

DMA 4210/4220

(Differential Mobility Analyzer)

The Differential Mobility Analyzer (DMA) is used to measure particle size distributions in the sub-micron and nanometer size ranges. The HCT DMA model 4200 series can be applied in a variety of aerosol studies, including the classification of mono-dispersed aerosol particles and the measurement of submicron aerosol size distributions. The aerosol is neutralized in the equilibrium charge distribution before entering the DMA. The aerosol and sheath flow travel axially between the center rod and inside wall of the DMA. The inside wall is grounded and the voltage of the central rod controlled at 5 and 10,000 VDC. By drag and electrical force, only particles with a narrow (almost same) range of mobility can enter the slit near the bottom of the DMA. The exiting aerosol is nearly all single charged and mono-dispersed. Particle size is controlled by applying the DMA voltage.

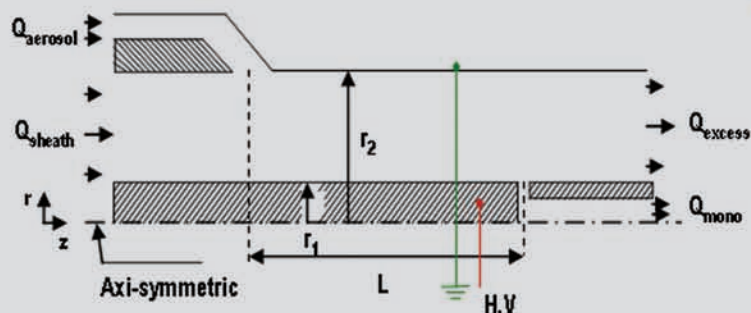


Specifications

	Model 4210	Model 4220
Particle Size Range	10 ~ 700 nm	5 ~ 100 nm
Maximum Input Concentration (at 10nm)	10 ⁸ Particles/cm ³	10 ⁸ Particles/cm ³
Aerosol Pressure Range	1 ± 0.5 atm	1 ± 0.5 atm
Flow Rates	Aerosol : 0.1 ~ 1.5 L/min Sheath Air : 1 ~ 15 L/min By-pass : None	Aerosol : 0.1 ~ 1.0 L/min Sheath Air : 1 ~ 10 L/min By-pass : None
Voltage	5 ~ 10,000 VDC	5 ~ 10,000 VDC
Dimensions	Height : 630 mm Outside Diameter : 65 mm	Height : 170 mm Outside Diameter : 50 mm
Weight	5.2 kg	1.3 kg

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Applications

- Aerosol research : Particle Generation, Nucleation, Condensation, Coagulation and Transport
- Particle charging and electrical mobility studies
- Filter Media Test
- Monodispersed particle generation for instrument calibration



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