



**Malvern  
Panalytical**  
a spectris company

# Zetasizer Advance range

Light Scattering for every application





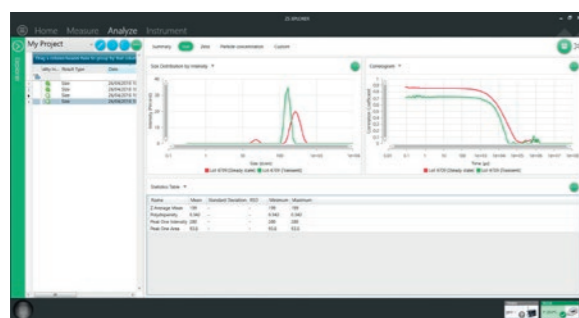
# Welcome to the Zetasizer Advance range

Building on the legacy of the industry-leading Zetasizer Nano Series, the Zetasizer Advance family of light scattering instruments brings increased versatility and expertise to your laboratory. The extensive range of six Zetasizer Advance systems provides a perfect fit for every application and every workflow challenge.



- **Dynamic Light Scattering (DLS)**  
Determine the size of particles in your sample, from <math><1\text{ nm}</math> to <math>10\text{ }\mu\text{m}</math>
- **Electrophoretic Light Scattering (ELS)**  
Understand sample stability and propensity to aggregate
- **M3-PALS with Constant Current Mode**  
Reduce errors in your data associated with electrode polarization at high ion concentrations

- **Adaptive Correlation**  
Generate robust data quickly and increase measurement repeatability
- **ZS Xplorer Software**  
Automate even the most complex analysis without expert knowledge, thanks to the sample-centric workflow
- **Data Quality System**  
Get instant feedback and actionable advice on how to improve data quality



This feature intelligently identifies and separately classifies rogue large particles so that they do not influence the consistently-present particle size result, providing a more representative view of the sample.

## Comprehensive, versatile and cost-effective

### Zetasizer Lab

Our entry-level model, the Zetasizer Lab, utilizes <math>90^\circ</math> measurements to generate high quality particle size and zeta potential data, especially when measuring larger-sized particles.

### Zetasizer Pro

The Zetasizer Pro utilizes Non-Invasive Back Scatter (NIBS) technology, delivering a wider range of sample concentration and particle size measurement capabilities.

### Zetasizer Ultra

Multi-Angle Dynamic Light Scattering (MADLS®) technology, for the highest resolution sizing data, makes the Zetasizer Ultra the ultimate research model.

Each model is available in either a Blue Label version for routine sample investigation or a Red Label version for use with more challenging samples.





# A Zetasizer for every need

Now you've been introduced to the Zetasizer Advance family, how do you find out which system best fits your requirements?

Here are some application examples to help you decide:



## Colloidal Silica

Sizing of colloidal silica is a critical requirement. This is easily and reproducibly measured using the Zetasizer Lab Blue Label.

Measurement	Z-Average (nm)
1	35.04
2	34.67
3	34.90
4	35.44
5	34.97
Mean	35.00
% RSD	0.80

## Titanium Dioxide

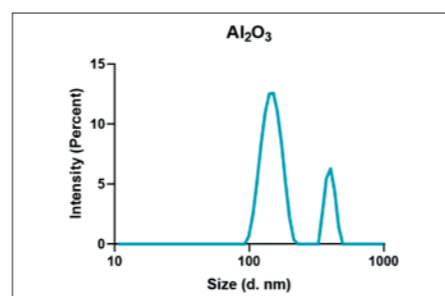
Titanium dioxide use is wide-ranging. When used in paints or inks, agglomerate or aggregate formation can diminish product performance.

The Zetasizer Pro Blue Label, used alongside the MPT-3 Autotitrator, characterizes the impact of salt concentration on the stability of TiO<sub>2</sub> and identifies the most stable pH region.



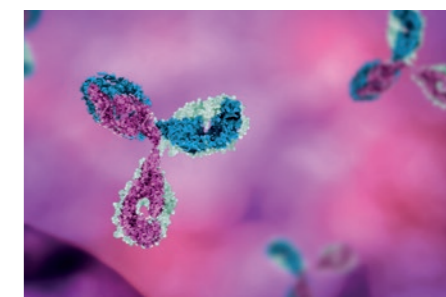
## Ceramics

The strength of ceramics is linked to particle size, and the Zetasizer Ultra Blue Label is ideally placed to measure this. Al<sub>2</sub>O<sub>3</sub> samples are often made of differently-sized particles which can easily be identified using MADLS. In this 0.1% w/v sample, the two particle size populations would not be distinguishable with a single angle DLS measurement.



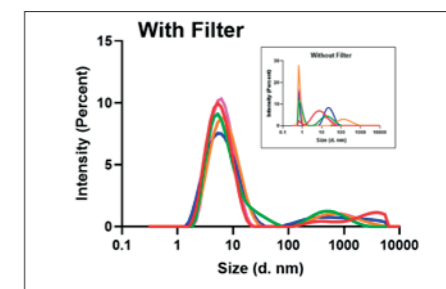
## Proteins

For protein researchers, early access to characterization data can be a challenge, due to low sample volumes. This is easily overcome using the Zetasizer Lab Red Label with the capillary cell to confirm that samples meet quality requirements and that production and purification processes are optimized.



