



**Anton Paar**

:: Superior Optical Instruments



## Propol

Automatic Polarimeter | Chiral Detector for HPLC

## General

The Propol is an automatic polarimeter with an extremely high resolution of 0.0001° Optical Rotation using an unique measuring principle: Magneto-optical compensation by Faraday effect.

The instrument operates without mechanically moved parts and therefore free of wear. The linearity of Optical Rotation and concentration scales is better than 0.05 % and the instrument temperature error is close to zero.

The high resolution in Optical Rotation allows the use of very short sample cells, thus enabling analysis of extremely dark coloured samples.

Hitherto, the use of automatic polarimeters for concentration measurements of optically active substances has been limited to sample volumes in the mL range.

The high resolution of the Propol allows to measure samples even in the µL range either as individual samples or continuously, e.g. in the eluate of a HPLC.

Powerful menu-selectable data processing facilities, seven measuring ranges, and interfaces to computers, analog recorders and other equipment give access to new dimensions in polarimetry and HPLC applications.

## Specifications

<b>Principle of operation</b>	Self-balancing polarimeter with magneto-optical compensation by Faraday effect
<b>Measuring ranges</b>	<ul style="list-style-type: none"><li>▶ °Optical Rotation, range ±6°, resolution 0.0001°, 0.001°, or 0.01°, menu-selectable</li><li>▶ User-definable concentration ranges: linear, standard or polynomial scales</li><li>▶ % Sucrose, range 0-23 % (g/100 cm<sup>3</sup>) with 40 mm cell, resolution 0.001 %</li><li>▶ % Glucose, range 0-26 % (g/100 cm<sup>3</sup>) with 40 mm cell, resolution 0.001 %</li><li>▶ °Z International Sugar Scale, ranges with 40 mm cell: ±86 °Z (standard) or -50 °Z to +120 °Z (sugar industry model), resolution 0.01 °Z</li></ul>
<b>Sample temperature display</b>	0-99 °C at 0.1 °C resolution. Sample cell with built-in Pt 100 temperature sensor, or a dipping probe required
<b>Display</b>	Green vacuum fluorescence display
<b>Keyboard</b>	Water-proof rubber membrane type with numeric key array
<b>Automatic gain control</b>	Compensates light attenuation up to an optical density of 4
<b>Field calibration facility</b>	Menu-guided calibration by Certified Quartz Control Standards
<b>Calendar/clock functions</b>	Battery-buffered quartz clock with date and time
<b>Interfaces</b>	RS-232C serial port, analogue output 0-10 V or 5 ±5 V
<b>Light source</b>	Tungsten-halogen lamp, 6 V, 10 W, average life 5000 h
<b>Optical wavelength</b>	589 nm (standard) or 546 nm (optional)
<b>Sample cells</b>	Various types from 2.5 to 90 mm length, material stainless steel or all glass, e.g. special models for HPLC applications
<b>Integration time</b>	User-selectable from 1-99 s, defines the number of measurements averaged at each display refresh cycle. The measuring rate is 14 measurements/s
<b>Measuring unit</b>	Waterproof cast metal housing, dimensions 550 x 130 x 215 mm (L x W x H), weight 17 kg
<b>Display unit</b>	Bench top housing of light metal, dimensions 470 x 160 x 340 mm (L x W x H), weight 7 kg
<b>Connecting cable</b>	Between measuring unit and display unit, length 2.5 m
<b>Power requirements</b>	Self-adapting to any mains voltage of 100/120 VAC or 200/240 VAC nominal +10 %/-15 %, 45-65 Hz

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### Instruments for:

Density & concentration measurement

Rheometry and viscometry

Sample preparation

Microwave synthesis

Colloid science

High-precision temperature measurement

Refractometry

Polarimetry

X-ray structure analysis

Specifications subject to change without notice

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