

# PAT-1P

## Profile Analysis Tensiometer

### Compact interface characterization

Compact optical tensiometer for surface and interfacial characterization using pendant-drop, buoyant-bubble and sessile-drop analysis. The PAT-1P supports time-resolved tension measurements, wetting analysis and optional dilational measurements.



### KEY PERFORMANCE

|                                        |                                   |                                                   |                                                     |
|----------------------------------------|-----------------------------------|---------------------------------------------------|-----------------------------------------------------|
| <b>1–1000</b><br>MN/M<br>Tension range | <b>±0.1</b><br>MN/M<br>Resolution | <b>1°–179°</b><br>CONTACT ANGLE<br>±0.1° accuracy | <b>0.1 s</b><br>TIME RESOLUTION<br>Dynamic analysis |
|----------------------------------------|-----------------------------------|---------------------------------------------------|-----------------------------------------------------|

### Measurement Performance

|                                |                 |
|--------------------------------|-----------------|
| Surface / interfacial tension  | 1 – 1000 mN/m   |
| Tension resolution             | ± 0.1 mN/m      |
| Contact angle                  | 1° – 179°       |
| Contact angle accuracy         | ± 0.1°          |
| Measurement duration           | Seconds to days |
| Optional oscillation frequency | 0.001 – 0.2 Hz  |

### Experimental Capabilities

|                       |                                 |
|-----------------------|---------------------------------|
| Pendant drop          | Surface & interfacial tension   |
| Buoyant bubble        | Surface & interfacial tension   |
| Sessile drop          | Contact angle                   |
| Area / volume control | Optional automatic control      |
| Dilational rheology   | Optional elasticity & viscosity |
| Temperature range     | 0 – 80 °C*                      |

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## Technical Specifications

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### Imaging & Acquisition

|                        |                            |
|------------------------|----------------------------|
| Camera                 | CMOS camera                |
| Maximum resolution     | 1280 × 1024 px             |
| Standard acquisition   | 25 images/s at 1280 × 1024 |
| High-speed acquisition | 100 images/s at 640 × 480  |
| Interface              | USB 2.0                    |
| Optics                 | Fixed or zoom objectives   |

### Instrument

|                        |                    |
|------------------------|--------------------|
| Dimensions (L × W × H) | 500 × 220 × 120 mm |
| Weight                 | 7 kg               |
| Cell volume            | Up to 25 ml        |
| Minimum liquid amount  | 100 µl             |
| Power supply           | Via USB            |

### Modules & Configuration Options

The compact PAT-1P platform can be extended with dedicated dosing configurations, temperature-controlled cells and specialized capillary systems for advanced experimental requirements.

Automatic Dosing

Coaxial Double Capillary

Piezo Control Unit

Temperature-Controlled Cell

Liquid Exchange Cell

Contact Angle Configuration

#### TECHNICAL NOTE

\*Temperature control, dilational measurements, automatic drop volume/area control and drop/bubble oscillations depend on the selected instrument configuration and optional accessories. Specifications may be subject to technical modification.

#### PRODUCT

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