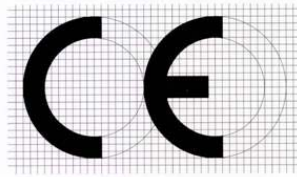


LVD TEST REPORT

For

laser pointer presenter

Model Number: KB-125, KB-109, KB-321, KB-4202,
KB-1Series, KB-2Series,
KB-4Series, KB-05Series,
KB-06Series



Prepared for :

Prepared By :

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TEL : 0086-18925263335

Report Number : TB-LVD110200
Date of Test : Jan. 14-17, 2011
Date of Report : Jan. 18-19, 2011

CERTIFICATION

APPLICANT:

ADDRESS:

FACTORY :

ADDRESS :

PRODUCT :

MODELS : KB-125, KB-109, KB-321, KB-4202, KB-1Series,
KB-2Series, KB-4Series, KB-05Series, KB-06Series

Test Standards
<p style="text-align: center;">EN 60825-1:2007</p> <p>Part 1: Equipment Classification, Requirements and User's guide</p>

This report shows that the product technically complies with the Council LVD **73/23/EEC** as amended by EEC Directive **2006/95/EC** requirements.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Report by :	<i>Victor Chen</i>	Date :	Jan. 19, 2011
	(Victor Chen)		
Checked by :	<i>Ethan Chen</i>	Date :	Jan. 19, 2011
	(Ethan Chen)		
Approved by :	<i>Justin Zhang</i>	Date :	Jan. 20, 2011
	(Justin Zhang)		

<p style="text-align: center;">EN 60825-1:2007 Part 1: Equipment Classification, Requirements and User's guide</p>	
Testing laboratory-----:	
Address-----:	
Testing location-----:	Shenzhen Toby Technology Co., Ltd.
Applicant-----:	
Address-----:	
Standard-----:	EN 60825-1:2007
Test result-----:	Compliance with the requirements.
Procedure deviation-----:	N.A.
Non-standard test method---	N.A.
Trademark-----:	---
Type of test object-----:	laser pointer presenter
Models/Type reference-----:	KB-125, KB-109, KB-321, KB-4202, KB-1Series, KB-2Series, KB-4Series, KB-05Series, KB-06Series
Rating-----:	4.5Vdc
Factory-----:	
Address-----:	

Test item particulars:

Equipment mobility -----: Portable
 Operating condition-----: Continuous
 Class of equipment -----: Class 2 laser product
 Protection against ingress of water-----: IP20

Possible test case verdicts:

Test case does not apply to the object-----: N
 Test object does meet the requirement -----: P
 Test object does not meet the requirement-----: F

General product information:

All test in ambient temperature is $25 \pm 5^{\circ}\text{C}$, RH: $60 \pm 20\%$ and air pressure of 860 mbar to 1060 mbar.

General remarks:

- 1." (see remark #) " refers to a remark appended to the report.
2. Throughout this report a point is used as the decimal separator.
3. The test results presented in this report relate only to the object tested.
4. All models are the same except the sharp. All test on the model KB-125.
5. This report shall not be reproduced except in full without the written approval of the Shenzhen TOBY.
6. If client has any objection to the testing results, please advise us within 15 working days after publish, otherwise claims will not be accepted.

Artwork of Marking Label

laser pointer presenter
Model: KB-125
Rating: DC4.5V



Made In China

CLASS 2 LASER PRODUCT

**LASER RADIATION
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT**

**CAUTION – CLASS 2 LASER RADIATION WHEN OPEN
DO NOT STARE INTO THE BEAM**



EN 60825-1:2007			
Clause	Requirement Test	Result - Remark	Verdict
4	Manufacturing Requirement		
4.1	Engineering Specifications		P
4.1.1	General remarks	Class 2 device	P
4.1.2	Modification		P
4.2	Protective Housing		P
4.2.1	General		P
4.2.2	Service	No access panel is equipped with.	P
4.2.3	Removable Laser System		N
4.3	Access Panels and Safety interlocks		N
4.3.1	A safety interlock shall be provided for access panels of protective housings, when : -the access panel is intended to be removed or displace during maintenance or operation, and - the removal of the panel gives human access to laser radiation levels in excess of the AEL of Class 3A		N
4.3.2	If a deliberate override mechanism is provided, the manufacturer shall also provide adequate instructions about safe methods of working.	No override mechanism provided	N
4.4	Remote interlock connector: Class 4 and class 3B shall provide a remote interlock connector	Class 2 device, no remote interlock connector	N
4.5	Key control	Class 2 device	N
4.6	Laser radiation emission warning		N
4.6.1	Class 4 or Class 3B laser system shall provide audible or visible warning when it is switched on or if capacitor banks of a pulsed laser are being charged or have not been positively discharged.	Class 2 device	N
4.6.2	Each operational control and laser aperture that can be separated by 2 meters or more from a radiation warning device shall itself be provided with a radiation warning device.	No operational control and laser aperture that can be separated by 2 meters.	N
4.6.3	Where the laser emission may be distributed through more than one output aperture, then a visible warning device shall clearly indicated the output aperture or apertures through which laser emission can occur.		N
4.7	Beam stop or attenuator	Class 2 device, no beam stop or attenuator is necessary	N
4.8	Each laser product shall have controls located so		P

