

Airborn Particle Explorer[®]

identification of airborne particles

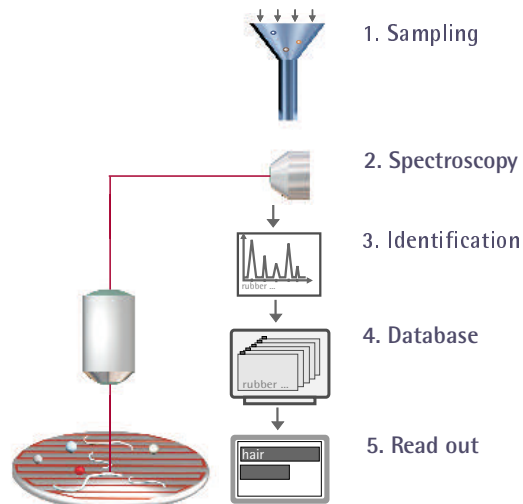
integrated solution

The Airborne Particle Explorer[®] detects, counts and identifies particles. Automatic identification of most particles present in ambient air is carried out by laser Raman-Spectroscopy. This powerful analytical tool and its unique self-explanatory software combine to enable quick and efficient determination of any source of contamination in a cleanroom environment.

automated RAMAN Spektroskopie

A laser beam is focussed to the micrometer on the particle. The integrated laser Raman-spectrometer provides the particles' spectrum at high resolution and sensitivity. Preparation of samples is not necessary. All processes run automatically.

reliable process

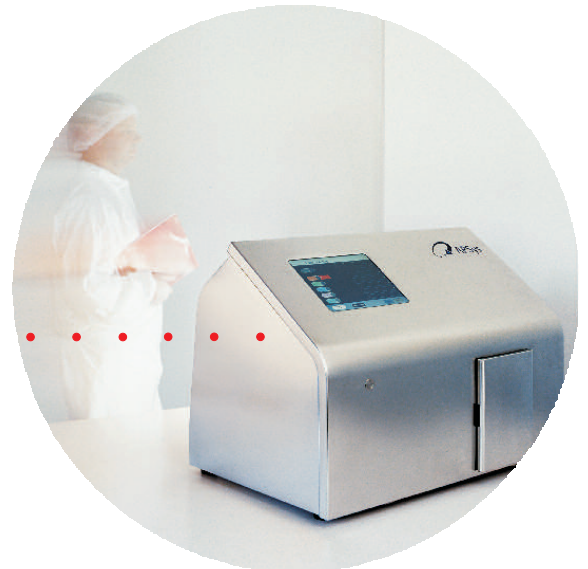


applications

- hygiene, clean room air monitoring
- particle reduction trouble shooting
- development of processes and products
- quality control and assurance
- hard disk, flat pannel and semi conductor-manufacturing QC
- IPC e.g. high potent drug monitoring

particle size and form detection

Particle detection is based on a scattered light analysis in which a focussed laser beam scans the surface on which the particles were located. The scattered light characterizes both particle size and properties. You will be able to very quickly determine the number and size of emitted particles, and the particle identification can be automatically engaged.



unique intuitive software

The APSys Identifier[®] software identifies the particles' material using the extensive integrated database and processes the data in a user-friendly way. The software is easy to use, the results are presented clearly and stored safely. Own particle spectra can be easily integrated.

features

- automated size, shape and identification of particle > 500 nm in one minute
- easily validated, CFR 21 Part 11 compliant
- customizable user-friendly operation
- transportable
- cleanroom manufactured and tested

Airborn Particle Explorer[®]

specification of automated particle ID

System components

• X,Y - scan system	0.1 µm resolution
• Autofocus system	10 s setting time
• Laser	532 nm, 10 mW
• Optical unit	Spektrometer CCD-Camera
• Housing	Electropolished stainless steel dust-proof, sterilisable
• Integrated workstation	Slot CPU PIII, 850MHz, 256 MB RAM, 80 GB HDD

Performance data

• Particle size coverage	0.5-100 µm
• Dimensions	Measured at the longest expansion: >0.5 µm; >1 µm; >3 µm; >5 µm ±15 % optional customizable (compared to microscopic count)
• Number	± 15 % (compared to microscopic count)
• Shape	Locally resolved picture of the particles, lengths/width relation ± 15 %
• Duration of an analysis	ID: Depending on the size of the particle and the substance 5s-100s per particle. Position, size and form: 10-150 min for the entire particle load area
• Lateral resolution	0.1 µm
• Spectral resolution	8 cm ⁻¹
• Area of the spectrum	400-2000 cm ⁻¹
• Identification	On the basis of the RAMAN-Spectroscopy a spectrum of oscillation is created. It is essential, for ID, that the substances obtain a molecular structure. and neither shows any fluorescence
• Memory capacity	1.500.000 Data sets of single particles
• Database	550 clean production entries, customizable

Software

• Control	APSys Software Liquid Particle Explorer and APSys - Central-Control-Center-Unit (ACCU) password guarded hierarchy administration
• Report	Visualization of data, preprocessing, fully automated chemometric data processing
• Compliance	The software works according to CFR 21 PART 11 and was developed in accordance to these rules and regulations

Power supply

• Mains connection	85-264 V 48 - 62 Hz
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Operating Conditions

• Humidity	20 - 70%
• Temperatures	17 - 28°C
• Laser	Class 1

Calibration

• Identification	Standard substance, duration, 5 min
• Counting and sizing	PSL particle (NIST)

Data

date, time, sample ID, operator ID, particle count, size, material composition, raw spectra, labels

Interface

• Protocols,	TCP/IP, Ethernet
• Connection	IEEE 802.3, USB

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Technical specifications subject to change.

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