

# Infitek

## POLARIMETERS

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VERSION.2025

# Fully Automatic High-speed Polarimeter, POL-5 Series

POL-568 POL-537 POL-533 POL-532 POL-531



POL-568 POL-537 POL-533

POL-532 POL-531

- ◆ High Speed & High Efficiency, response speed: 8°/second, measuring time: 6 times/26 seconds
- ◆ Low-Noise Operation, Quiet & Comfortable
- ◆ Digital Platform & High-End Optical Components, Glan Thompson prism
- ◆ Long-Lasting Light Source, 100,000 hours LED light source
- ◆ Audit trail is optional for POL-568/537/533 to comply with 21 CFR Part 11

## Description

- POL-5 series fully automatic high-speed polarimeter is engineered on a advanced digital platform. It incorporates a breakthrough high-precision photoelectric encoder that replaces traditional worm gear mechanisms used in conventional polarimeters, significantly simplifying the mechanical structure while dramatically increasing measurement speed and overall efficiency. Furthermore, the instrument operates with minimal noise throughout the process.
- The series offers a wide range of configurations to accommodate diverse user requirements, including optical rotation, specific rotation, concentration, and international sugar scale measurements. High-end models also provide customizable method modes for specialized applications.

## Features

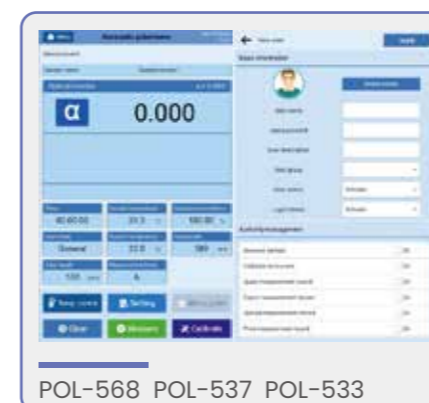
### High Speed and High Efficiency, Precision and Stability

With a full-range response speed of up to 8°/second and an average of 6 measurements in 26 seconds, detection efficiency is greatly improved, significantly reducing sample measurement time and supporting efficient laboratory operation.

### Low-Noise Operation, Quiet and Comfortable

The instrument maintains low noise levels both in standby and operating modes, providing silent measurement throughout the entire process and creating a quiet and comfortable working environment for laboratory staff.

### Intelligent System Option, Flexible to Meet Needs



POL-568 POL-537 POL-533



POL-532 POL-531

POL-568/537/533 are equipped with an Android intelligent system. Users can flexibly choose based on practical application and budget, meeting diverse operational and functional requirements.

### Digital Platform and High-End Optical Components

The digital platform significantly enhances measurement accuracy, repeatability, and reliability.

The polarizer is equipped with a Glan Thompson prism (specified wavelengths for POL-568/537), delivering excellent optical performance.

### Long-Lasting Light Source, Multiple Wavelength Options

The LED light source has a lifespan of over 100,000 hours, effectively avoiding the hassle of frequent replacement required with traditional sodium lamps.

POL-537 offers both LED and halogen tungsten lamp versions, with a total of 8 optional wavelengths to fully cover diverse user measurement needs.

## Features

### Intelligent Temperature Control, Accurate and Reliable Results



Peltier temperature control, temperature-controlled sample cell

POL-568/537/533/532 feature built-in high-precision Peltier temperature control devices with heating and cooling functions. They support the use of temperature-controlled sample cells for polarimetry measurements, ensuring samples are tested at the required temperature and guaranteeing data accuracy.

### Extensive Data Management, Easy System Integration

POL-568/537/533 come with a large-capacity built-in database, supporting user hierarchy management. Data can be saved, transmitted, printed, and traced. Users can customize and pre-store frequently used methods; measurement results can be exported as PDF reports or directly saved to a U disk, with an optional external printer also available.

Equipped with serial communication and open interfaces, seamless data connection with user systems such as LIMS is easily achieved, promoting digital laboratory management.