EN 60825-1:2007			
Clause	Requirement Test	Result - Remark	Verdict
	that adjustment and operation do not require exposure to laser radiation in excess of the AEL for class 1 and class 2		
4.9	Any viewing optics, viewport or display screen incorporated in a laser product shall provide sufficient attenuation to prevent human access to laser radiation in excess of the AEL for class 1 and for any shutter or variable attenuator incorporated in the viewing optics, viewport or display screen, means shall be provided.	Not such devices.	N
4.10	Scanning safeguard	Not emitting scanned radiation	N
4.11	Alignment aids	Not required to align beam path components	N
4.12	"walk-in" access	No access panel is equipped with.	N
4.13	Environmental conditions	See test condition for the environmental conditions	P
4.14	Protection against other hazards		P
4.14.1	Non-optical hazards		P
4.14.2	Collateral radiation		P

5	Labeling		
5.1	Each laser product shall carry label(s) in accordance with the requirements. The label shall be permanently fixed, legible, and clearly visible during operation, maintenance or service, according to their purpose.	See page 5 for the label	P
5.2	Class 1 laser product		N
	Class 1M laser product		N
5.3	Class 2	See page 5 for the label	P
	Class 2M		N
5.4	Class 3A		N
	Class 3R		N
5.5	Class 3B		N
5.6	Class 4		N
5.7	Each class 3B and class 4 laser product shall have affixed a label close to each aperture through which		N

EN 60825-1:2007			
Clause	Requirement Test	Result - Remark	Verdict
	laser radiation in excess of the AEL for Class 1 or class 2 is emitted.		
5.8	Radiation output and standards information	See page 5 for the label	P
5.9	Labels for access panels		P
5.9.1	Each connection, each panel of a protective housing and each access panel of a protective enclosure which when removed or displaced permits human access to laser radiation in excess of the AEL for Class 1 shall have affixed a label bearing the words "CAUTION – LASER RADIATION WHEN OPEN"	Protective housing be used.	P
5.9.2	Labels for safety interlocked panels	No safety interlocked panels	N
5.10	Warning for invisible laser radiation		P
5.11	Warning for visible laser radiation		P

6	Other information requirement		
6.1	Information for the user		N
6.2	Purchasing and servicing information		P

7	Additional requirements for specific laser products		
7.1	Medical laser products	Not medical laser product	N
7.2	Laser fiber optic transmission system		P

8	Tests		
8.1	General : errors and statistical uncertainties		P
	Test & Measurements of laser radiation for determining classification	Test are done during operation, maintenance and service, even single fault condition	P
8.2	Measurement shall be made under the following conditions:		P
	a) Under those conditions and procedures which maximize the accessible emission levels including start-up, stabilized emission, and shut-down of the laser product.		P
	b) with all controls and adjustments listed in the	.	P

EN 60825-1:2007			
Clause	Requirement Test	Result - Remark	Verdict
	operation, maintenance, and service instructions adjusted in combination to result in the maximum accessible level of radiation		
	c) At points in space to which human access is possible during operation for measurement of accessible emission levels.	Test point at 14mm from the apparent source	P
	d) With the measuring instrument detector so positioned and so oriented with respect to the laser product as result in the maximum detection of radiation by the instrument.	Refer to the test method describe in attached test procedure	P
	e) For a laser product other than a laser system, with the laser coupled to that type of laser energy source which is specified a compatible by the laser product manufacturer and which produces the maximum emission of accessible radiation from the product.		P
	f) for values expressed in radiant power (W) or radiant energy (J), within a circular aperture stop of 50mm diameter (to simulate the collection by an optical instrument of a stationary laser beam)		P
	g) For values expressed in irradiance ($W.m^{-2}$) or radiant exposure ($J.m^{-2}$) averaged over a circular stop according to the limiting aperture applicable to the eye in table 7		P
	h) for apparent sources subtending an angle greater than α_{min} and within the wave-length range from 400nm to 1400nm by measuring the radiant power (W) or radiant energy(J) detectable through a circular measurement aperture having a diameter of 50mm and within an effective angle of acceptance of α_{max} (0.1 rad)		P
	i) For scanned laser radiation within a stationary circular aperture stop having a 7 mm diameter	Not scanned laser radiation	N
	j) The angle of acceptance is α_{max} (0.1 rad) for the wavelength range from 302.5nm to 4000nm. However, this angle may be less in order to measure the laser radiation from a single element of an array (see h) above)		P
	k) Appropriate provision shall be made to avoid or to eliminate the contribution of collateral radiation to the measurement.		P

9	Classification		
9.1	Introduction		P
9.2	Description of laser class	Class 2 laser product	P

EN 60825-1:2007			
Clause	Requirement Test	Result - Remark	Verdict
9.3	Classification procedures	See attached table 9.1	P
9.4	Repetitively pulsed or modulated lasers		P
SECTION THREE – USER'S GUIDE			N
10. -13			N

TEST RESULTS:

1) Compare the accessible emission level of laser radiation emitted from the equipment with the accessible emission limit of class 1, class 2 as well as class 3A product respectively. This comparison is evaluated by using the highest measurement value under each condition. Accessible emission levels are measured values or calculated from the measurement values if necessary.

