

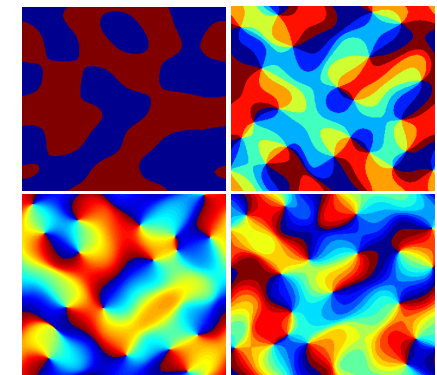
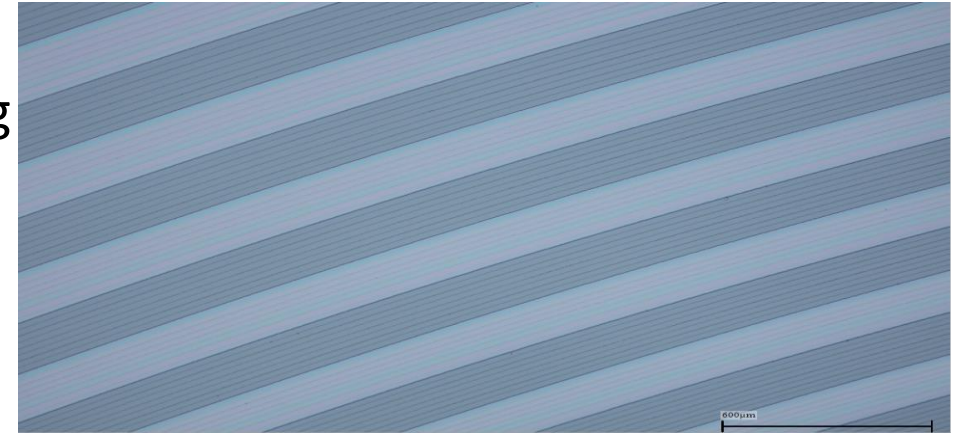


HOLO/OR

A VISION OF EXCELLENCE

DOE - robust & cost effective beam shaping

- DOEs are flat diffractive elements used for laser shaping
- Compact and robust
- Cost effective solution
- Vast amount of shaping possibilities
- Absolute angular precision
- **DOEs significantly improve system performance in many applications**



Holo/Or is a DOE design & manufacturing global leader

1989

- Holo/Or established by Israel Grossinger

1994

- First commercial use of CO₂ laser DOE

2017

- Continuous growth leads to re-organization and enables wafer level production

2020

- Strategic partnership with **TechInvest Holding Ag** (Scanlab)

