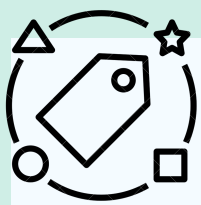


# ZETASIZER

# NANO ZS

## OVERVIEW

The Zetasizer Nano range of instruments provides the ability to measure three fundamental characteristics of particles or molecules in a liquid medium: particle size, zeta potential and molecular weight.



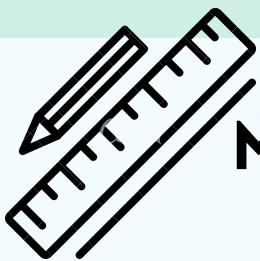
## BRAND / MODEL

Malvern Panalytical / Nano ZS



## APPLICATION

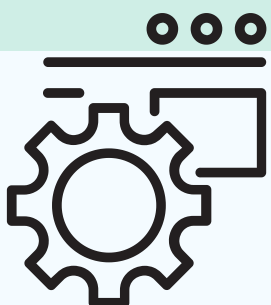
To measure fundamentals characteristics of particles or molecules in a liquid medium : particle size and zeta potential.



## MEASUREMENT RANGE

Size range maximum (diameter) :  
0.3 nm to 10.0  $\mu\text{m}$

Size range for zeta potential (diameter) :  
3.8 nm to 100.0  $\mu\text{m}$



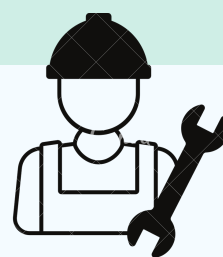
## SOFTWARE

The Zetasizer software controls the system during a measurement and then processes the measurement data to produce either a size, zeta potential, or molecular weight result. It displays the results and allows reports to be printed.



## SPECIFICATIONS (OPTICAL UNIT)

1. SIZE - Minimum sample size : 12 $\mu\text{L}$
2. ZETA POTENTIAL - Minimum sample size : 20 $\mu\text{L}$



## PRINCIPLE

### Particle size

1. The particle size measured in a Dynamic Light Scattering (DLS) instrument is the diameter of the sphere that diffuses at the same speed as the particle being measured.

2. The system determines the size by first measuring the Brownian motion of the particles in a sample using DLS and then interpreting a size from this using established theories.

3. A wide range of materials exist as molecules or particles that can be characterised by dynamic light scattering. These include proteins, polymers, emulsions and vesicles.

### Zeta potential

1. Zeta potential is measured using a combination of the measurement techniques: Electrophoresis and Laser Doppler Velocimetry. This method measures how fast a particle moves in a liquid when an electrical field is applied – i.e. its velocity.

2. Once we know the velocity of the particle and the electrical field applied we can, by using two other known constants of the sample - viscosity and dielectric constant - work out the zeta potential.

3. The zeta potential of the sample will determine whether the particles within a liquid will tend to flocculate (stick together) or not.



## CONTACT US

We would love to hear from you in any way or form. Please contact us by phone or email.

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