



Diffractive 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.

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

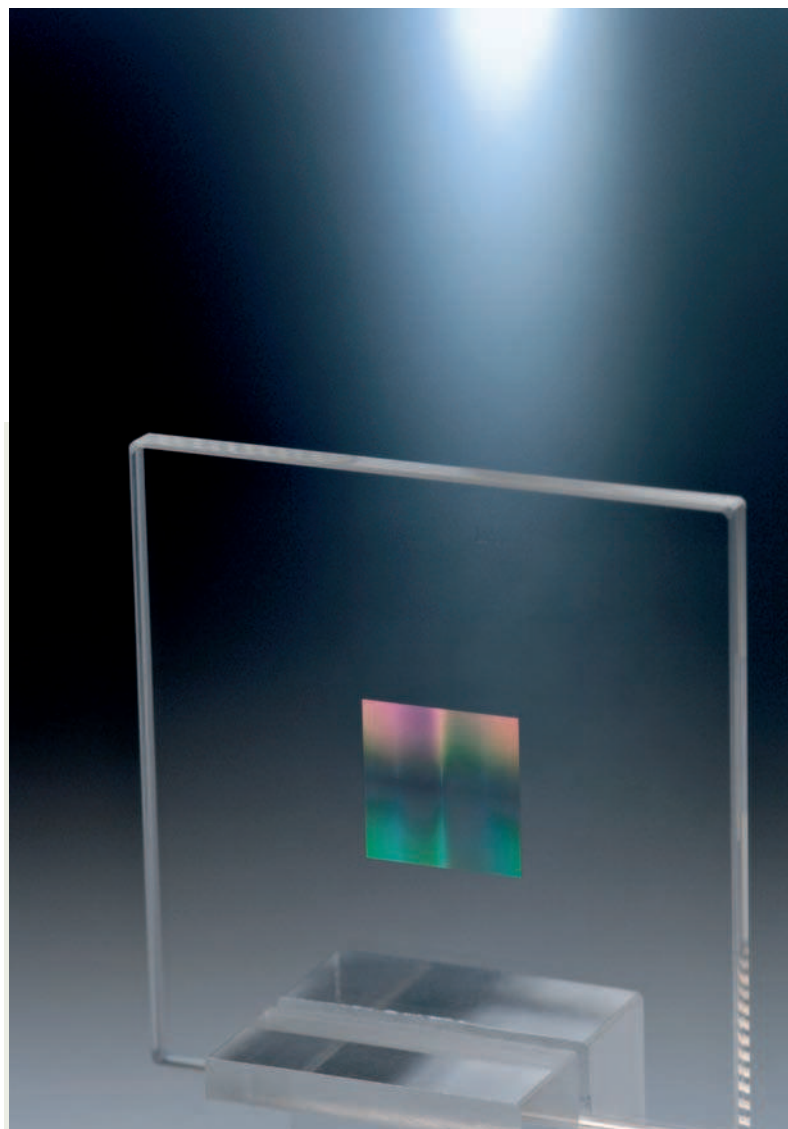
The transformation of the Gaussian beam into the desired top-hat line is done by a single, flat LGO element without any further optics.

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



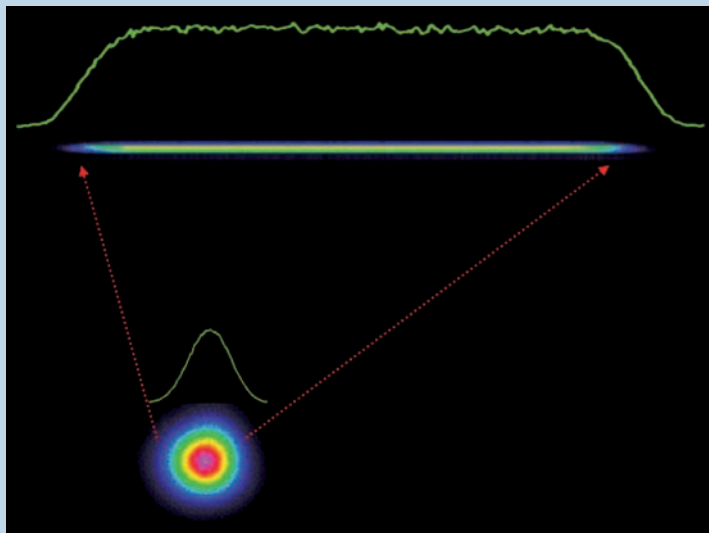
Diffractive Line Generators

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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