



**KIBRON MicroTroughX**

# **YOUR OWN LANGMUIR AND LANGMUIR-BLODGETT LABORATORY**

**The Leading Edge in Monolayers**

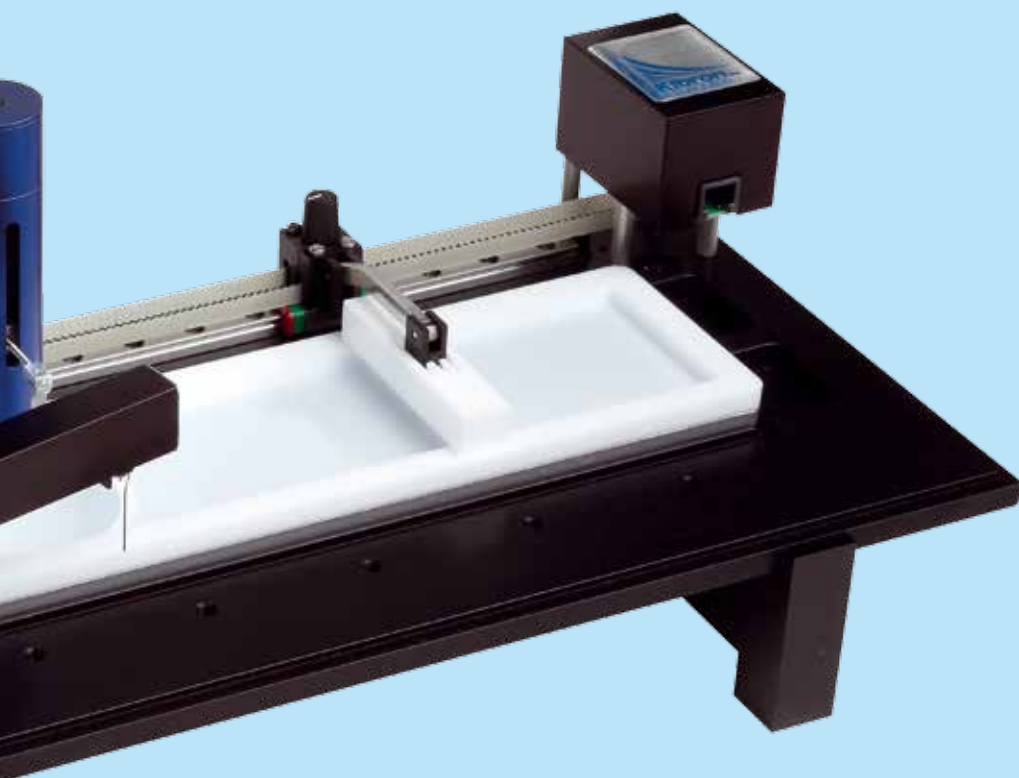


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# **MICROTROUGHX — MULTIPURPOSE LANGMUIR AND LANGMUIR-BLODGETT INSTRUMENT**

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# Kibron MicroTroughX

The Kibron MicroTroughX is an all-in-one lab tool for a variety of surface chemistry experiments. Using Kibron accessories you can convert the instrument into a Langmuir-Blodgett trough, a standard tensiometer, or a surface potential recording device.

- Recording surface pressure and isotherms
- LB deposition on Electron Microscopy-grids and mica
- Fluorescence microscopy of monolayers
- X-ray and IR-measurements

The core technology, the proprietary Kibron sensor (0.2 microgram resolution), allows to detect surface pressure and measure compression isotherms with a very high sensitivity, better than 0,01 mN/m, yielding excellent reproducibility. The technology also allows for very small subphase volumes with regard to both surface tension and pressure measurements; accordingly, LB coatings can be deposited on small surface area substrates. Open architecture facilitates the integration and interfacing of the system with other experimental techniques.

*"The monolayer and Langmuir-Blodgett equipment of Kibron has renewed my interest in a technique that I remembered as clumsy and complicated. In addition, I have been nicely impressed by the kindness and efficiency of the Customer Service. My students are delighted with Kibron".*

Prof.Dr. Félix M<sup>a</sup> Goñi Urcelay,  
Head of Unidad de Biofísica (CSIC-UPV/EHU)  
University of the Basque Country

## TECHNICAL DATA

### Surface pressure

- is measured with the Kibron DyneProbe – a small diameter (0,51 mm) rod suspended across the air-water interface. No artefactual hysteresis as when using the conventional Pt plates. No drying and accumulation of salt which cause significant errors when filter paper is used.

- Microbalance range  
0 – 300 mN/m
- Microbalance resolution:  
1  $\mu$ N/m

### Control of film area

- Barrier motion  
High precision microstepping for smooth control of area
- Barrier speed  
0,004-280 mm/min

### Deposition accessory

- Dipping speed:  
0,1\* – 10 mm / min
- Dipping range:  
40mm

### Surface potential

- Kibron MicroSpot has low noise of less than 1 mV

### Subphase temperature control

- Aluminum temperature plate that connects to a circulating water bath

### Troughs

- Standard troughs available in two sizes, made of either PTFE or stainless steel

Short: 232x59mm, 137 cm<sup>2</sup>, aspect ratio: 3.6:1, compression ratio: 15:1

