



# Laser Pointers

## What is a laser pointer?

A laser pointer is a battery-powered, pen-shaped device that emits an intense beam of light used to direct attention during presentations. Laser pointers are readily available for purchase from office supply stores, discount stores, shopping malls, and the internet.



## Are laser pointers dangerous?

When used properly most laser pointers pose minimal risk. The United States Food and Drug Administration (FDA) limits the output power of laser pointers to less than five milliwatts. At this power level a person's blink or aversion reflex can protect against eye injury. It is possible, and fairly easy, to obtain a laser pointer like devices that can pose great hazards though due to high power output.

## What is the hazard of a laser with a power output of greater than 5mW?

The natural protective mechanisms are ineffective against lasers with an output power greater than five milliwatts, and even a momentary exposure can cause severe retinal damage.

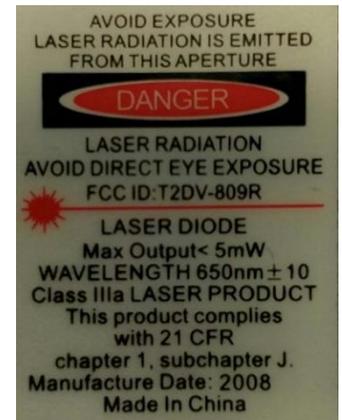
## How can I determine if my laser pointer is "safe"?

Laser pointers are required to have a "CAUTION" or "DANGER" label. Do not purchase unlabeled laser pointers. The label must have the following information:

- The manufacturer or distributor's name and the date of manufacture;
- A statement that the device complies with Chapter 21 CFR (the Code of Federal Regulations);
- A warning to avoid exposure to laser radiation, and
- The laser classification. Class IIIB and Class IV lasers should be used only by individuals with proper training, and only where there is a legitimate need for these high-powered products.

## Where can I purchase a compliant laser pointer?

Laser pointers purchased at a physical store in the US should meet the FDA's power output and labeling requirements. Laser pointers purchased from the online websites of physical stores (Staples, Walmart, Office Depot, etc.) most likely meet the FDA's requirements, as well as those purchased from large web-only stores like Amazon.



## Are there places I should not purchase laser pointers?

Laser devices marketed as pointers by specialty or foreign web sites may not meet FDA requirements, and handheld lasers that exceed 5 milliwatts in power are readily available from these sources.

## Should I consider anything else when purchasing a laser pointer?

Also consider the color. The human eye is less sensitive to blue and violet. So while someone would react quickly to a red or green laser, that person may not blink or turn away as fast from an equally powerful blue or violet light, creating a greater likelihood of injury. The photo below shows lasers of equal power, yet different colors.



### Also consider the following:

- If the pointer is small (less than the size of a pen) and runs on button batteries, its output probably is less than five milliwatts.
- If the pointer is pen-sized and runs on AA or AAA batteries, it's likely to be more powerful and may exceed five milliwatts.
- If the pointer is flashlight-sized and runs on a cluster of AA or AAA batteries or lithium batteries, it probably exceeds five milliwatts.
- Pointers sold with battery chargers drain their batteries quickly and are likely to be overpowered.
- Some pointers are sold with a removable cap that spreads the beam into a pattern. If used without the cap, the beam becomes a single beam that could exceed 5 milliwatts.
- Look for keywords that sellers might use to indicate a pointer is highly powered without saying that it's over five milliwatts: *powerful, bright, ultra, super, military, military grade, super bright, high power, ultra-bright, strong, balloon pop, burn, burning, adjustable focus, lithium battery, lithium powered* are code for "overpowered."
- Videos or photos that show the laser burning, melting, balloon popping or show a bright, well-defined beam of light indicate a laser that exceeds FDA limits.
- Purchaser comments on websites that tout the brightness or power of the product may indicate a laser pointer exceeds FDA limits.

### When using a laser pointer, remember:

- Never shine a laser pointer at anyone.
- Laser pointers are designed to illustrate inanimate objects.
- Only activate the laser pointer when you are using it to point at a nearby object.
- Do not point a laser pointer at mirror-like surfaces. A reflected beam can act like a direct beam.
- Do not allow minors to use a laser pointer unsupervised.
- Do not buy laser pointers for your children. Laser pointers are not toys.
- Be aware of irresponsible uses of laser pointers so the psychological effect will be minimized if you are illuminated by one.

### What if I have additional questions?

Contact the Laser Safety Officer at 706-721-2583 or 706-721 2663 for guidance on the selection, purchase, and safe use of laser pointers.



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