

## ***BT-2003 Laser Particle Size Analyzer***

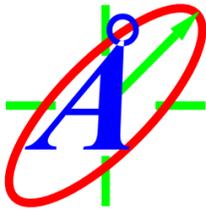


Particle size test is significant in application. Many products and solid material in industry and agriculture as well as scientific research exist as particles. Particle size distribution is significant for quality and performance of them. For example, for catalyst on catalytic result; for cement on condensing time and ultimate strength; for mineral stuffing on quality and performance; for paint/coating on coating effect and surface luster; for medicines on aftertaste, absorption rate and curative effect, etc. Therefore effective control on particle size distribution in powder processing and application is important for quality improvement, protection of public health, reduction of energy consumption and control of environment pollution.

BT-2003 laser particle size analyzer (LPSA) is a new model particle size analyzer working on the basis of laser scattering theory. It includes analyzer itself, sample preparation device and computer system, etc. Sample is carried to the testing zone in analyzer by sample preparation device, after illumination by laser, signals of scattered light occurs, photoelectric detector receive and transform them into electric signal, these signal is transmitted to the computer by USB or RS232 , at last processed by special particle size test software on the basis of Mie theory to obtain result of particle size distribution.

### **1. Performance**

- (1) **Size range:** 0.04 $\mu$ m-600 $\mu$ m.
- (2) **Repeatability error:**  $\leq$  1%(for standard sample D50).
- (3) **Test time:** Normally 1-3 minutes.
- (4) **Sample concentration :** 10—60, i.e. Optical concentration value, obscuration value , the corresponding percentage concentration is between 0.001% and 0.6 % )
- (5) **Test results:** cumulative particle size distribution (data and graph); frequency particle size distribution (data and histogram) ; Median size (D50), weights average size, surface area and other information concerned.



- (6) **Power supply** : AC220V 50Hz , Power : 240W
- (7) **Light source**: semiconductor laser , wave length 635ns,power 3mw
- (8) **Data transmission mode** : USB or RS232
- (9) **Computer & system** : Computer with Windows™Me, Windows™2000, Windows™ XP
- (10) **Printer**: printers under WINDOWS system including stylus printer, ink printer and laser printer.

## 2. Characteristics

- (1) Advanced forming technique makes it compact in structure, graceful in appearance thus convenient in use and maintenance. Effective anti-interference technology improves electrical stability and reduces fault rate.
- (2) Two sample feeding modes: small cell and automatic circulating & dispersing system (ACDS) selectable for user with easy replacement.
- (3) Mie scattering and Fraunhofer diffraction theories are applied in data processing, both includes R-R distribution and random distribution for selection.
- (4) Inside self-alignment system controlled by computer will search for lens focus automatically to improve accuracy; outside ACDS make sample preparation more convenient.
- (5) Specially designed light receiver array with 76 detectors improves resolving power. User-friendly interface of test software make operation easy including results save, locating, comparison, merging, editing, delete, help, etc.
- (6) Six report forms in Chinese and English including cumulative particle size distribution data and graph, frequency particle size distribution data, histogram and typical particle diameter range such as D3, D10, D25, D50, D75, D84, D90, D97, D98, etc. Layout, color, and font of the report are editable.

## 3. Application

- (1) Non-metallic powders such as calcium carbonate, talcum powder, kaolin, zirconium silicate, wollastonite, graphite, silica powder, tourmaline, mica, barite, plaster, bentonite, diamond, quartz, diatomite, feldspar, calamite, clay, garnet, vermiculite, Titanium white power, etc.
- (2) Metallic powder such as aluminum powder, iron powder, magnesium powder, molybdenum powder, copper powder, zinc powder, other rare metal power and varied alloy powder, etc
- (3) Pharmaceutical, agricultural pesticide, grinding particle, foodstuff, scientific research, teaching, cement, ceramic, glass, chemical industry, military industry, soil, pigment, oil exploration, geological analysis, river silt and electronic particle, etc.