

# Engineering Physics / C.E.D.T. Research Hazards Safety Report

## Detailed Hazard Report

### DESCRIPTION

The project will require the use of LEDs and low-power lasers (Class 2). The light emitted will be in the near-infrared range. This will make the light less visible. It will also make it more dangerous, since the blink reflex cannot offer protection.

### OPERATING PROCEDURES

It is important that the path of the light sources is kept on a different plane than the viewing angle of the researcher. This will greatly prevent the light from entering the eyes of any researchers. Specular surfaces will generally be used, in the form of optical filters. Collimating optics offer predictable paths, and can be safely arranged by knowing how each lens transforms the optical path.

Aside from the surfaces included in the experiment, any other reflecting surfaces in the lab could redirect the light in a hazardous way. These surfaces should be either removed or non-reflective barriers should be placed between them and the experiment. As well, any reflective clothing and accessories should be removed, such as watches and jewelry, since these could affect the beam path as well.

A more permanent housing solution should be implemented for the final design to ensure safe operation.

For the safety, suitable eyewear should be worn that is approved for the wavelength and intensity of light used in the experiment. This will be more of a concern for laser diodes than for LEDs. The eyewear should be offered to any other researchers in the room as well.

### EMERGENCY PREPARATION

In the event of an accident, "88" should be called immediately, and the supervisor and EOHSS LSO designate should be contacted. Any work on the system should stop, and the light source turned off. An incident report should be filed with the department as soon as possible.