

LASER SAFETY



In teaching, learning, or research, lasers (including laser pointers used as a visual aid) or working lasers (in instruments or devices), can be very useful tools. There are many types of laser devices that you may encounter on a daily basis: hand-held pen laser pointer, [diagram 1] presentation remotes [diagram 2], laser cutters [diagram 3], printers, and microscopes [diagram 4].



Diagram 1



Diagram 2



Diagram 3



Diagram 4

Lasers have many uses and benefit productivity, however, they also pose a serious hazard when used improperly or carelessly. Lasers are federally regulated under the [Canada Consumer Product Safety Act](#) and the [Radiation Emitting Devices Act](#). Activities within an organization, such as the University of Regina, are regulated under the Saskatchewan Occupational Health and Safety Act.

The most important thing to know about lasers and laser pointers is how to know if the laser may be harmful. For safety purposes, lasers are classified based on the hazard they represent. Class 1, 1M, 2, 2M, 3R, 3B, and 4 (levels of increasing risk). Each laser **must** be classified and labelled appropriately according to that risk.

Class 1 Lasers: This class of laser fits many consumer devices and are considered eye safe-lasers. This means the beam will not damage the eye upon exposure or there is no accessible way for the beam to reach the eye (locked within a device, such as a computer hard-drive).

Class 2 Lasers: This class of laser is very common among presentation remotes and must be handled responsibly. Direct staring at the beam/into the beam can cause damage to the eye.

Class 3 and 4 Lasers: This class of lasers are especially hazardous as a direct strike to the eye will cause damage faster than the human blink reflex. These high-power lasers can even be hazardous from diffuse reflection off surfaces, and cause burns or fires.

TIPS TO REDUCE RISK

Prior to purchasing or using any consumer laser pointer, check the safety markings on the laser pointer to ensure the laser is Class 1 or 2. Only buy a laser pointer from a reputable source. Many novelty and e-commerce lasers have inadequate safety specifications, making them much more hazardous than their label suggests.

Regardless of the class of a laser, **never** point a laser at people, animals, traffic, magnifying or reflecting surfaces, or aircraft. For more information on hand-held lasers and laser pointers, please visit the Health Canada website [here](#).

If you are, or will be using, high-powered lasers or laser devices in your work area and are unsure of the class of the laser, contact Health.Safety@uregina.ca and/or visit the [Laser Safety](#) section on the Health and Safety web page.