2023

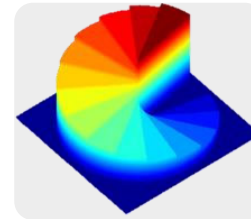
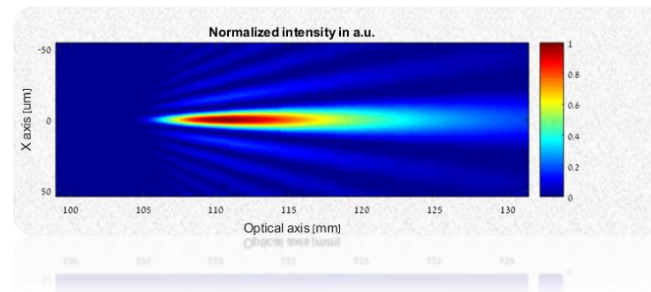
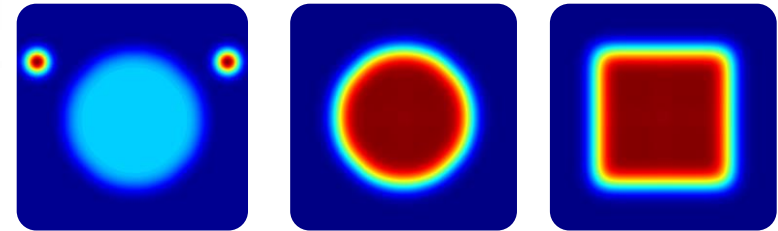
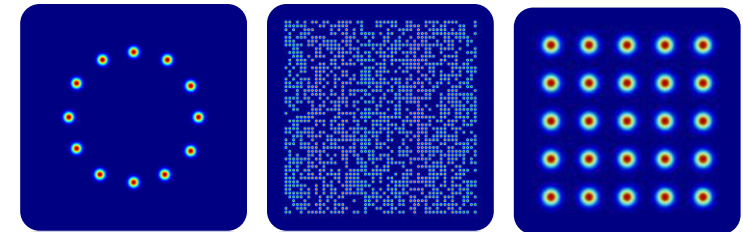
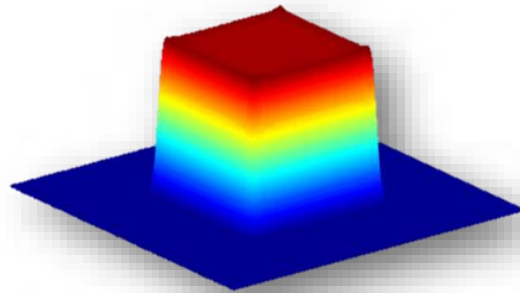
- Move to new Facility with increased capacity

- First to deliver DOEs for commercial use
- Break through technology
- Vast experience & expertise
- Diverse and extensive collection of beam shaping solutions



Optical functions enabled by using DOEs

- Beam splitting
- Angular beam shaping
- Beam focal shaping
- Others: sampling, phase corrections



Holo/Or Typical Customer Applications

Material Processing

Surface Treatment

Brazing

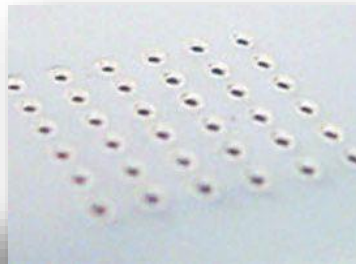
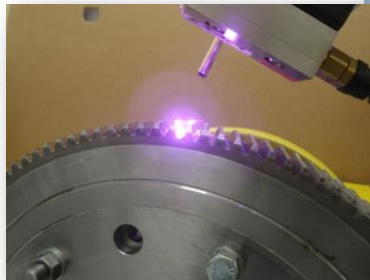
Ablation & Structuring

