

Micro structured optical components from 10mm² to 1m²



Located in Apolda; close to Jena



Machine Vision



Sensor



Lighting



Display

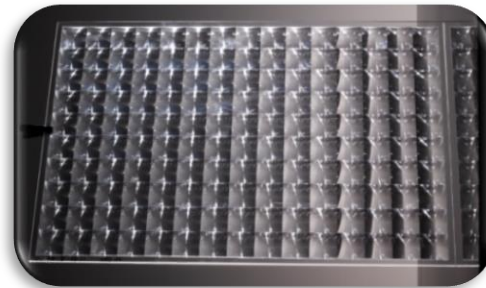


Solar

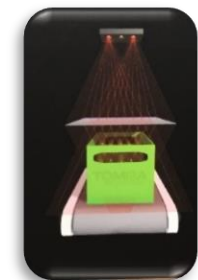
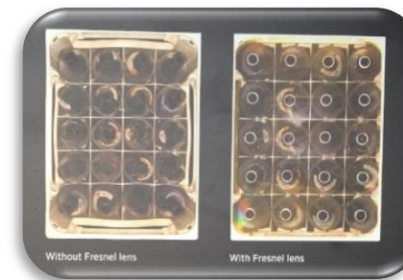
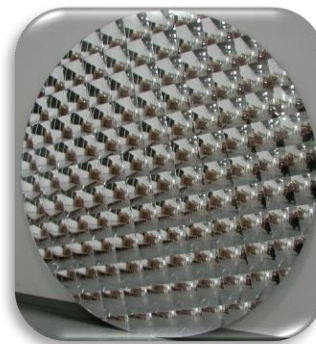
Instrumentation (sensor, machine vision and OEM)

