Midel Photonics

ALL-REFLECTIVE
Focal Shapers
based on micro-structured mirrors

Our Focal Shaper addresses the challenges of industrial laser processing, where focus position is critical. Standard beams often struggle with height tolerances or thermal lensing due to limited depth of focus. By elongating the focus and homogenizing the width, our Focal Shapers ensure reliable results, faster processing, fewer rejects, and consistent quality. Perfect for industrial applications demanding robustness and reliability, it delivers unmatched performance in demanding environments.

Focal Shaper Solutions

Uncompromising Quality

Our Focal Shapers are customized to your system requirements, ensuring optimal performance for your specific application.

- **Extended Depth of Focus**: Up to 5x longer than standard Gaussian beams
- **Homogenized Focus Width**: Reliable and consistent energy distribution
- **Thermal Lensing Resistant**: Ideal for multi-kW setups in industrial context

Midel Benefits

Core

System-Adapted DOE with Individual Support: The winning strategy for beam shaping in industrial context

Valuable

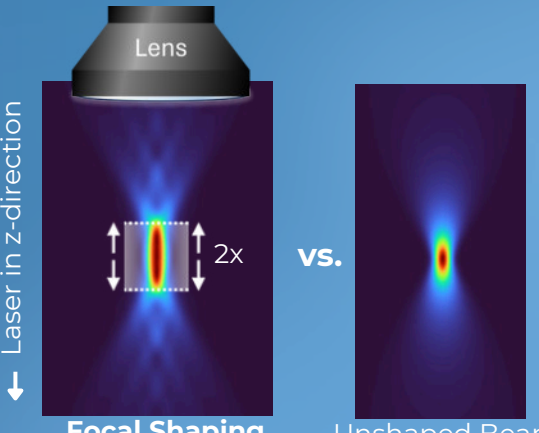
Superior Productivity by unmatched efficiency in shaping laser light

Fast Delivery within 3 weeks

Baseline

All Lasers, all Power Levels: Deep-UV to Near-IR, femto to continuous, low power to 50kW+

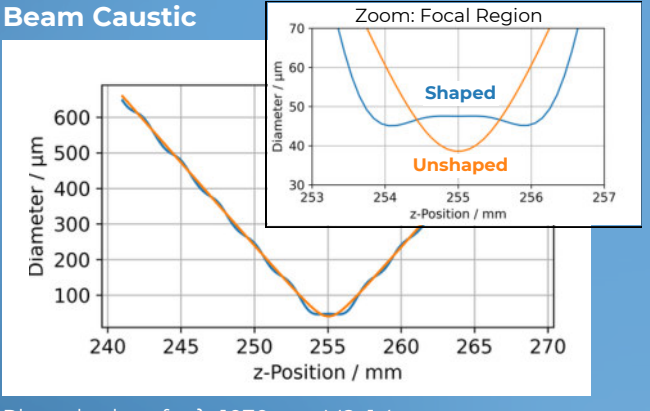
Configuration Example: 2x Focal Elongation



Focal Shaping
DOF = 3.2mm

Unshaped Beam
DOF = 1.6mm

Beam Caustic



Plotted values for λ=1070 nm, M2=1.4, f=255 mm, beam diameter=12 mm (1/e²)

Contact us for your optimal Focal Shaper solution. Fully customized and in your hands faster than ever!

Start NextGen Laser Processing!
Say Hi to our Team.

Call us +49 (0)228/28-679710
Write us info@midel-photonics.de
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Specifications

Focal Shaper

Elongation of DOF	Up to 5x Gaussian DOF

Input Beam Requirements

Input Beam	Works with single- or multi-mode
Input Beam Diameter	Customized for Beam Diameter ±5%; Max Diameter 16mm (AOI=45°)
Wavelengths	1064/1030 nm; 532/515 nm; 450 nm; 355/343 nm; 266 nm; others on request
Clear Aperture	Clear aperture ≥2x beam diameter ($1/e^2$)

Integration

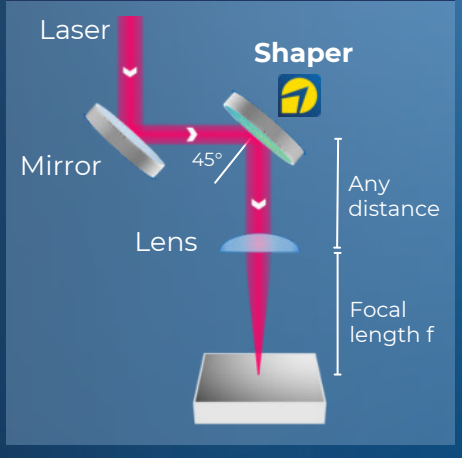
Alignment	Lateral alignment required
Setup	Recommended: Integrate into collimated beam with a focusing lens (see below). For setups without a lens, contact us for analysis.

Further Specs

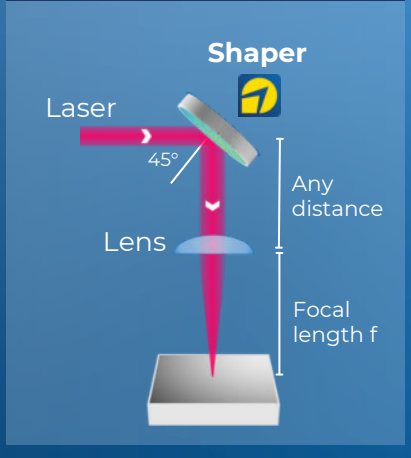
Material	Micro-structured dielectric HR coating on fused silica substrate
Reflectivity	>99.9% @ 1064/1032 nm; 532/515 nm; 355/343 nm; >99.8% @266 nm
Dimensions	Ø25mm/1" and Ø50mm/2". Other dimensions on request.

Configurations

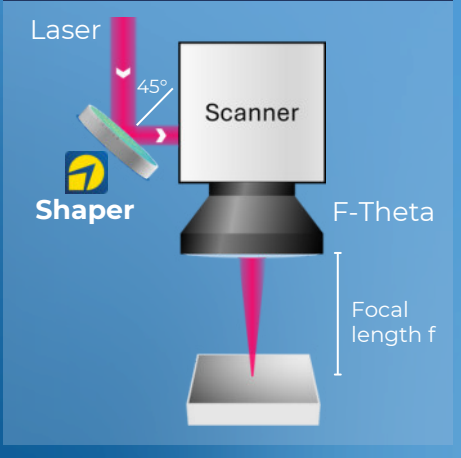
Parallel / Z-Folded



Folded



Scanner



Other configurations and angles-of-incidence (AOI) available

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