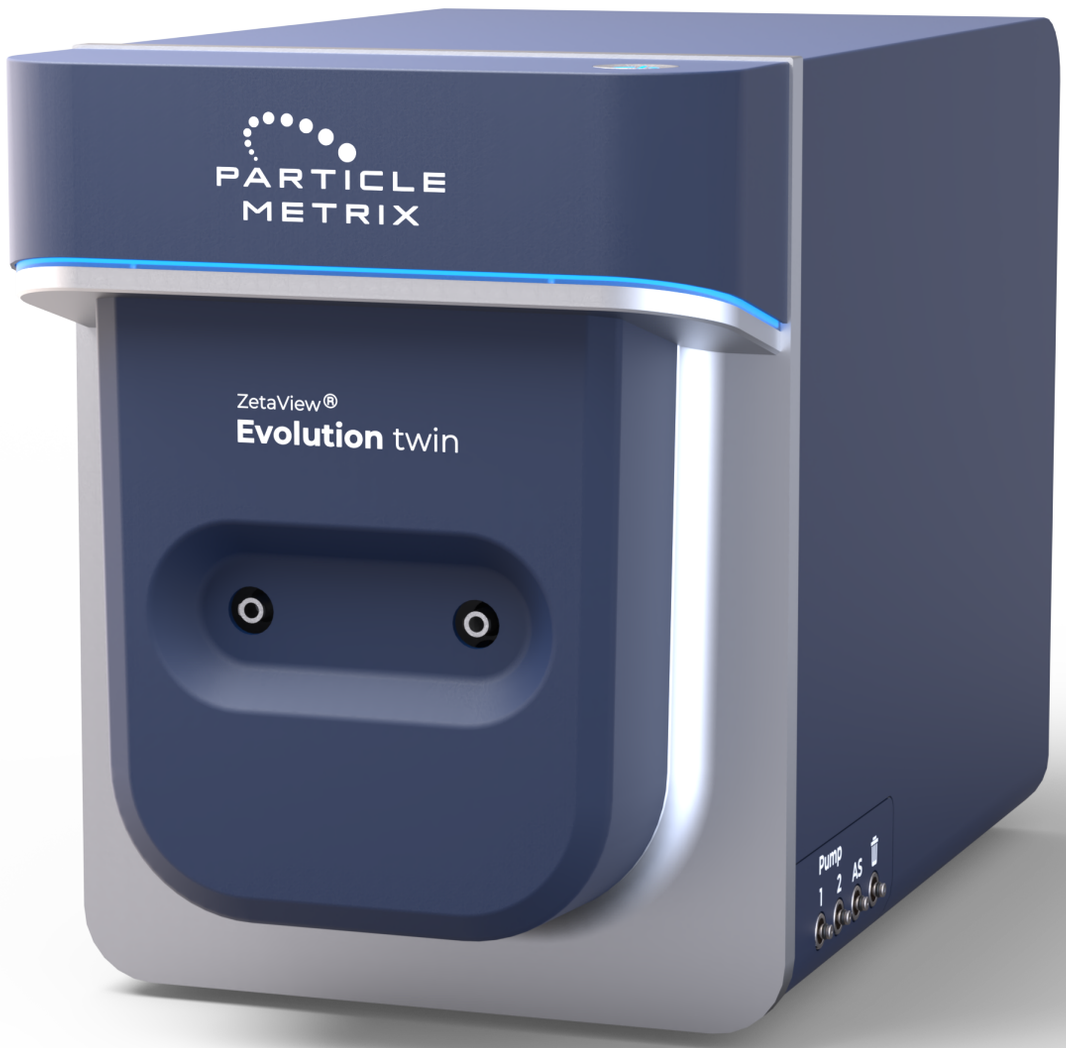
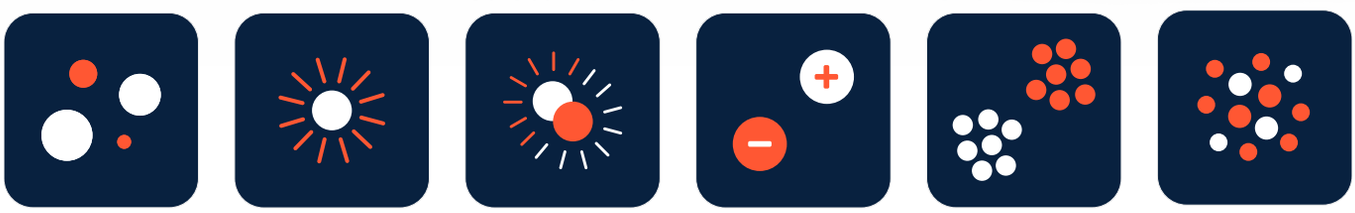
Technical Data

ZetaView® Evolution twin



Size | Fluorescence | Colocalization | Zeta Potential | Sub-populations | Concentration



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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

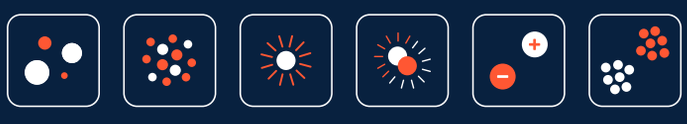
Software	• ZetaSphere control software featuring measurement of size, concentration, zeta potential* and colocalization** in scatter and fluorescence
Quality control	• Integrated instrument performance check • Outlayer control by automatic Grubbs statistical analysis of measurement data • Database event 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
- Two 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

- Available twin laser combinations: 405nm/488nm; 405 nm/520nm , 405nm/640nm; 488nm/520nm; 488nm/640nm and 520nm/640nm
- On request, the 640 nm laser can be exchanged by a 660nm
- Pulse duration each laser: 0.1ms up to continous
- Laser power 405nm: 130mW; 488nm: 40mW; 520nm: 80mW; 640nm: 135mW; 660nm: 135mW

Filters

- Software controlled automated 12 position filter wheel equiped with 4 fluorescence emission long pass filters at 430nm, 500nm, 550nm and 660nm 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

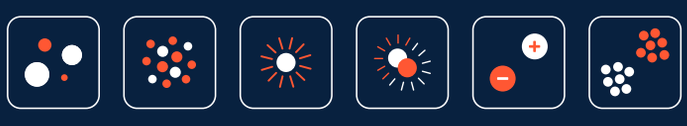
- i5 Asus® NUC Mini PC (i7 optional)
- 1TB SSD hard drive
- Windows 11 Professional
- Keyboard and mouse

Monitor

- LED screen

*When ordered with zeta potenital option

**When ordered with colocalization option



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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*

*When ordered with zeta potenital option

**When ordered with colocalization option

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