

# 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  $10 \mu\text{m}$  in concentrations of up to  $2 \times 10^6$  particles/ $\text{cm}^3$ .

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/ $\text{cm}^3$ ). The  $\text{PM}_{2.5}$  and  $\text{PM}_{10}$  values (in  $\mu\text{g}/\text{m}^3$ ) are also considered.

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

Continuous and time-resolved monitoring of  $\text{PM}_1$ ,  $\text{PM}_{2.5}$ , and  $\text{PM}_{10}$  and also particle size distribution can be realized by scattered light ...

## BENEFITS

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

## APPLICATIONS

- Time-resolved measurement of brake emissions

## DATASHEET

Measuring principle	Optical light-scattering	测量范围(数量浓度)	$< 2 \cdot 10^4$ particles/cm <sup>3</sup>
测量范围(粒径)	0.18–18 µm	体积流量	9.5 l/min
Size channels	Max. 64 (32/decade)	Power consumption	Approx. 200 W