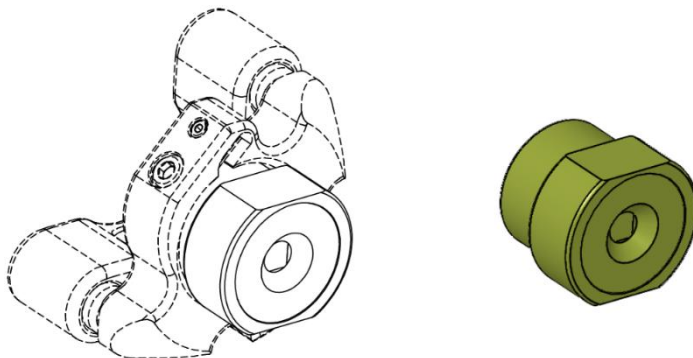


NoiseBlock™ Transmissive Ultra Narrow Bandpass ASE Suppression Filters

For Ultra-Low Frequency Raman spectroscopy with High Signal-to-Noise

The class leading NoiseBlock™ Transmissive Ultra-Narrow Bandpass Filter is engineered to suppress the broad amplified spontaneous emission (ASE) spectrum typically associated with laser diodes, delivering a clean, narrowband lasing output free from ASE background. These filters are optimized for ease of integration in transmission and provide exceptional side mode suppression achieving OD4 at 9 cm^{-1} as a single unit, or exceeding OD8 when used in pairs while maintaining high transmission efficiency.

The filter's precise spectral characteristics are specifically matched to the SureBlock™ Ultra-Narrow-Band Notch Filter, making it an ideal solution for ultra-low frequency Raman spectroscopy applications. This pairing enables maximum Rayleigh line suppression, significantly reducing measurement artifacts. A built-in polarizing element facilitates seamless integration into low-frequency Raman microscopy systems. Beyond ASE suppression of semiconductor diodes, the use of this filter would suppress nearby side modes in DPSS lasers allowing for artifact free spectra.



FEATURES

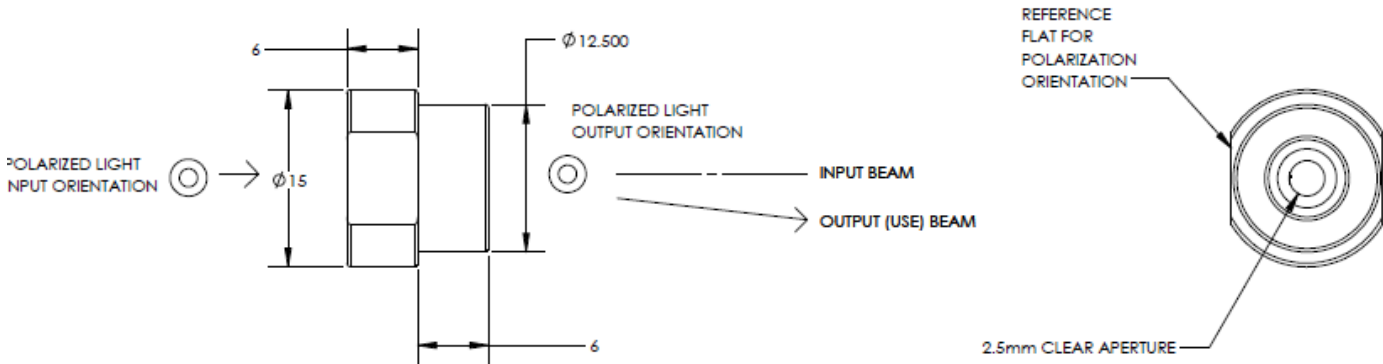
- High transmittance at design wavelength
- Reduce typical broadband ASE levels to more than 70 dB below the laser line
- Narrow spectral bandwidth
- Customizable slant angle for angular separation of beams
- Large angular acceptance
- No degradation under high power illumination conditions
- Environmentally stable at high temperature and humidity with over 12,000 hours of testing at 150°C

APPLICATIONS

- Removal of broadband ASE, fluorescence, and parasitic laser line emission
- ASE noise reduction for Raman spectroscopy
- ASE removal after optical amplifier stages
- Dense wavelength multiplexing / de-multiplexing
- Spectral combining
- Telecommunication
- Decrease ASE noise in optical quantum applications

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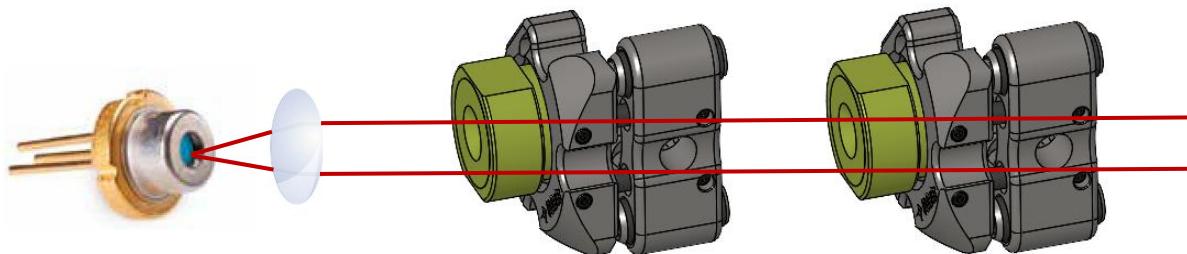
Specifications	Typical		
Centre Wavelength (nm)	532	785	830
Bandwidth (nm nominal FWHM)	0.1	0.22	0.24
Pass Bandwidth (nm OD0.1)	0.06	0.13	0.14
Bandwidth ¹ (HWHM) cm ⁻¹ GHz	< 10 < 300		
Transmission Efficiency (%)	>85		
Temperature Dependence (nm/°C)	<0.01		
Angle of Incidence	2.5		
Total Deflection Angle (θ) (degrees)	< 1		
Clear Aperture Diameter	2.5 mm in 1/2" mount. Custom sizes available		
Blocking Level	>OD4 at 10 cm ⁻¹ (when using two > OD8 at 10 cm ⁻¹)		



