

VCA Optima™

VIDEO CONTACT ANGLE SYSTEM

The VCA Optima series incorporates lightweight design, easy assembly, the latest Windows™ standards and user-friendly software to create a contact angle instrument that is accurate and easy to use. VCA-optima systems are suitable for research or quality control in R&D and processing engineering. Systems range from the basic Optima to the fully equipped Optima XE. Features include dynamic capture capability, motorized syringe, surface energy analysis and pendant drop analysis, to name a few.



APPLICATIONS (include but not limited to):

- Evaluate surface cleanliness and cleaning methods
- Study adhesion, wetting behavior, bonding quality, surface treatments and coatings on fiber, fabric, polymer, semiconductor wafer, hard disk, flat panel displays and biomaterials
- Absorption Studies

The VCA Optima 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.

SOFTWARE FEATURE	VCA OPTIMA	VCA OPTIMA S	VCA OPTIMA XE
Manual contact angle calculation	✓	✓	✓
Image save & export	✓	✓	✓
AutoFAST contact angle calculation software		✓	✓
SPC statistical analysis software		✓	✓
Dynamic-2500 software			✓
SE-2500 surface energy software		✓	✓
PDAST surface tension software			✓
DataView software			✓

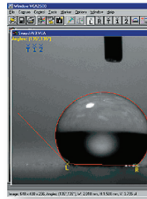




HARDWARE FEATURES

- High-resolution video camera with powerful lens system for fine image focus
- Solid state lighting for sharper and brighter images
- High-end PC is standard with high-performance video board for advanced image capture and fast results
- Three-dimensional adjustable stage for accurate sample position
- Standard motorized syringe for XE model
- Single control box for easy setup
- Small footprint requires less counter space

MEASURING METHOD SESSILE DROP/ MANUAL OR AUTOMATIC CALCULATION

- **Measuring range:** 0-180 degree
- **Repeatability:** ± 1 degree
- **Accuracy:** ± 0.5 degree
- **Magnification:** 35:1 (high mag until 51:1)
- **Sample/specimen stage sizes:** 3.5" x 3.5" / W6.5" x L9" x H2.5"
- **Dosing:** 150-500 Droplets
- **Input voltage:** 110V/50 or 60 Hz
- **Dimensions:** L17" x W7" x H15"
- **Weight:** 21 lbs
- **Standard accessories:** 5 (28g) needle tips, 3 (100ml) syringe
- **Motorized syringe:** (XE model only)

SOFTWARE FEATURES

- AutoFAST Imaging Software:** Automatically captures the droplet image and calculates the contact angle measurement by Sessile Drop method. Both the contact angle tangent line and computer generated drop shape curve fit are displayed on the video image. Graphical or numerical results can be printed, documented or exported to other programs.
 
- Dynamic-2500 Software:** Performs high-speed image capture up to 60 frames/second for dynamic and time-based contact angle analysis. Provides movie viewing of timed interval image capture. Controls motorized syringe and tilting base assembly for advancing and receding contact angle analysis.
 
- SE-2500 Surface Energy (dyne/cm) Software:** Calculates the surface energy of an unknown solid substrate in dynes/cm based on the contact angle of multiple known liquids. Tabulates contact angles from a number of liquids on the same substrate and automatically calculates the surface energy using one of the four user selectable methods: Zisman, Geometric Mean, Harmonic Mean, and Acid-Base.
 
- SPC (Statistical Process Control) Software:** Automatically records contact angle, droplet height, width, volume, and area in an easy to use chart. Instantly displays statistical values of average and standard deviation as the data is entered. All data can be printed, saved and/or exported for further analysis or graphing in other software programs.
 
- PDAST (Pendant Drop Analysis for Surface Tension) Software:** Determines the surface tension (or interfacial tension) by pendant drop image analysis through video-imaging digitization and numerical curve-fitting using the Laplace equation of capillarity.
 
- DataView Software:** Views color charts of contact angle, width and height, wetted area and volume. Data and charts can be stored, printed, and edited.
 