Fta32 Video 2.0 Software Functions

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• = standard o = optional hardware required

Function	Availablility
General	
No-charge for software upgrades	•
No-charge license for institutional multiple use copies	•
Fully functional demo	•
Local language support	•
Win98SE, ME, NT, 2000, XP	•
Full printing of forms, images, graphs, and data tables	•
Windows Clipboard copy/paste of images, graphs, tables	•
Microsoft Excel compatible data export	•
Project files to keep all settings by separate users	•
Camera Types	
RS170 30FPS (frames per second), US standard	•
CCIR 25FPS, European standard	•
USB 1 and 2	•
External camera systems that produce AVI files	•
Image Acquisition	
FTA cameras	•
User frame grabber supporting Windows DirectShow	•
AVI file read/write	•
60FPS interpolated from interlaced RS170 format	•
Secondary top view alignment camera	o
Image Analysis Modes	
Real-time software movie trigger	•
Real-time interfacial tension measurements	•
Real-time contact angle measurements	•
Movie acquisition for non-real-time analysis	•
Movie Modes	
Flexible trigger modes ("trigger" event sets time scale)	•
Separate pre-trigger and post-trigger setups	•
User set image rate and number of images in setups	•
Post-trigger rate can be log time (variable period)	•
Movie can be aborted after trigger and keep images	•
Image period set from camera rate to hours per image	•
Movie length limited only by computer memory size	•
Slower movies can be recorded directly to disk	•

Movie Trigger Modes	
User manual click	●
Software initiated by change in image	●
Time into run	●
Pump action	●
Robotic motion action	●
Dispense Pump Control	
User manual start/stop	●
Programmed constant rate, fixed volume	●
General user-set multi-step repetitive motion program	●
Multiple fluid dispense	o
Real Time Video-Feedback Macros	
Dispense to specific pendant volume	●
Dispense to specific pendant drop shape	●
Position motorized tip Z at specific point in image	o
Center tip in image using tip rack	o
Position motorized stage at specific point in image	o
Find potential baseline using tip Z motion	o
Touch-off pendant drop using tip Z motion	o
Movie Analysis	
Multiple movies open simultaneously for analysis	●
Cineloop to automatically scan through movie	●
Image zoom for close inspection	●
Varied image formats supported	●
Details of image acquisition and analysis stored in movie	●
Single, separate file for each movie	●
Microsoft Access database for summary of movies	●
Easy data export to Microsoft Excel	●
Flexible graphing built-in	●
Automatic measurement of magnification standards	●
XML file format data output	●
Contact Angle by Sessile Drop Shape	
Spherical fit to liquid-vapor interface	●
Non-spherical fit to liquid-vapor interface	●
Laplace-Young fit to liquid-vapor interface	♦
Automatic baseline (liquid-solid interface) location	●
Manual baseline location possible	●
Automatic drop volume, width, and height measurement	●
Tilted baseline correction	●
Curved baseline correction	●
Separate left/right, advancing/receding measurements	●
Contact angles of bubbles in liquids against solids	●

Range: ≈0-180°	•
Practical accuracy: <±1°	•
Resolution: <0.1°	•
Contact Angle by Capillary Rise	
Contact angles of rods and fibers	•
Contact angles of flat surfaces	•
Range: ≈0-90°	•
Practical accuracy: ±1°	♦
Resolution: <0.1°	♦
Contact Angle by Top View of Spreading Drop	
Measurement of drop volume prior to dispense	o
Measurement of uneven spreading	o
Range: 0-≈180°	o
Practical accuracy: ±1°	o
Resolution: 0.1°	o
Interfacial Tension by Pendant Drop Shape	
Measurements on hanging drops or floating bubbles	•
Liquid-liquid interfacial tension measurements	•
Automatic drop volume and surface area measurement	•
Range: ≈0-2000mN/m	•
Practical accuracy: ±0.5%	•
Resolution: <0.1%	•
Interfacial Tension by Sessile Drop Shape	
Measurements on sitting drops or floating bubbles	•
Liquid-liquid interfacial tension measurements	•
Automatic drop volume and surface area measurement	•
Range: 10-2000mN/m	•
Practical accuracy: ±1%	•
Resolution: 0.2%	•
Interfacial Tension by Drop Volume	
Measurements on hanging drops or floating bubbles	•
Liquid-liquid interfacial tension measurements	•
Automatic drop volume and surface area measurement	•
Range: ≈0-2000mN/m	•
Practical accuracy: ±2%	•
Resolution: 0.1%	•
Interfacial Tension by Sessile Drop Dorsey Method	
Measurements on large molten metal drops	•
Range: ≈20-2000mN/m	•
Practical accuracy: ±5%	•

Dilational Stress Interfacial Rheology	
Fourier transformation of surface area and IFT data	•
Automatic determination of modulation frequency	•
Modulus G magnitude	•
Modulus G angle	•
Elastic modulus G'	•
Loss modulus G"	•
Elasticity n"	•
Viscosity n'	•
Mean interfacial tension	•
Mean surface area	•
d Area / Area	•
Surface Energy and Adhesion	
Database of common test liquids	•
Database for contact angle measurements	•
Girifalco-Good-Fowkes-Young method	•
Extended Girifalco-Good-Fowkes-Young method	•
Wu harmonic mean method	•
Owens-Wendt geometric mean method	•
Lewis acid/base (aka van Oss) method	•
Wetting tension method	•
Zisman critical wetting tension method	•
Neumann's equation of state method	•
Schultz's estimate method	•
Wetting tension	•
Work of cohesion	•
Work of adhesion	•
Work of spreading	•
Critical micelle concentration	•
Wetting envelop presentation	•
Least squares regression for multiple measurements	•
Overdetermined equation regression for extra liquids	•
Prediction of contact angles from surface energy and tension	•
Help	
Tool-tip instant help when cursor held over item	•
Menu items described in on-line user-editable file	•
"How To" help in on-line user-editable files	•
Wide selection of application notes on CDROM	•

465 Dinwiddie Street • Portsmouth, Virginia 23704 • 1.757.393.1584 Fax: 1.757.393.3708
http://www.firsttenangstroms.com