



meDiSC

Diffusion Size Classifier.
A new generation aerosol measurement instrument which provides particle number and size information. It is portable, robust and easy to use.

Preliminary Technical Specifications

Number concentration	3·10 ³ ... 1·10 ⁶ #/cm ³ (depends on particle size and sampling time constants)
Particle size range	Measures 20 ... 200 nm
Correlations	Operated in parallel to an SMPS system and sampled with 3 different aerosols
Calibration	Using SMPS recommended every 1-2 years
Communication	Bluetooth USB
Data storage	PC SD/MMC Memory card
Battery life	Approximately 8 hours
Dimensions (in cm)	34.2W x 26.3D x 9.8H
Weight	Approx 5.5 kg
Sample flow	Approx 1.5 l/min
Accessories	USB cable for data transfer Power adapter, including car plug and charger for battery. Software for PC running Windows XP Essential spare parts DiSC is supplied in a portable carry bag with shoulder strap. The unit can be used with a removable SD/MMC Memory Card for full portability

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- 2 s resolution time
- measures number and size simultaneously
- weighs 5.5 kg
- battery life approx 8 hrs
- measures 20 ... 200 nm
- suited for field studies
- no technical experience necessary to operate

Many aerosol instruments are large, heavy, fragile and expensive. DiSC was designed to avoid these characteristics with the aim to offer an instrument suitable for field measurements where accuracy and size distribution are not critical elements. It is the first of its kind on the market.

DiSC is a modification of the well known diffusion charger (DC). Aerosol is charged and then passes through 3 measurement stages.

In the diffusion stage, smaller particles are deposited by diffusion while passing through a series of stainless steel grids.

In the induction stage, aerosol passes through unobstructed. During a rapid concentration change, a current is induced in both this stage and in the diffusion stage and is corrected for. Lastly, the filter stage consists of particles being collected on a filter.

Sensitive current amplifiers measure the 3 currents (induction, diffusion and filter) and their signals are digitalized.

A data analysis software calculates number and size and sends this via Bluetooth or USB to a PC or can be saved directly onto an SD/MMC memory card.

DiSC is approximately as large as two laptop computers placed on top of each other.

The portability of DiSC requires minimal set-up fuss and allows the ease of carrying DiSC in the field, for example, ambient air studies of aerosol number concentrations in urban areas.