

Dekati® Diluter

- ▶ Combustion aerosol dilution
- ▶ Controlled sample conditioning
- ▶ High temperature operation



Excellence in Particle Measurements

Dekati® Diluter



The Dekati® Diluter DI-1000 is an easy-to-operate and reliable dilution device for diluting aerosol and gaseous samples from any source. The simplicity, ability to withstand high temperatures and the robust, all stainless-steel design have made it a popular choice for dilution of combustion aerosols. In high temperature applications, the Dekati® Diluter is commonly used in a two-stage Dekati® Double Diluter setup, where the first Dekati® Diluter is heated and the second one operates at ambient temperature. This way unwanted condensation and nucleation effects are eliminated, and the measured particle concentration and size distribution results are stable and repeatable. The sample can be taken directly from the tailpipe or power plant stack into the Dekati® Double Diluter setup eliminating the need for large full-flow sampling systems to carry out particle or gas measurements.

The operating principle of the Dekati® Diluter is based on ejection dilution. Purified pressurised dilution air flows at high speed around an ejector nozzle and causes a pressure drop which draws the sample into the diluter through the nozzle. The raw sample is instantaneously diluted as it mixes with the dilution airflow always providing a homogeneous and stable sample. Only purified pressurized air is needed to operate the Dekati® Diluter – no flow control devices nor pumps are needed. The diluter does include any moving parts guaranteeing stable operation and low maintenance costs even during long measurement periods.



Measurement Applications

- Stationary source emission measurements
- Vehicle exhaust measurements
- Blow-by gas emission measurements
- Brake-wear emission measurements
- Can be used to dilute aerosol sample from practically any source

Complete Dekati® Double Diluter setup includes all necessary accessories for a complete heated dilution system for combustion aerosol measurements ▶



▶ **Dekati Ltd.** is a world leader in designing and manufacturing innovative fine particle measurement solutions. We have over 25 years of experience in providing measurement instruments and complete measurement solutions to a wide variety of environments and sample conditions. All Dekati® Products are developed and manufactured in Finland and are available with up to five-year warranty.

Features

- The most commonly used non-standard dilution system globally for combustion gas dilution
- Robust and simple to operate
- No moving parts and all stainless-steel construction
- Nominal dilution factor ~1:8, can be modified to higher dilution factors up to 1:50
- Each unit individually calibrated and provided with a detailed calibration certificate
- Dilution factors up to 10 000 possible by connecting diluters in series
- Dilution factor always constant when diluter exhaust is led back to the sampling point
- Suitable for sampling high temperature aerosols up to 450 °C
- Dekati® Double Diluter setup available for controlled dilution of any combustion aerosol
- High output sample flow – up to 45 lpm
- Can be used with several instruments at the same time
- Can be combined with any aerosol measurement instrument from any manufacturer

Specifications

Sample air flow (inlet)	~7 lpm
Diluted sample flow (outlet)	45 lpm
Dilution factor	~1:8, available up to 1:50 Each unit individually calibrated
Dilution air pressure	2 bar gauge
Sample temperature range	0–450 °C, Sampling probes available for measurements in higher temperatures
Weight	2.8 kg
Total length	360 mm
Maximum diameter	120 mm
Inlet/outlet/exhaust	12 mm male pipe
Dilution air inlet	8 mm female
Material	Stainless steel, AISI 316

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

