

# The Autopol<sup>®</sup> VII

*For High Throughput  
Pharmaceutical Laboratories*



**NVLAP<sup>®</sup>**  
CALIBRATION

NVLAP LAB CODE: 200898-0  
Accreditation to ISO/IEC 17025:2005  
[www.rudolphresearch.com/resources/quality](http://www.rudolphresearch.com/resources/quality)



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**TECHNICAL BULLETIN 942**

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# High Accuracy Polarimeter with Industry Leading Automated Sample Loading

## The Industry Standard Polarimeter

The Autopol® VII combines a pharmaceutical level Polarimeter with fully automated sample loading capability, a perfect answer for high throughput labs that demand accuracy and reproducibility combined with versatile sample loading, cell cleaning, rinsing, and drying.

The Autopol® VII has the validation tools, features, and reputation to satisfy today's global pharmaceutical companies, including: instrument level 21CFR Part 11 compliance, NIST traceable validation and a global list of satisfied customers who praise the Autopol's® quality, accuracy and reproducibility.

## The Autopol® VII offers Automated NIST Traceable 3 point validation combined with fully Automatic TempTrol™ Temperature Control

The Autopol® VII has built-in NIST Traceable Quartz plates to automatically perform a 3 rotation validation on the Autopol VII. To validate the instrument simply press a button to begin the validation routine. Using the on-board quartz plate standards the instrument will perform and record the results of a full 3 point calibration at all wavelengths at the correct temperature.



Built-In quartz plates will perform a 3 point validation automatically.

## The Autopol® VII Uses Rudolph's Exclusive TempTrol™ Electronic Temperature Control System

The USP <781> requires optical rotation measurements at  $25^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$  (unless another temperature is specified). The European Pharmacopoeia requires optical rotation measurements made at  $20^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$  (unless another temperature is specified). Whatever your temperature control needs are, the Autopol VII exclusive TempTrol™ System (Patent No. 6,717,665) makes your measurement in a few minutes without a water bath or any type of water circulation.



TempTrol™ cell mates with the heating and cooling transfer surface inside the cell chamber using acid resistance materials: Hastelloy™ and Peek™.

TempTrol™ Hastelloy™ passive surface



5 independent round racks

## Integrated sample loading with the flexibility you need



### Automated filling, cleaning, and rinsing

The Autopol VII with integrated sample loading can be configured to automate a wide range of sample viscosities. Perfect for high throughput laboratories looking to increase productivity. By automating, sample loading user time is saved. The method ensures samples are loaded properly and the correct cleaning and rinsing sequence is performed. The Autopol® VII with integrated automated sample loading is ideal for busy pharmaceutical laboratories where sample handling is discouraged.

### Sample Viscosity:

- Samples up to 36,000 mPa-s (cP)
- Sample Volume Requirements:  
3.5ml typical, optional to 1.5ml

### Rack Sample Capacity:

- 50 - 16 x 100mm Test tubes. 70 - 13 x 100 mm, or optionally dozens of sample vial configurations and capacities.

### Cleaning Cycle:

- 1:45 minutes nominal – Time varies by application
- Full Measurement and Cleaning Cycle:  
2:30 minutes nominal - Time varies by application

### Optional Automation Features:

- Racks (Customized to your bottles)
- Built in Bar Code / Label Reader with Vial Spinner
- Handheld Bar Code / Label Reader
- Automated Empty Vial Recognition
- Extra Racks
- Sample Return Feature: Allows 95% of Sample to be Returned to Sample Vial
- Custom Programming

### Custom racks to match your vials





# Specifications

| Features                       | Autopol® VII                                                                                                      |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Measuring Mode:                | Optical Rotation, Specific Rotation, Concentration & User-defined Scales                                          |
| Measuring Scale:               | Degrees Arc, % Concentration                                                                                      |
| Measuring Range:               | ±89.9° Arc Optical Rotation, ±999.99° Arc Specific Rotation and 0-99.9% Concentration                             |
| Resolution:                    | 0.001° Arc Optical Rotation<br>0.001% Concentration<br>0.001° Specific Rotation                                   |
| Reproducibility:               | 0.002° Arc                                                                                                        |
| Standard Model Accuracy:       | 0.002° up to 1°, 0.2% up to 5°, 0.01° above 5°                                                                    |
| AP Model Accuracy:             | (546nm and 589nm): ±0.002° Arc over ±89.9° Arc. Accuracy for other wavelengths is the same as the standard model. |
| Prism:                         | Glan Thompson calcite quartz                                                                                      |
| Optical Wavelengths:           | 365nm, 405nm, 436nm, 546nm, 589nm, 633nm (other wavelengths available)                                            |
| Wavelength Selection:          | Automatic by push-button                                                                                          |
| TempTrol™ Range:               | Automatic Electronic Heating & Cooling 15°-35°C                                                                   |
| TempTrol™ Accuracy:            | ±0.2°C                                                                                                            |
| Temp. Probe Range:             | 10°-40°C                                                                                                          |
| Temp. Probe Accuracy:          | ±0.1°C                                                                                                            |
| Acid Resistance:               | Hastelloy™ measurement cell and Silco Steel™ sample chamber (optional)                                            |
| Measurement Time:              | 4°/sec. slew rate and 5 sec. nominal settling time                                                                |
| Light Source:                  | Tungsten-halogen 6V, 20W, avg. 2,000 hour life                                                                    |
| Sample Chamber:                | Accepts sample tubes up to 200mm                                                                                  |
| Data Storage/Internal Memory:  | Multimedia Card and/or Secure Digital Card                                                                        |
| Communication Interface:       | Two RS232 serial ports, one parallel printer port and one auxiliary port                                          |
| Calibration:                   | Automatic calibration by push-button                                                                              |
| Display:                       | 7.5cm x 10cm graphics LCD, 320 x 240 dots cold fluorescent back lit                                               |
| User Interface:                | Touchscreen                                                                                                       |
| Automatic Sensitivity Control: | Measures samples with transmittance as low as 0.01% (up to O.D. 4.0)                                              |
| Input Power:                   | 100-240VAC, 50/60 Hz                                                                                              |
| Operating Dimensions:          | 35"W x 10.5"H x 17"D 890mm W x 267mm H x 432mm D                                                                  |
| Shipping Dimensions:           | 43"W x 26"H x 23"D 1,025mm W x 625mm H x 625mm D                                                                  |
| Operating Weight:              | 85 lbs. (39kg)                                                                                                    |
| Shipping Weight:               | 115 lbs. (52kg)                                                                                                   |