

## **Laser Pointer Safety Guidelines**Error! Bookmark not defined.

### **Applicability:**

All Class 2 or 3a laser pointers used for classroom instruction or presentations shall be operated under the guidelines established in this document. Class 3b and 4 laser devices are not addressed in these guidelines, and shall not be used in instruction or presentations without prior notification of the LSO.

### **Rationale:**

By definition, a Class 3a laser can cause eye injury. However, the intended use of laser pointers carries a very low probability of injury. For this reason, the Laser Safety Committee has approved the use of Class 3a pointers for their intended use as instruction and presentation aids.

### **Labeling of Pointers:**

The manufacturer is required by the FDA Center for Devices and Radiological Health (CDRH) to provide correct labeling for their laser pointers. This includes the laser hazard symbol, laser classification, maximum power output and laser wavelength. This information should be clearly visible on the laser pointer. The manufacturer should also provide operating and safety instructions.

If the laser is fabricated in-house or does not have the required labeling, contact the Laser Safety Officer (LSO) before using the pointer. The LSO will properly classify and provide labels for the pointer.

### **Equipment Purchase Considerations:**

The pointer operating switch should be a momentary contact type (designed to shut off the pointer when released). The switch should not have a locking device to keep the beam on when direct pressure is removed from the switch. Pulsed laser pointers shall not exceed the Class 3a hazard class.

For the diffuse viewing of any laser (including pointers) the relative image brightness to the human eye is a function of both output power and laser wavelength. The human eye sees yellow light (at about 560 nm) as brighter than other color. Even if the laser output power remains the same, as the wavelength grow shorter (towards the blue) or longer (towards the red) the image appears less bright to the human eye. For this reason, a Class 2 pointer (<1 mW) at 635 nm will often appear brighter than a Class 3a pointer (1 to 5 mW) at 670 nm. Longer wavelength pointers have to be made more powerful (and more dangerous) in order for their diffuse reflections to appear bright to the human eye. For this reason, it may be better to purchase a 635-650 nm laser pointer rather than a laser pointer at 670-690 nm.

## **Authorized Users:**

Brown employees handling 3a laser pointers on campus are required to follow these guidelines.

Access to 3a laser pointers should be limited to responsible persons who have been informed of these guidelines by the owner or user. The laser pointer should be kept in a secure place when not in use.

Persons visiting Brown University who wish to operate laser pointers are expected to abide by these guidelines. Generally, the person acting as host should inform the visitor of these guidelines. The owner of the laser pointer is responsible for its use at the University.

## **Operating Safety Guidelines**

No person should ever intentionally stare into the laser beam.

The laser beam should never be intentionally directed toward oneself or directed toward another person. The beam should be directed towards the screen and directed away from the audience.

The beam should be turned off when not in immediate use.

Mirror like surfaces (such as glass, metal and other highly reflective materials) should be avoided when directing the laser beam.

Use of Class 3a laser pointers should be limited to the intended purpose. Indiscriminate use may present an eye hazard.

Class 3a laser pointer use is prohibited when optically aided viewing of the beam is probable. Optical aids include telescopes, binoculars, viewing optics, and similar devices.

## **Exceptions:**

Exceptions to the above guidelines should be coordinated with the LSO.

## **Legal Implications of Laser Pointer Misuse:**

Willful misuse of a laser pointer can be considered either a misdemeanor or a felony. In particular, directing any laser beam at another person may constitute assault and directing any laser beam at an aircraft may constitute malicious mischief. Persons convicted of these crimes may be subject to stiff fines and/or jail sentences.

## **Emergencies:**

Although the potential for injury from a laser pointer is very slight, notify your immediate supervisor and get medical attention if an eye injury from laser use is suspected. Also notify the Laser Safety as soon as possible.