

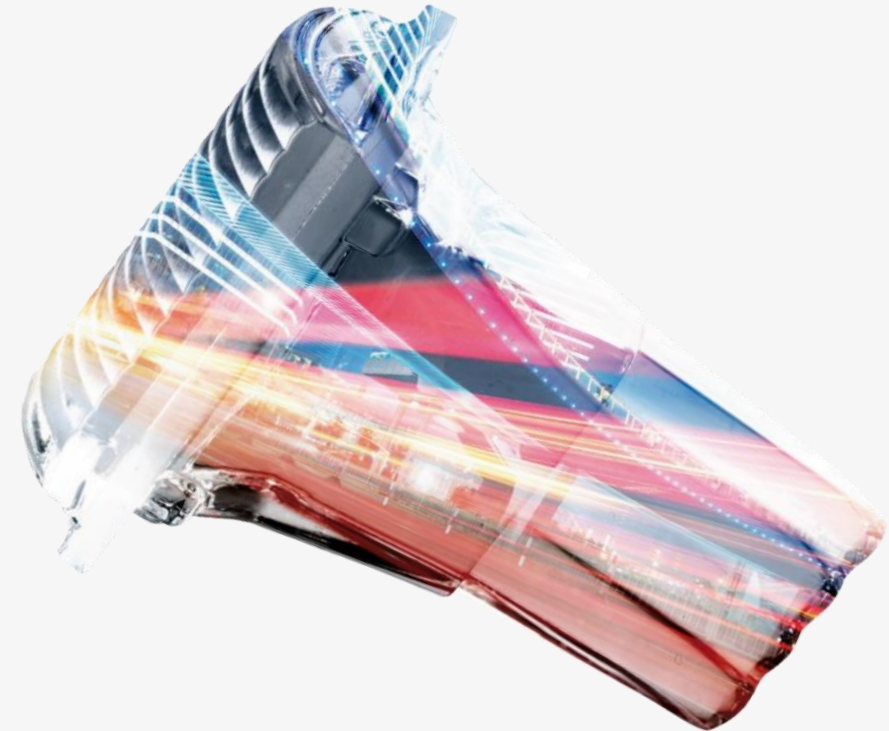
COMPANY PROFILE



Turning Ideas Into Solutions



1. INTRODUCTION
2. TECHNOLOGIES
3. INHOUSE GLASS PRODUCTION
4. AUTOMOTIVE SOLUTIONS
5. OPTICAL SYSTEMS
6. PRECISION GLASS COMPONENTS
7. EXPRESS GLASS SERVICES



