

Stay in control. Prevent the waste of your valuable wafers. Make Wafer Surface Analysis part of your process control



Throughout the semiconductor manufacturing process, the VCA-3000 systems offer quick and accurate analysis of the tested wafer surface conditions so process quality is assured before applying to large amount of production wafers.

VCA-3000 applications include:

- Surface contamination identification
- Adhesive and primer preparation
- Coating assessment of the HMDS process
- Coating uniformity
- Coating quality

How does it work?

VCA-3000 systems incorporate computerized video imaging with contact angle analysis to evaluate wafer surface conditions. The contact angle is defined by the tangent created at the interface of a liquid droplet with the wafer surface. It is directly related to the phenomenon of surface energy which is a critical factor for adhesive bonding, cleanliness evaluation and coating assessment.

Choose the right system for your application and budget

VCA-3000S™ is a manually operated system for testing 300mm wafers. Its 32 MB RAM enables dynamic image capture at 60 frames per second. In addition to surface energy analysis, it is also capable of performing pendant drop analysis for surface tension.

VCA-3000XE™ is equipped with the same capability of VCA-3000mp for testing 200mm wafers. In addition, it comes with a large capacity syringe.

VCA-3000mp™ is a self contained contact angle system for testing 300mm wafers. Wafer test location, droplet size, dispensing and contact angle calculations are performed automatically under computer control.

VCA-3000 Family Product features*

Precise image capture

Capture precise droplet profiles with high resolution camera and high magnification lens with high intensity LED lighting.

Easy and reliable operation

With manual wafer positioning (3000S) or fully automatic operation (3000XE and 3000mp), the VCA-3000 systems require little or no operator effort to perform contact angle measurement. Computer control system relieves the operator of tedious measurement tasks and improves reliability and repeatability.

Up-to-date image analysis workstation

Equipped with Intel Pentium™ microprocessor and video capture card for high speed imaging and realtime video viewing.

Microsoft Windows 95™ based imaging and analytical software

Wafer Mapping Software

allows the user to select any number of points for analysis, choose from a variety of pre-programmed test patterns, or create test point templates. The software automatically measures and records test details and displays information in both text and graphic formats. The average and standard deviation values are calculated and displayed as the data is being entered. All data can be saved and exported into Microsoft Excel™ compatible format for further analysis or graphing.



AutoFAST Imaging

Software captures droplet image and calculates the contact angle without user intervention. The values are recorded on the computerized wafer map. An image export function allows for printout, documentation and export to other programs.



*Not all features are available to all systems. Please refer to the chart on back for details.



VCA-3000 Family Product Features

	VCA-3000S	VCA-3000XE	VCA-3000mp
wafer size	up to 300mm	100, 150 and 200mm	100, 150, 200 and 300mm
operational mode	manual	automatic	automatic

Software Features

manual contact angle calculation	•	•	•
image save & export	•	•	•
statistical data analysis	•	•	•
automatic contact angle calculation	•	•	•
programmable motorized dispenser	•	•	•
automatic location of test points	not available	•	•
automatic droplet placement	not available	•	•
automatic mapping of wafer surface	not available	•	•
programmable wafer test patterns	not available	•	•
large capacity syringe	•	not available	•
dynamic image capture at 60 frames per second	•	not available	not available
surface energy analysis	•	•	•
pendant drop analysis for surface tension	•	not available	not available

Hardware

Processor	Pentium	Pentium	Pentium
RAM	32 MB	16 MB	16 MB
HDD	1.0 GB	1.0 GB	1.0 GB
FD	3.5" 1.44 MB	3.5" 1.44 MB	3.5" 1.44 MB
Monitor	17"	17"	17"
CD-ROM	•	•	•

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