



SCHMIDT
HAENSCH

Product Overview

Laboratory Instruments

2026
2027



VariDens
Density Meter

NON-
DESTRUCTIVE
BY DESIGN



VariPol
Polarimeter



VariRef²
Refractometer

NEW

REFRACTOMETERS FOR EVERYDAY USE



Refractometers are key analytical instruments for determining the refractive index of liquids and solids and are widely applied in industrial and laboratory environments. SCHMIDT + HAENSCH provides a versatile range of refractometer systems designed to address a wide variety of analytical tasks and requirements. Depending on the application, they combine long-term mechanical stability for demanding production environments with high-precision performance and regulatory compliance, including 21 CFR Part 11, for pharmaceutical use. Multi-wavelength measurement and application-specific scales ensure accurate, traceable results for both liquids and solids. Integrated digital interfaces enable data integrity and seamless connection to modern laboratory infrastructures, supporting standards such as LADS/OPC UA.

ATR V/ VT

Compact refractometer with intuitive touchscreen

| | |
|---------------------|---|
| Measuring range | up to 1.27000 - 1.71000 RI / 0 - 100 Brix |
| Accuracy | up to ± 0.00002 RI / ± 0.015 Brix |
| Resolution | up to 0.00001 RI |
| Reproducibility | up to ± 0.00001 RI |
| Temperature control | with internal peltier element (VT model) |



ATR V/ VT

VariRef²

Modular refractometer system for routine analysis with 21 CFR Part 11 compliance

| | |
|---------------------|--|
| Measuring range | up to 1.27000 - 1.72000 RI / 0 - 100 Brix |
| Accuracy | up to ± 0.00002 RI / ± 0.015 Brix |
| Resolution | up to 0.000001 RI |
| Reproducibility | up to ± 0.000005 RI |
| Temperature control | with internal peltier element (up to 100 °C) |

21 CFR Part 11
FDA
COMPLIANCE



VariRef²

ATR P

Robust refractometer for high sample throughput

| | |
|---------------------|-------------------------------------|
| Measuring range | 1.32000 - 1.54000 RI / 0 - 100 Brix |
| Accuracy | ± 0.00002 RI / ± 0.02 Brix |
| Measuring mode | vertical or horizontal |
| Resolution | 0.00001 RI |
| Reproducibility | ± 0.00001 RI |
| Temperature control | with circulation thermostat |



ATR P

ATR L

Unique multi-wavelength scanning refractometer for dispersion measurements

| | |
|---------------------|--|
| Measuring range | 1.27000 - 1.58000 or 1.32000 - 1.70000 RI |
| Accuracy | ± 0.00004 RI |
| Wavelength range | 350 - 960 nm |
| Temperature control | with internal peltier element (10 - 80 °C) |
| Accessory | Sample room door for liquid or solid samples |



ATR L

THE NEXT GENERATION OF POLARIMETRY



Polarimeters are detecting the optical rotation of chiral molecules and play a key role in numerous industries. Building on decades of experience, SCHMIDT + HAENSCH offers a comprehensive range of polarimeter models designed to meet specific application requirements. Our instruments cover measuring ranges from $\pm 89.9^\circ$ (with optional rotation offsets of 90° , 180° , or 270°) and 259°Z , delivering accuracy of up to $\pm 0.002^\circ$ or 0.006°Z . Flexible tube lengths of 10, 50, 100, or 200 mm further support application-specific configurations. Thanks to a modular concept, each polarimeter can be individually configured with suitable accessories. Our benchtop polarimeters are an integral part of modern laboratory equipment, enabling reliable determination of concentration and purity of optically active substances and enantiomeric mixtures.

