

NanoCoulter™

Particle Analyzer

TEM-Comparable
Resistive Pulse Sensing Technology

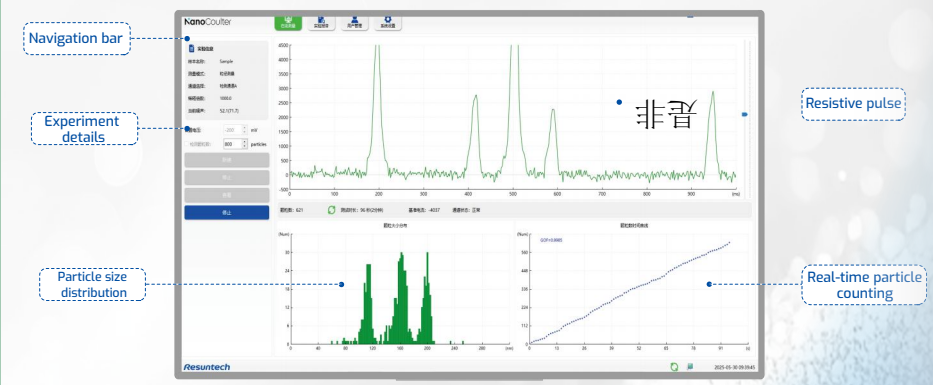
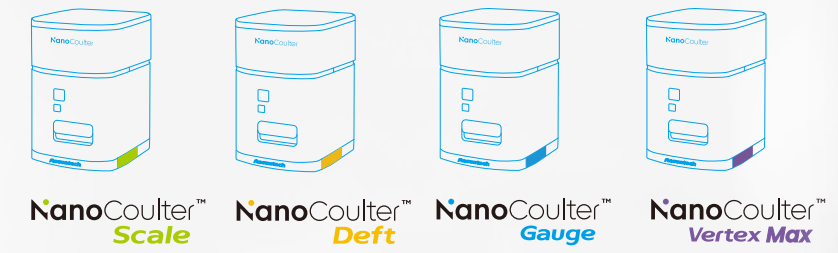
Single-Nanoparticle Characterization Expert



Stop wasting time
questioning your data.
Trust reliable results
— first time, every time!

Particle Size	Range	15 - 2000 nm
	Accuracy	100% ± 6%
	Precision	CV < 3%
Concentration	Range	2 × 10 ⁶ - 1 × 10 ¹² particles/mL
	Accuracy	100% ± 10%
	Precision	CV < 5%
Zeta Potential	Range	± 100 mV
	Accuracy	± 3 mV
	Precision	CV < 5%
Testing Time Per Sample	2-3 (up to 15) min	
Volume Per Sample	200 µL after dilution	
Operating System	Windows 7+ Pro/Ent	
GMP/GLP Management	IQ/OQ Option/FDA 21 CFR Part 11 Option	
Dimensions (W x D x H)	28.5 cm x 35 cm x 45 cm	
Weight	17.3 kg	

Which NanoCoulter is Right for Me?



About us

Resuntech is a national high-tech enterprise committed to developing world-leading instruments for nano-scale single-particle characterization. Our team brings together experts from top global universities and research institutions, backed by multiple intellectual property rights and invention patents.

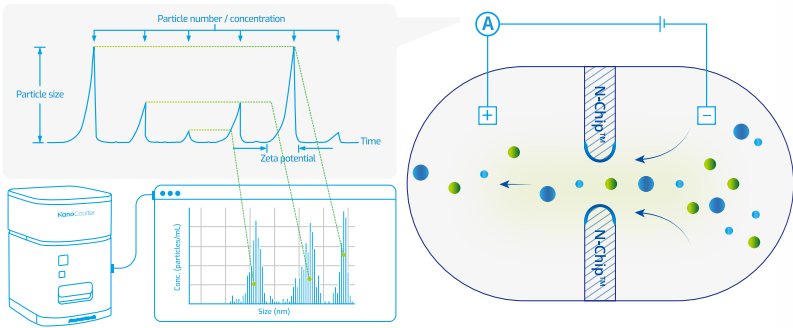
With atomic-level microfabrication capabilities (<1 nm) and expertise in advanced bio-nanochip processing, we have independently developed the NanoCoulter™ series—high-performance analyzers that provide comprehensive, multi-parameter characterization of individual nanoparticles.

