AMERIGO

High resolution nanoparticle analyzer:

Size distribution & Zeta potential

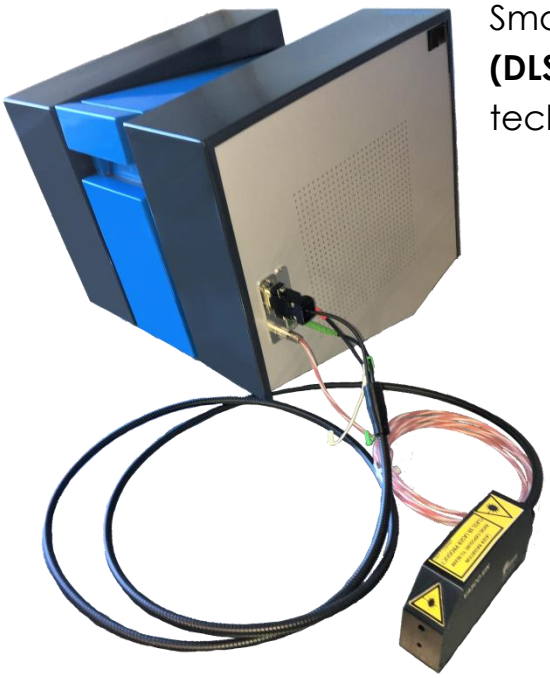
Unique : remote head options for *in situ* process monitoring

IDEAL FOR

Formulation stability
Nanoparticle aggregation
Emulsions and micelles
Pharmaceuticals
Petrochemicals
Polymers
Liposomes and bio-colloids
Pigments and inks
and more…

CORDOUAN
Technologies

DLS and Zeta potential



Smart design combining **Dynamic Light Scattering (DLS)**, **Laser Doppler Electrophoresis (LDE)** techniques:

- ✓ High-end components (Laser, APD, electronic) for optimum performances
- ✓ Multi-angle measurements (170° & 17°; option 90°) for better accuracy
- ✓ Software correlator for Real Time analysis and efficient data post-processing
- ✓ Advanced algorithms (Cumulants, SBL) for simple and complex samples analysis
- ✓ External DLS head options fitted to your specific measurement needs

Proprietary and innovative design of Dip cell electrodes for time and cost saving

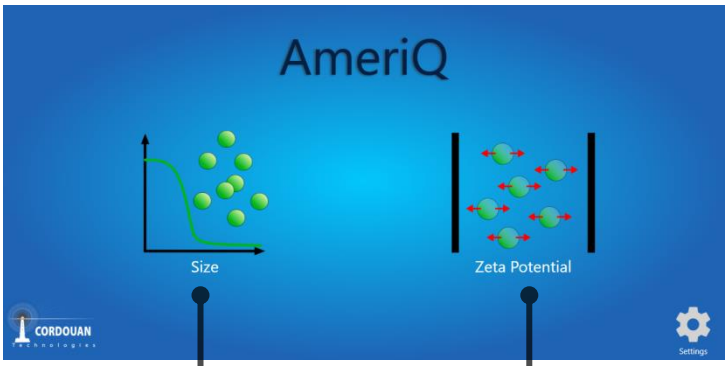
- ✓ High durability amorphous carbon electrodes
- ✓ Reusable: easy to clean; no specific consumables
- ✓ Compliant with standard 10 x 10 mm cuvettes: quartz, glass or polystyrene
- ✓ Perfectly suited for various solvents and pH levels
- ✓ Same cuvette for DLS and zeta potential measurement

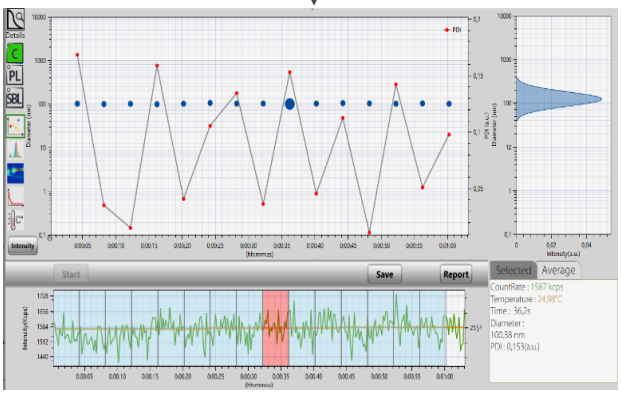
UNIQUE: Optical fiber output for remote measurements

