F-206.S Hexapod Platform for Fiber Alignment

Automated Photonics Alignment System with 6D Controller and Software

The F-206.S Hexapod comes with a digital 6D controller and comprehensive software

- Parallel Kinematics with 6 Degrees of Freedom
- 0.033 µm Actuator Resolution
- Repeatability 0.3 µm in Space
- No Moving Cables for Improved Reliability, Reduced Friction
- Better Dynamics, More Compact than Serial Kinematics Systems
- For Scanning and Alignment
- Cartesian Coordinate Control with Virtualized Pivot Point
- Powerful Digital Controller with Open Source LabVIEW Drivers, DLL Libraries...
- Integrated Fiber Alignment Routines

Interferometer test of an F-206.S system shows the excellent repeatability of small steps, here 0.5 µm spaced at 100 ms

Technical Data

Model	F-206.S0 / F-206.SD
Travel range X*	-8 to +5.7 mm
Travel range Y*	±5.7 mm
Travel range Z*	±6.7 mm
Travel range θ_X *	±5.7°
Travel range θ_Y *	±6.6°
Travel range θ_Z *	±5.5°
Actuator resolution	33 nm
Minimum incremental motion X, Y, Z**	0.1 µm (6-axis move!)
Minimum incremental motion θ_X, θ_Y, θ_Z**	2 µrad (0.4") (6-axis move!)
Bidirectional repeatability X, Y, Z	0.3 µm
Bidirectional repeatability θ_X, θ_Y, θ_Z	3.6 µrad
Speed X, Y, Z	0.01 to 10 mm/s
Maximum load in Z	2 kg (centered on platform)
Mass	5.8 kg
Controller	Digital Hexapod controller with optional photometer card and integrated scan and align routines
Operating voltage	100–240 VAC, 50/60 Hz
Software	LabVIEW drivers, software for alignment of arrays, DLL libraries, scan and align software, terminal software

*Travel ranges in the coordinate directions (X, Y, Z θ_X, θ_Y, θ_Z) are interdependent. The data given shows maximum travel range of the axis in question (i. e. its travel when all other axes are at their zero positions). If this is not the case, the available travel may be less.

**Six-axis move. No moving cables (unlike serial-kinematic stacked systems) to introduce bending forces, torque and friction which degrade positioning accuracy.

F-206 provides ultra-precise motion in all six degrees of freedom with rotation about any point in space. The pivot point is set by the user with a simple software command

Moving the NanoWorld _|_ www.pi.ws