



Example warning labels found on laser pointers. Laser pointers that emit less than 5 mW have a Caution label. Laser pointers that emit 5 mW have a Danger label. Any laser pointer classified as Class 3b (> 5mW) must be register with UVic OHSE.

## “Laser” stands for Light Amplification by Stimulated Emission or Radiation

Hand-held laser pointers have evolved from relatively benign boardroom tools into potentially hazardous devices found readily online and in local hardware stores. A split second look can result in a temporary condition called flash blindness. However when handled appropriately the dangers of laser pointers can be mitigated.

Class 2 laser pointers have output power less than 1 mW. They remain safe workplace tools unless the laser is intentionally directed into the eye. Red laser pointers (633-690 nm) are commonly classified as Class 2.

Class 3R (formerly Class 3a) laser pointers have output power between 1 and 5 mW and can be hazardous under some direct or specular viewing conditions. Green laser pointers (532 nm) are commonly classified as Class 3R and are of particular concern because the human eye is 50 times more sensitive to green light even with the same power as a red laser pointer. Green laser pointers use a diode pumped double frequency Nd:YVO<sub>4</sub> with a blocked infrared (IR) component to produce the green light. If the infrared filter becomes defective the invisible IR emission can become a hazard.

## Safety guidelines for laser pointers:

- Choose laser pointers labeled as Class 2.
- Avoid using green laser pointers due to high eye sensitivity to green light and risk of IR exposure.
- Choose a laser pointer that stays on only when you apply pressure with your fingers. This will prevent the beam will never be left on by accident.
- Only use laser pointers with a clear warning label.
- Never look directly into the laser beam or point it at another person.
- Never aim a laser pointer at surfaces that reflect light, such as mirrors or mirrored/shiny surfaces.
- Do not use collecting optics such as lenses when using a laser pointer.
- Consult with the OHSE Laser Safety Officer ([ohs@uvic.ca](mailto:ohs@uvic.ca)) if you have concerns about a laser pointer.