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TEST REPORT

EN 60825-1

Safety of laser products

- Part 1: Equipment classification and requirements

Report reference No	:	POCE13122702HRS
Tested by (printed name and signature)	:	Calvin Chen — Calvin Chen
Approved by (printed name and signature)	:	Machael Mo — Machael Mo
Date of issue	:	Jan. 05 , 2014
Testing Laboratory Name	:	
Test name.....	:	SHENZHEN POCE TECHNOLOGY CO., LTD.
Address	:	1F, Bldg. H, Hongfa Science and Technology Park,Tangtou, Shiyan, Bao'an District, Shenzhen, China
Testing location	:	As above
Applicant's Name		
Address		
Test specification		
Standard.....	:	EN 60825-1: 2007
Test procedure	:	CE Scheme
Procedure deviation	:	N.A.
Non-standard test method	:	Not applicable
Test Report Form No.:		
TRF originator	:	POCE Technology Center
Test item description		
Product name.....	:	LASER KEYCHAIN / PEN
Trademark	:	N/A
Manufacturer.....	:	
Address	:	
Model and/or type reference	:	40001, 40002, 40050.
Rating(s)	:	4.5Vdc, λ =650nm, Class II Laser

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Report on the submitted sample said to be:	
Sample Name	: LASER KEYCHAIN/PEN
Sample Model	: 40050
Ratings	: 4.5VDC 650nm
Tested	: 4.5VDC 650nm Class II
Test item	: Laser Classification Measurement
Ambient Temperature	: 24℃; 65%RH
State of Samples	: Normal operation
Test level	: N/A
Test requested	: Laser Power Measurement according to EN 60825-1: 2007
Sample Quantity	: 20 pieces
Sample Received Date	: Jau. 01, 2014
Sample tested Date	: Jan. 05, 2014

Test case verdicts

Test case does not apply to the test object ... ... : N (A.)

Test item does meet the requirement ..... : P(ass)

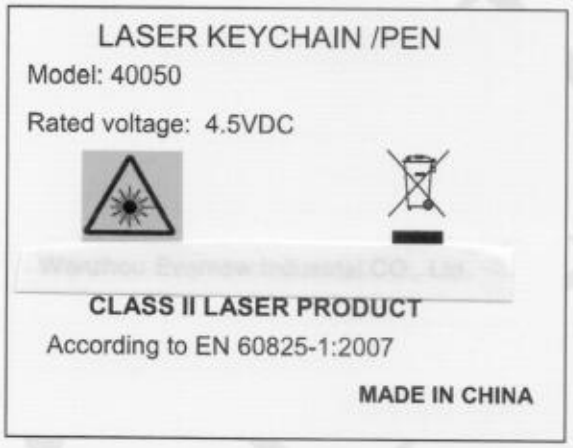
Test item does not meet the requirement .....: F(ail)

Test Results:

- The product is a Class II Laser.

1. Model 40050 is registered with the FDA and the accession number is 0710535.
2. This Test Report stating compliance with EN60825-1 and that the test method was used at constant voltage 4.5Vdc equal to the supplied batteries.
3. Test data refer to next pages.

Copy of the Marking Plate and Warning Labels:



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Clause	**Requirement - Test**	**Result**	**Verdict**

1. Basic Parameters of the LED

Parameters	Color of the laser/LED	Wavelength(λ) measured/ Given by manufactures	Time Basic estimated	Apparent source size(a) measure	Angular subtense (α) estimated	Continuous wave or pulsed	Break point(T2)
Unit	/	(nm)	(sec)	(mm)	(mrad)	/	(second)
1 laser	Red	650	30 000	2,53	46,2mrad	CW	10,0

2. Test condition

1) Condition 1, the radiation is collected through a circular aperture stop having a diameter 50 mm and its location is 2000 mm away form the closet point of human access.

2) Condition 2, the radiation is collected through a circular aperture stop having a diameter 7 mm and its location is 36,4mm (RTH) away from the apparent source.

The condition 2 is obviously severer than condition 1. Therefore, measurement for condition 1 is omitted.

3. Test data:

Tests against retinal thermal hazard (RTH):

Parameters	Measurement aperture(d)	Measurement distance(r)	Accessible Emission Level (AEL)		Class
			Measured	Limit (QAEL)	
Unit	(mm)	$100\sqrt{\frac{\alpha+0,46}{\alpha\,\max}}$ (mm)	(W)	$C_6\times10^{-3}$ (W)	/
1 laser	7	93.6	0.89×10^{-3}	1.0×10^{-3}	Class II

Therefore, the product is **Class II laser products**.

Correction factors:

1) C_6=1 for $\alpha \le \alpha_{min}$;

$C_6=\alpha/\alpha_{min}$ for $\alpha_{min} < \alpha \le \alpha_{max}$;

$C_6=\alpha_{max}/\alpha_{min}$ =66,7 for $\alpha > \alpha_{max}$

Therefore C_6 equals 1

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Remark : 1. The class II laser product should have affixed an explanatory label bearing the word "CLASS II LASER PRODUCT" or instead, the same statement may be included in the information for the user.

2. Adequate instructions for proper assembly, maintenance, and safe use including clear warnings concerning precautions to avoid possible exposure to hazardous laser radiation should be supplied with the laser product.

3. The corresponding position of each label affixed to the product should be indicated or, if provided with product, a statement that such labels could not be affixed to the product but were supplied with the product and a statement of the form and manner in which they were supplied should be provided.

4. A clear indication in the manual of all locations of laser apertures should be provided in the instruction manual.

5. The specification for the safety classification of the laser product should be provided.

Attachment – EUT's Photos

*** End of the report ***