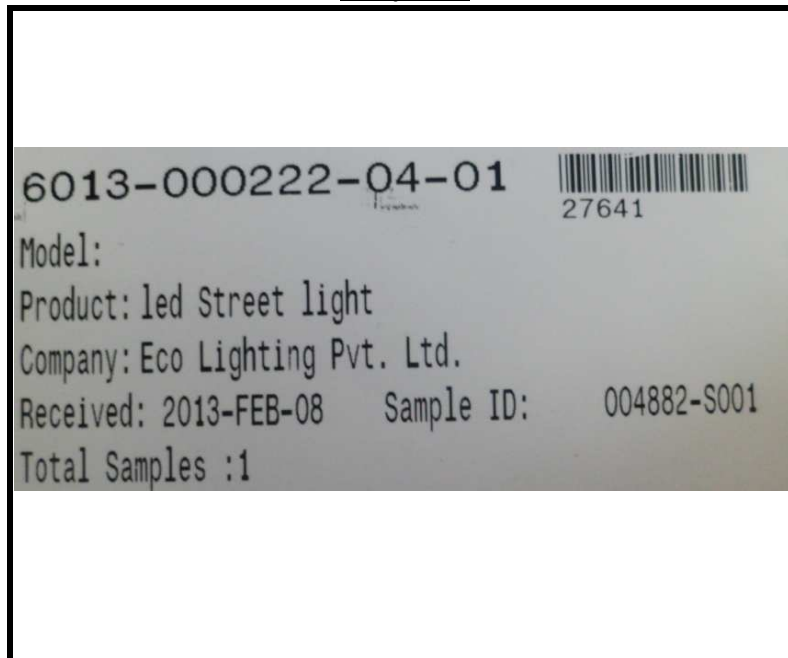
Front View



Rear View



### Sample ID:



-----**END OF TEST REPORT**-----