

Mastersizer 3000 (Laser Particle Size Analysers)

Rapid, reliable particle size measurements made easy.

The Mastersizer 3000 is the latest generation of the world's most widespread particle sizing instrument, used by many thousands of companies and research institutes across a wide range of industries.

Malvern's considerable experience and applications know-how has gone into every stage of the design of the Mastersizer 3000 instrument, from fundamental particle sizing performance right through to user ergonomics and method advice.

The Mastersizer 3000 is highly regarded as being the premier instrument on the market for design, performance and software user experience. However not every customer needs or can afford all the functionality that the Mastersizer 3000 offers.

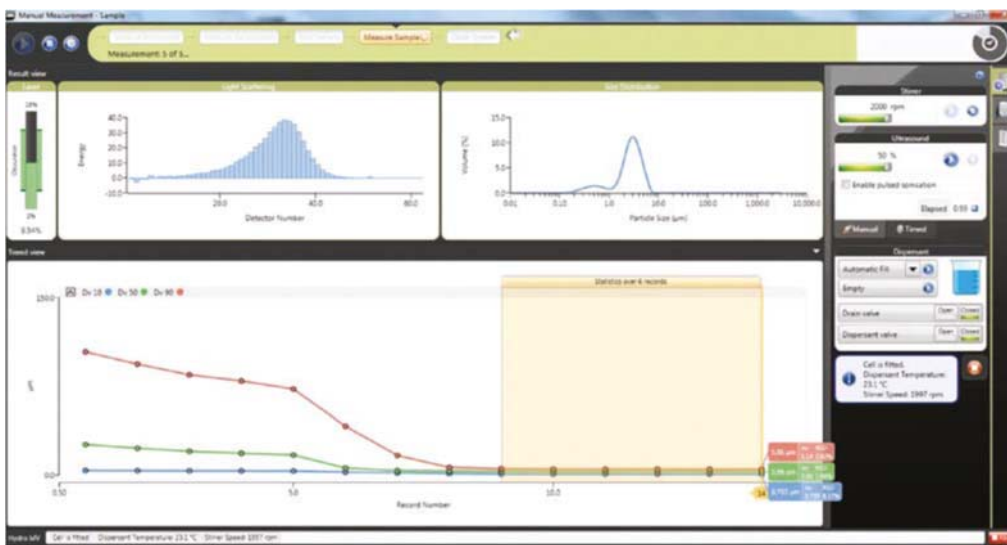
The Mastersizer 3000E is an entry level addition to the Mastersizer product family based upon the proven design of the Mastersizer 3000 but with more basic performance and software functionality.



With ever more demands placed on both instruments and users, software that is intuitive and easy to use is an essential requirement in the modern busy laboratory environment.

The Mastersizer 3000 software guides users through every stage of a measurement, from method development to result reporting, reducing training requirements and making particle size measurement fast and routine.

The ability to view how the particle size result changes with dispersion conditions is an essential element to rapid method development within ISO and USP guidelines. With the measurement manager window, the user can observe, control and optimise measurement conditions in real time, making the method development process as efficient and straightforward as possible.



The Mastersizer 3000E is available with two different software packages:

The *Basic* version (which can be updated to the Extended version at any time) supports manual wet and dry dispersion units only, and receives only updates and bug fixes.

The *Extended* version also supports automated wet sample dispersion units, and has an advanced software functionality which receives updates, bug fixes and upgrades.

Key features that make good quality particle size measurements easier than ever before:

- Intuitive look and feel based upon the latest software tools
- Rapid method development with the measurement manager dash board
- Simple, customizable reporting to present your data the way you want it
- Method development and support tools, including a unique optical property optimizer

Specification	Mastersizer 3000E Basic	Mastersizer 3000E Extended	Mastersizer 3000
Particle size	Suspensions, emulsions, dry powders		
Size range	0.1 to 1,000 microns		0.01 to 3,500 microns
Accuracy	Better than 1%		
Repeatability	Better than 0.5% variation		
Measuring Principle	Mie and Fraunhofer Scattering		
Optics	Red light source: Max. 4mW He-Ne, 632.8nm Lens arrangement: Reverse fourier (convergent beam)		
	None		Blue light source: Max. 10mW LED, 470nm
	Effective focal length: 300nm		
Detection Systems	Log spaced array arrangement : Automatic alignment		
	Angular range:	0.015 - 144 degrees	0.032 - 60 degrees
Typical measurement time	< 10 seconds		
Optical Alignment System	Automatic rapid align system with dark field optical reticle and multi-element alignment detector.		
Sample dispersion unit interchange system	Sample dispersion units automatically recognized, configured and enabled on insertion of measurement cell cassettes into optical unit.		
Power	110/240V, 50/60 Hz, 60 VA.		
Dimensions (LxDxH), weight	690 x 300 x 450mm, 30kg (excluding dispersion units)		

Sample dispersion is controlled by a range of wet and dry dispersion units. These ensure the particles are delivered to the measurement area of the optical bench at the correct concentration and in a suitable, stable state of dispersion to make accurate and reliable particle size measurements.



HYDRO EV

The Hydro EV has a unique dip-in centrifugal pump and stirrer design that achieves full and rapid dispersion in standard laboratory beakers, allowing close matching of the dispersant volume to the application requirements.

Following measurement, the dispersion head can be raised out of the beaker, enabling quick cleaning and sample recovery.

- Compatible with 250mL, 600mL and 1000mL laboratory beakers
- Patented 40W in-line sonication probe, for rapid agglomerate dispersion
- Dip-in centrifugal pump and stirrer design
- Sample easily recovered following analysis
- Chemically compatible with a wide choice of organic and inorganic dispersants
- Full software control of pump / stirrer and sonication
- Integral sample tank light.



HYDRO MV / LV

The Hydro MV and LV are medium volume (120ml) and large volume (600ml) wet sample dispersion units, with patented in-line sonication probes, with automated dispersant supply and full software control of pump / stirrer and sonication

AERO M

The Aero M is an entry-level dry powder disperser for the Mastersizer 3000E, enabling particle size distribution measurements to be made for bulk dry powder samples.

Measures dry powder particle size distributions over a 0.1-1000mm range

