



# Test Report



Report No	247/ 7572628/1 of 2	This Report consists of 17 pages
Client	Electrical Safety Council Canterbury Court 1 - 3 Brixton Road London SW9 6DE	
Authority & date	BSI Estimate Acceptance No 0000275614 dated 16 August 2010 Equipment Record No 10118021 dated 24 August 2010	
Items tested	6 alternative brands of self ballasted compact fluorescent lamps with bayonet lamp caps of various lamp wattages (4 of each type)	
Specification	BS EN 60968: 2000 + A1 + A2 + A3 Limited tests as detailed on page 2 of this Test Report	
Results	As detailed within this Test Report	
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Authorized by	C Higby Team Leader, Lighting Technology	
Issue Date	28 September 2010	
Conditions of issue	This Test Report is issued subject to the conditions stated in current issue of CP0322 'Conditions of Contract for Testing'. The results contained herein apply only to the particular sample/s tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of the Managing Director, BSI Testing Services who reserves the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.	

## Introduction

The samples of self ballasted compact fluorescent lamps were commercially available products that were purchased for testing by the Electrical Safety Council.

The samples were submitted on 24 August 2010 for a limited safety assessment according to an agreed limited test schedule.

## Details of samples submitted

The samples were allocated the following type references for identification purposes:

L1 – 20W Energy saving decor lamp with a spiral tube and bayonet lamp cap, declared as being equivalent to a 100W tungsten filament lamp, marked 8,000 hours and 1200 lumens

L2 – 25W Compact fluorescent lamp with a spiral tube and bayonet lamp cap, declared as being equivalent to a 125W tungsten filament lamp, marked 10,000 hours and 2700K

L3 – 11W Energy saving decor candle lamp with an outer candle glass and a spiral tube and bayonet lamp cap, declared as being equivalent to a 60W tungsten filament lamp, marked 8,000 hour, 2700K and 550 lumens

L4 – 20W Low Energy lamp with multi limbed straight tubes and bayonet lamp cap, declared as being equivalent to a 100W tungsten filament lamp, marked 10,000 hours, 1200 lumens and 60 lumen / watt

L5 – 15W Compact lamp with an outer glass in a standard lamp shape and internal spiral tube with a bayonet lamp cap, declared as being equivalent to a 70W tungsten filament lamp, marked 6,000 hour, 2700K and 810 lumens

L6 – 15W Energy saving stick lamp with multi limbed straight tubes and bayonet lamp cap, declared as being equivalent to a 75W tungsten filament lamp, marked 10,000 hours and 850 lumens

For further details of the samples submitted, please refer to the photographic evidence contained within pages 12 to 17 of this Test Report.

## Relevant Specification

The tests applied during the assessment of the lamps submitted were made with reference to the Clauses contained within the following Specification:

BS EN 60968: 2000 incorporating Amendments 1, 2 & 3

Self ballasted lamps for general lighting services – Safety requirements

## Test schedule

The Client requested the following tests as contained within the above stated Specification to be applied to each lamp sample submitted:

Clause 4 Marking (excluding sub-clause 4.3 Presence, visibility and durability of marking)

Clause 11 Resistance to flame and ignition (Glow wire test)

Clause 12 Fault conditions (Limited to fault C broken cathode only)

## **Results of tests conducted**

The results of the tests detailed within the test schedule on the previous page can be found on pages 4 to 11 of this Test Report.

## **Summary of results**

### **Clause 4 Marking**

Lamp reference L6 failed to comply with the mandatory marking details as the wattage was not marked on the lamp.

Lamp references L2 and L3 failed to comply with the additional information requirements in that the lamp current was not marked on the lamp or associated packaging.

Lamp references L1; L4 & L5 complied with the requirements specified.

### **Clause 11 Resistance to flame and ignition (Glow wire test)**

All lamps samples tested at the required test temperature of 650°C complied with the specified test conditions.

### **Clause 12 Fault conditions (Limited to fault C broken cathode only)**

All lamps samples subjected to the single fault condition test of a broken lamp cathode complied with the requirements of the Specification.

## RESULTS OF TESTS CONDUCTED

### Clause 4 Marking

Each lamp and associated box marking was assessed against the relevant requirements for mandatory marking details (see Tables 1 to 6) and additional information (see Tables 7 to 12) that can be shown on the lamp, packaging or associated literature.

