CENTRE OF TESTING SERVICE INTERNATIONAL

OPERATE ACCORDING TO ISO/IEC 17025

ERP TEST REPORT

TEST REPORT NUMBER : CGZ3140707-02292-L

CTS (Ningbo) Testing Service Technology Co., Ltd.

Fl.2 South, HuoJu Building, No.181 CangHai Rd., Jiangdong Hi-tech Park

Ningbo China

Report No.: CGZ3140707-02292-L Page 1 of 11 Date: 25 May 2015

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Applicant	:	Focus Lighting Technology Co., Ltd.
Address	:	The 2nd Road,Tutang Industrial Village,Changping Town,Dongguan City,Guangdong Province,China
Sample Description	:	Wall Lamp
Trade Mark	:	Focus Lighting
Model/Type	:	FS-3006-2
Taking/Receiving Date	:	07 July 2014
Test Date	:	07 July - 25 May 2015
Test Item	:	EU No 1194/2012
Test location	:	CTS (GUANGZHOU) Testing Service Technology Co., Ltd.
Address	:	GZ test site: A101, No.65, Zhuji Road, Tianhe District, Guangzhou, Guangdong, China

Note ..... : This report shall not be copied partly without the written confirmation.

Tested by:	**Reviewed by:**	**Approved by:**
Engineer	Supervisor	Deputy Manager
Date: 25 May 2015	Date: 25 May 2015	Date: 25 May 2015

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Manufacturer data	
Manufacturer	Focus Lighting Technology Co., Ltd.
Address	The 2nd Road,Tutang Industrial Village,Changping Town,Dongguan City,Guangdong Province,China
Contact person	Amy Huang
Factory data	
Factory	Focus Lighting Technology Co., Ltd.
Address	The 2nd Road,Tutang Industrial Village,Changping Town,Dongguan City,Guangdong Province,China
Contact Person	Amy Huang
Tested sample data	
Type	Wall Lamp
Model	FS-3006-2
Lamp type	LED
Sample status	New sample
Description	Measurement was conducted at voltage AC240V 50Hz
Input voltage	240V
Input frequency	50Hz

Sample No.	Test voltage(V)	Test Current (A)	Measured Power(W)	Power Factor
1	240	0.0373	4.103	0.4576
2	240	0.0375	4.116	0.4573
3	240	0.0379	4.121	0.4531
4	240	0.0369	4.043	0.4565
5	240	0.0371	4.061	0.4561
Average	240	0.03734	4.0888	0.45612

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Conformity verification - Summary of inspection

Test item	Test parameter	Test requirement	Result(P/F)	Record
1	EEI	≤0.5(classB)(Stage1，2); ≤0.2(classA)(Stage3)	P	Table A
2	Ec	Power consumption per 1000 hours(kWh/1000)	P	Table A
3	Lamp survival factor at 6000h	From 1 March 2014: ≥0.90	P	Table B
4	Lumen maintenance at 6000h	From 1 March 2014: ≥0.80	P	Table B
5	Number of switching cycles before failure	≥15000 if rated lamp life ⩾30000h ; otherwise:⩾half the rated lamp life expressed in hours	P	Table C
6	Starting time	＜0.5s	P	Table C
7	Lamp warm-up time to 95%Φ	＜2s	P	Table C
8	Lamp power factor for lamps with integrated control gear	P≤2W：no requirement ; 2W＜P≤5W :PF＞0.4 ; 5W＜P≤25W :PF＞0.5 ; P＞25W:PF＞0.9	N/A	Table: Measurement electrical parameters
9	Premature failure rate	≤5.0% at 1000h	P	Table D
10	Colour rendering (Ra)	≥80 or ≥65 if the lamp is intended for outdoor or industrial applications	P	Table E
11	Colour consistency	Colour tolerance≤6 SDCM	P	Table E
12	Colour temperature (K)	N/A	P	Table E
13	peak intensity(cd)	N/A	P	Table E

Each ecodesign requirement shall apply in accordance with the following stages:
Stage 1: 1 September 2013
Stage 2: 1 September 2014
Stage 3: 1 September 2016

Test case verdicts：
N/A.: Test case does not apply to the test object
P(ass): Test item does meet the requirement
F(ail): Test item does not meet the requirement

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Table A：EEI/Energy Efficiency classes,Ec

