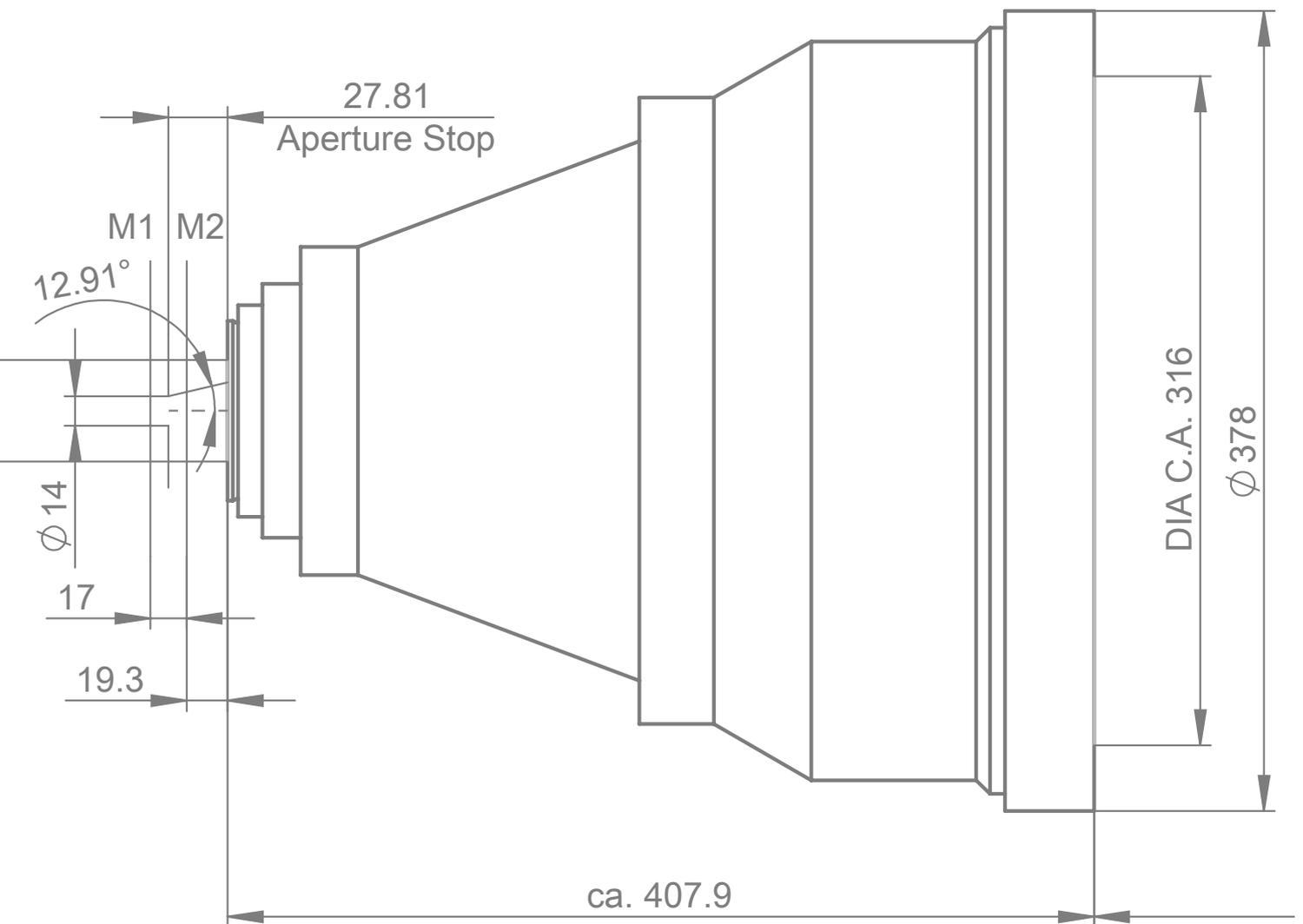


# OEM SOLUTIONS

HIGH QUALITY - PRECISION - INNOVATION



# OPTICAL SYSTEMS FROM SILL OPTICS

## OUR OEM SOLUTIONS

In the world of optical systems, Sill Optics leads the way with its advanced OEM solutions. Innovative technologies empower us to redefine possibilities, creating systems that are not just compact but also remarkably powerful. As your optics specialist, we are offering reliable and knowledgeable support.

Our approach is impactful, tailored precisely to your needs and centered on maximizing your benefits. With our extensive expertise, we handle the entire production process in-house, from crafting optical and mechanical components to incorporating suitable auxiliary materials.