Resuntech delivers state-of-the-art instruments designed for a broad spectrum of applications, including scientific research, manufacturing quality control, process monitoring, clinical diagnostics, and pharmaceutical development.

How Does NanoCoulter™ Work?

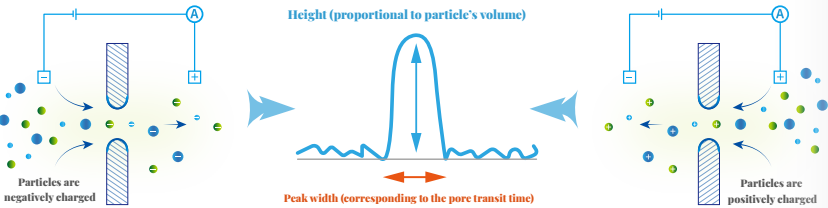
Resistive Pulse Sensing (RPS) Principle

NanoCoulter™ utilizes the resistive pulse sensing (RPS) principle, also known as the Coulter principle. When the voltage is applied in the electrolyte, as individual particles traverse the nano-aperture of the NanoCoulter™ N-Chip™, a transient change in electrical resistance is generated, forming a resistive pulse. These resistive pulses are accurately analyzed by NanoCoulter™ to yield multi-dimensional data, including particle size, concentration, and Zeta potential.



Potential Detection Principle(Electrophoresis Method)

When particles are subjected only to the electric field force, their electrophoretic migration velocity is proportional to their surface charge, which is quantified as the Zeta potential. Under the action of an applied electric field, charged particles move toward the electrode of opposite charge, and their migration velocity is related to the magnitude of the Zeta potential.



Why Choose NanoCoulter™ ?



True Particle-by-particle Detection

Precise analysis of polydisperse or heterogeneous samples as each particle passes through the nano-aperture.



Superior Accuracy and Precision

Highly linear concentration measurements ($R^2 > 0.999$) and consistently low CV% across all tests.



True-to-sample Results

Unaffected by optical properties of particles, delivering non-fitted, highly accurate data reflecting the true state of samples.



Multifunctional

All-in-one high-resolution analysis of single-particle size, concentration, and zeta potential.



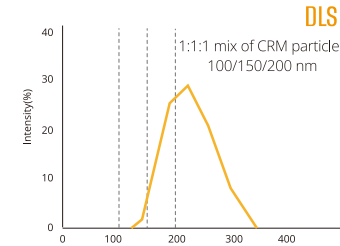
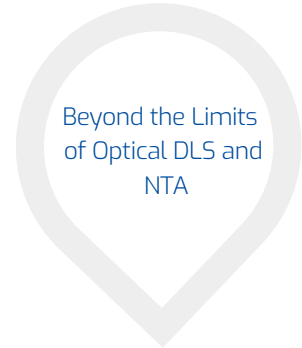
High Resolution and Sensitivity

1 nm particle size resolution for high-precision applications – comparable to TEM.

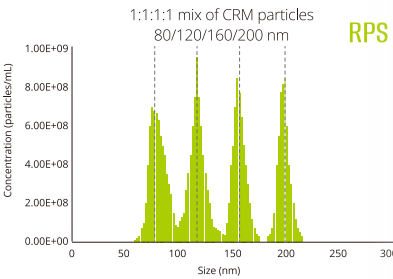


Easy to Use

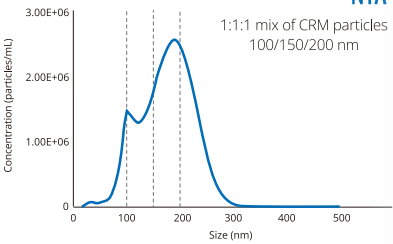
Pre-calibrated chips with simple, maintenance-free operation and user-friendly software. No washing, or calibration needed.



