LAUDA Ring/Plate Tensiometer TD 1 C

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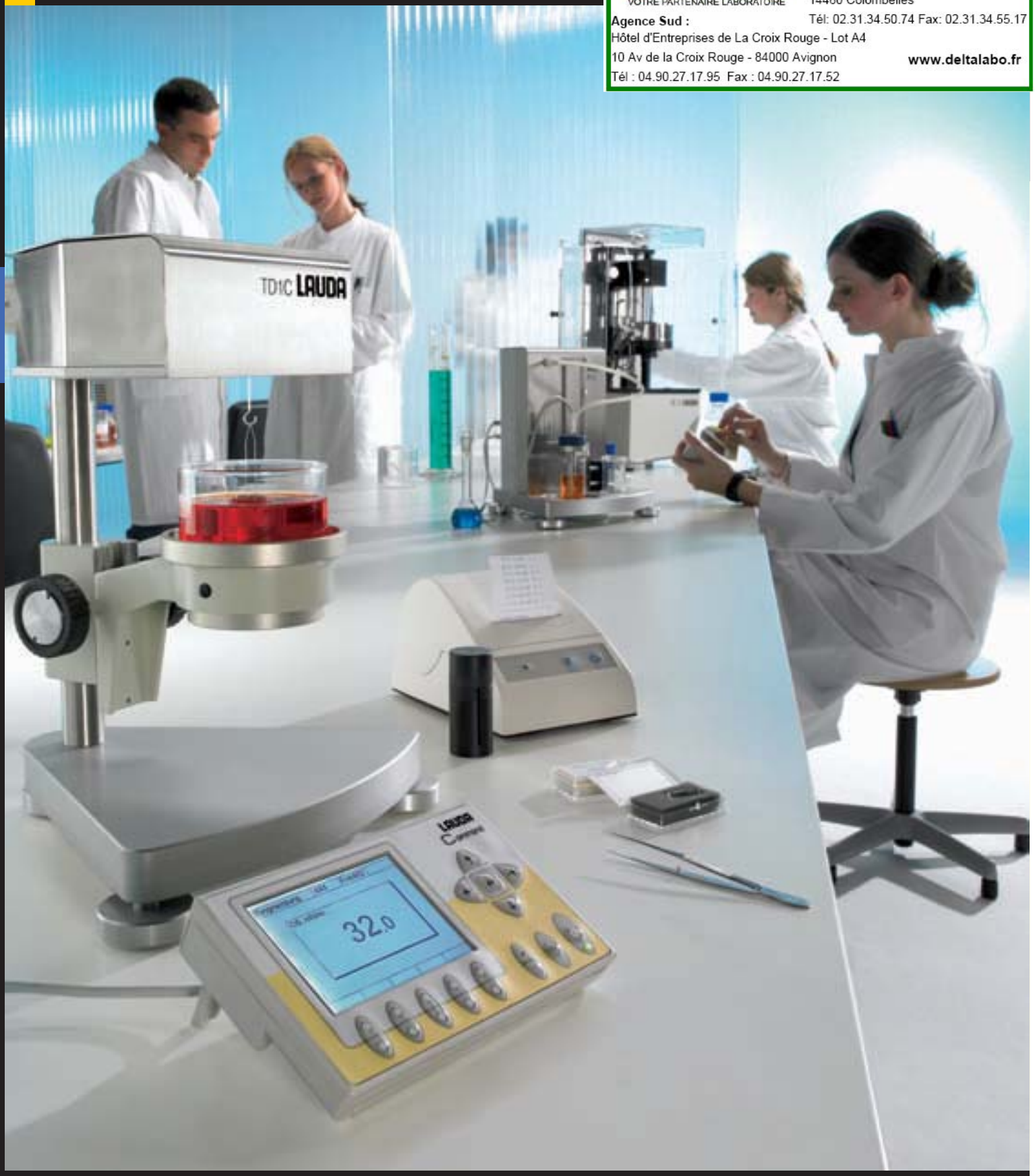


Economical introduction into the world of tensiometry with the new LAUDA Ring/Plate Tensiometer TD 1 C.

The TD 1 C units, whose technology has been completely revised and which bear a new design, offer even easier handling due to the handy remote control Command which has proven itself with LAUDA thermostats and measuring instruments. State-of-the-art processor technology allows extended documentation options. The measuring values are only displayed on the remote control. The evaluation of these values can be printed on an optional protocol printer.

Easy determination of surface tension

- *The measuring desk with the sample stage of the easy to handle tensiometer can be manually adjusted.*
- *The sample stage can be moved smoothly by means of ergonomic adjusting screws, like a microscope*
- *Easy measurements with Wilhelmy plate*
- *Simple determination of force maximum during the ring measurement*
- *By means of the high-resolution display of the remote Command control, the increase in wetting force during with drawing of the ring can be followed and the maximum force will be detected automatically and signalised by an acoustic signal without detaching the lamella*
- *The value displayed in the maximum is automatically corrected according to Zuidema and Waters, and thus corresponds to the surface tension of the measured liquid in nN/m*
- *At the touch of a button, the measured value and all parameters can be either saved or directly printed out on an optional protocol printer*

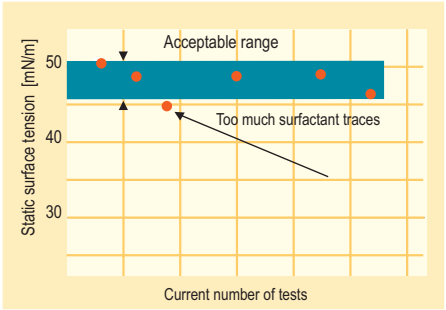
In total the TD 1 C is a very flexible and highly precise measuring instrument.

