



# Refractometer

## REFRACTIVE INDEX MEASUREMENT



### PRECISE REFRACTIVE INDEX MEASUREMENT WITH POLARIZED CONTROL

Optical refractometers are widely used for precise determination of refractive index in liquids, solids, and thin films. They are essential tools in chemical analysis, semiconductor manufacturing, life science, and quality control.

For system developers, measurement accuracy and long-term stability depend not only on the detector and prism design, but critically on stable and well-defined polarization of the probing light.

### THE INTEGRATION CHALLENGE

Many refractometer principles — including critical-angle, Abbe, and ellipsometric variants — rely on controlled polarization states to achieve high sensitivity and reproducibility.

Developers face several challenges:

- Fluctuating polarization states caused by source instability or reflections.
- Reduced contrast at the detector due to mixed or drifting polarization.
- Multi-wavelength operation requiring different optical configuration
- Tight mechanical constraints in compact refractometer designs.



**VIS 600 BC5**

### IN PRACTICE

How **colorPol®** solves the integration challenge:

- **Stable polarization:** High extinction ratios (>100,000:1) ensure a well-defined polarization state at the prism interface.
- **Broadband capability:** One polarizer can cover several wavelengths used in refractometers, reducing optical complexity.
- **Slim beam paths:** Glass substrates down to 0.2 mm enable compact optical layouts and short beam paths.
- **Environmental stability:** No polarization drift under temperature changes, humidity, or continuous operation.

# WHY DEVELOPERS CHOOSE US

## RELIABLE PERFORMANCE

Glass-based polarizers remain stable under UV exposure, humidity and cleaning cycles. Optical characteristics stay constant even after repeated sterilization.

## EASY SYSTEM INTEGRATION

Produced on glass wafers, **colorPol**® elements are compatible with automated processes such as pick & place or bonding. This ensures precise assembly and efficient series production.

## DESIGN FREEDOM

Custom wavelength ranges, polarization axes, shapes and AR coatings allow developers to design their system exactly as planned – without adjusting to component limits.

## CONSISTENT QUALITY

In-house production and ISO 9001:2015-certified processes ensure reproducible optical performance and full traceability across batches.

## LONG-TERM ECONOMY

High transmission and mechanical durability reduce recalibration, downtime and replacements, lowering total system cost.

**colorPol**® polarizers give developers freedom of design with reliable, long-lasting optical components made for integration and scalability.

## **codixx AG**

Innovation in Glass – Reliability & Quality

We develop and produce high-precision, customized polarizers and substrates that set new standards. Our products stand for the highest quality, long-lasting performance, and reliable availability.

Manufactured in Germany and supported by stable supply chains, we offer our customers maximum planning security and reliability – even for demanding applications.



[www.codixx.com](http://www.codixx.com)