



POL-200 Semiautomatic Polarimeter

Instruction Manual

Introduction

Thank you for selecting the POL-200 semiautomatic polarimeter. This user manual provides a step-by-step guide to help you operate the instrument, please carefully read the following instructions before use.

UNPACKING THE INSTRUMENT:

Before unpacking, ensure that the current work environment meet following conditions.

- Ambient temperature is greater than 0°C and less than 50°C.
- No potential electromagnetic and ambient light interference.

The following list describes the standard accessories of the polarimeter. After the unpacking, please check all accessories are complete. If any are damaged or missing, please contact nearest distributor.

- Test tube 100 and 200 mm
- Sealing rings
- Power cable

Power On/Off

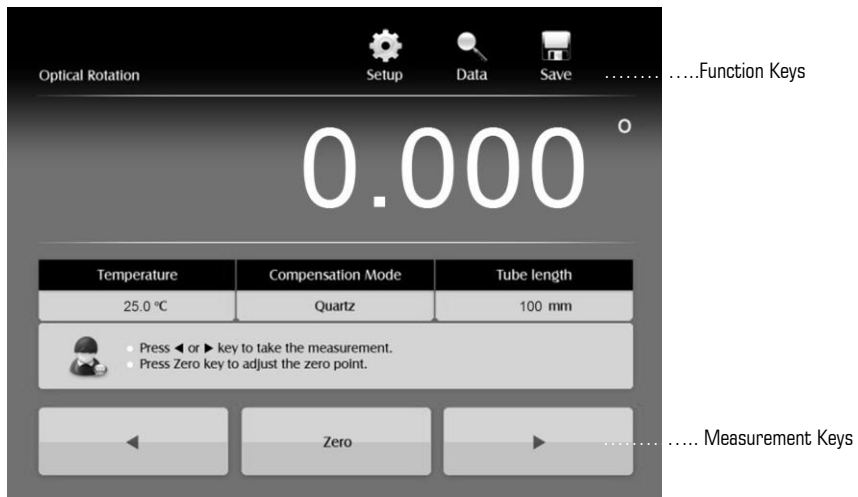
- Plug in the power supply and press ON/OFF key to turn on the polarimeter, the display shows "Wait for light source to stabilize". After a few seconds, the default measurement interface shows on the screen.
- Press ON/OFF key again, the instrument will automatically turn off.

WARNING:

DO NOT pull out the power plug from the power source if the instrument does not completely turned off, that may cause the zero-point offset.

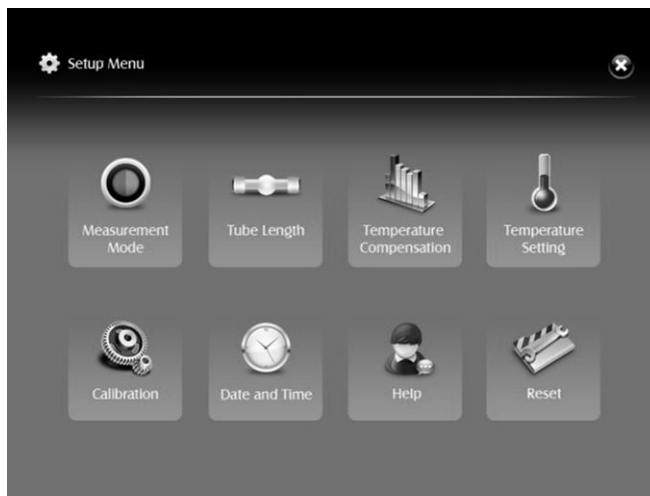
Display

POL-200 semiautomatic polarimeter is equipped with the 5.6 inch touch screen that used to show measured values, function keys and help message. In the measurement and setting modes, the instrument will show different user interfaces.



Setup Menu

POL-200 semiautomatic polarimeter contains an integrated setup menu that allows you to customize each option to meet measurement requirements. Selectable parameters contain the following options.



