### Specifications

#### Scales
- Angle of Rotation, International Sugar Scale (without temperature compensation), International Sugar Scale (with Automatic Temperature Compensation)

#### Measurement readings
- Angle of Rotation: 69.999° to 89.999°
  - International Sugar Scale: ±0.0005° to ±0.0009°

#### Resolution
- Angle of Rotation: 0.001° (Default 0.01°)
- International Sugar Scale: 0.01° (Default 0.01°)

#### Measurement accuracy
- Angle of Rotation:
  - Displayed value ±0.01° to ±0.05°
  - Relative precision ±0.2%
  - Angular range: –89.999° to –69.999°, 0.01° to 0.05° to 89.999°
- International Sugar Scale:
  - Displayed value ±0.02° to ±0.101°
  - Relative precision ±0.2%
  - Angular range: –101.01° to +101.01°

- (Checked by reading a standard Quartz Plate)

#### Length of observation tube
- Up to 200mm

#### Options

**Digital printer DP-63**
- Cat.No.3118

**Digital Printer DP-AD**
- Cat.No.3123

#### Quartz control plates
- RE-72043:
  - Quartz Control Plate 8°(20°)
  - Quartz Control Plate 17°(50°)
  - Quartz Control Plate 34°(100°)

**Circulating constant temperature**
- Bath 60-C4
- Cat.No.1522

#### Temperature
- 10.0 to 30.0°C
- Temperature accuracy: ±0.5°C
- Temperature resolution: 0.5°C

#### History function
- History function stores the 30 previous measurement values for reference, printing or exporting to a computer.

#### Display panel
- Backlit Color LCD

#### Graphic display
- Graphic display indicating the conformity of measurement values for measurements with limit settings.

#### Additional Features
- (1) Average Measurement Value
- (2) Password Function

#### Output
- (1) Digital Printer DP-63 or DP-AD (optional).
- (2) RS-232C input/output ports for connecting to a computer system.

#### Light source
- Halogen lamp

#### Accessories
- Observation tubes (100mm [5mℓ], 200mm [10mℓ])

#### Power supply
- AC100V to 240V, 50/60Hz
- 65VA

#### Dimensions and weight
- 485×285×175cm, 14.4kg (main unit only)

### EXPLANATION OF ICONS

Icons, for functions, specifications and scales have been added to this catalog.

#### ATAGO products comply with HACCP, GMP, and GLP system standards.

#### Polarimeter
- Automatic Temperature Compensation Function for International Sugar Scale
- Finally, a multifunctional fully automatic polarimeter at a reasonable price!

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**Automatic Polarimeter AP-300**
- Cat.No.5291

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**Quartz Control Plates**
- Cat.No.5291

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**Digital Printer DP-63**
- Cat.No.3118

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**Digital Printer DP-AD**
- Cat.No.3123

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All ATAGO polarimeters are designed and manufactured in Japan.

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**Options**

- Angle of Rotation
- International Sugar Scale (without temperature compensation)
- International Sugar Scale (with Automatic Temperature Compensation)
- Specific Optical Rotation
- Concentration
- Purity
The AP-300 offers ease of use with a very competitive price.

**Application**
- Measures the specific optical rotation of medical agents
- Measures the concentration of optically active substances found in fragrance materials or chemical compositions
- Measures the international sugar scale and the purity of sugar
- Identifies the attributes of inverted sugar, etc.
- Measures the specific optical rotation or the concentration of optically active substances

**Features**
- New: With high resolution: Angle of rotation 0.001°, International Sugar Scale 0.001°Z
- Easy To Use: Simply place an observation tube in the sample chamber of the AP-300 and press START key.
- Automatic Temperature Compensation Function for International Sugar Scale with a range between 18°C and 30°C
- Conforms with ICUMSA standards
- Built in memory stores the 30 most recent measurement readings
- Out-of-range measurements are indicated instantly by graphic display
- The AP-300 offers ease of use with a very competitive price
- Compact and space saving
- Average Measurement Value is Displayed!
- Password Function as necessary for ISO Standard!

**Example of angle of rotation display**

**Explanation of measurements display**
- **Angle of rotation**
  The angle of rotation is the basic numeric value measured by polarimetry, and changes depending on the concentration of the solution, the length of the observation tube, temperature, and/or the measurement wavelength. It is symbolized by "α" and indicated in °.

