International Commission on Non-ionizing Radiation Protection (ICNIRP)

What do the different classifications of lasers mean?

The FDA recognizes four major hazard classes (I to IV), including two subclasses (IIIa and IIIb), of lasers--ranging from those that pose no known hazard to those that pose serious danger if used improperly. The higher the class, the more powerful the laser is.

Class	Laser Hazard	Product Examples
I	Laser usually contained within the product and considered non-hazardous.	Laser printers CD players DVD players
II IIa	Visible laser or laser system that cannot cause eye damage unless viewed directly for an extended period of time, or with magnifiers, binoculars, or telescopes.	Bar code scanners
IIIa	Laser that normally does not present a risk of injury if viewed momentarily with an unaided eye, but may present a greater risk if viewed using magnifiers, binoculars, or telescopes.	Laser pointers
IIIb	Laser can cause eye damage if viewed directly	Laser light shows Industrial lasers Research lasers
IV	Laser may cause severe eye injury with short duration exposure to the direct or reflected beam.	Laser light shows Industrial lasers Research lasers

	May also cause severe skin damage and present a fire hazard.	

What are laser pointers?

Laser pointers are tools used for pointing out objects or locations, and are defined as "surveying, leveling, and alignment laser products" in an FDA regulation. They are commonly used during lectures and astronomy presentations, and laser pointers incorporated into spirit levels and hand tools are also very popular. In recent years laser pointers have become readily available, and are commonly sold in hardware, pet, hobby, and office supply stores.

Are laser pointers safe?

When used properly lasers pointers are safe. Laser pointers are misused when they are directed at the eyes or treated as toys. The light energy from a laser pointer aimed into the eye can be more damaging than looking directly into the sun. And the startling effect of a bright beam of light can cause serious accidents when aimed at someone driving a car or operating other machinery.

The FDA is concerned about the increased availability of a variety of laser products that may be illegal or unsafe. Green laser pointers have the agency particularly concerned. While there are legitimate uses for green pointers, they may be altered to become more powerful and unsafe if not used responsibly.

What is the proper use of a laser pointer?

Remember, laser pointers are not toys and they should only be used by an adult, or with adult supervision.

- Never aim or shine a laser pointer at anyone.
- Only activate the laser pointer when you are using it to point at a nearby object.
- Do not buy laser pointers for your children. Lasers are not toys.
- Before purchasing a laser pointer, make sure it has the following information on the label:
    - a statement that it complies with Chapter 21 CFR (the Code of Federal Regulations)
    - the manufacturer or distributor's name and the date of manufacture
    - a warning to avoid exposure to laser radiation
    - the class designation, ranging from Class I to IIIa. Class IIIb and IV products should be used only by individuals with proper training

and in applications where there is a legitimate need for these high-powered products.

What is FDA’s role in regulating lasers?

The FDA regulates both medical and non-medical lasers. The FDA may inspect manufacturers of laser products and require the recall of products that don't comply with federal standards or that have radiation safety defects. The agency also may test laser products and inspect displays of laser light shows to ensure the public is protected. Producers of laser light shows are required to tell the FDA where they are planning a show so that the agency can inspect it if possible and take action if required.

FDA is currently working to identify manufacturers of overpowered green laser pointers and other illegal lasers, and is taking action to prevent these unsafe products from being sold in the United States.