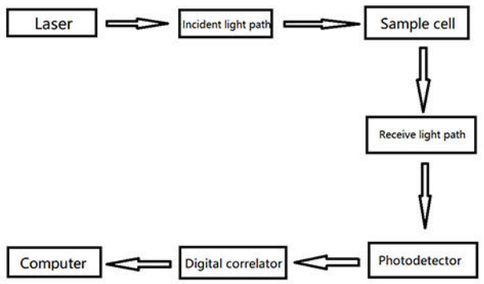
Nanoparticle Size Analyzer

Optical Correlation Nanoparticle Analyzer

BPSA-N9 is the latest nanometer particle size analyzer based on the principle of dynamic light scattering. It uses a high-speed photon correlator and a professional high-performance photomultiplier tube as the core device. It has the characteristics of fast speed, high resolution, repeatability and accuracy, and is the first choice for particle size determination of nanoparticles.



Basic Schematic Diagram of Photon Correlation Nanoparticle Analyzer

Main performance features:

Advanced testing principle: This instrument uses the dynamic light scattering principle and photon correlation spectroscopy technology to determine the particle size according to the speed of the Brownian motion of the particles in the liquid. The Brownian motion of small particles is fast, and the Brownian motion of large particles is slow. When laser light irradiates these particles, particles of different sizes will cause the scattered light to fluctuate at different speeds. Photon correlation spectroscopy analyzes the particle size according to the fluctuation of photons in a specific direction. Therefore, this instrument has the characteristics of advanced principle and high precision, thus ensuring the authenticity and validity of the test results; it is the preferred instrument for particle size determination of nano-excited particles.

High sensitivity and signal-to-noise ratio: The detector of this instrument adopts professional-grade high-performance photomultiplier tube (PMT), which has extremely high sensitivity and signal-to-noise ratio to photon signals, thus ensuring the accuracy of test results;

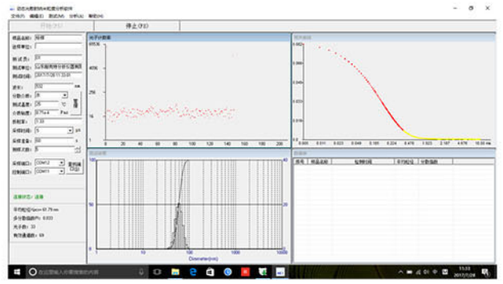
Extremely high resolving power and powerful computing function: Using PCS technology to determine the size of nano-scale particles must be able to distinguish nano-second signal fluctuations. The core component of this instrument adopts a high-speed photon correlator developed by an application-specific integrated circuit ASIC, which has a very high resolution capability of 6ns and a very high signal processing speed, which can quickly collect photons in real time and calculate related operations. Base.

Stable optical path system: The optical path system constructed with short-wavelength LD pump laser light source and optical fiber technology makes the photon correlation spectrum detection system not only small in size, but also has strong anti-interference ability, thus ensuring the stability of the test.

High-precision temperature control system: The accuracy of the sample cell temperature control system and the laser temperature control system is as high as ±0.1 °C, so that the tested sample and the laser light source are kept at a constant temperature during the entire test process, avoiding the influence of temperature changes on the test results, ensuring that Testing is accurate and repeatable;

Super powerful analysis software: The inversion algorithm in the analysis software adopts the cumulant method recommended by international standards, as well as the commonly used non-negative least squares (NNLS) and Contin algorithms. have good consistency;

Accurate and stable testing: The perfect combination of high-performance hardware and internationally standardized inversion algorithms has created the accuracy and repeatability of Nano90 test results. Its test accuracy and repeatability are higher than the requirements of international standards.



Test interface diagram

Technical Parameters:

Model	BPSA-N9
Test Range	1-10000nm(related to the sample)
Concentration range	0.1mg/L-100mg/L
Accuracy error	<1%（National standard sample average particle size)
Repeatability error	<1%（National standard sample average particle size)
Laser	λ=532nm,LD pump laser（Unique with temperature control protection)
Detector	HAMAMATSU photomultiplier tube（PMT），Using single-mode polarization-maintaining fiber
Scattering angle	90°
Digital correlator	High-speed photon correlator developed by ASIC, physical channel: 512, equivalent channel: 10000, baseline channel: 8, sampling and delay time: 1us~200us dynamically adjustable Minimum resolution: 6ns
Sample cell	10mm*10mm , 4ml（With temperature control protection, with automatic induction sliding door)
Cell placement window	With automatic sensor sliding door
Data processing	The best fitting cumulative analysis method and improved normalization algorithm can give the average particle size and particle size distribution curve
Software function	One-click measurement, automatic optimization of measurement parameters, and easy generation of test reports
Output item	Average particle size, polydispersity coefficient, particle size distribution curve, particle size distribution table, etc.
Temperature range	8-45°C (temperature accurate to 0.1°C)
Temperature display	Instrument real-time temperature display
Temperature regulation	External direct temperature adjustment, no need to open the case
Test speed	<1Min/time (excluding sample dispersion time)
power supply	AC100～260V, 50/60Hz, maximum power 80W
Use environment	Temperature: 15～40℃, humidity 20～70%, no condensation