Laser lift-off

Drilling

Welding

Cutting



Medical Aesthetic



Skin Resurfacing



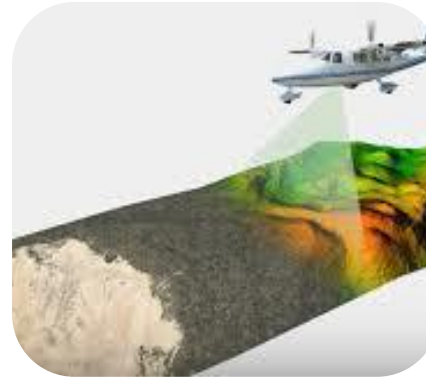
Tattoo Removal

Other Application Fields of Customers

Optical Metrology



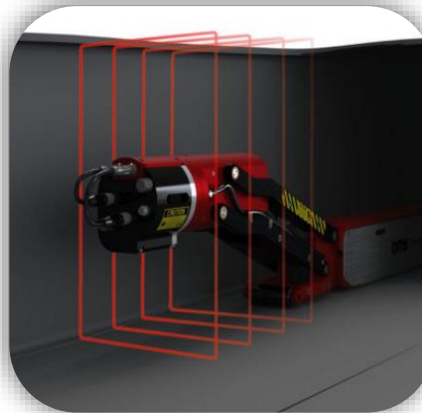
Areal Mapping



Scientific & Research

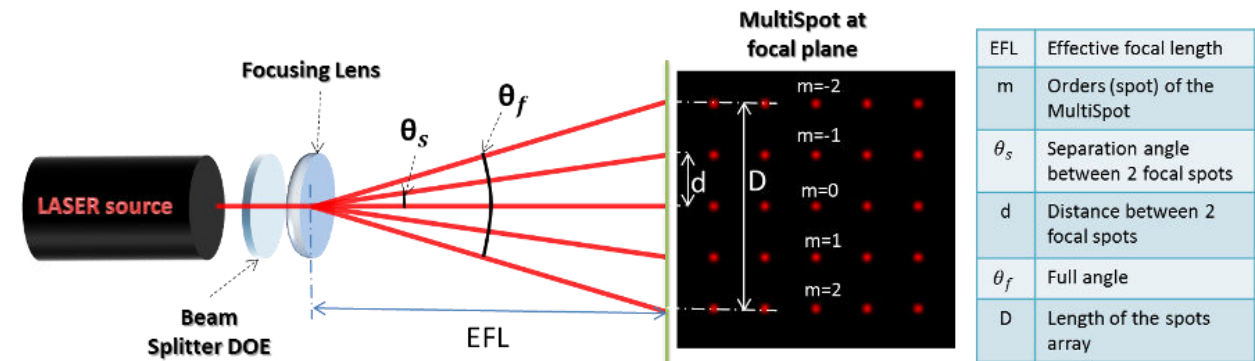
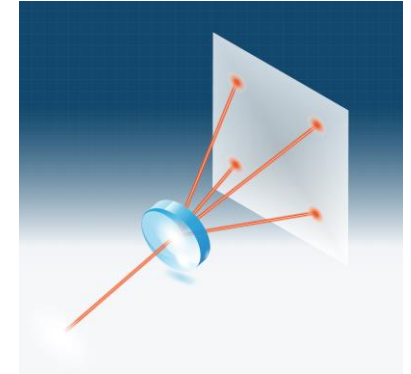


Machine Vision

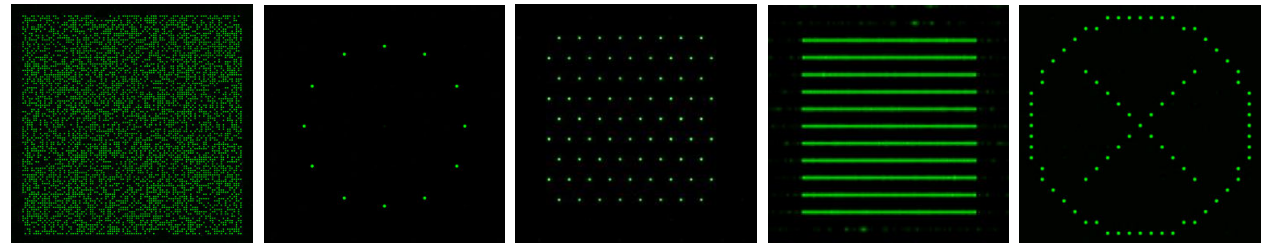


Beam splitter – multispot

- Split a single laser beam into several identical beams
- Precisely controlled separation angles between beams
- Custom configurations

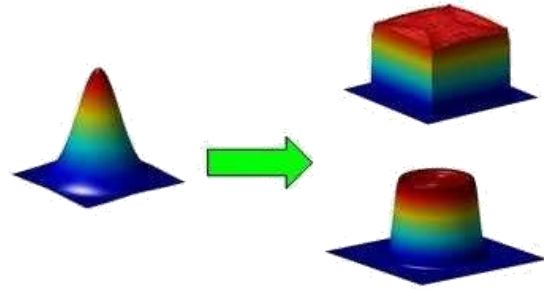


Examples of Multi-spot DOEs. From left to right: Random, Round, Hexagonal, Multiple lines, Viewfinder