1

INTRODUCTION

INTRODUCTION

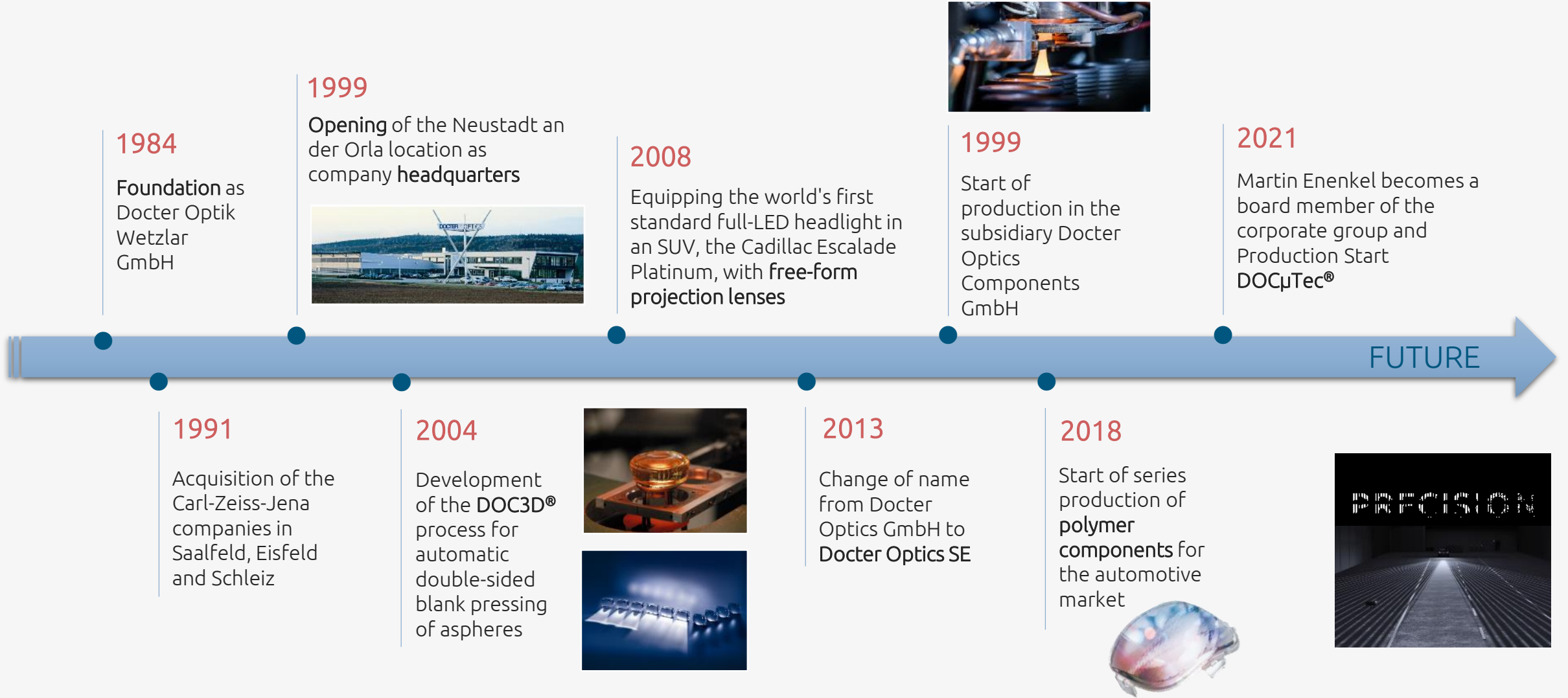
Facts & Figures

- Worldwide more than **400 employees**
- Manufacture of **over 40 million optical components** only for the automotive industry in glass and polymer
- Deep added value chain and **in-house glass production**
- **Certifications:** DIN EN ISO 9001, DIN EN ISO 14001, DIN EN ISO 50001, IATF 16949, German TÜV and ITAR
- Regular internal **audits** and audits with all mayor customers