DLS cannot accurately measure polydisperse samples, causing size deviations and failing to determine particle concentration.



RPS differentiates multimodal mixtures with high resolution, measuring actual diameter without prior particle knowledge.

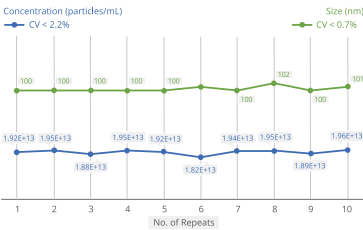
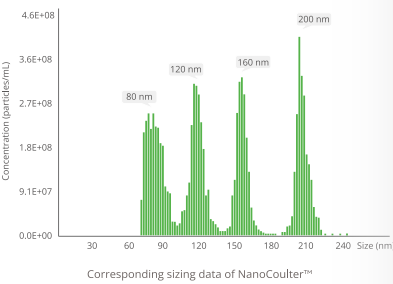
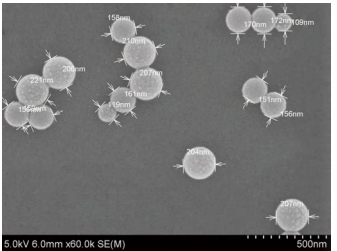


NTA could discern the bimodal mixture but not the trimodal or quadrimodal mixture.

Size · Concentration · Zeta-potential

Electron Microscopy-Comparable Particle Size Determination

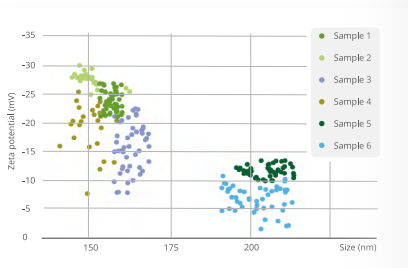
NanoCoulter™ measures both the particle size and size distribution of polydisperse samples, delivering EM-consistent results with exceptional accuracy and precision.



10 Replicate Measurements of a 100 nm Standard Sample

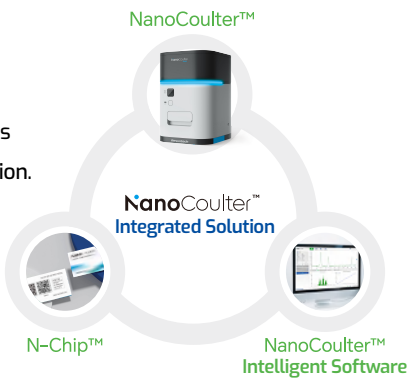
Single-Particle Zeta Potential Analysis

NanoCoulter™ records particle passage time through the nanopore to obtain zeta potential data, making RPS the only technology to date that simultaneously measures single-particle size, zeta potential, and their interrelationship as well.



One-Stop for Diverse Applications

- Real-time monitoring of single-particle size, Zeta potential and sample concentration.
- Delivers clear and accurate experimental results and data reports.
- Disposable, non-invasive cartridges and chips require no maintenance, cleaning or calibration.
- Intuitive software interface and simplified workflow, ideal for non-professional users.
- Secure data storage, audit trail and access control comply with FDA 21 CFR Part 11.
- User experience oriented with continuous updates and upgrades.



- Particle Size Distribution Analysis
- Concentration Quantification
- Zeta Potential Detection
- Purity Identification
- Production & Purification Quality Control
- Process Condition Optimization



- Physical Titer Characterization
- Virus Aggregation Analysis
- Purification Process Optimization
- Inter-Batch Variation Control
- Stability Monitoring
- Surface Charge Detection



- Preparation & Quality Control
- Aggregation & Dispersion Evaluation
- Stability Monitoring
- Particle Size Interval Ratio
- Storage Condition Screening
- Product Quality Characterization



- Particle Size Distribution Control
- Dispersant Screening
- Subpopulation Particle Concentration
- Stability Study
- Homogeneity Identification
- Charge Property Analysis