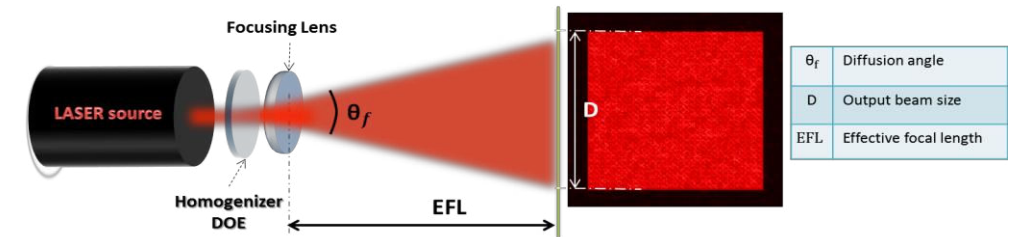
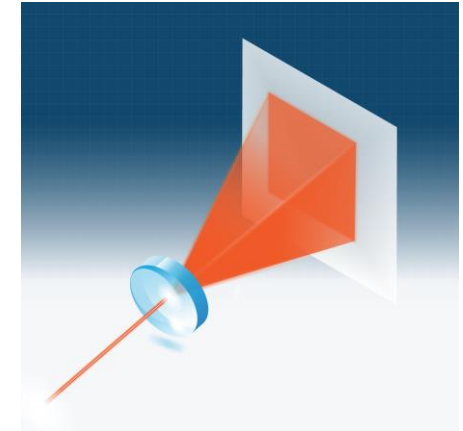
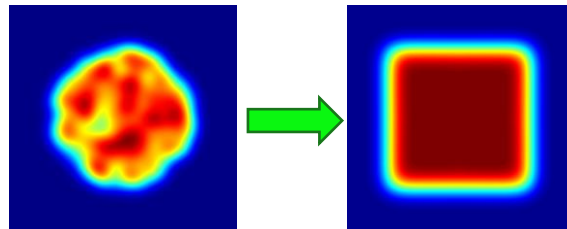


Angular beam shapers

- **Single Mode:** convert a Gaussian beam into a uniform spot with Top Hat profile

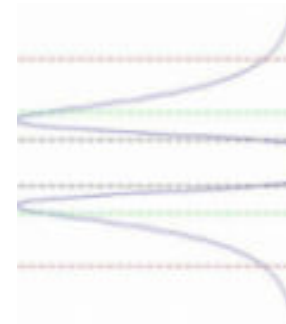
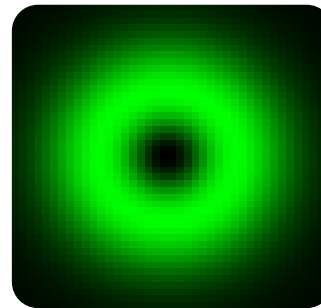
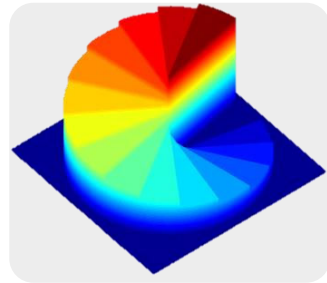


- **Multi Mode:** homogenize an irregular beam into a smooth profile with any custom shape