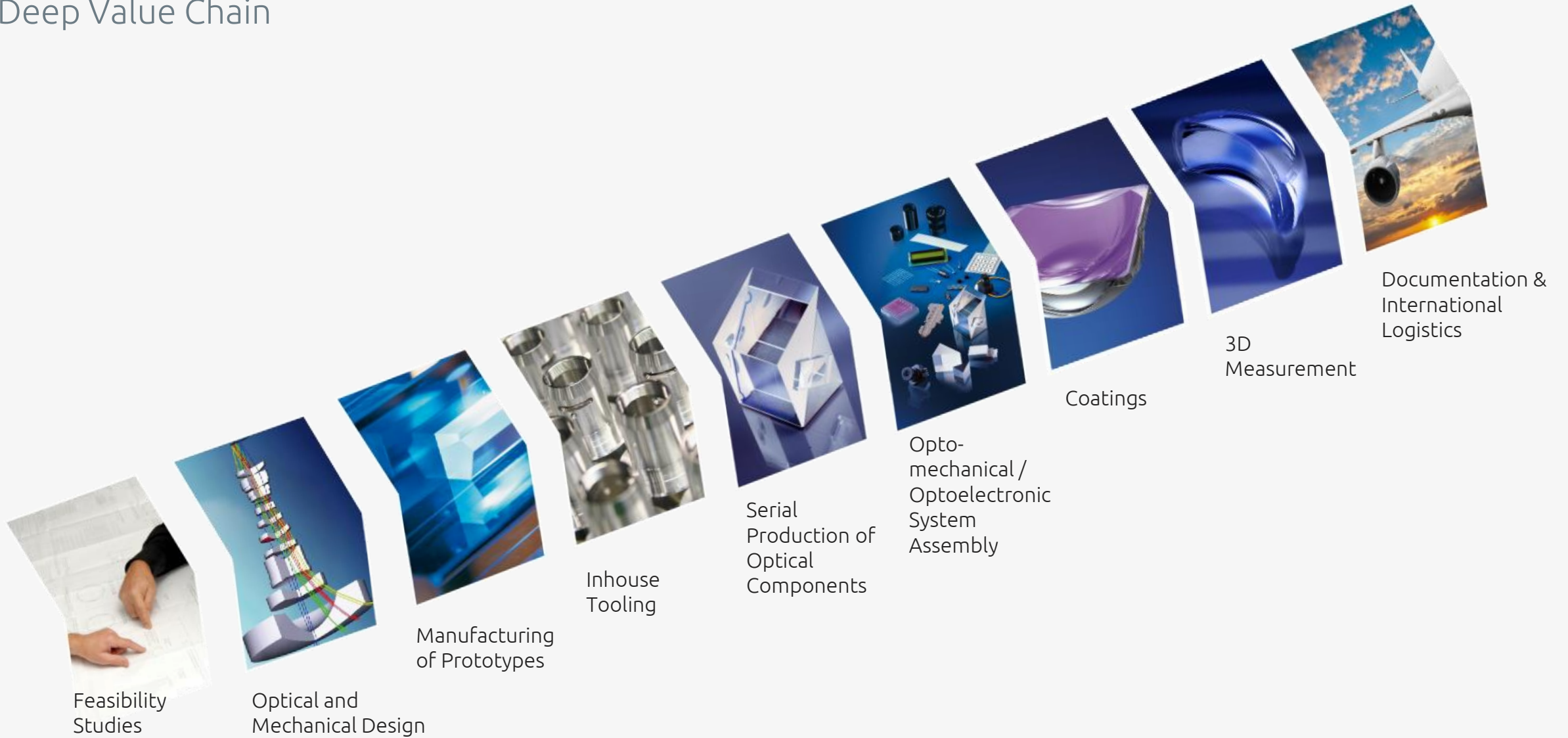
INTRODUCTION

History



INTRODUCTION

Deep Value Chain



INTRODUCTION

Worldwide Locations



INTRODUCTION

Business Units



AS
Automotive
Solutions

PGC
Precision Glass
Components



OS
Optical
Systems

EGS
Express
Glass
Service



2 TECHNOLOGIES

TECHNOLOGIES

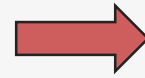
Patentend Production Processes for Glass and Polymer



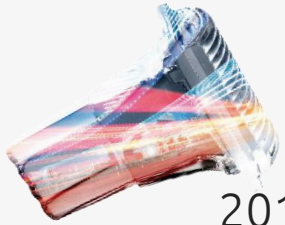
2004

DOC3D[®]

Double side molded
from glass gob



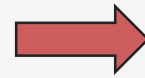
Wide range of geometries on large
production scale with high-cost efficiency



2011

DOCFast[®]

Directly from molten
glass



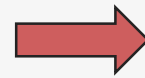
Shortened process chain for more
complex geometries



2018

DOCLight[®]

Injection molding of
polymer lenses



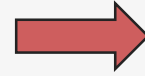
Reduced lens weight with increased design
options for high volume productions



2021

DOCμTEC[®]

Double side molded with
high precision



DOC 3D driven to next level of accuracy for
new markets (e.g., LIDAR / VR / DLP / Matrix /
pixel light systems)

HeadLED®



- Multifunctional free-form lenses with integrated cut-off-line and the shortest installation depth

DOCEdge®



- Simplified assembly of the component in the headlight

DOCResist®

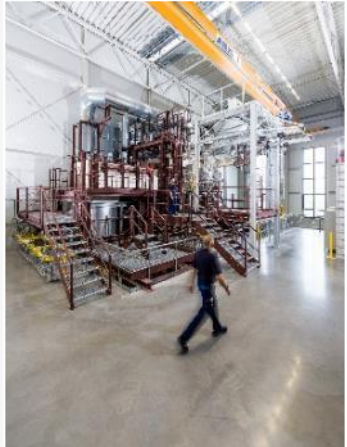
- Special coatings to improve UV and temperature management for HID and LED projection headlights



