

# SAFETY ALERT



## Laser Pointers

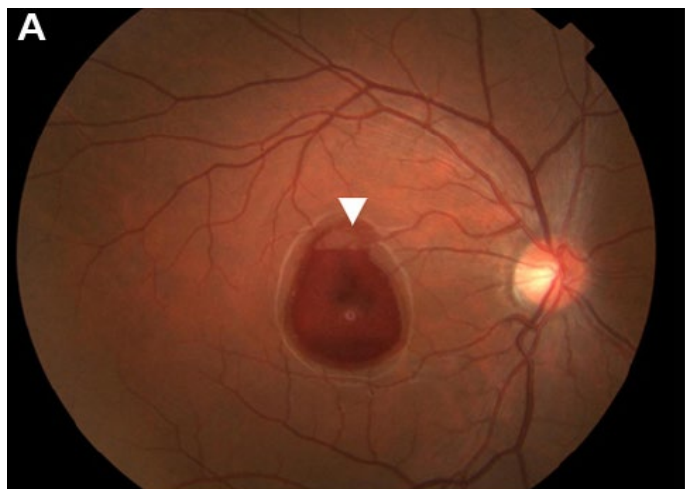
### How much is too much?

The legal power limit for laser pointers is 1 milliwatt (1 mW). To give you a rough idea of the risks involved, looking into a 1 mW laser is like looking at the sun.

### Risks

It does not take much power to do eye damage. This image shows a burn to the retina from an accidental exposure to a low powered (2 mW) laser during a light show. (See [Inner retinal damage after exposure to green diode laser during a laser show.](#))

*Retinal injury caused by a 2 mW green LED laser*



### Misleading labels and missing warnings

Increasing numbers of lasers are being sold with incorrect, inadequate, or non-existent classification labels and warnings. In [one investigation](#), 44 laser pointers were purchased from local and international suppliers. Measurements showed that 40 out of the 44 lasers had powers exceeding 1 mW. More than twenty of these lasers were in the class 3B power range (5-500 mW) and could easily do eye damage. One had a measured output of more than 100 times the eye-safe power level.

### There might be infrared power too

Many green laser pointers start with a Nd:YAG infrared laser (1064 nanometre wavelength) then halve the wavelength to make a green laser beam (532 nm). Even if the green component has a safe power level, there can be an infrared component that is strong enough to burn your retina. (You can't see infrared, but it will still burn your retina.)

If this type of laser has an infrared component, it can be emitted in a different direction to the visible beam.

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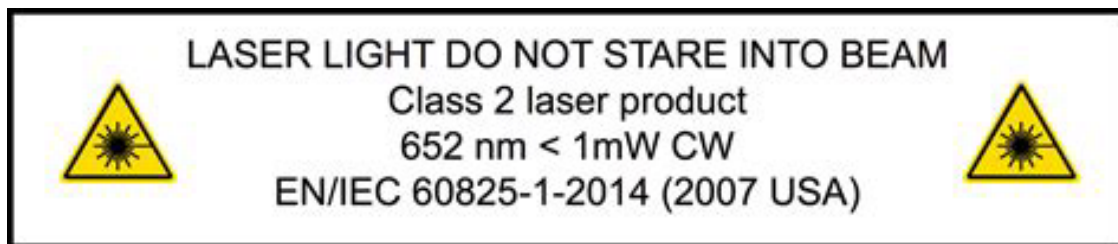
## What to do

- Never look directly into a laser
- Never look at a reflected laser – looking at reflections from a shiny surface is not much different to looking straight into the beam
- Never shine a laser at anyone, at a vehicle, or at an aircraft
- Be wary of lasers bought off the Internet.

### If you are buying a laser pointer

- Only buy class 1 or class 2 lasers
- Ensure your laser has a maximum power output of less than 1 mW.

This information should be visible on the rating sticker and in the item description. Before purchase, check that your laser is class 1 or 2 AND that the maximum power output is less than 1mW.



*Laser label*

### For laser pointers you already have

- All lasers should have a white or yellow laser sticker clearly showing their rating (class), wavelength, and maximum output power. (See example above.)
- Find this sticker and check that your laser is class 1 or class 2 and has a maximum power less than 1 mW
- Do not use a laser pointer unless you know that it is class 1 or 2, its power is less than 1 mW, and it has a laser warning label.

### Contact

Please do not hesitate to contact the Radiation Safety Officer ([rso@curtin.edu.au](mailto:rso@curtin.edu.au), 0434 208 534) if you have any questions about laser pointers.

### Date of Issue

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