

Particle Size Magnifier (Model A10)

SEE THE SMALLEST PARTICLES

Study and monitor particles smaller than the detection threshold of any CPC. Airmodus Particle Size Magnifier A10 grows nano sized aerosol particles into sizes that can be detected with a standard CPC. Particles as small as 1 nm can be counted.

For a complete nanoparticle counting system –an nCNC system – please ask for the Airmodus A11. The A11 combines the A10 PSM with the Airmodus A20 CPC and an easy to use operating software.

The A10 PSM is calibrated with nickel chromium nanoparticles. Based on the calibration, you can easily adjust your system for a particular nickel chromium equivalent cut-off diameter using the PSM management software. The possible equivalent 50% cut-off diameters range from 1 to 4 nm.

Several researchers share their expertise with the PSM User Community. You are welcome to join!



BENEFITS

- Detect particles as small as 1 nm in diameter in real time
- Also the electrically neutral particles
- Detect nucleation in-situ as it happens
- Study the formation and growth of 1-4 nm particles
- Use the activation spectrum for information of size or composition of the sampled particles

THREE OPERATION MODES

- Fixed mode: One fixed cut-off* for monitoring the appearance of nanoparticles.
- Stepping mode: Steps through several user-defined cut-offs*. Use to observe pre-defined size classes.
- Scanning mode: scans through the operation range in less than 5 minutes, giving the activation spectrum of 1 – 4 nm* particles



Specifications

Measurement range	1 - 1000 nm. 50% cut-off selectable: 1.3 – 3.5 nm*
Aerosol sample flow	2.5 lpm Sample flow to CPC 1 – 1.5 lpm. Other flows possible. Please contact for details.
Working fluid	Diethylene Glycol (>99%)
Sample conditions	Pressure: 90 to 105 kPa Relative humidity: 0 to 95% non-condensing**
Environmental conditions	Temperature: 15oC to 30oC Pressure: 90 to 105 kPa Relative humidity: 0 to 95% non-condensing
Communication	<i>Serial:</i> RS-232 <i>USB:</i> type B connector <i>Analog out:</i> BNC connector 0 to 10 V for external devices, e.g. controlling of a DMA or ion filter. All communication based on ASCII character-encoding scheme.
Fittings	<i>External vacuum:</i> fitting for 1/4 in. tubing <i>External compressed air:</i> fitting for 1/4 in. tubing <i>Inlet:</i> 1/4 in. stainless steel tube <i>Outlet:</i> 1/4 in. stainless steel tube
Software	Airmodus A1X software for online data inversion and data acquisition (for Microsoft Windows). <i>Note: Online data inversion only when used with an Airmodus CPC.</i>
External vacuum requirement	100 - 350 mbar pressure at NTP
External compressed air requirement	1.5 - 2.5 bar at NTP The air should be free of particles, oil and water (dew point below 0oC); maximum operating pressure is 3.0 bar at NTP.
Power requirements	100 - 240 VAC max. 320 W universal AC input/full range
Concentration	Depends on the particle counter used with the PSM. PSM has minor losses inside it and dilutes the sample depending on the saturator flow rate used. The PSM software takes the dilution into account, and the concentration data saved by the program is corrected for it.
Dimensions and weight	290x450x465 (height x width x depth in mm) 17.0 kg
Shipping conditions	Temperature: 0 - 40oC Relative humidity: <95% non-condensing The instrument should be shipped in upright position and should be protected against tremor and blows.

*) Nickel chromium equivalent activation diameter

**) Above 40% please dry the sample to avoid excess water condensation inside the instrument Microsoft and Windows are registered trademarks of Microsoft Corporation.