3

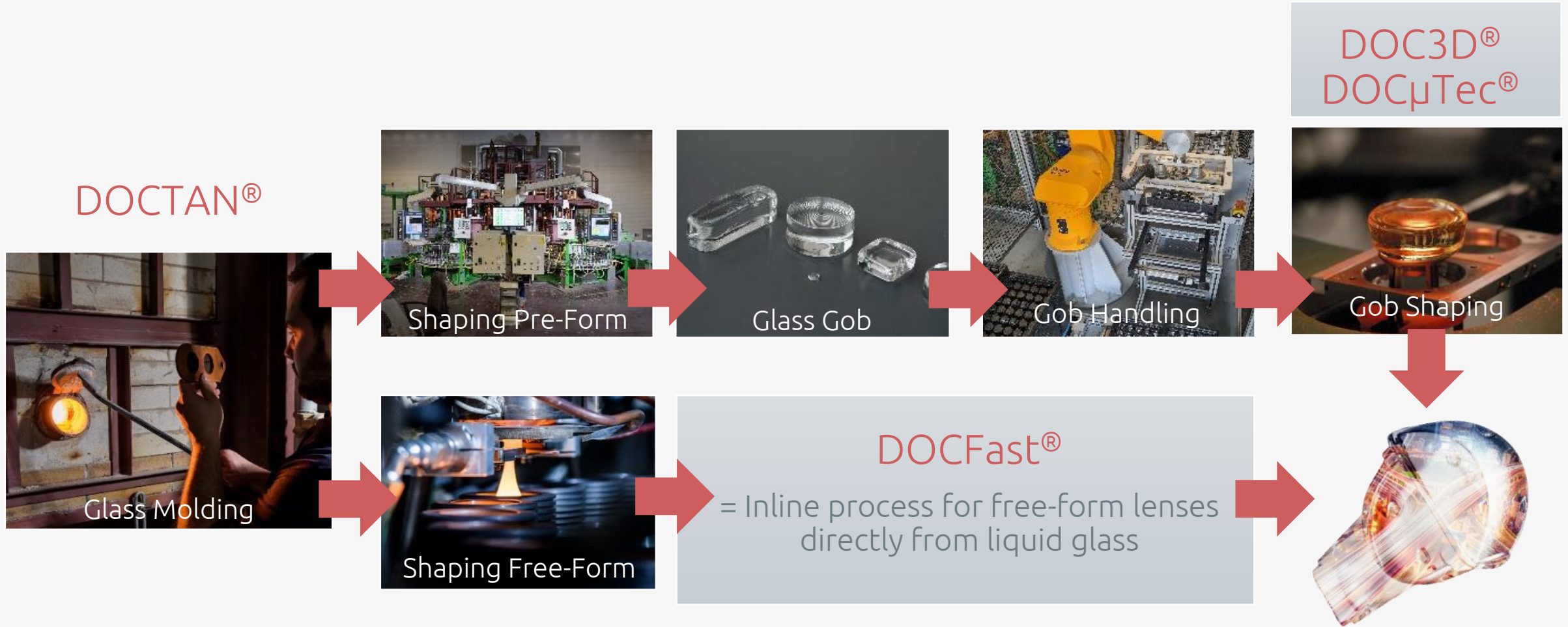
INHOUSE GLASS PRODUCTION

INHOUSE GLASS PRODUCTION DOCTAN®



INHOUSE GLASS PRODUCTION

Glass Production Processes



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AUTOMOTIVE SOLUTIONS



AS
Automotive
Solutions

PGC
Precision Glass
Components



OS
Optical
Systems

EGS
Express
Glass
Service



AUTOMOTIVE SOLUTIONS

Components & Systems made of Glass and Polymer

- Production of aspheres and freeform lenses for halogen, HID and LED projection headlights as well as fog lamp applications
- Internationally recognized market leader in the production of optical glass projection lenses for the automotive industry
- Annual output: lenses for over 30 million projection headlights
- Our aspheres and freeform lenses support the SAE as well as the ECE guidelines



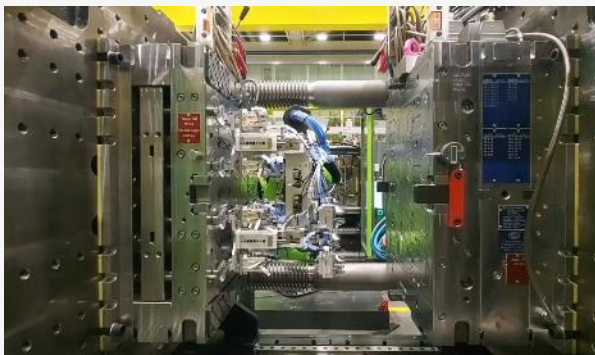
AUTOMOTIVE SOLUTIONS

Partner of all well-known Tier-1



AUTOMOTIVE SOLUTIONS

Polymer Optics



- Production setup with up to 15 Mio. lens capacity by the end of 2024 planned, 7.1 Mio already installed
- Optimized serial production technology with separated molding of lens substrate (1st shot) and final lens shape (2nd + 3rd shot)
- Different lens shapes, complexities and surface qualities supported
- Highest stability of photometrical and geometrical parameters
- High quantity output with optimized machine capacity utilization (short cycle times)
- Separate master insert with „0“ (master) lens for quality purpose