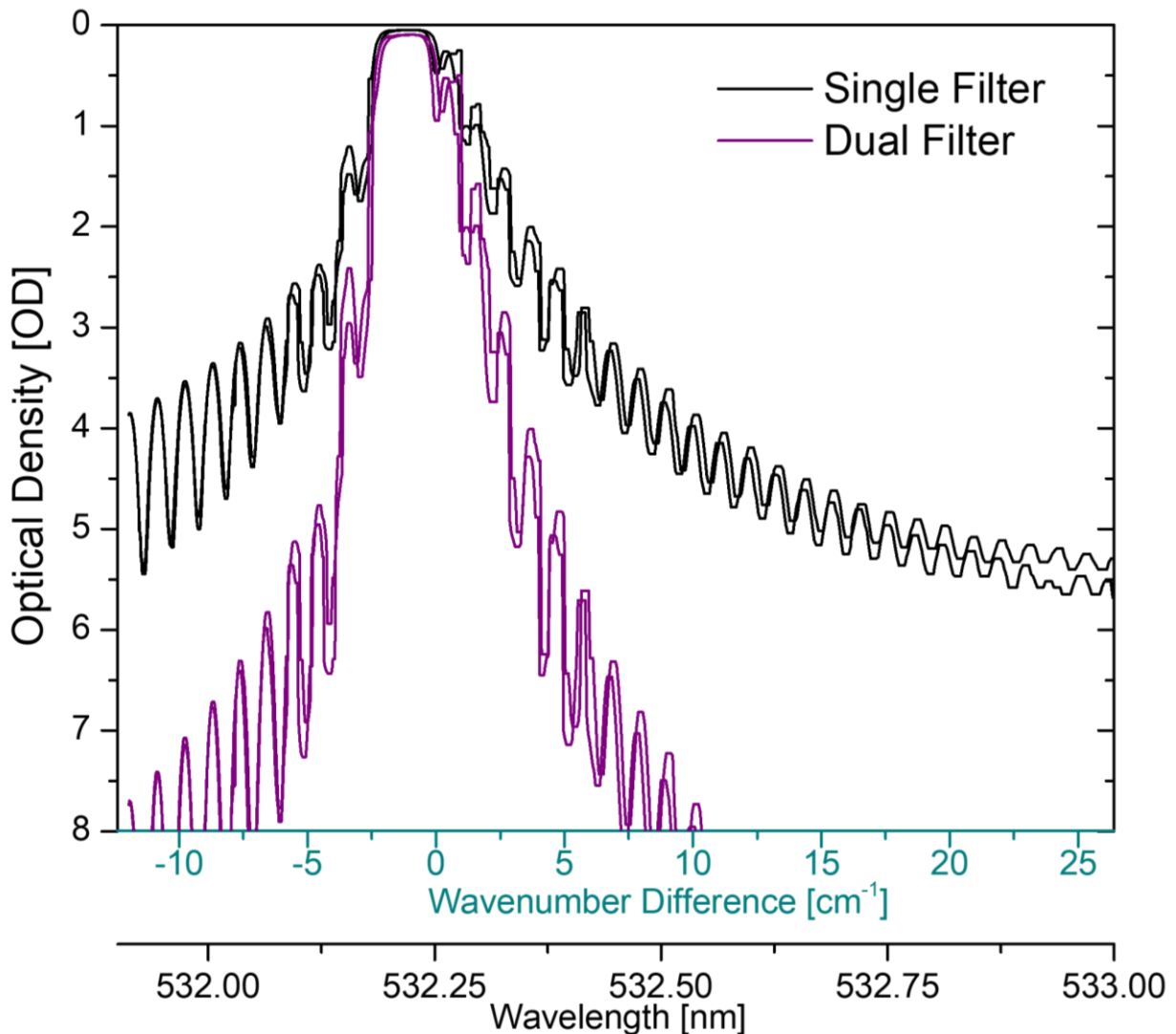
Principle of Operation

NoiseBlock™ ASE filters are designed to absorb ASE emission from a wavelength stabilized laser and transmit only the desired single frequency line. The inter-beam angle is chosen to separate the diffracted beam and the residual surface reflections, resulting in a clean, ASE-free output.

Wavelength-stabilised diode



Reduction of ASE light with NoiseBlock™ Filter



Applications such as low frequency Raman spectroscopy require >70dB attenuation of the residual ASE for artifact free measurement near the excitation wavelength. In these cases, combining two ASE filters, a spectrally matched 90/10 beamsplitter (BS) filter and two SureBlock™ ultra narrow-band notch filters provides for maximum Rayleigh light suppression and high throughput of Raman spectra starting from ~10cm⁻¹.

Ordering Information

Example: Mounted ASE 532 bandpass filter

MN-ASE-532-1