INDEX:

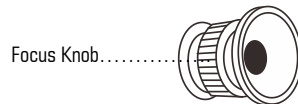
PARAMETER	OPTION	DESCRIPTION
Measurement Mode	<ul style="list-style-type: none"> • Optical Rotation • Specific Rotation • Concentration • International Sugar Scale 	Select your desired measurement mode.
Tube length	<ul style="list-style-type: none"> • 100mm • 200mm • Custom 	During the custom mode, the instrument acceptable setting ranges from 0.0 to 220.0mm.
Temperature Compensation	<ul style="list-style-type: none"> • Enable (Default) • Disable 	Temperature compensation allows the instrument to run at ambient temperature but produces readings as if the system was running at 20°C. During the Specific Rotation, Concentration and Sugar Degrees modes, the instrument will automatically enable the this feature.
Concentration	---	Sets the concentration of sample for measurement of specific rotation
Specific Rotation	---	Sets the specific rotation of sample for measurement of concentration
Temperature Setting	Range: 0.0 to 100.0°C	Calibrate the current temperature value
Calibration	1 to 3 points	Using the standard tubes to calibrate the polarimeter
Date and Time	---	Sets the date and time for data log

SETTING THE PARAMETER:

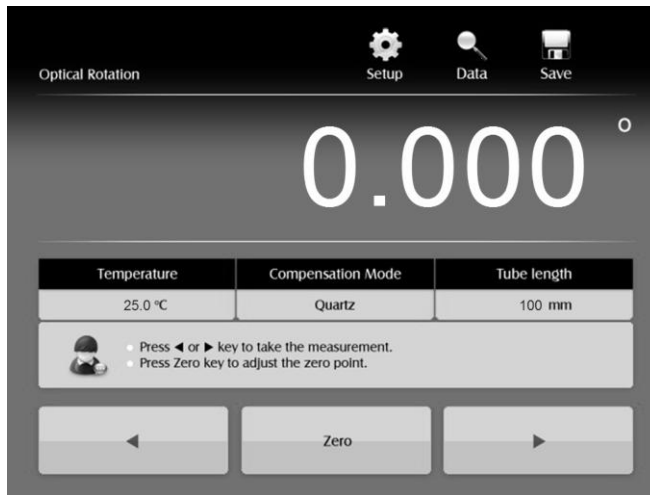
1. Click the Setup icon to enter the setup menu, select a parameter you want to set.
2. Press ◀ or ▶ key to select an option or press the numeric keys to input the setting value.
3. Press ENTER key to confirm. Setting is completed.

Prior to Use

Rotate the focus knob on front panel until visual field became legible.

**Zero Correction**

1. Take a clean empty tube and place in the sample chamber.
2. If the visual field appears the differences in apparent brightness, press ZERO key to enter the zero-point correction mode.



3. Press ◀ or ▶ key to adjust the instrument until visual field appear the uniform brightness.



4. Press ENTER key to confirm, the instrument returns to measurement mode. Zero correction is completed.

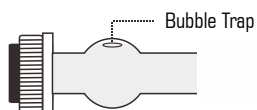
Measurement

POL-200 semiautomatic polarimeter can be used for measuring the four parameters, including the optical rotation, specific rotation, concentration and International Sugar Scale. Click the Setup icon to enter the setup menu, then click the "Measurement Mode" icon to select desired measurement mode. When the setting is completed, the instrument will automatically return to selected measurement mode.

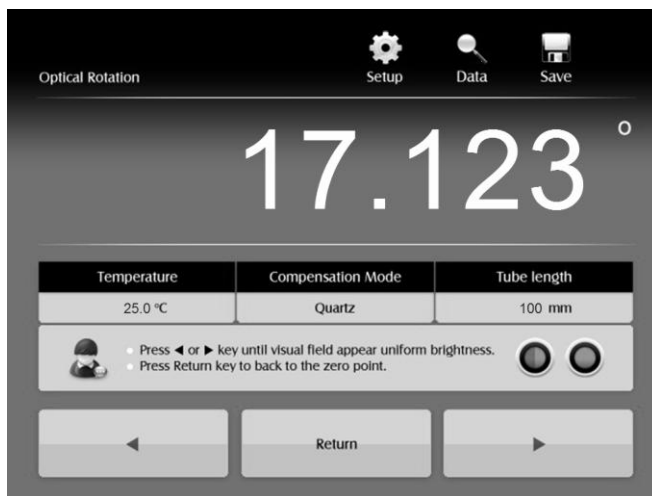
1. Take out the tube from the sample chamber. Unscrew the cap, remove the sealing ring and glass disc.



