Precision is your top priority.
We provide it.
The moment you inspire your customers with technology from ZEISS.

This is the moment we work for.
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More precise, but still with outstanding speed, more flexible, but still reliable. Your customers expect products of the highest quality and reliability. We can help you meet your promise of excellence, with our highly accurate opto-electronical systems and components in ZEISS quality.

For over 160 years now, ZEISS has been challenging the limits of man’s imagination. Customers use our products under extremely tough conditions: in the Arctic Circle, in the depths of the oceans, in the air and even in outer space. One example is interferometer lenses in which surface tolerances of < lambda/100 have been achieved on mounted lens elements. Behind these products you find one of the world’s highest concentrations of expertise and know-how in the field of opto-electronical systems and precision components.

Use the solution and manufacturing competencies of ZEISS – from the initial product idea right up to its realization and market launch.

Benefit from many years of experience in the development and manufacturing of opto-electronical systems.

For technical details and more specifications please visit our website at www.zeiss.com/czjena
The fascination of precision

Our great strength is an innovative team that listens to your requirements and suggestions. We support and enhance your personal idea by devising concepts and designing your products. Inspire us with your idea and we will ensure that it gets implemented!

We emphasize your benefits, take care of your individual wishes and cover all aspects of your environment. Our portfolio encompasses the entire value chain – from optical concept design and mechanical engineering up to manufacturing and final inspection. Needless to say, we manufacture your product to the highest quality standards. Our top priorities are design-to-cost targets and design-to-manufacture to ensure a successful product launch.

**Our key technologies include:**
- Complete mechanical processing
- Magnesium processing
- Complete optical manufacturing including aspheres and freeform surfaces
- Coating of optical and mechanical components
- Alignment and testing of opto-electronical components and modules
- Assembly with high degree of cleanliness and cleanroom conditions

Our passion

Our passion is light. Light illuminates objects from various angles; it is a ray and wave in one and points the way to new ideas by letting us bundle and diffract it.

It reflects our love of functionality – for simple elegance and perfection. It embodies our respect for our spiritual forefathers who researched and developed with knowledge, passion and determination – inventors who worked together to create values that are now recognized around the globe and that have played their part in shaping the future: Carl Zeiss, Ernst Abbe and Otto Schott.
Optical design and construction

Optical design is science, creativity, technical understanding and interdisciplinary collaboration in one. Principally the interaction between customer, optical design, system engineering, production departments and suppliers enables innovations that can be launched successfully in the market!

Our design competence supports the development process of optical systems – during the conception and main development phases right up to production. Optical solutions are our core competency. We work with internationally standardized computation techniques and software tools for the simulation and optimization of optical characteristics; supplemented by self-developed tools, allowing us to achieve process optimizations across the entire product generation and value creation processes.

Do you have an application or idea?
1. Starting with the definition of tasks to be performed we support you with expert advice including the simulation of the optical functionality during serial production.
2. You receive solutions and optical drafts for discussion and cost estimates.
3. Your initial drafts are enhanced until the design is suitable for serial production. Furthermore we compile the manufacturing documentation.
4. Fast prototype production ensures you an increasing speed of access to market.
Production of optical components

An integral part of high quality optical systems are suitable optical components. We offer you for example:

**Spherical optics**
Diameter ranges and accuracies:
Serial conditions 0.5–400 mm up to λ/100

**Plan optics**
Diameter and accuracies:
Serial conditions 4–400 mm up to λ/10
High-end series 4–250 mm up to λ/100

**Aspheres**
Diameter and accuracies:
Serial conditions 25–250 mm
Asphere pv ±0.003 mm ±0.0001 mm

**Materials**
All silicate materials, calcium fluoride (CaF₂), magnesium fluoride (MgF₂), quartz crystal, fused silicate (SiO₂)

**Cleanliness**
Cleanliness ISO 10110 5/0.63…0.063 5/0.063…0.006

**Our coating services**
- Consulting services
- Coating development
- Evaluation of prototypes
- Substrate production/coating
- Standard coatings

**Our coatings**
- Single and multilayer coatings (narrow band or broadband antireflective coatings in the wavelength range from 157 nm to 1.7 μm)
- Metallic and dielectric mirrors
- Beam splitter coatings
  (neutral, color and polarization splitters)
- Film polarizers (linear/circular polarizers)
- Delay elements
Production of mechanical components

High quality optics have to be mounted and completed with mechanical and electronic parts. Furthermore mechanical single parts from various materials have a growing importance.

