RR Elektronik GmbH

Your partner for particle measurment engineering.

Our own production
Particle monitoring
Particle counters for air and gas
Aerosol generator and dilution steps
Calibration and service of measuring instruments

A250 Aerosol Generator

The aerosol generator A250 is applied for the generation of test aerosols with defined attributes. The concentration of aerosol particles is adjustable. An essential application area of the aerosol generator A250 is the testing of high-efficiency filters or the acceptance and control measurements of laminar flow boxes and clean rooms.

APPLICATIONS

- Clean rooms according to VDI 2083-3 / DIN 1946-1/DIN EN ISO 14644-3
- Laminar flow boxes
- Workbench of zytostatik according to DIN 12950
- Safe workbench of micro biological according to DIN 12980
- Standard calibration of latex-aerosole

BENEFITS

- Easy to handle
- Mobile and flexible
- Low-maintenance
- Concentration of aerosol particles is adjustable
- Stainless steel enclosure
- Very high particle concentration
- 2 year warranty

Basic Principle A250 Aerosol Generator

The aerosol generator A 250 is characterized by a compact and sturdy construction and is easy to handle. The smooth surface of the A 250 is easy to clean and to disinfect. The small device size as well as the slight weight is good prerequisites for a mobile and flexible application.

The atomizer works according to the injector principle and is a bimaterial nozzle, which is coupled with an impact separator. The function of the impact separator is to lead back the large generated drops immediately after the nozzle propulsive process. In addition to that task the generated particle size distribution is defined. The necessary compressed air for the nozzle propulsive process is generated by means of a calm working piston compressor. The compressed air is cleaned with a HEPA-filter before entering the atomizer. The volume power is adjustable at most up to 250 l/h.

Determination of the particle generation rate

The generated aerosol concentration can eligibly be determined at the A 250. For this task the A 250 has a needle valve at the sucking side of the device, which is combined with an indicator instrument flow controller. When the needle valve is closed the total volume power is lowered, too and by that the particle generation rate of the atomizer was shifted. Low volume power sucks less fluid for the jetting process and therefore the particle generation rate is lowered.

The determined distribution of the DEHS-aerosol concentrations shows, that there is a very high particle concentration (> 10^7 particles/cm³) within the range of expected MPPS (most penetration particles 0.2 … 0.3 µm). In accordance to these measurements many devices for optical particle counting (> 0.3 µm … 0.5 µm) generate an equal amount of particles (0.5 x 10^6 paricles/cm³) within their demanded measuring range. A high consistency of the different particle concentrations as well as of the particle distribution is guaranteed because of the used constructive and technological solutions in the aerosol generator. Therefore the generated aerosol is very well reproduceable.

TECHNICAL SPECIFICATION

Aerosol generator A 250:

Power supply:	12 V/DC (via main-adapter)
Volume power:	adjustable at most up to 250 l/h
Maximum counter-pressure:	10 kPa (0,1 bar)
Particle materials:	DEHS, DOP, Emery 3004, Paraffin, Latex-Suspensions
Dimensions:	20 x 28 x 17,5 cm (HxBxD)
Weight:	4 kg

Aerosol specifications for DEHS:

Concentration:	> 10^8 Partikel/cm³
Concentration 0.2 µm:	2x10^7 Partikel/cm³
Concentration 0.5 µm:	5x10^6 Partikel/cm³
Concentration 1.0 µm:	1x10^5 Partikel/cm³
Operation duration 80 ml filling:	ca. 25 h
Flow rate:	2.5 g/h
Modality value:	0.25 µm

ACCESSORIES

Included:	Operation manual, calibration certificate, main-adapter, 100 ml DEHS, 100 ml glass container with locking-screw, aerosol-nozzle with PVC-hose
Optional:	Aluminium device-suitcase, clip-gadget with suction-feed for aerosol-nozzle, DEHS 0,5 l / 1,0 l / 5.0 l, additional 100 ml glass container with locking-screw

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