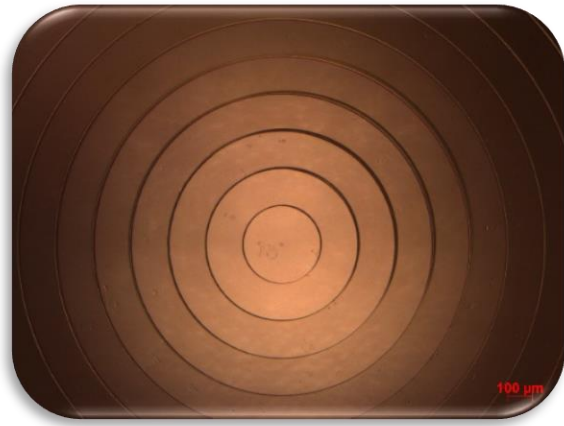


Display systems and SOG Elements

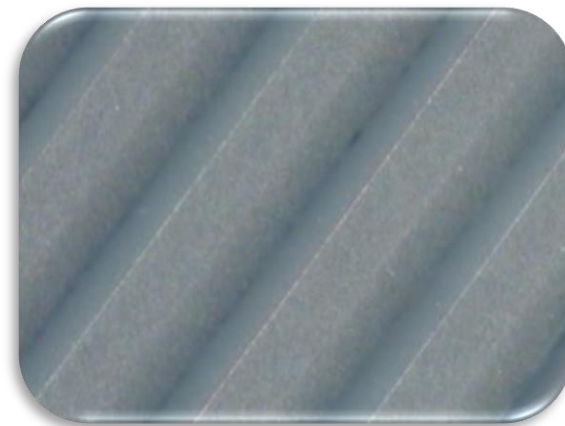


Lighting components

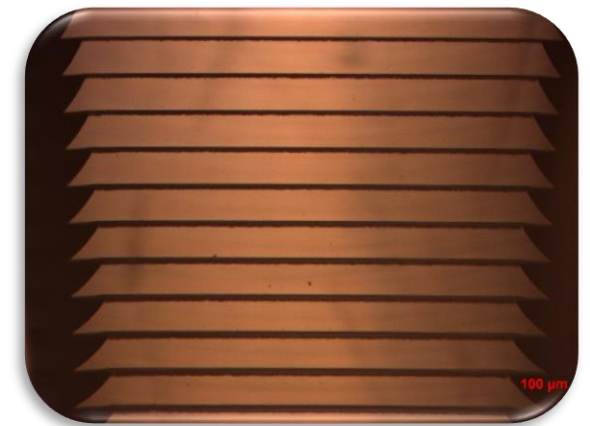




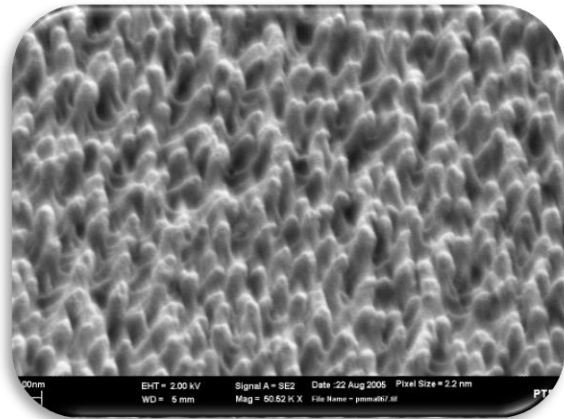
Fresnel Lens



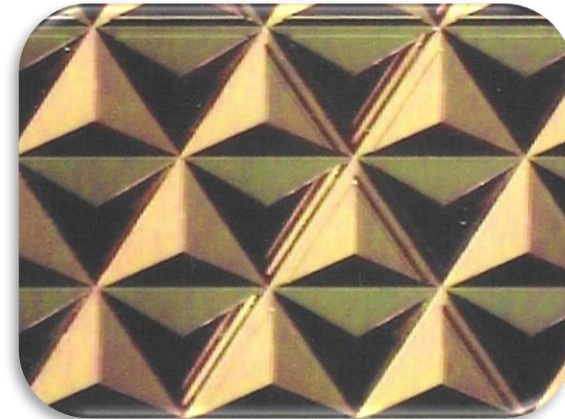
Beamsplitter



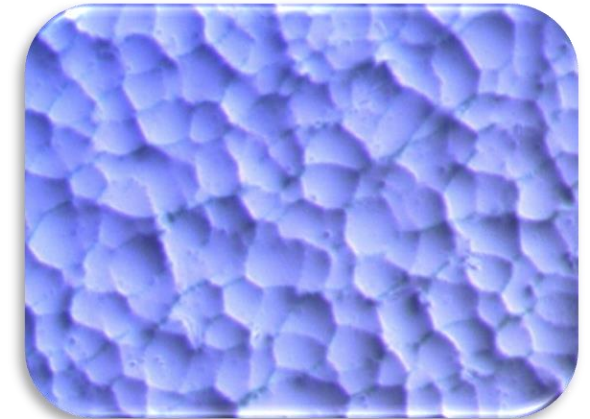
Cylinder Lens



Moth-Eye PlasmAR



Retroreflector



Asymmetric Diffusor



Basic Compression Molding Process

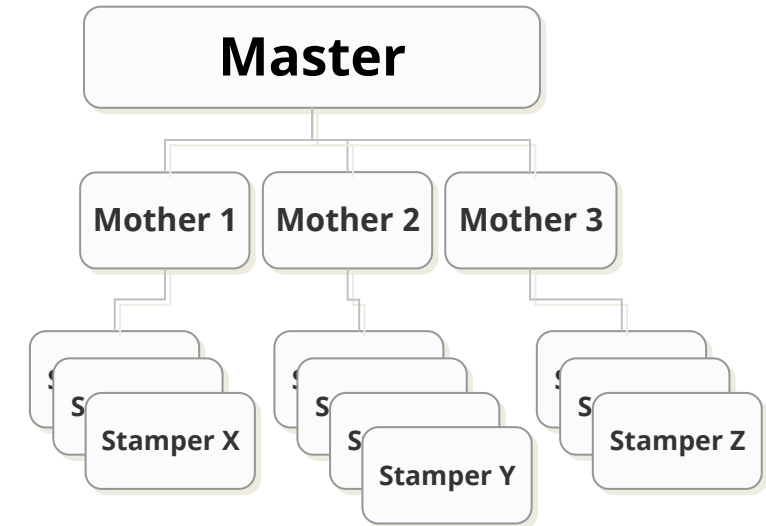
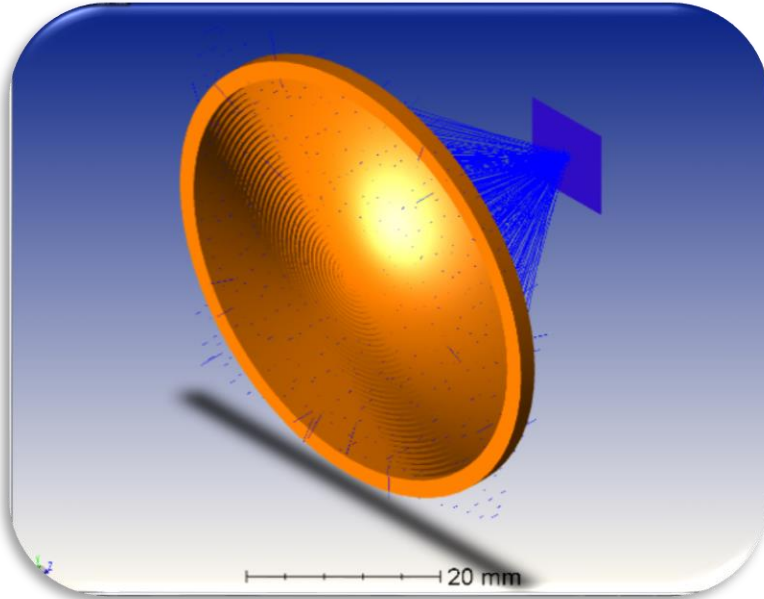
- high precise compression molding to replicate Micro- and Nano structures
- with single and multiple tools
- used for small, medium and high volume

