



Target**Oriented** ...

...accurate, holistic, profitable, diligent, dedicated, lasting

Innovation always starts with an idea. We develop your idea further and provide you with the final polymer based opto-mechanical component or assembly. The injection molding of optics creates unknown opportunities in technical as well as economic matters. Reconsider your current practices and benefit from the potential of our promising technologies.



Optical Components

- Aspherical Lenses
- Fresnel Lenses
- Lens Arrays
- Cylindrical Lenses
- Prisms
- Mirrors
- Microstructures
- Diffractive Optics



Mechanical Components

- Housings
- Control Elements
- Gear Wheels
- Bushings
- Covers



Assemblies

- Lens Assemblies
- Sensor Optics
- Bezels
- Opto-electronic Assemblies

Trust in the experience of our engineers and get lightweight, solid and cost-efficient high-performance optics.

Contact us!

Research **Driven**... Fore**Sight**... Skill**Ful**...
Worth **Seeing**... Pin**Point**... Thorough **Going**...

Core**Competency** ...

via**optic**

...understand, develop, design, test, produce, supply

Powerful

Turning ideas into final products, by listening and qualified thinking we accomplish complex requirements. From the single component to the final assembled product we fulfill your tasks.
By the perfect combination of optics, mechanics and electronics we provide a proven process chain.

SYSTEM DEVELOPMENT	OPTICAL DESIGN	MATERIAL SELECTION	MECHANICAL DESIGN	PROTOTYPING	TOOL SHOP	INJECTION MOLDING	OPTICAL COATING	ASSEMBLY	QUALITY MANAGEMENT	LOGISTICS
<p>Understanding customer requirements and transferring them into product concepts</p> <ul style="list-style-type: none">Opto-mechanical and opto-electronic concepts- Illumination optics: e.g. TIR lenses, freeform optics, ...- Sensor optics: e.g. double lenses, polygon wheels, lens arrays, ...- Standard imaging optics: e.g. fresnel lenses, magnifiers, ...- Complex imaging optics: e.g. camera lenses, viewfinder, ...	<p>The differentiation between illumination and imaging optics is the first step and sets the agenda for the optical design.</p> <ul style="list-style-type: none">Conceptual design approachDetailed design under consideration of material properties and possible optical coatingsOptimization through<ul style="list-style-type: none">- Tolerance analysis- Characteristics of the light source- Colorimetric investigations	<p>The material selection is essential for the efficiency of your product. Due to this we spend a lot of time on this subject. We highlight advantages and disadvantages of the possible plastic materials. Our experience in hundreds of applications is your benefit.</p> <p>Polymers:</p> <ul style="list-style-type: none">- PMMA- PC- COP- COC- ...	<p>Part and mold design are performed by the same team. Due to this we guarantee the best transfer of knowledge into the mold design and the product quality.</p> <p>Design Tools:</p> <ul style="list-style-type: none">- CATIA V5- Solid Works- CAM CATIA V5 (closed loop from mechanical design to tool shop with no loss of data quality)	<p>Fast realization and evaluation of the development result through prototyping. This helps to make the right decisions and achieve the best products.</p> <ul style="list-style-type: none">Functionally optical prototypes via ultra-precision machining of transparent plastic and metalPrototype molds within shortest lead time	<p>We focus on custom-tailored solutions with the highest precision and cost efficiency.</p> <ul style="list-style-type: none">- In-house tool shop- Surface shape accuracy up to $\lambda / 4$- Surface roughness of $< 5 \text{ nm (Ra)}$	<p>Optical injection molding in a perfect environment.</p> <ul style="list-style-type: none">Injection molding machines from 150 to 2000 kN clamp force2 color injection molding3D robot systemsInjection compression moldingConsistent and clean environment including air condition and filtered air	<p>The right optical coating opens a wide range of applications. Polymer based optics with the right coating are more efficient and adaptable to use. We offer you one of our established coating systems or develop a customized solution for you.</p> <p>Coating Systems:</p> <ul style="list-style-type: none">Reflective coatings: gold, aluminium, silver, copper, beam splitter, dielectric mirrors, dichroic mirrors, ...Anti-reflective coatings: wide band, narrow band, edge filters, UV, VIS, NIR, IR, ...Other coatings: anti-scratch, anti-fog, ...	<p>The optical component is very often the most complex part of an assembly.</p> <p>References:</p> <ul style="list-style-type: none">LED illumination modulesLens assembliesSensor assembliesOpto-electronic assemblies	<p>The best combination: highest product quality and reliable manufacturing processes.</p> <p>Quality Management:</p> <ul style="list-style-type: none">DIN ISO 9001:2008ISO TS16949EMAS = Eco-Management and Audit Scheme <p>Measurement Technology:</p> <ul style="list-style-type: none">InterferometerProfilometerHigh end 3D coordinate measurement machineMTF testingFocal length testingCustomized functional testing equipmentSpectrometerLight density cameraIntegrating sphere	<p>We act globally and adapt our effort to your requirements.</p> <p>Logistic Concepts:</p> <ul style="list-style-type: none">KanbanSafety stockVendor inventory management <p>Packing Concepts:</p> <ul style="list-style-type: none">Returnable packagingCustomized solutionsWide range of standard solutionsHermetically sealed boxes