



BragGrate™ - Bandpass Filter Reflecting Bragg Grating (RBG) for spectral filtering

Product Description

BragGrate™ Bandpass Filter is a reflecting Bragg grating (RBG) recorded in a bulk of photosensitive silicate glass. The filters are used to clean up laser spectral noise with a bandwidth as narrow as 50 pm in visible and near IR regions. In Raman spectroscopy applications, combining the bandpass filters with matching BragGrate™ Notch Filters enables Raman shift measurements down to 5 cm⁻¹ from the laser line. BragGrate™ filters have superior environmental stability and can handle high power optical radiation.

Standard Parameters

Center Wavelength: 405, 488, 514, 532, 633, 785, 1064 nm

Spectral Bandwidth (FWHM): < 7 cm⁻¹

Diffraction Efficiency: > 90%

Lateral Dimensions: 5x5 mm²

Total Deflection Angle: 20 deg

Applications

- Spectral filtering and noise cleaning of laser beams
- ASE filters for Raman diode laser sources
- Spectral detection
- Tunable filters for high resolution spectroscopy

Specifications

Diffraction Efficiency (DE): >90%

Spectral Bandwidth: 50 pm to 0.5 nm

Operating Range λ: 350-2700 nm

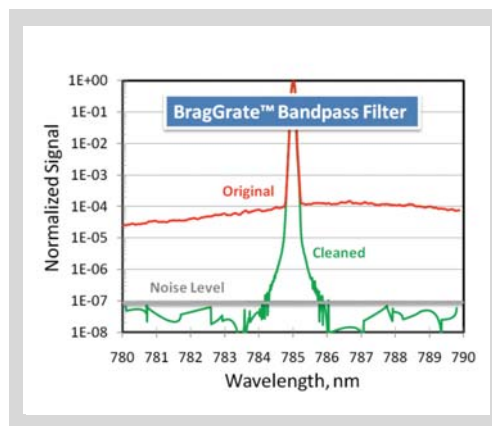
Grating Thickness: 0.5-15 mm

Apertures: 1-10 mm²

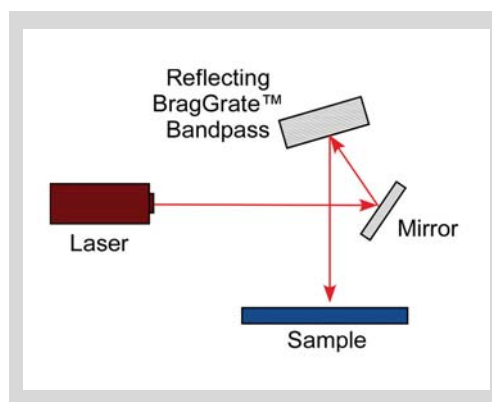
Deflection Angles: 5-90 deg

Advantages & Features

- High spectral selectivity
- Superior environmental stability, no degradation over lifetime
- High power operations over 1 kW
- High average power operations >20 W
- High energy operations up to 5 J/cm²
- No polarization dependence
- Near-diffraction-limited beam quality



785 nm laser diode ASE background clean up with a BragGrate™ bandpass filter with bandwidth <7 cm⁻¹



Schematics of a possible BragGrate™ Bandpass filter configuration



OptiGrate Corp is a 10-year old, privately owned company which designs and manufactures a full range of BragGrate™ holographic optical elements (volume Bragg gratings) in inorganic photosensitive silicate glass. OptiGrate supplies custom built, as well as volume orders of diffractive optical components to hundreds of customers on 5 continents. This technology is protected by a portfolio of issued and pending patents.