Models: P3. P3A

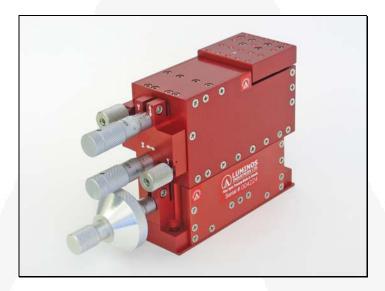
XYZ Manual 3-Axis Stage

SUPERIOR PERFORMANCE

Imagine a positioning system so stable and easy to adjust that singlemode optical fiber alignment is as simple as tuning a radio! No need to let go of the micrometers while adjusting - the I3000 is *extremely* touch insensitive. And with the patented ergonomic inline design, all the micrometers are easily accessible on one side - just rest your hand comfortably on the table and enjoy the ease and efficiency of quickly aligning any type of fiber. No fiber alignment challenge is too difficult - even 1-2 micron core lensed fibers can easily be aligned. This is possible because of the radical departure from conventional design.

FEATURES

- Patented Inline actuators provide ease of access.
- Patented 25x Ratio Drive[™] system affords superior resolution for far less cost.
- Small footprint allows multiple unit workstations.
- Onboard controller for actuators avoids high cost of separate motion controllers.
- Damped exterior shell design provides superior vibration and touch insensitivity.
- Lightweight aluminum construction allows system to be moved easily by other motion equipment.
- High mechanical stiffness affords rugged and stable base system.
- Patented linear dual flexure Z offers frictionless repeatable straight travel.



INNOVATION

The Luminos I3000 benefits from our patented Ratio Drive[™] while all other stages are direct-drive. A standard micrometer, which has about 1/3 the backlash of a differential micrometer, is further improved by the 25x Ratio Drive[™] resulting in a backlash of only 20 nanometers and an incredible single-sided resolution of just 1 nanometer!

The I3000 is extremely vibration and temperature insensitive. In an ordinary lab *without* an optical table, normal temperature fluctuations result in only 0.03 dB variation with *no* drift in a typical singlemode alignment for over a month.

ACCESSORIES

With accessories ranging from fiber array holders to contact sensors, Luminos can get you out-fitted and up-and-running quickly on your applications

AUTOMATION

With this advanced design, upgrading to automation is easy and inexpensive. Our standard, low cost stepper motor option provides the I3000 with a resolution of 4 nanometers and a 1/2 millimeter of travel on the X and Y axes. An additional 2 millimeters of manual travel is still available using the coarse adjustments. If you require more travel to be available using the actuator, consider the I3005. The Z axis provides a larger ½ inch (12.5mm) travel on the focal axis and a resolution of 100 nanometers. Using the internal Linear Motors option, the I3000 is capable of ½ nanometer movements on the X and Y axes superimposed on the stepper motor and coarse adjustment travel.

ORDERING INFORMATION

	Part #	Description				
-	P3-M-M-1-N-H-N	I3000: 3-Axis Positioner, Z-Axis Actuator: Manual Imperial Micrometer, X-Axis Actuator: Manual Micrometer, Y-Axis Actuator: Manual Micrometer, Y-Axis Actuator: Manual Micrometer, XY Coarse Adjust: 40 pitch set screw, XY Linear Motors: None, Mounting Axis: Horizontal, Side Damper: None				
	P3A-M-M-H-N	I3005: 3-Axis Positioner (5x), Z-Axis Actuator: Manual Imperial Micrometer, X-Axis Actuator: Manual Micrometer, Y-Axis Actuator: Manual Micrometer, Mounting Axis: Horizontal, Side Damper: None				



<u>I3000/I3005 Specifications</u>

Travel							
Axis			Actuator¹	Coarse	9	Total	
Z – f	ocus		2.7mm (0.5")	N/A		12.7mm (0.500")	
	Y – vertical	0.5mm (0.02")		2mm (0.08	30")	2.5mm (0.1")	
13000	13000 X – lateral		5mm (0.02")	2mm (0.080")		2.5mm (0.1")	
	Y – vertical	2.5mm (0.1")		N/A		2.5mm (0.1")	
13005 X – lateral			.5mm (0.1")	N/A		2.5mm (0.1")	
Setability ²	(Micromete	r)					
Axis		Resolution		Movement /Division			
Z			0.25 micron (10µ-inch)		0.001"		
		Y 10nm (0.4				m - 25x Ratio Drive™	
13000	×	X 10nm (0				µm - 25x Ratio Drive™	
7	Y		50nm (2μ-inch)		5μm - 5x Ratio Drive™		
13005	×	,	50nm (2μ-inch)		5µm - 5x Ratio Drive™		
Resolution	(Stepper M	otor)	,	,			
Axis			Resolution		Total Steps		
	Z		100nm (4µ-inch)		128 000		
	Y			4nm (0.16µ-inch)		128 000 - 25x Ratio Drive™	
13000			4nm (0.16µ-inch)		128 000 - 25x Ratio Drive™		
10005	Y		20nm (0.8µ-inch)		128 000 - 5x Ratio Drive™		
13005	×			20nm (0.8μ-inch)		128 000 - 5x Ratio Drive™	
Stage Conf	iguration &	Arc Eri	ror Motion				
Axis		Flexure Type		Arc Error			
Z		Dual		None - True Linear Motion			
Υ			Single		Max 30µm - Arc Error in Z only		
X			Single		Max 30µm - Arc Error in Z only		
Linear Stiff	ness						
Along Axis			Stiffness		Comments		
Z		130 kN/m		measured at the rotation center			
Υ			95 kN/m		measured at the rotation center		
X		40 kN/m		measured at the rotation center			
Torsional S	tiffness						
About Axis			Stiffness		Comments		
Z – roll		75Nm/rad		measured at the rotation center			
Y – yaw			100Nm/rad		measured at the rotation center		
X – pitch			130Nm/rad		measured at the rotation center		
Maximum L	_oad						
Static Load			Transient Load		Comments		
2.2 lbs (1kg)			10 lbs (4.5kg)		stage must be protected from shock loading during transport and usage		