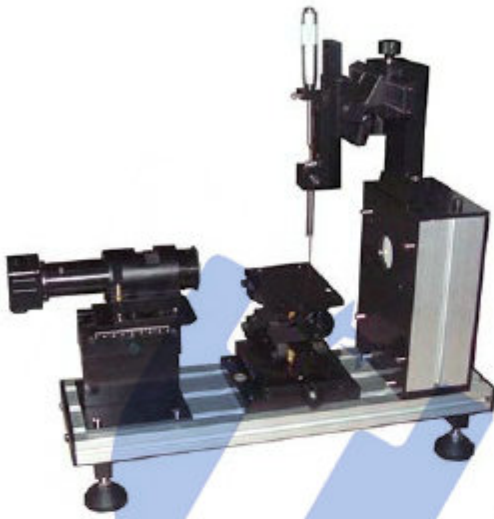


Contact Angle Tester (Goniometer, Optical tensiometer)



Model: CAG100



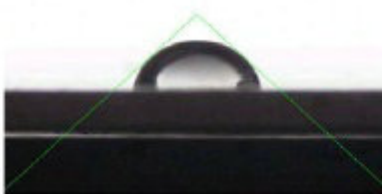
Model: CAG200

1. General introduction

Contact angle meters (also known as optical tensiometers or goniometers) allow direct measurements of surface tension, interfacial tension and contact angles. Contact angle is an extremely versatile technique used for characterization of both liquids and solids.

The Contact Angle Meter (optical tensiometer) is an ideal industrial or academic tool for product development engineers, R & D engineers who need precision and repeatability. Contact angle measurement combines high technology test instrumentation and a non-destructive testing method to allow an accurate, objective and repeatable analysis to be made. Using the contact angle meter you can compare the effects of a range of surface treatments and gather data that correlates to various surface conditions e.g. lubricity, wettability, surface energy etc.

UnitedTest CAG series contact angle measuring equipment captures drop images and automatically analyses the drop shape as a function of time. The drop shape is function of surface tension of liquid, gravity and the density difference between sample liquid and surrounding medium. On a solid the liquid forms a drop with a contact angle that also depends on the solid's surface free energy. The captured image is analysed with a drop profile fitting method in order to determine contact angle and surface tension.



Sessile drop measuring static contact angle

Key Features

1, Imaging: High pixel digital camera and Zooming lens, connection USB 2.0, 3 Million pixel, can

clearly analysis dynamic liquid drop, and suitable to use laptop to operate.



2, Light source: brightness adjustable luminescence LED light, clear display liquid drop edge;

3, Specification: 25 frame/s; microscope rate 0.7 - 4.5 continuous magnifying; zoom in 20- 200 times; high imaging resolution 2048*1536;

4, Look down vision angle adjust range: 0--10° (useful for small angle or thin material imaging clearance).

2, Application

Contact angle meters and tensiometers are used in a wide range of fields including industrial R&D, quality control and academic research. Specifically, these fields include the chemical industry, electronics, energy, food, oil industry, paper & packing, biomedical and other type of advanced materials engineering, and pharmaceuticals and any area where surface properties and wettability are important. The applications have been divided based on industry, measurement principle, and phenomenon to measure.

3, References

ASTM D7334 Standard Practice for Surface Wettability of Coatings, Substrates and Pigments by Advancing Contact Angle Measurement;

ASTM D7490 Standard Test Method for Measurement of the Surface Tension of Solid Coatings, Substrates and Pigments using Contact Angle Measurements;

ASTM D5946 Standard Test Method for Corona-Treated Polymer Films Using Water Contact Angle Measurements;

ASTM C813 Standard Test Method for Hydrophobic Contamination on Glass by Contact Angle Measurement;

