



Laser safety products

Protection against specific laser radiation in industrial or laboratory environments can in general be achieved using dyed glass or plastics. When the laser wavelength is in the middle of the visible spectrum, the blocking bandwidth of the dye can reduce the visibility to unacceptable levels. A solution that overcomes this disadvantage available from AFETC uses 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 very difficult or impossible to design using conventional techniques. ATC has developed rugate notch filters for a number of applications including laser protection. The version for laser safety products conforms to the requirements of BS EN 207 providing protection over the angular range 0-30 degrees

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.

Features of rugate coatings are:

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

Typical Specification for ophthalmic laser filter

Photopic transmission:	>45%
Optical density at 532nm:	>4.5 OD at 0 – 30 degrees
Operating temperature range:	-40 to 300°C
Adhesion, abrasion resistance	MIL-C-48497
Humidity, salt fog, temp. shock	MIL-STD-810B

