

## Evaluation of Paints, Inks, Additives for coating processes

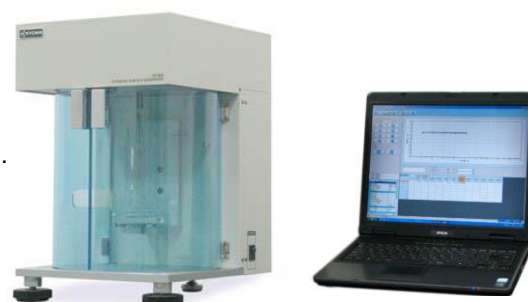
# DyneMaster DY-300

## Automatic Surface Tensiometer

New model of multi-purpose and user friendly operation with dialog guidance, which is developed with Kyowa's experiences and know-how acquired by 50 years' of manufacturing surface tensiometers.

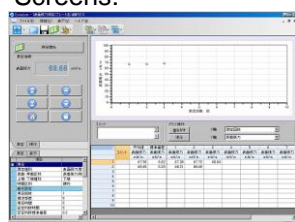
### Features:

- ◆ Fully automatic operation by single command button.
- ◆ For QC use, repetition of measurement can be pre-set.
- ◆ For surfactant solutions, graph of variations over time can be plotted.
- ◆ For R&D use, functions of graph overwriting and data converting to spreadsheet are prepared.
- ◆ Measurements of lamella length, and liquid density are available in addition to surface/interfacial tension.

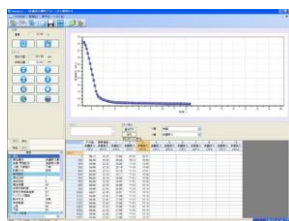


DY-300

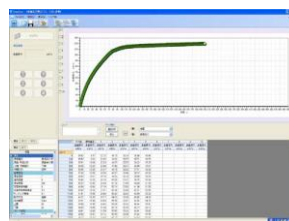
### Screens:



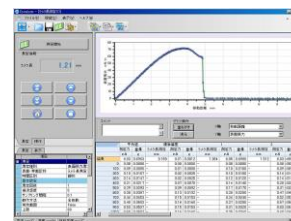
Surface tension (Static)



Surface tension  
(Dynamic variations over time)



Surface tension  
(High viscosity fluids)



Lamella length

### Typical applications:

- ◆ **Surface tension:** evaluating detergency of detergents, wettability of coating agents
- ◆ **Interfacial tension:** evaluating emulsification property of water/oil
- ◆ **Lamella length:** evaluating foaming stability of coating agents
- ◆ **Liquid density:** measuring density of liquids



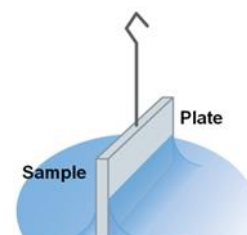
### Specifications:

Measurement method	Wilhelmy Plate method, du Noüy Ring method
Measurement range	0 - 100 mN/m
Measurement accuracy	0.2 mN/m *standard deviation of repeatability
Resolution	0.01 mN/m
Stage speed, Stroke	0.1 - 1.0 mm/s, Stroke 48mm
Measurement temperature	Room temp. - 150°C (Heater type stage system) 10 - 70°C (Jacket type stage set with Hot/cold water circulator 4VT)
Software	Standard: Surface/interfacial tension, Lamella length, Liquid density
Detecting parts	Standard: Platinum plate Option: Platinum ring, Pycnometer for liquid density, Accessory for sedimentation
External dimensions	255(W) × 309(D) × 369(H)mm
Weight	About 12.5kg
Electric power	AC100-240~50/60Hz 35W 75VA

# Measurement techniques of surface/interfacial tension and features

## Wilhelmy Plate Method

When a platinum plate (Wilhelmy plate) makes contact with the surface of the liquid, the liquid will wet the Wilhelmy plate upwards. In this case, the surface tension acts along the perimeter of the plate and the liquid pulls in the plate. This method detects the pulling force and determines the surface tension.

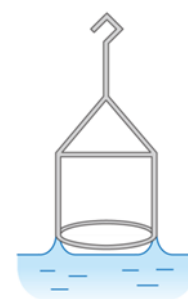


### **Features:**

- Simple cleaning process by flaming it in short time
- It can observe variations over time and get equilibration of surfactants.
- It is the most popular for its flexibility of application to variety of liquid samples.
- No density correction is required if sample density is from 0.6 to 1.4g/cm<sup>3</sup>.

## Du Noüy Ring Method

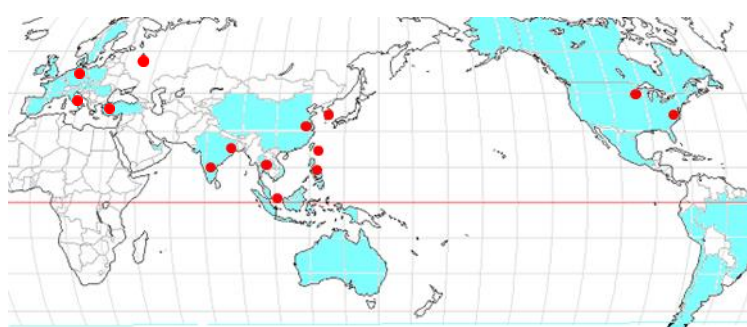
First, a platinum ring (du Noüy ring) that is hanging parallel to the liquid surface is sunk into the liquid. Then, the ring is gradually drawn apart from the surface in a vertical direction. In this process, the surface tension of the liquid membrane that is hanging by the ring generates a force on the ring. This force changes as the ring is drawn farther. Using the maximum value of this force, surface tension is determined.



### **Features:**

- Simple cleaning process by flaming it in short time.
- It can obtain Lamella length in addition.
- Several industrial standards adopt the method for its long history.

## ■ For Overseas Customers



● Distributors, Agents

■ Countries we served

\*The specifications and designs are subject to change without notice

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