The requirements of Sub-Clause 4.3 for marking visibility and durability were not assessed on the samples submitted.

#### Sub-Clause 4.1 Mandatory marking details

Lamp reference: L1

Table 1		
Lamp ref:	Marking requirement:	Result:
1)	Mark of origin	Pass
2)	Rated voltage or voltage range	Pass
3)	Rated wattage	Pass
4)	Rated frequency	Pass

Lamp reference: L2

Table 2		
Lamp ref:	Marking requirement:	Result:
1)	Mark of origin	Pass
2)	Rated voltage or voltage range	Pass
3)	Rated wattage	Pass
4)	Rated frequency	Pass

Lamp reference: L3

Table 3		
Lamp ref:	Marking requirement:	Result:
1)	Mark of origin	Pass
2)	Rated voltage or voltage range	Pass
3)	Rated wattage	Pass
4)	Rated frequency	Pass

Lamp reference: L4

Table 4		
Lamp ref:	Marking requirement:	Result:
1)	Mark of origin	Pass
2)	Rated voltage or voltage range	Pass
3)	Rated wattage	Pass
4)	Rated frequency	Pass

**RESULTS OF TESTS CONDUCTED: Continued/...****Clause 4 Marking: Continued/...**

Lamp reference: L5

Table 5		
Lamp ref:	Marking requirement:	Result:
1)	Mark of origin	Pass
2)	Rated voltage or voltage range	Pass
3)	Rated wattage	Pass
4)	Rated frequency	Pass

Lamp reference: L6

Table 6		
Lamp ref:	Marking requirement:	Result:
1)	Mark of origin	Pass
2)	Rated voltage or voltage range	Pass
3)	Rated wattage	Fail
4)	Rated frequency	Pass

## Sub-Clause 4.2 Additional information

Lamp reference: L1

Table 7		
Lamp ref:	Marking requirement:	Result:
1)	Lamp current	Pass
2)	Burning position	N/A
3)	Weight	N/A
4)	Special conditions	Pass

Lamp reference: L2

Table 8		
Lamp ref:	Marking requirement:	Result:
1)	Lamp current	Fail
2)	Burning position	N/A
3)	Weight	N/A
4)	Special conditions	Pass

**RESULTS OF TESTS CONDUCTED: Continued/...****Clause 4 Marking: Continued/...**

Lamp reference: L3

Table 9		
Lamp ref:	Marking requirement:	Result:
1)	Lamp current	Fail
2)	Burning position	N/A
3)	Weight	N/A
4)	Special conditions	Pass

Lamp reference: L4

Table 10		
Lamp ref:	Marking requirement:	Result:
1)	Lamp current	Pass
2)	Burning position	N/A
3)	Weight	N/A
4)	Special conditions	Pass

Lamp reference: L5

Table 11		
Lamp ref:	Marking requirement:	Result:
1)	Lamp current	Pass
2)	Burning position	N/A
3)	Weight	N/A
4)	Special conditions	Pass

Lamp reference: L6

Table 12		
Lamp ref:	Marking requirement:	Result:
1)	Lamp current	Pass
2)	Burning position	N/A
3)	Weight	N/A
4)	Special conditions	Pass

**RESULTS OF TESTS CONDUCTED: Continued/...****Clause 11 Resistance to flame and ignition**

The lamp mouldings providing protection against contact with live parts of the PCB and associated component wiring were each subjected to the glow wire test.

The results of each test conducted are shown in Tables 13 to 18 detailed below.

Lamp reference: L1

Table 13	
Test temperature	650°C
Application time	30 seconds
Molten droplets present	No
After glow or flame duration	0 seconds
Ignition of tissue paper	No

Result: Pass

Lamp reference: L2

Table 14	
Test temperature	650°C
Application time	30 seconds
Molten droplets present	No
After glow or flame duration	0 seconds
Ignition of tissue paper	No

Result: Pass

Lamp reference: L3

Table 15	
Test temperature	650°C
Application time	30 seconds
Molten droplets present	No
After glow or flame duration	0 seconds
Ignition of tissue paper	No

