

INGENERIC

PRODUCT CATALOG

HIGH-PRECISION MICRO-OPTICS
FOR ADVANCED TECHNOLOGY APPLICATIONS



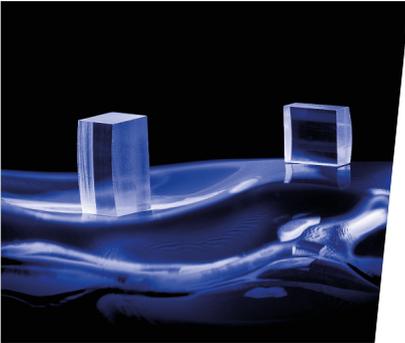
HIGH-PRECISION MICRO-OPTICS AND LENS ARRAYS

Custom
solutions
possible!



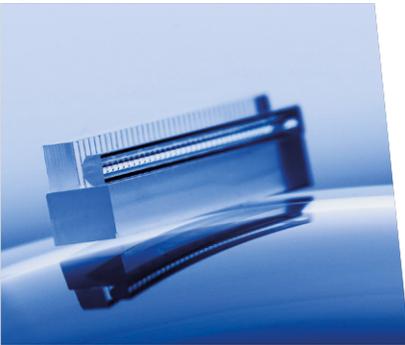
FAC (Fast-Axis Collimation) & FAC with Tab

- Most important optical component for beam shaping of high-power diode lasers, bars, and single emitters
- NA: up to 0.8
- EFL: 0,15 – 2,8
- Beam quality factor: 1.5 after collimation



SAC (Slow-Axis Collimation) & S-SAC (Single SAC)

- Forming slow axis of high-power diode laser bars
- Available as monolithic array (diode bar) or lens for single emitter collimation
- Diode bars: EFL 1.0 – 10.3, Pitch 0.20 – 1.00, small transition zones between lenslets
- Single emitter: EFL 3.7 – 37.0



C-Modules (Collimation Modules)

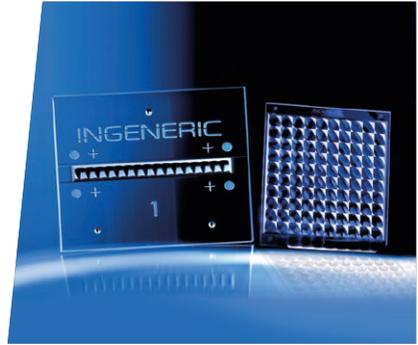
- Highly efficient optics to reduce divergence in fast and slow-axis simultaneously
- Module of FAC and SAC lens assembled with a support structure
- Assembly accuracy $\pm 5 \mu\text{m}$

INGENERIC produces micro-optics using a precise isothermal glass-molding process, ensuring superior optical performance and consistent quality.

DESIGNED AND MANUFACTURED BY INGENERIC

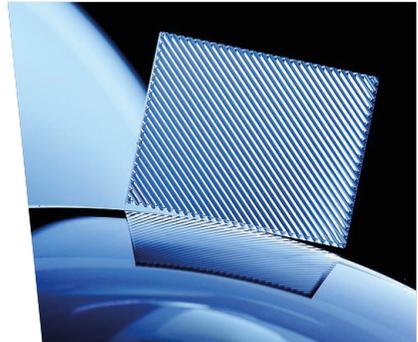
1D and 2D Microlens Arrays

- Applications: collimation, homogenization, and coupling
- Max. array size: 40.0 x 40.0 mm (array structures are typically in the sub-millimeter range)
- Lens designs: spherical / aspherical / cylindrical / acylindrical / toric
- Lens geometry: plano-convex / bi-convex / convex-concave
- Aperture of lenses: round / rectangular



INGENERIC beamProp (Beam Transformation Optics)

- Key component for the fiber coupling of diode bars
- Available as a single component or as a module combined with FAC on a support
- Support, length, and height can be customized



