# spray laser particle size analyzer for fire protection industry

Spray laser particle size analyzer adopts split design, combined with advanced laser optical technology and multi-angle scattering detection method, can accurately analyze the particle size distribution in various spray environments.

## Spray Laser Particle Size Analyzer

Spray laser particle size analyzer is a high-end instrument developed specifically for the measurement of fog particles, suitable for complex flow field and large particle size range of dynamic measurement, widely used in a number of cutting-edge science and technology and industrial fields.

## Main Features

1. Modular separation design: the measurement unit is separated from the control unit, the measurement distance is flexible and adjustable, supporting multi-scenario applications from 0.1m to 10m, improving the adaptability to different atomized environments.
2. Non-contact measurement: the instrument does not need to directly contact the droplets, effectively avoiding interference with the particles and the flow field, to ensure that the original state of the particle size data is true and reliable.

3. Airflow protection mechanism: airflow protection device for the optical lens to provide a continuous clean environment, effectively preventing droplet or impurity contamination, to improve the stability of long-term operation.
4. High precision and wide range: the use of parallel optical path and spectral amplification technology, combined with a number of photodetectors, to ensure that in a wide range of particle size to achieve high-resolution, accurate measurement results.
5. Intelligent optical path auto-centering: Built-in automatic optical path calibration system can complete the centering with one key, simplifying the operation process and avoiding optical errors caused by equipment displacement.
6. A variety of distribution model support: the instrument supports a variety of particle size distribution algorithms, including standard distribution, RR distribution and lognormal distribution, according to the actual needs of flexible switching volume distribution and quantity distribution.

## Advantages

1. Strong adaptability and flexibility: applicable to a variety of atomization and spraying scenarios, suitable for particle detection in complex, dynamic environments.
2. Efficient data acquisition and analysis: multi-angle photoelectric detection and spectrum technology combined to significantly improve the data acquisition speed and depth of particle size analysis.

3. Easy maintenance, high reliability: airflow protection and automatic centering system reduces the maintenance frequency, extends the life of the equipment and ensures long-term stable operation.
4. Easy to operate, high degree of intelligence: integrated intelligent control and automated calibration functions, even non-professionals can easily complete the measurement task.

## Working Principle

Spray Laser Particle Size Analyzer is based on the Mie scattering theory, the use of high-power laser beam through the atomized particles area, the fog droplets on the laser generated by multi-angle scattering. The instrument collects the scattered light signals from various angles through an array of highly sensitive detectors, and analyzes the scattering characteristics of particles of different sizes by combining spectral amplification and multi-distribution modeling algorithms to accurately project the particle size distribution of the droplets. The split structure and automated calibration system further enhance the stability and applicability of the measurement.

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| **Model** | **LP200A** | **LP200B** | **LP200C** |
|---|---|---|---|
| Implementation standards | GB/T19077:2016, ISO13320:2020, Q/0100JWN001-2024 | | |
| Measurement Range | 1um to 500um | 1um to 1000um | 1um to 2000um |
| Channel number | 58 | 78 | 88 |
| Accuracy error | ≤ 1% | | |
| Repeatability error | ≤ 1% | | |
| Laser light source | LD-pumped laser with a wavelength of 532 nm and tunable power from 1 to 40 mW | | |
| Sample introduction method | open type | | |
| Lens protection | Dual air curtain type | | |
| Measurement zone length | 0.1m to 10m | | |
| Dimensions | Radiation end:380x280x380mm, Receiving end:850x280x380mm | | |

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| **Model** | **LP200A** | **LP200B** | **LP200C** |
|---|---|---|---|
| Weight | 13kg and 24kg | | |
| Power Supply | 100Vac, 230Vac, 50Hz, 60Hz | | |