

AMERIGO

High resolution nanoparticle analyzer:
Size distribution & Zeta Potential



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

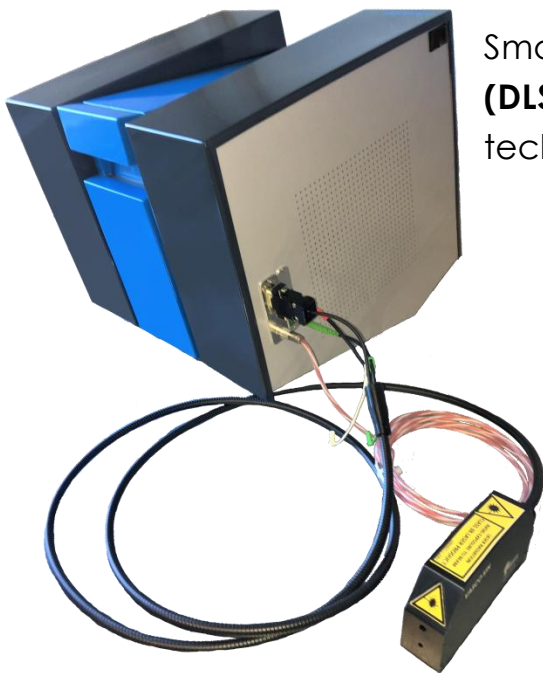
IDEAL FOR

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

CORDOUAN

T e c h n o l o g i e s

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° & 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

