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THORLABS

PHYS12P/M - JAN 24, 2019

Item # PHYS12P/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.

PHYSIOLOGY STAGE COMPONENTS

- **Components Offer Customizable Solutions**
- **Design a Physiology Stage to Meet Your Needs**

PHYS12P

MTM-FN1

PHYS24BB

Thorlabs' PHYS24
Includes the MT-FN1

Hide Overview

OVERVIEW

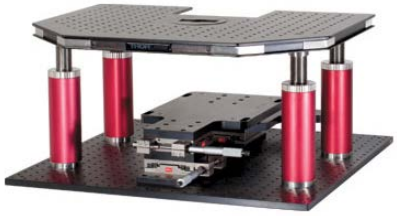
Features

- Manual, Motorized, and Motorized-Encoded Microscope Translators
- U-Shaped Breadboard with Full 270° Array of 1/4"-20 (M6) Taps
- Support Columns with Adjustable Heights from 8" to 12"

Thorlabs understands that experimental needs vary; therefore, we offer the components of our PHYS24 Physiology Stages individually. These stages, breadboards, and support columns are fully compatible with Thorlabs extensive line of anti-vibration tables, ScienceDesk™ workstations, and optomechanical components. The image to the right shows a custom Physiology Stage constructed from the component parts shown on this page.

Note: The 3 Microscope Translators are only compatible with Nikon FN1 microscopes. Please contact Imaging Sales for information concerning compatibility with other microscopes.

Click on the components of the Physiology Stage, shown below, for further details.



Hide Manual Microscope Translator

Manual Microscope Translator

- Left- or Right-Hand Configurable

MT-FN1

- Smooth, Repeatable Positioning

The Manual Microscope Translator (MT-FN1) can be easily configured in either a left- or right-handed XY orientation. The MT-FN1 manual Microscope Translator utilizes micrometer drives with a graduated scale to provide smooth translation and repeatable positioning, which allows one to return to a previously viewed location.

Specifications	
XY Travel	2" (50 mm)
Adjustment	Micrometer
Vernier Graduations	10 µm
Load Capacity	110 lbs (50 kg)

Part Number	Description	Price	Availability
MT-FN1	Manual Microscope Translator	$5,235.96	Lead Time

Hide Motorized Microscope Translator

Motorized Microscope Translator

- Automated XY Positioning
- 0.05 µm/Step Movement

The motorized version of the Microscope Translator (MTM-FN1) includes high-quality stepper-motor-based actuators (DRV014) to provide motorized high-resolution XY positioning and repeatability. Each stepper-motor-based actuator utilizes a trapezoidal-shaped 1 mm/rev pitch leadscrew that provides high load carrying capability. Coupled with stepper motor controllers (two TST001 controllers included), the Motorized Microscope Translator provides smooth, automated, controlled movement in increments of 0.05 µm/step.

The TST101 compact stepper motor controller measures just 2.36" x 2.36" x 1.87" (60 mm x 60 mm x 47 mm) in size. This single-channel controller allows for easy control of small, 2-phase, bipolar stepper motors. For more information on the TST101 controller, please click the TST101 link to the right. The MCM3003 controller can also drive the MTM-FN1.

Specifications	
Travel Range	2" (50 mm)
Acceleration (Max)	0.5 mm/s^2
Velocity (Max)	1.0 mm/s
Load Capacity (Max)	110 lbs (50 kg)
Incremental Movement	0.05 µm (Min Achievable)
Bidirectional Repeatability	0.5 µm
Percent Positional Accuracy	0.02% (Max)
Absolute Accuracy	10 µm
Home Location Accuracy	±1.0 µm
Stepper Motor Actuator	**DRV014**
Included Controller	**TST101**

Part Number	Description	Price	Availability
MTM-FN1	Motorized Microscope Translator	$7,354.20	Lead Time

Hide Motorized Microscope Translator with Encoder

Motorized Microscope Translator with Encoder

- Encoded XY Positioning
- >0.3 µm Position Acuracy with Encoder

The performance of the Motorized Microscope Translator is further enhanced by utilizing XY stages with high-resolution integrated linear optical encoders in combination with Thorlabs' two-channel, closed-loop stepper motor controller (BSC202). The linear optical encoder provides feedback to the drive electronics to ensure accurate positioning and allows a direct readout of the absolute position of the stage. The controller connects via USB to a PC, where the apt™ software can be used to control the motion of the translator (for software details, click on the BSC202 link to the right).

