3 Axis Flexure Stages Selection Guide

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Three Axis 90µm Travel PiezoBlock™
The PiezoBlock™ flexure stage measures just 55mm and provides 90µm of translation in three orthogonal directions. The translator consists of a novel (patent pending) flexure mechanism that allows three degrees of motion, each orthogonal to the others. The significant advantage of this design over earlier designs is that the mechanical system provides the three degrees of freedom in parallel as opposed to building up the three degrees in series.

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Three Axis 4mm Travel MicroBlock™ Translation System
The MicroBlock™ translation stage was originally designed for the demanding task of coupling optical signals into single mode optical devices. The flexure design provides ultra-fine movement without the limitations of stiction and friction found in conventional linear bearing systems. While newer generations of this family of products are offered by Thorlabs (see the NanoMax™ products listed below), we continue to support this classic design as it offers a cost effective solution to many optical alignment challenges.

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Preconfigured MicroBlock™ Fiber Launch Systems
Six preconfigured fiber launch systems are offered, these systems allow our customers to specify the most often requested systems with just one part number. If one of these systems does not meet your exact requirements, Thorlabs offers a broad selection of MicroBlock™ compatible accessories which have been developed over the past tens years with feedback from our diverse customer base. The accessories are detailed on pages 285-301 and are all compatible with both the MicroBlock™ as well as the NanoMax™ series of flexure stages.

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New Three Axis 4mm Travel NanoMax™ Translation System
The NanoMax™ series 3-axis stage represents a significant advancement in positioning technology. It provides an unmatched combination of high stability and high resolution. Major improvements in performance, functionality and robustness have all been achieved by the patented parallel flexure design. This new design has the unique feature that all three actuators are connected directly to "ground", thus providing a degree of rigidity unachievable in multi-axis systems built from a series of stacked individual single axis stages.

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Preconfigured NanoMax™ Fiber Launch Systems
Five preconfigured fiber launch systems are offered in the NanoMax™ family, these systems are intended to address the most common fiber launch applications. The new NanoMax™ based systems offer improved performance as well as a greater range of features. The improved performance is a direct result of our patented parallel flexure design which allows all three adjusters to be connected to the fixed portion of the stage's main body. The additional features offered include 20µm piezoelectric actuators and strain gauge based displacement sensors that allow the drift and hysteresis of the piezoelectric elements to be removed.

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NanoMax™ & MicroBlock™ Accessories
A broad selection of fiber optic and optical component holders are available for the three axis flexure based translation stages. The keyway design allows the components to be dropped into place and then quickly prealigned before using the stage controls to make the fine adjustments. All of the accessories are designed to be used by both the NanoMax™ and the MicroBlock™ stages.

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