

# Powerful laser pointers create risks

November 22 2010, By Dan Vergano

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The latest generation of high-powered laser pointers may seem like a fun Christmas gift, but experts caution consumers to weigh the potential harm.

Sold online for as little as \$20, some laser pointers offer a brightness about 10,000 times stronger than looking at the sun, warn eye-safety experts. At that power, they exceed [Food and Drug Administration](#) 5-milliwatt power limits on manufacturers selling laser pointers to consumers.

A milliwatt is one-thousandth of a watt, and although 5 milliwatts is just a fraction of what's needed to power even a household light bulb, lasers pack their punch by concentrating light into a single beam. Meanwhile, pointers are now being sold with as much as 700 milliwatts of power.

"These devices are hazardous and some are being sold as party toys," says photonics professor Thomas Baer of Stanford University. The worldwide compact disc and DVD boom has led to improved lasers that can generate a powerful beam with small batteries, produced by low-cost overseas manufacturers, he says.

"Higher and higher power lasers are going to be with us in the future," says laser safety expert Casey Stack of Laser Compliance in Centerville, Utah. "We need to start a discussion about public safety."

Lasers deliver a beam of focused light, usually of a single wavelength. The eye focuses the light narrowly, which can scar the retina. A Sept. 9

[New England Journal of Medicine](#) report, for example, described a 15-year-old boy who scarred the retina of both his eyes after creating a "light show" in a mirror with a 150-milliwatt [laser pointer](#). For such powerful lasers, "even an inadvertent glance into the laser beam can cause immediate severe eye injury," says report co-author Martin Schmid of Switzerland's Lucerne Cantonal Hospital.

Green laser pointers can be particularly dangerous, Schmid and other experts warn, for two reasons. Often, they emit light in wavelengths that don't trigger the eye to blink and block out the light. And green lights are particularly bright to the eye, potentially triggering "flash blindness," a temporary loss of vision that can last for minutes.

The National Transportation Safety Board aviation database does not list any accident involving lasers in the last decade. However, pilots in particular worry about overpowered lasers directed at cockpits. In a March safety advisory, the FDA said it was "concerned about recent reports of laser products directed at aircraft - a potentially hazardous situation." In 2004 and 2005, more than a dozen such pranks were reported by the Federal Aviation Administration, a number that had climbed to 950 cases by 2008.

The FDA only has jurisdiction over manufacturers of lasers, who are mostly overseas, and its current warnings to consumers extend only to "buyer beware" notices about buying high-powered laser pointers.

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