

laser particle size analyzer for both dry and wet samples

Wet and dry laser particle sizer is a high-precision, multi-functional particle size analysis equipment, to meet the diverse needs of a variety of samples in the particle size measurement.

Wet and Dry Laser Particle Sizer

Whether it's a powder material that is prone to moisture absorption and agglomeration, or a conventional sample that can be dispersed in liquids, the Wet and Dry Laser Particle Sizer can achieve accurate particle size distribution testing. Wet and dry laser particle sizer has a flexible feeding mode and powerful data processing capabilities.

Main Features

1. **The dispersion system is highly modular:** The use of dispersion modules, circulating water and DC test system integrated into one. Users can freely switch between circulating dispersion and DC feeding mode according to the particle size and dispersion characteristics of the sample, taking into account the precise analysis of small and medium-sized particles and continuous testing of large particles, which improves the testing efficiency and applicability.



2. **Optical system sharing, diversified sampling mode:** Equipped with fast switchable dry and wet sampling system, to ensure the unity of the measurement principle under different sample conditions. For water-sensitive or easily agglomerated samples, dry sampling can be used, while conventional powders can be dispersed by wet method, users can choose flexibly according to the actual needs, to achieve personalized and accurate measurement.
3. **Intelligent data processing and automatic optical alignment:** The use of high-precision stepper motors to achieve automatic micron-level alignment of the optical path, to ensure that the whole process of testing optimal conditions. The data acquisition software is equipped with high-speed analysis capability, adopts advanced fitting algorithm, intelligent statistics and processing test results, effectively improving the reliability and repeatability of data.
4. **Fully automated operation experience:** Support one-button intelligent operation, wet and dry testing can be freely switched in the software. Users only need to add samples according to the prompts, the instrument automatically completes the dispersion, measurement, data analysis and other processes, significantly reducing the burden of operation, to avoid human error, improve experimental efficiency and consistency of results.

Working Principle

Laser particle sizer is based on the principle of laser scattering for particle size analysis. After the sample is uniformly dispersed in the dispersion system, the particles pass through the detection zone and are irradiated by multiple laser beams. Particles of different sizes scatter the laser light at different angles and intensities. The instrument collects the scattered light signals by means of highly sensitive photodetectors and calculates the particle size distribution by combining the Mie scattering theory or the Fraunhofer diffraction model. The wet and dry design allows the dispersion method to be flexibly adjusted for different sample characteristics, thus ensuring accurate and extensive measurements. Intelligent algorithms further enhance the accuracy of data fitting and inversion to ensure that the test results are true and reliable.

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| Model | LP801A | LP801B |
|--------------------------|---|------------------|
| Implementation standards | GB/T19077:2016, ISO13320:2020, Q/0100JWN001-2024 | |
| Wet Measurement Range | 0.01um to 3500um | 0.01um to 2800um |
| Dry Measurement Range | 0.1um to 3000um | 0.1um to 2800um |
| Channel number | 116 | 108 |
| Accuracy error | wet method: $\leq 0.5\%$, dry method: $\leq 1\%$ | |

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| Model | LP801A | LP801B |
|------------------------|--|---------------|
| Repeatability error | wet method: $\leq 0.5\%$, dry method: $\leq 1\%$ | |
| Laser light source | Primary laser source: a high-performance laser with a wavelength of 639 nm and an output power greater than 2 mW Secondary laser source: a blue laser, operating at a wavelength of 405 nm and an output power exceeding 2 mW | |
| Optical Path Alignment | fully automatic alignment system, 0.1um | |
| Operation Mode | software operation or fully automatic mode, switchable SOP can be configured One-click automatic testing Automatic data storage Automatic alignment function | |
| Measurement speed | less than 10 seconds | |
| Refractive Index | a wide range of refractive indices available; any value can be entered | |

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| Model | LP801A | LP801B |
|---|---|---------------|
| Sampling Frequency | maximum data acquisition rate up to 10 kHz | |
| Dimensions | Main unit: 870x365x325mm,Module 1: 415x350x 380mm,Module 2: 260x285x135mm | |
| Weight | 32kg, 15kg, 7kg | |
| Power Supply | 100Vac, 230Vac, 50Hz, 60Hz | |
| The following are wet dispersion methods: | | |
| Ultrasonication | Frequency: $f = 40$ kHz, Ultrasonic power: $P = 60$ W adjustable duration | |
| Stirring Speed | 0 to 3000 rpm, adjustable | |
| Circulation | Rated flow rate: 1 to 8 L/min, Rated power: $P = 120$ W | |
| Sample Cell | 600 ml capacity | |

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