



TEST REPORT

IEC 60968 and/or EN 60968

Self-ballasted lamps for general lighting services

Safety requirements

Report reference No.: SHESO09030033301

Tested by
(printed name and signature): Tiger Zhao

Approved by
(printed name and signature): Edward Li

Date of issue: 2009-07-12

Testing Laboratory Name: SGS-CSTC Standards Technical Services Co. Ltd. - Shanghai Branch

Address: No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai China

Testing location: CBTL CCATL SMT TMP

Address: Same as testing laboratory above

Applicant's Name: Shanghai Winsun Electronics Co., Ltd.

Address: Room 501, Building 1, No.3266, Jin Du Road, Min Hang District, Shanghai, China

Test specification

Standard: IEC 60968:88 (1st Edition) + A1:91 + A2:99 and/or EN 60968:90 (1st Edition) + A1:93 + A2:99

Test procedure: CE-LVD

Non-standard test method: N/A

Test Report Form No.: IECEN60968A

TRF originator: SGS Fimko Ltd

Master TRF: dated 2002-01

Copyright © 2001 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description: Light Bulb

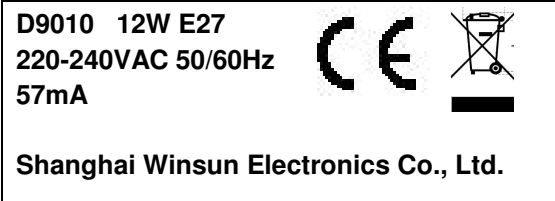
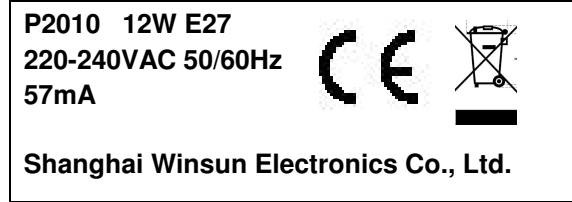
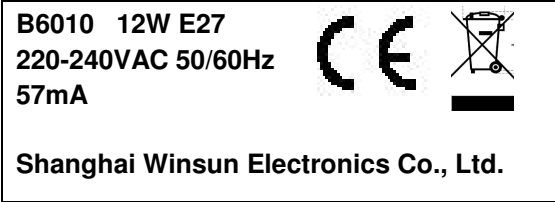
Trademark: None

Model and/or type reference: B6010, P2010, D9010

Rating(s) (V; Hz): AC 220-240V 50/60Hz Max.12W 57mA E27

Copy of marking plate

Example



Summary of testing

The tested samples were found to meet the requirements of the following standards

EN 60968:90 (1st Edition) + A1:93 + A2:99

All samples has the same Circuit diagram and PCB layout

All respective tests are applied to typical Model B6005 which has rated wattage and contains all relative components.

Clause 11 and 12 of IEC/EN 60598-1 were also done on Model B6005

Summary of compliance with National Differences:

None

Test items particulars:

Lamp cap: E27
 Lamp identification: LED
 Commission received from: N/A
 Date: N/A
 Electrical safety class: N/A
 IP number: N/A

Test case verdicts

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

Testing

Date of receipt of test item: 2009-4-14

Date(s) of performance of test: 2009-4-14 –2009-7-10

General remarks

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by a NCB in accordance with IECEE 02.

This report shall not be reproduced except in full without the written approval of the testing laboratory. The test results presented in this report relate only to the item(s) tested.

"(see enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

This document is issued by the company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 3 months. This document cannot be reproduced except in full, without prior approval of the company.

Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.

Content:

- 1. Test report – 12 pages
- 2. Photographs – Enclosure 1 – 18 pages
- 3. Circuit diagram+ PCB layout – Enclosure 2 – 2 pages

General product information:


Total 3 models are covered by this report. These models have the same configuration and same PCB except the different enclosure.