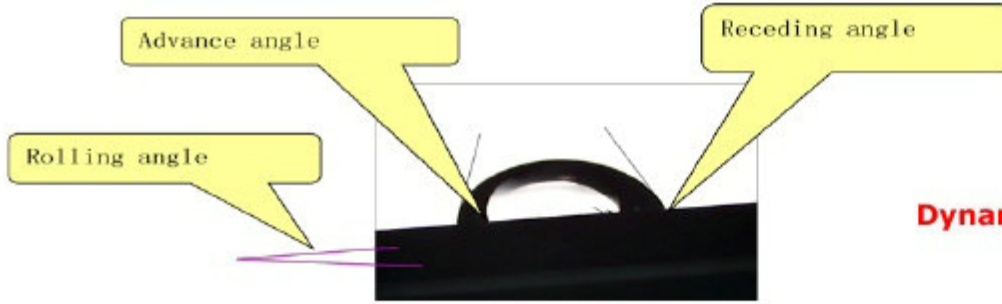
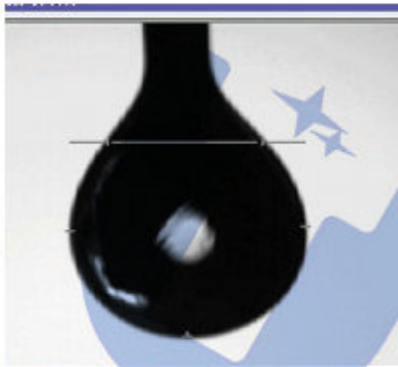
ASTM G205 Standard Guide for Determining Corrosivity of Crude Oils;

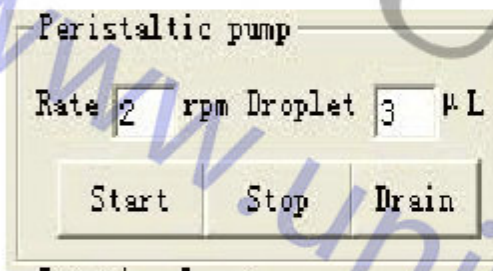
ISO 15989 Plastics -- Film and sheeting -- Measurement of water-contact angle of corona-treated films;

ISO 27448 Fine ceramics (advanced ceramics, advanced technical ceramics) -- Test method for self-cleaning performance of semiconducting photocatalytic materials -- Measurement of water contact angle;

4, Main technical specification

Model	CAG100	CAG200
Measuring methods	Sessile drop, Solid surface energy, pendant drop	Sessile drop, Solid surface energy, pendant drop, Rotate falling, Insert method (optional)
Analysis methods	$\theta/2$, height measuring, automatic analysis ($\theta/2$), automatic analysis (two base points)	
Image shooting method	Single shot, continuous interval shot, continuous shot	
Contact angle measuring range	$0 < \theta < 180^\circ$	
Measuring resolution	0.01°	
Measuring accuracy	0.1°	
Solid surface energy	Owens with 2 liquids	
Sample size	120*80mm	
Sample max. height	30mm	
Two-dimensional table adjusting range	Up and down 0-60mm, accuracy 0.01mm Left and right 0-60mm, accuracy 0.01mm	
One-dimensional table adjusting range	Front and back 0-60mm, accuracy 0.01mm	
Sample feeding mode	Sample injector 1), 100 microlitre, 2 microlitre 2), 10 microlitre, 0.2 microlitre	
Sample injector adjusting range	13mm, accuracy 0.005mm	
Sample injector screw knob adjusting range:	0-50mm, adopt high accuracy manual screw rod, ensure liquid feeding stable and accurate.	
Power	220V, 50Hz/ 110V, 60HZ	
Automatic sample feeding <i>(standard for CAG200, optional for CAG100)</i>	Software control peristaltic pump, 0.1-50 circle per min. , control time can be free setting. peristaltic pump flow rate accuracy: 0.0002ml/min. Min. liquid volume: 0.2u _l (Optional for CAG100)	
Automatic rotary table <i>(standard for CAG200, optional for CAG100)</i>	360° Manual/Automatic rotary table, software adjust rotate speed 0.01-50Rpm; (Do dynamic contact angle test, international allow speed is 0.3Rpm, more slower is better. Slow rotate speed can make the result more accuracy. Can used to measure dynamic contact angle (advanced angle, receding angle, rolling angle). (Optional for CAG100)	
Weight	50Kg	
Dimension	500*350*400mm	


Dynamic contact angle test

Pendant drop (to measure the interfacial tension value)

Surface free energy

Software control automatic liquid drop

Insert method
7, Main accessories

Item	Quantity
Frame	1 set
3 million pixel digital camera	1 pc
Zoom lens	1 pc
Three-dimensional table	1 set
Light source	1 pc
Sample injector	1 set
Computer	1 set
English software	1 set
360 degree Manual/Automatic rotate table (optional)	1 set
Peristaltic pump (optional)	1 set
Documents (Manual, packing list, certificate)	