

## WaferSense™ ATS (Automatic Teaching System)



### *Wireless Machine Vision Teaching*

WaferSense™ ATS measures three-dimensional offsets to teach wafer transfer positions. Using machine vision technology it “sees” targets inside semiconductor equipment.

Wireless and wafer-like, it is automatically handled to significantly speed equipment setup and maintenance. The teaching wafer is also vacuum compatible so measurements can be taken while the equipment is sealed, saving qualification time and consumables.

An intuitive graphical user interface provides digital x, y, and z offsets that eliminate guesswork.

### **Accurate wafer handoff calibration improves yield and lowers particulate contamination.**

WaferSense™ ATS moves through your semiconductor equipment just as a wafer to capture offset data for accurate calibration of transfer positions. Calibrated equipment improves the yield of your manufacturing process.

### **Repeatable and reproducible setups put you in control of your semiconductor equipment.**

Because it is based on hard data, the ATS calibration process eliminates technician-to-technician variation, making the setup and maintenance checks repeatable and reproducible. Uniformly controlled equipment is more reliable.

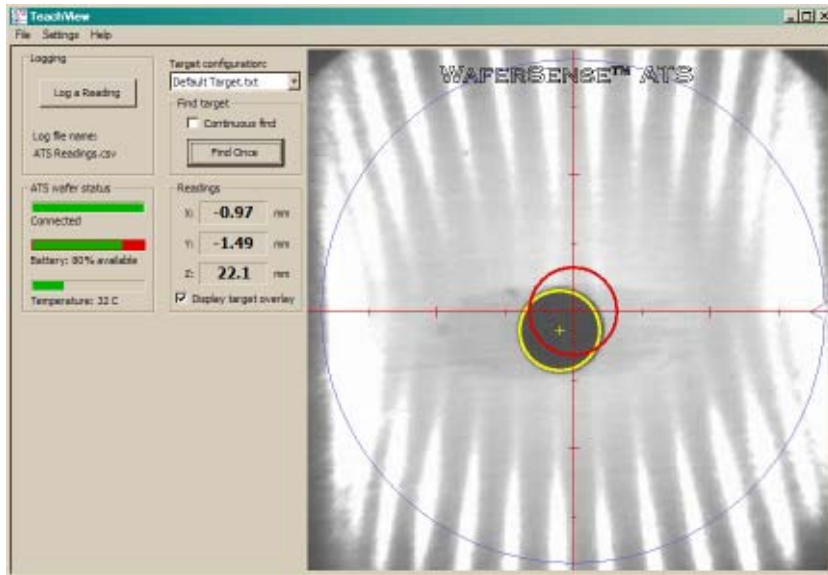
### **Wireless communications and wafer form factor reduce equipment downtime from hours to minutes.**

Wireless and vacuum compatible, the ATS teaching wafer makes calibration safe both for technicians and for process stations. Troubleshooting takes less time when equipment stays sealed during inspection. Lower downtime makes the equipment available for productive use faster and with less personnel and consumable expense.

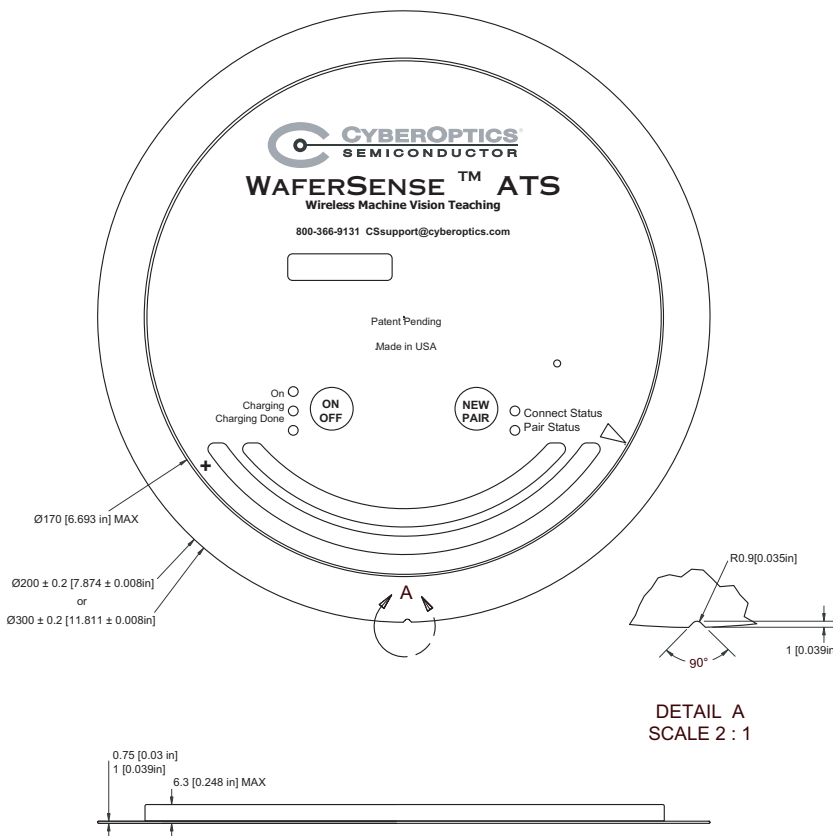
### **Visual inspection speeds troubleshooting and lowers consumable expense**

ATS displays real-time images to technicians as robots move ATS through the tool. Technicians search for lost wafers and verify that pedestals are free of debris without opening the tool. Avoiding one needless process kit replacement may pay for the ATS.

# TeachView™



## Dimensions



Dimensions in mm.

## Features

- **Reports wafer xyz offsets.** The on-board camera captures live video from inside semiconductor equipment. An on-board image processor reports the coordinates (xyz) of the teaching wafer in relation to a target present inside the equipment.
- **Wireless, wafer-like.** The teaching wafer can be handled and placed just as a wafer inside your semiconductor equipment.
- **Package materials.** Low outgas, high temperature coated carbon fiber, Polycarbonate (label).
- **Form factor.** 200 mm and 300 mm diameters. Height 6.75 mm (0.27"). Weight 160g (200 mm) and 232g (300 mm).
- **Working distance.** Measures offsets to targets 6.5 mm – 45 mm (0.25" – 1.8") below the teaching wafer.
- **Accuracy.** ±0.1 mm (±0.004") (x and y position); ±0.5 mm (±0.02") (z position).
- **Vacuum compatible.** Low outgas construction materials allow use of the teaching wafer under vacuum (at least 10<sup>-6</sup> Torr).
- **Operating temperature.** Optimum 20°C – 50°C. Can withstand exposure to 120°C (5 min or less) if not in direct contact with heat source.
- **Battery runtime.** 2 hours (achieves full charge in 2 hours).
- **Charging carrier.** Charging clean box draws power from an electrical outlet to charge the teaching wafer when not in use.
- **Bluetooth communications.** Uses the 2.4 GHz radio frequency band to communicate with USB communications link.
- **USB communications link.** Connects to host system for wireless communications.
- **Application software.** TeachView™ displays live video and measurements based on preset targets. It also logs offsets and user comments. TeachTarget™ helps the user program teaching of any circular feature, 3 mm - 10 mm (0.1" - 0.4") diameter.
- **Operating systems.** Use with Windows 2000, XP and Vista.
- **Product components.** Product kit includes teaching wafer, charging clean box, USB communications link and application software. Optional portable tablet PC.



13555 SW Millikan Way  
Beaverton, OR 97005  
Phone: 800.366.9131 or 503.495.2200  
Fax: 503.495.2201  
E-mail: CSales@cyberoptics.com  
Web: www.CyberopticsSemi.com