



## WaferSense® Auto Vibration System (AVS)



**EDN**  
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Honoring Excellence in Electronics  
**FINALIST 2008**

Above: WaferSense AVS300CL  
Inset top: AVS200C  
Inset bottom: AVS200CF

**WaferSense AVS** can be moved through your semiconductor process equipment and automation material handling systems to monitor three-axis accelerations and vibrations. Its wafer-like shape is compatible with your existing automation and its wireless communication provides real-time data to speed tool setup and maintenance. Vibration data can be recorded so you can compare past to present as well as one tool to another to reduce particles, maintenance time and cycle time.



*Wireless, wafer-like accelerometer for real-time equipment diagnostics.*

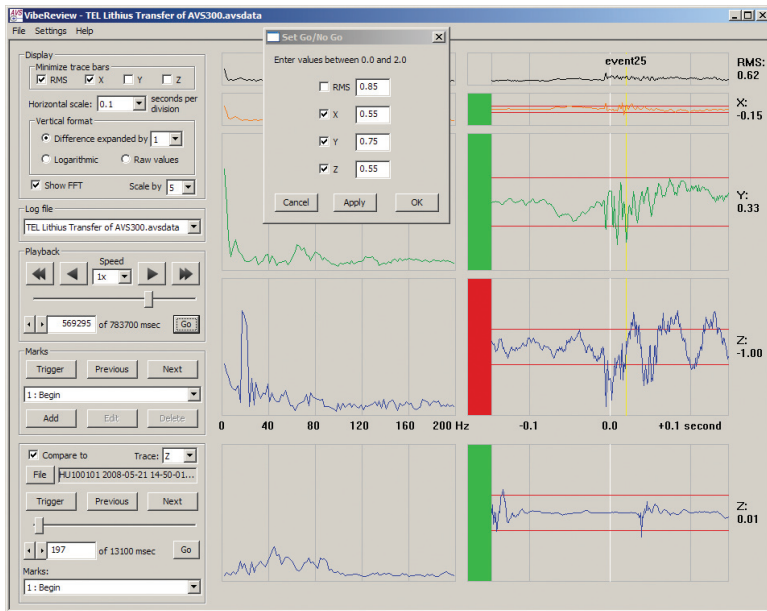
**Wireless measurement speeds equipment qualification.** Use the AVS three-axis vibration wafer and VibeView™ to collect and display acceleration data wirelessly to see the effect of adjustments in real time, speeding equipment alignment and setup. When equipment fails particle qualifications, AVS enables swift location of contamination sources.

**Wafer-like accelerometer helps shorten equipment cycle times.** Use the AVS three-axis vibration wafer to observe and optimize wafer, cassette, SMIF and FOUP motions. AVS is clean and vacuum compatible, so you don't need to expose process areas to the environment. Detect wafer slides, slips, bumps, scrapes and rough handling in real-time without opening the tool. Once the location or absence of wafer damage is identified, motion parameters can be optimized

**Objective and reproducible vibration data helps lower maintenance expense.** Use the AVS vibration wafer to establish a baseline. Cycle AVS through like a dummy wafer to verify that baseline operation continues. Get early warning for impending equipment failures. Optimize preventive maintenance plans.

**Maximum acceleration coupled with minimum vibration optimizes equipment productivity and yield.** Optimized motion profiles and trajectories minimize cycle times. Smooth, vibration free handling minimizes particle adders.

## WaferSense AVS Components

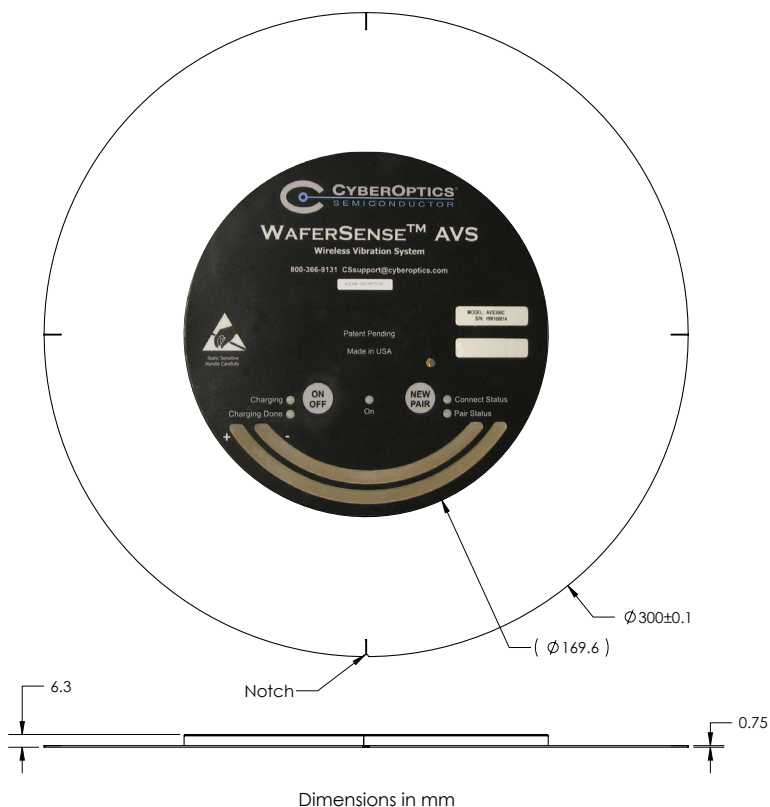


**Above:** VibeReview's display enables data review and analysis.

**Right:** WaferSense link is a USB 1.1 compliant device enabling wireless communications with the sensor via Bluetooth®.



## Dimensions (AVS300CL)



AVS300CL dimensional drawing. For AVS300C, AVS200C and AVS200CF dimensional drawings, please contact tech support at CSsupport@cyberoptics.com.

## Key Features

**Wireless, wafer-like package.** Handles like a wafer; can be placed anywhere a wafer can.

**Form factors.** SEMI 200 mm notch or flat (AVS200C or AVS200CF) or 300 mm (AVS300C or AVS300CL).

**Thin and light.** 6.3 mm tall  
 • 200 mm: 150 gm  
 • 300 mm (C): 230 gm  
 • 300 mm (CL): 190 gm

**Housing.** Carbon fiber composite.

**Reports acceleration in three directions.** X, Y, Z and RMS display allows quick, objective measurements.

**Range.** ±2 G.

**Resolution.** ±0.01 G.

**Frequency response.** 0 to 200 Hz, -3 dB.

**Operating pressure.** ≤ 10<sup>-6</sup> to 760 Torr.

**Operating temperature.** 20°C - 70°C.

**Battery operation.** ≥ 4 hours per charge.

**WaferSense Link.** Bluetooth, 2.4 GHz, USB 1.1, 92 mm x 58 mm x 28 mm.

**VibeView™ application software.** Graphical user interface provides real-time visual feedback and can record data in a log file.

**VibeReview™ application software.** Replays log file data for review and analysis.

**Operating systems.** For use with Windows® 2000, XP and Vista.

**Product components.**

- Vibration sensing wafer
- Communications link module
- Application software
- Charging clean box
- Carrying suitcase.



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