

TEST REPORT DEPARTMENT OF ENERGY (10 CFR Parts 429 and 430) Energy Conservation Program: Test Procedures for Integrated Light-Emitting Diode Lamps	
Report reference No	AOC251128012ER
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Contents	12 Pages
Testing laboratory	
Name	Shenzhen AOCE Electronic Technology Service Co., Ltd
Address	Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Testing location	Same as above
Client	
Name	Guangdong Fengshang Electronics Co., Ltd.
Address	Room 201, Block 8, Yi 'an Scientific Innovation Park, No.23, Gangkou Road,Guicheng Street, NanhaiDistrict, Foshan City, Guangdong Province, China
Manufacturer	
Name	Guangdong Fengshang Electronics Co., Ltd.
Address	Room 201, Block 8, Yi 'an Scientific Innovation Park, No.23, Gangkou Road,Guicheng Street, NanhaiDistrict, Foshan City, Guangdong Province, China
Test specification	
Standard	DEPARTMENT OF ENERGY 10 CFR Parts 429 and 430) Energy Conservation Program: Test Procedures for Integrated Light-Emitting Diode Lamps
Test procedure	DEPARTMENT OF ENERGY (10 CFR Parts 429 and 430) Energy Conservation Program: Test Procedures for Integrated Light-Emitting Diode Lamps
Non-standard test method	N/A

Test item Description	Desktop square nail lamp		
Trademark	FENGSHANG		
Model and/or type reference.....	F-800R		
Test Model.....	F-800R		
Rating(s)(V/Hz).....	100-240V~, 50/60Hz, 40W		
Test case verdicts			
Test case does not apply to the test object : N(N/A)			
Test item does meet the requirement: P(Pass)			
Test item does not meet the requirement : F(Fail)			
Testing			
Date of receipt of test item: 2024-12-12			
Date(s) of performance of test.....: 2024-12-12 to 2025-11-28			
Test item particulars: 10 CFR Parts 429 and 430			
Lamp type:	☒ Omni directional	☐ Directional	☐ Decorative
Model type (ANSI Standard Lamp Shape): N/A			
Base type (ANSI).....: /			
Control gear:			
- Integrated	☐		
- External	☒		
Use of lamp:			
- Indoor	☒		
- Outdoor	☐		
- Industry	☐		
Envelope transparency:			
- Clear lamp	☐		
- Non-clear lamp	☒		
Dimmable lamp:	☐		
Lamps with anti-glare shield:	☐		
Lamp cap installed:	/		
Declared data:			
Rated voltage(V): 100-240V~			
Rated lamp power(W): 40W			
Rated useful luminous flux.....(lm): 4250 lm			
Rated CCT(K): 3000-6000K			
Rated life time(h): 20000h			
Forward current of the LED chip.....(mA): --			

LED Manufacturer	Guangdong Fengshang Electronics Co., Ltd.
LED Model.....	F-800R

Table of Contents

1. Test Method.....	5
1.1 Photometric and Electrical Measurement	5
1.2 Standby Power Measurement.....	5
1.3 Luminous Flux and Color Maintenance Measurement.....	6
2. Test equipment list.....	6
3. Test Data	7
3.1 Initial Photometric and Electrical Measurement Test Results	7
3.2 In-Situ Temperature Measurement Test (ISTMT)	8
3.3 Lumen Maintenance (%).....	9
3.4 Chromaticity Shift ($\Delta u'v'$)	9
3.5 Test Summary	10
3.6 Lumen Maintenance Projection (IESNA TM-28-14 Method)	10
4. Photo of sample	11

1. Test Method

1.1 Photometric and Electrical Measurement

Test Standard.....: IES LM-79-08:Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

Ambient Condition: 25.1°C

Stabilization time: 0.5h

Orientation(burning position) of SSL product during test: 5 base-up and 5 base-down

Test Method: 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 rated voltage and was stabilized before measurement. Lumen output, Lamp efficacy, 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 380 to 780 nm. Input power, Power factor, Voltage, Current, were calculated from the digital power meter.