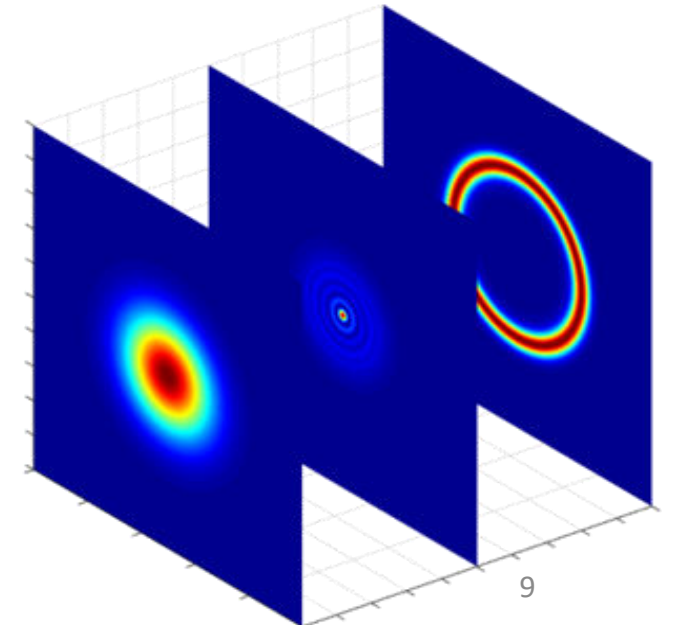


Ring generators

- **Vortex Phase Plate:** convert a Gaussian beam into a donut-shape with specified topological charge

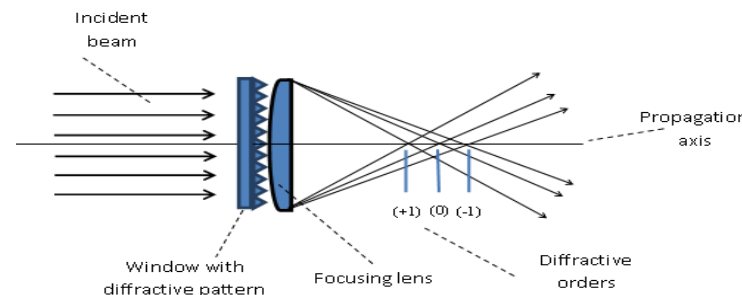
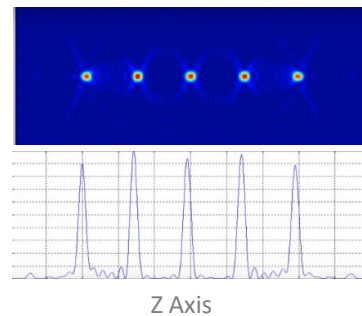
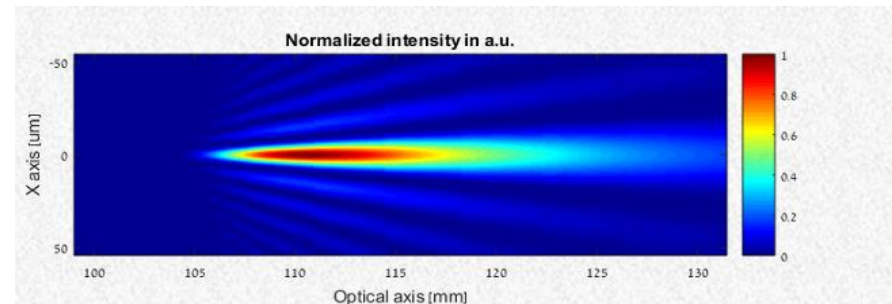
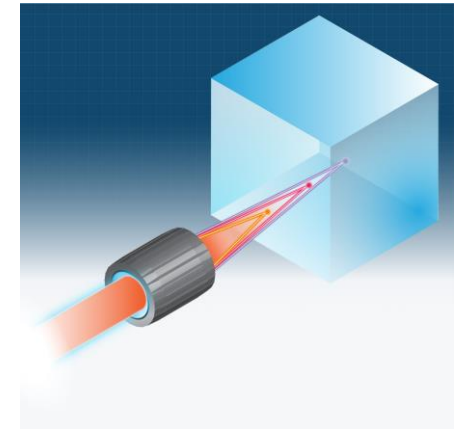


- **Diffraction Axicon:** generate a Bessel beam in a well defined ring intensity profile, for both multi-mode and single-mode beams



