Aerosolgenerator ATM 225

The aerosolgenerator ATM 225 is applied for the generation of test-aerosoles with defined attributes. The concentration of aerolsol particles is adjustable. An essential application area of the aerosol generator ATM 225 is the testing of high-efficiency filters or the acceptance and control measurement of laminar flow boxes and clean rooms. The determined distribution of the DEHS-Aerosol concentrations shows, that there is a very high particle concentration (>10^7 particles/cm^3) within the range of expected MPPS (most penetration particles 0.2...0.3µm). In accordance to these measurements many devices for optical particle counting (> 0.3µm...0.5µm) generate an equal amount of particles (0.5X10^6 particles/cm^3) 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 aerosolgenerator. Therefore the generated aerosol is very well reproduceable.

The aerosol generator ATM 225 is characterized by a compact and sturdy construction and is easy to handle. Higher security demands are considered by using a protective low voltage (12 V/DC) for the power supply. The aerosol substance is in a glass container, which is protected from external influences at the top by means of an opening swing-hood. The smooth surface of the ATM 225 is easy to clean and to desinfect. The small device size as well as the slight weight are good prerequisites for a mobile and flexible application. The essence of the ATM 225 is a new atomizer, which is completely made of high-grade steel. 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 standard volume power is determined up to 250 l/h.

Determination of the particle generation rate

The generated aerosole concentration can eligibly be determined at the ATM 225. For this task the ATM 225 has a needle valve at the sucking side of the device, which is combined with an indicator instrument flow controler. When the (needle valve) Nadelventils 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.

Technical Specification

Aerosolgenerator ATM 225

Power supply	:	12 VDC (via main-adapter)
Volume power	:	250 l/h
Maximum counter-pressure	:	10 kPa (0.1 bar)
Particle materials	:	DEHS, DOP, Emery 3004, Paraffin, Latex-Suspensions
Aerosol output	:	fast coupling 8 mm (dt-System R)
Dimensions	:	200*280*175 (H x B x D) in mm
Weight	:	4.5 kg
Accessories	:	aerosol-nozzle with hose; little tripod; aluminium device-suitcase; atomizer; glass container with locking-screw

Aerosol specifications for DEHS

Concentration	:	> 10^8 particles/cm^3
Concentration (0,2 µm)	:	2x10^7 particles/cm^3
Concentration (0,5 µm)	:	5x10^6 particles/cm^3
Concentration (1 µm)	:	1x10^5 particles/cm^3
Modality value	:	0.25 µm
Flow rate	:	2.5 g/h
Operation duration (80 ml filling):		about 25 h

Markus Klotz GmbH
Theodor-Heuss-Straße 23 75378 Bad Liebenzell Phone 07052/92336 Fax 07052/92338 E-mail info@fa-klotz.de