Technical Data

ZetaView® Evolution quatt

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Measurement principle in scatter and fluorescence

Size	• Motorized scanning Nanoparticle Scanning Analysis (NTA) for measurement of up to 39 subvolumes per sample sample (129nl measurement volume)
Concentration	• Concentration Scanning Technology or NTA (220nl or 129nl measurement volume)
Zeta potential*	• Video based electrophoretic mobility tracking
Colocalization**	• NTA based 2 channel overlay

Data management

Software	• ZetaSphere control software featuring measurement of size, concentration, zeta potential* and colocalization** in scatter and fluorescence
Quality control	• Integrated instrument performance check • Outlayer control by automatic Grubbs statistical analysis of measurement data • Database event logging for data integrity • Live monitoring of particle size and concentration, temperature, scattering intensity, conductivity, particle drift and signal to noise ratio • Predefined measurement settings for several applications which are fully customizable
Data output	• PDF multiparamter sample reporting • CSV • PNG • FCS

Physical characteristics

Dimensions	• W x D x H: 20cm x 30cm x 25cm (excluding computer)
Weight	• 13.5kg (excluding computer)
Shipment conditions	• on pallet
Electrical supply	• 90V - 240V; 47 - 63Hz; 50VA
Power consumption	• max 30W

*When ordered with zeta potenital option

**When ordered with colocalization option

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Hardware

Instrument	• 90° laser scattering video microscope with x10 magnification for maximized sample volume and highest statistics • Four simultanious aligned, software controlled lasers for use in scatter and fluorescence • Software controlled 12 position fluorescence filter wheel for scatter and 11 fluorescence channels • Two software controlled pumps for liquid transport and sample dosing • Designed for automated sample loading • Automated alignment and focussing of laser and microscope • External temperatur range: 5°C to 45°C • Sample temperature control via peltier element from RTP -5°C to 55°C with automated due point sensing
Camera	• High sensitive CMOS camera with 1280x960 pixels • Variable frame rate from 2Hz to 60Hz for optimal resolution and fast aquisition
Lasers	• Quatt laser design with 405nm (130mW), 488nm (40mW), 520nm (80mW) and 640nm (130mW) • Pulse duration each laser: 0.1ms up to continous
Filters	• Software controlled automated 12 position filter wheel equiped with two fluorescence emission long pass filters at 430nm (in case of 405nm laser), 500nm (in case of 488nm laser), 550nm (in case of 520nm laser), and 670nm (in case of 640nm or 660nm laser), cut-off • customized emission filters available on request
Measurement cell	• Quartz class cuvette for low protein binding • Tool free access for quick and simple cleaning process
Computer	• i5 Asus® NUC Mini PC (i7 optional) • 1TB SSD hard drive • Windows 11 Professional • Keyboard and mouse
Monitor	• LED screen

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Measurement specifications

Size	• 10 – 1000nm (dependent on sample and laser) • Accuracy: ±5% (for 100nm polystyrene latex)
Concentration	• Concentration range: 10^5 – 10^9 particles/ml • Accuracy: ±5% (for 100nm polystyrene latex)
Fluorescence	• Concentration range: 10^5 – 10^9 particles/ml • Sensitivity level: < 20AF488 molecules
Zeta potential*	• Working range: -500mV - +500mV • Concentration range: 10^6 – 10^{10} particles/ml • Conductivity range: 3µS/cm – 15mS/cm • Reproducibility: ±2mV (zeta potential standard)
General	• Minimum sample quantity: 500µl of sample at 10^5 particles/ml • pH range: 1 - 13
Reference material	• Nominal 100nm size and concentration reference suspension • Four nominal 100nm and 200nm reference suspensions for fluorescence • Nominal -50mV reference suspension for zeta potential*

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**When ordered with colocalization option

Manufactured by Particle Metrix, distributed in the UK and Ireland by **analytik**.

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