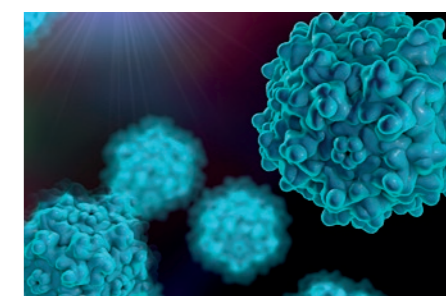
## Carbon Dots (C-dots)

Photoluminescent C-dots are considered safer alternatives to quantum dots. Measuring fluorescent samples by DLS can be challenging due to additional photons emitted by the fluorophore. Available with NIBS on Zetasizer Pro Red Label, a filter removes this interference to provide accurate and reliable data.



## Adeno-Associated Virus (AAV)

Monitoring viral concentration is important during development and production optimization. By using the Multi-Angle DLS (MADLS) based particle concentration measurement in the Zetasizer Ultra Red Label, both the size distribution and titer of the virus can be measured within a few minutes.



## A Zetasizer you can install yourself

### Get up and running fast with self-install

Get your new system up and running rapidly, when you self-install. There's no need to wait for an engineer to visit.

- Multilingual video installation guides
- 15 months' access to exclusive e-learning materials
- Extended 15-month warranty



Find out more at:

[malvernpanalytical.com/self-install](https://malvernpanalytical.com/self-install)

### Easy, on-site upgrades

Upgrade your Zetasizer Advance system to a higher specification model at any time. Upgrades can be performed onsite\* to minimize downtime.

With Zetasizer Advance, you can be confident that, should your needs change, you can upgrade to adapt easily and improve the value of your system.

### 21 CFR Part 11 functionality

Coming soon: Malvern Panalytical's new solution for regulatory compliance, 21 CFR Part 11 and GMP Annex 11. This will provide flexible configuration of roles and permissions to fit your workflow, supporting electronic records and signatures.

\*Upgrades can be performed onsite when you upgrade between models (Zetasizer Lab, Zetasizer Pro or Zetasizer Ultra); upgrading from Blue Label to Red Label versions cannot be performed onsite.

## Zetasizer advance specifications

	Zetasizer Lab	Zetasizer Pro	Zetasizer Ultra
Size Measurement Principle	Classical 90° Dynamic Light Scattering	Non-Invasive Back Scatter (NIBS) Dynamic Light Scattering	Non-Invasive Back Scatter (NIBS) Dynamic Light Scattering (90° and 13°) Multi-Angle Dynamic Light Scattering (MADLS®)
Zeta Measurement Principle	ELS with M3-PALS and Constant Current Zeta Mode	ELS with M3-PALS and Constant Current Zeta Mode	ELS with M3-PALS and Constant Current Zeta Mode
Molecular Weight and B22 <sup>1</sup>	Static Light Scattering (90°)	Static Light Scattering (173°)	Static Light Scattering (90° and 173°)
Optical Filter Wheel (Fluorescence/DDLS)	No	Yes	Yes
Low Volume Disposable Sizing Cell with Extended Size Analysis Support	Yes	No	Yes
MADLS® (High Resolution DLS)	No	No	Yes
MADLS® - Particle Concentration/Titer	No	No	Yes <sup>2</sup>
21 CFR Part 11 compliant software <sup>3</sup>	Optional	Optional	Optional
<b>Size</b>			
Range <sup>4</sup>	0.3 nm to 10 µm	0.3 nm to 10 µm	0.3 nm to 10 µm
Minimum Volume	3 µL	12 µL	3 µL
<b>Zeta potential</b>			
Size Range	3.8 nm to 100 µm	3.8 nm to 100 µm	3.8 nm to 100 µm
Minimum Volume <sup>5</sup>	20 µL	20 µL	20 µL
<sup>1</sup> Hardware capable; Software support coming soon			
<sup>2</sup> Red Label only			
<sup>3</sup> 21 CFR Part 11 software features coming soon			
<sup>4</sup> 10 µm by default. Option to extend for Zetasizer Lab and Zetasizer Ultra coming soon			
<sup>5</sup> Patented Diffusion Barrier method in capillary cell			



## Why choose us?

**When you make the invisible visible,  
the impossible is possible.**

Our analytical systems and services help our customers to create a better world. Through chemical, physical and structural analysis of materials, they improve everything from the energies that power us and the materials we build with, to the medicines that cure us and the foods we enjoy.

We partner with many of the world's biggest companies, universities and research organizations. They value us not only for the power of our solutions, but also for the depth of our expertise, collaboration and integrity.

With over 2200 employees, we serve the world, and we are part of Spectris plc, the world-leading precision measurements group.

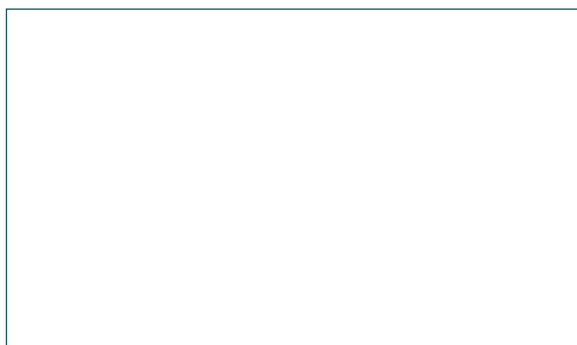
**Malvern Panalytical. We're BIG on small™**

## Service & Support

Malvern Panalytical provides the global training, service and support you need to continuously drive your analytical processes at the highest level. We help you increase the return on your investment with us, and ensure that as your laboratory and analytical needs grow, we are there to support you.

Our worldwide team of specialists adds value to your business processes by ensuring applications expertise, rapid response and maximum instrument uptime.

- Local and remote support
- Full and flexible range of support agreements
- Compliance and validation support
- Onsite or classroom-based training courses
- e-Learning training courses and web seminars
- Sample and application consultancy



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