

56 Sparta Avenue • Newton, New Jersey 07860  
(973) 300-3000 Sales • (973) 300-3600 Fax  
www.thorlabs.com

**THORLABS**

## MBT402 - MAY 18, 2015

Item # MBT402 was discontinued on May 18, 2015. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

### 4-AXIS MICROBLOCK DEVICE PLATFORM, 62.5 MM DECK HEIGHT

- ▶ Thin Profile MBT401 or Low Profile MBT402
- ▶ High Precision Differential Drives
- ▶ Appropriate for Orientating Optics to an Alignment Stage



Provides 4 Degrees of Freedom (2 Translation, 2 Rotation)



Patent  
6,186,016

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## OVERVIEW

### Features

- Two Models to Choose From:
  - Thin Profile **MBT401** is Ideal for Aligning a Device Between Two Coupling Stages
  - Low Profile **MBT402** Provides Maximum Clearance with Height Limitation Applications
- High Resolution Differential Drives

### MicroBlock™ 4-Axis Device Platforms, 62.5 mm Deck Height

The MBT401 Thin Profile MicroBlock™ Narrow Device Platform provides four degrees of freedom, two translation and two rotation. The 62.5 mm deck height is compatible with our 3-Axis MicroBlock™, NanoMax™, and RollerBlock™ families of stages. We recommend this narrow platform positioning system for applications that require a device to be positioned between two coupling stages such as the MAX600 series. The extensive selection of accessories are all compatible with the platform stages. Given the large array of possible solutions to any particular alignment challenge, Thorlabs recommends that you contact one of our regional offices for expert technical assistance in configuring a system that is ideally suited to your specific needs.

The MBT402 MicroBlock™ Device Platform is a compact, cost-effective, four-axis positioner designed for precise orientation of photonics components and other planar devices. This device is intended to allow a complex optical element that either has multiple single mode ports, or has angled output surfaces, to be properly positioned with respect to one of our high performance stages. Please note that we only recommend this device for the static positioning of the optical element or device; any optimization of the coupling efficiency should be accomplished using the NanoMax 3-Axis System to position the input/output device.

The low profile design provides a 62.5 mm deck height designed specifically to work with the MicroBlock™, NanoMax™, and RollerBlock™ stages. The four independent degrees of freedom provide 13 mm of horizontal translation, 6mm of vertical translation, plus 10° of pitch and 10° of yaw. This stage, when combined with any of our three axis stages (MicroBlock™, NanoMax™, or RollerBlock™) is ideal for building high performance fiber launch or single mode

waveguide couplers. The 13 mm of horizontal travel allows the individual channels of a multichannel waveguide to be readily accessed. The use of nested flexure elements ensure smooth continuous motion over all three rotational axes of movement making this device ideally suited for high resolution optical applications. Aside from the low profile, the key feature that this particular stage offers is the easy accessibility of the moving platform. The moving platform is accessible from three of the four sides, this feature maximizes the free space available for additional equipment that your setup may require.

[Hide Specs](#)

S P E C S

Item #	MBT401(/M)		MBT402(/M)	
Travel (Coarse)	Horizontal Axis (y)	13 mm	Horizontal Axis (y)	13 mm
	Vertical Axis (z)	6 mm	Vertical Axis (z)	6 mm
	Pitch Axis (θy)	10°	Pitch Axis (θy)	10°
	Yaw Axis (θz)	10°	Yaw Axis (θz)	10°
Travel (Differential)	Horizontal Axis	300 μm	Horizontal Axis	300 μm
	Vertical Axis	300 μm	Vertical Axis	300 μm
	Pitch Axis	30 arc min	Pitch Axis	12 arc min
	Yaw Axis	30 arc min	Yaw Axis	30 arc min
Theoretical Resolution (Coarse)	Horizontal Axis	1 μm	Horizontal Axis	1 μm
	Vertical Axis	1 μm	Vertical Axis	1 μm
	Pitch Axis	10 arc sec	Pitch Axis	10 arc sec
	Yaw Axis	10 arc sec	Yaw Axis	10 arc sec
Theoretical Resolution (Differential)	Horizontal Axis	50 nm	Horizontal Axis	50 nm
	Vertical Axis	50 nm	Vertical Axis	50 nm
	Pitch Axis	1 arc sec	Pitch Axis	1 arc sec
	Yaw Axis	1 arc sec	Yaw Axis	1 arc sec
Deck Height	62.5 mm to the mounting surface of the moving platform. The accessory beam height is 75 mm measured from the bottom surface of the stage.			
Load Capacity	500 g (1.1 lbs)		500 g (1.1 lbs)	
Weight	750 g (1.7 lbs)		700 g (1.5 lbs)	

[Hide 4-Axis Device Platform, Thin Profile, 62.5 mm Deck Height](#)

4-Axis Device Platform, Thin Profile, 62.5 mm Deck Height



- ▶ Thin Profile Ideal for Placement Between Two 3-Axis Stages
- ▶ Deck Height: 62.5 mm
- ▶ Vertical Travel: 6 mm
- ▶ Horizontal Travel: 13 mm
- ▶ Yaw Axis Travel: ±5°
- ▶ Pitch Axis Travel: ±5°

This MicroBlock™ Device Platform provides four degrees of freedom, two translation and two rotation. The 62.5 mm deck height is compatible with our 3-Axis MicroBlock™, NanoMax™, and RollerBlock™ families of stages. We recommend this narrow platform system for applications that require a device to be positioned between two coupling stages. An extensive selection of accessories are available.

Part Number	Description	Price	Availability
MBT401	MicroBlock 4-Axis Waveguide Manipulator with Differential Drives, Imperial	\$1,840.00	Today
MBT401/M	MicroBlock 4-Axis Waveguide Manipulator with Differential Drives, Metric	\$1,840.00	Lead Time

[Hide 4-Axis Device Platform, 62.5 mm Deck Height](#)

4-Axis Device Platform, 62.5 mm Deck Height



- ▶ Compact, Low-Profile Adjusters for Maximum Clearance and Easy Access to the Mounting Platform
- ▶ Deck Height: 62.5 mm
- ▶ Vertical Travel: 6 mm
- ▶ Horizontal Travel: 13 mm
- ▶ Yaw Axis Travel:  $\pm 5^\circ$
- ▶ Pitch Axis Travel:  $\pm 5^\circ$

This Low-Profile MicroBlock™ Device Platform is a compact, cost-effective, 4-axis positioner designed for precise orientation of photonics components and other planar devices. This device is intended to allow a complex optical element that either has multiple single mode ports, or has angled output surfaces, to be properly positioned with respect to one of our high performance stages. Please note that we only recommend this device for the static positioning of the optical element or device; any optimization of the coupling efficiency should be accomplished using the NanoMax 3-axis or 6-axis system to position the input/output device. The four independent degrees of freedom provide 13 mm of horizontal translation, 6mm of vertical translation, plus 10° of pitch and 10° of yaw.

Part Number	Description	Price	Availability
MBT402	MicroBlock 4-Axis Low-Profile Waveguide Manipulator with Differential Drives, Imperial	\$2,010.00	Today
MBT402/M	MicroBlock 4-Axis Low-Profile Waveguide Manipulator with Differential Drives, Metric	\$2,010.00	3-5 Days

Visit the *4-Axis MicroBlock Device Platform, 62.5 mm Deck Height* page for pricing and availability information:  
[http://www.thorlabs.com/newgrouppage9.cfm?objectgroup\\_id=1042](http://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=1042)