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laser classification

Posted by Anonymous on Fri, 2014-09-05 12:14

laser classification: We have not been using our old laser because it was a Class 3B, and therefore banned in secondary schools under the older code of practice.

Now, in the ARPANSA Use of Radiation in Schools, Radiation Protection Series Publication No. 18, June 2012, page 79, it says, "Some lasers that were previously Class 3B now belong to Class 1M or 2M, as they are considered safe for viewing with the naked eye."

Our laser from Laser Services, is a 402 He Ne, and has Class 3, Max. output 3MW, Wavelength 633nm on the case. The instructions accompanying it state it produces less than 0.001 watts. Further in the booklet it says it produces 0.5 milliwatts.

My question is, please, - does our laser now belong to the Class 1M or 2M in the new guidelines, and therefore is it safe to use in the classroom?

Voting:



No votes yet

Year Level:

Senior Secondary

Laboratory Technicians:

Laboratory Technicians

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Answer by labsupport on question Answer by j.turnbull on question laser classification

Submitted by on 08 September 2014

Reviewed 11 February 2023

It is our understanding that this laser would still be classified as Class 3 under the current classification system, probably Class 3R. We would therefore caution against its use in the classroom.

Classification of lasers

The upper output for Class 2 visible lasers is 1mW. At or below this power eye injury is considered very unlikely because of the natural human aversion responses (blinking, turning away). Class 3R visible lasers fall into the 1- 5 mW power range, eye injury is possible, and so extra precautions are required for their use.

The possible reclassification of former Class 3 lasers to the current Classes 1M or 2M refers to situations where the laser can exceed the permitted accessible emission limit (AEL) for Class 1 or Class 2 (that is, 1mW), but because of the geometrical spread of the radiation, can not cause harmful levels of exposure to the unaided eye (see pages 75- 76). This would not apply to a bench laser because the beam is collimated and is not "geometrically spread", and so eye injury remains possible.

Classification of your laser

It is noted that this instrument is classified as Class 3, and with 3mW power output by the manufacturer (Laser Services), however the instruction sheet indicates a power output of 0.5mW (consistent with a Class 2 laser). It would be prudent here to follow the classification on the instrument rather than external printed notes. This classification could be checked with Laser Services. For contact details see <https://laserservices.com.au>

Use of Class 3 lasers

It is also noted that the use of Class 3R visible lasers in schools is not prohibited in the ARPANSA Safety Guide.¹ While it states "It is expected that in most circumstances only Class 1 and Class 2 laser products should need to be used in schools" (page 65), the use of Class 3R lasers is not uncommon in senior Physics applications. This Safety Guide gives extensive advice on this, particularly in Sections 9.3, 9.5, 9.6 (pages 81- 82), and also in Section 10, Developing a Risk Assessment (Section 10.1, pages 85- 86).

- Specific policies and permissions are required for the use of lasers above class 2.
- It is also important to consult with your jurisdiction in case there are additional restrictions in place in your school system.

Reference

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). 2012. *Safety Guide for the Use of Radiation in Schools (2012)*. Retrieved from the ARPANSA website:

<https://www.arpansa.gov.au/regulation-and-licensing/regulatory-publicati...>

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