Aspheres and Toric Lenses

- Tailored optics with superior imaging characteristics
- Optics can be aspherically curved on one or both sides with significant geometric freedom
- Optical surfaces can be concave or convex, with steep angles and NA up to 0.8
- Lens diameter: 0.5 mm – 40.0 mm
- Center thickness: 1.0 mm – 10.0 mm



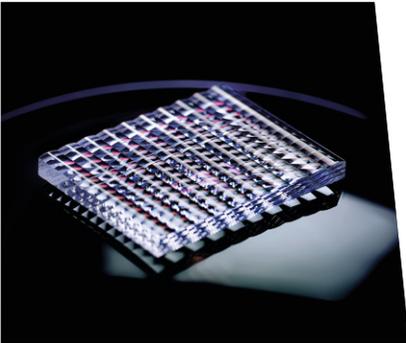
For more information and a detailed overview of our optical component specifications, please scan the QR code.

CUSTOM OPTICAL SOLUTIONS TAILORED TO YOUR NEEDS



XMO – eXtended Micro-Optics

- Highly-integrated multifunctional micro-optics for demanding applications in photonics, sensing, and imaging
- Integration of multiple optical surfaces in a monolithic solution
- Reduced alignment effort



Customized Microlens Arrays

- Lens arrays for homogenization of light sources for different applications
- Minimal variation in specifications within an array increases system performance
- Small variations from part to part reduce alignment effort



Free-Form Optics

- Compact system design
- Improved system performance
- Maximum design flexibility
- Enhanced light shaping and beam control
- Optimized optical efficiency and transmission

We would be pleased to support your business with our custom solutions. Our expert team is available to discuss your specific requirements in detail.



INGENERIC – YOUR PARTNER FOR PRECISION AND PERFORMANCE



Exceptional Precision:

Benefit from high precision accuracy in complex, micro-sized optical shapes (High form accuracies <math>< 1 \mu\text{m}</math> PV, Surface quality <math>< 2-3 \text{ nm Rq}</math>).



Standard Products and Custom Design Solutions:

Select from a comprehensive range of off-the-shelf products or utilize our custom design services to meet your specific needs.



Scalable Solutions:

Leverage our extensive capabilities in prototyping, small series, and high-volume manufacturing to accommodate projects of any scale with optimal cost efficiency.



Reliable Quality Assurance:

Rely on consistent quality control measures according to DIN ISO 9001:2015 to ensure that each product meets your exacting standards.



Tailored Supply Chain Solutions for Industry Needs:

Take advantage of “Made in Germany” manufacturing quality ensured by our full internal process control, while our strong partner and distribution network guarantees reliable supply performance even under changing market conditions and demanding industry requirements.