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OPTICAL SYSTEMS



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Glass
Service



OPTICAL SYSTEMS

Product Overview



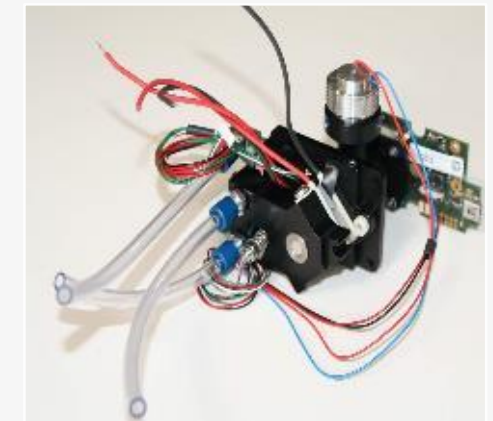
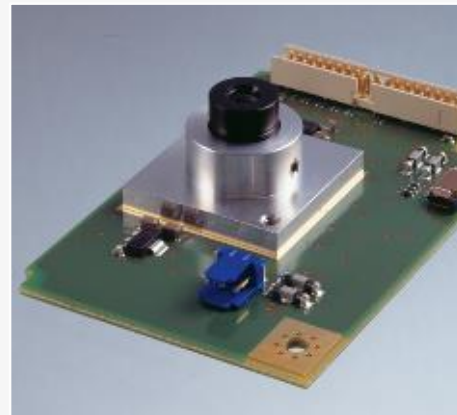
- Docter Optics manufactures optical, optomechanical and optoelectronic assemblies
- The fields of application for these products range from biometrics to printing technology and industrial image processing
- Docter Optics has first-class references from technology leaders in these areas

OPTICAL SYSTEMS

Product Overview



Optical components, optomechanical and optoelectronic assemblies for security and surveillance technology, biometrics, defense technology, medical technology and analytics



CONSUMER ELECTRONICS

MACHINE VISION

AVIATION

ANALYTICAL TECHNOLOGY

AUTOMOTIVE

BIOMETRICS

AEROSPACE

3D PRINTER

COMPUTING

RAILWAY TECHNOLOGY

SECURITY TECHNOLOGIES

6

PRECISION GLASS COMPONENTS



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PRECISION GLASS COMPONENTS

Products



Aspherical lenses
on one side



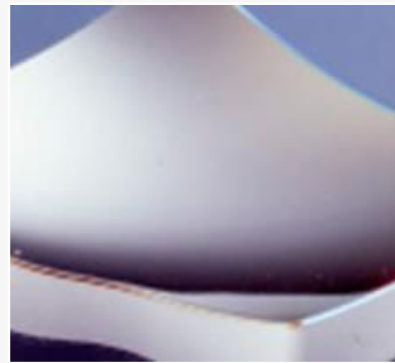
Double-sided
aspherical lenses



Lens arrays



Freeform lenses



Aspherical and
freeform mirrors



Prism and prism
assemblies

PRECISION GLASS COMPONENTS

Applications



Light tunnel
for CPV-
(Concentrated Photo-
voltaics) systems



Lens arrays
for applications in
medicine, laboratories
and science



Freeform Lenses
for lighting
technology



7

EXPRESS GLASS SERVICES



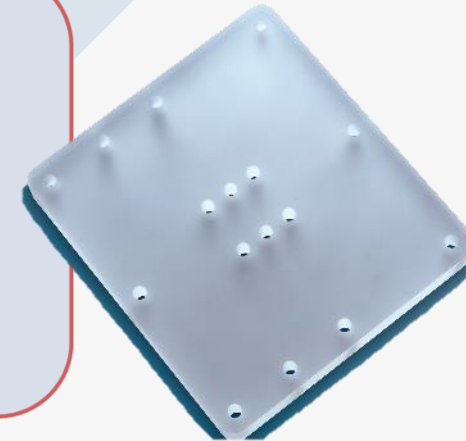
AS
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Components