## Specifications



Model	POL-568	POL-537 Dual wavelength* Multiple wavelength**	POL-533	POL-532	POL-531
Specification					
Measuring scale	Optical Rotation; Specific Rotation; Concentration; International Sugar Scale; User Defined	Optical Rotation; Specific Rotation; Concentration; International Sugar Scale; User Defined	Optical Rotation; Specific Rotation; Concentration; International Sugar Scale; User Defined	Optical Rotation; Specific Rotation Concentration; International Sugar Scale	Optical Rotation; Specific Rotation Concentration; International Sugar Scale
Measuring range	±90° (OR); ±259°Z (ISS)	±90° (OR); ±259°Z (ISS)	±90° (OR); ±259°Z (ISS)	±90° (OR); ±259°Z (ISS)	±90° (OR); ±259°Z (ISS)
Accuracy	±0.003°	±0.004°	±0.004°	±0.004°	±0.006°
Repeatability	≤0.002°	≤0.002°	≤0.002°	≤0.002°	≤0.002°
Min. transmission	0.01%	0.1%	0.05%	0.1%	0.1%
Resolution	0.0001°	0.001°	0.001°	0.001°	0.001°

## Features

### Compliant with Regulations, Meeting Audit Requirements

POL-568/537/533 offer optional audit trail software functionality, complying with FDA 21 CFR Part 11, GMP, GLP, and pharmacopoeia requirements, making them suitable for the stringent quality management needs of the pharmaceutical industry.

The POL-532/531 systems comply with GMP and relevant pharmacopoeia standards, making them reliably suitable for routine quality control scenarios.

## Industry Applications

Model	POL-568 POL-537 POL-533 POL-532 POL-531
Food and Beverages	Determination of sucrose, monosodium glutamate, soy sauce, and sugar content
Agricultural Production	Determination of antibiotics, hormones, pesticides, and starch
Petrochemical Industry	Mineral oil analysis, monitoring of oil fermentation processes
Fragrances and Flavors	Quality analysis of natural essential oil raw materials such as camphor oil
Health and Disease Control	Glucose analysis in medical infusion solutions and diabetes analysis
Pharmaceutical Industry	Analysis of antibiotics, vitamins, and amino acids