2. Pour sample solution into the tube, screw on the tube cap. Wipe away the drops of water on glass disc.
3. If necessary collect all air bubbles into the bubble trap.



4. Place tube into the sample chamber. The bubble trap is upward.
5. Press ◀ or ▶ key until visual field appears uniform brightness. Record the measured value.



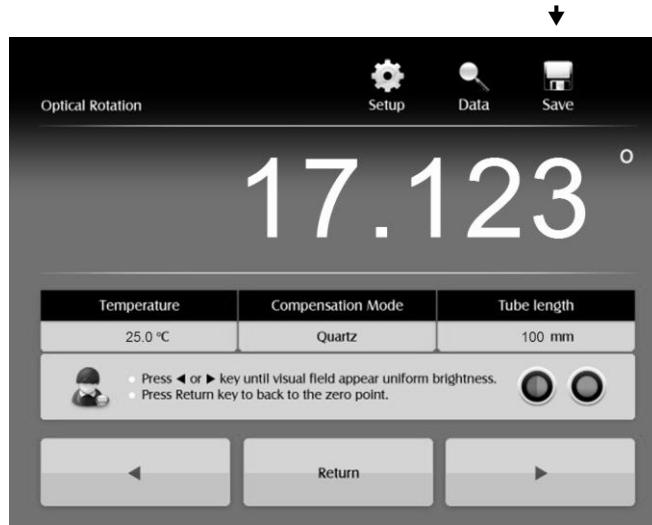
6. Press Return key, the instrument returns to the zero-point automatically. Measurement is completed.
- ① Press and hold ◀ or ▶ key for 8 seconds, the instrument will enter auto-run mode. Press ◀ or ▶ key again, the instrument stops running.

Storing and Recalling Data from Memory

POL-200 semiautomatic polarimeter allows up to 100 data sets to be stored and recalled.

MEMORY INPUT:

1.1 During the measurement, click the Save icon, the screen shows a dialog box and wait for entering the sample name.

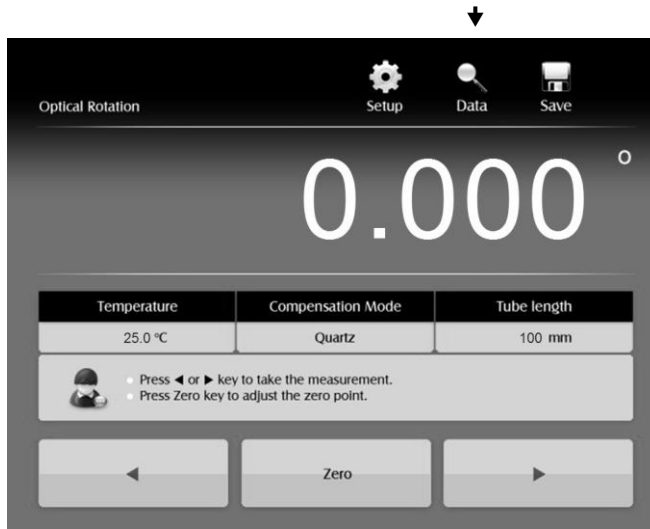


1.2 The default sample name is SAMPLE. If you need to modify this name, press ◀ key, then press the letter keys to enter new name. Press ENTER key to confirm, the measured value will be saved into the memory.

