

## Looking after your eyes

There is an old saying that goes “Once you lose an eye from looking into a laser beam, use your remaining eye to read the safety warning”



Blindness can happen (literally) in the blink of an eye. Lasers span distances at the speed of light. There will be no warning before a laser beam does its damage.

Laser light is also collimated - in other words the rays of light are nearly parallel. This means the energy intensity of a beam diminishes little with distance. This is different from ordinary light, which diminishes in intensity with the square of its distance.

For example, its intensity diminishes by a factor of four when its travel distance is doubled. This is why a one watt laser can blind you from tens of feet away, while a 100 watt LED light will not.

Wear laser safety goggles when using your laser.



Laser safety goggles have lenses that absorb, attenuate, or reflect specific wavelengths of light at specific strengths (optical densities). This protects the sensitive photoreceptors of the eyes from being damaged or destroyed by direct or scattered laser radiation.

These lenses are specified to protect from certain wavelengths of (mostly invisible) light. Your laser will operate at a specific wavelength or range of wavelengths of light - CO<sub>2</sub>, UV YAG or Fiber.



Just because a laser's beam is not visible does not mean that it is incapable of injuring or destroying skin or an eye. Most types of laser safety filters (goggles or shields) protect from invisible laser radiation.



Some filters are darker than others, but that does not necessarily mean that they block more. Lenses that appear to be dark just happen to block more light in the visible spectrum than lenses that seem clearer or less tinted.



It is easy to become confused by laser goggles if you are not used to all of the terminology associated with laser safety. If you are ordering laser safety goggles from a company, it is a good idea to ask them any questions you may have. It is certainly a good idea to be absolutely certain you know that you're getting the right laser safety goggles before you order them. If you make a mistake with laser safety, it could be the difference between keeping or losing your vision.



Perfect Laser Technologies supplies three types of safety goggles - for our CO<sub>2</sub> lasers operating at a wavelength of 10,600 nm, our Fiber lasers operating at a wavelength of 1,064 nm and our UV lasers operating at wavelengths between 300 and 500 nm.

