NANOMETER AEROSOL SAMPLER MODEL 3089

ALLOWS YOU TO SAMPLE 2- TO 100-NM PARTICLES ONTO TEM GRIDS, AFM SUBSTRATES, OR GLASS SLIDES

Now you can sample charged particles, typically from the output of a Differential Mobility Analyzer (DMA), onto sample substrates for analysis. The Model 3089 Nanometer Aerosol Sampler (NAS) allows you to control the spot size of the deposition using two electrode sizes to get a uniform deposition size that is optimal for your analysis system. For your convenience, the instrument contains a high-voltage negative power supply, pump, and LCD display. The NAS is optimized for use with a Model 3080N Electrostatic Classifier, which contains a Model 3085 Nano DMA.

Applications

The successful use of the electrostatic precipitation method to sample aerosol has been documented in many publications. The NAS provides a convenient means of sampling charged aerosols onto substrates with control over the collection spot size using two sizes of electrodes, flow control, and voltage control. Known applications for this instrument include:

+ Samples for electron microscopy (SEM/TEM)
+ Samples for scanning microscopy (AFM/STM)
+ Biomolecule sample preparation (PCR)
+ Nano-material evaluation

Features and Benefits

+ Uniform particle deposition on substrate
+ High collection efficiency of positive, singly charged particles in the range from 2 to 100 nanometers
+ Flow and voltage adjustments
+ Built-in pump and flowmeter

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SPECIFICATIONS

NANOMETER AEROSOL SAMPLER
MODEL 3089

Impactor Cut Points
Mode of Operation
Collection of single- or multi-charged particles using electrostatic precipitation onto a collection substrate

Particle Type
Solids or nonvolatile liquids

Particle Size Range
2 to 100 nm

Sample Electrode Size
9.5-mm (3/8-in.) or 25-mm (1-in.) diameter

Inlet Flow Rate
0.2 to 2.5 L/min (1 L/min nominal)

Voltage Range
-0.5 to -10 kV

Power Requirements
85 to 260 VAC, 50/60 Hz, 25 W maximum

Front-panel Displays
3.5-digit LED for voltage, 0.2 to 2.5 L/min flowmeter

Ports

Aerosol Inlet	1/4-in. OD aluminum tube
Pump Exhaust (Filtered) connection	1/4-in. OD Swagelok®

Dimensions (LWH)
20.3 cm × 25.6 cm × 22.8 cm (8.0 in. × 10.1 in. × 9.0 in.)

Weight
3.75 kg (8.25 lb)

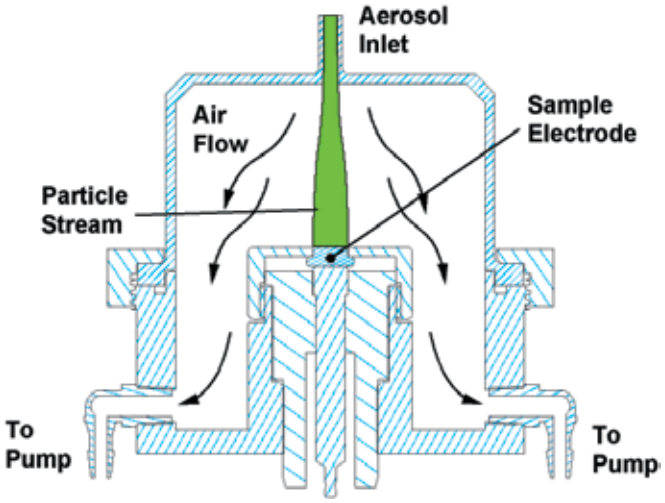
Environmental Operating Conditions

Recommended Environment	Indoor use
Ambient Temperature	10 to 50°C
Ambient Humidity	0 to 90% RH, noncondensing

Specifications are subject to change without notice.

Operation

The substrate is mounted on the sample electrode using adhesive tape. The electrode is installed inside the sampler and run at a fixed voltage. The electric field will focus charged particles from the inlet onto a portion of the substrate. The substrate can then be removed for further analysis.



Bibliography

J. Dixkens and H. Fissan, Development of an Electrostatic Precipitator for Off-Line Particle Analysis, Aerosol Science and Technology, 30:438-453 (1999).

TO ORDER

Nanometer Aerosol Sampler

Specify	Description
3089	NAS instrument and accessories

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