Fused silica transmission grating technology offers unbeatable energy/power damage threshold combined with high-efficiency spectral performance

As femtosecond laser systems advance to ever increasing energy levels, demands to the energy/power handling capabilities of pulse compression gratings increase. Ibsen manufactures 100% fused silica pulse compression gratings that offer unbeatable energy/power handling capacity, combined with high-efficiency, low wavefront distortion performance.

Pulse compression gratings from Ibsen build on Ibsen’s world leading position in fused silica transmission gratings, utilizing state-of-the art interferometric patterning technologies and advanced reactive ion etching technology. Gratings are manufactured on custom/OEM basis, but an increasing number of gratings are stock available, such as the grating described in this product sheet.

Pulse Compression Grating

1250 l/mm for 800 nm
PCG-1250-800-989
Benefits

<table>
<thead>
<tr>
<th>Benefit</th>
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<tbody>
<tr>
<td>Highest energy/power damage threshold</td>
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<tr>
<td>Environmentally and thermally stable</td>
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<tr>
<td>High diffraction efficiency</td>
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<td>High tolerance to incidence angle</td>
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<td>Low transmitted wavefront distortion</td>
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Parameter | Specification
---|---
Material | Fused silica and high-power, dielectric AR coating materials
Grating area | 26 mm x 23 mm
Substrate size | 28 mm x 25 mm x 1 mm
Grating resolution | 1250 l/mm
Grating period | 800.00 nm +/- 0.1 nm
Dispersion at 800 nm | 0.083 deg/nm
Nominal wavelength | 800 nm
Angle of incidence (AOI) | Littrow (30 deg)
Diffraction efficiency (TE) | >94%
Back-side AR coating | High power, dielectric AR coating applied
Production technology | 2-beam Interferometry and Reactive Ion Etch, Class 10 cleanroom environment

Typical Grating Performance

**1250 l/mm for 800 nm**

![Graph showing absolute diffraction efficiency vs. wavelength for PCG-1250-800-989](image_url)
1250 l/mm for 800 nm
PCG-1250-800-989

Configuration/definitions

Specifications are subject to change without notice.
The above grating is an example of Ibsen's capabilities. Ibsen operates as grating partner for our customers, from being an integrated part of the grating and device / instrument design phase, to the manufacturing of prototypes, to volume manufacturing of OEM gratings.