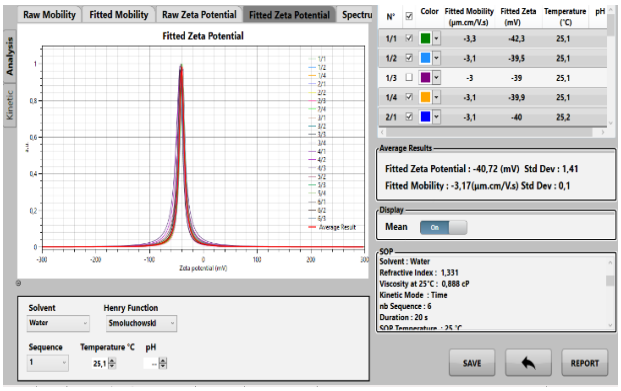
Different head options matching your applications. Explore further details in our dedicated brochure.

AmeriQ™ Software

Our proprietary software enables the analysis of nanoparticle size and/or zeta potential in just one click.







- ✓ Original and performant Multimodal Continuous Algorithm (MCA) and Multimodal Discrete Algorithm (MDA)
- ✓ Dynamic time slicing
- ✓ Kinetic analyses of nanoparticle sizes
- ✓ Advanced data post-processing
- ✓ Programmable experiments of zeta potential (zeta vs T°, zeta vs pH, zeta vs time)
- ✓ An exhaustive solvent database
- ✓ A simulation tool
- ✓ User management and programmable Standard Operating Procedures (SOPs)
- ✓ CFR21 compliant

Specifications & main characteristics

SPECIFICATIONS	
Particle size range	Particle size : 0.5 nm up to 10 µm Zeta potential : 1 nm to 100 µm
Sample concentration	0.0001% to 10% (w/w) (solvent dependent)
Zeta potential range	-500 mV to +500 mV
Temperature control range inside the cell	4°C to 90°C; +/-0,1°C (depending on cuvette cell material)
Mobility range	10^{-10} to 10^{-7} $m^2/V.s$
Sample cell	Cuvette cell with optical quality windows compatible with organic solvents
Sample volume	Typically 750 µL (Hellma cell: 10 mm light path)
Sample type	Aqueous & organic solvents; pH: 1-14 (depending on cuvette cell material)
Maximum sample conductivity	300 mS/cm
Molecular weight range (SLS)	0.9 kDa – 20 MDa ±5%
Optical fiber output	**Possibility to connect an external *in situ,* milli fluidic or high concentration head**
SIGNAL PROCESSING	
Measurement technology	Dynamic Light Scattering (DLS) Laser Doppler Electrophoresis (LDE)
Laser source	Highly reliable 50 mW diode @635 nm coupled to automated optical attenuation system. Other wavelengths available upon request.
Measurement angles	Particle size : 170° (backscattering) and 17°, optionally 90° Zeta potential: 17°
Data processing algorithm	Real Time correlation (DLS) Fast Fourier Transform (Zeta)
Resolution (Zeta)	Mobility = 10^{-10} $m^2/V.s$ or Zeta = 0,1 mV (in water)
Detector	Avalanche Photodiode (APD)
HARDWARE	
Computer interface	USB 2.0 – Windows 10 32 & 64 bits
Weight	17 kg
Dimensions	38 x 33 x 33 cm^3 (L×W×H)
Power supply	100-115/220-240 VAC, 50/60 Hz, 100 W max
SYSTEM COMPLIANCE	
CE certification	CE marked product - Class I laser product, EN 60825-1:2001, CDRH
ISO norm	ISO 13321 (1996) & ISO 22412 (2008) compliant, CFR 21 part 11 (option) ISO 13099-2 : 2012 – Colloidal system – methods for zeta-potential determination – Part 2 : Optical methods

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