

# Flow Focusing Monodisperse Aerosol Generator

## Model 1520

Produces monodisperse droplets and solid particles.

The Flow Focusing Monodisperse Aerosol Generator (FMAG) 1520 uses the aerodynamic flow-focusing effect to accurately control the diameter of a liquid jet for generating monodisperse droplets from 15 to 90  $\mu\text{m}$  in diameter, which can then be dried to produce particles from 0.8 to 12  $\mu\text{m}$  in diameter. In normal operation, a built-in syringe pump pushes liquid out of a 100- $\mu\text{m}$ -diameter nozzle and is stretched to a much thinner stream by the focusing gas flow. The resulting thin liquid jet then breaks up into uniform-sized droplets after passing through a vibrating ceramic aerosol generation head. A coaxial flow of clean air is introduced to dry the droplets into solid particles. The aerosol then exits the top of the FMAG after passing by a built-in electrical corona ionizer and inspection light for easy viewing. The large 100- $\mu\text{m}$ -diameter nozzle in the FMAG enables aerosol generation over extended periods of time without experiencing nozzle clogging problems, and at a very low liquid pressure. This low shear stress generally enables biological cells to remain viable, even after dispersion as uniform particles. The closely-related model 1530 omits the drying air, ionizer, and light, and has provisions for remotely mounting the aerosol generation head upside down for generating large droplets.



# Polydisperse Generators

This type of generator is typically capable of spraying aqueous solutions (e.g. salt), suspensions PSL, gold or glass nanoparticles), or oil or similar substances. They serve a variety of applications from laboratory research, field tests of detectors, and filter testing.

Model	3073	3079A	3076	8026	8108
Particle Size Range ( $\mu\text{m}$ )	0.01 to 2.0 (nominal 0.3 count mean diameter)				0.1 to 10
Particle Concentration (particles/ $\text{cm}^3$ ) in Output	$10^2$ to $10^7$	$>10^8$	$>10^7$	$10^6$	$<10^3$ at 1 $\mu\text{m}$
Nominal Flow Rate (L/min)	0.3 to 4.5	1.0 to 4.2	3.0	1.25	140
Note	Portable, battery option available	Portable	Laboratory grade	Portable	Designed for ISO 16890-2 and ASHRAE 52.2 filter testing