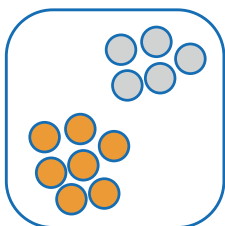
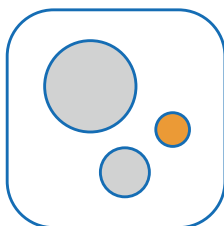


ZetaView[®] TWIN

Technical Data



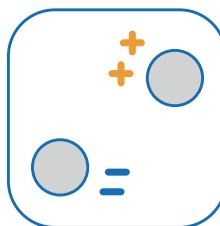
Subpopulations



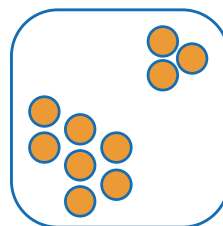
Size



Fluorescence



Zeta Potential



Concentration



Colocalization

Technical Data: PMX-230 ZetaView TWIN Laser



Dimensions

Physical	<ul style="list-style-type: none">• Footprint (W x D x H): 20 × 30 × 25cm• Weight: 8.5kg (main unit, PC and monitor extra)• Shipping box with standard content:<ul style="list-style-type: none">Main unit: 51 × 32 × 77cm; 16,9 kg to 18,5 kg*Minimum 22" Monitor: 61 × 18 × 48cm; 7,42 kg
Electrical	<ul style="list-style-type: none">• 90-240V, 47-63Hz, 50VA

Warranty & Support

Warranty	<ul style="list-style-type: none">• 1 year (glass excluded)
Service & Support	<ul style="list-style-type: none">• 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

Technical Data: PMX-230 ZetaView TWIN Laser



General Features

Measurement Principle	<ul style="list-style-type: none">• 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 measurements.• Software controlled 11-position fluorescence emission filter wheel for quick changes between scatter 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	<ul style="list-style-type: none">• Nanoparticles suspended in polar liquids and organic solvents (e.g. water, biological buffers, alcohols) for size, concentration, fluorescence and zeta potential

Hardware

Equipment	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 90° laser scattering video microscope with x10 magnification for maximized sample volume and highest statistics• Automated alignment and focusing of laser and microscope
Camera	<ul style="list-style-type: none">• High sensitive CMOS camera 640 × 480 pixels• Variable frame rate from 2 to 60 Hz for optimum resolution and fast acquisition
Lasers	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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• Customized LWP and bandpass filter available on request
Cleaning	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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

Technical Data: PMX-230 ZetaView TWIN Laser



Computer System

Control Device	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 22" LED screen (or better)

Software

Communication	<ul style="list-style-type: none"> • Software provided on pre-configured PC, communication via Ethernet
Quality Control	<ul style="list-style-type: none"> • Cell quality check, daily performance check, outlier control with automatic Grubbs statistical analysis of measurement data
Live Monitoring	<ul style="list-style-type: none"> • Number of detected particles in scatter and fluorescence mode, scattering intensity, conductivity*, temperature, particle drift
Standard Operating Procedures (SOP)	<ul style="list-style-type: none"> • Fully-customizable SOPs for different samples/applications
Analysis and Reports	<ul style="list-style-type: none"> • 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**	<ul style="list-style-type: none"> • Live monitoring of particle size distribution • Colocalization feature

Measurement Specifications

Size/Concentration	<ul style="list-style-type: none"> • Concentration range: $10^5 - 10^9$ particles/ml • Particle size: 10nm – 1000nm (dependent on sample and laser selection) • Accuracy: ± 5nm (for 100nm polystyrene latex) • Reproducibility: ± 2nm (for 100nm polystyrene latex)
Fluorescence	<ul style="list-style-type: none"> • Concentration range: $10^5 - 10^9$ particles/ml • Particle size: 20nm – 1000nm (dependent on fluorescent dye and laser selection) • Accuracy: ± 5nm (for 100nm polystyrene latex) • Reproducibility: ± 2nm (for 100nm polystyrene latex)
Zeta Potential*	<ul style="list-style-type: none"> • Working range: -500 to +500mV • Concentration range: $10^6 - 10^{10}$ particles/ml • Particle size: 20nm – 5000nm (dependent on sample and laser selection) • Conductivity range: $3\mu\text{S/cm} - 15\text{mS/cm}$ • Accuracy: ± 4mV (zeta potential standard) • Reproducibility: ± 2mV (zeta potential standard)
General	<ul style="list-style-type: none"> • Minimum sample quantity: 500μl of sample at 10^5 particles/ml • pH range: 1 – 13 • Temperature: 5°C to 45°C (external temperature) • Sample volume visualised and tracked by the camera for a single measurement: 11×3.3 nL
Reference Materials	<ul style="list-style-type: none"> • 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**.