

DEKATI DMM - Mass Monitor

Specifications

Particle size range	0 – 1.2 µm
Number of Stages	6 impactor stages + one mobility channel
Volumetric flow rate	10 lpm (nominal)
Lowest stage pressure	100 mbars absolute pressure
Operation temperature	5-40°C
Operation humidity	0-60 % R.H.
Response time	< 5 seconds
Concentration range	From 1 to 1000 µg/m ³ (up to 5000 µg/m ³ for short periods of time)
DMM unit dimensions	Outer cabin: W x L x H 560 x 420 x 300 mm Installable to 19" rack, 6 U height: W x H x L 450 x 266 x 400 mm
Unit weight	40 kg
Inlet	G 3/8" thread
Outlet	G 3/8" thread, NW-16 -connector
Input/output	RS-232 serial connector for computer interface 0-5 V analog mass concentration output 2 0-5 V analog input signals
Required accessories	Vacuum pump Computer Sampling system
Computer requirements	Pentium II processor, 64 MB RAM, MS-WINDOWS 95, 98, ME, NT4.0, 2000 or XP
Pump requirements	7 m ³ /h at 100 mbar



Accessories

- Vacuum pumps for 230/100/110V
- Vacuum hose set for pump connection
- Dekati ejector diluter (DI-1000) for CVS tunnel sampling
- Dekati Fine Particle Sampler (FPS-4000) for tailpipe sampling
- 19" Mobile instrument rack
- 19" Installation cabinet

For more information, please contact: sales@dekati.fi



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Dekati Ltd. is specialized in the design and manufacture of innovative fine particle measuring and sampling devices. Since its founding in 1994, Dekati has become the technological market leader in producing fine particle measurement instrumentation for various applications and hundreds of customers. ●

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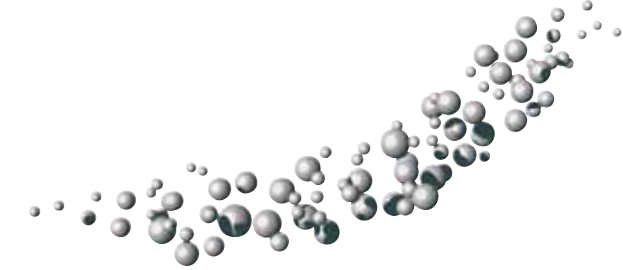
Real-time particle mass concentration measurement

Diesel and gasoline exhaust PM concentration

Pre- and post aftertreatment device measurements



Excellence in Particle Measurements



DEKATI DMM Mass Monitor

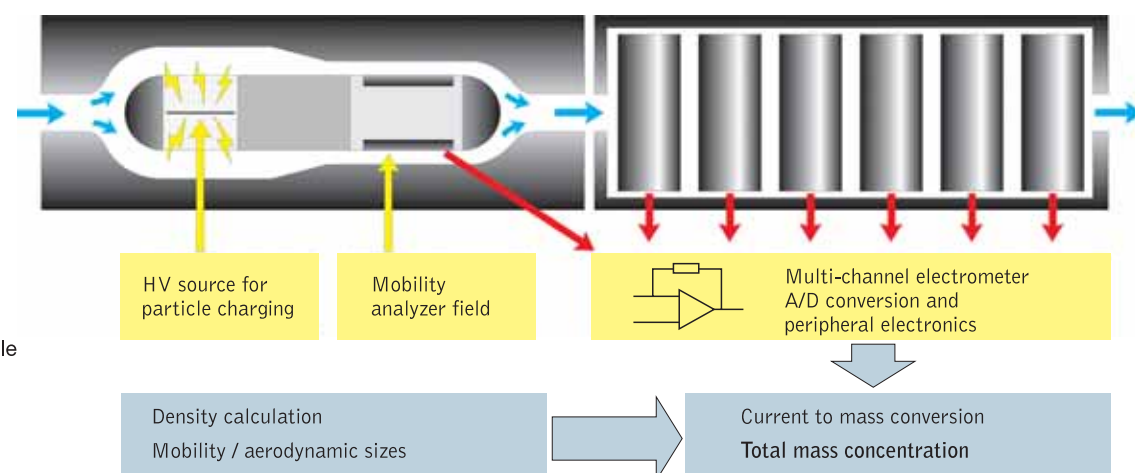


DMM, Dekati Mass Monitor, is a real-time instrument for diesel and gasoline vehicle PM (Particulate Matter) emission measurements. Used either with a tailpipe sampling system or an existing CVS tunnel, it provides second-by-second information about vehicle PM mass emissions.

Operating principle

Based on well-known ELPI™ technology, the device consists of a corona charger complete with on-line particle density measurement, and an inertial 6-stage impactor

with electrical detection. A diffusion charger is used to give a precisely designed charge to particles, and particle size classification is accomplished in a 6-stage inertial impactor. Sensitive electrometers are connected to the impactor collection sensors and the measured current is proportional to the amount of particles in the corresponding size range. Combining the particle mobility size information from the charger and aerodynamic size from the impactor enables calculation of the effective density of the particles required for conversion from measured current values to particle mass concentration.



DMM-230 operating principle

DMM applications

DMM is specially designed for automotive PM emission measurements, and in this field it can be used for all development and routine measurement purposes. Some of its common applications and benefits are:

- Engine development and ECU tuning – see immediate results
- After-treatment device development – simultaneous tailpipe measurement, upstream and downstream of catalyst or DPF for real-time efficiency measurements
- Raw exhaust or CVS tunnel measurements, both steady state and transient testing
- Test cell integration possible, analog input and output signals

DMM Technical advantages

DMM is currently the most advanced PM mass measuring equipment available, measuring both solid and volatile particles with outstanding sensitivity and a fast time response. Even concentrations well below ambient levels are measured, minimum detectable concentration is as low as 1 µg/m³, and the data is still reported in real time, time resolution being 1 Hz and time constant 2-3 s. The dynamic range is also exceptionally large, maximum concentration is 1000 µg/m³, even higher for short periods of time.



Total tailpipe mass concentration during EUDC cycle.

User Interface and Software

Special attention has been paid to easy and reliable operation. The need for service and maintenance is minimized, data reporting automatized, and test cell integration is also possible with analog input / output signals. All this results in faster and more cost-effective PM emission reductions than ever before.

Measured data is displayed on a computer screen on a second-by-second basis, and the total mass concentration can be recorded to data acquisition systems by using analog output signals.