Milling and turning
- Modern, highly productive and flexible CNC machining centers with up to 10 axes
- Wide diversity of materials including high-alloy steels and magnesium
- High performance chipping, high speeds at competitive prices

Extreme precision machining
- Machining of various materials with the highest accuracy requirements, for single and small series
- Horizontal surface grinding machine, rotary table surface grinding machine, internal cylindrical grinding, external cylindrical grinding, centerless grinding, ultra-precise turning, wire EDM, precision machining with diamond tools, lapping and manual lapping

Surface finishing
- Decorative and functional finishing processes for one piece flow, up to mid-sized batches and large series.

Additive manufacturing
- Plastics
- Laser sintering for all common metals
- Functional models and prototypes
Module and system assembly

We use optical and mechanical precision components equipped with electronic components and software to create optical systems: waterproof, pressure- or heat and cold-resistant, depending on your requirements and specifications.

Our departments for optical design and mechanical engineering consider the production tolerances and efforts across the entire process into the design optimization. In line with our production technology development, this is the key to reproducible manufacturing of high-quality optical systems.

This all guarantees delivery on schedule and in line with quality standards under serial conditions.

Our service offering:
- Technological advice from our specialists
- Project and product support – from optical design to final measurement of prototypes and series

In figures:
- Solid technology for low stress glueing and mounting of optical components to l/30 and surface tilting to 0.02"
- Lens diameter from 0.5 to 500 mm
- Wavelengths in the range from 157 nm to 1.7 μm
- Chemical laboratory for auxiliary materials and supplies
- Class ISO 7 cleanrooms with the appropriate environment such as storage under nitrogen gas (quality class 5.0), UV burning, plasmatization, controlled humidity and temperature, to ISO 4 on request
The development process is finalized through system integration and system qualification. Our all-purpose system metrology ensures deterministic alignment and a qualification process for a wide variety of opto-mechanical systems. During adjustment we determine the current performance of the system regarding aberration correction.

With the integration of system measurement technology into the alignment process, we guarantee the image quality calculated and provide a protocol of all parameters on request.

Our testing platform is capable for measuring a large variety of optical systems. We use flexible setups for prototypes or specialized setups for serial processes. Today, we deliver optical systems to various industrial sectors like semiconductor and medical industry, microscopy, mechanical engineering, photography, sports optics, research and development and aerospace industry.
Our customers value the optimal matching and coordination of our processes along the entire value chain. From material procurement and production to packaging and delivery, we strictly adhere to the stipulations of the Integrated Management System.

Our components are subjected to extremely stringent quality inspections at every stage of production. The causes of error are immediately remedied by specially trained teams through the implementation of targeted countermeasures.

Tools:
- Measuring system monitoring through control card standards
- Online monitoring of critical entry parameters
- Identical reproduction of auxiliary materials through validated processes
- Continuous improvement process
- Implementation of SIX SIGMA

We use the expertise of our in-house calibration and test laboratory to inspect the quality of the materials we employ, including the calibration of the testing and measuring devices utilized. Our laboratory is ISO 17025 accredited.

Process engineering
As a manufacturing company using leading, cutting-edge technology, we constantly enhance our production technologies and work methods. We use state-of-the-art methods and instruments for process engineering.

We would be pleased to demonstrate our expertise to you, e.g. in a personal consultation about new manufacturing possibilities now available. We plan, manage and document a production process which is sharply focused on your individual stipulations and requirements.