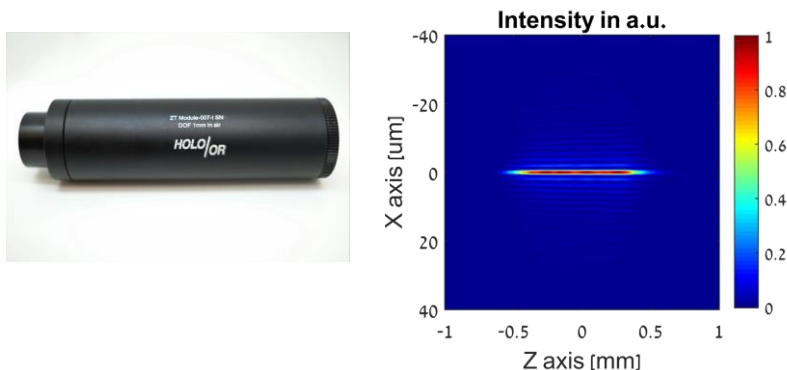
Focal beam shapers

- **Elongated focus:** generates a Bessel beam that extends the depth of focus of the laser system
- **Multi-focal DOEs:** split a single focal point into several focal points along the optical axis

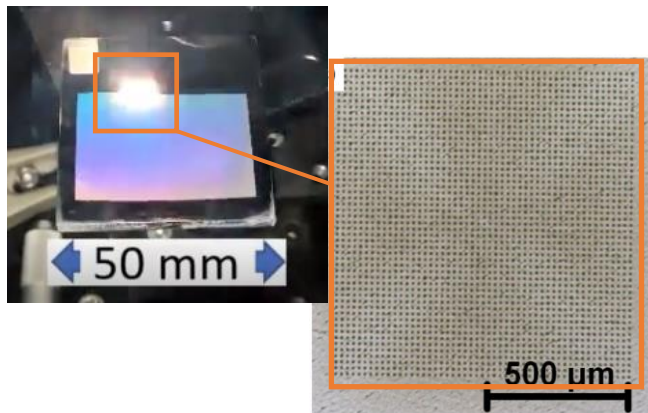


Innovative solutions

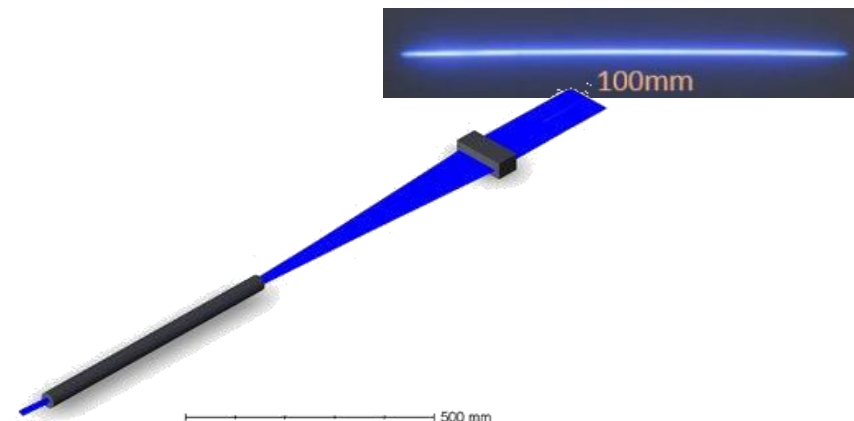
DeepCleave™ for glass cutting



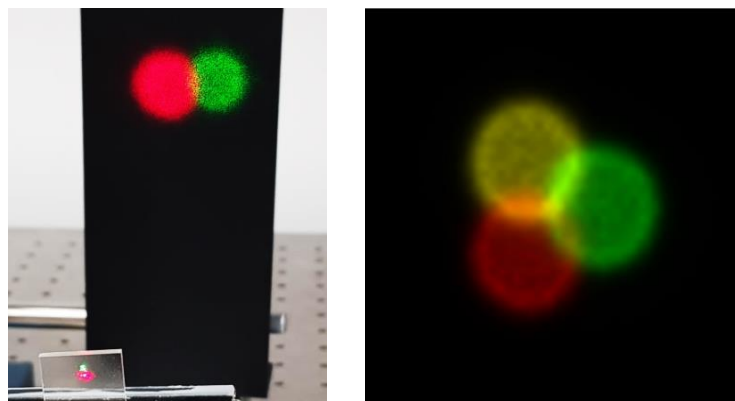
DLITe- Surface texturing DOEs



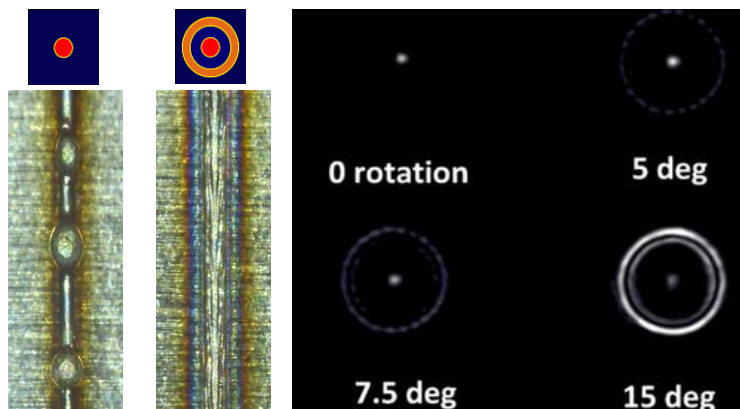
LeanLine™ beam shaping



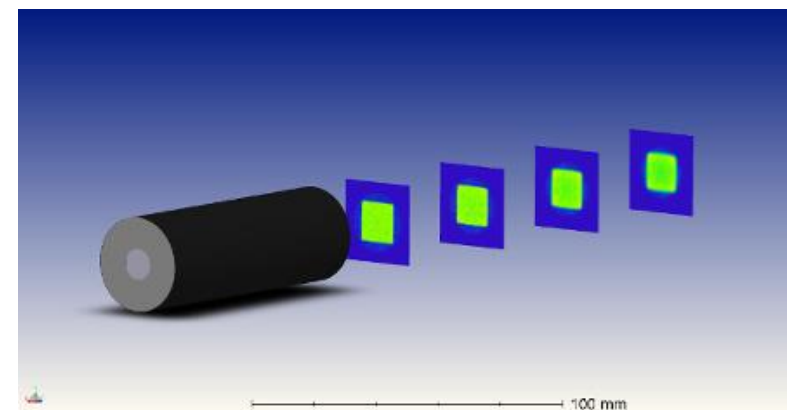
