

ZETATRAC

Microtrac has enhanced the functionality of the Nanotracs range of instruments to include Zeta Potential measurement capability. The determination of Zeta Potential provides critical information to researchers and production personnel regarding the stability of a wide range of emulsions and colloidal suspensions.

Zetatrac utilizes the unique Nanotracs probe technology to provide fast, accurate, convenient and cost effective Zeta Potential measurements without the need for disposable cuvettes.

ONE INSTRUMENT—THREE MEASUREMENTS:

- Zeta Potential
- Particle Size
- Molecular Weight

Zetatrac measures Zeta Potential by determining the mobility of particles as they move from one side of the sample cell to the other. A potential difference is applied to the sample cell and charged particles move to the electrode of opposite polarity at a velocity proportional to their charge. Using the principles of Dynamic Light Scattering, light from a laser is scattered and its frequency shifted under the Doppler Effect in relation to its velocity. By determining the velocity of the charged particle, the Zeta Potential can be calculated. Zetatrac uses Microtrac's proprietary Controlled Reference Method to generate a power spectrum (inverse of photon correlation curve) of the moving charged particles. Unlike other methods, Zetatrac can measure Zeta Potential in both high and low concentration suspensions.



Zetatrac is controlled by Microtrac FLEX Operating Software. Through the use of Standard Operating Procedures (SOP's), the user is guided through a series of easy steps to generate full characterization data on Zeta Potential and Particle Size. Data archiving and retrieval is through standard Microsoft Access™ database management with the ability to export data either manually or automatically. Graphic data presentations, report generation, trending and statistical analysis are all standard features of FLEX Software.

SPECIFICATIONS

Model	NPA151— 31A Zetatrac	
Internal Sample Cell Volumes	0.2 ml	
Measurement Range	Size	0.8 to 6500 nanometers
	Zeta Potential	3 nm to 10 microns
Measurement Angle	180 Degrees.	
Concentration limits	High	up to 40% by solids in some cases
	Low	0.1 mg/ml Lysozyme
Repeatability	Particle Size	1% for 100nm Polystyrene
	Zeta Potential	+/- 5mV, +/- 0.4 mobility units (microsecond/vol)
Optical Components	Laser Diode	780 nm wavelength, 3 mW nominal, Class IIIB Laser and detector fixed in place- no alignment required.
Power Requirements	90 to 240 VAC, 47 to 63 Hz, 5 Amps	
Temperature (operating)	10 to 50 Degrees C	
Humidity	up to 90% non condensing	
Dimensions	Width	10.2 cms (4 inches)
	Depth	38.1 cms (15 inches)
	Height	15.2 cms (6 inches)
Weight	3.2 kgs (7 pounds)	