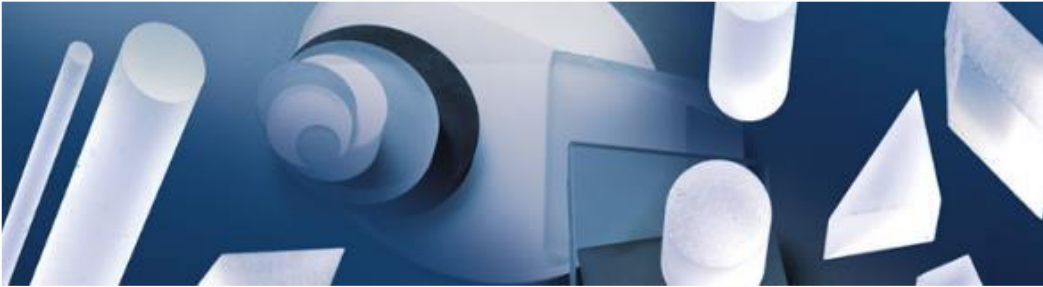


OS
Optical
Systems

EGS
Express
Glass
Services



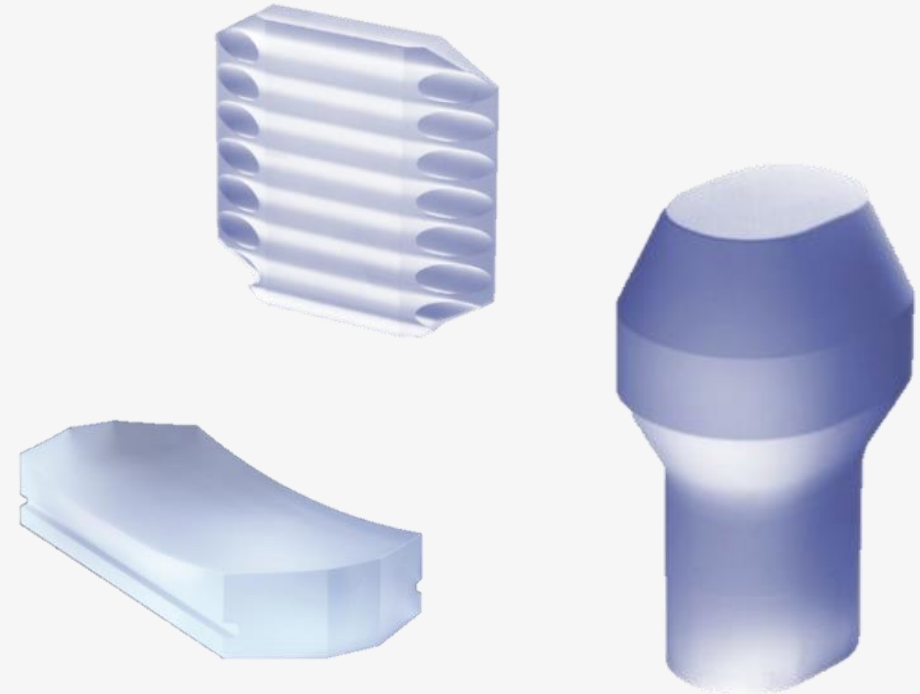
48 hours



... From receipt of your order ...
to your delivery.

Concentrate on your core competencies – We supply your custom-made semi-finished product for any application – as prototypes, in limited number or small series.

- Manufacturing of optical semi-finished products with complex surfaces in high precision e.g., round disks and prism blanks
- Wide range of optical and synthetic glasses from different manufacturers, e.g. Docter Optics is the official distributor of Corning
- Automated waterjet- / sliver - / laser- cutting, turning, milling, drilling, grinding and polishing as well as coating of almost all glass, quartz and ceramic specialties



