

Test Report

M/S.EFFTRONICS SYSTEMS PVT LTD

REPORT NUMBER: 4786812850 -01-NABL-S2

PROJECT NUMBER: 4786812850 -01



T1431, T1432, T2215,
T2216, T2233, T2234

Location (a)

UL India Lab,
UL India Pvt Limited,
Laboratory building,
Kalyani Platina
Campus, Sy.no.129/4,
EPIP Zone, Phase II,
Whitefield,
Bangalore - 560 066
P:91-80-41384400

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Location (b)

UL India Pvt Limited,
413 Sector-8, IMT
Manesar, Gurgaon.
P:91-124-4215707

TEST DISCIPLINE: PHOTOMETRY**General details**

Customer / Applicant	M/s. EFFTRONICS SYSTEMS PVT LTD 40-15-9, BRUNDAVAN COLONY, VIJAYAWADA-520010, ANDHRA PRADESH, INDIA		
Manufacturer	M/s. EFFTRONICS SYSTEMS PVT LTD.		
Program	NABL		
Test Lab Location	(b) UL Manesar	Refer to Cover page for the UL address	
Item Under Test	1'X1' Troffer		
Model	ITF11AC025DW		
Number of Samples	1		
UL Sample Identification	2069358	Refer Summary of Test results for multiple samples	
Manufacturer Serial Number (if any)	ITF11DC025DW15100044(Lamp) ITF11AC025DW15100044(Driver)		
Condition of IUT on receipt	Good		
Date of Receipt	5 March 2015		
Applicable Standard	IES LM 79-08		
Date of Testing (Start date)	8 March 2015	End Date	8 March 2015
UL general^ ambient condition	Temperature in °C		23 ± 5°C
	Relative humidity in %		< 70%
Date of Reporting	20 March 2015		
Test In-charge	Arun Kumar		

Fill in the rows with information or add hyphen (-)

 Hari Om Engineer Reviewed by		 Gautam Brahmhatt Technical Manager Authorized signatory	
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General Remarks (If any)

Description of Item under Test (IUT)

Sample Catalogue No. ITF11AC025DW

Rated voltage: 230V AC, Frequency: 50Hz, Rated Input Power Factor: 0.95, Rated Input Current: 0.134A
 Rated Input Power: 30W

LED Specification:
 LED Make/Model: NICHIA / NFSW757DT-V1, No. of LEDs: 144

LED Driver Specification :
 Driver Make/Model: Effe / ITF11AC025DW, No of Drivers: 01

Summary of Test Results

Test No.	Test Parameter	Standard & Clause Number	UL Sample Identification	Result
1	Electrical and Photometric measurements	IES LM 79-08, Clause number 8, 9, 10 and 11	2069358	Evaluate by customer
2	Colorimetric measurements	IES LM 79-08, Clause number 12		Evaluate by customer

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Test No.01 Electrical and Photometric measurements**Master Equipment and Calibration details**


Serial No.	Test Equipment	UL Equipment ID	Calibration status (Valid up to)
1	Goniophotometer	GON01	Before use
2	Digital Power Meter	PM03	24.08.2015

Test methodology adopted

- The sample was tested according to the IES LM-79-2008.
- The condition of the sample tested was new. Stabilization time before testing was 60 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 more than five times of the largest dimension of the test sample.
- 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, luminous efficacy, zonal lumen were calculated from the software.

