

Particulates suspended in air,  
Atomized droplets, powders, spray particles and mist  
Laser diffraction Particle size distribution analyzer

# AEROTRAC II

0.5 to 2000  $\mu\text{m}$



# Capture the moment of spraying

## Features

### Wide range of applications

- Droplets : Droplets from injectors, nebulizers
- Spray : Insecticide, lotions
- Mist : Humidifiers, mist separators
- Powder : Powder paint, various powders

### Measurement modes to support various applications

- Key start (manual operation via keyboard)
- Auto start (automatically starts when detecting scattered light from particulates)
- Measurement start via external signal input

### Accurate particulate analysis at short measurement intervals

- Measurement interval in continuous measurement: 0.02 to 500 msec
- High-precision continuous measurement is possible for particulates flying in space at the speed of sound

### Provided with multiple scattering correction software as standard

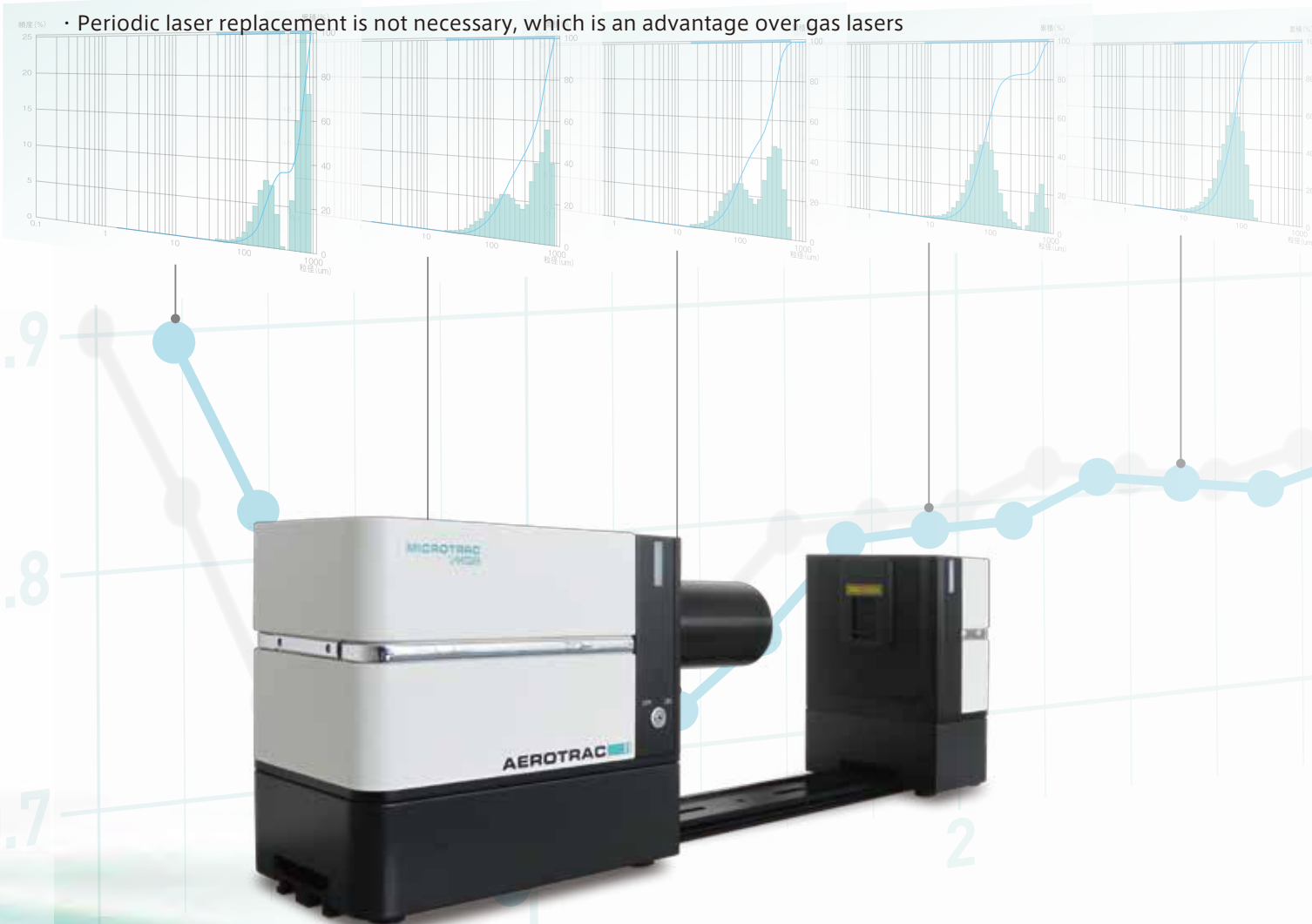
- The effect of multiple scattering of lasers is minimized, allowing accurate measurement of high density spray particulates