## Specifications

Model	POL-568	POL-537 Dual wavelength* Multiple wavelength**	POL-533	POL-532	POL-531
Specification					
Available wavelength	589nm	*Standard: 589nm/880nm *Optional: 365nm/405nm/436nm/ 546nm/578nm/633nm **Standard: 589nm/546nm **Optional: 365nm/405nm/436nm/ 578nm/633nm	589nm	589nm	589nm
Response speed	8°/sec.	8°/sec.	8°/sec.	8°/sec.	8°/sec.
Measuring time	6 times/26 sec.	6 times/26 sec.	6 times/26 sec.	6 times/26 sec.	6 times/26 sec.
Temperature control range	Peltier temperature control: 10 °C to 50 °C	Peltier temperature control: 10 °C to 50 °C	Peltier temperature control: 10 °C to 50 °C	Peltier temperature control: 10 °C to 50 °C	/
Temperature accuracy	±0.2 °C	±0.2 °C	±0.2 °C	±0.2 °C	/
Calibration	Multi-point automatic calibration	Multi-point automatic calibration	Multi-point automatic calibration	Multi-point automatic calibration	Multi-point automatic calibration
User management permissions	Four levels	Four levels	Four levels	/	/
Electronic signature	Yes	Yes	Yes	/	/
Audit trail	Optional FDA software	Optional FDA software	Optional FDA software	/	/
Engineering					
Light source	LED (100,000 hours lifespan) Precision interference filter	*LED (100,000 hours lifespan) Precision interference filter **Tungsten halogen lamp (20W)	LED (100,000 hours lifespan) Precision interference filter	LED (100,000 hours lifespan) Precision interference filter	LED (100,000 hours lifespan) Precision interference filter
Sample cell length	Standard: 100mm (regular) 200mm (regular) 100mm (temperature control) Optional: 50mm (regular) 200mm (temperature control)	Standard: 100mm (regular) 200mm (regular) 100mm (temperature control) Optional: 50mm (regular) 200mm (temperature control)	Standard: 100mm (regular) 200mm (regular) 100mm (temperature control) Optional: 50mm (regular) 200mm (temperature control)	Standard: 100mm (regular); 200mm (regular); 100mm (temperature control) Optional: 50mm (regular); 200mm (temperature control)	Standard: 100mm (regular); 200mm (regular); Optional: 50mm (regular)
Technical data					
Display	10.1" color LCD touchscreen	10.1" color LCD touchscreen	10.1" color LCD touchscreen	8" color LCD touchscreen	8" color LCD touchscreen
Operating system	Android	Android	Android	/	/
Internal storage	128G	128G	128G	10,000 sets of data	10,000 sets of data
User management	500	500	500	/	/
Method management	1000	1000	1000	30	30
Communication interface	RS232, USB, U disk, Keyboard, Mouse, Wifi, Ethernet	RS232, USB, U disk, Keyboard, Mouse, Wifi, Ethernet	RS232, USB, U disk, Keyboard, Mouse, Wifi, Ethernet	RS232, USB, U disk	RS232, USB, U disk
Connect PC, LIMS	Yes	Yes	Yes	Yes	Yes
Printer (Optional)	Thermal printer; Stylus printer; Wifi printer	Thermal printer; Stylus printer; Wifi printer	Thermal printer; Stylus printer; Wifi printer	Thermal printer	Thermal printer
Power supply	220V±22V, 50Hz±1Hz, 200W	220V±22V, 50Hz±1Hz, 200W	220V±22V, 50Hz±1Hz, 200W	220V±22V, 50Hz±1Hz, 200W	220V±22V, 50Hz±1Hz, 200W
Product dimensions (L×W×H)	702mm×376mm×240mm	702mm×376mm×240mm	702mm×376mm×240mm	702mm×376mm×240mm	702mm×376mm×240mm
Package dimensions (L×W×H)	880mm×530mm×490mm	880mm×530mm×490mm	880mm×530mm×490mm	880mm×530mm×490mm	880mm×530mm×490mm
Net weight	21kg	21kg	21kg	21kg	21kg
Gross weight	36kg	36kg	36kg	36kg	36kg

\* POL-537 (Dual wavelength), only equipped with two wavelengths, only 880nm can be replaced with one of the optional wavelengths.

\*\* POL-537 (Multiple wavelength), can be equipped with more than two wavelengths, only 546nm can be replaced with other optional wavelengths.

## Automatic Polarimeter, POL Series

POL-2P POL-1P POL-3 POL-2S POL-2B

### Features

#### Multiple Test Modes, Automatic Repeat Measurement

POL-2P/1P/3 offers four measurement modes: optical rotation, specific rotation, concentration, and international sugar scale, meeting diverse testing needs. The automatic repeat measurement function allows for up to six consecutive tests and automatically calculates the average, effectively improving data reliability. The POL-2P/1P also calculates root mean square (RMS) values, enabling accurate measurement of dark samples.

#### Long-Lasting Light Source

The LED light source has a lifespan of over 100,000 hours, effectively avoiding the hassle of frequent replacement required with traditional sodium lamps.

#### Intelligent Temperature Control, Accurate and Reliable Results

POL-2P feature built-in high-precision Peltier temperature control devices with heating and cooling functions. They support the use of temperature-controlled sample cells for polarimetry measurements, ensuring samples are tested at the required temperature and guaranteeing data accuracy.

### Description

- Automatic polarimeter can automatically measure the optical rotation of optically active substances. This measurement can be used to analyze parameters such as concentration, content, purity, sugar content, and specific rotation. These instruments are widely used in sugar refining, pharmaceuticals, food, quality inspection, chemical industry, agriculture, light industry, petroleum, and other industrial sectors, as well as relevant universities and research institutions.



