

## DATA SHEET

### Rugate notch filters for laser protection applications

Orion Photonics has developed a range of laser protection coatings based on thin film rugate notch filters. Rugate technology is a design concept that utilises a single film with a continuously varying refractive index. This allows the design of filters with spectral characteristics that are very difficult or impossible to design using conventional techniques. Using this technology, Orion Photonics can supply filters exhibiting high visible transmission while simultaneously affording protection against specific laser wavelengths in the visible spectrum to optical density in excess of OD5. Rugate filters can be combined with edge filters and colour glasses to achieve multiple line laser protection with high photopic transmission.

Manufacture is by plasma assisted electron beam deposition process which provides high spectral stability independent of temperature or humidity variations. The coatings are extremely rugged, passing all relevant military specifications. Applications include general-purpose laser protection filters, laser protection eyewear, optical instruments and filters for use in laser surgery.

Features of rugate coatings are:

- Plasma assisted deposition for thermal and environmental stability
- High visible transmission with minimal colouration
- Temperature stable with extended operational lifetime
- Meets most military durability specifications

### Measured transmission of single line rugate filter

