WaferSense® Airborne Particle Sensor (APS)

Above: WaferSense APS300C

WaferSense APS moves through semiconductor process equipment and automated material handling systems to monitor airborne particles inside the systems. Its wafer-like shape is compatible with most existing automation and its wireless communication provides real-time data to speed tool qualification and release to production. Particle data can be recorded so you can compare past to present as well as one tool to another. APS helps you fabricate more semiconductor devices.

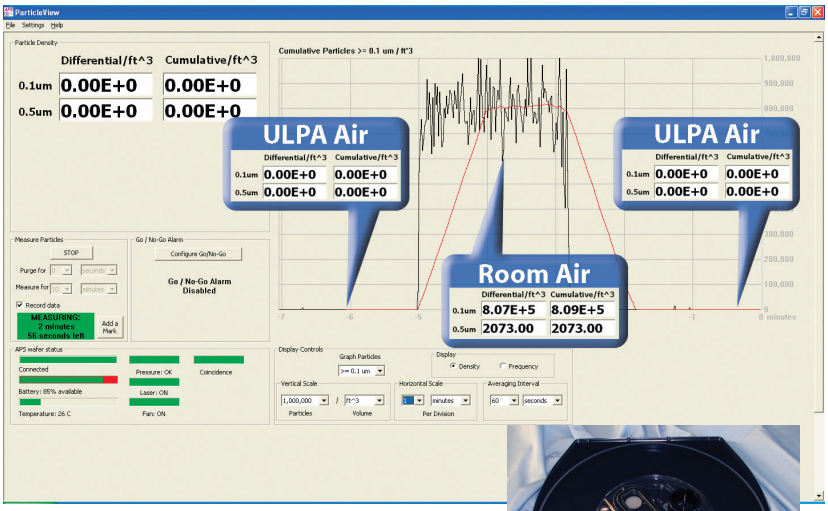
Wireless, wafer-like airborne particle counter for real-time equipment diagnostics.

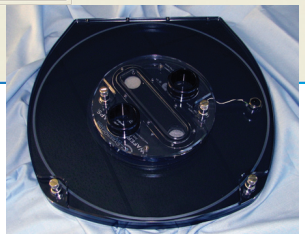
Wireless measurement speeds equipment qualification. Use the APS wafer and ParticleView™ to collect and display particle data wirelessly. APS data enables swift location of contamination sources. See the effect of cleanings, adjustments and repairs in real time.

Wafer-like form factor helps shorten equipment maintenance cycles. APS is clean and vacuum compatible, so you don't need to expose process areas to the environment. Detect particles in real-time without opening the tool. APS goes where wafers go to find the place where particles contaminate wafers. Once the location of particles is identified, tools may be selectively cleaned. Open only the dirty portion, keep the clean areas clean.

Objective and reproducible data helps lower maintenance expense. APS enables you to establish a baseline from a known clean tool. You may then cycle APS through a candidate tool before committing monitor wafers. This process raises your first-pass monitor wafer success, reducing your qualification expense and increasing availability. In addition, APS provides early warning for impending equipment failures and helps optimize your preventive maintenance plans.

WaferSense APS Components



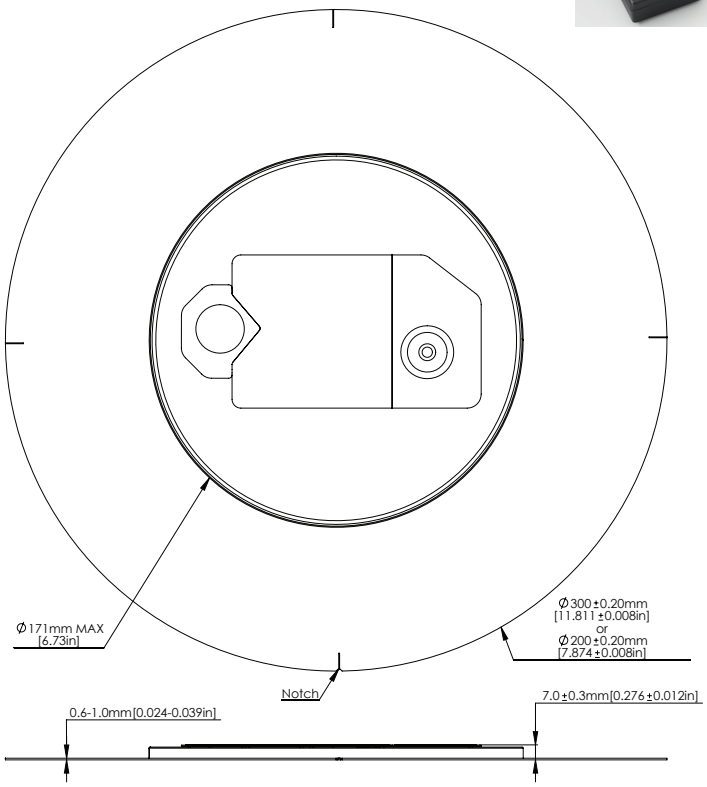


Above: ParticleView™ displays and trends particle levels.

Inset: Field Cleaning Unit cleans and charges the particle sensing wafer.

Right: WaferSense link wirelessly communicates with the particle sensing wafer.

Dimensions (APS300C)



APS300C dimensional drawing. For APS200C dimensional drawing, please contact tech support at CSsupport@cyberoptics.com

Key Features

Wafer-like package.
- Carbon-fiber composite housing handles like a wafer; can be placed most places a wafer can
- Form factors: 200mm, 300mm SEMI notch
- Thin and light: 8.0 mm tall, 300 mm: 270 gm, 200 mm: 200 gm

Wireless link. Bluetooth, 2.4 GHz, USB 2.0, 92 mm x 58 mm x 28 mm.

ParticleView™ application software.
- Provides real-time numeric and visual feedback
- Cumulative or Differential counting modes
- Particle density or particle frequency counting modes
- Go/No Go and Coincidence Alarms
- Can record particle data in a log file

ParticleReview™ application software. Recalls and displays log file data for review and analysis.

Operating systems. Windows® XP, Vista and 7.

Key Specifications

Airflow. 0.1 CFM (2.8 L/m) @ 1 atmosphere.

Size channels. 0.1 µm & 0.5 µm OR 0.3 µm & 1.0 µm.†, ‡

Counting efficiency for 0.1 µm NIST traceable Poly Styrene Latex spheres. ≥ 30%.†

False Count Rate. ≤ 25 counts per hour.†

Operating pressure. 0.4 to 1.6 Atmosphere.

Operating internal temperature. 15°C to 45°C non-condensing.

Battery operation. ≥ 1 hour per charge.

Product components.
- Particle sensing wafer
- Field cleaning unit
- Communications link module
- Software license for one computer
- Carrying suitcase

†per ISO 21501-4:2007(E)

‡part descriptions = APS200C0105, APS200C0310, APS300C0105 and APS300C0310

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