POL-2P POL-1P



POL-3



POL-2S POL-2B

- ◆ Multiple Test Modes: optical rotation, specific rotation, concentration, international sugar scale
- ◆ Long-Lasting Light Source: 100,000 hours LED light source
- ◆ Peltier Temperature Control: 15 C to 30 C
- ◆ Measuring Range:  $\pm 45^\circ$  (OR),  $\pm 120^\circ Z$  (ISS)
- ◆ Data Transmission, Result Printing

## Specifications



Model	POL-2P	POL-1P	POL-3	POL-2S	POL-2B
Specification					
Measuring scale	Optical Rotation Specific Rotation Concentration International Sugar Scale	Optical Rotation Specific Rotation Concentration International Sugar Scale	Optical Rotation Specific Rotation Concentration International Sugar Scale	Optical Rotation International Sugar Scale	Optical Rotation
Measuring range	±45° (OR) ±120°Z (ISS)	±45° (OR) ±120°Z (ISS)	±45° (OR) ±120°Z (ISS)	±45° (OR) ±120°Z (ISS)	±45° (OR)
Accuracy	±0.01° (-15°≤OR≤+15°) ±0.02° (OR<-15° or OR>+15°)	±0.01° (-15°≤OR≤+15°) ±0.02° (OR<-15° or OR>+15°)	±(0.01+measuring value×0.05%)°	±(0.01+measuring value×0.05%)° (OR) ±(0.03+measuring value×0.05%)°Z (ISS)	±(0.01+measuring value×0.05%)° (OR)
Repeatability	≤0.002°	≤0.002°	≤0.003°	≤0.002°	≤0.01°
Min. transmission	1%	1%	10%	1%	10%
Resolution	0.001° (OR) 0.01°Z (ISS)	0.001° (OR) 0.01°Z (ISS)	0.001° (OR) 0.001°Z (ISS)	0.001° (OR) 0.01°Z (ISS)	0.002° (OR)
Available wavelength	589nm	589nm	589nm	589nm	589nm
Temperature control range	Peltier temperature control: 15°C to 30°C	/	/	/	/
Temperature accuracy	±0.5°C	/	/	/	/
Engineering					
Light source	LED (100,000 hours lifespan) Interference filter	LED (100,000 hours lifespan) Interference filter	LED Interference filter	LED Interference filter	LED Interference filter
Sample cell length	Standard: 100mm (regular) 200mm (regular) 100mm (temperature control) Optional: 50mm (regular) 200mm (temperature control)	Standard: 100mm (regular) 200mm (regular) Optional: 50mm (regular)	Standard: 100mm (regular) 200mm (regular) Optional: 50mm (regular)	Standard: 100mm (regular) 200mm (regular) Optional: 50mm (regular)	Standard: 100mm (regular) 200mm (regular) Optional: 50mm (regular)
Technical data					
Display	7" color LCD touchscreen	7" color LCD touchscreen	Color LCD touchscreen	5" LCD	5" LCD
Communication interface	RS232, USB	RS232, USB	RS232, USB	RS232	RS232
Connect PC	Yes	Yes	Yes	/	Yes
Printer (Optional)	Thermal printer Stylus printer	Thermal printer Stylus printer	Stylus printer	Thermal printer	/
Power supply	220V±22V, 50Hz±1Hz, 200W	220V±22V, 50Hz±1Hz, 200W	220V±22V, 50Hz±1Hz, 150W	220V±22V, 50Hz±1Hz, 150W	220V±22V, 50Hz±1Hz, 150W
Product dimensions (L×W×H)	710mm×400mm×240mm	710mm×400mm×240mm	605mm×370mm×260mm	605mm×370mm×260mm	605mm×370mm×260mm
Package dimensions (L×W×H)	840mm×530mm×520mm	840mm×530mm×520mm	750mm×510mm×510mm	750mm×550mm×550mm	750mm×550mm×550mm
Net weight	28kg	28kg	21kg	21kg	21kg
Gross weight	43kg	43kg	33kg	34kg	34kg

## Manual Visual Polarimeter

### POL-DISC4II



- ◆ Measuring range:  $\pm 180^\circ$
- ◆ Main scale graduation:  $1^\circ$
- ◆ Vernier scale reading:  $0.05^\circ$
- ◆ Sample cell length: 100mm, 200mm

### Description

- Manual visual polarimeter is a classic optical instrument used for measuring the optical activity of substances, such as sugars, pharmaceuticals, and organic compounds. Operating through a combination of polarized light and precise manual adjustment, it requires the user to visually align optical components to determine the angle of rotation produced by a sample. Equipped with a vernier scale for high-resolution readings, this type of polarimeter emphasizes accuracy and user involvement, making it ideal for educational settings and fundamental research where hands-on experimentation is valued. While lacking automated features, it offers reliability, straightforward operation, and deep insight into the principles of optical rotation.