### Compact optical stand

- The instrument can be set up in a limited space

### Equipped with a semiconductor laser

- Periodic laser replacement is not necessary, which is an advantage over gas lasers

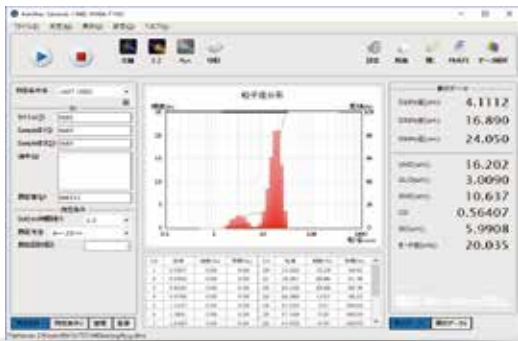


## Easy-to-use software

### Easy operation

Perform measurements with a click of an icon. After clicking the icon, a measurement can be performed by initializing the sample spray.

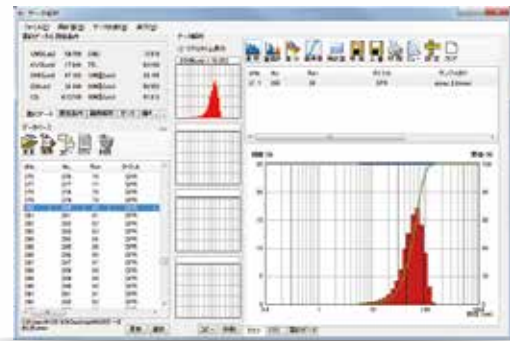
#### Measurement screen



### Wide range of analysis functions

Capable of overlapping displays for comparison of multiple sets of data and time-series display of summary data (median diameter, SMD, light transmittance, etc.).

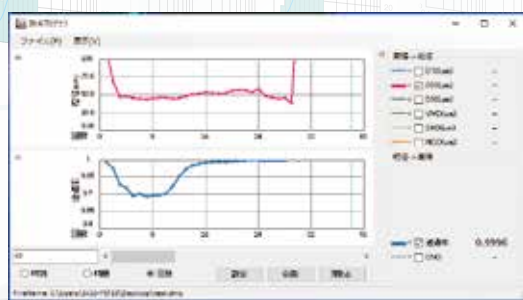
#### Analysis screen



### Real-time monitoring and analysis of measurement results

Measurement and analysis screens can be displayed and operated in separate windows. Past data can be viewed and analyzed while performing measurement.

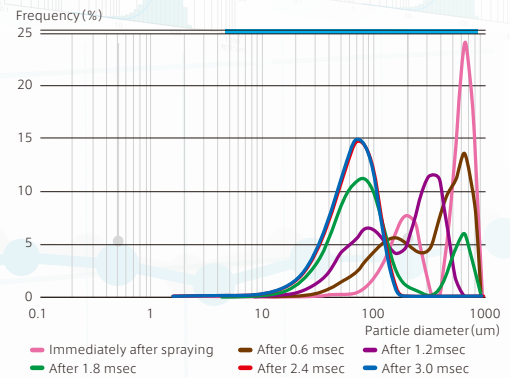
#### Time-series display of particle size distribution



### Measurement results output

Measurement results can be output in various file formats (CSV, JPEG, BMP, EMF, PNG, TIFF, etc.). Particle size distribution graphs can be copied to the clipboard.

#### Overlapping display of particle size distribution



## Applications

AEROTRAC II can be used in a wide variety of fields, including droplets from injectors, nebulizers, insecticides, lotions, humidifiers, mist separators, powder paint and various powders.



Droplets from injector



Nebulizers



Insecticide



Lotion



Humidifiers



Powder paint



Mist separators



Pigments

## Options

AEROTRAC II takes advantage of the optical system that has a wide open space, providing many types of measurement. Various options are available to meet your applications.

### Fixing jigs to support various types of sprays

Several types of jigs are available to match various sizes and shapes of sprays. This allows spraying from the same position all the time.



