

Selecting Laser Safety Eyewear

There are trade-offs involved with selecting any of the technologies available for laser safety eyewear. Filter glass will be heavier than polymer products, but usually provides better visible light transmission (VLT). Coated substrates are selected when multiple wavelength protection is required, but these products tend to be among the most expensive and require the most care. The physical properties of polycarbonate make those products suitable for all-day wearing and for molding single lens products with wide fields of view.

Finally, consider the work environment. High VLT products are best for low-light environments. Impact resistance is necessary in production environments and should be considered in all environments. UV protection or glare reduction may be needed for welding. Larger products and wrapping products provide additional splash protection for medical applications.

1 Match Wavelength Ranges:

Choose eyewear that is marked to cover the entire wavelength range(s) but keep in mind working with a wide variety of wavelengths it might not be possible to cover them all with one filter. Call KENTEK for further options if you cannot locate a filter that will cover your entire wavelength range.

2 Determine Optical Density (OD):

Optical Density is the protection factor provided by a filter. Each unit of OD represents a 10X increase in protection. Select a filter that is equal to, or greater than, the OD that you need. The formula for calculating OD is: $D_{\lambda} = \log_{10} (H_p/MPE) = -\log_{10} \tau_{\lambda}$

For assistance in determining the recommended OD for your laser:

- Refer to your laser manual for a listed OD minimum
- Call your laser manufacturer for their recommendation
- Allow KENTEK to calculate your OD

Note:

CE designates products meeting the European Directives for laser eyewear.

Look for this symbol for products meeting the European Directives EN207, EN208 and/or EN60825-1 

3 Select Frame Style:

Select a frame style that meets individual needs. Consider whether users will need a frame option that fits over prescription glasses, or perhaps an adjustable frame to accommodate a variety of faces.

Helpful Hint:

The laser types listed in this catalog are for reference only. The wavelength range(s) and OD factors are the most important factors in selecting eyewear.

Helpful Hint:

Consider Visible Light Transmission (VLT) values when narrowing down eyewear selections. VLT is the amount of visible light that passes through a filter and is usable to the eye. Typically, the higher the VLT percentage the lighter the color of the filter.

**NEED HELP?????
CONTACT THE PROFESSIONALS**

With so many eyewear options available selecting eyewear can be overwhelming.

Contact one of our Account Specialists for immediate help in selecting the best eyewear for your application and needs.



800.432.2323

components

accessories

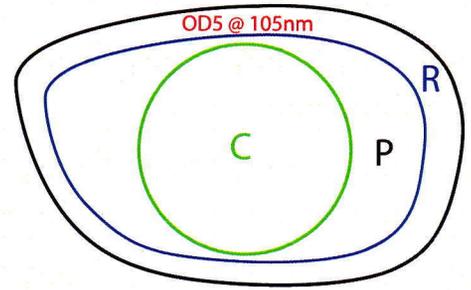
containment

signs/labels

education

eyewear

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Laser Protective Eyewear Field Inspection

1. Match Eyewear to Laser (OD and Wavelength)

Markings must be legible and meet the OD and wavelength requirements of the laser(s) in use.

2. Inspect the Lens

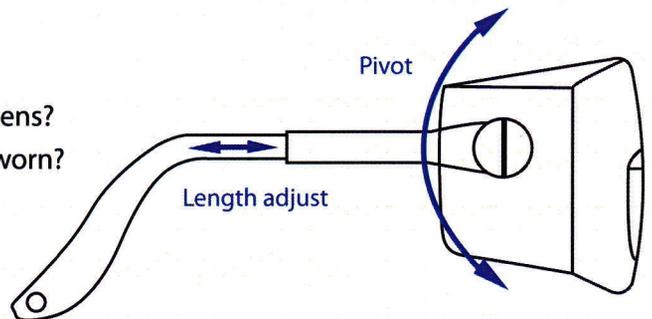
Central (C) = 28mm Optical Center or apex of the lens, Peripheral (P) = Remaining area outside optical center, Rim (R) = 3mm perimeter of the lens

White Marks (discoloration)	P-None	C-None	R-None
Blemishes	P<.5mm	C-None	R-Acceptable
Swirls	P-None	C-None	R-Acceptable
Pits, Digs	P<4mm	C-None	R<6mm
Surface Scratches (mm)	P<.011(w) X 3(l)	C-None	R<.011(w) X 6(l)
<i>(The depth of the surface scratch should not break the polycarbonate surface)</i>			
Coating Tack (Thumb Test)	P-None	C-None	R-None

3. Inspect the Frame

The mechanicals must be intact and all features operational. Uniformity of the frame surface is paramount to performance and protection. Discoloration or worn areas can indicate chemistry change and possible frame brittleness.

- Is the frame broken?
- Is the frame cracked?
- Do the temples adjust as the frame design allows?
- Do the ratchets function and do they hold the weight of the lens?
- Are the retainer straps or goggle straps functioning and not worn?



4. Evaluate the Fit

- Is the fit secure and stable to ensure eyewear stays in place?
- Is it comfortable to ensure that eyewear is worn when needed?
- Does the eyewear impede significant orbital and peripheral light?