Manufacturer and Factory:

Same as applicant

IEC 60968 and/or EN 60968			
Clause	Requirement – Test	Result - Remark	Verdict

	SAFETY REQUIREMENTS		
--	---------------------	--	--

4	MARKING		
4.1	1) Mark of origin		P
	2) Rated voltage/voltage range (V)	(See page 2)	P
	3) Rated wattage (W)	(See page 2)	P
	4) Rated frequency (Hz)	(See page 2)	P
4.2	1) Lamp current (A)	(See page 2)	P
	2) Burning position if restricted		N/A
	3) The mechanical stress caused by the weight of the lamp in the luminaire		P
	4) Special conditions or restrictions observed for lamp operation; operation in dimming circuits		P
	Not suitable for dimming; symbol used		P
4.3	1) Presence and legibility of the marking by visual inspection		P
	2) The durability of the marking is checked by rubbing lightly with water and hexane for 15 s		P
	3) Availability of information by visual inspection		P

5	INTERCHANGEABILITY		
5.1	Interchangeability shall be ensured by the use of caps in accordance with IEC 60061-1		P
5.2	Compliance of the combination of cap and bulb is checked by the use of gauges		P
	B22d or B15d:		N/A
	A max. and A min. gauge 7006-10/11		N/A
	D1 max. gauge 7006-10/11		N/A
	N min. gauge 7006-10/11		N/A
	Diametrical position of the pins:		N/A
	Insertion in lampholder gauge 7006-4A		N/A
	Retention in lampholder gauge 7006-4B		N/A
	E27:		P
	Max. dimension of the screw thread gauge 7006-27B		P

IEC 60968 and/or EN 60968			
Clause	Requirement – Test	Result - Remark	Verdict
	Min. major diameter of the screw thread gauge 7006-28A		P
	Contact making gauge 7006-50		P
	E26:		N/A
	Max. dimensions of the screw thread 7006-27D		N/A
	Max. major diameter of the screw thread 7006-27E		N/A
	E14:		N/A
	Max. dimensions of the screw thread 7006-27F		N/A
	Min. major diameter of the screw thread 7006-28B		N/A
	Contact making 7006-54		N/A
5.3	Mass not exceeding 1 kg		P
	Bending moment not exceeding 2 Nm		P

6	PROTECTION AGAINST ELECTRIC SHOCK		
	Lamps shall be so constructed that no internal metal parts or live parts are accessible, when the lamps is installed in a prescribed lampholder. Compliance is checked by means of the standard test finger with force of 10 N		P
	Edison screw caps compliance with gauge IEC 60061-3, sheet 7006-51A for E27 caps		P
	and sheet 7006-55 for E14 caps		N/A
	B22 or B15 caps compliances with normal incandescent lamps		N/A
	External metal parts shall be so designed that live parts are not accessible (test of Cl. 7)		P

7	INSULATION RESISTANCE AND ELECTRIC STRENGTH AFTER HUMIDITY TREATMENT		
7.1	After storage 48 h at a 91...95 % relative humidity and at 20...30 °C	25°C; 93%	P
	Insulation resistance with 500 V d.c., required $\geq 4 \text{ M}\Omega$.		P
7.2	Immediately after the insulation resistance test, electric strength test for 1 min.	Single layer metal base printed wiring boards was tested by 1480V rms as electric strength test for 1 min	P
	Type HV (220 ... 250 V): 4000 V rms		P
	Type BV (100 ... 120 V): 2xU + 1000 V		N/A

IEC 60968 and/or EN 60968			
Clause	Requirement – Test	Result - Remark	Verdict

	No flashover or breakdown		P
--	---------------------------	--	---

8	MECHANICAL STRENGTH		
	Torsion resistance		P
	The cap is remain firmly attached when subjected to torque levels		P
	- B22d..... 3 Nm:		N/A
	- B15d..... 1,15 Nm:		N/A
	- E26 and E27 3 Nm:	E27	P
	- E14 1,15 Nm:		N/A
	Torque increased continuously from zero to specified value		P
	Uncemented caps; relative movement between cap and bulb does not exceed 10°		P
	After mechanical strength test sample complies requirements of accessibility		P

9	CAP TEMPERATURE RISE		
	Cap temperature rise ΔT_S not exceeding the condition specified in IEC 60360:		P
	- B22d..... 125 K:		N/A
	- B15d 120 K:		N/A
	- E27 120 K:	B6010: 33,2K	P
	- E14 120 K:		N/A
	- E26..... under consideration		N/A

10	RESISTANCE TO HEAT		
	External parts of insulating material providing protection against electric shock, and parts of insulating material retaining live parts in position, ball pressure test:		P
	Part tested; temperature (°C);diameter of impression (≤ 2 mm) :	Plastic cover; 125; 0,9mm	P
	Part tested; temperature (°C); diameter of impression (≤ 2 mm) :	PCB; 125; 1,1mm	P
	Part tested; temperature (°C); diameter of impression (≤ 2 mm) :		N/A

