



VCA 3000sTM

VIDEO CONTACT ANGLE SYSTEMS

VCA-3000S Wafer Surface Analysis Systems are specially design for use in semiconductor wafer processing quality control. The system provides quick and accurate contact angle/surface energy analysis on wafer surface to evaluate adhesion, cleanliness and coatings. The syringe mechanism can be raised for easy loading and unloading eliminating the possibility of wafer damage.

Although the system was designed for wafer surface analysis it is also a useful tool for any application that requires a large stage. Samples sizes up to W12" x L12" x H.75" can easily be accommodated by this system.



Full view of VCA 3000S

APPLICATIONS:

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

The VCA 3000s utilizes a precision camera and advanced PC technology to capture static or dynamic images of the droplet and determine tangent lines for the basis of contact angle measurement. Manual or automatic syringe provides easy dispensing of test liquid. Computerized operation eliminates human error in line drawing and captures dynamic images for time sensitive analysis. Data and images are stored in the computer for later analysis or easy transfer to other software applications.

HARDWARE FEATURES

- High-resolution video camera with magnifying lens with high intensity LED lighting for precise image capture
- 300mm rotating stage, allows access to all areas of the wafer
- High-end PC is standard with high-performance video board for advanced image analysis and video capture
- Flat Screen Monitor

SOFTWARE FEATURES

- **Automatic contact angle imaging and calculation**
- **Dynamic droplet capture (movie viewing of droplets)**
- **Surface energy (dynes/cm) analysis**
- **SPC (Statistical Process Control)**
- **Pendant Drop surface analysis**

SYRINGE ASSEMBLY

- Vertical Orientation
- Straight Needle
- Motorized Drive Mechanism
- 1.8 Degree Stepping Motor
- **Syringe Head:** Tilt back for safe and easy removal of large samples

SAMPLE PLATFORM

- **Platform size and shape**
12" Circular
- **Sample size and shape**
4", 6", 8", 12" circular
Not wider than 12"
- **Movement along the optical axis**
6" by hand sliding with lock
- **Movement transverse to the optical axis**
6" by dial
- **Vertical traveling distance**
2" by dial
- **Rotating**
360 degrees by hand with Planary Bearing

SOFTWARE

- **Contact angle calculations and control** AutoFAST
- **Time-based contact angle analysis** Dynamic-2500
- **Surface energy calculations** SE-2500
- **Statistical process control** SPC
- **Pendant drop for surface tension** PDAST

DIMENSIONS

- **Overall length** 32"
- **Min width** 12"
- **Max width** 18.5"
- **Max. height** 16.5"
- **Net weight of platform** 47 lb