1.2 Standby Power Measurement

Test Standard.....: IEC 62301-2011:Household electrical appliances-Measurement of standby power

Ambient Condition.....: 25.1°C

Stabilization time: 0.5h

Orientation(burning position) of SSL product during test: 5 base-up and 5 base-down

Test Method: Sections 5.3.4 Direct meter reading method. The sample was operated at rated voltage and was stabilized before measurement. The standby power were calculated from the digital power meter.

1.3 Luminous Flux and Color Maintenance Measurement

Orientation(burning position) of SSL product

during test: 5 base-up and 5 base-down

Test Method: Season the LED Lamp from 0 hours to 6000 hours.

The sample are operated steady state (no cycling) for a period of 6000 hours, checked the lumen flux and Chromaticity Shift every 1000 hours. The samples are inspected at regular intervals (24 hours) throughout the 6000 hours. The time and date of failure of each lamp is recorded. The actual elapsed time for each light package is in hour.

1.4 In-Situ Temperature Measurement Test (ISTMT)

Test Method: Maximum led source operating temperature measurements were taken on one test sample per model with a thermocouple and temperature meter. The SSL sample was allowed to reach thermal equilibrium for at least 3 hours before measurements were taken. Led source temperature was measured at the point as indicated by the included diagram in accordance with manufacturers declared hot spot location. The maximum temperature was recorded for the sample.

2. Test equipment list

Instrument	Equipment ID	Model	Calibration Date	Calibration Due Date
2m Integrating Sphere	SENSING	SL-300	AOC-S-126	2026-04-13
DC source	OYHS	OYHS-Z120V-50A	AOC-S-062	2026-04-13
Digital power meter	HENGHE	WT310E	AOC-S-012	2026-04-13
Standard Lamp	SENSING	220V/150W	AOC-S-156	2026-06-05
Variable frequency power supply	WOSEN	BP6005	AOC-S-129	2026-04-13
Oscilloscope	TEKTRONIX	MDO3012	AOC-S-028	2026-04-13

3. Test Data

3.1 Initial Photometric and Electrical Measurement Test Results

Sample No.	Base Orientation	Voltage (V)	Current (A)	Lamp Power (W)	Power Factor	Light Output (Lumens)	Revised Lumen/ W	CCT (K)	CRI
S1	base-up	120.0	0.354	38.9	0.915	4241.19	109.0	6223	80.3
S2	base-up	120.1	0.355	39.0	0.915	4375.46	112.2	6166	82.5
S3	base-up	120.2	0.362	40.7	0.935	4322.18	106.2	6247	82.8
S4	base-up	120.1	0.355	39.1	0.916	4317.91	110.5	6279	81.3
S5	base-up	120.2	0.362	40.7	0.935	4245.45	104.2	6179	84.3
S6	base-down	120.1	0.357	39.5	0.921	4257.39	107.9	6229	82.8
S7	base-down	120.2	0.355	39.2	0.917	4215.61	107.6	6266	81.3
S8	base-down	119.9	0.356	39.3	0.920	4253.98	108.2	6241	84.3
S9	base-down	120.2	0.361	40.5	0.932	4266.34	105.4	6198	81.3
S10	base-down	120.2	0.362	40.8	0.936	4257.81	104.5	6204	81.6
Average		120.1	0.358	39.8	0.924	4275.33	107.6	6223	82.2

Sample No.	Base Orientation	R9	Duv	x (CIE1931)	y (CIE1931)	u' (CIE1976)	v' (CIE1976)	Standby Power
S1	base-up	7	0.00676	0.3183	0.3408	0.1974	0.4737	0.31
S2	base-up	7	0.00680	0.3205	0.3425	0.1988	0.4761	0.27
S3	base-up	6	0.00677	0.3193	0.3412	0.1980	0.4742	0.31
S4	base-up	7	0.00680	0.3209	0.3425	0.1990	0.4761	0.28
S5	base-up	7	0.00678	0.3189	0.3419	0.1978	0.4751	0.29
S6	base-down	7	0.00676	0.3186	0.3405	0.1905	0.4732	0.25
S7	base-down	6	0.00675	0.3186	0.3401	0.1976	0.4727	0.24
S8	base-down	7	0.00678	0.3199	0.3415	0.1984	0.4746	0.31
S9	base-down	7	0.00677	0.3202	0.3412	0.1986	0.4742	0.29
S10	base-down	7	0.00680	0.3196	0.3425	0.1982	0.4761	0.31
Average		7	0.00678	0.3172	0.3404	0.1974	0.4746	0.29

