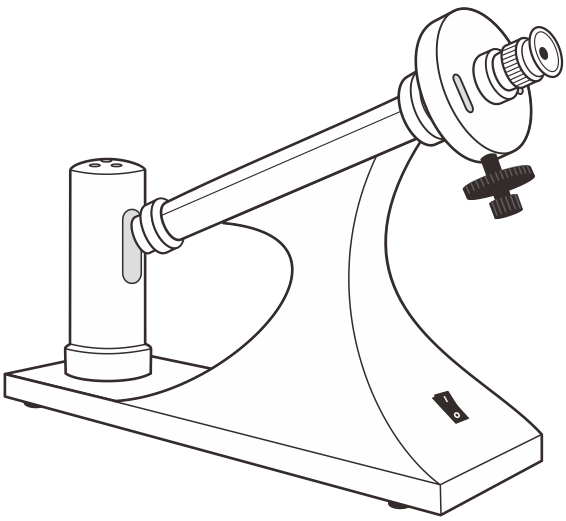
BANTE instruments

POL-100 Manual Polarimeter

USER MANUAL



Bante Instruments Inc.

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Introduction

Thank you for selecting the POL-100 manual polarimeter. This manual provides a step-by-step guide to help you operate this instrument, please carefully read the following instructions before use.

Environmental Conditions

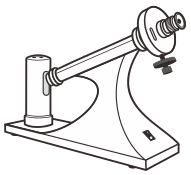
Before unpacking, ensure that current environmental conditions meet the following requirements.

- Relative humidity is less than 80%
- Ambient temperature between 0°C (32°F) and 40°C (104°F)
- No ambient light interference
- No corrosive gas exists

Packing List

The following list describes all components of the polarimeter. If any items are missing or damaged, contact the supplier immediately.

1

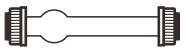


- Polarimeter

2

- Sealing rings

3



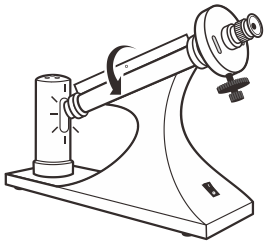
4

- Test tubes 100 and 200 mm

Prior to Use

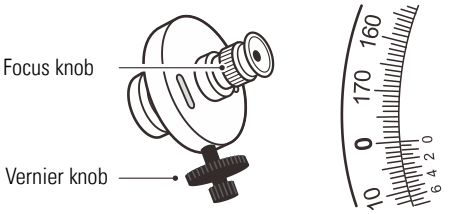
Before connecting the power supply, make sure that the local mains power voltage matches the polarimeter requirements.

1.1 Close the light shield lid. Press the power switch to the **ON** position, the sodium lamp will gradually light up.



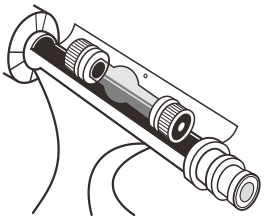
1.2 Wait for the light source to stabilize, rotate the focus knob until the visual field becomes legible.

1.3 Rotate the vernier knob makes the vernier scale aim at zero position.



Recording the Reference Point

2.1 Place an empty test tube into the sample chamber.



2.2 Rotate vernier knob until the visual field appears the uniform brightness. Record the measured value.

Filling the Sample Solution

3.1 Take out the test tube from sample chamber. Unscrew the metal cap, remove the sealing ring and glass disc.

3.2 Rinse the test tube thoroughly with distilled water.

3.3 Fill the sample solution into the test tube, screw on the cap, wipe away the water drops on glass disc.

3.4 If necessary, collect all air bubbles into the bubble trap.

Measurement

1. Open the light shield lid and place the test tube into the sample chamber. Note, the bubble trap is upward.
2. Close the lid, clockwise or anticlockwise rotate vernier knob until the visual field appears the uniform brightness. Record the measured value.
3. Repeat the above measurements twice and calculate the average of measured values.

Calculation

If the measured values are positive angle (dextrorotatory substance), minus the value of the reference point shall be the actual measured value of the sample.
If the measured values are negative angle (levorotatory substance), minus the 180° shall be the actual value of the sample.

Determination of the Concentration

If you need to determine the purity, concentration or proportion of the sample, please using the formula below.

$$\alpha = [\alpha] LC$$

Where:
α = Optical rotation
$[\alpha]$ = Specific rotation
L = Tube length (dm)
C = Concentration (g/L)

Appendix

Optional Accessories

Order Code	Description
POLTUBE-100	Test tube, 100 (L) × 30 (Ø) mm
POLTUBE-200	Test tube, 200 (L) × 30 (Ø) mm

Specifications

Range	±180°
Scale Value	1°
Vernier	0.05°
Magnifier	3X
Light Source	LED
Wavelength	589 nm
Tube Length	50, 100, 200 mm
Operating Temperature	0 to 40°C (32 to 104°F)
Storage Temperature	0 to 60°C (32 to 140°F)
Relative Humidity	< 80% (non-condensing)
Power	AC 220V/50Hz
Dimensions	500 (L) × 135 (W) × 330 (H) mm (19.6 × 5.3 × 13 in.)
Weight	5 kg (11 lb)

Disposal

This product is required to comply with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC and may not be disposed of in domestic waste. Please dispose of product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

Warranty

The warranty period for manual polarimeter is one year from the date of shipment. Above warranty does not cover the sodium lamp. Out of warranty products will be repaired on a charged basis.
The warranty on your polarimeter shall not apply to defects resulting from:

- Improper or inadequate maintenance by customer
- Unauthorized modification or misuse
- Operation outside of the environment specifications of the products

For more information, please contact the supplier.

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