### From Scratch to Series Production

As your strategic system partner, we work effectively, actively participating in every stage of the product development process according to your preferences. From the initial spark of an idea to the mass production phase, we ensure a steady presence throughout the journey.

Within our production range, we specialize in the art of crafting optical elements like spheres and aspheres, precision mechanical components, and the meticulous assembly of optical modules and systems.

**Experience the future of optical excellence.**



## PRODUCT DEVELOPMENT CUSTOMIZED OPTICS

Our primary source of pride lies in offering solutions that seamlessly cater to our customers' specific requirements while adhering rigorously to the highest benchmarks in quality standards.

Within our team, a collective of optical designers, engineers, and production technologists drives our commitment to crafting sophisticated, custom lenses and optical systems.

### Advanced Optics Expertise

Our core competencies derive from the fusion of employee expertise, innovative capacities, a unique arsenal of tools and close attention to detail. Our lenses are the result of employing intricate simulations, which include rigorous tolerance analyses. These simulations are conducted in conjunction with lenses produced in-house.

### Across Applications

Additionally, we integrate high-quality components from suppliers, such as liquid lenses, diffractive elements, and advanced electronics. As a result of this comprehensive approach, our lenses are widely applicable across diverse and demanding fields, including laser optics and imaging optics.



## DEVELOPMENT SERVICES ACROSS THE MANUFACTURING LIFECYCLE

We are dedicated to engineering optimal manufacturing technologies tailored specifically for your products. Leveraging a diverse range of optical and mechanical manufacturing processes, our approach ensures precision and efficiency in every aspect of the production journey.

Our core competency lies in the precise creation and design of customized coatings and coating systems. Spanning from Deep Ultraviolet (DUV) to Near Infrared (NIR), our portfolio encompasses a versatile array of standard coatings, which can be fine-tuned to align seamlessly with your specific application requirements.

### Our Coating Concepts

We formulate the ideal coating concept for your product, ensuring it meets the highest expectations for both decorative and technical surfaces. Whether for a single piece or mass production, our competence in technically sophisticated coatings is enhanced by reliable partners within our network.

### Bespoke Optical Coatings

Our cutting-edge coating systems continuously undergo refinement using sophisticated procedures. We provide customized modifications to optical coatings, such as the optical enhancement of transparent surfaces, allowing for ultra-high-precision optics within confined spaces. These specialized coatings are crafted to suit the exact demands of your application.

# ADVANCED OPTICAL SYSTEMS

## CUSTOMIZED OEM SOLUTIONS

Harnessing the synergy of optics, precision mechanics, electronics, and software, we engineer optical systems to meet your specifications. These solutions are not just limited to functionality; they can be tailored to be waterproof, pressure-resistant, shockproof, or capable of withstanding extreme temperatures, aligning precisely with your diverse requirements.

### Stringent Quality Standards

Our approach carefully factors in the impact of manufacturing tolerances and intricacies inherent in the entire process chain, commencing from the optical design and construction phase. The crux of your success lies in this detailed consideration, coupled with our commitment to innovative technology development. With robust and reproducible processes, we ensure the timely delivery of high-quality optical systems that adhere to stringent quality standards.

