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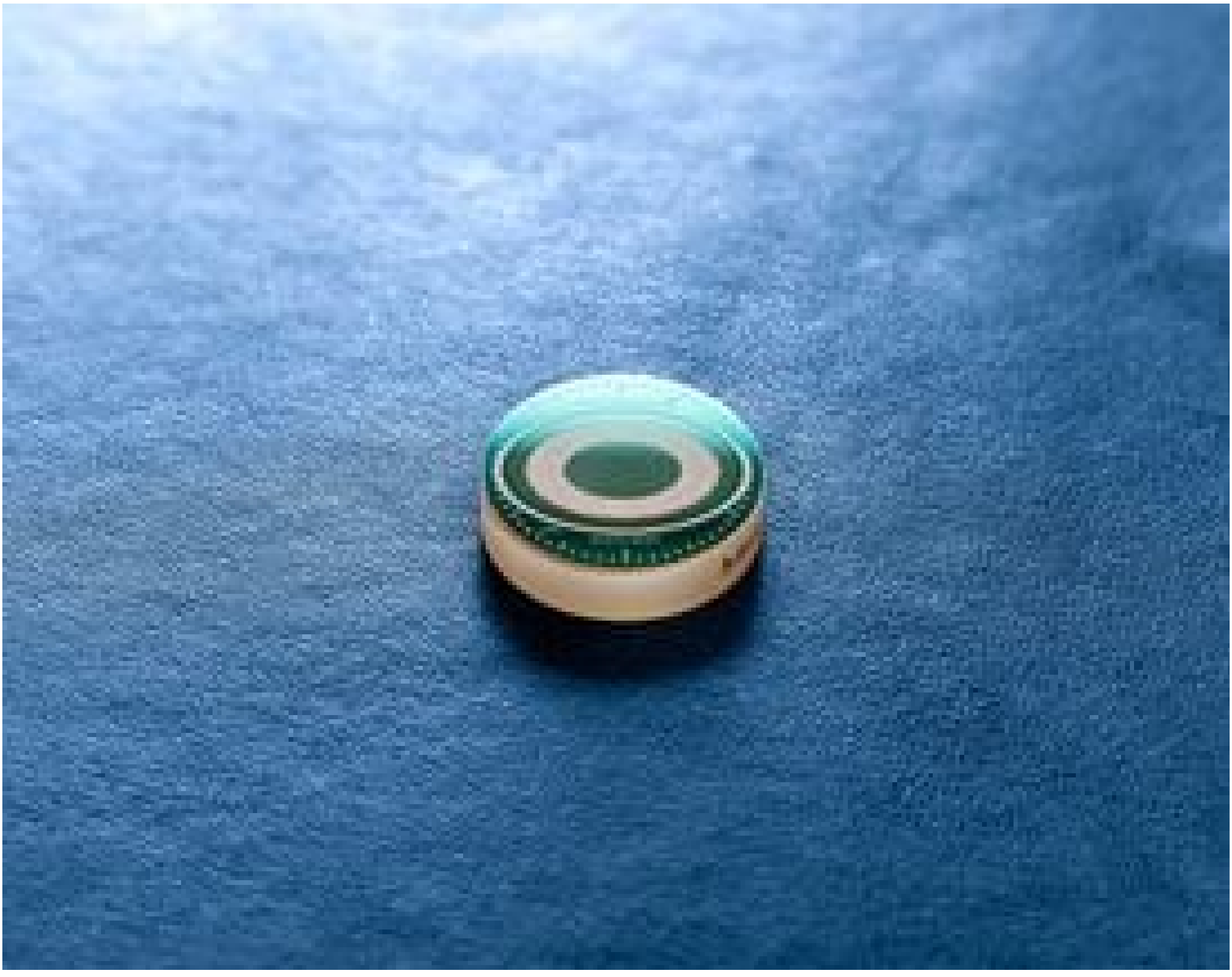
355nm, 2.5mm Input, 3D Tophat Shaper



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Efficiency @ Design Wavelength DWL (%):
≥ 85%

General

Type:
Beam Shaper

Style:
EDOF Flat Top

Physical & Mechanical Properties

Thickness (mm):
6.35 ±0.10mm

Diameter (mm):
25.00 +0.0mm/-0.1mm

Optical Properties

Entrance Beam Diameter, $1/e^2$ (mm):
2.5

Focus Range (mm):
±60% of Rayleigh Length

Substrate:
Fused Silica

Angle of Incidence (°):
45

Coating:
High Reflectivity

Design Wavelength DWL (nm):
355

Wavelength Range (nm):
343 - 355

Coating Specification:
HR coating, 343 - 355nm, 45°, R > 99.9%

Input Beam Mode:
TEM00 $M^2 \leq 1.3$

Regulatory Compliance

RoHS 2015:
Compliant

Certificate of Conformance:
View

Product Details

- Stable Flat-Top Spots Across an Extended Axial Range
- High Efficiency with Low Side Lobes for Small-Spot Micromachining
- Depth-Of-Field Engineered Top-Hat (Flat-Top) Beam Shaping for Stable Industrial Processes
- Continuous Reflective DOE (Diffractive Optical Element) Based on a Micro-Structured Mirror
- Designed For Industrial Laser Systems from CW To Ultrashort Pulses

Midel Photonics 3D Top-Hat Beam Shapers generate stable Flat-Top (Top-Hat) intensity profiles not only in the focal plane, but across an extended depth of field (EDOF). Unlike conventional beam shaping solutions that are highly sensitive to small focus or alignment changes, this extended depth-of-field engineered approach extends the usable process window and improves robustness in real production environments. The all-reflective design enables compact system layouts, supports high laser powers, and delivers reliable beam shaping performance for demanding industrial applications. Midel Photonics 3D Top-Hat Beam Shapers are available in input beam diameters of 2.5, 5, and 8mm with multiple wavelength options and feature a ≥ 85% efficiency and an EDOF of ±60% of the Rayleigh length. These beam shapers are ideal for applications requiring precise and repeatable energy distribution such as laser precision marking, laser lift-off, precision drilling, wafer dicing, and surface micro-structuring.

Conventional Top-Hat solutions shape the beam mainly in the focus plane. In production, however, process stability depends on behavior across depth of field. 3D-Top-Hat Beam Shapers are designed to keep the top-hat stable over a defined axial range - extending the usable working range under realistic system conditions. At the core is a continuous reflective DOE (diffractive optical element) realized as a micro-structured mirror with a dielectric high-reflectivity coating. The result is a uniform Flat-Top spot with high efficiency and minimized side lobes.

Special Handling

These optics require special handling to avoid damage and ensure long-term performance. Proper handling, cleaning, and storage are essential to maintain optical quality. Explore our **Optics Cleaning Resources** for step-by-step guides and best practices. For personalized assistance, **Email us** or **Chat** with our technical support team.

Component Handling Tools

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