



Illuminating Facts About Laser Pointers

By Linda Bren

Instructors use them to draw attention to information on slide shows. Astronomers use them to point out stars, planets, and other heavenly bodies. And construction workers use them to level and align pipes.

These are all legitimate uses of laser pointers, says the Food and Drug Administration, which regulates lasers and other radiation-emitting devices. But the agency is concerned about the misuse of these potentially dangerous devices and their increased availability for purchase on the Internet.

Laser pointers are misused when they are directed at people or treated as toys. The light energy from a laser pointer aimed into the eye can be more damaging than staring directly into the sun. And the startling effect of a bright beam of light can cause serious accidents when aimed at a driver in a car, a pilot in a plane, or even a person holding a cup of hot coffee. According to the Laser Institute of America, one woman reported how other mothers she knew bought laser pointers for their children so they could imitate Star Wars characters Luke Skywalker and Darth Vader.

"Laser pointers have become consumer novelty products and promoted as toys," says Jerome Dennis, a consumer safety officer for the FDA's Center for Devices and Radiological Health (CDRH). "They're hazardous as toys and shouldn't be used frivolously."

The agency is concerned about the increased availability through the Internet of a variety of laser products that may be illegal or unsafe. Some laser products are intended for use only by professionals or other trained operators. And green laser pointers have the agency particularly concerned. While there are legitimate uses for these green pointers, they may be altered to become more powerful and unsafe if not used responsibly.

"These overpowered pointers may have been modified to emit more radiation than the manufacturer's original product," says Lt. Cmdr. Sean Boyd, M.P.H., head of the electronic products branch in CDRH, "and they are not compliant with our standard." The FDA sets safety standards that must be met before laser products, including pointers, can be legally sold in the U.S. market.

"The potential for injury increases as you increase the power output of the product," adds Boyd. "Certainly the potential for distraction or flash blindness or startling increases as well when you're talking about an overpowered green pointer."

Flash blindness is a temporary loss of vision that occurs when the eye is suddenly exposed to intense light--even from an unintentional sweep of laser light across a person's eyes. The effect can last from several seconds to several minutes. Recent reports of flash blindness in pilots from laser lights beamed at aircraft have further heightened the agency's concerns.

The FDA is working to identify manufacturers of overpowered green laser pointers and other illegal laser products and will take action to prevent these unsafe products from being sold in the United States.

FDA's Authority

The FDA has the authority to regulate all kinds of lasers. Under the Medical Device Amendments to the Federal Food, Drug, and Cosmetic Act, the agency regulates lasers used in medicine. And under the Electronic Product Radiation Control Provisions of the act, the FDA regulates both medical and nonmedical lasers such as those used to solder circuits in factories, to scan groceries in a supermarket, or to entertain a crowd with a light show in the night sky.

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 display so that the agency can inspect it if possible and take action if required. In 1995, the FDA, working with the Federal Aviation Administration, issued a moratorium that remains in effect on outdoor laser light shows in and near Las Vegas. The action, which affects Clark County, Nev., was taken after airline pilots reported experiencing temporary visual impairment during flights into or out of the county's three airports.

The FDA requires that labeling on most laser products contain a warning about radiation and other hazards and a statement certifying that the laser complies with FDA safety regulations. The label must also state the power output and the hazard class of the product.

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. Class I laser products, for example, include laser printers and CD players, which are not considered hazardous because the laser radiation is contained within the product.

Class IIIb and class IV laser products are very powerful and permit ready access to the laser radiation, which can cause eye or skin injury. Research and industrial lasers and laser light show projectors fall into these classes. Class IIIb and class IV laser light show projectors may be sold only by or to individuals or firms that have obtained approval from the FDA.

Buyer Beware

In addition to potentially harming your health, some high-powered pointers can damage your wallet, says Dennis. Consumers who purchase an illegal laser product on the Internet--whether knowingly or unknowingly--may lose their money if the product is manufactured outside the United States, he says. "There is a reasonable risk of having a charge laid against your credit card for goods you're not going to receive because they're going to be blocked by U.S. Customs and Border Protection."

What Consumers Can Do

1. Never aim or shine a laser pointer at anyone.
 2. Don't buy laser pointers for your children.
 3. Before purchasing a laser pointer, make sure it has the following information on the label:
 - o a statement that it complies with Chapter 21 CFR (the Code of Federal Regulations)
 - o the manufacturer or distributor's name and the date of manufacture
 - o a warning to avoid exposure to laser radiation
 - o 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.
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For More Information

- If you have questions about a laser product you are considering purchasing or offering for sale on the Internet, contact the FDA's Center for Devices and Radiological Health at (240) 276-0326.
 - To report Web sites that you suspect are illegally selling laser products, follow the instructions at www.fda.gov/oc/buyonline/buyonlineform.htm
 - See additional information about buying regulated products online at www.fda.gov/oc/buyonline/
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