

Test Report

M/s. DIGIFLIC CONTROLS (INDIA) PVT LIMITED

REPORT NUMBER: 4787172447-01-NABL-S1

PROJECT NUMBER: 4787172447-01



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

.....
Location (b)

UL India Pvt Limited,

413 Sector-8, IMT




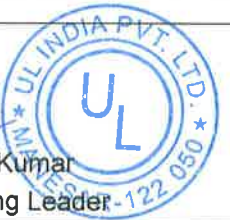
Manesar, Gurgaon.

P:91-124-4215707

TEST DISCIPLINE: PHOTOMETRY**General details**

Customer / Applicant	M/S DIGIFLIC CONTROLS (INDIA) PVT LTD , H.O : # 893 , 2 ND FLOOR , MES RING ROAD , MUTHYALANAGAR , JALAHALLI , BANGALORE - 560054		
Manufacturer	DIGIFLIC CONTROLS (INDIA) PVT LTD		
Program	NABL		
Test Lab Location	(b) UL Manesar	Refer to Cover page for the UL address	
Item Under Test	DC LED BULB 3W		
Model	--		
Number of Samples	1		
UL Sample Identification	2256259	Refer Summary of Test results for multiple samples	
Manufacturer Serial Number (if any)	--		
Condition of IUT on receipt	Good		
Date of Receipt	25 November 2015		
Applicable Standard	IES LM 79-08		
Date of Testing (Start date)	26 November 2015	End Date	26 November 2015
UL general^ ambient condition	Temperature in °C		23 ± 5°C
	Relative humidity in %		< 70%
Date of Reporting	26 November 2015		
Test In-charge	Navin Kumar Maurya		

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

  Satish Kumar Engineering Leader	  Satish Kumar Engineering Leader
Reviewed by	Authorized signatory

Disclaimer

The issuance of this report in no way implies Listing, Classification or Recognition by UL and does not authorize the use of UL Listing, Classification or Recognition Marks or any other reference to UL on the product or system. UL authorizes the above named company to reproduce this Report provided it is reproduced in its entirety. UL's name or marks cannot be used in any packaging, advertising, promotion or marketing relating to the data in this Report, without UL's prior written permission. The results of testing in this report apply only to the sample product/item, which was tested. UL Lab has not participated in the sample selection. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties. ^The applicable standard ambient condition supersedes the lab general ambient conditions and are recorded in datasheets available in the lab.

General Remarks (If any)

Description of Item under Test (IUT)

Rated voltage: 12V DC, Rated Input Power: <3W

LED Specification:

LED Make / Model: LG / LGIT5630 (LEMWS59R80), No of LEDs: 06

LED Driver Specification :

Driver Make / Model: Digific Controls / DEGD 3 , 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	2256259	Evaluate by customer
2	Colorimetric measurements	IES LM 79-08, Clause number 12		Evaluate by customer



Reviewed by signature:

12-LO-F0851, Issue 3.0

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

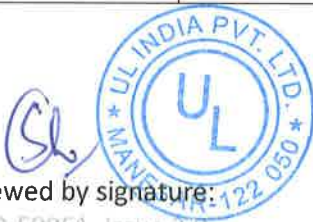
Serial No.	Test Equipment	UL Equipment ID	Calibration status (Valid up to)
1	Goniophotometer	GON01	Before use
2	Digital Power Meter	PM03	23.07.2016

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 12V DC. It was stabilized before measurement. Luminous flux, luminous efficacy, zonal lumen were calculated from the software.

