PROCESS AEROSOL MONITOR

MONITORS HIGH-CONCENTRATION, MONODISPERSE AEROSOL

The Process Aerosol Monitor 3375 (PAM) measures highconcentration, monodisperse aerosol, like that produced with our Model 3475 Condensation Monodisperse Aerosol Generator* (CMAG) or other Sinclair-LaMer-type generators. The PAM is a process instrument that monitors aerosols online, measuring particle size and concentration in real time. It validates particle size and concentration and helps confirm that the CMAG is working properly. It is also suitable for monitoring an aerosol while making adjustments to the generator's operating parameters. *Availability is limited in Europe.

Operation

Highly concentrated, monodisperse aerosol flows from the exhaust port of the aerosol generator to the PAM's inlet port. Inside the measuring volume, the intensity of the laser light on the photodetector is reduced depending on particle size and aerosol concentration. Size and concentration also affect the standard deviation measured by the photodetector. Unlike conventional photometers, the PAM has a small, well-defined measuring volume. The average number of particles inside depends on the concentration of the aerosol and the size of the measuring volume. As described by the Poisson distribution, the number of particles N fluctuates with deviation √N. This fluctuation can be described by the standard deviation of the transmission. Therefore, measuring the average transmission and its standard deviation in the defined measuring volume determines both mean particle size and aerosol concentration. The measurement of the concentration is independent of the extinction coefficient.

Features and Benefits

+ Measures high-concentration, monodisperse aerosol
+ Provides real-time measurements of particle size and concentration
+ CMAG accessory

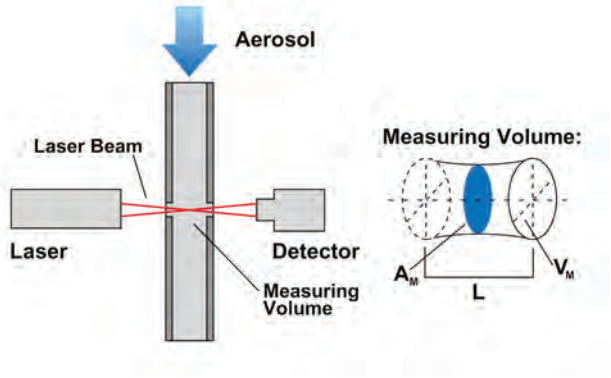
Applications

+ Validation of particle size and concentration
+ Monitoring operating parameters of monodisperse aerosol generators
+ Monitoring an aerosol during the process of adjusting CMAG operating parameters such as temperature, saturator flow, or screen flow
+ Use for general monitoring tasks involving a variety of high-concentration, monomodal aerosols

SPECIFICATIONS

PROCESS AEROSOL MONITOR
MODEL 3375

Performance	
Mode of Operation	Extinction photometer with fluctuation analysis, concentration determined independent of extinction coefficient
Particle Size Range	0.5 to 10 µm
Particle Concentration Range	>10^4 up to 107/cm^3
Aerosol	Monodisperse, spherical particles (calibrated for DEHS)
Light Source	Stable, 3-mW, 785-nm laser diode
Aerosol Flow Rate	0.1 to 8 L/min
Sheath Air Flow Rate	0.2 L/min
Maximum Counter-Pressure	3 kPa (0.03 atm)
Hardware	
Dimensions (LWH)	6 cm × 20 cm × 23.5 cm (2.4 in. × 7.9 in. × 9.3 in.)
Weight	2.4 kg (5.3 lb)
Power Requirements	Operates on 12.0 VDC, supplied by power supply (included)
Power Supply	115/230 VAC



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TO ORDER

Fluidized Bed Aerosol Generator

Specify	Description
3375	Process Aerosol Monitor

Model 3375 is produced in Germany by TOPAS GmbH and marketed by TSI Incorporated. Contact your TSI representative for additional information.

UNDERSTANDING, ACCELERATED

TSI Incorporated - Visit our website **www.tsi.com** for more information.

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