



Diffraction Line Generators

Single transverse mode lasers such as many solid-state lasers, diode lasers, gas lasers and frequency double or tripled lasers have a Gaussian beam profile and cannot easily be used for homogeneous illumination applications.

Diffraction Line Generator Optics (LGO) from Jenoptik transform a Gaussian laser beam into a homogeneous top-hat line profile.

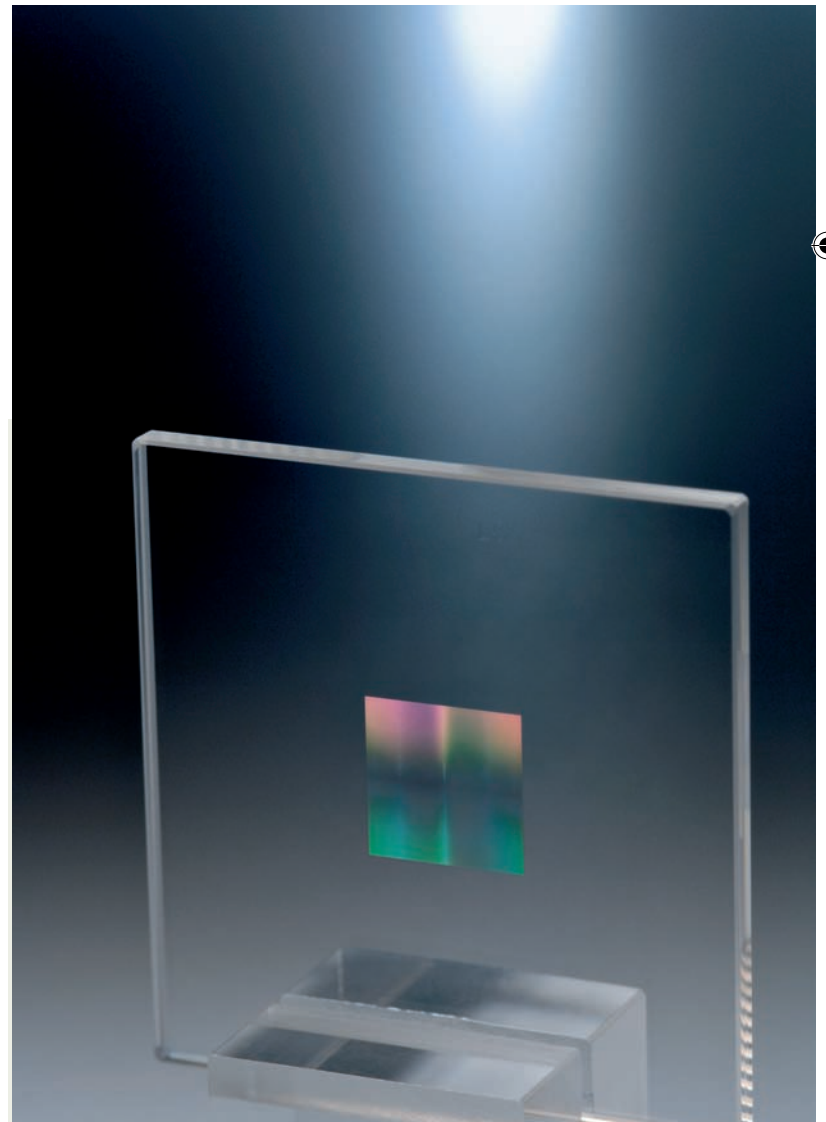
The transformation of the Gaussian beam into the desired top-hat line is done by a single, flat LGO element without any further optics.

Features:

- Good uniformity
- High efficiency
- UV to NIR wavelengths available
- High damage threshold
- Single optical element
- Custom designs with short delivery time
- Integration of lens function possible

Applications:

- Laser materials processing
- Annealing and re-crystallization of semiconductors and thin layers
- Printing technology
- Lithography
- Measuring systems



Microoptics

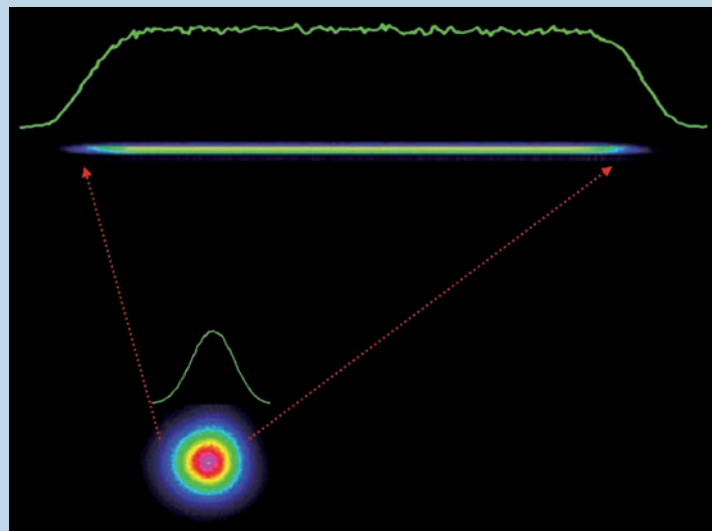
Diffractive Line Generators

Specifications

Line length:	0.1 mm to 100 mm (or even larger)
Efficiency:	Up to 95 % *
Uniformity:	Typical ± 2.5 %
Clear aperture:	5 mm to 100 mm square
Input parameters:	UV to IR, TEM ₀₀
Material:	UV grade Fused Silica, ZnSe
AR-Coating:	Laser line or broadband
Product number:	029126

* AR coated

False-colour image and intensity profile of a 5 mm long and 20 μm wide top-hat line generated from a Gaussian laser beam



Setup

Wavelength	632.8 nm
Beam diameter 1/e ²	1.8 mm Gaussian
On axis setup with integrated lens function	

Results

Line beam	20 μm x 5 mm
Efficiency	> 92 % (AR coated)
Uniformity	< ± 5 %

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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