**L** LABORATORY

**P** PROCESS

**S** SOFTWARE

**A** AUTOMATION

SCHMIDT HAENSCH
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# Polartronic® V

## High Performance Polarimeter

Our fully automatic circle polarimeter provides continuous measurements with high accuracy and is designed for various applications

| SPECIFICATIONS | POLARTRONIC® V |
|---|---|
| **Measurement scales** | °Optical rotation, °Specific rotation, °Z International Sugar Scale, % Concentration (g/mL, g/100mL, g/L)<br>up to 1000 scales freely definable |
| **Measuring range** | ± 360° / ± 259°Z |
| **Resolution** | 0.001° / 0,01°Z |
| **Precision** | ± 0.005° / ± 0,015°Z * |
| **Reproducibility** | ± 0.001° / ± 0,01°Z |
| **Sensitivity** | Up to OD 5 |
| **Wavelength** | 1 or 2 wavelengths fixed: 405, 435, 546, 578, 589, 633, 882 nm (others upon request) |
| **Response time** | ≤ 4 sec. over the entire measuring range |
| **Measuring tubes** | Different Models, 10 to 200 mm length<br>Material: glass, stainless steel, acid-proof stainless steel, stainless steel tubes with integrated temperature sensor*** |
| **Temperature measurement** | NTC sensor for measurement of sample temperature |
| **Range** | 0 - 99°C |
| **Resolution** | 0.01°C |
| **Precision** | ± 0.1°C |
| **Light source** | LED, interference filter |
| **Display** | 7" Touchscreen, 800 x 480 Pixel, 16 Bit colors |
| **Operation** | Touchscreen, keyboard**, mouse**, barcode-reader**, remote via PC** |
| **Interface / Communication** | RS232 (1x), USB A (4x), USB B (1x), Ethernet (1x), W-LAN/LAN** |
| **Conformity** | International Pharmacopoea, OIML, ASTM, ICUMSA, Australian Standard K157 |
| **Highlights** | New improved hardware for faster operation; 7" conductive touch display as standard; ready to implement "Aquisys 3" operating system offering: intuitive operation, control via smartphone, connection to third party instruments, industrial standard interfaces, internal data base function, internal 21 CFR Part 11 software |
| **Weight / dimensions** | 18.3 kg; 730 x 370 x 160 mm (width x depth x height) |

* Standard conditions
** Optional
*** Certificate on request

## Polarimeter applications

Polarimetry is an instrumental analytical method using the optical activity by inorganic and organic compounds as a non-destructive measure of their concentration in a solution.

## Applications often used

- Determination of concentration
- Purity analysis
- Quality control
- Scientific analysis

## Typical applications of the models

- Raw-, intermediate and final products of sugar cane and beet processing
- Food (sugar, starch, milk and dairy products)
- Pharmaceuticals (alkaloids, amino acids, organic compounds, vitamins, essential oils etc.)
- Chemicals (organic fluids, biopolymers, synthetic and organic polymers, benzene, acids etc.)
- Research (analysis of molecular structure, investigation of kinetic reactions as function of time, distinction of optical isomers, monitoring changes in concentration of an optically active component in a reaction mixture as in enzymatic scission)

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# Saccharomat® V

## Sugar Polarimeter

Our fully automatic quartz wedge sugar polarimeter provides continuous measurement with unrivaled accuracy and without the need for recalibration

| SPECIFICATIONS | SACCHAROMAT®V |
|---|---|
| **Measurement scales** | °Z International Sugar Scale |
| **Measuring ranges** | -35°Z to + 105°Z* |
| **Resolution** | 0,01°Z |
| **Precision** | ± 0,02°Z ** |
| **Reproducibility** | ± 0,01°Z |
| **Sensitivity** | Up to OD 5 |
| **Wavelength** | 1 or 2 wavelengths fixed: 587, 882 nm |
| **Response time** | ≤ 4 sec. over the entire measuring range |
| **Measuring tubes** | Different Models, 50, 100 or 200 mm length Material: glass, stainless steel, acid-proof stainless steel, stainless steel tubes with integrated temperature sensor**** |
| **Temperature measurement** | NTC sensor for measurement of sample temperature |
| **Range** | 0 - 99°C |
| **Resolution** | 0,01°C |
| **Precision** | ± 0,1°C |
| **Light source** | LED, interference filter |
| **Display** | 7" TFT Touchscreen, 800 x 480 Pixel, 16 Bit colors |
| **Operation** | Touchscreen, keyboard***, mouse***, barcode reader***, remote via PC*** |
| **Interface / Communication** | RS232 (1x), USB A (4x), USB B (1x), Ethernet (1x), W-LAN/LAN |
| **Conformity** | International Pharmacopoea, OIML, ASTM, ICUMSA, Australian Standard K157 |
| **Highlights** | High performance sugar polarimeter using the unique principle of quartz wedge compensation; Saccharomat does not need re-calibration at any time, High stability of the measuring val- ues; Measurement of dark samples after filtration with "Autofilt Z"; High resolution 7" TFT touchscreen, Energy saving LED light source |