### Product Simulation

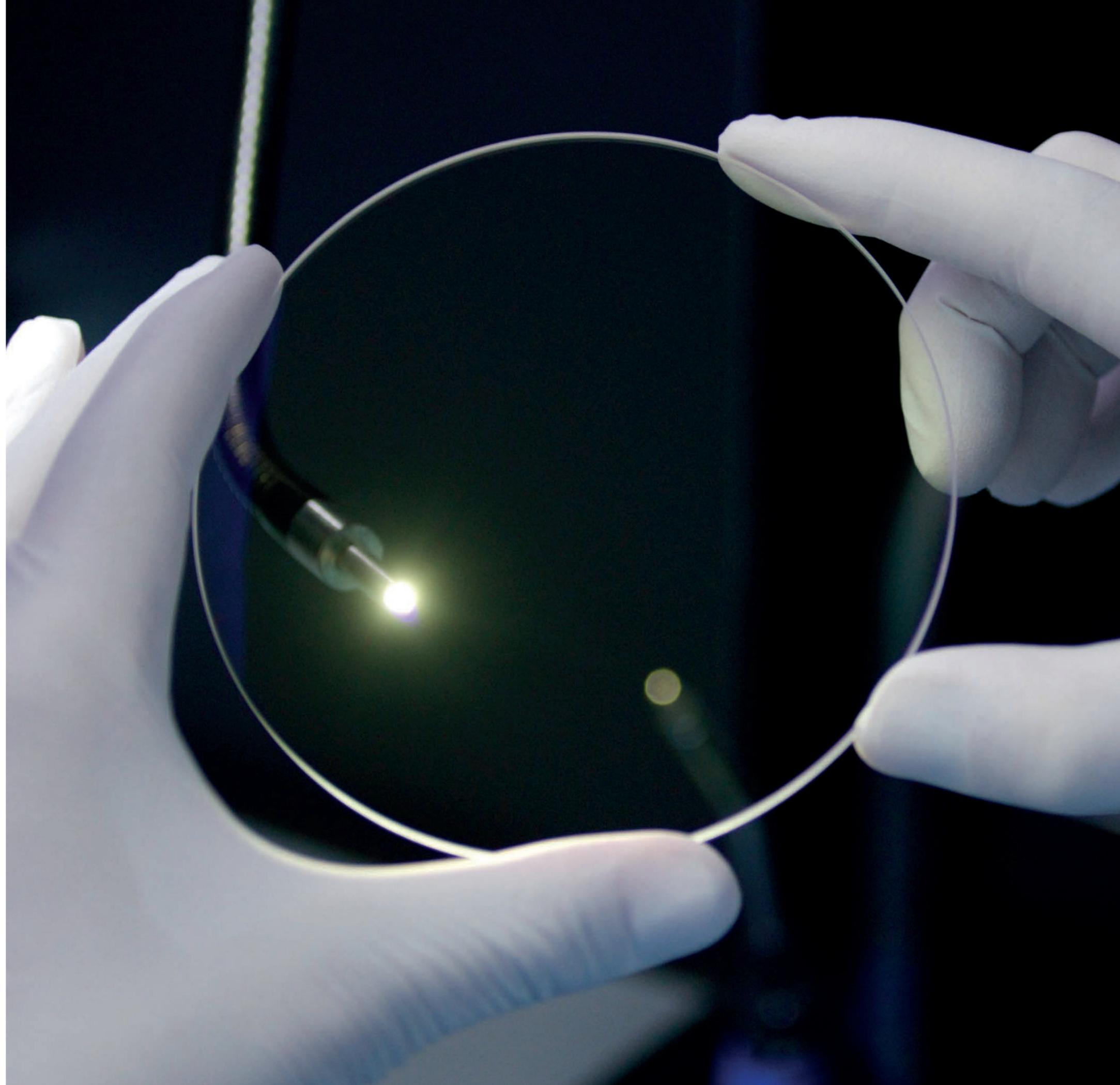
In cooperation with competent partners, we offer the simulation of thermal and mechanical environmental influences to secure the longevity of our products.

### Personalized Consultations

As a trailblazing technology-driven manufacturing entity, we continually enhance our production technologies and methodologies. Eager to share our wealth of expertise, we extend personalized consultations to showcase all of our technological manufacturing possibilities.

### Across the Entire Value Chain

Our thorough planning, oversight, and documentation revolve around a production process finely tuned to meet your unique requirements and preferences. Clients laud our adept coordination of processes across the entire value chain, spanning material procurement, production, packaging, and timely delivery.





## OUR EXPERTISE FOR YOUR SUCCESS

### WE FIND THE SUITABLE TECHNOLOGY

Optical systems with complex functions are at the core of our developmental drive. Our mission is to translate intricate requirements into bespoke solutions for our clients. By seamlessly interconnecting optical elements and electronic functions, we engineer them to function as a potent unit, adeptly meeting the most stringent specifications.

#### Pioneering Optics since 1894

As optics manufacturers with extensive system expertise, we take pride in having pioneered and significantly influenced various processes and procedures in optical manufacturing. Armed with this wealth of knowledge, we manufacture intricate systems accurately optimized down to the last nanometer. The careful tailoring of interfaces to Sill Optics optical components ensures the attainment of exceptional results.

#### Meet the Exceptional

Incorporating digital adjustment techniques and seamlessly integrating with optical design, we craft exceptional optical systems. The infusion of system measurement technology into the adjustment process ensures the realization of envisioned imaging quality, with relevant protocols readily available upon customer request.

