



ZetaView® TWIN

Technical Data



Subpopulations

Size

Fluorescence

Zeta Potential







Dimensions

Physical	 Footprint (W x D x H): 20 × 30 × 25cm Weight: 8.5kg (main unit, PC and monitor extra) Shipping box with standard content: Main unit: 51 × 32 × 77cm; 16,9 kg to 18,5 kg* Minimum 24" Monitor: 61 × 18 × 48cm; 7,42 kg 	
Electrical	• 90-240V, 47-63Hz, 50VA	

Warranty & Support

Warranty	• 1 year (glass excluded)	
Service & Support	 Reaction time: 48 hours Maintenance, service and IQ/OQ contracts can be purchased on request Support via telephone, e-mail and remote desktop software software for trained users free of charge during warranty period Training courses for new users available on demand Special arrangements and specifications can be purchased on request– quotation required 	

* With zeta potential option



General Features

Measurement Principle	 Precision-engineered motorized scanning Nanoparticle Tracking Analysis (NTA) instrument for tracking the movement of individual visualized nanoparticles in suspension Real-time visualization of Brownian Motion and Electrophoretic Mobility, for measuring size, concentration and zeta potential in scatter and fluorescence mode Two simultaneous aligned and software-controlled lasers for enhanced fluorescence measurement. Software controlled 11-position fluorescence emission filter wheel for quick changes between scatt and fluorescence measurements as well as between different emission filters Fast scanning to acquire and analyze typically 2000 particles in less than one minute Two software-controlled pumps for liquid transport and sample dosing 	
Samples	 Nanoparticles suspended in polar liquids and organic solvents (e.g. water, biological buffers, alcohols) for size, concentration, fluorescence and zeta potential 	

Hardware

Equipment	 ZetaView® PMX-230 TWIN Laser main unit is equipped with a fixed NTA cell assembly, two simultaneous aligned lasers (see section Lasers) and bottles for buffer rinse Two software-controlled pumps for liquid transport and sample dosing Power of statistics by automated unique scan and dose control for measurement of 1 - 100 independent sub volumes Zeta potential option* Software controlled fluorescence option with 2 fluorescence channels features short acquisition times to avoid negative effect of photo bleaching 		
Optical Layout	 90° laser scattering video microscope with x10 magnification for maximized sample volume and highest statistics Automated alignment and focusing of laser and microscope 		
Camera	 High sensitive CMOS camera 640 × 480 pixels Variable frame rate from 2 to 60 Hz for optimum resolution and fast acquisition 		
Lasers	 Available laser wavelengths combinations: 405 nm / 488nm, 405 nm / 520 nm, 405 nm / 640 nm, 488 nm / 520 nm, 488 nm / 640 nm and 520 nm / 640 nm at typical laser power of >30 mW On request, the 640 nm laser can be exchanged by a 660 nm excitation laser free of charge Pulse duration 0.1 ms up to continuous 		
Fluorescence	 Software controlled, automated 11 position fluorescence filter wheel Available long wave pass (LWP) filter combinations: 430 nm / 500 nm for 405 / 488 laser combination 430 nm / 550 nm for 405 / 520 laser combination 430 nm / 680 nm for 405 / 6X0 laser combination 500 nm / 550 nm for 488 / 520 laser combination 500 nm / 680 nm for 488 / 6X0 laser combination 550 nm / 680 nm for 520 / 6X0 laser combination 500 nm / 680 nm for 520 / 6X0 laser combination 500 nm / 680 nm for 520 / 6X0 laser combination 		
Cleaning	 Tool-free access to glass cuvette for quick and simple cleaning process Cell cleaning recommended weekly or monthly depending on sample type and usage Cleaning of driver electrodes required after >1000 zeta potential runs* Cleaning kit and spare parts included in delivery 		
Temperature Range/Control	 External working temperature range: 5°C to 45°C Sample temperature control: Peltier temperature control from RTP -5°C to 55°C with automated dew-point sensing 		

* With zeta potential option



Computer System

Control Device	 Intel[®] NUC Mini PC 250 GB SSD hard drive Windows 10 Professional Maclean holder for mounting computer at backside of screen Keyboard and mouse
Monitor	• 24" LED screen (or better)

Software

Communication	Software provided on pre-configured PC, communication via Ethernet	
Quality Control	 Cell quality check, daily performance check, outlier control with automatic Grubbs statistical analysis of measurement data 	
Live Monitoring	 Number of detected particles in scatter and fluorescence mode, scattering intensity, conductivity*, temperature, particle drift 	
Standard Operating Procedures (SOP)	Fully-customizable SOPs for different samples/applications	
Analysis and Reports	 Data Analysis in scatter and/or fluorescence mode: particle size distribution profiles, concentration, overlays and averaging, scatter plots, zeta potential distribution profiles, sub-population analysis Data export format: AVI, TXT, CSV, FCS, PDF reports containing key results 	
ZetaNavigator Software**	 Live monitoring of particle size distribution Colocalization feature 	

Measurement Specifications

Size/Concentration	 Concentration range: Particle size: Accuracy: Reproducibility: 	10 ⁵ – 10 ⁹ particles/ml 10nm – 1000nm (dependent on sample and laser selection) ±5nm (for 100nm polystyrene latex) ±2nm (for 100nm polystyrene latex)
Fluorescence	 Concentration range: Particle size: Accuracy: Reproducibility: 	10 ⁵ – 10 ⁹ particles/ml 20nm – 1000nm (dependent on fluorescent dye and laser selection) ±5nm (for 100nm polystyrene latex) ±2nm (for 100nm polystyrene latex)
Zeta Potential*	 Working range: Concentration range: Particle size: Conductivity range: Accuracy: Reproducibility: 	-500 to +500mV 10 ⁶ – 10 ¹⁰ particles/ml 20nm – 5000nm (dependent on sample and laser selection) 3μS/cm – 15mS/cm ±4mV (zeta potential standard) ±2mV (zeta potential standard)
General	 Minimum sample quantity pH range: Temperature: Sample volume visualised 	y: 500µl of sample at 10⁵ particles/ml 1 – 13 5°C to 45°C (external temperature) d and tracked by the camera for a single measurement: 11 × 3.3 nL
Reference Materials	 Nominal 100 nm reference suspension for size Two nominal 100 or 200 nm reference suspensions for fluorescence Nominal -50mV reference suspension for zeta potential* 	

* With zeta potential option, ** With colocalization option

Manufactured by Particle Metrix, distributed by **analytik**.