Example: The perfect instrumentation for professional training

At the university's practical training in physics students must learn to understand the principles in static surface and interfacial tension. This should be done with a simple instrument to learn the basics behind fully automated systems for tensiometry.

Solution:

The robust and intuitive TD 1 C allows students to mesure exactly – and without additional corrections – the static surface and interfacial tension of numerous liquids according to the standardized methods of Du Noüy and Wilhelmy. Furthermore, they are able to determine the density of liquid media according to the Archimedes' principle. Now it is possible by a single, well-priced instrument to combine various experiments.



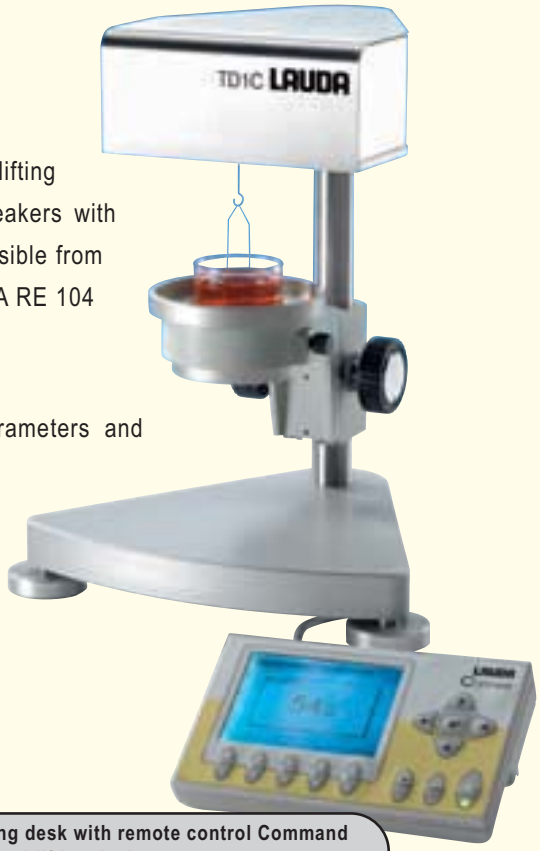
LAUDA Ring/Plate Tensiometer TD 1 C

The TD 1 C model works with Du Noüy ring and Wilhelmy plate according to international standards (DIN 53914, ISO 304, ASTM D971). Furthermore, the density, according to the Archimedes' principle, as well as smaller weights can be measured due to a newly-developed, even more powerful force-measuring cell with a considerably enlarged measuring range.

Easy handling

The measuring desk includes the high-resolution force-measuring cell and the lifting device for the manual positioning of the sample stage. Various standard test beakers with a diameter of up to 8 cm can be inserted into the large sample compartment accessible from all sides. The samples can be brought to the correct temperature by using a LAUDA RE 104 thermostat, for example, connected to a double-walled glass thermostating vessel.

This handy, removable control unit enables the input of the measurement parameters and assumes the evaluation and representation of the measurement results. The large, high-resolution graphic display takes over the menu-driven user guide, and displays single measurements and results at the touch of a button. The remote control with its self-explanatory menu-driven operation offers an optimum degree of user-friendliness.



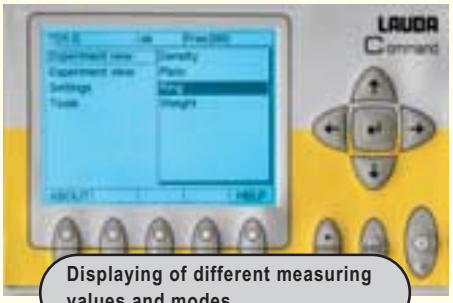
Measuring desk with remote control Command and manual lifting device

The scope of delivery:

- High resolution (± 0.1 mN/m, ± 1 mg) and enlarged measuring range up to 300 mN/m or 5 g
- Automatic maximum recognition
- Automatic correction of measuring values (according to Zuidema and Waters)
- Semi-automatic calibration at three levels of precision with calibration weights
- Input of sample dimensions possible

Other options:

- Print-out of the measuring values (surface / interfacial tension, density) on an optional printer at the touch of a key
- Storage of up to 500 measurements and the accompanying parameters
- Numerical sample description determined by the user



Displaying of different measuring values and modes

Measuring of the surface and interfacial tension with Wilhelmy plate

Advantages and technical data TD 1 C

The measuring values displayed on the remote control Command, can be printed on an optional protocol printer.

Double walled glass thermostating vessel

Logging of measuring values

Technical data TD 1 C		
Measurement type		Surface and interfacial tension; density, weight
Measurements surface and interfacial tension	mN/m	ring < 300; plate < 999
– Resolution	mN/m	± 0.1
Density measurement	g/l	< 2000
– Resolution	g/l	± 1
Weight measurement	mg	< 5000
– Resolution	mg	+/- 0.1
Calibration		Calibration weight
– Sensitifity		3 levels
Display		320 x 240 Graphic display, 11 x 40 characters
Selection of measuring modes		Menu-controlled
Parameter input		Menu-controlled
Sample designation		Numerical (0 - 999)
Measuring value	Results	Max. 500, with date and time
Stage movement (sample)	manual	DC motor
Maximum recognition		Automatic
Ring correction		Automatic according to Zuidema und Waters
Documentation		Printer
Weight	kg	approx. 5.0
Dimensions (WxDxH)	mm^3	250 x 120 x 300
Power supply	V; Hz	100-240, 50/60

Standard accessories

- Du Noüy ring
- Calibration weight
- Immersion plunger made from glass for determining density

Further accessories

- Wilhelmy plate
- Double walled glass thermostating vessel
- Protocol printer
- Thermostats (see p. 40)

Measuring technology standards

- DIN 53914
- DIN 53993
- ASTM D971
- ISO 304
- ISO 4311

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