UCR Environmental Health & Safety

Spotlight On Safety

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Laser Protective Eyewear

There are trade-offs involved with selecting laser safety eyewear. Filter glass will be heavier than polymer product, but usually provides better visible light transmission. Select coated substrates when multiple wavelength protection is required. These products tend to be among the most expensive, but are suitable for all-day wearing.

Parameters when selecting laser eyewear

Work Environment: The work environment where the laser is being used also needs to be considered. High visible light transmission (VLT) products are best for low light environments

Wavelength: Choose eyewear that is marked to cover the entire wavelength range(s). Keep in mind that if you work with a wide variety of wavelengths it might not be possible to cover them all with one filter.

Determine the Optical Density (OD): Optical Density is the protection factor provided by a filter. Each unit of Optical Density represents a 10- fold increase in protection. Therefore, select a filter that is equal to or greater than, the optical density that you need.

Selecting a Frame: Consider whether you will need a frame that fits over prescription glasses, or an adjustable frame if there are multiple individuals using the eyewear.

Visible Light Transmission (VLT): Consider VLT values when selecting laser eyewear. VLT is the amount of visible light that passes through a filter that is usable to the eye. The higher the VLT percentage, the lighter the color of the filter.

Prior to using your Laser Eyewear you should:

- Ensure that the markings are legible and meet the OD requirements of the laser(s) in use
- Inspect he lens for marks, blemishes, and scratches
- Ensure that the frame is not broken, cracked, or discolored
- Ensure that the eyewear fits securely, is comfortable, and does not impede orbital and peripheral light

A list of vendors that sell laser eyewear is on Laser Safety Website at http://ehs.ucr.edu/laser/

For more information visit www.ehs.ucr.edu or call 951-827-5528 if you have questions.