Long: 405x59mm, 239 cm<sup>2</sup>, aspect ratio: 6.4:1, compression ratio: 27:1

A range of different trough designs can be manufactured according to customer specifications

### Dimensions and weight

- Complete system with acrylic casing:  
Short: 2,70kg : 33 x 15 x 19 cm  
Long: 4,85kg : 52 x 20 x 19 cm
- Electronics unit:  
29 x 22 x 55 cm  
1,35kg

\* Model year 2015

# WITH THE ACCESSORIES OF YOUR CHOICE YOU CAN BUILD YOUR OWN COMPLETE LANGMUIR- AND LANGMUIR-BLODGETT LABORATORY.

## FEATURES & BENEFITS

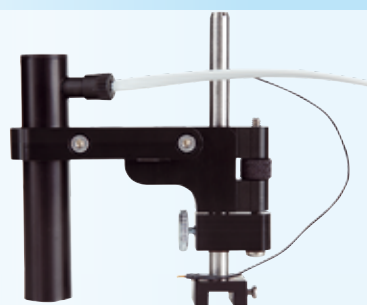
### DyneProbe

- Inert metal alloy Ø 0.51mm
- Small diameter means minimal interference/disturbance during different experiments.
- Allows for small sample volumes
- Easy to clean, economical to use



### Coating facility – LayerX

LayerX is an independent coating facility to transfer monolayer(s) to a solid substrate by the Langmuir-Blodgett (vertical) or Langmuir-Schaefer (horizontal) technique.



### Surface Potential – MicroSpot

Kibron MicroSpot is a miniature size plug-and-play accessory for recording surface potential of monolayers. MicroSpot uses non-destructive vibrating capacitor method and the trough bottom acts as the counter electrode. The noise is less than 1 mV.



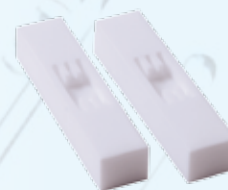
### Electronics unit

- Easily connect and control a variety of analog and digital sensors; even up to four microbalances.
- Comes with a FilmwareX monolayer Control Software
- Upon request: ActiveX or Software & Drivers for command level control



### Ribbon Trough

Special compression mechanism designed for measurements at extremely high surface pressures (>70 mN/m). Ribbon Trough fits into the base plate of MicroTrough and a Teflon ribbon forms a closed rectangular loop acting as a barrier.



### Barriers

Compression barriers for the MicroTroughX. All the systems come with barriers made of PTFE. Extra compression barriers made of PTFE/Delrin are available upon request.

A RANGE OF DIFFERENT TROUGH DESIGNS, MADE OF DIFFERENT MATERIALS CAN BE MANUFACTURED ACCORDING TO CUSTOMER SPECIFICATIONS



### Kibron Troughs

Interchangeable/removable troughs to expand the range of experimental possibilities; enzyme kinetics, LB/LS deposition, surface potential, microscopy, and more.

**Hydrophobic troughs:** precision manufactured from purest PTFE to keep the subphase free of contaminants and surfactants.

**Hydrophilic troughs:** shallow, low volume troughs machined out of stainless steel (grade 316).



MORE TOOLS, PLATES, TROUGHS AND OTHER ACCESSORIES ON [WWW.KIBRON.COM](http://WWW.KIBRON.COM)

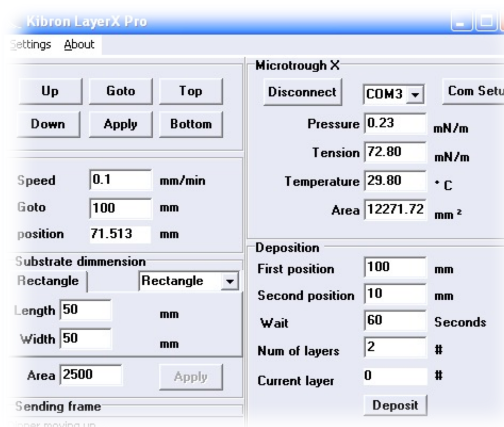
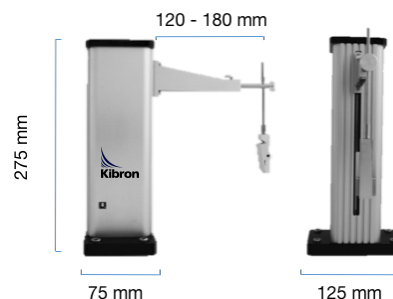


## Kibron DipCoater – *LayerX Pro*

Kibron LayerX Pro is a precision dip coating equipment for the deposition of thin films on different substrates. It can be used as a standalone unit or integrated to a Kibron MicroTroughX. Kibron LayerX Pro is interfaced and powered via single USB and is controlled by a dedicated Windows® software. Base support has M6 mounting holes for connecting into the Kibron Microtrough baseplate or into a standard optical breadboard.

KIBRON DIPCOATER – LAYERX PRO	
Product specifications	
Dipping range	150 mm (optionally 250mm)
Speed range	0,06 – 300 mm/min
Weight	1,5 kg
Dimensions (HxWxL)	275 mm x 125 mm x 180 mm
Power supply	USB
Sample specifications	
Maximum sample load	500 g
Maximum sample thickness	3 mm (std. clip)

All product specifications are subject to change without prior notice



Kibron LayerX Pro software offers range of different settings to perform a desired dipping sequence.