### Wet measurement using a batch cell

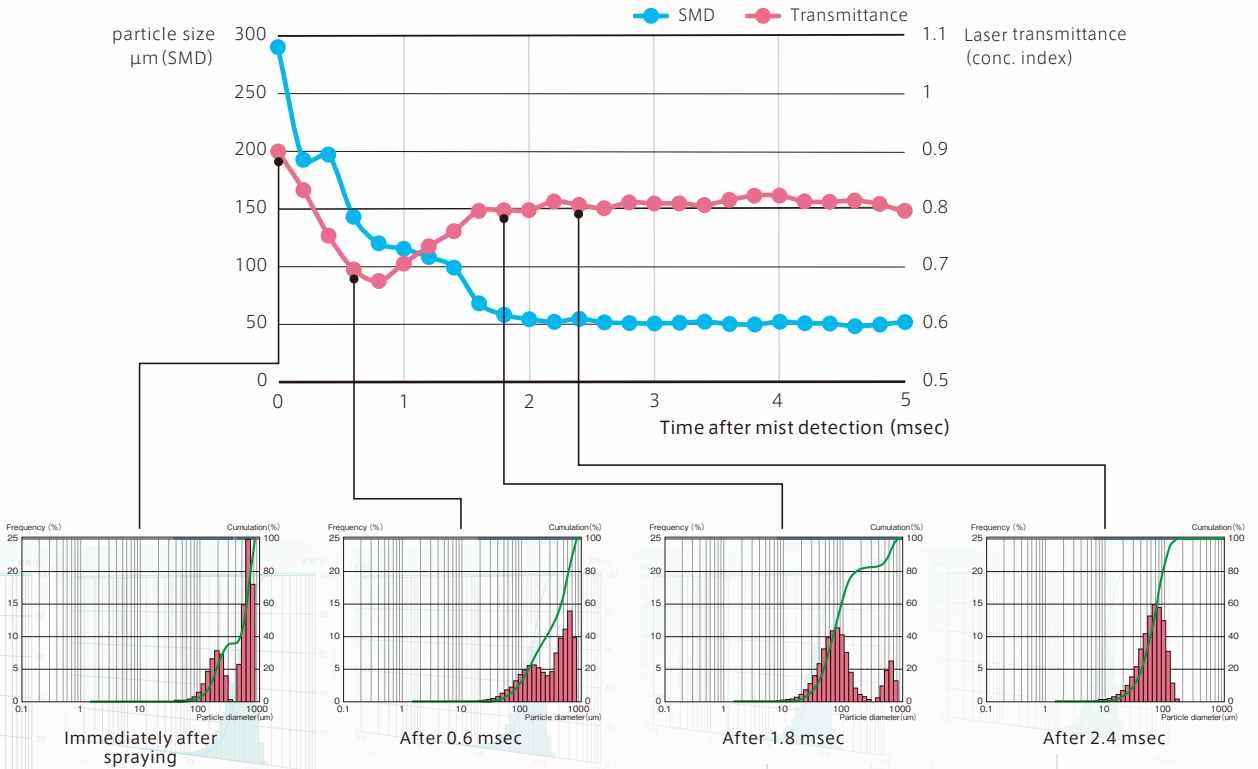
Particle size distribution in slurry can be measured by using a batch cell.



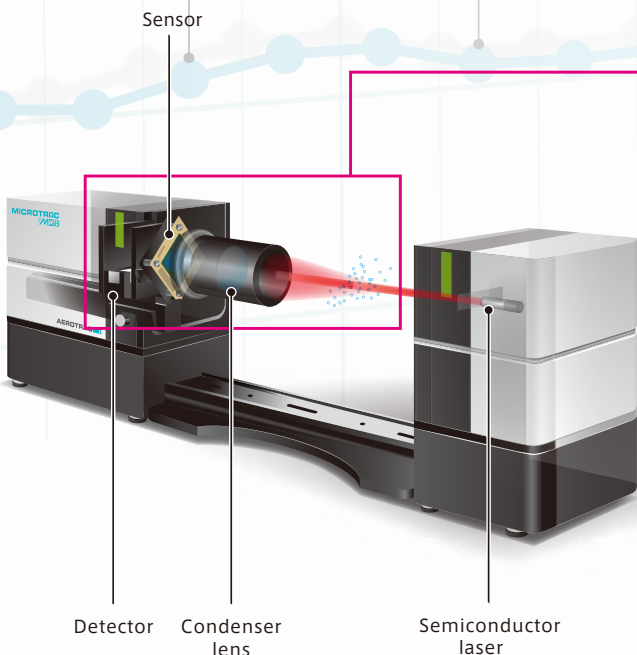
## Analysis of temporal change of spray mist

Graphs of concentration of spray mist, particle size and its distribution are shown below.

