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 μm in concentrations of up to $2x10^6$ 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 PM_{10} values (in $\mu g/m^3$) 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 ...

Benefits

- Easy integration into the BEMS System
- Time-resolved measurement of $PM_{2.5}$ and PM_{10}
- Additional measurement of particle size distribution and PM_1
- Robust, compact design

Applications

- Time-resolved measurement of brake emissions

DATASHEET

Measuring principle	Optical light-scattering	Measurement range (number C_N)	$< 2 \cdot 10^4$ particles/cm^3
Measurement range (size)	0.18 – 18 μm	Volume flow	9.5 l/min
Size channels	Max. 64 (32/decade)	Power consumption	Approx. 200 W