



- 1 SEM micrograph (post processed) of a grating profile cross section. Grating etched into a dielectric layer stack.
- 2 Dielectric reflection gratings during a full size measurement scan of diffraction efficiency.
- 3 Transmission grating with 1700 l/mm.

DIFFRACTION GRATINGS FOR HIGH POWER LASER APPLICATIONS

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Description

Customized diffraction gratings for laser applications are designed, fabricated with lithographic technologies and characterized with respect to their optical parameters.

Parameters

- Reflection (R) or Transmission (T)
- Line density: up to 3500 l/mm
- Polarization: TE or TM
- Wavelength: 266–2100 nm
- Bandwidth: 20–100 nm
- Angle of incidence: Littrow (T) < +/- 5° off Littrow (R)
- Efficiency: > 95% over bandwidth > 99% possible
- Element size: < 260 x 120 mm² or < 200 x 200 mm²
- Substrate: fused silica

Service / technology

- Grating design
- Lithographic wafer-level processing:
 - Electron beam lithography
 - Reactive ion etching
- Characterization
 - Diffraction efficiency
 - Wave front error
- Dicing / machining of grating elements
- Backside anti-reflection coating (T)

Applications

- Laser pulse compression
- Phase gratings for FBG-Inscription
- DWM-components
- Beam shaping