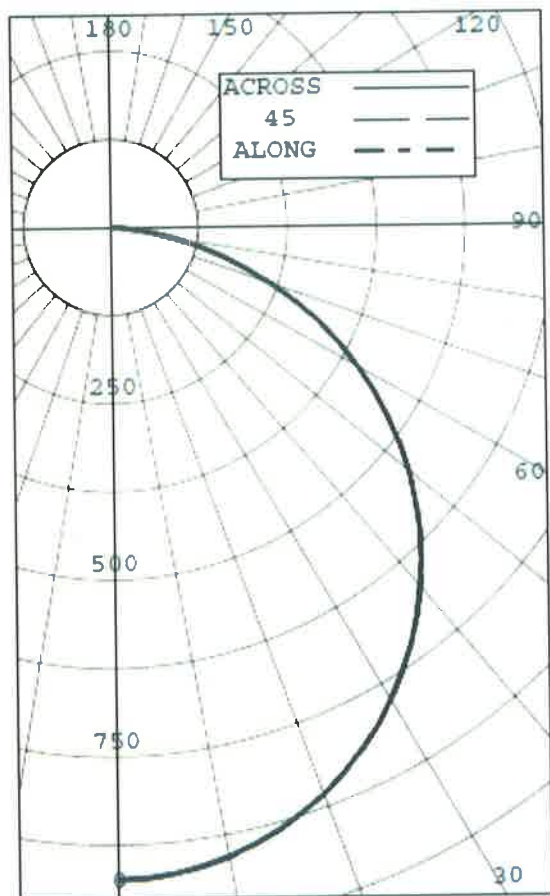
Test Observation

INPUT PARAMETER				
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
230.03	50.00	0.124	27.35	0.96
OUTPUT PARAMETER				
Flux (lm)	Efficacy (lm/W)			
2592.0	94.6			

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Light Distribution curve: [Unit: cd]



INTENSITY (CANDLEPOWER) SUMMARY						OUTPUT LUMENS
ANGLE	ALONG	22.5	45	67.5	ACROSS	
0	924	924	924	924	924	
5	920	920	921	920	920	89
15	885	886	886	885	885	249
25	820	820	820	818	818	377
35	725	725	726	726	726	453
45	609	609	609	609	608	469
55	474	475	474	473	472	422
65	322	322	322	321	324	318
75	167	165	164	164	165	173
85	32	32	31	32	31	41
90	4	4	4	4	4	
95	0	0	0	0	0	1
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	715	27.59
0-40	1168	45.07
0-60	2059	79.44
0-90	2591	99.98
40-90	1423	54.91
60-90	532	20.54
90-180	1	0.02
0-180	2592	100.00

EFFICACY (LUMENS PER WATT): 94.6

*** THIS IS AN ABSOLUTE TEST ***

LUMINANCE SUMMARY CD./SQ.M.

ANGLE	ALONG	45	ACROSS
45	12746	12793	12776
55	12220	12284	12225
65	11268	11304	11384
75	9554	9405	9444
85	5424	5353	5266

S/MH: 1.2
SC: 1.2

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Intensity Data:

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
0	924	924	924	924	924	924	
5	920	920	921	920	920	920	89
10	907	907	908	907	906	907	
15	885	886	886	885	885	886	249
20	856	856	857	856	856	856	
25	820	820	820	818	818	819	377
30	776	776	777	775	775	776	
35	725	725	726	726	726	726	453
40	670	671	671	669	668	670	
45	609	609	609	609	608	609	469
50	543	543	544	543	543	543	
55	474	475	474	473	472	474	422
60	400	400	400	400	399	400	
65	322	322	322	321	324	322	318
70	244	244	244	244	242	244	
75	167	165	164	164	165	165	173
80	90	89	89	89	91	89	
85	32	32	31	32	31	32	41
90	4	4	4	4	4	4	
95	0	0	0	0	0	0	1
100	0	0	0	0	0	0	
105	0	0	0	0	0	0	0
110	0	0	0	0	0	0	
115	0	0	0	0	0	0	0
120	0	0	0	0	0	0	
125	0	0	0	0	0	0	0
130	0	0	0	0	0	0	
135	0	0	0	0	0	0	0
140	0	0	0	0	0	0	
145	0	0	0	0	0	0	0
150	0	0	0	0	0	0	
155	0	0	0	0	0	0	0
160	0	0	0	0	0	0	
165	0	0	0	0	0	0	0
170	0	0	0	0	0	0	
175	0	0	0	0	0	0	0
180	0	0	0	0	0	0	

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Coefficient of Utilization:

