

# **BREVET DE TECHNICIEN SUPERIEUR**

*Session 2004*

**Epreuve de langue vivante étrangère 1**

ANGLAIS

**Groupe 10**

SPECIALITES	
Opticien lunetier	coefficient 1
Génie Optique	coefficient 2

## **LASER EYE PROTECTION**

1 A vendor will want to know the details of the exposure conditions you are  
working in before selling you a pair of safety glasses. You will need to be able to tell  
the vendor whether you are interested in protection from momentary accidental direct  
exposure to a laser beam, or from diffuse reflections for an extended period of time.

5 Another consideration when selecting safety glasses is the transmittance of the  
eyewear for a particular wavelength, which is known as its optical density (OD). To  
offer adequate protection, eyewear must have the appropriate OD. Laser safety  
standards in the US and Europe allow vendors to calculate the OD that your eyewear  
requires based on the exposure limits of your specific application.

10 (...)Vendors also offer a selection of glasses that allow you to see enough of  
the beam to align it. In some instances, though, it is better to use a low-power laser for  
alignment rather than relying on safety eyewear.

15 Crucially, your eyewear must provide a high transmission in the visible range  
so that you can see what you are doing. Be aware that if the eyewear has a high OD in  
the near-infrared it may also be very effective at blocking red light and consequently  
any warning lights on your equipment.

20 The lenses in eyewear are made from either glass or polycarbonate filters. Glass  
filters are typically more expensive but give better protection (owing to their greater  
OD) and better colour recognition. Bear in mind that safety eyewear only filters a  
specific range of wavelengths. If you are using a tunable laser, such as an optical  
parametric oscillator, make sure that you mention all applicable wavelengths to the  
vendor. It may be necessary to buy several pairs of glasses to cover broadband filters  
that can deal with multiwavelength sources.

25 If you know that you will be wearing the eyewear for an extended period of  
time, comfort is also an issue. A large choice of frames is available, but be careful to  
choose a style that protects against stray beams entering the eye. All eyewear comes  
with the wavelength range it blocks, etched onto the lenses or the arm of the glasses.

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### SUJET et BAREME

I. Faites un résumé du texte en français (150 mots à 10% près) , et indiquez le nombre de mots utilisés . **6 points**

II . Traduisez depuis «A vendor will want to know ...» (1.1) jusqu'à « an extended period of time.... » (1.4) **4 points**

III. Answer the following questions in English (150 à 180 mots en tout) *Indiquez le nombre de mots utilisés.*

- 1) Give examples of situations which require the use of eyewear protection at work or for leisure activities.
- 2) In your opinion, what characteristics should be adopted to offer the best possible eyewear protection at work and for leisure activities ?

**10 points**