The concentration of spray mist and particle size distribution are automatically and continuously measured in 0.2 msec intervals the instant the AEROTRAC II detector detects scattered light from the mist particles. The mist concentration and particle size are not stable from 0 to 2 msec, but become stable after that time.



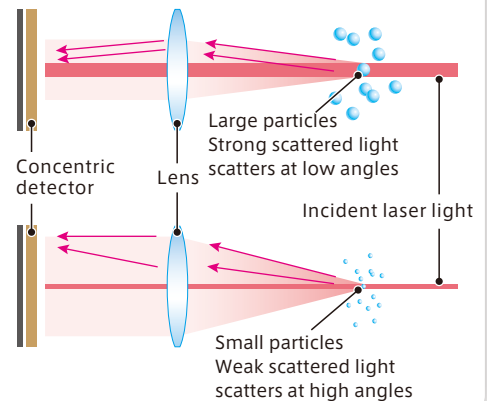
## Basic block diagram



### Measurement area

#### Laser diffraction method

The scattered light that is generated when laser light is irradiated on particles has a scatter pattern that corresponds to the particle size. The detector receives scattered light (mixed light) from particles of various sizes, and our unique algorithm is used to convert the result into particle size distribution.

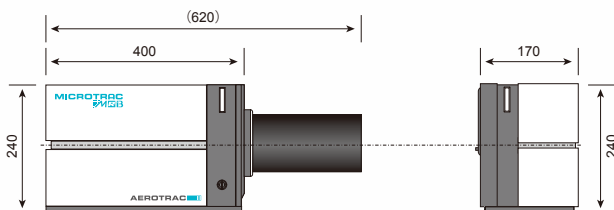


## Specifications

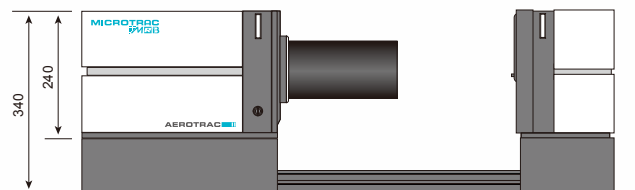
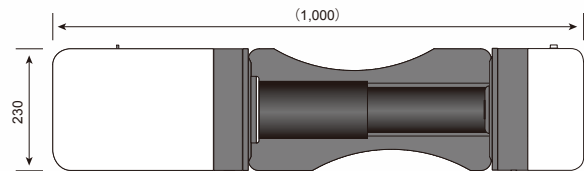
| Model                            | AEROTRAC II   |
|----------------------------------|---|
| Measurement principle            | Laser diffraction method  |
| Measurement range                | F100 lens: 0.5 to 350 $\mu\text{m}$<br>F300 lens: 1.4 to 1000 $\mu\text{m}$<br>F600 lens: 2.8 to 2000 $\mu\text{m}$   |
| Light source                     | Semiconductor laser<br>Wavelength: 635 nm<br>Output: 3.5 mW<br>Laser class: CLASS 3R  |
| Detector                         | 32-element ring detector (with automatic optical axis adjustment function)  |
| Measurement interval             | Spray measurement: 0.02 to 500 msec<br>Continuous measurement: 1 to 600 sec   |
| Number of measurements           | Spray measurement: 1 to 100 times<br>Continuous measurement: 1 to 9,999 times   |
| Display/output content           | Particle size distribution (frequency/cumulation),<br>summary data (D50% particle size, SMD, mode diameter, etc.), density index  |
| Batch cell                       | Material: Tempax glass (with coating)<br>Capacity: 5 to 7 ml  |
| Conditions of use                | Ambient temperature: 10 to 35°C<br>Ambient humidity: 20 to 80% R.H. (no condensation)   |
| Power source                     | 85 to 264 VAC, 47 to 63 Hz  |
| Dimensions and weight            | Light emission module: 170 (W) $\times$ 230 (D) $\times$ 240 (H) mm 5.5 kg<br>Detection module: 595 (W) $\times$ 230 (D) $\times$ 240 (H) mm 11.5 kg (with F300 lens attached)<br>For connected modules (option): 1000 (W) $\times$ 230 (D) $\times$ 340 (H) mm 27 kg |
| Data processing and control unit | Windows PC (including laptop PC)  |

## Outline dimensions

Unit (mm)



Standard model



Integrated model (option)

※Specifications and appearance of the products listed are subject to change without notice.

※Products (goods and services) described in the catalog, depending on the destination and application, might be applicable to export regulations, etc. by the "Foreign Exchange and Foreign Trade Control Law".

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