



- 1 *Laser diode bar high-brightness fiber coupler.*
- 2 *Diffractive laser resonator.*

## DESIGN OF MICRO-OPTICAL ELEMENTS AND SYSTEMS

### Software

The design of free-space micro-optical systems is based on commercially available design software. The following tools are used:

- Raytracer: ZEMAX, OSLO, ASAP, TracePro, LucidShape
  - Wave propagation: VirtualLab 4, GLAD
  - Grating design: UNIGIT, GSolver
- If required, specific add-on's like macros and interfaces extend the capabilities of these design tools.

### Projects

- Complex micro-optical systems for sensors, scanner and switches
- LED illumination optics
- Diffractive laser resonators
- Imaging Systems (visualization)

- Objective lenses for CCD-cameras (single-aperture, multi-aperture insect eye waferscale)

### Our offer

- Complete designs based on raytracing and wave propagation
- Support including prototyping and characterization
- Complex analysis of optical systems i.e. thermal analysis, tolerancing, stray light, cost estimation
- Customized macro-programming (optical system set-up, merit function generation, user-defined surfaces etc.)
- Consulting services

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