11	RESISTANCE TO FLAME AND IGNITION		
----	----------------------------------	--	--

IEC 60968 and/or EN 60968			
Clause	Requirement – Test	Result - Remark	Verdict

	Parts of insulating material retaining live parts in position and external parts of insulating material providing protection against electric shock, glow-wire test 650 °C		P
	Part tested; temperature (°C) :	Plastic cover; 650	P
	Part tested; temperature (°C) :	PCB; 650	P
	Part tested; temperature (°C) :		N/A
	No visible flame and no sustained glowing		P
	Flames and glowing, extinguish within 30 s :	0s	P
	No ignition of the tissue paper		P

12	FAULT CONDITIONS		
	a) In a switch-start circuit, the starter is short-circuited		N/A
	b) Short-circuit across capacitors	(See table as below)	P
	c) The lamp does not start, because one of the cathodes is broken	(See table as below)	N/A
	d) The lamp does not start, although the cathode circuits are intact (de-activated lamp)	(See table as below)	N/A
	e) The lamp operates, but one of the cathodes is de-activated or broken (rectifying effect)	(See table as below)	N/A
	f) Opening or bridging other points in the circuit where the diagram indicates that such a fault condition may impair safety	(See table as below)	P

	COMMON MODIFICATIONS (EN 60968:1990)		
5, 6, 8 and 9	Delete all references to E26 lamp caps		N/A

12	TABLE : tests of fault conditions (Model B6010)					
part	0,9xU _n	1,1xU _n	short-circuited	dis-connected		
CX1	198	264	Yes	No	Fuse operated	No hazard
VC1	198	264	Yes	No	Fuse operated	No hazard
C1	198	264	Yes	No	Power changed to 6,3W	No hazard
C1	198	264	Yes	No	No change	No hazard
C2	198	264	Yes	No	Power changed to 0,64W	No hazard
C3	198	264	Yes	No	Power changed to 0,64W	No hazard
C4	198	264	Yes	No	Power changed to 0,8W	No hazard
C5	198	264	Yes	No	Power changed to 0,9W	No hazard
VD1	198	264	Yes	No	No change	No hazard
VD2	198	264	Yes	No	No change	No hazard
VD3	198	264	Yes	No	No change	No hazard
VD4	198	264	Yes	No	Power changed to 7W	No hazard
VD5	198	264	Yes	No	Power changed to 6,4W	No hazard
VD6	198	264	Yes	No	Power changed to 0,72W	No hazard
VD7	198	264	Yes	No	Power changed to 9,6W	No hazard

ANNEX 1: components						
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Fuse	B	Shanghai Songshan Electronics Co., Ltd.	RT1-20	AC 250V 2A	DIN EN 60127-1:2007- 02	VDE 138756
Component fan	B	Asia Vital Componets Co., Ltd.	X3610Z12L Y	DC 12V 0,06A	EN 60950- 1/A11:2004	TUV B0607257300 52
Single layer metal base printed wiring boards	B	SHENZHEN KERUI ELECTRIC INDUSTRY CO LTD	KRP	SS V-0	--	UL E320953
Insulation tap	B	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A #	130 °C	--	UL E246950
PCB	B	GUANGZHOU CITY HENYIDA ELECTRONIC MFR CO LTD	H-068	130 °C V-0	--	UL E258570
X2 Capacitor	B	Shenzhen Su Rong Capacitors Co., Ltd.	MPX/MKP	0,1 μ F AC280V 40/100/21	DIN VDE 60384- 14:2006-04	VDE 40008924
Y1 Capacitor	B	Jyh Chung Electronic Co., Ltd.	JD	AC 400V 1000Pf 40/085/21/C	DIN EN 132400: 2002- 04	VDE 137027
Internal wire	B	Shenzhen Mysun Insulation Materials Co., Ltd.	H05S-K	0,5mm ²	DIN VDE 0282-03: 2005-02	VDE 40016705
Heat shrinkable flexible polyolefin tubing	B	DONGGUAN SALIPT CO LTD	SALIPT S- 901-600	600V 125°C	--	UL E209436
Silicone Rubber (SIR)	B	SHANGHAI HUITIAN NEW CHEMICAL MATERIAL CO LTD	906Z	V-0	--	UL E248611
Bobbin	B	CHANG CHUN PLASTICS CO LTD	T375J	V-0	--	UL E59481
Magnet Wire	B	SHANGHAI DINGQIANG ELECTRICAL EQUIPMENT CO LTD	DQMW75 130	MW75	--	UL E193482

