



C/P/010003 - Model D Optical Polarimeter

The Model D Polarimeter is a general-purpose instrument for measuring the optical rotation of optically active materials such as sugar solutions. Operation requires a sodium lamp as light source. The two-part field is viewed through the lower telescope and a balance is achieved by the rotation of the analyser circle (viewed through the upper telescope), until both halves of the field are of equal intensity.

The introduction of an optically active sample disturbs the balance, which is restored by rotation of the circle through an angle corresponding to the rotation caused by the sample. Measurement can be made using two available scales: 0-360° angular scale and the International Sugar Scale (ISS) -30° to +130°Z. The instrument can accept tubes up to 220mm in length and is supplied with one standard 200mm tube.

Main Features

- Popular, high quality, low cost optical Polarimeter capable of measuring the optical rotation of a wide range of optically active samples
- Used extensively in schools and colleges as educational tool
- Instrument offers two scales: angular (0-360°A) and sugar (-30 -130 °Z)
- The instrument accepts sample tubes of lengths up to 220mm
- Requires a sodium light source (can be free standing or instrument-mounted)
- Light boost for dark/coloured samples
- Accessories available: sample tubes, temperature control equipment, calibration standards

Technical Specification

Part No.	C/P/010003	
Scale ranges	0-360 ° angular	-30 to 130 °Z (ISS)
Resolution	Drum divided to 0.05 °A	Drum divided to 0.1 °Z
	Estimation to 0.02 °A	Estimation to 0.05 °Z
Dimensions (mm)	710 x 470 x 340	
Mass (packed), kg	9.5 (12.5)	

Sodium Lamp Outfits

Part No.	Description
C/P/040100	Sodium Lamp Outfit complete with power unit. Lamp mounted on transformer case. 190/250V 50/60Hz
C/P/040101	Sodium Lamp Outfit complete with power unit. Lamp mounted on transformer case. 100/130V 50/60Hz
C/P/040102	Sodium Lamp for fitting to instrument base. 190/250V 50/60Hz
C/P/040103	Sodium Lamp for fitting to instrument base. 100/130V 50/60Hz
Overall dimensions packed (mm)	700 x 450 x 270
Net weight (kg)	10.0

Part No.	Description
C/P/040104	Spare sodium lamp bulb



ADP220

The ADP220 is a low cost, general purpose, fully automatic polarimeter, suitable for measuring the rotation of optically active samples across a wide range of laboratory applications. The illuminated LCD digital display shows reading and instrument status. Angular and sugar (ISS) scales are standard; other 'user-defined' scales can be programmed. Temperature compensated modes include: sugar, quartz and 'user-defined'. The default range for the angular degree ($^{\circ}$ A) scale is -85 to $+85^{\circ}$. Seven other ranges are available by selection between 0 and 360° . Accuracy is typically $\pm 0.02^{\circ}$ A and better than $\pm 0.05^{\circ}$ Z. The ADP220 offers high and low resolution. Fast or slow reading response times can be chosen depending on the sample being measured and the accuracy required.

The instrument reads automatically and has touch button control for print, scale change and zero re-setting. Using the RS232 interface enables printing and PC control/data logging. Time, date, batch and operator identifiers can be recorded. There are two temperature sensors; one located in the sample chamber, the other externally for immersion in the sample. Sample optical density is displayed to indicate adequate light transmission.

Technical Specification

Part No.	C/P/010001
Scale ranges	-85 to $+85^{\circ}$ A* -255 to $+255^{\circ}$ ISS
Resolution	0.01° A 0.01° Z
Accuracy	$\pm 0.02^{\circ}$ A $\pm 0.05^{\circ}$ Z
Light source	LED (589 nm)
Interfaces	Serial RS232, parallel, temperature probe
Power supply	External 90-250 V ~ 50-60 Hz
Dimensions (packed), mm	550 x 280 x 150 (650 x 410 x 400)
Mass (packed), kg	9.0 (14.5)

* Other ranges selectable (-355 to $+355^{\circ}$ A)