Sample No.	R1	R2	R3	R4	R5	R6	R7	R8
S1	78	86	90	77	77	80	83	71
S2	81	88	92	79	79	82	85	74
S3	82	88	92	79	79	82	85	75
S4	79	87	91	78	78	81	84	72
S5	82	90	94	81	81	84	87	75
S6	82	88	92	79	79	82	85	75
S7	79	87	91	78	78	81	84	72
S8	82	90	94	81	81	84	87	75
S9	79	87	91	78	78	81	84	72
S10	77	88	92	79	79	82	85	71
Average	80	88	92	79	79	82	85	73

3.2 In-Situ Temperature Measurement Test (ISTMT)

Sample No.	Base Orientation	Voltage (V)	Frequency (Hz)	Current (A)	Lamp Power (W)	Power Factor	Tested Case Temperature (Ts)°C	Tested ambient Temperature (Tc)°C	Normalized to 25°C
S1	base-up	120.0	60	0.354	38.9	0.915	53.8	25.0	53.8
S2	base-up	120.1	60	0.355	39.0	0.915	53.9		53.9
S3	base-up	120.2	60	0.362	40.7	0.935	55.1		55.1
S4	base-up	120.1	60	0.355	39.1	0.916	53.4		53.4
S5	base-up	120.2	60	0.362	40.7	0.935	53.5		53.5
S6	base-down	120.1	60	0.357	39.5	0.921	54.5		54.5
S7	base-down	120.2	60	0.355	39.2	0.917	53.6		53.6
S8	base-down	119.9	60	0.356	39.3	0.920	54.6		54.6
S9	base-down	120.2	60	0.361	40.5	0.932	54.9		54.9
S10	base-down	120.2	60	0.362	40.8	0.936	54.2		54.2
Average		120.1	60	0.358	39.8	0.924	54.2		54.2

3.3 Lumen Maintenance (%)

Sample No.	Base Orientation	Initial Light Output (lm)	Lumen Maintenance(%)						
			0 hours	1000 hours	2000 hours	3000 hours	4000 hours	5000 hours	6000 hours
S1	base-up	4241.19	100	98.23	98.13	98.03	97.93	97.91	97.77
S2	base-up	4375.46	100	98.67	96.68	96.45	96.35	96.23	96.12
S3	base-up	4322.18	100	97.99	97.01	96.77	96.67	96.55	96.44
S4	base-up	4317.91	100	98.11	97.12	96.89	96.79	96.67	96.56
S5	base-up	4245.45	100	97.61	96.63	96.40	96.30	96.18	96.07
S6	base-down	4257.39	100	97.57	96.59	96.36	96.26	96.14	96.03
S7	base-down	4215.61	100	97.38	96.40	96.17	96.07	95.95	95.84
S8	base-down	4253.98	100	97.99	97.00	96.77	96.67	96.55	96.44
S9	base-down	4266.34	100	98.03	97.05	96.82	96.71	96.60	96.49
S10	base-down	4257.81	100	97.67	96.69	96.45	96.35	96.23	96.12
Average		4275.33	100	97.92	96.93	96.71	96.61	96.50	96.39
Median		4257.60	100	97.99	96.85	96.61	96.51	96.39	96.28
Std.dev		45.63	0	0.36	0.46	0.49	0.49	0.52	0.51
Max		4375.46	100	98.67	98.13	98.03	97.93	97.91	97.77
Min		4215.61	100	97.38	96.40	96.17	96.07	95.95	95.84

