



May 2010

DEAR COLLEAGUES,

We are pleased to offer for delivery in your organization

Langmuir–Blodgett trough 'LT-201'

'LT-201' is a device for application of monomolecular films according to the Langmuir-Blodgett (LB) technique. Langmuir–Blodgett trough 'LT-201' is intended for:

- application of monomolecular films on solid samples according to the Langmuir-Blodgett (LB) technique or to the horizontal precipitation (HP) technique
- deposition of multimolecular films using corresponding layer-by-layer technique
- formation of mono- and multimolecular composite coatings on solid surfaces
- modification of the surface properties (hydrophilic behavior, optical, electrical properties etc.)
- conducting fundamental research at ultrathin film fabrication and their use as insulating and protective coatings, molecular electronic elements, in biology for creation of bilayer lipid membranes etc.



CHARACTERISTICS OF LANGMUIR–BLODGETT TROUGH 'LT-201'

Full free surface area:	800 cm ²
Maximum free surface area confined with the barrier:	744 cm ²
Compressed (effective) area:	560 cm ²
Liquid medium volume:	2000–2100 cm ³
Dipping well:	75 mm deep, diam. 60 mm (may be change according to the Customer request)
Maximum dimensions of the immersed substrate:	70x55x4 mm (h-w-t)
Number of barriers:	Two
Velocity range of the barrier motion:	- single side compression – 0.01 to 180 mm/min - symmetrical compression – 0.02 to 360 mm/min
Dipper mechanism stroke:	85 mm (vertical position of the unit can be adjusted manually)
Dipper mechanism velocity range:	0.01–40 mm/min,
Step of the dipper mechanism velocity change:	0.1 mm/min
Possibility of altering different monomolecular layers deposition:	Available
Delay between the layers deposition:	0–100000 s
Surface tension sensor:	Wilhelmy plate (vertical position of the sensor can be adjusted manually)
Working range of the surface tension sensor:	0-80 mN/m (stepped and fine adjustment of the range are available)
Sensitivity of the surface tension sensor:	0.01 mN/m
Number of surface tension sensors:	Two
Unit for substance layer-by-layer self-assembling from solutions:	- number of vessels – 23 (holes diam. 42 mm) - number of application cycles – unlimited - the vessel cassette feed velocity – 2.2 rev/min
Doser for substance feed to aqueous surface:	- substance reserve – 1 ml (2 ml and 5 ml applicable as well) - motion range of leading rod – 0-40 mm
Overall dimensions:	Trough with mounted rig - 800x300x520 mm (w-d-h); Control unit - 185x240x105 mm (w-d-h); Weight 14 kg.
Overall dimensions:	Trough with mounted rig - 400x200x250 mm (w-d-h); Control unit - 220x165x105 mm (w-d-h); Weight 7/8 kg.

Supply voltage:	220 V 50 Hz
Power consumption:	not more than 100 W
Additional accessories:	Substrate clamping holder for fixing the sample on the dipper lever. Rig for film application by the horizontal precipitation method (by liquid medium draining)*. Rotating barrier for substance film transfer into the working zone. A unit for tape substrate winding with two guides. A doser for substance feed on water surface. PTFE inserts for reduction of the working fluid volume. A jacket for for liquid thermostating of the trough in range 0°C...60°C by outer facilities.

Note. As we proceed improvement of the designed instruments, actual features may differ from the stated above that, however, does not mean the product malfunctioning.

SPECIFICATION

Product name: Langmuir–Blodgett trough.

Model: LT-201.

Code of the goods: 8479 (847989980).

Supplier: Microtestmachines Co., Gomel, Belarus.

Developer and manufacturer: Microtestmachines Co., Gomel, Belarus.

Item and description	Amount	Price, USD
Langmuir–Blodgett trough LT-201 including:	1	34400.00
Trough with additional rig (substrate clamping holder, rig for film application by the horizontal precipitation method, PTFE inserts, a jacket for liquid thermostating)	1	
A dipper unit on rotating base	1	
Surface pressure sensors	2	
Control electronic unit	1	
Additional options:		
A unit for substance layer-by-layer self-assembling from solutions	1	1450.00
A unit for tape substrate winding with two guides	1	1810.00
Rotating barrier for substance film transfer into the working zone	1	600.00
A doser for application of substance on water surface	1	1400.00
Water-jet pump for cleaning the surface of liquid in the trough (PTFE).	1	280.00
TOTAL		39940.00

The note.

1. Price is indicated without VAT. VAT in the country of Customer is on the Customer's responsibility.
2. Price of the instrument includes: delivery, transport insurance. Additionally can be included: installation, tuning, and 5-day user course at the Customer's residence.
3. Warranty and free service period: 1 year since the equipment installation.
4. Service conditions: Initial tuning and calibration is made by representatives of Microtestmachines Co. at the Customer residence. Serious problem that may occur during warranty period will be fixed at the Customer residence. Minor questions can be settled by e-mail or phone.
5. Technical support and methodological consultations are provided for the instrument lifetime. Updated control and processing software is regularly provided for the Customer free of charge.
6. The instrument's developer provides for upgrade of the supplied equipment including addition of newly developed functions and options improving or increasing the device functionality.

The delivery set of the instrument also includes:

- Software package for the device control and data acquisition.
The software is built according to the modular scheme oriented to perform specific application technique and provides all preliminary settings and calibration necessary for the LB trough operation as well control over the systems (mechanisms of the barrier movement and sample dipping/lifting) at the film application. Acquired data can be saved in special format or text files and can be then processed, visualized and analysed in the program itself or with third party software (e.g. SurfaceView package or Microsoft Excel). Minimal configuration of host PC (not included in the delivery set): Celeron® 1.7 GHz, RAM 512 MB, HDD 160 GB, VRAM 256 MB, monitor 17" 1024x768x32 bit, MS Windows® XP SP2, USB port.
- Operation manual on the instrument and software running.
- Original video materials.

Microtestmachines Co. is original developer and manufacturer of the scanning probe microscope with the above performances.

Additional information about this and other products of Microtestmachines Co. you can get at <http://microtm.com>.

Sincerely



Dr. Andrei Suslov
Director