World's first tippable, self-sustaining, compact water-based CPC

it's like MAGIC!

The new MAGIC™ water condensation particle counter uses a patented, three-stage "moderated" condensational growth system to enlarge particles as small as 5-nm into droplets that are easily detected optically.

M — Moderated

A — Aerosol

G — Growth with

I — Internal water

C — Cycling

Who We Are

Aerosol Devices Inc. was formed in 2014 by two professional "women in aerosols". Both of the company's founders, Ms. Pat Keady and Dr. Susanne Hering, are past Presidents of the American Association for Aerosol Research (AAAR) and leaders in the field with numerous aerosol measurement patents and publications. The product line continues to expand with innovative technology exclusively licensed from Aerosol Dynamics Inc. The company partners with industry, government, and academic leaders across the globe.

Mission

Our mission is to offer superior aerosol measurement capabilities that advance scientific knowledge, which can lead to improving the environment, health, safety, and quality of life.

U.S. Patents #6712881, #7736421, #8801838, German Patent #10392241 and Japanese Patent #5908475. Other patents pending. Manufactured by Aerosol Dynamics Inc. under sublicense from TSI Incorporated. Distributed by Aerosol Devices Inc.

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Aerosol Devices Inc

Aerosol measurement innovations using laminar-flow water condensation technology

The all new MAGIC™ water condensation particle counter — high-quality performance at a fraction of the cost

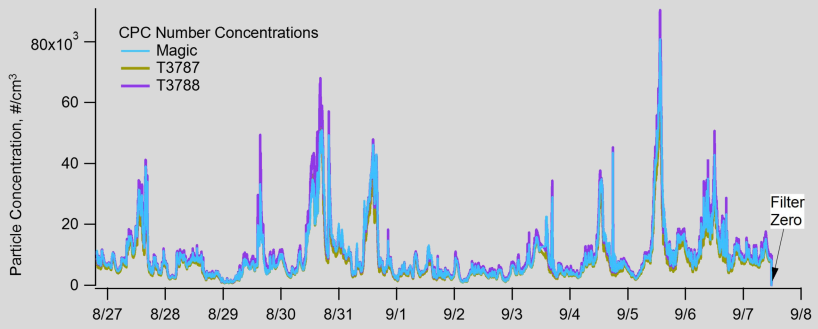
Advantages

- Self-sustaining wick that uses water as the working fluid—low cost, non-toxic, odor free
- Insensitive to short-term changes in orientation, vibration and shock
- Internal data storage
- Portable, compact package with battery option goes places no other CPC can go!

Applications

- Air quality studies—especially useful for distributed monitoring
- Mobile studies in vehicles and aircraft; aboard ships; on bicycles!
- Health effects in epidemiology studies
- Indoor Air quality monitoring
- Workplace monitoring for nanoparticles

Long term ambient sampling



MAGIC CPC comparison: vs TSI-3787: y= 1.09x+390, R^2=0.97
vs TSI-3788: y= 0.89x+306, R^2=0.98

How It Works

Particles are enlarged by water condensation using a “cold-hot-cold” growth tube, with a wick that spans all three temperature regions.

Water evaporation from the warmed, middle section provides the water vapor that creates supersaturation conditions for condensation activation and droplet growth.

Water vapor is recovered by the cooler, down-stream “growth” section of the wick and transported back to the warmed mid-section via capillary action. The system tolerates short-term tipping, as there are no liquid reservoirs.

Droplets are individually counted with a laser sensor measuring the total concentration of ultrafine particles up to 10^5 particles/ cm^3. Sample flowrate is 0.3 L/min.

Removable Nafion® pre-conditioning humidifier extends operation time between water charges —no internal water reservoirs!

Reference: Lewis, G., S. Spielman, A. Eiguren Fernandez, and S. Hering (2016) “ A Compact “MAGIC” Water Condensation Particle Counter.” Poster — 2016 American Association for Aerosol Research, Portland, OR.

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Battery power option for up to 8 hours of operation

Contact Us

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