



**MAXIMUM
PRECISION.**

> IBS COATING.



PRECISION IN FOCUS

Load-Lock

- Productivity is increased thanks to shorter process times (AR coatings)
- Chamber conditions are far more stable, since the vacuum in the main chamber is not broken between processes

Monitoring system

- Single wavelength and broadband optical monitoring
- Very high reproducibility for complex coating designs

Advantages

- Dense, highly stable thin-films
- Very **low absorption**
- Very **low scattered** light in combination with **WZWOPTICAG's** super polished substrates
- Highest **reflectivity: R>99.999 %**
- Minimum defect densities due to optional mask-less deposition and operation without shutter

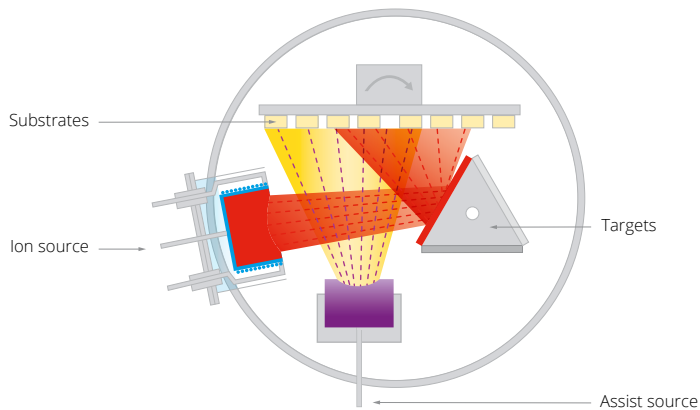


PRECISION OPTICAL COATING

> With ion-beam sputtering (IBS) technology, **WZWOPTICAG** affirms its position as the world's leading manufacturer of optical components. IBS technology addresses a broad field of applications and offers unsurpassed precision for customers seeking the highest quality in the optical coatings field.

The growing demand for optical coatings with the lowest-possible losses requires processes that are not achievable through conventional coating methods. Thanks to our modern IBS systems, installed in our new cleanroom facility in Balgach, we can now offer our customers incredibly precise optical coating options, creating the exact components desired. IBS enables the manufacture of high-precision and reproducible coatings, yet involves low process temperatures. Moreover, these coatings feature maximum compactness and the lowest sensitivity to environmental influences. IBS production of optical coatings is the final link in the **WZWOPTICAG** process chain: each step, from raw glass to the finished product, can now be implemented under one roof and with a single management process.

PRECISION AS A PRINCIPLE



IBS is a thin-film deposition process. Using an ion source, a high-energy ion beam is directed onto a target material. The material is atomized and then resettles (reactive or non-reactive) on the substrate as the actual layer material. This results in extremely low-loss coatings that are particularly suitable for the production of sophisticated laser optics. In fact, through their lifetime laser coatings require high reflectivity, low losses, and a high resistance to laser damage. IBS is the answer: a high-energy process delivering extremely uniform, high-density, fully amorphous layers with superb adhesion to the substrate.

One particularly important feature of an optical surface coating is its surface quality, and the best coatings require a super polished substrate with a roughness $< 1 \text{ \AA}$ (rms). Here again, IBS coatings offer a major advantage: specifically, that of keeping surface roughness very close to the value of the polished substrate.

PRECISION IN USE

The outstanding optical quality and stability offered by IBS coatings is essential for applications with the highest quality requirements - for example, in the field of laser applications.

- Laser mirrors with the lowest stray-light losses, for use in ring-laser-based gyroscopes.
- AR, HR, and all other low-absorption beam splitter, filter, and polarization coatings in order to avoid hazardous thermal effects in high-power laser applications.
- Intra- or extra-cavity laser mirrors for laser manufacturers or external laser stabilization.



PRECISION IS OUR PROFESSION

Swiss company **WZWOPTICAG** is a global leader in the high-tech manufacture of optical components, precision prisms, and prism groups at the most advanced level. Each piece is unique, handmade, and meticulously inspected. **WZWOPTICAG** is dedicated to the principle of maximum quality and maximum commitment, from the idea and development, through to production. With state-of-the-art technologies, a perfected process control, and a philosophy of continuous process optimization, we have elevated ourselves to the market's top position. And with our new IBS plants, our process chain is complete and we can now perform all tasks in-house. Furthermore, the construction of our new ultrasonic plant, the extension of our metrology department, the acquisition of a new, highly flexible spectrometer, and the purchase of a cavity ring down for measuring the smallest losses in highly-reflecting mirrors are additional steps we have taken to consolidate our standing as market leader.

FACT BOX

Location:	Swiss Rhine Valley, Balgach
Chairman of the board:	Willi Weder
CEO:	Claudio Meli
Employees/Production area:	65/3000 m ²
Markets:	Semiconductor industry, laser industry, defense and space, measurement technology, imaging
Export:	env. 90 %

WZWPRODUCTRANGE

ASSEMBLIES & SYSTEM

COATINGS

SUPER POLISHING



PROJECTS

ENGINEERING

OPTICS FROM UV TO IR



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Swiss Made, Swiss Quality, Swiss Precision