#### Key Information

Dimensions	Modules up to lens diameter 500 mm, systems as per requirements
Weight	< 1kg up to a maximum of 400 kg
Wavelength range	193 nm up to 1,7 $\mu$ m
Cleanliness	ISO 5 Cleanroom
Monitoring	Humidity and temperature, up to ISO 4
Applications	Inspection modules, microscopy objectives, illumination modules, detection modules, relay optics, spectrometers and many more

# HIGH-TECH COMPONENTS

## A COMMITMENT TO EXCELLENCE

We approach your high-tech components requirements with unwavering enthusiasm and a dedicated commitment to realization. Our approach is characterized by a personalized and individualized touch, considering all facets and prioritizing the advantages inherent to your project. Our comprehensive support extends to the intricacies of both optical and mechanical components particularly within the premium segment.

### Optical High-Tech Components

Whether it's high-performance spheres, or customized components, our continuous evolution and unwavering commitment to quality at Sill Optics set new standards in every discipline. Precision is paramount in our manufacturing of turned, milled, and ground components, aiming to serve your customers. Sill Optics' production of high-tech components at competitive prices is made possible through streamlined processes, leveraging state-of-the-art technology and intelligent automation solutions.

### Prototypes

In need of prototypes for your individual parts, assemblies, or modules? We not only manufacture according to your specifications but also design tools, fixtures, adjustment, and testing equipment for both mechanical and optical manufacturing. Special features can be simulated or calculated in advance, catering to your specific requirements.

### Customizable Surface Focus

Whether your priority lies in the shape, cleanliness, roughness, or overall performance of surfaces, we provide you the flexibility to determine the focus. We tailor all processing variations to your specific preferences and modularly structure our manufacturing chain to align seamlessly with your unique requirements.



# HIGH-TECH COMPONENTS

## A COMMITMENT TO EXCELLENCE

### Our Manufacturing Portfolio

High-end spheres	Diameter 20 mm to 600 mm; up to $\lambda/40$
Front lenses	Lens radii up to -0.5 mm, aperture angle up to 178°
Aspheres	Diameter 10 mm to 300 mm; rise error < 0.1 $\mu\text{m}$
Freeform optics	Customized
Optical coatings	Spectral range 193 nm to 1700 nm

These values are technical possible specifications. The feasibility must be checked on an individual basis.

## TAILORED MANUFACTURING HIGH-TECH COMPONENTS

At Sill Optics, our high-tech components, crafted through precision turning and milling, are designed for accuracy. We are continually innovating, creating new and efficient tools and processes to achieve precision machining across a diverse range of materials.

### Crafting Operational Equipment

Furthermore, in addition to producing prototypes and small series, we extend our services to encompass the design, development, and production of operational equipment. Utilizing innovative techniques like rapid prototyping and flexible CNC manufacturing, we ensure comprehensive support from concept to production equipment.

#### Milling

Dimensions	Components with up to 500 mm edge length
Machinery	3-axis and 5-axis milling
Materials	Steel alloys, light metals, plastics, castings, brass
Accuracy	Up to IT6
Surface quality	Up to Ra 0,4

#### Turning

Dimensions	3 mm to 300 mm, bar machining up to 100 mm
Machinery	CNC turning machine, turning-milling
Materials	Steel alloys, light metals, plastics, castings, brass
Accuracy	Up to IT6
Surface quality	Up to Ra 0,4



# CRAFTING OPTICAL SYSTEMS

## YOUR TRUSTED OEM PARTNER

Embarking on the journey from conceptualization to series production, we stand as your steadfast OEM partner, specializing in the precision crafting of optical systems. At Sill Optics OEM Solutions, our seamless collaboration across various divisions—from development and design to prototype construction and series production—ensures a holistic approach, delivering optimal outcomes for our discerning clients. Experience the synergy of Sill Optics expertise right from the inception of your project, where our technical prowess and a tailored network of possibilities are dedicated to your success.

### Customer-Centric Focus on Application

Your ideas are at the heart of our collaborative process. When you bring forth an idea, we engage in a joint exploration of potential solutions, methodically evaluating their feasibility. Our approach involves a thorough examination of risks and potentials, laying a robust foundation for the commencement of your project under well-defined conditions.

Following the feasibility study, we present you with a comprehensive foundational concept. This includes detailed insights into development and production costs, delivery timelines, and technical risks. Additionally, we shed light on key cost drivers and potential opportunities, ensuring transparency and informed decision-making.

Rest assured, your project is in capable hands, regardless of the stage in the value stream where we provide support—whether it's guiding you through optical design to technology development or navigating the complexities of a sophisticated optomechatronic system. Equipped with cutting-edge machinery, advanced testing devices, and state-of-the-art manufacturing technologies, coupled with the expertise of our dedicated staff, we not only meet but exceed your requirements, from prototype construction to large-scale production. Your vision is our mission, and we are committed to bringing it to fruition with precision and excellence.





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