Sample No.	Beam angle	Useful luminous flux Φuse (lm)	Φuse<1300lm: Pref =0.88√Φuse+0.049 Φuse; Φuse≥1300lm: Pref=0.07341*Φuse(W)	Prated (W)	Pcor=Prated*c orrection factors(W)	EEI=Pc or/Pref	Energy Efficiency classes	Ec= (Pcor*1000h) /1000 (kWh/1000)
1	61.7	249.6	26.133	4.103	4.103	0.157	A+	4.103
2	61.7	254.7	26.525	4.116	4.116	0.1552	A+	4.116
3	61.8	251.2	26.256	4.121	4.121	0.157	A+	4.121
4	61.6	250.9	26.233	4.043	4.043	0.1541	A+	4.043
5	61.7	253.8	26.456	4.061	4.061	0.1535	A+	4.061
Average	61.7	252.04	26.321	4.0888	4.0888	0.15536	A+	4.0888

Correction factors（From EU No 1194/2012）:

Scope of the correction	Corrected power (Pcor)
Lamps operating on external halogen lamp control gear	Prated*1.06
Lamps operating on external LED lamp control gear	Prated*1.10
Fluorescent lamps of 16mm diameter(T5 lamps) and 4-pin single capped fluorescent lamps operating on external fluorescent lamp control gear	Prated*1.10
Other lamps operating on external fluorescent lamp control gear	Prated*（0.24*√Φuse+0.0103Φuse）/ （0.15*√Φuse +0.0097Φuse）
Lamps operating on external high-intensity discharge lamp control gear	Prated*1.10
Compact fluorescent lamps with colour rendering index≥90	Prated*0.85
Lamps with anti-glare shield	Prated*0.80

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EEI（From EU No 1194/2012）:

Application date	Maximum energy efficiency index(EEI)			
	Mains-voltage filament lamps	Other filament lamps	High-intensity discharge lamps	Other lamps
Stage 1	If Φuse＞450 lm：1.75	If Φuse≤450 lm：1.20 Φuse＞450 lm：0.95	0.50	0.50
Stage 2	1.75	0.95	0.50	0.50
Stage 3	0.95	0.95	0.36	0.20

Energy Efficiency classes（From Energy Labelling EU No 874/2012）:

Energy Efficiency Class	Energy Efficiency Index(EEI) for non-directional Lamps	Energy Efficiency Index(EEI) for directional Lamps
A++(most efficient)	EEI≤0.11	EEI＜0.13
A+	0.11＜EEI≤0.17	0.13＜EEI≤0.18
A	0.17＜EEI≤0.24	0.18＜EEI≤0.40
B	0.24＜EEI≤0.60	0.40＜EEI≤0.95
C	0.60＜EEI≤0.80	0.95＜EEI≤1.20
D	0.80＜EEI≤0.95	1.20＜EEI≤1.75
E(least efficient)	EEI＞0.95	EEI＞1.75

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Table B: Lamp survival factor at 6000h, Lumen maintenance at 6000h

Sample No.	Life(h)	Initial luminous flux(lm)	Luminous flux(lm) at 6000h	Lumen maintenance at 6000h
1	>6000	254.2	226.8	89.2%
2	>6000	259.4	231.7	89.3%
3	>6000	257.1	227.1	88.3%
4	>6000	255.2	218.3	85.5%
5	>6000	258.3	219.9	85.1%
6	>6000	255.6	221.8	86.8%
7	>6000	253.1	223.4	88.3%
8	>6000	255.8	231.5	90.5%
9	>6000	259.2	229.2	88.4%
10	>6000	254.3	217.2	85.4%
11	>6000	256.5	218.5	85.2%
12	>6000	258.8	220.7	85.3%
13	>6000	257.6	232.6	90.3%
14	>6000	254.9	226.4	88.8%
15	>6000	258.1	225.7	87.4%
16	>6000	257.2	219.9	85.5%
17	>6000	255.9	222.1	86.8%
18	>6000	257.7	228.5	88.7%
19	>6000	258.7	227.6	88.0%
20	>6000	259.3	228.3	88.0%
Average	---	256.845	224.86	87.5%
survival factor at 6000h		>-- survival factor reached		

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Table C: Switch cycle test, Starting time, Lamp warm-up time

