

ZetaProbe™



ZetaProbe - the easiest to use most accurate zeta potential analyzer for research, QA/QC & plant optimization!

The ZetaProbe is the easiest to use, most accurate zeta potential analyzer available. Samples can be measured without dilution or sample preparation at concentrations up to 60% volume. Even the direct measurements of pastes, gels, cements, and other difficult materials are possible with the ZetaProbe.

Traditional characterization techniques require sample dilution and sample preparation which are both time-consuming and error-prone. Our patented multi-frequency electroacoustic technology eliminates these problems. The ZetaProbe measures zeta potential directly, under true sample conditions, at concentrations as high as 60% volume.

The ZetaProbe features a compact design with built-in titration, versatile dip probe sensor, and software wizards. Automatic titration offers unattended rapid isoelectric point determination, as well as optimum dispersant or flocculant level control in a click of a button. The ZetaProbe offers many advances not found in other analyzers including automatic correction for particle size and double layer distortion. Yet, its easy to use software & rugged design makes the ZetaProbe ideal for use in research and plant optimization!

Parameters Measured

- Zeta Potential
- Dynamic Mobility
- Conductivity
- pH
- Temperature
- Isoelectric Point (IEP)

Features and Benefits

- Measures directly in concentrated colloids and emulsions
- Delivers the most accurate IEP determination available
- Measures samples up to 60% volume
- Offers versatile & rugged dip probe design with no moving parts
- Measures in dip probe cup or customer supplied containers
- Features axial bottom stirring for highly efficient mixing
- Eliminates time consuming and error-prone sample preparation steps
- Utilizes our patented multi-frequency electroacoustic technology
- Automates potentiometric and volumetric titration
- Operates without the need to enter particle size
- Simplifies cleaning procedure with disposable sample containers
- Features advanced software wizards for easy set-up & operation
- Measures difficult samples such as pastes, gels, & cements
- Offers rapid cycle times; analysis in seconds
- Stores data in easy-to-use MS Excel spreadsheet files

Colloidal Dynamics

Colloidal Dynamics offers a wide range of services to help you take advantage of this powerful new measurement device. ZetaProbe can be used for plant optimization, QA/QC, and research for major industrial and academic applications including:

- ceramics
- paint and inks
- coal slurries
- cmp slurries
- pigments
- natural latexes
- light phosphors
- food colloids
- emulsions
- cement
- minerals processing
- clay minerals
- bio-colloids
- paper coatings
- pharmaceuticals
- filtration/de-watering
- wet milling/grinding
- control of surface coating
- control of homogenization
- catalysts and zeolites
- abrasives and polishing compounds

ZetaProbe™ Specifications

Technology

Electroacoustic Spectral Analysis

Sample Characteristics

Particle Concentration	0.5 to 60 volume percent
Sample Volume.....	180 - 240ml
Maximum Viscosity.....	20,000 centipoise stirred (higher viscosities unstirred)
Conductivity Range.....	0 to 5 S/m
pH Range.....	1 – 13
Temperature Range.....	10 to 50 °C
Measurement Range	+/- 200 millivolts
Analysis Time.....	less than 30 seconds, with selectable time delays between analysis

Performance

Particle Size Range for Zeta Measurements.....	1 nm to greater than 10 microns (varies by application)
Titration Capabilities.....	Potentiometric & Volumetric
Titration Module.....	0.1 microliter resolution, dual syringe pump

Other Characteristics

Wetted Surface Materials	Polypropylene, Niobium, PTFE, Hastelloy C
Sample Options.....	Bottom stirred disposable sample container, or user-supplied container
Power Requirements	100 - 240 VAC, 50/60 Hz, 5 Amps @ 120 VAC, 3 Amps @ 240 VAC
Dimensions (HxWxD).....	17" x 20" x 14" (440 x 505 x 410mm)
Shipping Weight.....	50 lbs (23 Kg)

Minimum Computer Specification (if supplied by customer)

Pentium II class or better PC, minimum 64 Mb RAM, 1 Gb hard disk space available, one serial port available, high resolution color monitor (17" display recommended), Microsoft Excel 97 or higher installed, Windows 95/2000/NT/ME

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