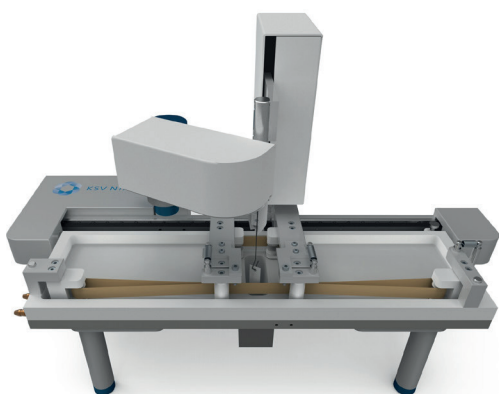


Langmuir & langmuir-blodgett Ribbon barrier trough

The KSV NIMA L & LB Ribbon Barrier Trough allows compression to a higher surface pressure than conventional L & LB Troughs. The use of a ribbon instead of a set of barriers enables a better monolayer confinement and ultimately higher packing densities, opening the way to new applications.



Applications

The KSV NIMA Ribbon Barrier Trough can be used as a Langmuir Trough or as a Langmuir-Blodgett Deposition Trough:

• Langmuir Ribbon Barrier Trough

In its Langmuir configuration, the KSV NIMA Ribbon Barrier Trough enables the study of floating monolayers at high packing densities (e.g. > 70 mN/m for DPPC). Such high surface pressures are required to study phenomena such as lung surfactant (DPPC) behaviour in alveoli.

• Langmuir-Blodgett Ribbon Barrier Trough

In its Langmuir-Blodgett or Langmuir-Schaefer configuration, the KSV NIMA Ribbon Barrier Trough can be used to deposit monolayers at high packing densities onto solid samples. Deposition enables further characterisation of your film with complementary techniques such as QCM-D and AFM.

Compatibility

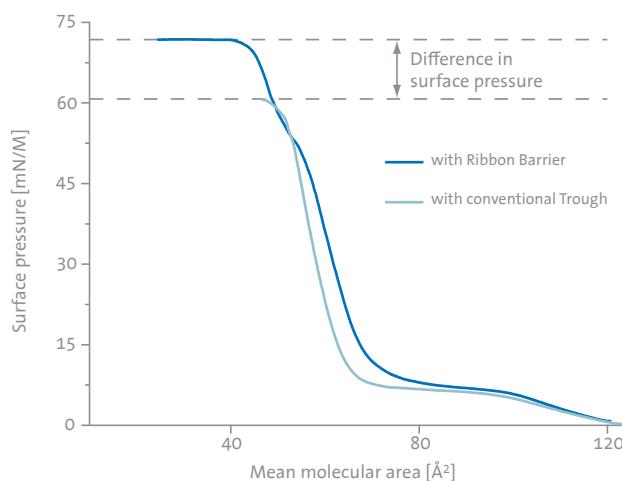
The KSV NIMA Ribbon Barrier Trough is a KSV NIMA Langmuir or Langmuir-Blodgett Deposition system equipped with a Ribbon Barrier trough top which includes the compression mechanism.

This means that any KSV NIMA Langmuir and Langmuir-Blodgett Deposition system can be converted into a Ribbon Barrier Trough (and vice versa) by simply exchanging the trough top.

Measurement example

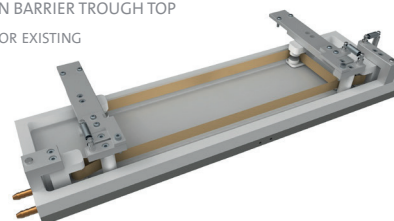
The graph below shows the surface pressure - area isotherms of a DPPC monolayer obtained with a conventional KSV NIMA Langmuir Trough Medium (light blue) and with the KSV NIMA Langmuir Ribbon Barrier Trough (dark blue).

The difference in the maximum surface pressure observed between the two curves demonstrates the ability of the KSV NIMA Ribbon Barrier to compress (and maintain) monolayers at higher packing densities.



GRAPH 1: COMPARISON OF SURFACE PRESSURE - AREA ISOTHERMS OF DPPC OBTAINED WITH A CONVENTIONAL LANGMUIR TROUGH AND A RIBBON BARRIER TROUGH.

KSV NIMA LANGMUIR RIBBON BARRIER TROUGH TOP
(AVAILABLE AS AN ACCESSORY FOR EXISTING
L AND LB KSV NIMA SYSTEMS)

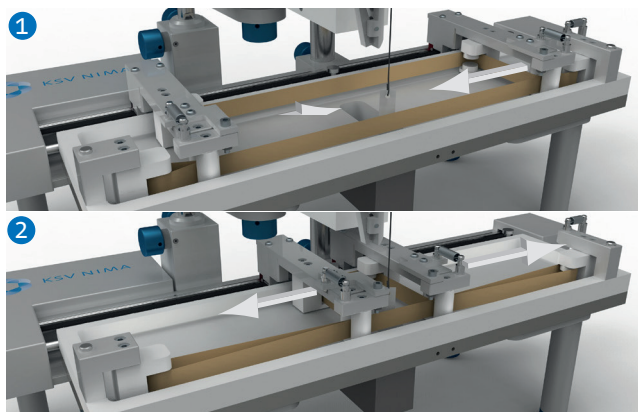


Langmuir & langmuir-blodgett Ribbon barrier trough

Working principle

The KSV NIMA Ribbon Barrier Trough works in every way like a conventional KSV NIMA Trough. The only difference is the compression mechanism which is done *via* a ribbon instead of the conventional barriers.

The ribbon is immersed halfway into the subphase and provides an enclosed perimeter around the monolayer for perfect film containment. The KSV NIMA Ribbon Trough mechanism allows the confined area to compress (1) and expand (2) as shown below:



Technical specifications

For full system specifications, please revert to the KSV NIMA L & LB Trough brochure.

Ribbon Barrier

Maximum surface area (cm²): 148.4
Minimum surface area (cm²): 40.5
Maximum compression/expansion speed (mm/min): 270
Compression/expansion speed resolution (mm/min): 0.01
Ribbon Barrier position resolution (mm): 0.01
Ribbon material: PTFE coated glass fibre
Number of Ribbons provided: 5

Langmuir Ribbon Barrier Trough

Subphase volume (ml): 161*

Langmuir-Blodgett Ribbon Barrier Trough

Subphase volume (ml): 226*
Dipping well (mm): L20 x W56 x H65
Maximum sample size (mm): T3 x W52 x H63

Software

KSV NIMA LB Software

*subphase level is set to the middle of the ribbon

Specifications and appearance are subject to change without prior notice. Biolin Scientific shall not be liable for any errors in this document.