* The accuracy is only guaranteed within 0ÁZ to 100ÁZ
** Standard conditions
*** Optional
**** Certificate on request

## Polarimeter applications

Determination of sucrose concentration Precision and reproducibility of the measured values meets the high requirements of quality control and payment systems.

## Applications often used

- Determination of concentration
- Purity analysis
- Quality control

## Typical applications of the model

- Sugar industry (raw-, intermediate and final products of sugar cane and beet processing)
- Food industry (reception control of sucrose)
- Pharmaceutical industry (reception control of sucrose)

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# ATR P

## High Performance Refractometer

The robust critical angle refractometer, designed for the sugar industry and mixing ratio determination complemented by a VariControl unit

| SPECIFICATIONS | ATR-P |
|---|---|
| **Measuring scales** | Refractive Index (RI), Sucrose (%Brix)<br>Up to 1000 scales freely definable |
| **Measuring range** | 1.33200 - 1.54000 RI / 0 - 100% Brix |
| **Resolution** | 0.00001 RI / 0.01% Brix |
| **Precision** | ± 0,00002 RI / ± 0.02% Brix |
| **Reproducibility** | ± 0.00001 RI / ± 0.01% Brix |
| **Ambient temperature** | + 10° to + 40°C |
| **Automatic temperature compensation** | + 5° to + 50°C |
| **Temperature measurement** | NTC sensor for measurement of sample<br>temperature placed inside the prism |
| **Temperature control**<br>**Temperature range** | Temperature control prism / sample by external water bath<br>5°C / 50°C |
| **Measurement mode** | Single sample or flow through measurement / horizontal or vertical usage |
| **Prism** | Sapphire |
| **Light source / wavelength** | LED, interference filter 589 nm |
| **Display** | VariControl, 7" Touchscreen, 800 x 480 Pixel, 16 Bit colors |
| **Operation** | Touchscreen, keyboard**, mouse**, barcode reader**, remote via PC** |
| **Interfaces** | 1 x RS232 C serial, 3 x USB (A), 1 x USB (B), 1 x Ethernet, Easy connection of keyboard, mouse, printer, barcode reader, PC and network |
| **Conformity** | International Pharmacopoea, ASTM, AOAC, DIN, FDA, ICUMSA and others |
| **Highlights** | Robust stainless steel measuring head for rough environments; high performance and accuracy; continuous measurement; ESH[1] chamber; MBS[2] as stand alone with VariControl or polarimeter; easy calibration; GLP/GMP; With the VariControl: Maintenance friendly by remote diagnostic; intuitive user handling guided OP system; installation wizard; full traceability of records; ext. LIMS integration<br>[1] Easy sample handling; [2] Modular build-in-system |
| **Weight / dimensions** | Measuring Head: 4.5 kg; 200 x 160 x 135 mm (width x depth x height) VariControl:<br>2.0 kg; 250 x 170 x 180 mm (width x depth x height) |

* Standard conditions (589nm, 20°C)
** Optional

## Refractometer applications

The applications of Refractometers are highly diverse.

### Applications often used

- Determination of refractive index
- Determination of dry substance
- Determination of mass percent
- Brix measurement
- Standard scale (Brix) with automatic temperature compensation
- Qualitative analysis – identification of samples
- Quantitative analysis of dissolved solids in water or other solvents
- Quantitative analysis of sugars, solves, glycol, oechsle…

### Typical applications of the model

- Sugar industry (main application)
- Beverages (juices with pulp)
- Samples with suspended particles
- Food (oil from palm, corn, sunflower, soya)

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