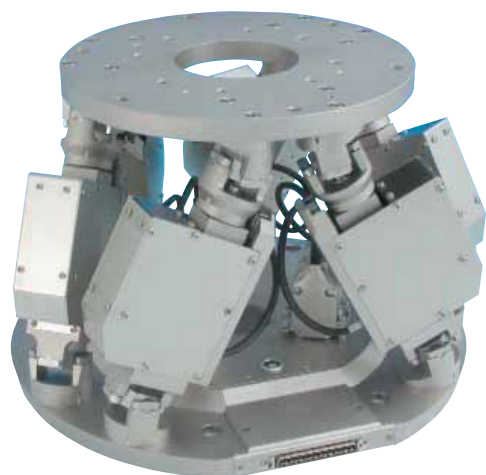


M-824 Hexapod Platform Parallel Kinematics Positioning System

Precision Parallel-Kinematics Micropositioner with Controller, Vacuum Versions



- Extremely Compact
- Travel Ranges to 45 mm (linear), 25° (rotation)
- Load Capacity to 10 kg, Self Locking Version
- Resolution to 7 nm
- Min. Incremental Motion to 300 nm
- Repeatability $\pm 0.5 \mu\text{m}$
- Velocity to 25 mm/sec
- Vacuum-Compatible Versions Available

Technical Data

Model	M-824.3DG	M-824.3PD	Units
Active axes	X, Y, Z, θ_x , θ_y , θ_z	X, Y, Z, θ_x , θ_y , θ_z	
Motion and positioning			
*Travel range X, Y	± 22.5	± 22.5	mm
*Travel range Z	± 12.5	± 12.5	mm
*Travel range θ_x , θ_y	± 7.5	± 7.5	°
*Travel range θ_z	± 12.5	± 12.5	°
Single-actuator drive	DC-motor, gearhead	ActiveDrive™ DC Motor	
Actuator stroke	± 12.5	± 12.5	mm
Single-actuator design resolution	0.007	0.5	μm
Integrated sensor	Rotary encoder	Rotary encoder	
Sensor resolution	2048	2048	cts./rev.
**Min. incremental motion X, Y, Z	0.3	1	μm
**Min. incremental motion θ_x , θ_y , θ_z	3.5	12	μrad
Repeatability X, Y, Z	± 0.5	± 0.5	μm
Repeatability θ_x , θ_y , θ_z	± 6	± 6	μrad
Max. velocity X, Y, Z	1	25	mm/s
Max. velocity θ_x , θ_y , θ_z	11	270	mrad/s
Typ. velocity X, Y, Z	0.5	10	mm/s
Typ. velocity θ_x , θ_y , θ_z	5.5	55	mrad/s
Mechanical properties			
*Stiffness X, Y	1.7	1.7	N/ μm
Stiffness Z	7	7	N/ μm
Load capacity (baseplate horizontal/any orientation)	10/5***	5/2.5	kg
Miscellaneous			
Operating temperature range	-10 to +50	-10 to +50	°C
Material	Aluminum	Aluminum	
Mass	8	8	kg
Controller			
Controller included	M-850.502	M-850.502	
Operating voltage	100–240 VAC, 50/60 Hz	100–240 VAC, 50/60 Hz	

*The travel ranges of the individual coordinates (X, Y, Z, θ_x , θ_y , θ_z) are interdependent. The data for each axis in this table shows its maximum travel, where all other axes are at their zero positions. If the other linear or rotational coordinates are not zero, the available travel may be less.

**Simultaneous motion of all 6 actuators! No moving cables (as in serial-kinematics stacked systems) to introduce bending sources, torque and friction, which degrade positioning accuracy.

***Self Locking
Technical data are specified at 20 \pm 3 °C.
Data for vacuum versions may differ.