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

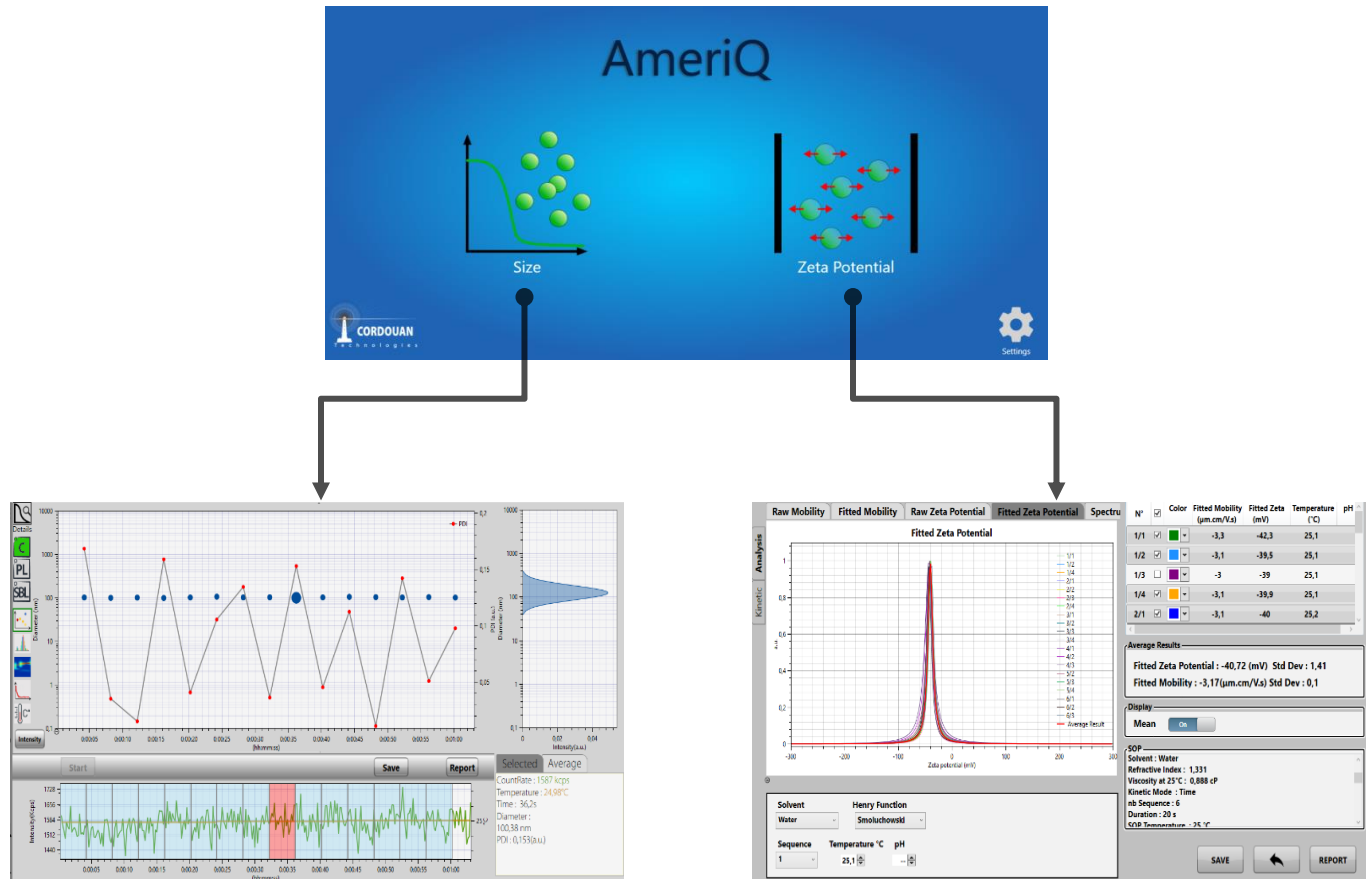


AMERIGO Plus: Optical fiber output for remote measurements

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)
- ✓ Kinetic analyses of nanoparticle sizes
- ✓ Dynamic time slicing
- ✓ Advanced data post-processing
- ✓ An exhaustive solvent database

- ✓ Programmable experiments of Zeta Potential (Zeta vs T°, Zeta vs pH or Zeta vs time)
- ✓ User management and programmable Standard Operating Procedures (SOPs)
- ✓ A simulation tool
- ✓ CFR21 compliant

Specifications & main characteristics



AMERIGO Standard		AMERIGO Plus
SIZE		
Measurement technology	Dynamic Light Scattering (DLS)	
Measurement angles	2 angles: 17° and 90° or 17° and 170°	3 angles: 17° , 90° and 170°
Particle size range	0.5 nm up to 10 µm	
Sample concentration	0.0001% to 10% (w/w) ^[1]	
Minimal sample volume	100 µL	In cuvette: 100 µL; In situ: 5 µL
Sample cell	Standard cuvette cell (10x10mm ²)	Any transparent container
External measurement heads	NO	In situ contactless measurements Options: In Line measurements High concentration (up 40%) ^[1,2]
ZETA POTENTIAL		
Measurement technology	Laser Doppler Electrophoresis (LDE)	
Angle	17°	
Particle size range	1 nm up to 100 µm	
Zeta Potential range	-500 mV to +500 mV	
Mobility range	10 ⁻¹⁰ to 10 ⁻⁷ m ² /V.s	
Sample cell	Standard cuvette cell with dip cell electrode	
Sample concentration	0.0001% to 10% (w/w)*	
Sample volume	Typically 600 µL	
Sample type	Aqueous & organic solvents; pH: 1-14 (depending on cuvette cell material)	
Maximum sample conductivity	300 mS/cm	
Resolution (Zeta)	Mobility = 10 ⁻¹⁰ m ² /V.s or Zeta = 0,1 mV (in water)	
MOLECULAR WEIGHT		
Measurement technology	Static Light Scattering (90° or 170°) Debye Plot	Static Light Scattering (90° and 170°) Debye Plot
Molecular weight range	0.9 kDa – 20 MDa ±5%	
HARDWARE AND SIGNAL PROCESSING		
Optical fiber output	NO	YES
Temperature control range inside the cell	4°C to 90°C; +/-0,1°C	
Laser source	Highly reliable 50 mW diode @635 nm coupled to automated optical attenuation system. Other wavelengths available upon request.	
Data processing algorithm	Real Time correlation (DLS) Fast Fourier Transform (Zeta)	
Detector	Avalanche Photodiode (APD)	
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); ISO 13099-2 : 2012 – Colloidal system – methods for zeta-potential determination – Part 2 : Optical methods	
CFR 21 part 11 compliant software	Included	
IQ; OQ	On the request	

[1] Sample dependent
[2] Patented Dual Thickness Controller cell



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