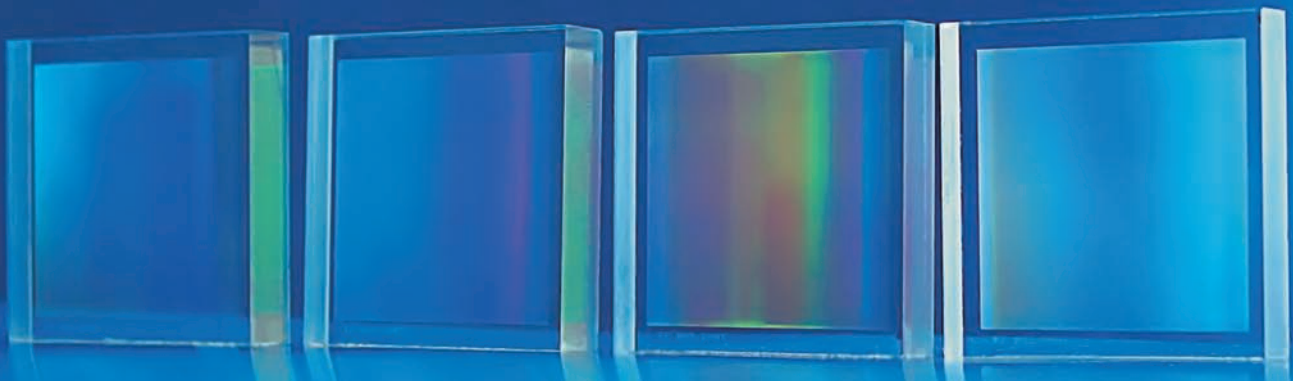




Pulse Compression Transmission Gratings



High output power femtosecond lasers require sophisticated chirped pulse amplification (CPA) setups.

Pulse compressors using dielectric gratings in Littrow mounting show very high efficiencies and lifetimes in such CPA setups.

Jenoptik dielectric pulse compression gratings are highly efficient and durable under high laser power densities. The efficiency advantage over metal gratings results in more than 20% additional output power in a typical CPA setup with four grating passes.

The Jenoptik pulse compression gratings are made of high-purity fused silica and are thus well suited for a broad wavelength range.

Features:

- Fused silica transmission grating
- High diffraction efficiency
- High uniformity of efficiency
- Low thermal wavefront distortion by the use of non-absorbing dielectric material
- Monolithic fused silica design for highest damage threshold and lifetime
- Low Self Phase Modulation (SPM)
- Custom designs with short delivery time

Applications:

- Laser pulse compression in chirped pulse amplifiers (CPA)
- Intracavity Dispersion Control
- Wavelength selection and bandwidth narrowing
- UV laser applications

Pulse Compression Transmission Gratings

Specifications

Configuration:	Single or multi pass transmission setup			
Ultrafast Laser:	Ti:Sapphire	Yb:KAW, Nd:Glass, Nd:YAG	Yb fiber	Er fiber
Wavelength (nm):	670 ... 1080	1025 ... 1064	1080	1560
Frequency (typ. lines/ mm):	1480	1250	1000	800
Efficiency maximum ¹ (%):	98	97	98	97
Clear Aperture (typ. in mm):	up to 125 x 125			
Polarization:	s-polarized			
Damage threshold ² (mJ/ cm ²):	300			
Thermal load ³ (kW/ cm ²):	> 3			
Wavefront distortion:	< λ / 10			
Thickness ⁴ (mm):	6.3			
Options:	Custom size, Thickness and Groove frequency			
Product number:	029130			

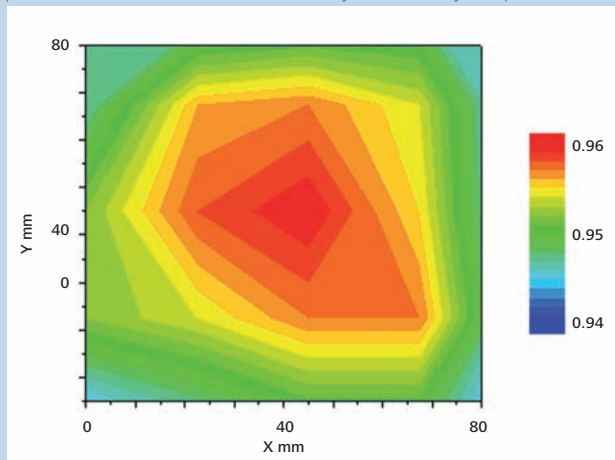
¹ with AR-Coating, single pass, theoretical maximum,

² 800 nm, 140 fsec, 1.480 lpmm, with AR-Coating,

³ 1080 nm, 8 kW Disc laser,

⁴ optional 3.05 or 2.3 mm

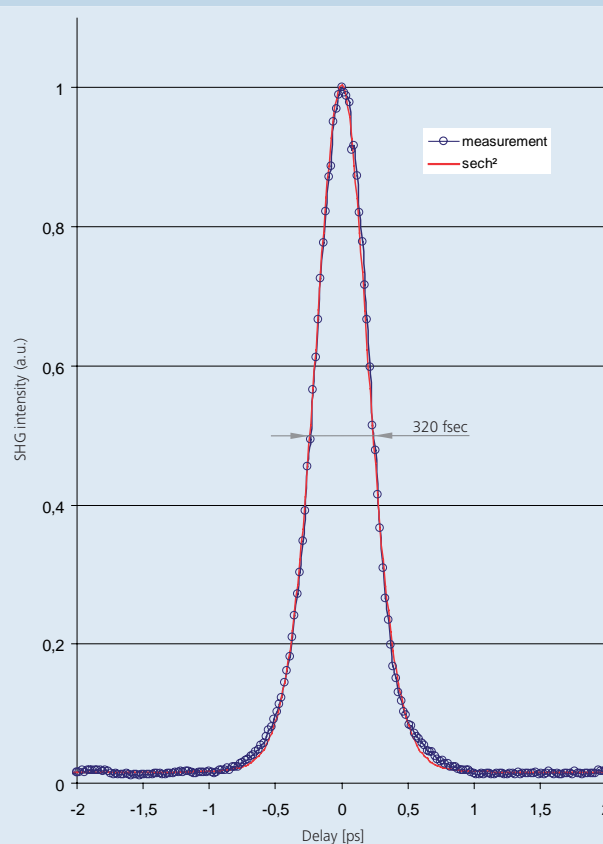
Typical measured 1st order efficiency uniformity map



Groove density: (lines/mm)	1480
Diffraction:	-1st order
Dispersion: (°/nm)	0.105
Clear Aperture: (mm x mm)	80 x 80
Wavelength: (nm)	800
Polarization:	s-polarized

Results:

Average efficiency: (%)	95.5
Uniformity: (%)	±1.2



It is our policy to constantly improve the design and specifications. Accordingly, the details represented herein cannot be regarded as final and binding.



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