

Laser Pointers

(Adapted from Health Canada's website)

Background

Laser technology was first developed in the 1960s, and has grown to touch our lives in many ways. We use laser technology in space-age medical equipment, office printers and light shows at rock concerts. A laser is the strongest source of light ever created by scientists. *The beam that comes out of a simple hand-held laser pointer is at least a million times brighter than the average light bulb in your home.*

Are Laser Pointers a concern?

These pointers are not dangerous when used with care, but *the brightness of laser light can damage the eyes of anyone who looks directly into the beam for more than a minute and a half.*

***Never point a laser beam at anyone!
Never look directly into the beam
yourself.***

Do I need more advanced Laser

Safety training? If you work in a room where open beam Class 3B or Class 4 lasers are used, you need more information/ training than what is in this pamphlet or in the EHS orientation. Talk to your supervisor and contact Radiation Safety at 789-3613 or 789-3654.

The letters in "laser" stand for Light Amplification by Stimulated Emission of Radiation

What are the regulations regarding lasers in the workplace? Since the use of this technology constitutes a potential hazard to health, the possession and use of lasers is governed in the workplace by Manitoba Regulation 217/2006, Workplace Safety and Health Regulation. Effective February 1, 2007, the University of Manitoba has the duty to inform anyone that may be exposed to radiation from lasers at the University (Section 18.4). Additionally, lasers must be installed, used and maintained in accordance with ANSI Z136.1-2014 American National Standard for Safe Use of Lasers (Section 16.28).

How can I tell the hazard of a particular laser? All lasers are labeled to identify the hazard.



Class 2 laser label



Class 4 laser label

Class 3B and 4 lasers may cause:

- Acute (immediate) effects such as burns/blindness. or
- Delayed (accumulative) effects such as cataracts or cancer!



All Lasers are potentially hazardous if misused!

How are lasers controlled at the University?

In April 2010 the University of Manitoba approved the Laser Committee to oversee and advise on the Laser Safety Program. Currently the University is focused on registering the high powered lasers (Class 3B or Class 4) used or stored at locations controlled by the University of Manitoba.

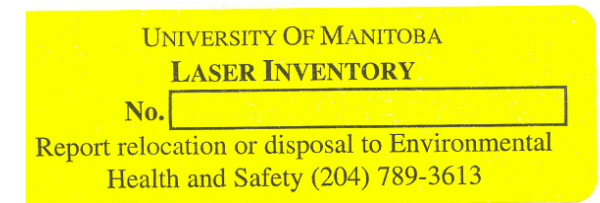
Environmental Health and Safety (EHS) provides staff and resources for the day to day operations of the Laser Safety Program. Details on the Laser Safety Program are found at http://umanitoba.ca/admin/vp_admin/risk_management/ehso/rad_safety/lasers.html

In addition to the website and this pamphlet on laser pointers, another pamphlet on Lasers in general has been developed for the different laser audiences.

See also – Laser Safety pamphlet

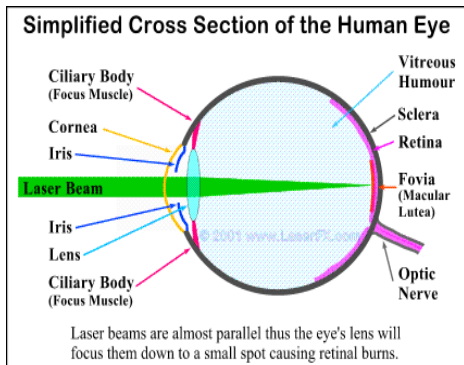
Does my laser pointer need to be registered? High powered (Class 3B or 4) lasers must be registered with Environmental Health and Safety to be used in areas controlled by the University of Manitoba.

Registered lasers have this sticker:



What are the EYE HAZARDS of LASERS? A split-second look at Class 1, 2 or 3R laser radiation can result in a condition called *flashblindness*. This is similar to the effect you get during flash photography, where the image of the flash remains in your eyes for a few seconds, and then fades away. *Flashblindness* is temporary. Your vision returns to normal after a few moments, and there are no long-term effects.

However, a longer look can cause serious damage to your eyes. It's worse if the laser beam is being projected through a piece of optical equipment, such as a telescope or a pair of binoculars. In these situations, the laser beam could actually burn a tiny spot, or cut open a blood vessel, on the retina at the back of your eye. In a worst-case scenario, you could go blind.



SKIN HAZARDS?

- Thermal injury (BURN)
- Erythema (sun burn)
- Accelerated aging and pigmentation

Some people may be more at risk of photosensitive reactions from genetics or induced by medicines



How can I stay safe when using a hand held laser pointer? Hand-held laser pointers are popular in Canada. Unfortunately, users are not knowledgeable about the intensity of the light and the effect it may have on the eye. If you look directly into the beam from a laser pointer for more than a minute and a half in a very steady manner, or shine the beam into your eyes with binoculars, you could end up with permanent eye damage.

Use Common Sense Laser pointers are not toys. Use them with caution, and only for their intended purpose. So far, there have been no reports of permanent eye damage caused by the use of laser pointers in Canada. We can keep it that way if we use our common sense. By following a few guidelines you can make sure no one gets hurt by a laser pointer.

For example:

- When you buy a laser pointer, choose one that has a clear warning on the label about the potential to cause eye damage. Read the instructions carefully, and follow them closely.
- Choose a laser pointer that stays on only when you apply pressure with your fingers. That way you can never leave the beam on by accident.
- Never point a laser beam at anyone, and never look directly into the beam yourself.
- Never aim a laser pointer at surfaces that would reflect the light back, such as mirrors or mirrored surfaces.
- Never leave a laser pointer where children might get their hands on it.

How do I get more information or safety training?

Talk to your supervisor and contact EHS.



email: EHSO@umanitoba.ca



ENVIRONMENTAL HEALTH and SAFETY			
Fort Garry	474-6633	Bannatyne	789-3613
Fax	474-7629	Fax	789-3906
http://umanitoba.ca/admin/vp_admin/risk_management/ehso/			
After Hour Emergencies Call 911 or 555 from all U of M phones or #555 from cell phones on Rogers Wireless and MTS Mobility			