

## Advisory 19.0 Guidelines for the Safe Use of Laser Pointers

A laser pointer is a small device similar in appearance to a pen light flashlight that emits an intense beam of light and is intended to illuminate images on a projection screen or chart to enhance educational, research, or other presentations.

The Food and Drug Administration has issued a warning on the misuse of laser pointers. The warning advises that “the light energy that laser pointers can aim into the eye can be more damaging than staring directly into the sun. Federal law requires a warning on the product label about this potential hazard to the eyes.”

Early models of laser pointers were Class 2 low power red beam devices (<1 milliwatt [mW]) as defined by the American National Standards Institute (ANSI) Z136.1 that were considered as not able to cause injury if viewed for a time period of ¼ second or less. Class 2 lasers were marked with “caution” labels. Laser pointers of more recent manufacture are usually Class 3a devices of 1 to 5 mW that can be hazardous to the eyes even if viewed for very short periods of time. Class 3a laser pointers should be marked with “danger” labels.

Some laser pointers imported from China and Russia are higher power devices (15 mW or more) that generate a green beam at 532 nanometers (nm), or have easily removed filters that expose users to laser beams of 532 nm and 1064 nm. Although no laser pointer can be considered “safe”, the higher power, green beam devices present a significant potential for permanent eye injury. Some of these are sold without the appropriate warning labels.

Although the natural aversion response or blink reflex of the eyes to bright light may protect the eyes from lasers of less than 5 mW if the output is not focused with a magnifying lens, laser pointer users must avoid directing the laser beam toward themselves or other people. When laser pointers are used for other than their intended purpose, accidental viewing of the laser beam can cause varying degrees of blindness, afterimages, or glare and may lead to more serious problems if the persons exposed to the laser’s light are driving vehicles, piloting aircraft, operating machinery, etc.

Users of laser pointers should observe the following safety guidelines:

- ✓ Never look directly into the beam or point a laser at anyone else,
- ✓ Never point a laser at a mirror or other equally reflective surfaces,
- ✓ Limit laser pointer use to devices with laser radiation labels citing Class 2 or 3a, wavelengths between 630 nm and 680 nm, and a maximum output of less than 5 mW.

Additional information is available at the following web sites:

[www.rli.com/pointer.html](http://www.rli.com/pointer.html)

[www.princeton.edu/~ehs/laserpointer.html](http://www.princeton.edu/~ehs/laserpointer.html)

[www.safety.ed.ac.uk/rad/policy1.htm](http://www.safety.ed.ac.uk/rad/policy1.htm)

Any questions or concerns regarding laser pointers should be directed to Environmental Health & Safety, 556-4968.