Original size: h = 125 mm

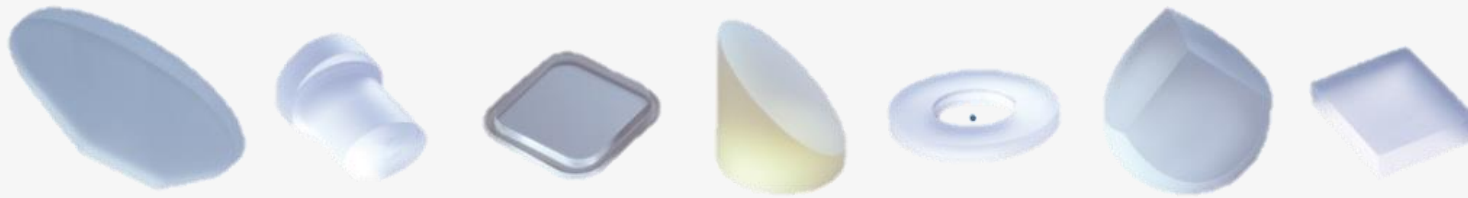
EXPRESS GLASS SERVICES

5-AXIS CNC Machining Center



EXPRESS GLASS SERVICES

364 different glass types



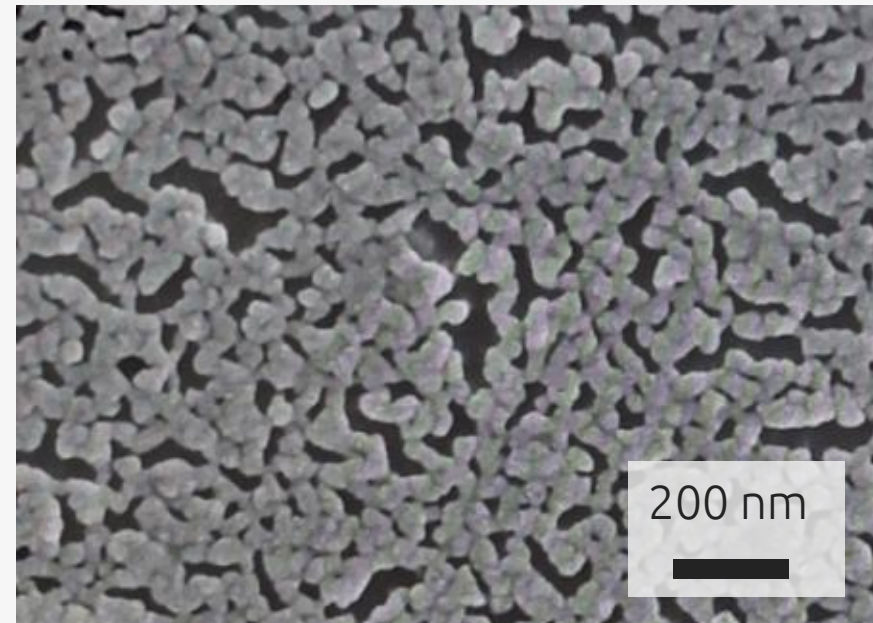
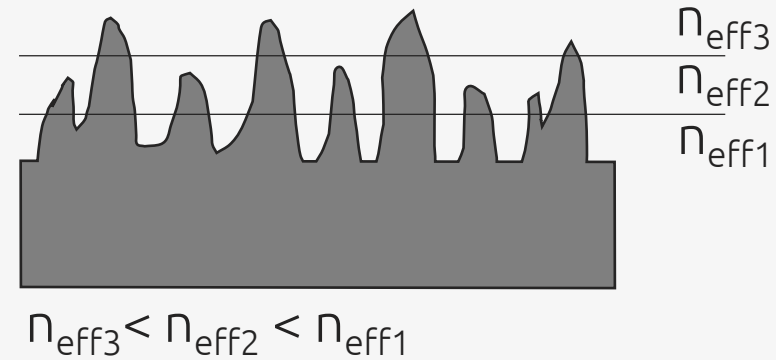
- Extensive inventory and official Corning distributor for HPFS 7980 and ULE 7972 synthetic quartz glass
- Stock of optical glasses, filter glasses, borosilicate glasses, synthetic quartz glasses, natural quartz glasses, glass ceramics

