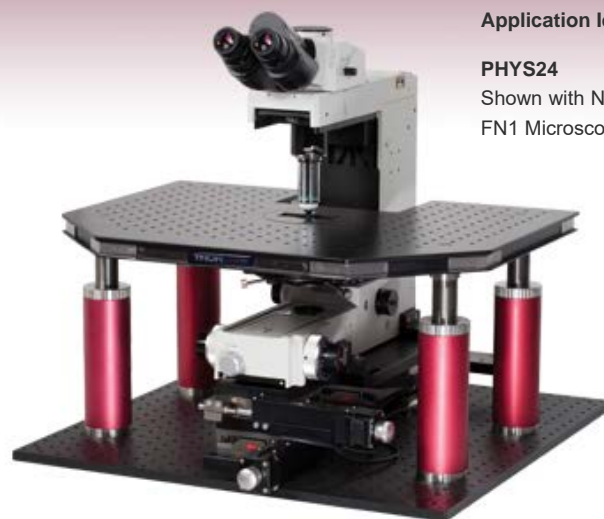


## Part PHYS24M/M - JAN 24, 2019

Item # PHYS24M/M was discontinued on JAN 24, 2019. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

### COMPLETE PHYSIOLOGY STAGES

- ▶ Manual or Motorized Microscope Translators
- ▶ U-Shaped Breadboard Designed for Microscopy



#### Application Idea

**PHYS24**  
 Shown with Nikon  
 FN1 Microscope

[Hide Overview](#)

## OVERVIEW

### Features

- Adjustable-Height U-Shaped Breadboard Provides 270° Access to Samples
- Includes Microscope Translator (Three Versions Available):
  - Manual Microscope Translation
  - Motorized Microscope Translation
  - Encoded Motorized Microscope Translation
- U-Shaped UltraLight™ Series Breadboard with Sealed Holes to Contain Spills

Modern imaging technology enables the study of physiological processes in living cells and animals. Image quality depends not only on state-of-the-art technology but also on the preparation of the specimens to be imaged. Imaging of live cells, tissues, and animals often requires the ability to position the specimens so that they remain stationary during image acquisition. To address these needs, Thorlabs has developed physiology stages that provide manual or motorized movement of the microscope about a stationary specimen.

These physiology stages consist of a rigid, mechanically and thermally stable U-shaped breadboard that provides more than two hundred 1/4"-20 (M6) tapped holes over a full 270°, which makes it easy to mount patch clamps or other experimental accessories. The breadboard has a removable Ø110 mm insert with an inset that can accommodate a standard microscope slide or Ø35 mm petri dish. The upper U-shaped breadboard is supported by four adjustable-height support columns (PHYS12P or PHYS12P/M), each of which can be adjusted from 8" to 12" (203 mm to 305 mm) and locked into place using a knurled ring locking collar. The base of each column is attached to a 1/2" (12.7 mm) thick solid aluminum breadboard measuring 24" x 24" (600 mm x 600 mm) with 1/4"-20 (M6) taps on 1.0" (25 mm) centers. This base allows the unit to maintain its factory alignment during transport; however, the aluminum breadboard can also be removed and the components can be directly mounted onto an anti-vibration table, such as our ScienceDesks. For more details on the individual components of our physiology stages, please see the *Component Details* tab.

Each physiology stage comes with either a manual or motorized 2" (50 mm) XY Travel Microscope Translator that is mounted to the base breadboard and

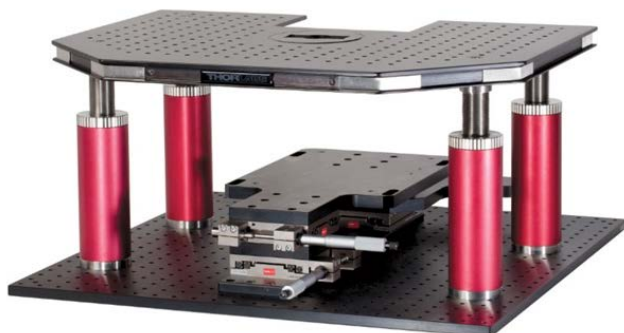
provides smooth, repeatable movement in the XY direction while maintaining a stable platform for the microscope. Thorlabs' standard translators are compatible with the Nikon Eclipse FN1 upright microscope. Please email [imaging@thorlabs.com](mailto:imaging@thorlabs.com) to inquire about adapter plates that are compatible with other common microscopes.

Many of the components of our physiology stages are available separately for custom applications. Please [click here](#) for more information.

[Hide Component Details](#)

## COMPONENT DETAILS

Click on the components of the Physiology Stage, shown below, for further details. These components are also available separately for custom applications.



### Microscope Translators

- Manual, Motorized, and Motorized-Encoded Microscope Translators
- Compatible with Nikon's FN1 Microscope
- 2" (50 mm) XY Travel
- 110 lbs (50 kg) Load Capacity



[Click to Enlarge Manual Translator](#)



[Click to Enlarge Motorized Translator](#)



[Click to Enlarge Encoded Motorized Translator](#)

Our microscope translators are offered in three versions to meet a variety of experimental needs. Our manual translators offer micrometers with 10  $\mu\text{m}$  graduations. Our motorized version features two stepper motor actuators to automate the movement of the microscope. The motorized version with encoder improves the bidirectional repeatability, which allows for very precise microscope positioning. [Click here](#) for more details.