2) The time base is 30,000s for wavelength less than 400nm and or for laser radiation of wavelengths greater than 400nm where intentional viewing is inherent in the design or function of the laser product.

3) Break point $T_2 = 10 \times 10^{0.02(\lambda - 550)} \text{ s} = 10 \times 10^{0.02 \times (650 - 550)} \text{ s} = 1000 \text{ s}$

4) Correction factor: (a) correction factor $C_3 = 10^{0.018((\lambda - 550))} = 10^{0.018 \times (650 - 550)} = 63$

(b) correction factor C_6 equals to 1

Accessible emission limits for class 2 laser products

Emission duration (s)	Accessible emission level	Accessible emission Limit	CLASS
10^3 To 3×10^4	$Q = 0.92 \text{ mW}$	$Q = 3.9 \times 10^{-4} \text{ W}$	1
$t \geq 0.25$	$Q = 0.92 \text{ mW}$	$Q = C_6 \times 10^{-3} \text{ W}^a$ $= 1 \text{ mW}$	2

EUT Photos

Photo 1 View of EUT



Photo 2 View of EUT

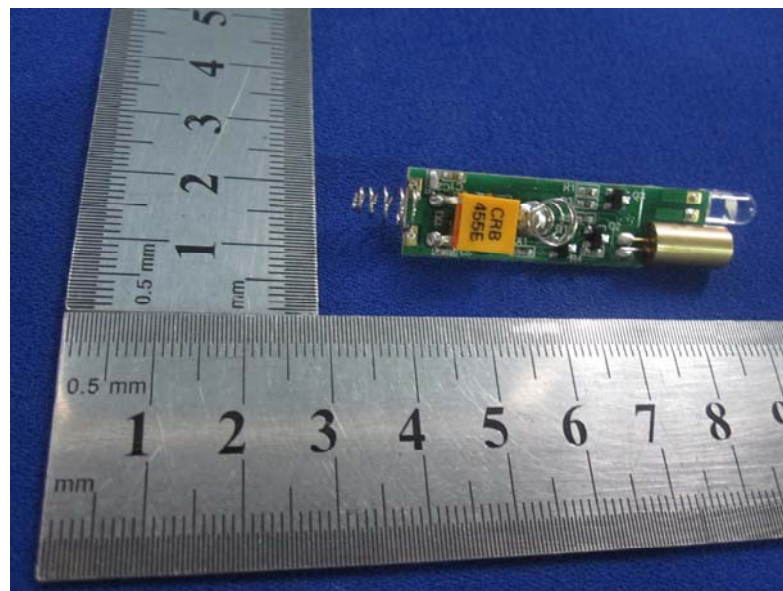
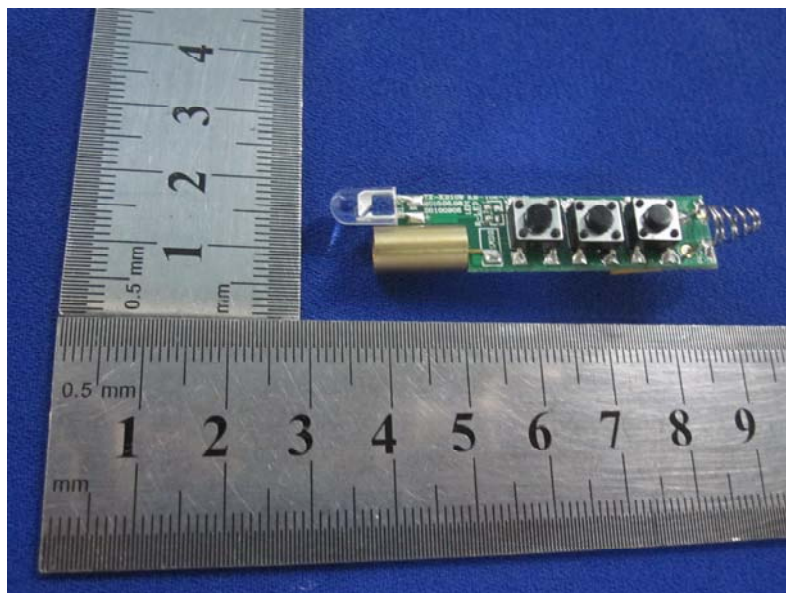


Photo 3 View of EUT



END OF REPORT