ANALYTICAL TECHNOLOGY
OUR SERVICES IN THE ANALYTICAL TECHNOLOGY SECTOR

We produce sapphire optics for measuring systems such as refractometers, spectrometers, photometers and pyrometers. Products in the analytical technology sector make the highest demands regarding the purity of materials and precision. Thanks to our experience, our modern machinery and our quality control we can guarantee precise, quick production.

With us, you get everything from a single source. We will support you during the whole production process, from the development of the prototype to assembly.
OUR WORKFLOW

DEVELOPMENT AND SUPPORT
Our team provides comprehensive support in the development of new products. This includes the selection of suitable materials, definition of the working techniques, prototype development and establishing of serial production. We ensure the prototype’s suitability for series production, we document all the steps necessary for series production, and we define and implement suitable qualification methods.

PRODUCTION
First we cut the crystals into blanks. Therefore we use ID saws, wire saws, circular saws and multiblade saws.

Then we grind the blanks into the desired form. We can realize the most varied geometrical shapes using CNC-processing technologies, complex combinations are also possible. We possess a large number of tools or develop client-specific tools when necessary. Thanks to double-sided processing technology we are in a position to realize large quantities.

After grinding, we polish the parts. We offer a multitude of different polishing processes that make it possible to fulfill client-specific surface-finishing requirements according to DIN/ISO and also MIL standards.

ENGRAVINGS, COATINGS AND ASSEMBLIES
We offer laser engravings, part identification and reference marking. We also offer specific optical coatings such as AR coatings, ITO coatings and also mirror coatings. When joining sapphire parts to a casing or mounting, choosing the right technology is decisive. Besides mechanical mounting, the other usual joining technologies are gluing, soldering, welding and shrinkage.

QUALITY CONTROL
Our core focus is on the quality of the finished pieces which includes the material and the technological precision. From choosing the raw materials through production to assembly, each step of our work is subject to the highest requirements and is documented and traceable according to international standards.
TECHNICAL SPECIFICATIONS FOR ANALYTICAL TECHNOLOGY

FLATS
- Optical flats in standard sizes or with customized dimensions and shapes
- Dimension range of round geometries from $\phi$ 1mm to $\phi$ 200mm
- Dimension range of square or rectangular geometries up to # 150mm × 150mm

WEDGE WINDOWS
- Wedge windows with an accuracy of 1 arc-minute

PRISMS
- Angular pieces according to customer specifications
- Prisms with various angles, combined with different geometries such as spheres etc.
- Angles can be realized with an accuracy of 1 arc-minute

RAW MATERIAL
- Selected single crystals that meet the highest purity requirements
- Crystal orientation according to customer specifications

SURFACE QUALITY
- Surface finish with roughness values below 20 angstroms
- Surface form optimized for precise measurement results or best picture quality

SURFACE TREATMENTS
- Optical coatings to optimize transmission properties on request
- Mirror coatings

TYPICAL COMPONENTS
- Protective windows
- Pressure windows
- Wedge windows
- Refractometer prisms
- Dove prisms
- 60° prisms
- Right-angle prisms
- Porro prisms
- Corner cube prisms
- ATR prisms

All products are made in-house by the Kyburz Sapphire Team, using materials of Mohs 9 hardness.