



Dynamic Dilution System Series DDS 560

In various applications the particle size and number concentration shall be measured in high concentrated aerosols. Particle counter are usually not able to measure high particle concentrations. The dilution of the aerosol with a defined factor enables to use particle counter for such applications too.

The Dilution System series DIL was developed by Topas for such measuring tasks. This instruments are calibrated for a constant dilution factor and for one operation flow.

With the Dynamic Dilution System series DDS the user can reduce particle concentration by various operation flows and with various dilution factors. Both values are shown by the display of the DDS. On this way the sample flow of the particle measuring instrument can be simultaneously monitored.

The design of the instrument warrants a easy and flexible handling.

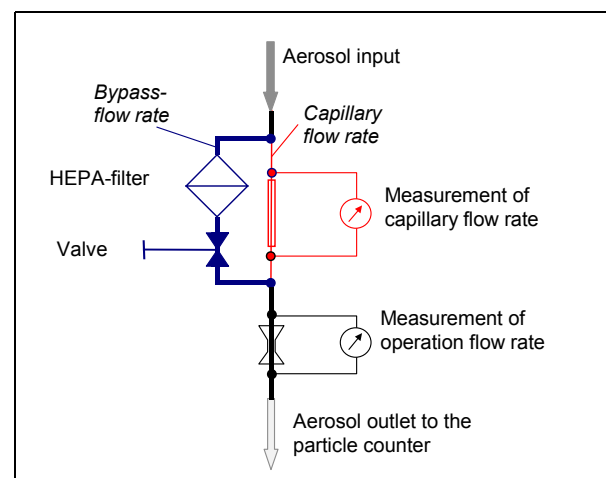
Applications

- Checking HEPA- and ULPA-filters
- Filter media verification Aerosol research
- Verification of aerosol generators and powder disperser

Features

- Various adjustable dilution factors
- Suitable for various operation flows (particle counter flows)
- Monitoring the particle counter flow rate
- Maintains gas characteristics of original aerosol
- Totally self-contained
- No compressed air requirement

Principle



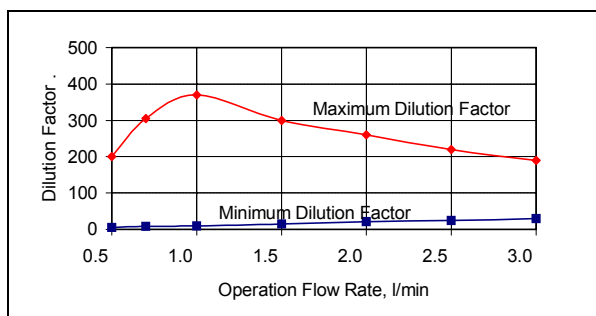
Principle of the Dynamic Dilution System DDS 560

Specification

An aerosol stream is split up into two separate flows (capillary and bypass flow) inside a so-called process chamber. From the bypass flow all particles are removed by the built in high efficiency filter. The capillary flow particle concentration as well as distribution are mainly not affected.

The dilution ratio is determined by the proportion of both flow rates or the ratio between particle loaded capillary flow and the operation flow of the particle counter, respectively. Downstream both streams are mixed together again. The user can change the dilution ration by variation of the bypass pressure drop with the regulation valve.

A control unit in the DDS measures the operation and capillary flow rates, calculates the dilution ratio and indicate both values in the display. This enables to adjust the dilution ratio with very rapidly responds as well as to monitor the operation flow rate of the connected particle counter.



Maximum and minimum adjustable dilution factor dependent on the total volume flow

Technical Data

Volume flow range	0.5...3l/min
Range of dilution ratios	see table below
HEPA capsule	Filter efficiency 99.97% for 0.3µm DOP droplets (according to ASTM D2986-71)
	Guaranteed lifetime of 280h at volume flow of 3l/min with 2×10^6 particles/cm ³ (<1µm)
Power supply	12V/DC, 300mA (via AC adapter)
Dimensions (WxHxD)	300 x 200 x 140mm
Weight	2.9kg

Total volume flow [l/min]	Adjustable dilution factor
0.5	1 : 5 ... 1 : 200
0.7	1 : 8 ... 1 : 305
1.0	1 : 10 ... 1 : 370
1.5	1 : 15 ... 1 : 300
2.0	1 : 20 ... 1 : 260
2.5	1 : 25 ... 1 : 220
3.0	1 : 30 ... 1 : 190



As manufacturers of instruments in the field of particle technology and filter testing Topas GmbH has been certified to comply with the high requirements as specified in DIN EN ISO 9001:2000 (and its predecessors) since 1999.

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