Insulation sheet (PET)	B	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFPET 6023	VTM-2	--	UL E199019
LED	B	NICHIA CORPORATION	Warm white LED	DC 350mA Class I	IEC 60825-1 Edition 1.2: 2001	Reference to No: SQETB080623 01-06E

The codes above have the following meaning:

- A - The component is replaceable with another one, also certified, with equivalent characteristics
- B - The component is replaceable if authorised by the test house
- C - Integrated component tested together with the appliance
- D - Alternative component

IEC/EN 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
11	CREEPAGE DISTANCES AND CLEARANCES		
	Working voltage (V)	240	—
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> > 600 <input type="checkbox"/>	—
	Rated pulse voltage (kV)	N/A	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm)		N/A
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm)	B6005: ≥ 7,2 ; ≥ 7,2 (required min. 6,5; 6,5)	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm)		N/A
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm)		N/A
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm)		N/A

12	temperature measurements, thermal tests of Section 12		
	Type reference	B6010	—
	Table: measured temperatures corrected for ta = 25 °C:		
	- test: rated voltage	240	—
temperature (°C) of part		B6010	
		test	limit
Lamp cap		33,2K	120K
Enclosure inside		41,7	130
Winding		52,0	130
Winding (Bobbin)		47,6	130
Capacitor		46,3	105
PCB		45,4	130
Lead wire		48,4	180

12,5	Abnormal test (blockage of the fan)		
	Type reference	B6005	—
	Table: measured temperatures corrected for ta = 25 °C:		
	- test: rated voltage	240	—
temperature (°C) of part	B6005		
	test	limit	
Winding	85,6	130	
capacitor	75,1	115	

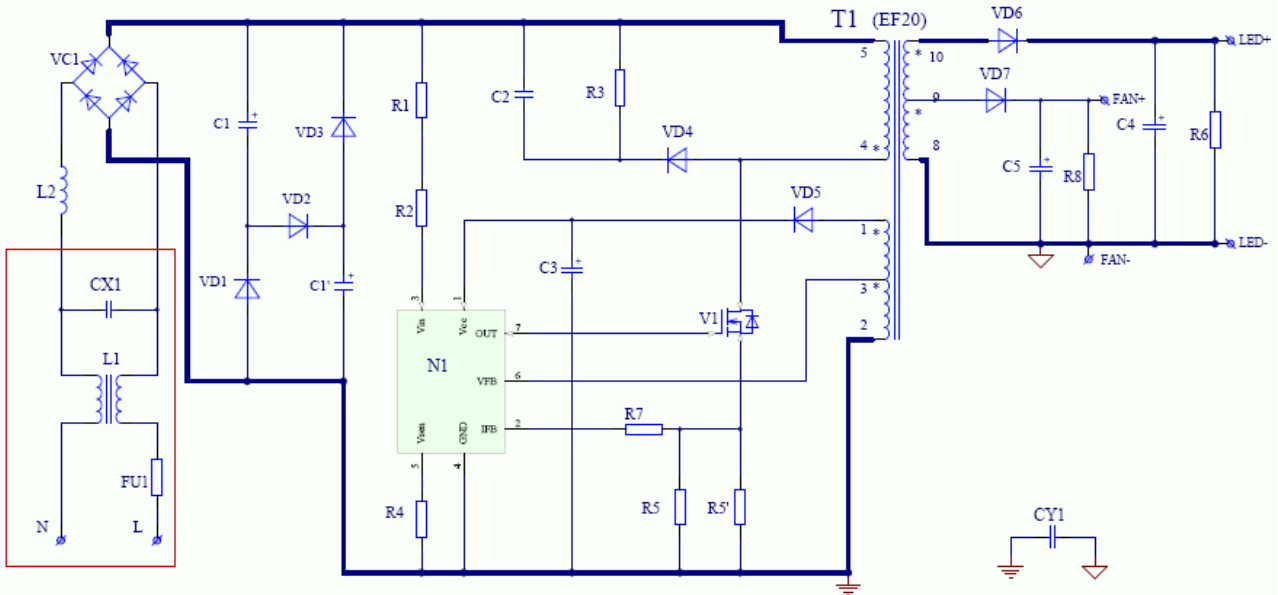
Appendix 2: Safety of laser product for LED test report according to EN 60825-1: 1994+ A1: 2002+ A2:2001