BD - Broadband multiwavelength Diffuser



Flexishaper- Adjustable ring welding

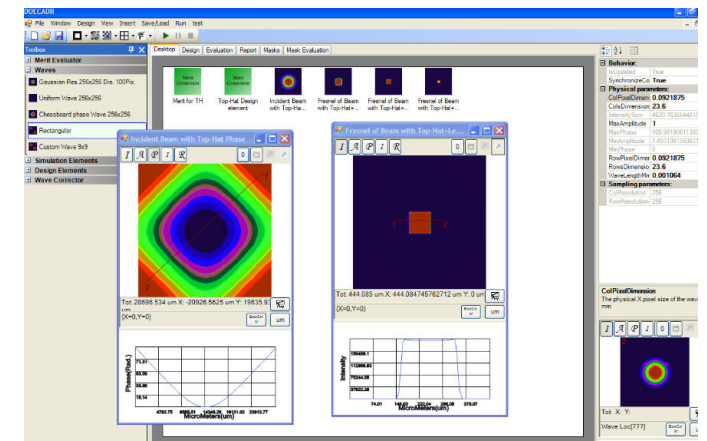


Collimated Homogenizer / Top-Hat



Capabilities

- State of the art lithography machinery
- From prototypes for R&D to production for OEM
- Optical technologies for highly specialized applications
- In house design SW and manufacturing
- Simulation tools
 - Matlab™
 - Zemax™
- Custom module solutions with DOE
- Holo/Or is ISO 9001:2015 certified, since 2012



Holo/Or provides excellent shaping solutions worldwide. Feel free to contact us!