Test Observation

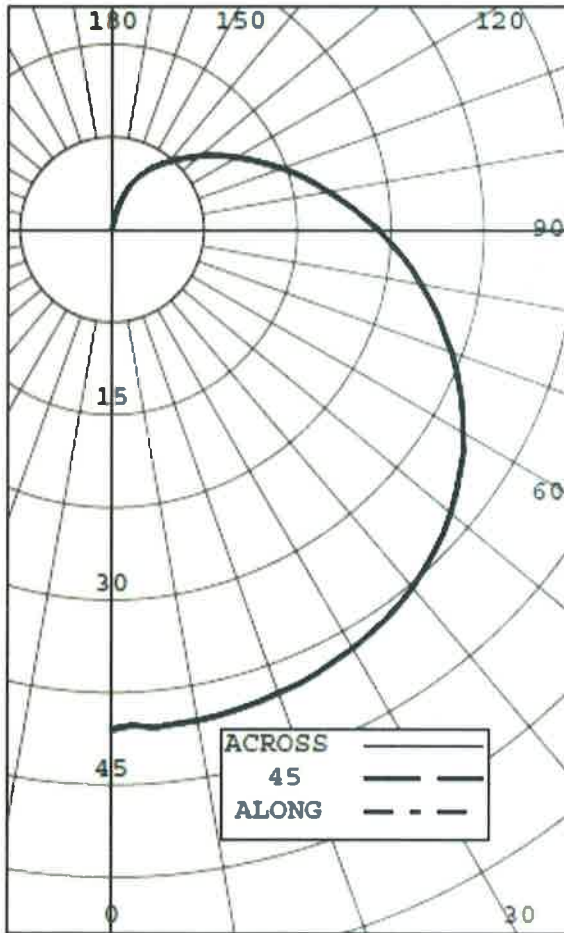
INPUT PARAMETER			
Voltage (V)	Current (A)	Power (W)	
12.02	0.2289	2.77	
OUTPUT PARAMETER			
Flux (lm)	Efficacy (lm/W)	Beam Angle (°)	Center Beam Intensity(cd)
276.0	98.5	189.71	41.0



Reviewed by signature:

12-LO-F0851, Issue 3.0

Light Distribution curve: [Unit: cd]



ANGLE	MEAN CP	LMS.	ANGLE	MEAN CP	LMS.
0	41		90	22	
5	41	4	95	20	21
10	40		100	18	
15	40	11	105	16	17
20	40		110	15	
25	40	18	115	13	13
30	39		120	12	
35	39	24	125	11	9
40	38		130	9	
45	37	28	135	8	6
50	36		140	7	
55	34	31	145	6	4
60	33		150	5	
65	31	31	155	5	2
70	29		160	3	
75	27	29	165	2	1
80	25		170	1	
85	23	25	175	0	0
90	22		180	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	34	12.16
0-40	58	20.91
0-60	117	42.33
0-90	202	73.13
40-90	144	52.23
60-90	85	30.80
90-180	74	26.87
0-180	276	100.00

EFFICACY (LUMENS PER WATT): 98.5

*** THIS IS AN ABSOLUTE TEST ***

LUMINANCE SUMMARY CD./SQ.M.

ANGLE	MEAN CD/SQ M
45	191
55	219
65	269
75	387
85	986

S/MH: 1.5
SC: 1.5



Reviewed by signature:
12-LO-F0851, Issue 3.0

Intensity Data:

ANGLE	INTENSITY (CANDLEPOWER)	LUMENS
0	41	
5	41	4
10	40	
15	40	11
20	40	
25	40	18
30	39	
35	39	24
40	38	
45	37	28
50	36	
55	34	31
60	33	
65	31	31
70	29	
75	27	29
80	25	
85	23	25
90	22	
95	20	21
100	18	
105	16	17
110	15	
115	13	13
120	12	
125	11	9
130	9	
135	8	6
140	7	
145	6	4
150	5	
155	5	2
160	3	
165	2	1
170	1	
175	0	0
180	0	



Reviewed by signature:
12-LO-F0851, Issue 3.0

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	14.04.2016
3	Power Meter	PM12	23.07.2016