- **International Sugar Scale**
  The International Sugar Scale is indicated in °Z.
  The measurement value of 2g of sucrose in 180ml of sucrose solution in a 200mm observation tube is 198°. This measurement value is commonly used in the sugar manufacturing industry, and is usually temperature-compensated to the reference temperature of 20°C (68°F). The AP-300 can display the measurement value with or without temperature compensation (Automatic Temperature Compensation, "ATC").

- **Specific Rotation**
  The Specific Rotation is a numeric value unique to each substance. By definition, the specific rotation value is equivalent to the angle of rotation obtained by measuring a solution of 1°/100 concentration to a 100mm observation tube (although such a measurement is actually not practical). Specific rotation is symbolized by "[α]" and indicated in °.

- **Concentration**
  The Concentration is the density of a liquid solution made by dissolving an optically active substance in water or alcohol. It is indicated in °/100cc.

- **Purity**
  The Purity is the proportion of sucrose compared to the soluble solid content in a sample. It is indicated in °. To measure the purity, input the Brix value of the sample (which can be obtained by using an ATAGO refractometer) into the AP-300 before taking a measurement.

**Special Packages**
ATAGO has prepared 4 different AP-300 packages.

**Recommended for sugar industry**

**Type A**
- **Temperature Control**
  - Cat.No.5297
  - AP-300
  - Unjacketed flow tube with funnel (200mm-approximate volume 15ml)
  * Circulating Constant Temperature Bath 60-C4 (Cat.No.1922) sold separately.

**Type B**
- **No Temperature Control**
  - Cat.No.5297
  - AP-300
  - Unjacketed flow tube with funnel (200mm-approximate volume 15ml)
  - Printer paper for DP-AD
  - Digital printer DP-AD
  - Ribbon cassette for DP-AD
  - Quartz Control Plate (8°, 17°, or 34°)

**Recommended for pharmaceutical industry**

**Type C**
- **Temperature Control**
  - Cat.No.5294
  - AP-300
  - Jacketed flow tube 200mm
  - Diamond inner lid for 200mm tube

**Type D**
- **No Temperature Control**
  - Cat.No.5295
  - AP-300
  - Quartz Control Plate (8°, 17°, or 34°)

Options other than above mentioned 4 types are available. Contact your nearest ATAGO representative for details.

**Observation tubes**
- RE-72055 : Observation tube 50mm long OT-50(A)/2.5ml
- RE-72054 : Observation tube 100mm OT-100(A)/5ml
- RE-72055 : Observation tube 200mm long OT-200(A)/10ml
- RE-72056 : Observation tube 50mm long OT-50(A)/2.5ml
- RE-72053 : Observation tube 100mm long OT-100(A)/5ml
- RE-72054 : Observation tube 200mm OT-200(A)/10ml
- RE-72055 : Observation tube 200mm long OT-200(A)/10ml
- RE-72056 : Observation tube 50mm long OT-50(A)/2.5ml
- RE-72055 : Observation tube 100mm OT-100(A)/5ml
- RE-72054 : Observation tube 200mm OT-200(A)/10ml
- RE-72055 : Observation tube 200mm long OT-200(A)/10ml
- RE-72055 : Observation tube 100mm OT-100(A)/5ml
- RE-72054 : Observation tube 200mm OT-200(A)/10ml
- RE-72055 : Observation tube 200mm long OT-200(A)/10ml
- RE-72056 : Observation tube 50mm long OT-50(A)/2.5ml
- RE-72055 : Observation tube 100mm OT-100(A)/5ml
- RE-72054 : Observation tube 200mm OT-200(A)/10ml
- RE-72055 : Observation tube 200mm long OT-200(A)/10ml

* To use the flow tubes, the sample chamber RE-76015 and an inner lid matching the size of the tube will be necessary to be purchased.

**Recommended for sugar industry**

**Type A**
- **Temperature Control**
  - Cat.No.5297
  - AP-300
  - Unjacketed flow tube with funnel (200mm-approximate volume 15ml)
  - Printer paper for DP-AD
  - Digital printer DP-AD
  - Ribbon cassette for DP-AD
  - Quartz Control Plate (8°, 17°, or 34°)

**Type B**
- **No Temperature Control**
  - Cat.No.5297
  - AP-300
  - Unjacketed flow tube with funnel (200mm-approximate volume 15ml)
  - Printer paper for DP-AD
  - Digital printer DP-AD
  - Ribbon cassette for DP-AD
  - Quartz Control Plate (8°, 17°, or 34°)

Options other than above mentioned 4 types are available. Contact your nearest ATAGO representative for details.