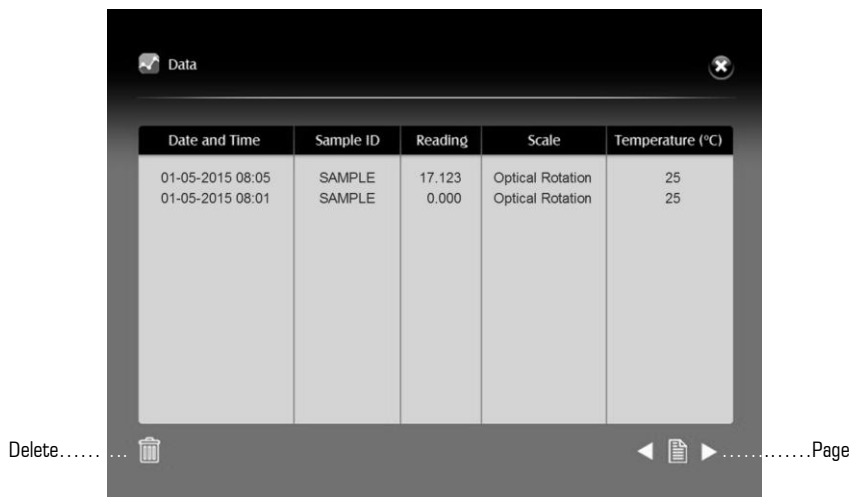


MEMORY RECALL:

2.1 Click the Data icon during the measurement mode, the screen shows the stored measured values.



2.2 Press Page key, the screen will toggle to next page.



2.3 If you need to delete stored data, press Delete key, all of the data will be deleted.

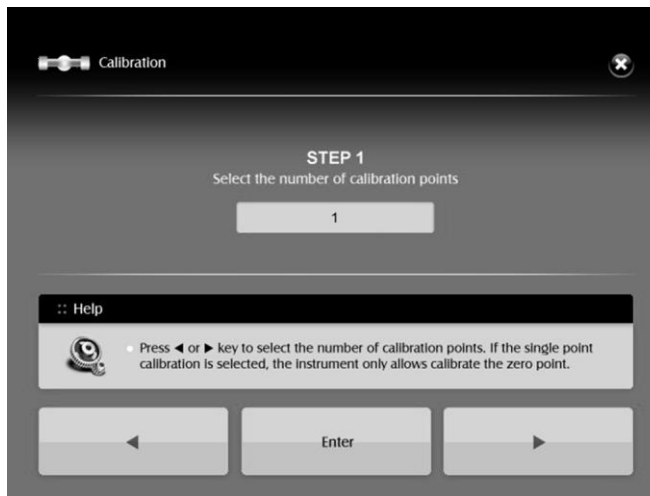
WARNING:

Once the data is deleted, cannot be recovered.

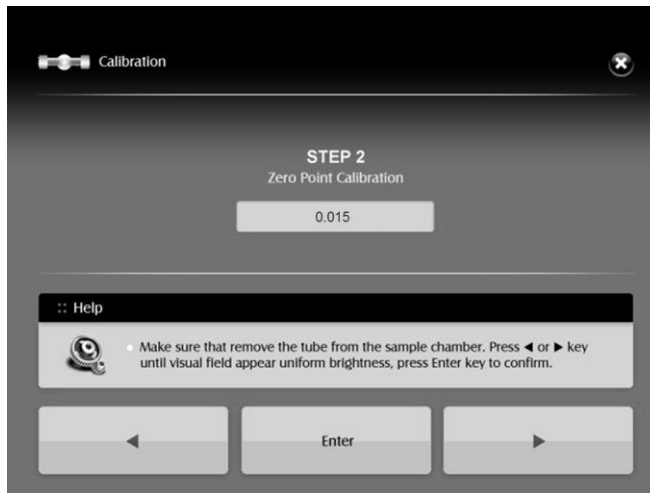
Calibration

POL-200 semiautomatic polarimeter allows 1 to 3 points calibration, but calibration is not required unless the measured value appeared serious deviation.