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																									
0	1.221	2.221	2.221	2.22	1.191	1.191	1.191	1.19	1.161	1.161	1.161	1.16	1.111	1.111	1.11	1.061	1.061	1.06	1.021	1.021	1.02	1.00			
1	1.121	1.071	1.030	0.99	1.101	1.051	1.010	0.98	1.071	1.030	0.990	0.96	0.990	0.960	0.93	0.950	0.920	0.90	0.910	0.890	0.88	0.86			
2	1.030	0.950	0.890	0.82	1.010	0.930	0.870	0.81	0.980	0.910	0.850	0.81	0.880	0.830	0.79	0.850	0.810	0.77	0.820	0.780	0.75	0.73			
3	0.940	0.840	0.760	0.69	0.920	0.820	0.750	0.69	0.900	0.810	0.740	0.68	0.780	0.720	0.67	0.750	0.700	0.66	0.730	0.680	0.65	0.63			
4	0.870	0.750	0.660	0.60	0.850	0.740	0.660	0.59	0.830	0.720	0.650	0.59	0.700	0.630	0.58	0.680	0.620	0.57	0.660	0.610	0.57	0.54			
5	0.800	0.670	0.580	0.51	0.780	0.660	0.570	0.51	0.760	0.650	0.570	0.51	0.630	0.560	0.50	0.610	0.540	0.50	0.590	0.540	0.49	0.47			
6	0.740	0.600	0.510	0.45	0.720	0.590	0.500	0.44	0.700	0.580	0.500	0.44	0.560	0.490	0.44	0.550	0.480	0.43	0.530	0.470	0.43	0.41			
7	0.680	0.540	0.450	0.39	0.660	0.530	0.440	0.39	0.650	0.520	0.440	0.38	0.510	0.430	0.38	0.490	0.420	0.37	0.480	0.420	0.37	0.35			
8	0.630	0.490	0.400	0.34	0.610	0.480	0.400	0.34	0.600	0.470	0.390	0.34	0.460	0.390	0.34	0.450	0.380	0.33	0.430	0.380	0.33	0.31			
9	0.580	0.440	0.360	0.30	0.570	0.440	0.350	0.30	0.550	0.430	0.350	0.30	0.420	0.350	0.30	0.410	0.340	0.29	0.400	0.340	0.29	0.27			
10	0.540	0.400	0.320	0.27	0.530	0.400	0.320	0.26	0.520	0.390	0.320	0.26	0.380	0.310	0.26	0.370	0.310	0.26	0.360	0.300	0.26	0.24			

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN. LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LUMINAIRE INPUT WATTS 27.4

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE. BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST LUMINOUS OPENING OF LUMINAIRE.

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Test No.02 Colorimetric Measurements

Master Equipment and Calibration details

Serial No.	Test Equipment	UL Equipment ID	Calibration status (Valid up to)
1	Integrating Sphere	TIS 02	Before use
2	Measured standard lamp	WSL 09	14.04.2015

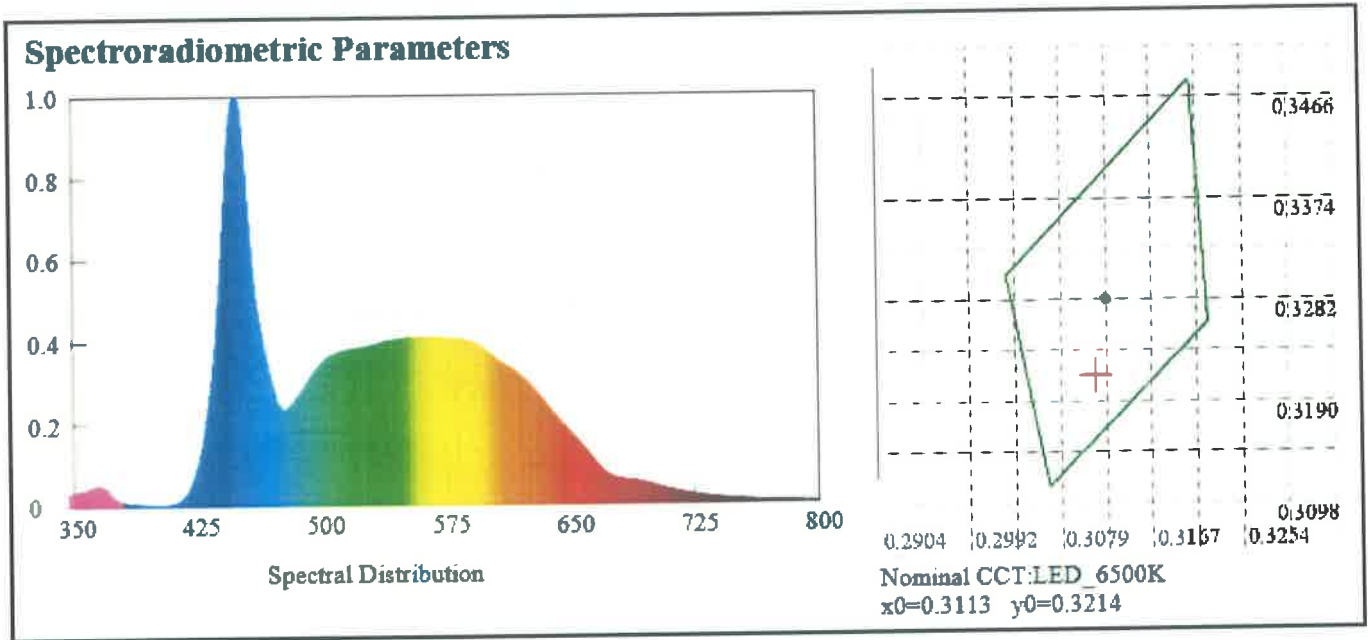
Test methodology adopted

- 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. 4π geometry was used.
- The ambient temperature was maintained at $(25 \pm 1)^\circ \text{C}$ during testing.
- The sample measurements were made using a spectroradiometer connected by a fiber 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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Test Observation



