



NanoTracer

True portability and accurate measurement of ultra-fine and nano-particles



PHILIPS



Airborne ultra-fine and nano-particles pose a recognized threat to hundreds of millions of people throughout the world. When inhaled they are deposited deep in the lungs, where they can lead to respiratory problems and other illnesses. Present in everything from vehicle exhausts, chemicals and tobacco smoke to emissions from gas cookers and industrial processes like nano particle production and welding, these invisible particles can have a serious impact on our health and well-being.

Simple, handy yet accurate real-time monitoring

The Aerasense NanoTracer is a hand-held device that enables real-time detection of these potentially hazardous particles. It offers many advantages over established solutions like SMPS (Scanning Mobility Particle Sizer), including a much lower level of investment and continuous measuring rather than sample-taking every few minutes. Its portability and compactness means you can use it for personal monitoring, for instance

in the direct vicinity ('breathing zone') of people at work.

The NanoTracer, which works by diffusion charging (and is therefore not nuclear-based), also distinguishes itself from other compact solutions on the market in that it measures not only particle concentration but also average particle diameter. This helps determine the source of the particles.

Combining all this with ease of use and excellent accuracy, the NanoTracer really

offers something different for monitoring both indoor and outdoor air quality and in occupational health applications. Being easy to carry around, it would typically be used at various industrial sites and in laboratories, as well as to carry out spot measurements in offices (e.g. in proximity to printers and photocopiers) or in buildings close to busy roads.*

* For continuous monitoring at a fixed location, a wall-mounted version, known as the NanoMonitor, is available.

“The problem is how to measure exposure to, and emission of, nano particles in the air in an easy way. Philips Aerasense has really solved this.”

Dr. Matthias Voetz, Bayer Technology Services

“I really like this equipment. It works very well and has a great user interface. It enables me to do research I couldn't do before.”

Andreas Dahl, scientist Lund University



Accurate and thorough

- Detects ultra-fine airborne particles (10 to 300 nm)
- Carries out continuous, real-time measurement
- Measures both particle concentration and average particle diameter
- Patented technology
- Independently-validated accuracy (by the German Institut für Gefahrstoff-Forschung)



Convenient

- Compact and lightweight
- Simple operation
- No addition of liquids required
- Minimal maintenance requirements for the user
- Silent operation

NanoReporter software

The specially-developed NanoReporter software gives you easy yet powerful analysis, comparison and archiving of measurement data. You can view both on-line and saved measurement data in either graphical or numerical format.

Other benefits include:

- Real-time display of measurements from NanoTracer
- Intuitive, straightforward user interface
- One-click report generation
- Comparison of up to four different measurements
- Export of data for further post-processing



Complete kit

The NanoTracer is supplied as part of a kit which contains everything you need for accurate measurement of ultra-fine and nano particles. The kit is contained within a sturdy, padded equipment case and contains:

- The unique NanoTracer portable monitor
- The NanoReporter software for easy analysis, comparison and archiving of measurement data
- A belt and holster for the NanoTracer so it can be carried as a personal monitor
- Sample tube
- Mains adapter with a set of universal plugs
- USB cable
- Detailed instructions for use



Technical specifications

Operating modes

Fast mode: in this mode the NanoTracer measures particle concentrations in real-time.

Advanced mode: measurement of both particle concentrations and average size of the particles. This requires a slightly longer sample time.

Measurement units

Fast mode: particles/cm³

Advanced mode: particles/cm³ plus average particle diameter in nm*

Concentration range

0-10⁶ ultra-fine particles/cm³

Average particle diameter range

20-120 nm

Time resolution

Fast mode: user-adjustable (min. 3 sec)

Advanced mode: 16 sec

Data presentation

Via display on the NanoTracer and on a PC running NanoReporter software (provided)

Data storage

24 MB internal memory, enough for more than 10 weeks of continuous monitoring data at the fastest sample rate

* particles in the ultra-fine range of 10-300 nm

Communication

USB

Measurement technology

Diffusion charging

Operating conditions

0-35°C, with optimal performance at room temperature

0-90% relative humidity (non-condensing)

Power supply

- Internal lithium-ion battery (rechargeable)
- 24V DC mains adapter

Dimensions (H x W)

16.5 x 9.5 cm

Weight

0.75 kg

Airflow

0.3 - 0.4 l/min

Support and maintenance

- Periodic maintenance and calibration services available
- The NanoTracer can be used in intermittent mode to extend maintenance intervals

Certification

CE

Contact information

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Date of release: March 2011
Specifications are subject to change without prior notice