3.4 Chromaticity Shift ($\Delta u'v'$)

Sample No.	Base Orientation	u'	v'	CCT(K)	Chromaticity Shift($\Delta u'v'$)					
		0hr(Initial)			1000 hours	2000 hours	3000 hours	4000 hours	5000 hours	6000 hours
S1	base-up	0.1974	0.4737	6223	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
S2	base-up	0.1988	0.4761	6166	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
S3	base-up	0.1980	0.4742	6247	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
S4	base-up	0.1990	0.4761	6279	0.0006	0.0007	0.0007	0.0007	0.0007	0.0008
S5	base-up	0.1978	0.4751	6179	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
S6	base-down	0.1905	0.4732	6229	0.0007	0.0008	0.0008	0.0008	0.0009	0.0009
S7	base-down	0.1976	0.4727	6266	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
S8	base-down	0.1984	0.4746	6241	0.0007	0.0007	0.0008	0.0008	0.0008	0.0008
S9	base-down	0.1986	0.4742	6198	0.0006	0.0007	0.0007	0.0007	0.0007	0.0008

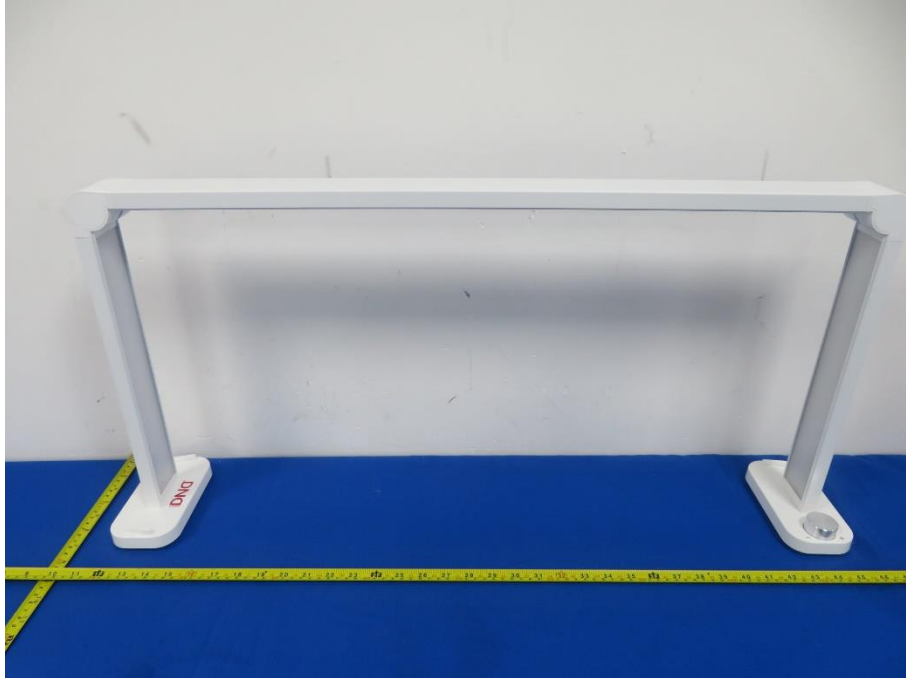
S10	base-down	0.1982	0.4761	6204	0.0006	0.0007	0.0007	0.0007	0.0007	0.0008
Average		0.1974	0.4746	6223	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
Median		0.1981	0.4744	6226	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
Std.dev		0.0024	0.0012	35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Max		0.1990	0.4761	6279	0.0007	0.0008	0.0008	0.0008	0.0009	0.0009
Min		0.1905	0.4727	6166	0.0006	0.0007	0.0007	0.0007	0.0007	0.0008

3.5 Test Summary

Tested Ambient Temperature (Ta)°C	Test Case Temperature (Ts)°C	Number of failures	Input Voltage (V)	Frequency (Hz)	Input current (A)	Input Power (W)	Average Lumen Maintenance at 6000 hours	Average Chromaticity Shift ($\Delta u'v'$) at 6000 hours
25.0	54.2	100%	120.1	60	0.358	39.8	96.39	0.0009

3.6 Lumen Maintenance Projection (IESNA TM-28-14 Method)

Criteria Item	Result
15000hours luminance of LED light source	94.61 %
Drive current on each LED light source	/
Reported L ₇₀ lumen maintenance life	35000 hours

4. Photo of sample**ATTACHMENT 1(S)**

-----END OF REPORT-----