### Features

- Wide measuring range:  $\pm 180^\circ$
- Manual measurement with visual aiming.
- Lightweight and easy to use.









### Specification

Model	POL-DISC4II
Measuring scale	Optical Rotation
Measuring range	$\pm 180^\circ$
Main scale graduation	$1^\circ$
Vernier scale reading	$0.05^\circ$
Available wavelength	589nm
Light source	Sodium lamp
Sample cell length	Standard:
	100mm (regular) 200mm (regular)
Magnifying glass magnification	4×
Power supply	220V $\pm$ 22V, 50Hz $\pm$ 1Hz
Product dimensions (L×W×H)	435mm×135mm×320mm
Package dimensions (L×W×H)	580mm×230mm×420mm
Net weight	5kg
Gross weight	5.8kg


## Polarimeter Accessories

### Polarimeter Accessories

Name	Picture	Model	Inner Diameter	Tube Length	Sample Capacity	Applicable Models	Remarks
Bubbled Glass Test Tube		SGW-50p	φ9mm	50mm	6.5mL	POL-568 POL-537 POL-533 POL-532 POL-531 POL-2P POL-1P POL-2S POL-2B POL-3	
		SGW-100p	φ9mm	100mm	13mL	POL-568 POL-537 POL-533 POL-532 POL-531 POL-2P POL-1P POL-2S POL-2B POL-3 POL-DISC4II	The following models come standard with one(1) SGW-100p and one(1) SGW-200p: POL-568, POL-537, POL-533, POL-532, POL-531, POL-2P, POL-1P, POL-2S, POL-2B, POL-3, POL-DISC4II
		SGW-200p	φ9mm	200mm	21mL		
Funnel-Neck Glass Test Tube		SGW-100L	φ9mm	100mm	7.5mL	POL-568 POL-537 POL-533 POL-532 POL-531 POL-2P POL-1P POL-2S POL-2B POL-3	
		SGW-200L	φ9mm	200mm	16mL		
Micro Glass Test Tube		SGW-50w	φ5mm	50mm	0.8mL		
Jacketed Glass Test Tube		SGW-200g	φ9mm	200mm	17mL		
Thermostatic Tube (Stainless Steel)		SGW-100k	φ6mm	100mm	2.5mL	POL-568 POL-537 POL-533 POL-532 POL-2P	The following models come standard with one(1) SGW-100k: POL-568, POL-537, POL-533, POL-532, POL-2P

# Polarimeter Accessories

## Polarimeter Accessories

Name	Picture	Model	Inner Diameter	Tube Length	Sample Capacity	Applicable Models	Remarks
Thermostatic Tube (Stainless Steel)		SGW-200k	φ6mm	200mm	5mL	POL-568 POL-537 POL-533 POL-532	
Anti-corrosion Thermostatic Tube (Hastelloy alloy)		SGW-100KF2	φ6mm	100mm	2.5mL	POL-568 POL-537 POL-533 POL-532 POL-2P	
		SGW-200KF2	φ6mm	200mm	5mL	POL-568 POL-537 POL-533 POL-532	

## Polarimeter Accessories

Name	Picture	Model	Inner Diameter	Applicable Models
Standard Quartz Tube		SGW-101B	+5° -5° +10° -10° +17° -17° +20° -20° +30° -30° +34° -34°	POL-568 POL-537 POL-533 POL-532 POL-531 POL-2P POL-1P POL-2S POL-2B POL-3
		SGW-102B	+1° -1° +71.5° -71.5° +84° -84°	POL-568 POL-537 POL-533 POL-532 POL-531