With a resolution of 0.1 µm, the bi-directional position accuracy is greater than 0.3 µm (compared to 0.5 µm without the encoders) over the full 50 mm of travel. The motorized microscope translator with optical encoders allows the user to return to a previous position within the specimen and is the ideal solution for applications where stability, long microscope travel, and high-load capacity need to be achieved with absolute position accuracy.

Specifications	
Travel Range	2" (50 mm)
Acceleration (Max)	3.0 mm/s^2
Velocity (Max)	4.0 mm/s
Load Capacity (Max)	110 lbs (50 kg)
Incremental Movement	0.05 µm (Min. Achievable)
Bidirectional Repeatability	0.3 µm
Percent Accuracy	0.02% (Max)
Absolute Accuracy	3 µm Over the Full Travel
Home Location Accuracy	±1.0 µm
Stepper Motor Actuator	**DRV014**
Included Controller	**BSC202**

Part Number	Description	Price	Availability
MTME-FN1	Motorized Microscope Translator with Encoders	$12,081.90	Lead Time

Hide U-Shaped Breadboard

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

Specifications	
Dimensions	17.72" x 23.62" x 0.98" (650 mm x 450 mm x 25 mm)
Weight	15.5 lbs (7 kg)
Load Capacity	110 lbs (50 kg)
Tapped Hole Matrix	1/4"- 20 (M6) Tapped Holes over 270° Surface

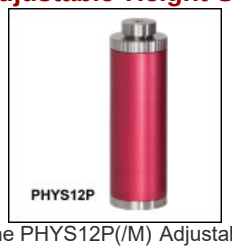
The PHY24BB (PHY24BB/M) breadboard is designed to be used as a microscopy stage; the U-shape surrounds the microscope, providing 270° of workspace with over 200 1/4"-20 (M6) tapped mounting holes. Its lightweight aluminum construction makes it portable, while the thermally stable honeycomb construction provides excellent dynamic rigidity with a high strength-to-weight ratio. In addition, tapped mounting holes are individually sealed in order to contain spills.

The dimensions of the U-shaped breadboard are ideal for the Nikon Eclipse FN1 upright microscope. The Ø110 mm insert can be removed entirely or it can be used to hold a standard microscope slide or 35 mm Petri dish. Larger specimens, patch clamps, and other accessories can be easily secured to the working surface using the 1/4"-20 (M6) tapped holes.

Part Number	Description	Price	Availability
PHYS24BB/M	**UltraLight Series Breadboard for Physiology, Metric**	**$2,686.38**	**5-8 Days**
PHYS24BB	**UltraLight Series Breadboard for Physiology**	**$2,686.38**	**Lead Time**

Hide Adjustable-Height Support Columns

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

The PHYS12P(/M) Adjustable-Height Support Columns are designed to support a breadboard or microscope stage. Each post has a top-located 1/4"- 20 (M6) tap and a universal base that has four 1/4" (M6) counterbored holes on 2" (50 mm) centers for mounting it to an optical table or optical breadboard. The height of the post is continuously adjustable from 8" to 12", and its position can be locked using a knurled ring locking collar. To secure the columns to an optical table is as simple as loosening the locking collar and raising the red housing. This will provide access to the four counterboard 1/4" (M6) mounting holes.


Click to Enlarge
Step 1: Loosen the Locking collar, and raise the threaded portion of the post.


Click to Enlarge
Step 2: Raise the red cover and attach the post base to the table.


Click to Enlarge
Step 3: Lower the red cover, ensuring the dowel pins in the base are aligned with the holes in the cover. Adjust the post to the desired height, and then lower the locking ring to lock the height.

Part Number	Description	Price	Availability
PHYS12P/M	**Adjustable-Height Support Column: 20.32 - 30.48 cm, Metric**	**$482.23**	**Lead Time**
PHYS12P	**Adjustable-Height Support Column: 8" - 12"**	**$482.23**	**Lead Time**