

Winner802 Photon Correlation DLS Nano particle Size Analyzer



Brief Introduction:

Winner802 dynamic light scattering nanometer particle size analyzer which based on the dynamic light scattering principle, and also 1st one which use digital correlator in China. And It's upgrade from Winner801, which is 1st set of Nanometer particle size analyzer. Based on Brownian motion principle, smaller particle, faster speed, bigger particle, more slowly. It adopt great performance of Japan HAMAMATSU photomultiplier and self-developed high speed digital correlator as core parts, Get diffusion coefficient by test scattering light change in some angle, and calculate particle diameter and distribution according to stokes-Einstein equation. the machine is with characters of fast calculation, high resolution ration, good accuracy and repeatability, therefore it's widely used in company product lab research and university use.

Main specification:

| Model | | Winner 802 |
|---------------------|---------------------------|---|
| Standard | | GB/T 19627-2005/ISO 13321:1996 GB/T 29022-2012/ISO 22412:2008 |
| Measure range | | 1-10000nm |
| Concentration range | | 0.1mg/ml--100mg/ml |
| Accuracy error | | <1%(D50 of National standard sample) |
| Repeatability error | | <1% (D50 of National standard sample) |
| Light source | | Semiconductor laser $\lambda = 532\text{nm}$ $P = 30\text{mW}$ |
| Detector | | Imported HAMAMATSU photo-multiplier |
| Scattering angle | | 90° |
| Sample cuvette | | 1-4mL |
| Temperature control | | 5-40 °C (temperature controller within 0.1°C) |
| Test speed | | <5 Min |
| Outer Dimension | | L48cm*W27cm*H17cm |
| G.W. | | 12Kg |
| Operation system | | Win XP/Win 7/Win 10 64 bits |
| Analysis | | Average particle diameter, particle distribution, photon counting rate etc. |
| Digital Correlator | Model | CR256 |
| | Auto-correlation channels | 256 |
| | Baseline channel | 4 |
| | Unit delay time | 100ns-10ms |

Main Features:

1) Advanced test principle:

Dynamic light scattering principle and photon correlation spectrum technology, according to Brownian motion speed of particle to test particle size, different size of particles have different speed, when laser illuminate these particles, it will make scattering light happen different speed of fluctuations- downs.

Photo correlation spectrum method will analyze these particle size according to Photon fluctuations

-downs in particular direction.

2) High resolution:

Using PCR technology test nanometer-scale particle size, must be able to distinguish nanosecond signal fluctuations. The core components of the instrument is CR256 digital correlator developed by our company, with 8ns high resolution speed.

3) High sensitivity and Noise-signal ratio

Detector is composed of imported HAMAMATSU photomultiplier, so ensure good accuracy.

4) High speed data collection and calculation

Self-developed patent product-CR256 digital correlation, It could finish dynamic scattering light intensity collection and autocorrelative function real time calculation, Data processing speed is up to 162M, effectively reflect dynamic scattering light information of different sizes of particles.

5)High stable light path system

Photon correlation spectrum detect system adopt optical-fibre technology, smaller size and high anti-interference and reliability.

6)High precision constant temperature control system

Semiconductor temperature control technology, precision control within $\pm 0.1^{\circ}\text{C}$, make samples be in a constant state throughout the testing process, prevent testing error because temperature change will change liquid viscosity and Brownian movement speed.

7) Output parameters: freely set D10-D100, D[4,3],D[3,2], D[2,1],D[1,0] and specific surface area.

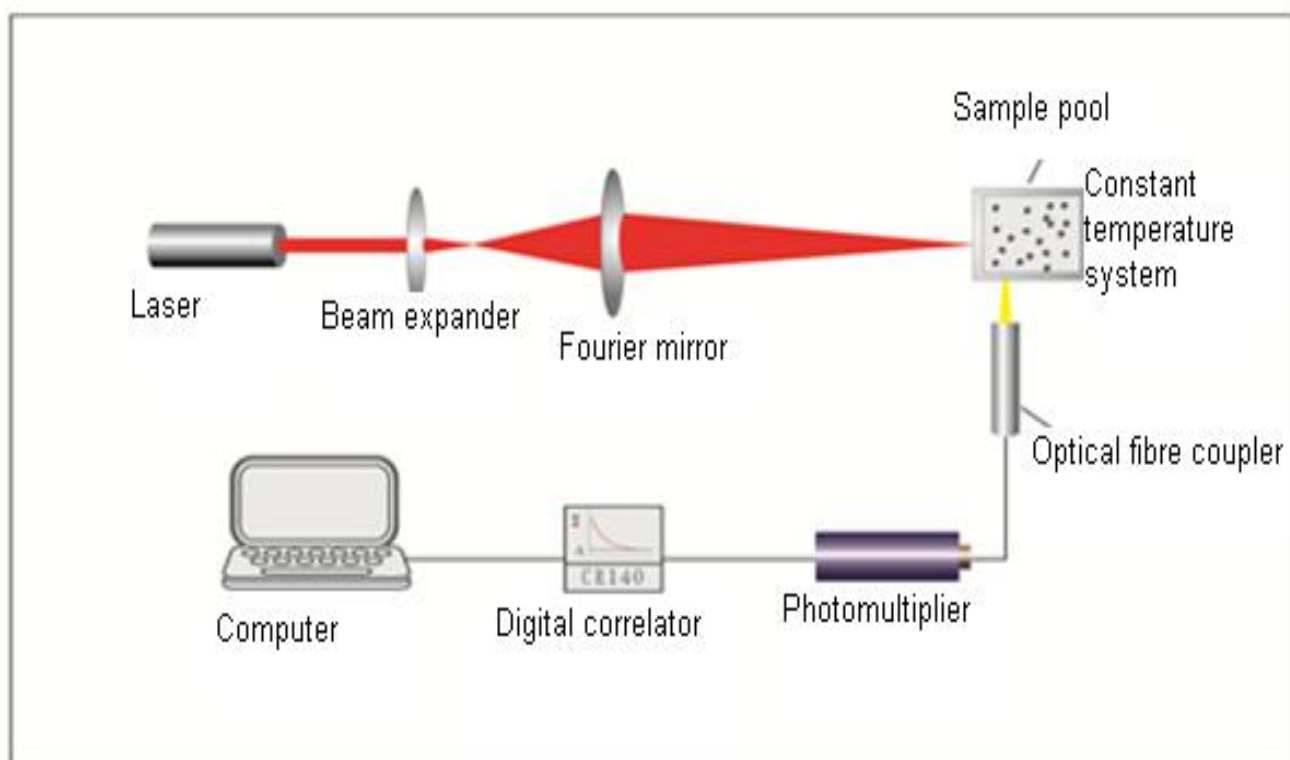


Figure- Winner802 DLS nano particle size analyzer scheme

Application:

Nano metallic oxide, Nano metallic powder, Nano ceramic material, protein, polymer latex, preparation of pharmaceutical, water/oil emulsion, paint, coating material, pigment, ink, toner, cosmetics and other fields of research, preparation and application of nano materials.