

Product Name : Astra Nanoparticle Tracking Analysis	Product Code : ASTRALAB-SUPPLYA17005
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Description :
Astra Nanoparticle Tracking Analysis
Technical Specification :
Nanoparticle tracking analysis Purpose: Nanoparticle tracking analysis is a cost-effective nanoparticle characterization technique. It is suitable for applications that require high granularity measurement sensitivity or use the same results as the 90-degree scattering angle system. This instrument is suitable for analyzing emulsions, suspensions, proteins and other samples.

Nanoparticle tracking analysis is a leading nanoparticle size analyzer specially developed after the successful launch of the high-performance laser particle size analyzer. The instrument uses 90-degree dynamic light scattering technology to measure the size of particles and molecules, and uses static light scattering to measure the molecular weight of proteins and polymers; in many domestic brands, it is specially equipped with an avalanche photodiode (APD) detector, which is more sensitive; the photomultiplier tube detector (PMT) is much more sensitive; it also uses high-end helium-neon gas lasers, plus precise internal temperature control technology, and is compact. The closed light path and advanced software algorithms ensure data repeatability, accuracy and the lower limit of 0.3nm test; at the same time, it supports SOP standard operation and intelligent evaluation of measurement data, which is convenient for users.

Working principle:

Dynamic light scattering technology:

Nanoparticle size analyzers use dynamic light scattering technology to measure particle size and molecular size.

The random Brownian motion of particles in the liquid is caused by the collision of surrounding solvent molecules. Small particles move faster in the liquid than large particles. This movement is always going on, so if we "shoot" the movement of the sample in a short interval, we can see how much the particle is moving and calculate how big it is. At the same time, if the displacement is small and the particle position is close, the particle size in the sample is larger; on the contrary, if the displacement is large and the particle position changes greatly, the particle size in the sample is smaller. Dynamic light scattering (DLS) technology, also known as photon correlation spectroscopy (PCS), is used to measure particle size by using the relationship between diffusion speed and particle size.

Measurement range: 0.3-5000 nm (subject to sample)

Measurement Principle: Dynamic Light Scattering Method

Detection angle: 90 degrees

Repeatability error: <1%(NIST retroactive latex standard)

Minimum sample volume: 20L

Minimum sample concentration 0.1mg/mL (subject to sample)

[Molecular weight]

Measuring range of molecular weight: <1000 Da-2*10⁷ Da, estimated by hydrodynamic diameter (dynamic light scattering)

Measuring range of molecular weight: <10 000 Da-2 x 10⁷ Da, calculated by Debye diagram (static light scattering)

Measurement Principle: Dynamic Light Scattering, Static Light Scattering

Minimum sample volume: 20 L (3-5 sample concentrations required)

[System Hardware]

Laser source: He-Ne laser with high stability, wavelength 633 nm, power 4 mW. Fifty mW, 532 nm solid-state lasers are also available.

Laser safety: Category 1, meeting CDRH and CE standards

Detector: avalanche photodiode (APD) detector, QE > 50%

correlator: sampling time 25ns-8000s, 4000 channels

Condensation Control: Dry Air Purge

Temperature control range: 0 90 C (120 C temperature control tank is optional)

Temperature Control Accuracy: +0.1 degree C

Power supply: AC 100-240V, 50-60Hz

Power: Maximum 100W

[Weight and Size]

Dimensions: 320mm *600mm *260mm (W *D *H)

Weight: 21 kg

[Operating environment]

Computer configuration: Intel Core 2 Duo, 4 GB memory, 160G hard disk capacity, display resolution 1440 *900 32bit and above

Computer Interface: USB 2.0

Operating System: Windows 7 Pro (32 bit/64 bit), Windows 10 (64 bit)

Temperature range: 10 C 35 C

Ambient humidity: 10%-90% without condensation



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