

APS3 Technology

Did You Know?

The new WaferSense APS3 technology, an extension of the proven APS, incorporates large and small particle measurement capability in the same device, and is now thinner and lighter.

The APS technology enables equipment engineers to shorten equipment qualification, release to production and maintenance cycles, all while reducing expenses. Customers have experiences up to 88% time savings, up to 95% reduction in costs and up to 20X the throughput with half the manpower requirements by using the APS technology relative to legacy surface scan wafers.



Time
88% reduction,
half the manpower



Expense
95% reduction



Throughput
20X increase

Save Time. Improve your Yields.

WaferSense® & ReticleSense® - The world's most efficient and effective wireless measurement devices.

Deploy WaferSense and ReticleSense measurement devices for chamber gapping, leveling, wafer hand-off teaching, vibration, humidity and airborne particle measurement in your applications. Visit our website for additional application information.

AGS



Applications

- Chemical vapor deposition; CVD, ALD
- Atomic layer deposition; ALD
- Wet (chemical) etch, plasma etch

ATS



Applications

- Plasma vapor deposition; PVD
- Chemical vapor deposition; CVD, ALD
- Photo lithography
- Wet (chemical) etch, plasma etch
- Dry etch
- Ion implant
- Automated handling system

APS3



Applications

- Factory interface FI/EFEM
- Photo Lithography
- Diffusion/Furnace
- Test and Inspection
- Rapid Thermal Anneal; RTA, RTP
- Metrology
- Microcontamination
- Auto Handling System; AMHS and Stockers

AVS



Applications

- Epitaxy
- Thermal oxidation/metallization
- Plasma vapor deposition; PVD
- Chemical vapor deposition; CVD, ALD
- CMP

ALS



- Atomic layer deposition; ALD
- Photo lithography
- Wet (chemical) etch, plasma etch
- Dry etch
- Ion implant
- Diffusion/furnace
- Rapid thermal anneal; RTA, RTP

AMS



- Test and inspection
- Metrology
- Micro contamination
- Auto handling system; AMHS
- Module repair



Leveling



Vibration



Humidity



Particle



Gapping



Teaching



CYBEROPTICS®

Contact CyberOptics today for your complimentary on-tool demonstration
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CYBEROPTICS®

WaferSense® and ReticleSense® Wireless Measurement Devices

When you need the most efficient and effective measurement devices for semiconductor tool set-up and maintenance processes, count on CyberOptics, the global market leader in wireless semiconductor measurement devices for chamber gapping, leveling, wafer handoff teaching, vibration and airborne particle measurement.

Semiconductor fabs and OEMs value the accuracy, precision and versatility of the WaferSense and ReticleSense measurement portfolio to enable improvements in fab yields and equipment uptime.



WaferSense Measurement Devices

Available in 150mm, 200mm and 300mm Sizes*



WaferSense® and ReticleSense® Portfolio

Proven and Adopted

- Major semiconductor fabs and equipment OEMs worldwide have adopted CyberOptics wireless measurement devices.
- Several OEM standards require the use of the WaferSense and ReticleSense devices which have been adopted as the BKM (best known method) due to the increased level of precision required with today's ever smaller chip geometries.

Most Efficient and Effective

- Since the wireless, battery powered devices are wafer or reticle shaped, they can generally travel anywhere a wafer or reticle travels, providing optimal ease-of-use and access to locations that otherwise may be difficult or impossible to reach.
- Calibrations can be done under closed-chamber process conditions with the vacuum compatible devices.
- Receive and record data in real-time on your laptop with CyberOptics' easy-to-use software.
- Count on accurate, precise, reliable and repeatable results that save time and expense compared to traditional or legacy methods.

Save Time and Expense

- ✓ Improve yields and increase tool uptime
- ✓ Increase throughput
- ✓ Reduce resource needs
- ✓ Speed equipment set-up, maintenance cycles, trouble-shooting, qualification and release to production
- ✓ Speed tool optimization, stabilization and standardization
- ✓ Streamline fab processes
- ✓ Establish repeatable and verifiable standards

NEW!



AMS / AMSR

Auto Multi Sensor

- Speeds measuring leveling, vibration and humidity with a thinner, lighter, all-in-one multi sensor.
- Monitors humidity when wafers are in the FOUP awaiting next process step to prevent yield loss.
- Saves time for cooling systems with higher sensor operation temperatures.
- Includes MultiView™ and MultiReview™ software.

NEW!



APS3 / APSR / APSRQ

Airborne Particle Sensor

- Quickly monitors, identifies and enables troubleshooting of airborne particles down to 0.14µm within semiconductor process equipment and automated material handling systems.
- Easily identifies *when* and *where* the particles originate and measures the effectiveness of cleaning adjustments and repairs in real-time.
- Includes Particle View™ and ParticleReview™ software
- APS3 includes new ParticleSpectrum™ software

ALS2V / ALSR

Auto Leveling System

- Speeds setting the right inclination by measuring pitch, roll, rise over run and vertical inclinations.
- Quickly and accurately enables setting the same level across the tools for better process uniformity.
- Includes LevelView™ and LevelReview™ software.



AVS

Auto Vibration System

- Monitors 3-axis accelerations and vibration to maximizing acceleration and minimize vibration.
- Records data to enable comparison between past and present, as well as one tool to another, to reduce particles, maintenance time and cycle time.
- Includes VibeView™ and VibeReview™ software.



ATS

Auto Teaching System

- "Sees" inside equipment to capture three dimensional offset data (x, y, and z) to quickly teach wafer transfer positions with accuracy to 100µm.
- Lowers particulate contamination with accurate wafer hand-off calibration, proper alignment and set ups.
- Includes TeachView™, TeachReview™ and TeachTarget™ software.



AGS

Auto Gapping System

- Speeds non-contact gap measurements and parallelism adjustments under vacuum for semiconductor processes such as thin-film deposition, sputtering and etch.
- Improves uniformity, tool availability and repeatability.
- Includes GapView™ and GapReview™ software

* Varies by device