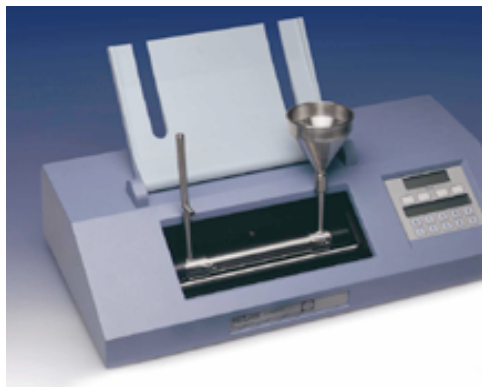
C/P/010001 - ADP220 Automatic Digital Polarimeter

Main Features

- General purpose fully automatic digital Polarimeter
- Internal LED light source
- Illuminated LCD display shows reading and instrument status
- Scales: angular degrees (-355 to $+355^{\circ}$ A, range selectable, default -85° to $+85^{\circ}$); International Sugar Scale (-225 to $+225^{\circ}$ Z); and user-defined scales.
- Optional automatic temperature compensation: sugar, quartz, user-defined or none.
- Accuracy (typical): $\pm 0.02^{\circ}$ A; $\pm 0.05^{\circ}$ Z
- Sample optical density displayed
- Fast (low accuracy) or slow (high accuracy) read modes. Reading stability displayed.
- RS232 interface for print or PC operation and data logging
- Results can be sent to a printer via the RS232 port
- Date, time, batch and operator number recording
- Instrument calibration facility (e.g. using quartz control plate)
- Two temperature sensors: one located in the sample chamber one to dip into sample
- Multiplication factor to compensate for path length/concentration, e.g. to display specific rotation

Accessories

Part No.	Description
C/P/010100	Quartz Control Plate - Quartz control plate calibrated at 97° Z (33° Angular) approx. Supplied with B+S certificate
C/P/010101	Quartz Control Plate - Quartz control plate calibrated at 15° Z (5° Angular) approx. Supplied with B+S certificate
C/P/010104	Polarimeter Tubes - Standard glass tubes from 50 - 200mm (x8 mm id)
C/P/010105	Water jacketed tubes
C/P/010106	Flow-through and funnel tubes (water-jacketed) Customer-specified tubes



ADS 220 Automatic Digital Saccharimeter

The ADS 220 is a saccharimeter based around the ADP 220 design but with features that suit the particular requirements of the sugar industry. It has enhanced reading accuracy on the ISS (Z) scale.

The ADS 220 is fully automatic saccharimeter suitable for measuring the optical rotation and purity of sugar solutions. Reading occurs automatically when a sample is placed in the chamber. Stabilisation is rapid. Touch-of-a-button gives mode change, print and zero setting. Calibration (verification) can be performed with a standard such as a quartz plate. Automatic Temperature Compensation can be selected to be sugar or quartz.

The sample chamber will accept tubes of length up to 220 mm. A fixed temperature probe monitors the sample chamber temperature and a second probe is provided for direct insertion into samples. Water-jacketed tubes can be used for precise temperature control and an optional slotted chamber lid can be fitted to accept flow-through tubes.

The ADS 220 software includes a facility to calculate sugar purity, either when operated manually or when coupled to an RFM300 series refractometer via the RS232. The Brix reading from the refractometer along with the rotation and calculated sugar purity are displayed on the ADS 220.

Technical Specification

Part No.	C/P/010002
Scale*	-225° to +225°Z (ISS)
Resolution	0.01°Z
Accuracy	0.03°Z
Light source	LED with interference filter (589 nm)
Beam diameter	Approximately 4 mm through length of chamber
Temperature compensation	Sugar or Quartz or none - selectable
Interfaces	Serial RS232, parallel, temperature probe
Power supply	External 90-250 V ~ 50-60 Hz
Dimensions (packed), mm	550 x 280 x 150 (650 x 410 x 400)
Mass (packed), kg	9.0 (14.5)

*The ADS220 also has a standard angular scale (-85 to +85 °A)

C/P/010002 ADS 220 Automatic Digital Saccharimeter

Accessories

Part No.	Description
C/P/010100	Quartz Control Plate - Quartz control plate calibrated at 97°Z (33° Angular) approx. Supplied with B+S certificate
C/P/010101	Quartz Control Plate - Quartz control plate calibrated at 15°Z (5° Angular) approx. Supplied with B+S certificate
C/P/010104	Polarimeter Tubes - Standard glass tubes from 50 - 200mm (x8 mm id)
C/P/010105	Water jacketed tubes
C/P/010106	Flow-through and funnel tubes (water-jacketed) Customer-specified tubes.