Result: Pass

**RESULTS OF TESTS CONDUCTED: Continued/...****Clause 11 Resistance to flame and ignition: Continued/...**

Lamp reference: L4

Table 16	
Test temperature	650°C
Application time	30 seconds
Molten droplets present	No
After glow or flame duration	0 seconds
Ignition of tissue paper	No

Result: Pass

Lamp reference: L5

Table 17	
Test temperature	650°C
Application time	30 seconds
Molten droplets present	No
After glow or flame duration	0 seconds
Ignition of tissue paper	No

Result: Pass

Lamp reference: L6

Table 18	
Test temperature	650°C
Application time	30 seconds
Molten droplets present	No
After glow or flame duration	0 seconds
Ignition of tissue paper	No

Result: Pass



**RESULTS OF TESTS CONDUCTED: Continued/...****Clause 12 Fault conditions**

In accordance with the agreement of the Client, a single fault condition of the same type was applied to each lamp type in turn, in accordance with the requirements of the Specification.

However, due to the lamps being of commercially available types and being finished products, it was not possible to apply the selected fault without first removing the outer plastic moulding.

The post compliance tests for access to live parts with the standard test finger and insulation resistance test between the lamp contacts and the outer moulding were therefore not conducted.

The results of the tests performed are shown within Tables 19 to 24 of this Test Report.

Lamp reference: L1

Table 19	
Rated lamp voltage range	220-240V
Mean of the lamp voltage range	230V
Calculated test voltage based upon the mean voltage	$1.1 \times 230 = 253V$
Fault applied	Broken cathode
Application time	8 hours
Flammable gases present	None
Smoke or flame present	None

Result: Pass

Lamp reference: L2

Table 20	
Rated lamp voltage range	220-240V
Mean of the lamp voltage range	230V
Calculated test voltage based upon the mean voltage	$1.1 \times 230 = 253V$
Fault applied	Broken cathode
Application time	8 hours
Flammable gases present	None
Smoke or flame present	None

Result: Pass

**RESULTS OF TESTS CONDUCTED: Continued/...****Clause 12 Fault conditions: Continued/...**

Lamp reference: L3

Table 21	
Rated lamp voltage range	220-240V
Mean of the lamp voltage range	230V
Calculated test voltage based upon the mean voltage	$1.1 \times 230 = 253V$
Fault applied	Broken cathode
Application time	8 hours
Flammable gases present	None
Smoke or flame present	None

Result: Pass

Lamp reference: L4

Table 22	
Rated lamp voltage range	220-240V
Mean of the lamp voltage range	230V
Calculated test voltage based upon the mean voltage	$1.1 \times 230 = 253V$
Fault applied	Broken cathode
Application time	8 hours
Flammable gases present	None
Smoke or flame present	None

Result: Pass

Lamp reference: L5

Table 23	
Rated lamp voltage range	220-240V
Mean of the lamp voltage range	230V
Calculated test voltage based upon the mean voltage	$1.1 \times 230 = 253V$
Fault applied	Broken cathode
Application time	8 hours
Flammable gases present	None
Smoke or flame present	None

Result: Pass

**RESULTS OF TESTS CONDUCTED: Continued/...****Clause 12 Fault conditions: Continued/...**

Lamp reference: L6

Table 24	
Rated lamp voltage range	220-240V
Mean of the lamp voltage range	230V
Calculated test voltage based upon the mean voltage	$1.1 \times 230 = 253V$
Fault applied	Broken cathode
Application time	8 hours
Flammable gases present	None
Smoke or flame present	None

Result: Pass

**PHOTOGRAPHIC EVIDENCE OF SAMPLES SUBMITTED**

**Sample reference: L1**



**PHOTOGRAPHIC EVIDENCE OF SAMPLES SUBMITTED: Continued/...**

**Sample reference: L2**



**PHOTOGRAPHIC EVIDENCE OF SAMPLES SUBMITTED: Continued/...**

**Sample reference: L3**



**PHOTOGRAPHIC EVIDENCE OF SAMPLES SUBMITTED: Continued/...**

**Sample reference: L4**



**PHOTOGRAPHIC EVIDENCE OF SAMPLES SUBMITTED: Continued/...**

**Sample reference: L5**





**PHOTOGRAPHIC EVIDENCE OF SAMPLES SUBMITTED: Continued/...**

**Sample reference: L6**



**End of Report.**