UniPol V

Circular polarimeter with attractive price-performance ratio

| | |
|---------------------|--|
| Measuring range | $\pm 89.9^\circ$ (rotation offset of 90° , 180° or 270° possible) |
| Accuracy | $\pm 0.003^\circ$ / 0.009°Z |
| Wavelength | 589 nm, 882 nm or 589 + 882 nm (others on request) |
| Tubes | up to 200 mm, glass or stainless steel |
| Temperature control | with circulation thermostat |



UniPol

VariPol

Modular polarimeter system for routine analysis with 21 CFR Part 11 compliance

| | |
|---------------------|--|
| Measuring range | $\pm 89.9^\circ$ (others on request) |
| Accuracy | up to $\pm 0.003^\circ$ / 0.009°Z |
| Wavelength | 589 nm, 589 + 365 nm or 589 + 405 nm (others on request) |
| Tubes | up to 100 mm, stainless steel or hastelloy |
| Temperature control | with internal peltier system ($10 - 40^\circ\text{C}$) |

21 CFR Part 11  COMPLIANCE



VariPol

Polartronic® V

Most precise circular polarimeter with continuous measurement mode

| | |
|---------------------|--|
| Measuring range | $\pm 89.9^\circ$ / up to 259°Z (rotation offset of 90° , 180° or 270° possible) |
| Accuracy | $\pm 0.002^\circ$ / $\pm 0.006^\circ\text{Z}$ |
| Wavelength | 589 nm, 882 nm or 589 + 882 nm (others on request) |
| Tubes | up to 200 mm, glass or stainless steel |
| Temperature control | with optional peltier-tubes ($0 - 99^\circ\text{C}$) |



Polartronic® V

Saccharomat® V

Unique maintenance-free quartz wedge polarimeter

| | |
|---------------------|--|
| Measuring range | $- 35$ to 105°Z |
| Accuracy | $\pm 0.006^\circ\text{Z}$ |
| Wavelength | 587 nm, 882 nm or 587 + 882 nm |
| Tubes | up to 200 mm, glass or stainless steel |
| Temperature control | with circulation thermostat |



Saccharomat® V

DENSITY METER



Density meters based on the oscillating U-tube principle enable fast, highly accurate density and concentration measurements across many applications like alcohol concentration, pharmaceutical quality control, purity of edible oils and analysis in chemical and petrochemical sectors. The VariDens density meter combines precise performance with sleek SCHMIDT + HAENSCH design and a robust, sealed construction for reliable operation under harsh conditions. A modular concept provides flexibility for different tasks, while advanced VariFamily features ensure ease of use, adaptability, and long-term reliability.

VariDens

Modular density meter for routine analysis with 21 CFR Part 11 compliance

| | |
|---------------------|---|
| Measuring range | 0 - 3 g/cm ³ |
| Accuracy | up to ± 0.00005 g/cm ³ |
| Temperature control | with internal peltier system (10 - 95 °C) |
| Special feature | Integrated air-pump |

21 CFR Part 11
FDA
COMPLIANCE



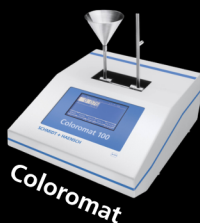
COLOR MEASUREMENT



As color is a decisive criterion for product quality, SCHMIDT + HAENSCH color measuring instruments support accurate color measurement of liquids and color assessment of crystallized sugar. Widely used in the food and beverage sector, sugar production, and the chemical industry, our photometer and reflectance colorimeter help maintain consistently high product quality and ensure compliance with international norms and standards, including ICUMSA. SCHMIDT + HAENSCH offers advanced solutions for reliable liquid color determination, including measurement of transmission, extinction, and ICUMSA color units, while a dedicated reflectance colorimeter is available for the color evaluation of crystal sugar.

Coloromat

Filterphotometer with possibility to use 100 mm polarimeter tubes



Saccharoflex

Reflectance colorimeter for crystal sugar



SAMPLE PREPARATION



Sample preparation is the key to reliable and repeatable measurement results. SCHMIDT + HAENSCH automation systems streamline laboratory workflows and significantly increase efficiency in daily operations. Automatic filtration system enables fast and reliable clarification of even dark samples for usage with NIR polarimetry, while dosing and sample preparation units ensure precise, repeatable handling. By reducing manual effort and optimizing resource use, SCHMIDT + HAENSCH lab automation technology simplifies routine sample preparations and therefore enhances measurement reliability, helping laboratories achieve higher performance and consistent quality control results.