OPTICAL SOLUTIONS FOR DEMANDING INDUSTRIES WORLDWIDE MAXIMIZING PERFORMANCE AND EFFICIENCY



HIGH-POWER LASER

Enhanced laser performance and efficiency



HEALTHCARE

High-resolution diagnostic and surgical accuracy



OPTICAL DATA COMMUNICATION

Improved signal integrity and transmission efficiency



AR / VR & IMAGING

Improved visual fidelity and immersive user experiences



INDUSTRIAL SENSING

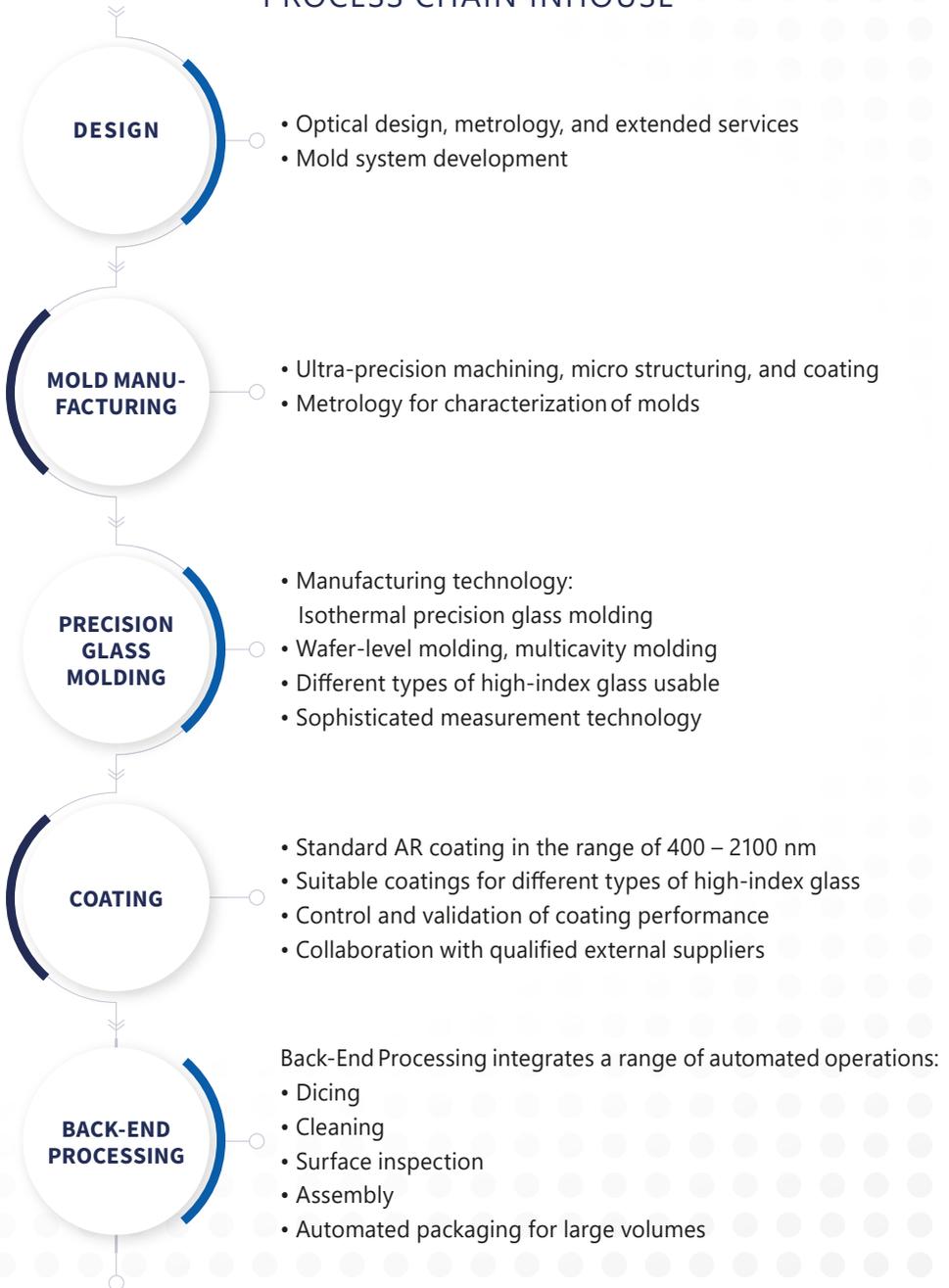
Improved measurement accuracy, resolution and higher transmission



SPACE TECHNOLOGY

Superior imaging resolution and data transmission efficiency in satellite systems

AN INTEGRATED APPROACH: INGENERIC COVERS THE ENTIRE PROCESS CHAIN INHOUSE



INGENERIC was founded in Aachen, Germany in 2001 and has since become a leading supplier of micro-optics and lens arrays. The company, headquartered in Baesweiler with its own production facilities, offers a comprehensive process chain for precision glass molding – from custom lens design and prototyping to small-batch and automated series production.

With certified processes, state-of-the-art manufacturing, and deep expertise, INGENERIC is committed to providing its international customers with the best optical solutions, excellent service, outstanding quality, and long-term partnerships based on trust and innovation.



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