

Wir messen es.



# Product Portfolio Nanoparticle

(Stand: April 2016)

## testo DiSCmini – Diffusion Size Classifier miniature

Wir messen es.



**Description:** handheld, battery-powered instrument for the measurement of aerosol nanoparticles with 1 second time resolution of following online variables:

- Particle number concentration: 1E3 to 1E6 pt/ccm
- Geometric mean diameter: 10 to 300 nm
- Lung-deposited surface area (LDSA): [ $\mu\text{m}^2/\text{cm}^3$ ]

**Measuring principle:** based on electrical charging of the aerosols in a unipolar diffusion charger.

### Applications:

- Personal exposure monitoring
- Ambient air monitoring
- Workplace hazard identification
- Filtration efficiency verification
- Air pollution mapping with one mobile or multiple stationary instruments
- Epidemiological studies

### Target groups:

- Environmental authorities, Governmental monitoring authorities
- Science, universities, Technical Colleges, Research Institutions & Laboratories
- Non-governmental inspection, auditing and certification services
- Public Transport
- Clean Room
- Filter/washer manufacturers
- Associations, Lobbyists

### Features:

Handheld device, one button operation, battery-powered, no working fluid necessary, operation in any position.

testo DiSCmini Order. No. 133



**Description:** portable emission measurement system PEMS for on-board particle counting and classification with 1 second time resolution of following online variables:

- Particle number concentration: 1E4 to 3E8 pt/cm<sup>3</sup>
- Geometric mean diameter: 10 to 300 nm
- Lung-deposited surface area – LDSA (active surface):  $\mu\text{m}^2/\text{cm}^3$
- Calculated particle mass PM [ $\mu\text{g}/\text{m}^3$ ]

**Measuring principle:** based on electrical charging of the aerosols in a unipolar diffusion charger including PMP compliant sampling and conditioning.

### Applications:

- Real Driving Emissions – RDE for LDV within Euro 6c
- In-Service Conformity with PEMS for HDV within Euro VI
- R&D Diesel and Gasoline engines
- R&D of diesel particle filters (DPF)

### Target groups:

- Automotive construction; Trucks & construction vehicles; Engine manufacturing
- DPF Filter/washer manufacturers
- Governmental monitoring authorities
- Science and universities

### Features:

portable device, one button operation, battery-powered, no working fluid necessary, operation in any position, ThermoDilution PMP compliant, Golden Instrument for the Inter Laboratory Comparison Exercise ILCE of the JRC.

testo NanoMet3 Order. No. 444





## testo ViPR – Volatile Particle Remover

Wir messen es.



**Description:** PMP-compliant system for sampling, diluting and conditioning of raw gas for particle characterization. In combination with an condensation particle counter measures number concentration of solid nanoparticles from vehicle emissions in compliance with UNECE R83 and R49 regulations.

**Function principle:** Thermodilution post-conditioning (primary dilution + evaporation tube + secondary dilution) for the removal of volatile particle formation in order to measure the solid particle fraction.

### Applications:

- Measuring particle number concentration according to regulations R83 and R49
- Diesel- and gasoline-engine emissions research
- Characterizing efficiency of DPFs, loading and regeneration studies
- Studying emission-specific effects of different fuels, lubricants, and additives
- Measuring particle emissions of off-road diesel vehicles, ships and locomotives
- Characterizing particle emissions from biomass combustion, garbage incinerators, agricultural burning, and stationary power generators

### Target groups:

- Automotive construction; Trucks & construction vehicles; Engine manufacturing
- DPF Filter/washer manufacturers
- Governmental monitoring authorities
- Science and universities

### Features:

Compliant with UNECE R83 and R49 regulations; transient measurement for recording driving cycle tests; primary diluter for direct connection to tail pipe or on CVS dilution tunnel; easy PC-linked operation.

testo ViPR Order. No. 1122B



## testo MD19-3E – Rotating Disk Diluter

Wir messen es.



**Description:** rotating disk method to dilute a sample of raw gas for measurement. The unit is supplied with two disks (8 and 10 cavities) for different dilution ranges. This allows setting up dilution ratios from 1:15 to 1:3000.

**Function principle:** A portion of the raw exhaust fills up each cavity of the rotating disk and is transported to the measurement channel where it is mixed with particle-free dilution air. The undiluted gas parts, the dilution unit and the dilution air may be heated up to selectable temperatures to avoid condensation of raw gas components sampled from exhaust source.

### Applications:

- Dilution of aerosol in laboratories or raw exhaust gas at chassis dynamometer or test bench

### Target groups:

- Automotive construction; Trucks & construction vehicles; Engine manufacturing
- DPF Filter/washer manufacturers
- Governmental monitoring authorities
- Science and universities

### Features:

Continuously variable aerosol dilution over a wide range; dilution takes place directly close to the aerosol source; raw gas return to the exhaust or any off-take; built-in heater with selectable temperatures to avoid condensed volatile materials; full remote control possible in combination with digital control unit testo CU-2; 1000 operation hours between recommended service.

testo MD19-3E Order. No. 202





# testo REXS – Reproducible Exhaust Simulator

Wir messen es.



**Description:** soot particle source with outstandingly high mass output, ease of operation and attractive cost savings potential. It produces ultrafine particles of the same size as those emitted from a combustion engine, reaching every time the same mass output.

**Function principle:** testo REXS obtains its soot from a continuously extinguished laminar propane diffusion flame.

## Applications:

- Multipurpose and stable source for soot-like standard particles in laboratories or test bench

## Target groups:

- Filter/washer manufacturers
- Calibration services
- Automotive construction; Trucks & construction vehicles; Engine manufacturing
- Science and universities

## Features:

combustion soot particles with similar mobility distribution as emissions from Diesel; stable operation even during change of absolute pressure due to rising backpressure of loaded filters; particle size distributions are stable and reproducible within less than 5% deviation; soot volume concentration is largely unaffected by pressure increase

testo REXS Order. No. 366

