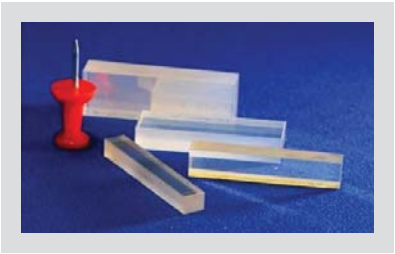
OptiGRATE
HIGH EFFICIENCY FOR HIGH POWER

BragGrate™ - Pulse

Stretcher & compressor for ultra-short pulse lasers

Product Description



BragGrate™-Pulse is a volume Bragg grating in reflecting geometry with a period gradually varying along the direction of the beam propagation (so-called chirped Bragg grating, CBG).

BragGrate™-Pulse is the first commercially available CBG-based product especially designed for stretching / compression of femtosecond and picosecond laser pulses.

Product Features

- Compact geometry and easy-to-align
- High power operation (up to 1 kW average power)
- High energy operation (up to 2 mJ pulse energy)
- Environmentally stable
- Robust, easy to handle and clean
- Preserves diffraction limited quality of femtosecond laser beam with diffraction efficiency exceeding 80%

Specifications

Spectral bandwidth: 1-100 nm

Operating range: 800-2500 nm

Thickness: 10-50 mm

Stretching time: 10-250 ps (FWHM)

Efficiency: 70-95%

Apertures: up to 8x10 mm^2

Applications

BragGrate™-Pulse is for temporal stretching of a reflected ultrashort pulse and recompression of this pulse if launched from the opposite side of the grating. Most compact and robust compressors are ideal for industrial and scientific applications.

Typical Specs of BragGrate™- Pulse for 1030 nm spectral range

Center wavelength: 1032 nm

Spectral bandwidth: 5, 10, 25 nm

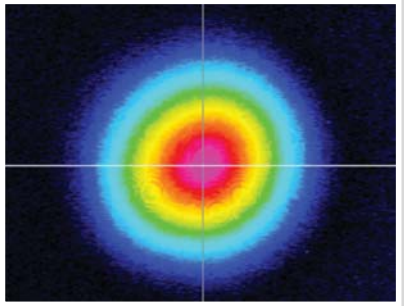
Diffraction efficiency: > 85%

Thickness: 20, 35 mm

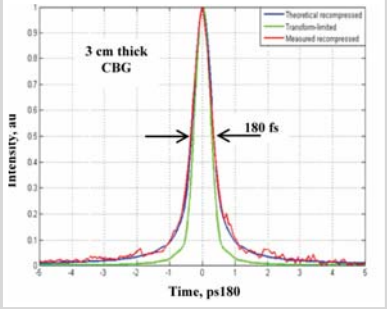
Stretching time (FWHM): ~ 150 ps

Dispersion rate: ~ 6, 10, 25, 60 ps/nm (linear)

Compressed pulse duration: < 200 fs



Output beam shape after passing 30-mm-thick CBG in both directions



Compressed pulse profile theoretical vs measured data with 30 mm thick BragGrate™ Pulse

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OptiGrate Corp designs and manufactures a full range of BragGrate™ holographic optical elements (volume Bragg gratings) in inorganic photosensitive silicate glass. OptiGrate pioneered commercial VBG technology and supplied VBG-based diffractive optical components to hundreds of customers on 5 continents. This technology is protected by a portfolio of issued and pending patents.