



# **PAMS**

## **Portable Aerosol Mobility Spectrometer**

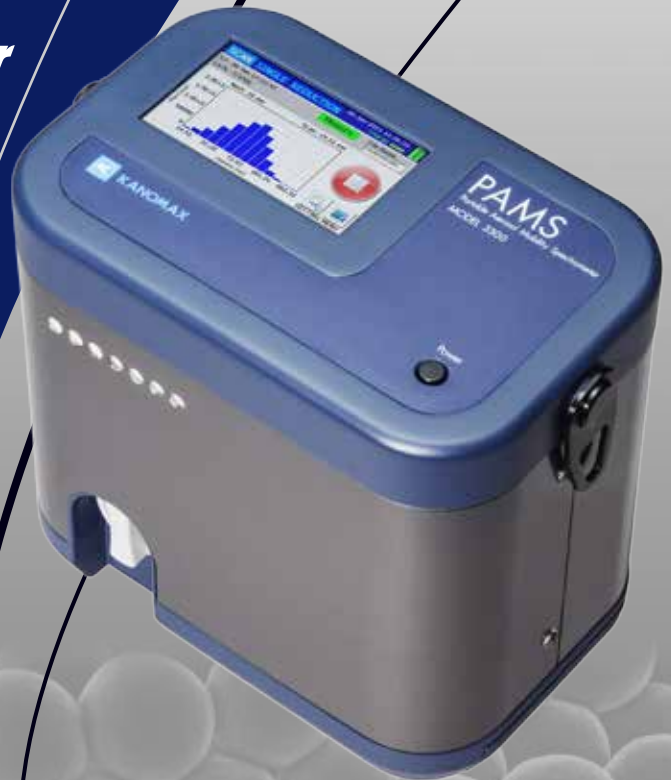
PAMS is an electrical mobility size spectrometer designed for portable, mobile, or handheld aerosol sampling applications. It provides the number-weighted diameter distribution of aerosols over the entire submicrometer range (10 to 863nm) in one scan. The unit uses a non-radioactive bipolar aerosol charger to allow easy access to sampling sites with tight safety regulations. Its bipolar charger significantly reduces measurement uncertainty of larger particles in the submicrometer range.

### **Applications**

- Personal Nanoparticle/Aerosol Exposure Measurement
- Workplace protection factor measurement of respirators
- Atmospheric process studies
- Air pollution and air quality measurements
- Combustion and engine exhaust emission measurements
- Filtration studies
- Inhalation toxicology studies
- Indoor air quality studies

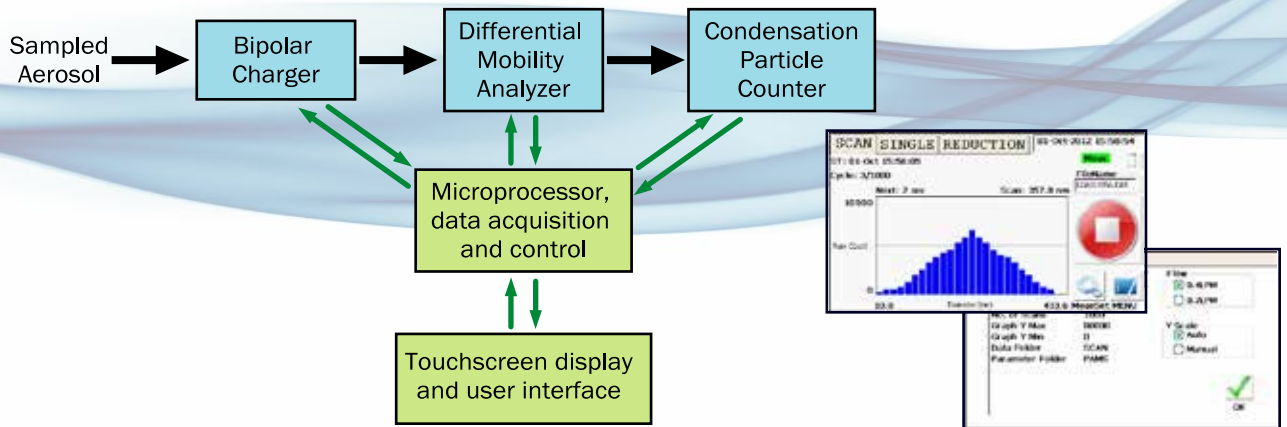
### **Key Features**

- Electrical mobility size spectrometer designed for portable, mobile, or handheld aerosol sampling applications
- Provides number-weighted diameter distribution of aerosols over the entire submicrometer range (10-863 nm) in one scan
- Uses a non-radioactive bipolar aerosol charger to allow easy access to sampling sites with tight safety regulations
- Bipolar charger significantly reduces measurement uncertainty of larger particles in the submicrometer range
- Can be used in two modes:
  - Single diameter count mode: to get a total count within a narrow size range
  - Size distribution mode: to get an automated size distribution measurement over desired size range or size resolution
- Stand-alone, battery-operated instrument; no external computer needed. Weighs only 4.5 kg and measures 23 x 23 x 15 cm.



## Operation:

Sampled aerosol is charge-conditioned using a non-radioactive, bipolar charger which brings the particles to steady-state charge distribution. Particles are subsequently sorted according to their electrical mobility in a differential mobility classifier (DMA). Classified particles are detected and counted downstream using a condensation particle counter (CPC).



Portable Aerosol Mobility Spectrometer (PAMS) is developed using technology licensed from the National Institute for Occupational Safety and Health (NIOSH)

### Portable Aerosol Mobility Spectrometer (PAMS) Specifications

Measuring Modes	Single size mode (single size concentration) Scan mode (size distributions)
Particle Size Range	0.2LPM: 14.5 to 862.3 nm 0.4LPM: 10 to 433.7 nm
Scan Resolution	0.2LPM: 14 channels 0.4LPM: 27 channels
Scan Time	0.2LPM: 56 sec to minutes for one scan 0.4LPM: 108 sec to minutes for one scan
Concentration Range	0 to 100,000 particles /cm <sup>3</sup>
Flow Rate	Inlet: 0.7 LPM Sample: 0.05 LPM
Bipolar Charger	Dual corona charger with corona current less than +/- 5 uA
Condensing Fluid	Isopropyl alcohol
Interface	USB
Display	Color touchscreen
Power Source	Li-ion battery or AC adapter Battery life: continuously for 8 hours
Operating Environment	Temperature: 10-35 °C / Humidity: 20-85 %RH (with no condensation)
Dimensions (WHD) / Weight	9.1 x 9.1 x 5.9 inch (23 cm x 23 cm x 15 cm) / 9.9 lbs (4.5 kg)

Specifications are subject to change without notice.



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