AutoFilt Z

Automatic filtration of samples with high solid content



AutoDosage

Gravity or pressure-based dosing by %w/w or %w/v



APPLICATION HIGHLIGHTS

SCHMIDT + HAENSCH laboratory instruments support diverse applications across industries such as food and beverage, pharmaceuticals, chemicals, polymers, and petrochemicals. Combining proven measurement principles with German production quality, our portfolio enables accurate analysis of properties such as optical activity, refractive index, and light absorption. Automated dosing and filter systems complement these instruments by simplifying sample preparation and daily laboratory workflows. Our instruments support flexible, application-specific analysis from routine quality control to specialized research.

Sugar and sugar-related Industry

Brix measurement of all common sugar types | Purity monitoring | Crystal sugar whiteness degree | Starch or sweetener concentration measurement



Pharmaceutical Industry

Chemical reactions and synthesis monitoring | Impurity detection | Quality control | Following Pharm. Eur. methods | 21 CFR Part 11



Scan for a deep dive into our software Aquisys3

It allows you to control, monitor, archive, and retrieve your measured data from anywhere.



SCHMIDT + HAENSCH SERVICES

Independent and Reliable Lab Services

At our SCHMIDT + HAENSCH Lab, customers can rely on precise reference measurements under ideal laboratory conditions across the full SCHMIDT + HAENSCH product portfolio. Our experts perform high-precision measurements to support method development and create customized, highly accurate scales using state-of-the-art reference technology. The result is maximum accuracy and full traceability, providing either a solid foundation for your future instrument or a reliable long-term solution without the need for your own equipment.



Instrument Certification from Scratch

We support instrument certification from the very beginning. Our application experts assist in defining the *User Requirement Specification (URS)* and provide complete, compliant IQ/OQ documentation, supported by qualified service personnel for professional execution. Using certified reference materials and working in accordance with GLP/GMP requirements, we ensure a smooth and reliable qualification process.



Product Support

SCHMIDT + HAENSCH provides worldwide reliable service support to keep your instruments performing at their best. Our experienced service teams offer professional maintenance and repair services on site or in-house, with or without a service contract, as well as recalibration of reference materials. This ensures sustained performance, long-term reliability, and a maximized instrument lifetime you can rely on in daily operation.



>160 YEARS OF EXCELLENCE

SCHMIDT + HAENSCH was founded in Berlin in 1864 by Franz Schmidt and Herrmann Haensch, building a legacy in precision mechanics and optical expertise. From the beginning, the company developed high-quality optical instruments for scientists, supporting fundamental research, which resulted in international recognition for precise analytical solutions in polarimetry and refractometry. As a fifth-generation family-run business, SCHMIDT + HAENSCH seamlessly combines long-standing tradition with continuous technological innovation. Today, the company is a leading global manufacturer of high-precision analytical instruments, trusted across a wide range of industries including pharmaceuticals, food and beverage, chemicals, sugar, petrochemicals, and academia for delivering reliable, user-focused solutions tailored to modern laboratory needs.



SCHMIDT + HAENSCH founded by Franz Schmidt and Herrmann Haensch in Berlin

1864

Manufacturing microscopes for Rudolf Virchow

1879

Manufacturing of Abbe refractometers with Pulfrich principle

1895

Developing the color mixing apparatus according to Helmholtz-König

1921

First fully-automatic bench-top refractometer with a measuring range up to 1.72000 RI and a resolution of 10^{-5} Brix

1986

Introduction of a patented multi-wavelength refractometer

2005

Development of the SpectroPol - a multi-wavelength scanning polarimeter

2022

SCHMIDT + HAENSCH celebrates 160-year anniversary

2024

1864 Developing a quartz wedge polarimeter in cooperation with Karl Ventzke

1881 Manufacturing an interferometer for the Michelson-Morley experiment

1905 Manufacturing a circle polarimeter for Swiss Nobel Prize winner Alfred Werner

1963 Developing and manufacturing of the world's first fully automatic sugar polarimeter with digital display and printer

1992 Developing first refractometers for process control

2018 Launch of the VariFamily - refractometer, polarimeter and density meter

2023 Introduction of the iCS - the world's smallest process refractometer

2026 Update of product portfolio to the next level



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