Spectral Distribution

Chromaticity Coordinates: $x=0.3113$ $y=0.3214$ $u'=0.1997$ $v'=0.464$

Correlated Color Temperature: 6650 K

Dominant Wavelength: 484.0 nm(E)

Purity: 0.0836

Chromaticity Difference: -0.00001Duv

Peak Wavelength: 451.1 nm Color

Ratio: Kr=31.0% Kg=55.1% Kb=13.9%

Bandwidth: 20.5nm

Radiant Flux: 7.692 W

Rendering Index: Ra=87.2

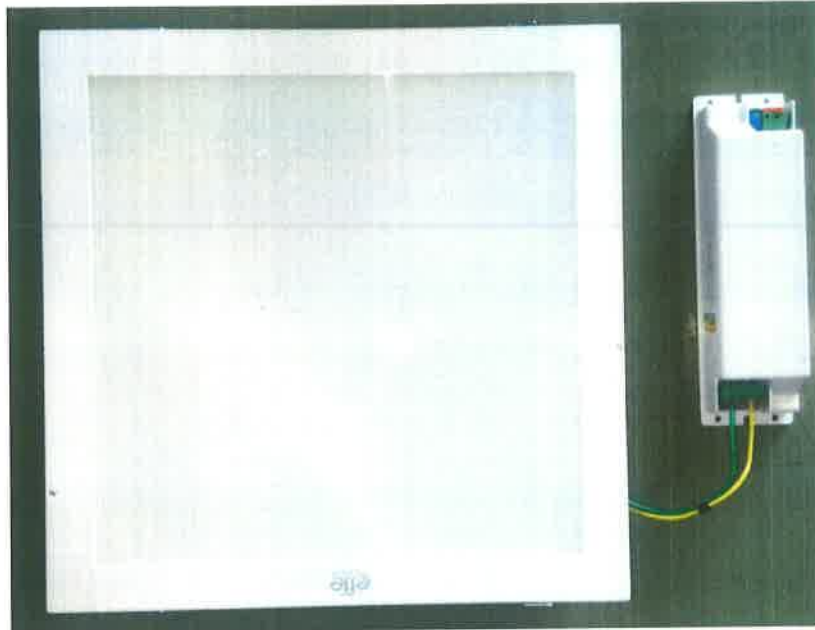
R1=87 R2=92 R3=93 R4=88 R5=87 R6=86 R7=90 R8=76

R9=28 R10=79 R11=88 R12=63 R13=89 R14=96 R15=84

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**Appendix
Photographs**



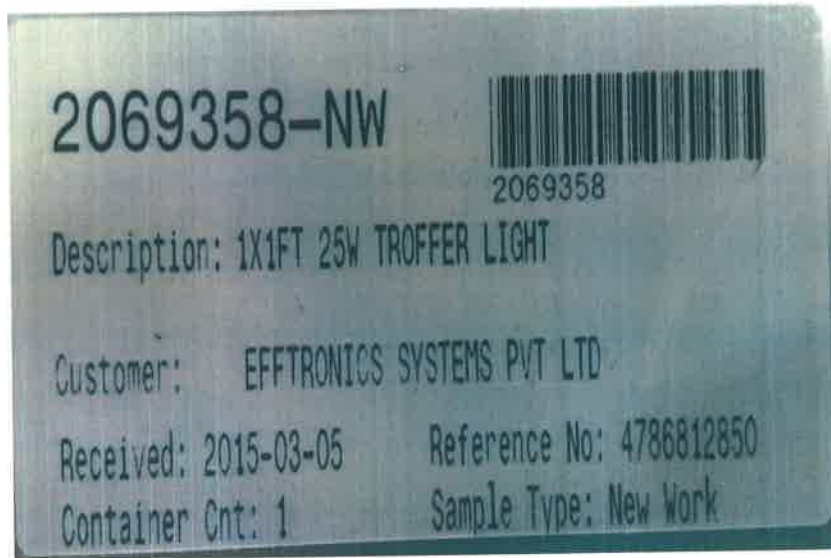
Front View



Rear View

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Sample ID

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