BEMS 4000







In Europe, motor vehicles (light-duty vehicles) will, in the future, be tested for braking emissions in the WLTP cycle. The basis for this is the directive ECE/TRANS/WP.29/GRPE, in short, UN GTR. The particle sizes in brake emissions are in the nanoparticle range up to about $10~\mu m$ in concentrations of up to 2×10^6 particles/cm³.

Therefore, emissions in this size range are tested for TPN (Total Particle Number, solid and volatile) and SPN (Solid Particle Number, solid particles only, in particles/cm³). The PM_{2.5} and PM₁₀ values (in μ g/m³) are also considered.

The test of $PM_{2.5}$ and PM_{10} (in $\mu g/m^3$) is done purely gravimetric after the entire test is finished, meaning there is one emission value for $PM_{2.5}$ and one for PM_{10} for the overall test cycle.

Continuous and time-resolved monitoring of PM_1 , $PM_{2.5}$, and PM_{10} and also particle size distribution can be realized by scattered light detection of the particle size and concentration with the BEMS 4000.

This device is sold via our partner Link¹

工作原理

BRAKE EMISSION MEASUREMENT SYSTEM

The BEMS 4000 uses the recognized optical light scattering measuring technique according to ISO 21501-1 on a single particle. It is equipped with an LED light source of high light intensity, high light stability, and long service life

The instrument's calibration can be easily and quickly checked and, if necessary, adjusted at any time, even when installed, using a monodisperse test aerosol.

Extensions/Accessories

Data transmission is via an integrated interface, TCP-IP for the CPCs, and the dilution (AK-Ethernet protocol on request).

The calibration of the BEMS 4000 takes place traceably at Palas, including a comprehensive calibration certificate.

Notice. Our partner, Link Engineering, distributes this product. We will be glad to forward your request.

¹Link Website: https://www.linkeng.com/product/model-4222-brake-emissions-particle-measuring-system/



优势

- Easy integration into the BEMS System
- Time-resolved measurement of $\mbox{PM}_{2.5}$ and \mbox{PM}_{10}
- Additional measurement of particle size distribution and $\ensuremath{\mathsf{PM}}_1$
- Robust, compact design



技术数据

测量原理

测量范围(数量浓度)

测量范围(粒径)

体积流量

Size channels

Power consumption

Optical light-scattering

 $< 2 \cdot 10^4 \, \text{particles/cm}^3$

 $0.18-18~\mu{\rm m}$

9.5 l/min

Max. 64 (32/decade)

Approx. 200 W



应用领域

• Time-resolved measurement of brake emissions



Mehr Informationen: https://www.palas.de/product/bems4000