TOPAS®
Technologie-orientierte Partikel-, Analysen- und Sensortechnik

Atomizer Aerosol Generator

ATM 210

Atomizer Aerosol Generator ATM 210

The ATM 210 aerosol generator produces aerosols with known properties in accordance with the guideline VDI 3491. This special model facilitates generation of aerosols into pressurised vessels (up to 10 bar). Its design ensures a highly stable particle size distribution and concentration with high reproducibility and a high aerosol output.

The generator is suitable for various liquids, e.g. DEHS or PAO (Emery 3004). It can also be used to disperse PSL reference materials.
The ATM 210 is designed for use with an external pressurised air supply. Pressure reducer and manometer are so positioned that the instrument can be easily and safety operated. The liquid reservoir is arranged inside the chassis of the generator.

For safety requirements a protection valve has been installed in the liquid reservoir. All fluid components are certified for pressures up to 20 bar.

Special Advantages

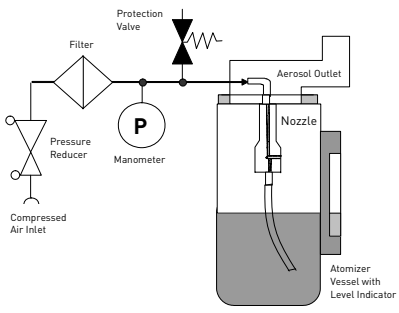
- Aerosol generation into pressurised vessels up to 10 bar
- Polydisperse aerosol mainly below 1 µm
- Excellent stable particle size distribution
- By variation of nozzle pressure, the particle production rate can be adjusted on a wide range
- Suitable for producing latex aerosols

Applications

- Aerosol generation against overpressure
- Test of HEPA and ULPA filter and filtermedia
- Approval of Cleanrooms
- Flow visualization

Principles

The essential part of the ATM 210 is a new atomizer nozzle made completely of stainless steel. It works as a two-stream nozzle based on the injection principle and is combined with a baffle placed close to the spray outlet. This integrated particle impaction section removes coarse spray droplets and results in a number dependant particle size distribution mainly below 1 µm. The necessary compressed air is cleaned by a HEPA-filter. A pressure reducer and a manometer facilitate regulation of the atomizer pressure. A level indicator outside the atomizer vessel allows the user to check the liquid level during operation.



Schematic of the ATM 210

Specifications

Details

The ATM 210 is available as a standard and a high flow model (ATM 210/H). The only difference between both instruments is the design of the stainless steel atomizer nozzle (protection of utility model), which can be easily changed by the user. The aerosol output of the ATM 210/H is nearly ten times higher than that of the standard model (see specification).

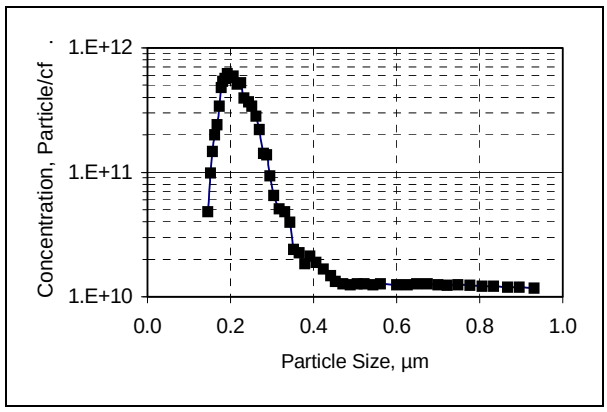
Options

Maximum flow rate	250 l/h (ATM 210) 2500 l/h (ATM 210/H)
Mass flow	max. 2 g/h (ATM 210) max. 20 g/h (ATM 210/H)
Nonstop operation	ca. 30 h (ATM 210) ca. 3 h (ATM 210/H)
Counterpressure	max. 1000 kPa (10 bar)
Aerosol substances	DEHS, PAO (Emery 3004), paraffin oil, PSL suspensions
Filling amount	75 ml
Release pressure of safety valve	15 bar
Aerosol outlet	Hose connector ∅19 mm
Compressed air connection	Quick coupling
Compressed air supply	max. 1500 kPa (15 bar)
Dimensions (H x W x D)	230 x 200 x 240 mm
Weight	4.9 kg

Technical Data

Number concentration	
total	> 10^8 particles/cm^3
at 0.2 µm	$2 \cdot 10^7$ particles/cm^3
at 0.5 µm	$5 \cdot 10^5$ particles/cm^3
at 1.0 µm	$1 \cdot 10^5$ particles/cm^3
0.3 - 0.5 µm	$1.5 \cdot 10^7$ particles/cm^3
0.5 - 1.0 µm	$8 \cdot 10^6$ particles/cm^3
Median value	0.1 ... 0.5 µm

The Aerosol was generated with ATM 210 against atmospheric pressure and measured by a Scanning Mobility Particle Sizer (TSI, Inc.).



Number Concentration of a DEHS Aerosol vs. Particle Size measured by a Scanning Mobility Particle Sizer (SMPS)

QMS certified to DIN EN ISO 9001.

12 100 11908 TMS

For more information please visit our website at www.topas-gmbh.de

Specifications are subject to change without notice.

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