

In order to offer you a safe and satisfactory solution to your eye protection needs it is necessary for us to have accurate information describing your laser and its application, particularly in terms of risks assessment.

It is important to consider the potential impact of the laser beam on the eye rather than the work piece; for instance is the laser beam focused to a small spot where it would be impossible to place the eye.

There are three ways (defined by the current European Safety Standards) of assessing the risk and therefore the level of protection required by the eye wear.

1. CEI 825 - Required Optical Density (OD).
2. EN 207 - Required scale number (L) for the various laser types as defined in the standards by D, I, R or M.
3. EN 208 - Required scale number (R), as defined for visible lasers only where it is required to attenuate the laser beam to an eye safe level while still allowing the beam to be seen.

COLLIMATED BEAMS are where the laser output forms a pencil beam of light with very low divergence. The beam diameter for calculation is assumed to be constant at any distance from the laser output aperture and is defined by the manufacturer.

FOCUSED BEAMS are where the laser output is passed through optical components to obtain a very small spot of light (i.e. in applications where the laser is used for cutting, surgery etc.). The assessment of risk must be made with regard to the minimum distance the eye can be placed to the point of focus and a calculation made for beam diameter using the focal length of the optical components and the original laser beam diameter.

OPTICAL FIBRE DELIVERY SYSTEMS need special consideration since while the fibre may <1mm diameter, if there are no further optical components in the beam path then the light leaving the fibre will be diverging at relatively large defined angle (i.e. the light spot will get bigger the further you travel away from the fibre tip.). The standards EN207 and CEI825 define the minimum distance between the eye and the fibre tip as 10 cm. If in your application this is the case then for the purposes of calculation the beam diameter is given by the diameter of the light spot 10 cm from the fibre tip.

Overleaf is a **LASER QUESTIONNAIRE**. The information from that will allow us to calculate the appropriate level of eye protection needed and recommend suitable eye protection from the Bollé range.

IMPORTANT :

In order to give precise recommendations, a study of the working place should be performed to define exactly the beam parameters (energy, surface). These parameters are completely different from those of the working point. Do not assume that extremes values (maximum energy, minimum surface) are more secure, because this leads to either a non-existing eye protection or one protection with a visible transmission dangerously low.