Precision Replication

- Compression molding with heating and cooling process for each component
- one to One replication of micro structures with low stress
- use of different polymers

Various Temperature Injection & Compression Molding

- high precision with various temperature and injection-compression molding
- limited in the dimension
- same Quality compared to CM



Design and prototyping

- sequential and non-sequential ray tracing (Zemax, ASAP; TracePro)
- conceptual design of tools
- prototyping in PMMA

Precision Tooling - Mastering

- Implementation of the final tool design into the Master tool
- diamond turning with very high precision at the optical surface
- without peak rounding

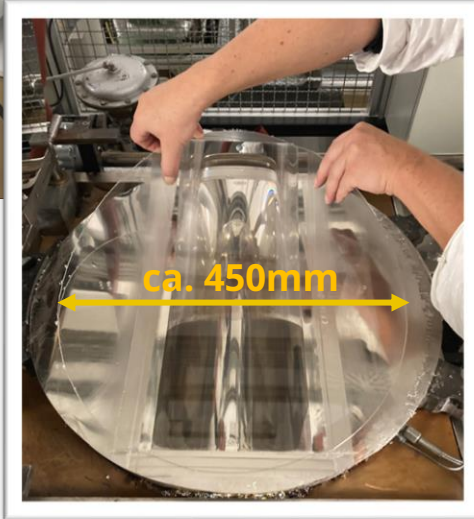
Tooling Tree Concept

- Master replication into a tooling tree
- state-of-the art tool replication (electroforming and plating)
- fabrication of parquets

large optics with compression molding Manual Process



Standard diameter 19"
Example cylinder lens
(linear version)
362mm x 157mm



Own injection molding technology development for small micro structured optical components



Next goal:
large microstructured areas with this high Quality Technology



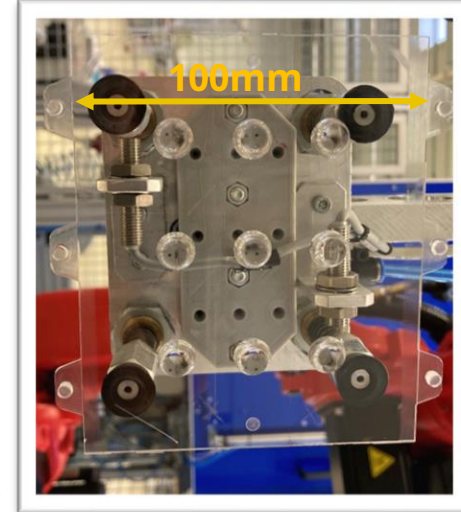
Final Goal:
Automation of the complete Production Process