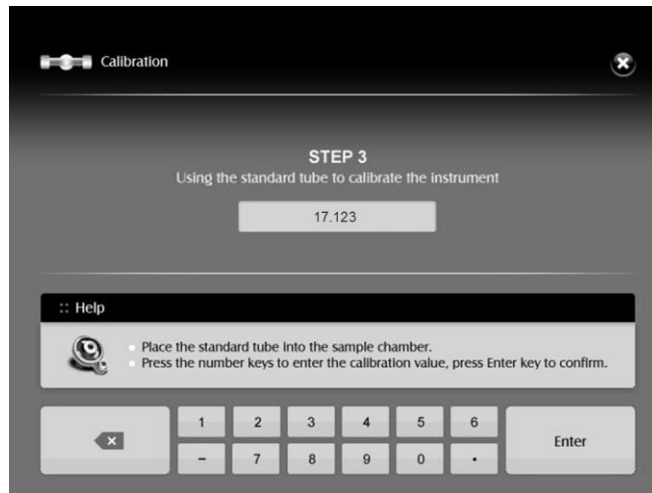
1. Click the Setup icon during the measurement mode, the screen shows the setup menu.
2. Click the Calibration icon, the instrument enters the calibration mode.
3. Follow the displayed guides to select the number of calibration points, press ENTER key confirm.



4. Make sure that remove the tube from the sample chamber.
5. Press ◀ or ▶ key until visual field appears uniform brightness, press ENTER key to confirm. Zero-point calibration is completed.



- Place the standard tube into the sample chamber, press number keys to enter calibration value, press ENTER key to confirm.

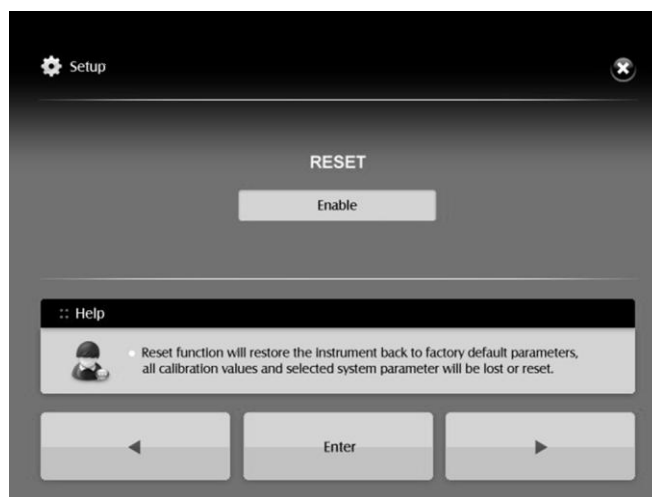


- Press ◀ or ▶ key until visual field appear uniform brightness, press ENTER key to confirm. The instrument returns to zero-point automatically.
- If you selected 3 points calibration, please repeat above steps until screen shows "Calibration is completed". The instrument will return to measurement mode automatically. Calibration is completed.

Restore Factory Settings

If the instrument goes wrong during the use, you are able to follow the steps below to restore factory settings. NOTE: Reset function will restore the polarimeter back to factory default parameters, all calibration values and selected parameter will be lost or reset.

- Click the Setup icon to enter the setup menu.
- Click on the Reset icon, and press ◀ or ▶ key to select the "Enable" option.
- Press ENTER key, then press YES key. Reset is completed.



Specifications

Model	POL-200
Measurement Modes	Optical Rotation, Specific Rotation, Concentration, International Sugar Scale
Measuring Range	$\pm 90^\circ$, $\pm 130^\circ Z$
Accuracy	$\pm 0.02^\circ$, $\pm 0.05^\circ Z$
Resolution	0.005°
Wavelength	589nm
Light Source	LED, Interference filter
Test Tube	50/100/200mm
Temperature Range	0~100°C
Temperature Accuracy	$\pm 0.5^\circ C$
Memory	Stores up to 100 data sets
Output	USB Communication Interface
Language	English
Display	5.6 inch TFT touch screen
Power Requirements	AC 220V/50Hz
Dimensions	550(L)×300(W)×220(H)mm
Weight	7.5g

Hazardous Substance Statement

Bante Instruments is committed to the reduction and eventual elimination of all hazardous substances in both the manufacturing process and finished products we supply. We have an active manufacturing and procurement program to minimize and eliminate the use of harmful heavy metals such as cadmium, lead, mercury and the like. New technologies and design parameters are also promoting these efforts and we expect to have little or no such materials in our product in the coming years. We welcome our customer suggestions on how to speed up these efforts.



Warranty

The warranty period for polarimeter is two years from the date of shipment. Above warranty does not cover light source. 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 nearest authorized distributor.



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