1	Scope and object	—
2	Normative references	—
3	Definitions	—
4	Engineering specifications	N/A
5	Labeling	N/A
6	Other informational requirements	N/A
7	Additional requirements for specific laser products	N/A
8	Classification	P
9	Measurement for classification	P

Note:

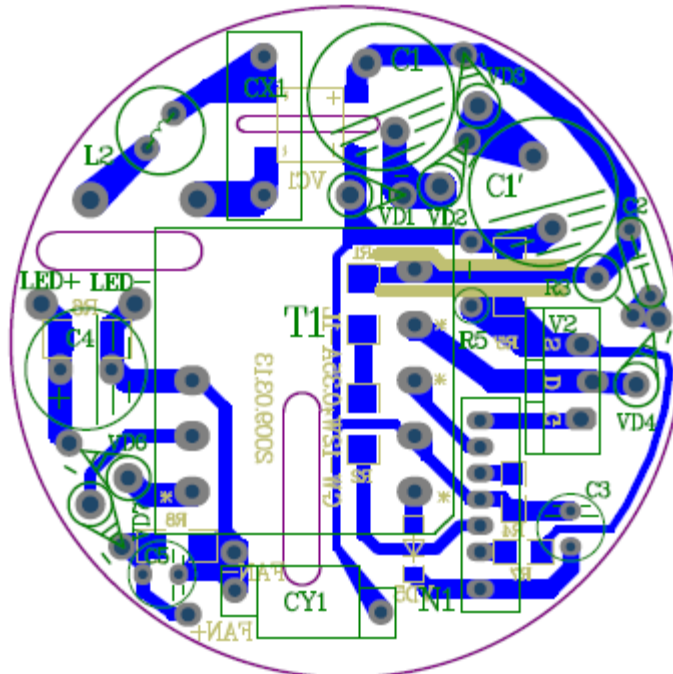
The measured emission level did not exceed the accessible emission level of Class 1 and the apparatus was classified as “Class 1 LED Product”.

Circuit diagram

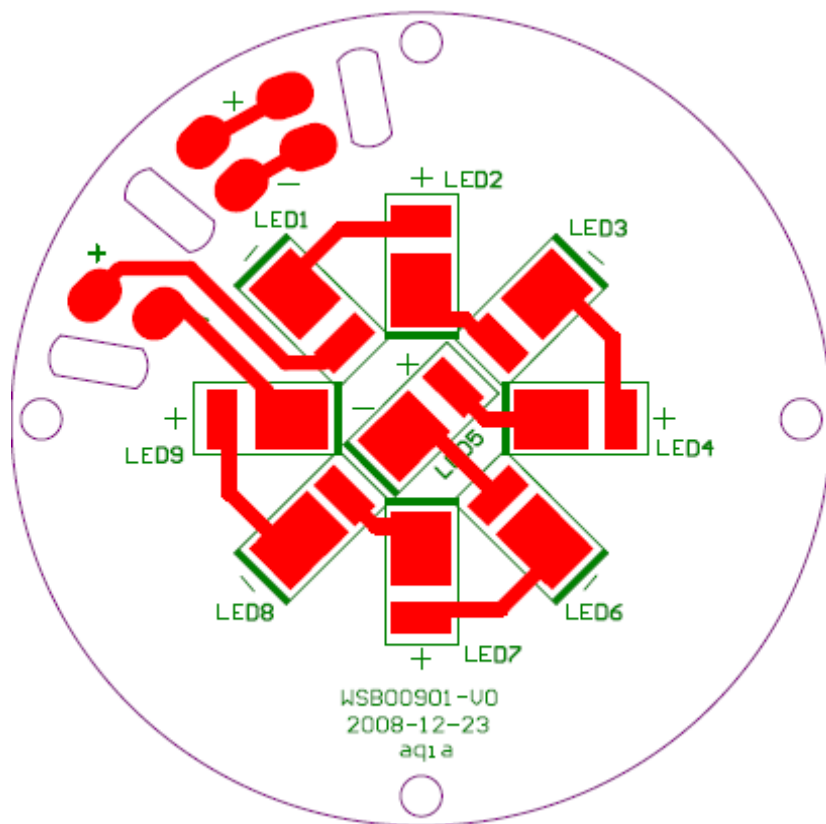


PCB layout

LED Control Gear Board



LED Support Board



--- End of Enclosure 2 ---