METER
ENVIRONMENT

PARIO / PARIO PLUS

AUTOMATED PARTICLE SIZE ANALYSIS



- **Get complete particle size distribution curves**
- **Calculation of particle size distribution by Stokes's law**
- **Autonomous operation after measurement start (with the exception of opening the valve at measurement end)**
- **Lower measurement duration of 2.5h**
- **Estimated error: an incredible +/- 0.5%**
- **Quasi-continuous resolution of particle size distribution**
- **No physical disturbance of suspension during measurement**
- **Avoidance of manual reading errors**
- **Avoidance of manual calculation errors**
- **Temperature dependence automatically integrated in the calculation of particle size distribution**
- **Direct measurement of clay content**
- **PARIO Plus improvements mean external data errors are less problematic**

PARIO calculates the particle size distribution by Stokes' law, with a range spanning from 63 µm to 2 µm, finally making it easy to obtain a complete particle size distribution curve, instead of just a few measurements at discrete time points.

MEASUREMENT SPECIFICATIONS

Particle size	Range: 2-63 µm
Approximate error in mass fraction detection	PARIO Classic: ±3.0% PARIO Plus: ±0.5%
Pressure measurement	Accuracy: ±1.0 Pa Resolution: ±0.1 Pa
Typical particle mass	25−50 g per 1-L suspension
Typical duration of measurement	PARIO Classic: 8.0 h PARIO Plus: 2.5 h
Measurement interval	10 s
Estimation of clay content	Derived from integrated particle mass in effluent
Estimation of sand fraction	Sand fraction estimated by sieve data

COMMUNICATION SPECIFICATIONS

Power requirements	USB 5 V/100 mA
Computer compatibility	Microsoft Windows 10

PHYSICAL SPECIFICATIONS

Glass cylinder	Height: 450.0 mm (17.7 in) Diameter: Inner: 59.0 mm (2.3 in) Outer: 67.5 mm (2.7 in) Volume: 1,000 cm^3 (61.0 in^3) Material: Borosilicate glass 3.3
PARIO device	Height: 293.0 mm (9.1 in) Diameter: 80.0 mm (3.2 in) Material: Polyoxymethylene plastic (POM) and stainless steel
Volume of suspension	1,000 mL
Operating temperature	Minimum: 15 °C Typical: 20 °C Maximum: 35 °C
Maximum tolerable temperature change during measurement	±1.5 °C
Required external measurements	**PARIO Classic:** Content of organic matter (if OC is destroyed) Sand fractions (from wet sieving) Mass of dispersion salt in total suspension volume

	PARIO Plus: Mass of dry matter in discharged subsample Sand fractions (from wet sieving) Mass of dispersion salt in total suspension volume
Cable type	USB 2.0; 500 mA for receiving port
COMPLIANCE	Manufactured under ISO 9001:2015 EM ISO/IEC 17050:2010 (CE Mark)

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