Test methodology adopted

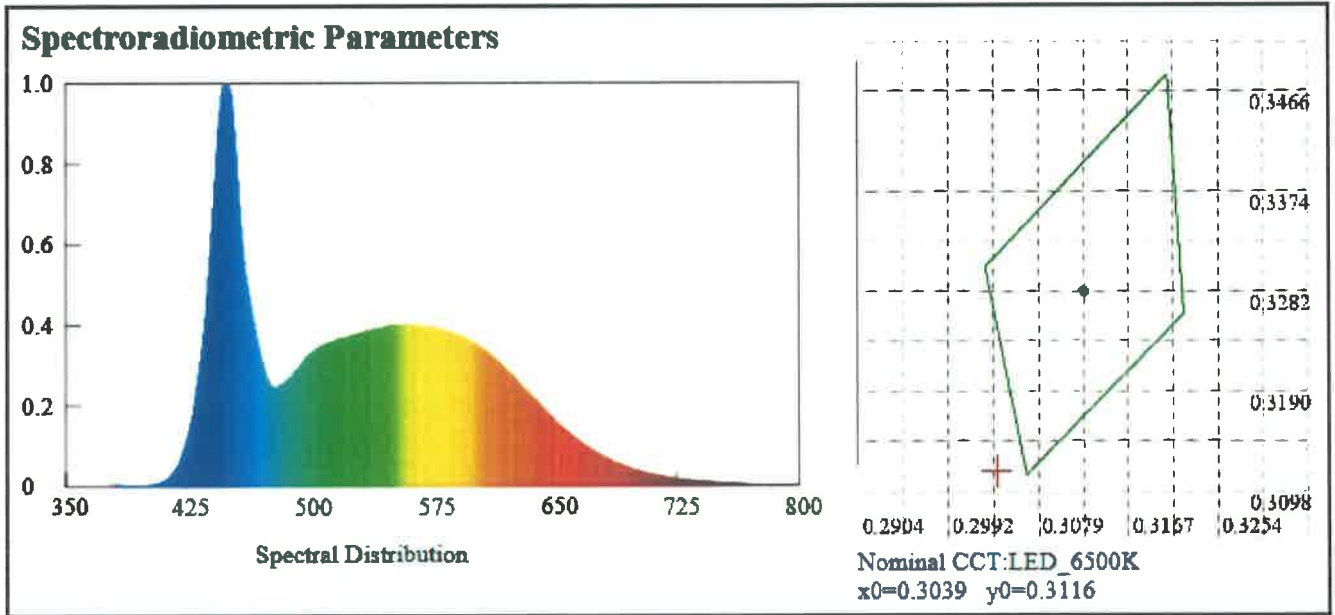
- The sample was tested according to the IES LM-79-2008.
- Orientation (burning position) of SSL product during testing was its normal burning position i.e. at zero degree inclination to horizontal.
- Colorimetric parameters were measured using an integrating sphere, a spectroradiometer and software. 4 π 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 12V DC. 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.



Reviewed by signature:

12-LO-F0851, Issue 3.0

Test Observation



Spectral Distribution

Chromaticity Coordinates: $x=0.3039$ $y=0.3116$ $u'=0.1983$ $v'=0.4574$

Correlated Color Temperature: 7230 K

Dominant Wavelength: 481.0 nm(E)

Purity: 0.1177

Chromaticity Difference: -0.00128Duv

Peak Wavelength: 450.9 nm

Color Ratio: $K_r=30.4\%$ $K_g=55.6\%$ $K_b=14.1\%$

Bandwidth: 22.2nm

Radiant Flux: 0.948 W

Rendering Index: $R_a=87.1$

$R_1=87$ $R_2=91$ $R_3=91$ $R_4=88$ $R_5=87$ $R_6=85$ $R_7=90$ $R_8=77$

$R_9=30$ $R_{10}=77$ $R_{11}=88$ $R_{12}=62$ $R_{13}=89$ $R_{14}=95$ $R_{15}=85$



Reviewed by signature:
12-LO-F0851, Issue 3.0

Appendix

Photographs



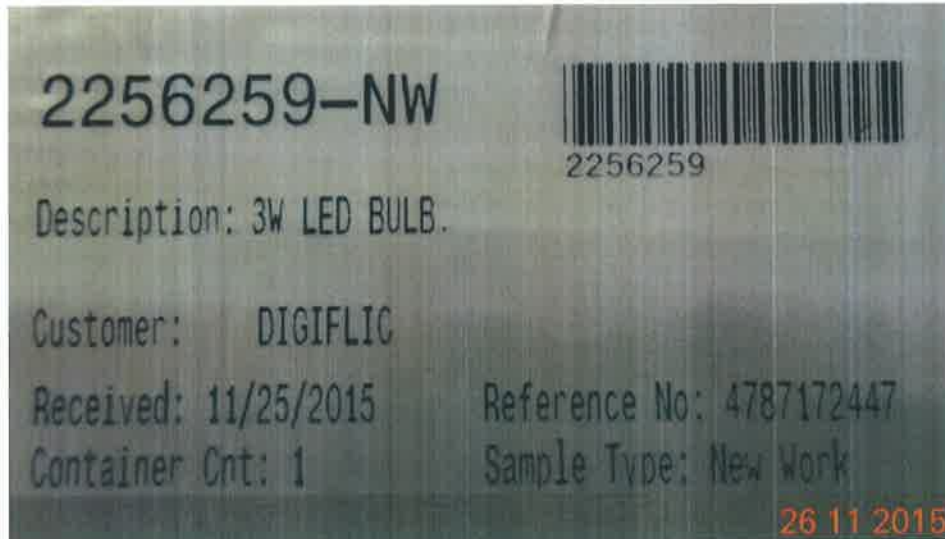
Front View



Product Identification



Reviewed by signature:
12-LO-F0851, Issue 3.0



SampleID

*****End of Report*****

Reviewed by signature: 
12-LO-F0851,  SAR-122 050