

# VCA Optima<sup>TM</sup>

## ACCESSORIES

The VCA Optima series incorporates lightweight design, easy assembly, the latest Windows<sup>TM</sup> 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.

### ENVIRONMENTAL/HEATED CHAMBER

The Environmental Chamber is sealed to provide a controlled environment for sample placement. Gas/vapor inlets and outlets allow the user to create a desired environment. The system can accommodate either a net positive or net negative gas pressure. The chamber allows for image capture through a window on the front portion of the assembly. The Heated Environmental Chamber includes a heating unit with a thermocouple feedback temperature control system.



#### Heated Environmental Chamber Applications

- All applications of the Standard Environmental Chamber
- Adhesive investigations
- Contact angle vs. temperature analysis

#### Standard Environmental Chamber Applications

- Investigations involving hazardous or corrosive gases.
- Minimize liquid droplet evaporation by creating an environment saturated with the liquid/solvent used. A saturated environment is important for longer time duration studies or to minimize error due to evaporation.

### HEATED SYRINGE

The Heated Syringe Assembly consists of a heated enclosure which houses an interchangeable syringe. A micrometer syringe drive external to the heater jacket provides dispensing control. The unit is independently fixtured to control the height relative to the sample. The heated syringe has a thermocouple feedback control that can be adjusted to a preset temperature. The system couples directly to both the standard and heated environmental chambers.



#### Heated Syringe Applications

- Viscous liquids
- Liquid temperature vs. contact angle studies
- Polymer melt studies
- Analyze materials in their liquid form that are solid at room temperature. Please note that use of the heated environmental chamber is suggested for most applications involving the heated syringe.

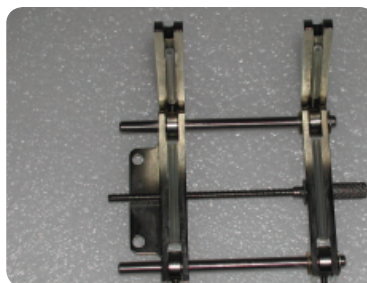
### TILTING BASE

VCA OPTIMA is attached to the tilting stage in order to tilt the VCA. This method is used to measure advancing and receding contact angles. This tilting base is motorized and computer controlled via the VCA Optima software.



### FILM SAMPLE CLAMP

The film sample clamp is designed to grasp short segments of films or flexible tubing at two ends, providing a taut and flat surface for contact angle analysis. This unit can be mounted with supplied thumb screws to the VCA sample stage for fixed sample positioning, as well as for operation with the tilting base assembly.



### Specifications

- Maximum sample dimensions are: 1.75" wide by 2.5" long.
- Maximum film thickness or compressed tubing thickness is 1/8"; substrates up to 3/8" can be fixture with longer fastening screws, please contact AST Products for special thickness requirements.

### Applications

- Analyzing films, small tubing and thin flexible sheets

### MEASURING METHOD SESSILE DROP/ MANUAL OR AUTOMATIC CALCULATION

- **Measuring range:** 0-180 Degree
- **Repeatability:**  $\pm 1$  Degree
- **Accuracy:**  $\pm 0.5$  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)