# University Occupational Health and Safety Information Sheet

# LASER CLASSIFICATIONS

This table details the applicable limits and characteristics that will determine the classification of a given laser or laser device.

| Laser Class | Details | Power Limit (mW) | Wavelength Range |
|---|---|---|---|
| Class 1 | Safe under reasonably foreseeable conditions of operation, including the use of optics for intra-beam viewing provided they are operated appropriately. | N/A | N/A |
| Class 1M | Safe under normal conditions of use, these typically have a beam larger than the pupil of the eye, allowing only a portion of the beam to enter the eye.<br>These may be hazardous if viewing with magnifying optics. | N/A | 300 – 4000nm |
| Class 1C | A designed to be explicitly operated in contact with the skin. When in contact with the skin, the beam may be above the MPE for skin.<br>Engineering controls will ensure that this is reduced to below the AEL of a Class 1 laser when not in contact with the skin. | N/A | N/A |
| Class 2 | The blink reflex may protect against an accidental exposure. This must not be relied on as a risk control measure. | <1mW | 400 – 700nm |
| Class 2M | A beam that will only present a risk if viewed through magnifying optics.<br>The blink reflex may protect against an accidental exposure. This must not be relied on as a risk control measure. | <1mW | 400 – 700nm |
| Class 3R | Beams emitted from a Class 3R laser may be in excess of the MPE for accidental viewing.<br>The blink reflex may protect against an accidental exposure. This must not be relied on as a risk control measure.<br>Class 3R lasers may be sold to the general public. | =< 5mW | N/A |
| Class 3B | These lasers may be capable of igniting fires, so must be controlled appropriately.<br>Direct intra-beam viewing of any Class 3B laser is always hazardous.<br>Typically, diffuse reflections will be safe, but this must not be considered as a risk control measure. | =< 500mW | N/A |
| Class 4 | These lasers are hazardous in any reasonably foreseeable scenario. They are capable of causing skin or eye injuries from either direct viewing of the beam from either specular or diffuse reflections.<br>Class 4 lasers are capable of starting fires from direct interaction from the beam. May also be capable of starting fires from reflected beams, depending on the power. | > 500mW | N/A |