### U-Shaped Breadboard

- UltraLight Series I Breadboard with Sealed Holes to Contain Spills
- Imperial and Metric Versions Available
- Full 270° Array of 1/4"-20 (M6) Taps
- Mechanically and Thermally Stable
- [Click Here for More Information](#)



[Click to Enlarge](#)

### Adjustable-Height Support Columns

- Continuously Adjustable Height from 8" to 12"
- Lockable Design
- Top-Located 1/4" -20 (M6) Tap
- Universal Base for Mounting to Work Surfaces with Imperial or Metric Taps
- Load Capacity/Post: 300 lbs (136 kg)



[Click to Enlarge](#)

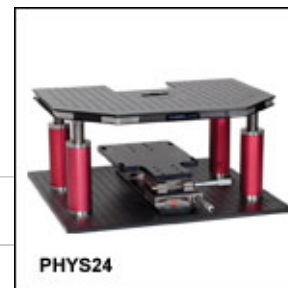
- [Click Here for More Information](#)

## Base: Solid Aluminum Breadboard

- Ensures all Components Maintain Factory Alignment
- Imperial Physiology Stages Include MB2424
  - Dimensions: 24" x 24" x 1/2" Thick
  - 1/4"-20 Holes on 1" Centers
- Metric Physiology Stages Include MB6060
  - Dimension: 600 mm x 600 mm x 12.7 mm Thick
  - M6 Holes on 25 mm Centers



[Click to Enlarge](#)



PHYS24

[Hide Manual Physiology Stages](#)

### Manual Physiology Stages

Thorlabs' Manual Physiology Stages come with our LNR50M (LNR50M/M for the PHYS24/M) TravelMax Translation Stage, which incorporates micrometer drives that have a graduated scale. The manual microscope translator can be easily configured into left- or right-handed XY systems.

Please note that our standard stages are compatible with the Nikon Eclipse FN1 upright microscope. Please email [imagingales@thorlabs.com](mailto:imagingales@thorlabs.com) to inquire about adapter plates for other common microscopes.

PHYS24(M) Specifications	
XY Travel	2" (50 mm)
Adjustment	Micrometer
Vernier Graduations	10 $\mu$ m
Load Capacity	110 lbs (50 kg)

Part Number	Description	Price	Availability
PHYS24/M	Manual Physiology Stage (Metric)	\$7,879.50	Lead Time
PHYS24	Manual Physiology Stage (Imperial)	\$7,879.50	Lead Time

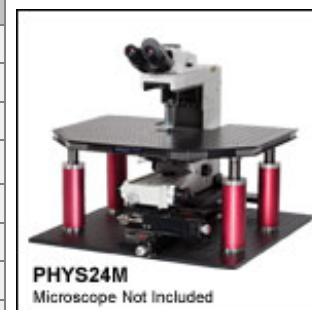
[Hide Motorized Physiology Stages](#)

### Motorized Physiology Stages

The motorized versions of the microscope translators on our physiology stages are available either with or without encoders. The linear optical encoder mounts to the moving platform of the stage and provides feedback to the drive electronics to ensure a bi-directional repeatability. Our motorized translators come with two TST101 T-Cube Stepper Motor Controllers for motorized control. The encoded version comes with our BSC202 Two-Channel Benchtop Stepper Motor Controller, which can be controlled through a PC using the apt™ software package (more details may be found by clicking on the controller link above).

Please note that our standard stages are compatible with the Nikon Eclipse FN1 upright microscope. Please email [imagingales@thorlabs.com](mailto:imagingales@thorlabs.com) to inquire about adapter plates for other common microscopes.

Item #	PHYS24M(M) Motorized Physiology Stage	PHYS24ME(M) Motorized Physiology Stage with Encoders
XY Travel	2" (50 mm)	
Adjustment	Stepper Motor	
Velocity (Max)	1 mm/s	4 mm/s
Acceleration (Max)	0.5 mm/s <sup>2</sup>	3 mm/s <sup>2</sup>
On-Axis Accuracy	10 $\mu$ m	3 $\mu$ m Over the Full Travel
Bi-Directional Repeatability	0.5 $\mu$ m	0.3 $\mu$ m
Velocity Stability	N/A	$\pm$ 0.4 mm/s
Encoder	N/A	Optical Grating Incremental Encoder
Encoder Resolution	N/A	0.1 $\mu$ m
Load Capacity	110 lbs (50 kg)	



PHYS24M  
Microscope Not Included

Part Number	Description	Price	Availability

<b>PHYS24M/M</b>	<b>Motorized Physiology Stage (Metric)</b>	<b>\$10,506.00</b>	<b>Lead Time</b>
<b>PHYS24ME/M</b>	<b>Motorized Physiology Stage with Encoders (Metric)</b>	<b>\$15,233.70</b>	<b>Lead Time</b>
<b>PHYS24M</b>	<b>Motorized Physiology Stage (Imperial)</b>	<b>\$10,506.00</b>	<b>Lead Time</b>
<b>PHYS24ME</b>	<b>Motorized Physiology Stage with Encoders (Imperial)</b>	<b>\$15,233.70</b>	<b>Lead Time</b>