BragGrate™ - Notch Filter (BNF)

Ultra Narrow (<10 cm^{-1}) Bandstop Filter for Rayleigh light suppression

Product Description

BragGrate™ Notch Filter (BNF) is a reflective volume Bragg grating recorded in a bulk of photosensitive silicate glass. Ultra-Narrow-Band Notch Filters reflect light with bandwidths as narrow as 5 cm^{-1} while all other wavelength pass unaffected with up to 95% total transmission. BNF's enable simultaneous measurements of Stokes and Anti-Stokes Raman bands down to 5 cm^{-1} with a single stage spectrometer. Our Notch filters can withhold temperatures of up to 400°C and are fully environmentally stable with a practically unlimited life-time. Central wavelengths of the filters can be angle tuned by several nanometers without reduction of the filter optical density.

Standard Parameters

Center Wavelength: 488, 514, 532, 633, 785, 1064 nm (custom wavelengths available)

Spectral Bandwidth (FWHM): < 10 cm^{-1}

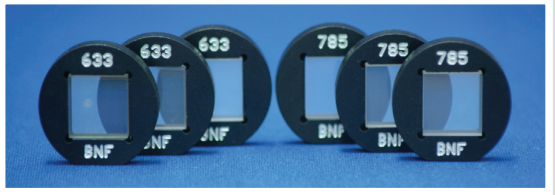
Attenuation: 99.9% and 99.99% (OD3; OD4)

Lateral Dimensions: 12.5x12.5, 11x11 mm^2 (90% clear aperture)

Thickness: 2-3 mm

Applications

Ultra-low frequency Raman spectroscopy



Specifications

Attenuation: 90-99.99% (OD1-4)

Spectral bandwidth (FWHM): < 10 cm^{-1}

Operating range: 400-2500 nm

BNF thickness: 2-4 mm

Apertures: up to 25×25 mm^2

Angular selectivity: 0.1-0.2 deg

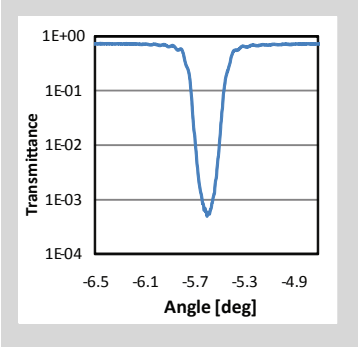
Incident/Diffracted Angles: 0-45 deg

Transmittance: up to 95%

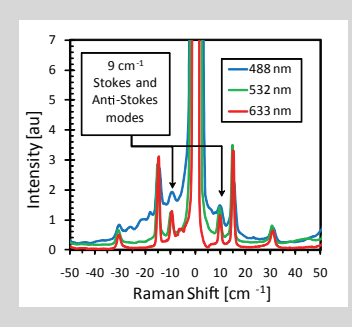
Transmission ripple: <1% at ±0.5 nm from laser line (@ 633 nm)

Advantages & Features

- Ultra-narrow rejection bandwidth
- Measurements of both Stokes and anti-Stokes modes
- No degradation in high power light
- Environmentally stable: high temperature operation, no humidity effects
- No polarization dependence



Transmission spectrum of OD3@488 nm BragGrate™ Notch Filter with 12×12 mm2 clear aperture.



Raman spectra of L-cysteine measured with a single-stage spectrometer and BragGrate™ Notch Filters at 3 different wavelengths. (Courtesy of HORIBA Jobin Yvon)