SCHOTT
CORNING
HERAEUS
TOSOH
OHARA
J-PLASMA

NEW

DO process: Ion etching of polymers

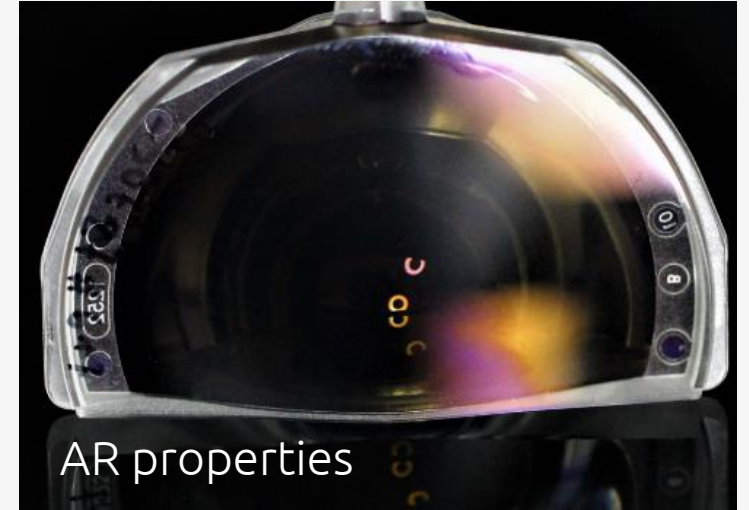
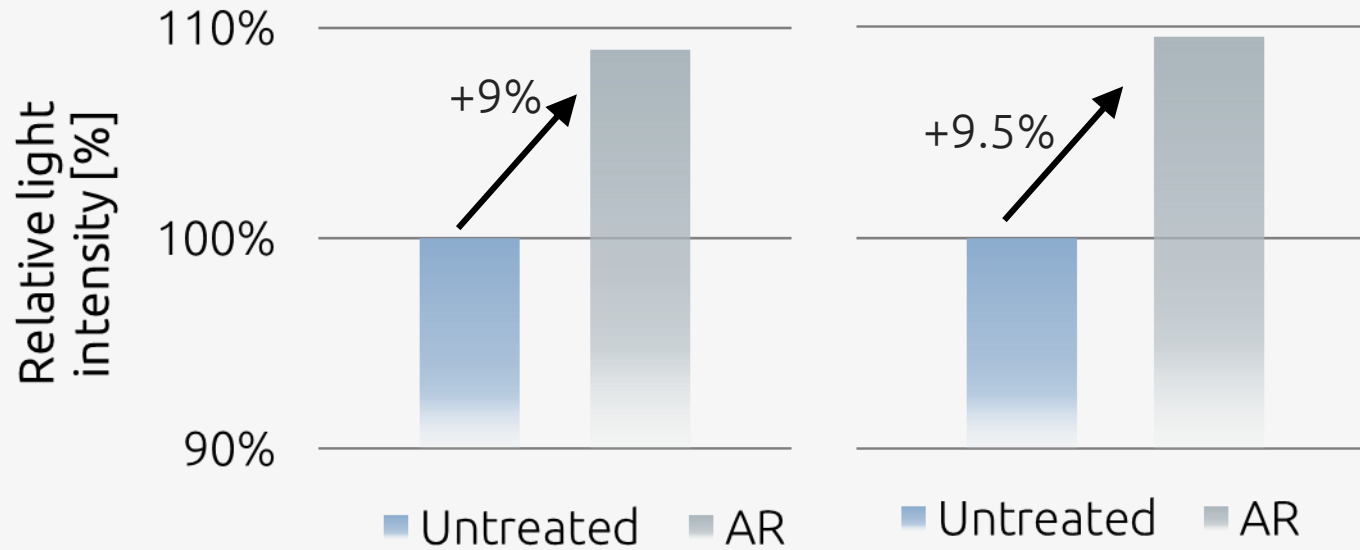
- Excellent AR properties
- AR properties on Fresnel lenses and micro-lens arrays
- High throughput: Etching on both sides simultaneously
- Structuring of base material
 - No cracks
 - No peel-off
 - Enables pure-grade recycling



NEW


Headlamp with PMMA lens

Headlamp with PC lens



- ➔ Intensity + 9 % with one AR-structured lens
- ➔ Enabling design improvements: thinner lens, hidden lens

An aerial photograph of a large, modern industrial building with a flat roof and multiple wings. The building is surrounded by a parking lot with several cars. In the background, there are rolling hills and a clear sky. A semi-transparent blue overlay covers the entire image. A white sign with the Docter Optics logo and name is positioned in the foreground, supported by several white poles.

 DOCTER[®] OPTICS

THANK YOU FOR YOUR
ATTENTION!

 DOCTER[®] OPTICS