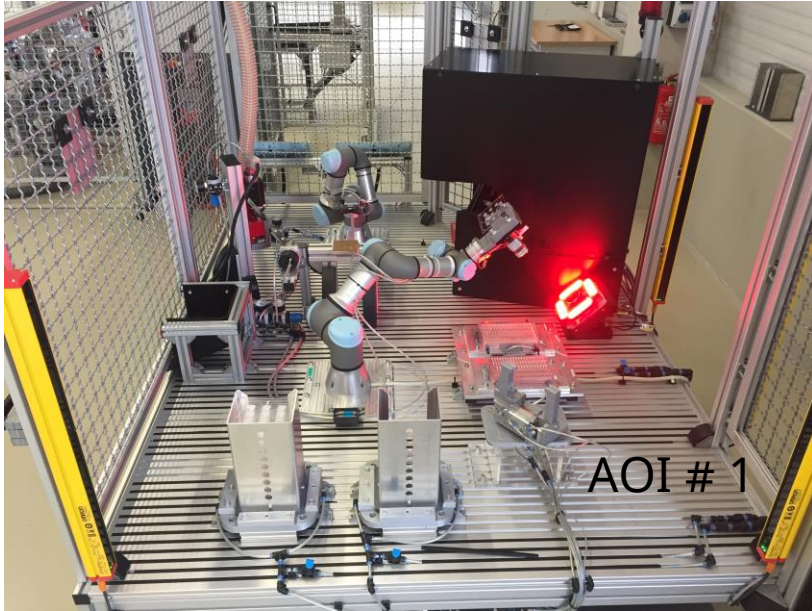


small optics with injection molding Automated Process



Standard size
Multiple part (9 lenses)
Blank 100mm x 120mm
max. 140mm x 140mm





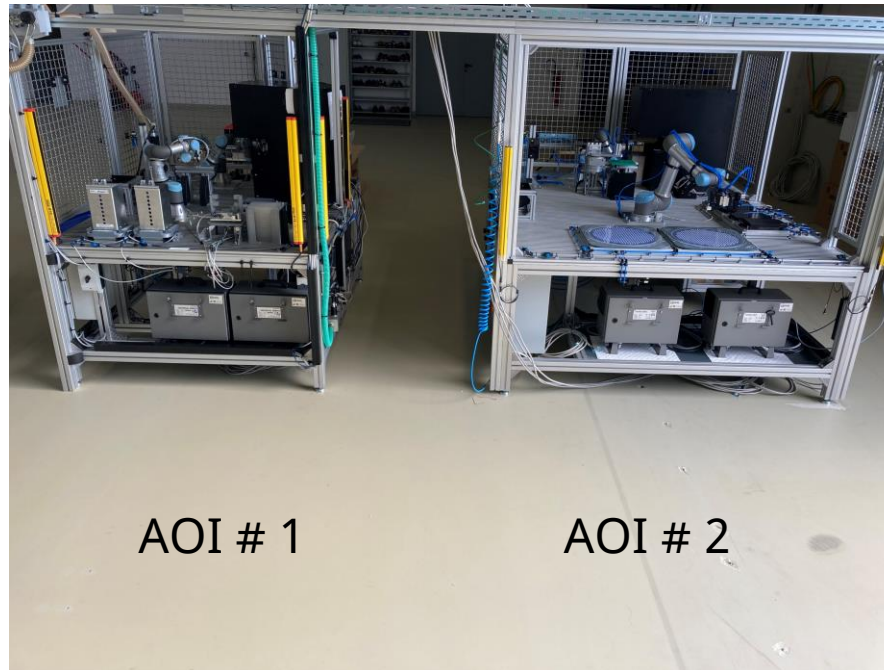
AOI # 1

AOI 1

- own development of the AOI 1 for Fresnel lenses
- no standard Inspection Systems for this product available
- got used and accepted from the customer in 2020

AOI 1 & 2

- next Generation for the next products got developed during the last 20 month
- implementing und usage started about 4 weeks ago in 2023

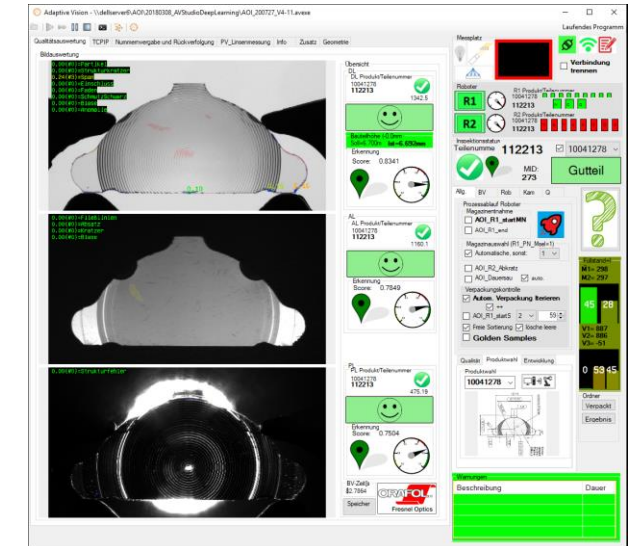


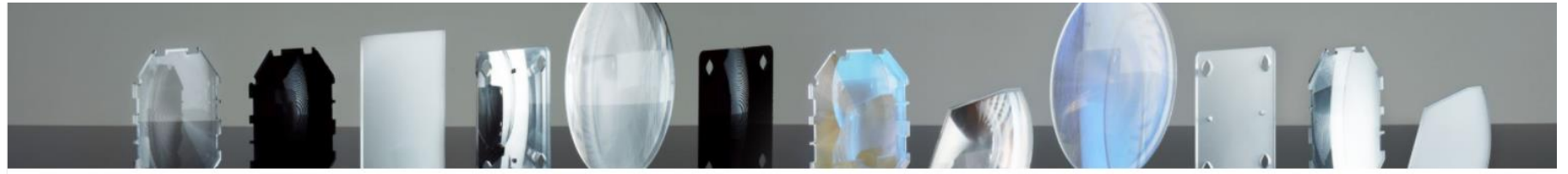
AOI # 1

AOI # 2

AOI 3

- future product with a adapted camera system to inspect the next optical system
- Development already in work
- schedule for usage in 2024





Optic Solutions – Engineered to Manage Light

We develop and manufacture microstructured optical components made of plastics or Silicone on glass and supplies customers throughout the world. These components are used in different industries, such as optical sensor and machine vision market, as well backlighting, display, lighting, automotive and solar power. We offer an integrated R&D and production expertise: from start of optical design, to tool fabrication and precision polymer replication as well as a wide range of finishing processing.



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