Sample No.	Number of switching cycles	Starting time(s)	Warm-up time to 95%Φ(s)
1	15000	0.23	1.6
2	15000	0.21	1.5
3	15000	0.24	1.3
4	15000	0.26	1.5
5	15000	0.29	1.5
6	15000	0.21	1.4
7	15000	0.24	1.3
8	15000	0.24	1.3
9	15000	0.24	1.2
10	15000	0.26	1.6
11	15000	0.28	1.3
12	15000	0.23	1.4
13	15000	0.28	1.3
14	15000	0.25	1.4
15	15000	0.29	1.6
16	15000	0.23	1.5
17	15000	0.22	1.6
18	15000	0.23	1.7
19	15000	0.26	1.5
20	15000	0.24	1.5
Average	15000	0.2465	1.45
Remark	Number of switching cycles ： At least 19 of every 20 lamps have no failure；	Starting time：the average starting time is not higher than the required starting time plus 10%,and no lamp longer than two times the required starting time	Lamp Warm-up time to 95%Φ：the average warm-up time is not higher than the required warm-up time plus 10%,and no lamp exceeds the required warm-up time multiplied by 1.5

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Table D: Premature failure rate

Sample total number for testing	Failure number at 1000h	Failure rate at 1000h
20pcs	0	0%
Remark	a maximum of one out of 20 lamps failure	

Table E: Colour rendering (Ra), Colour temperature (K), peak intensity(cd), Colour consistency(SDCM)

Sample No.	Colour rendering(Ra)	Colour temperature(K)	peak intensity(cd)	Colour tolerance(SDCM) at initial time	Colour tolerance(SDCM) at 6000h
1	81.3	2842	316.9	4.92	5.32
2	81.5	2903	326.3	2.69	4.99
3	81.4	2879	319.8	3.4	4.58
4	81.5	2831	321.3	4.37	5.15
5	81.3	2904	328.1	3.15	5.23
Average	81.4	2871.8	322.48	3.71	5.054
Remark	The average Ra of the lamps is not lower than 77 or 62(lamps for outdoor or industrial applications),and no lamp has a Ra value that is not lower than 76.1 or 61.1(lamps for outdoor or industrial applications); Colour consistency：variation of chromaticity coordinates within a six-step MacAdam ellipse or less.				

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Manufacturer/ Approval holder Declaration

The following identical model(s):

FL-3102,FL-3108,FL-3118,FL-3003

belong to the tested device:

Product description: Wall Lamp
Model name: FS-3006-2

No additional models were tested.

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Equipment used

No.	Name	Model
1	Moving Mirror Goniophotometer	GO-R5000
2	Power meter	PF2010A
3	Power supply	DPS1030
4	Temperature recorder	7210-00
5	High accuracy array spectra-radio meter	HASS2000
6	digital oscilloscope	DS5102C

Product Photos

Figure 1 （External view – front, FS-3006-2）

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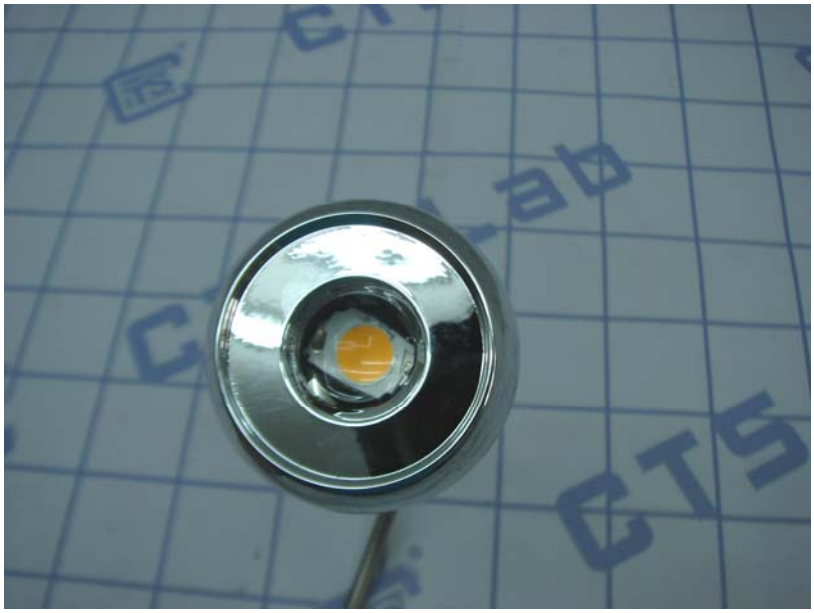

Figure 2 （External view –LED ）

Figure 2 （internal view –LED driver）

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