M-811 Vaccum Hexapod Platform Parallel Kinematics System

With 6D Vector Controller and Software

- **Vacuum-Compatible Miniature Hexapod**
- **Complete with Specialized Hexapod Controller and Software**
- **Travel Ranges 34 x 32 x 13 mm, Rotation to 42 Degrees**
- **Load Capacity to 5 kg**
- **Actuator Resolution 40 nm**
- **Min. Incremental Motion to 200 nm**
- **Repeatability up to ±0.2 µm**
- **Velocity to 10 mm/s**

Technical Data

Model	M-811.STV
Active axes	X, Y, Z, θX, θY, θZ
Motion and positioning	
*Travel range X, Y, Z	±17, ±16, ±6.5 mm
*Travel range θX, θY, θZ	±10°, ±10°, ±21°
Actuator drive	Brushless DC motor, ActiveDrive
Single-actuator design resolution	0.04 µm
Integrated sensor	Rotary encoder
Sensor resolution	12800 cts./rev.
**Min. incremental motion X, Y	0.5 µm
**Min. incremental motion Z	0.2 µm
**Min. incremental motion θX, θY, θZ	10 µrad
Repeatability X, Y	±0.5 µm
Repeatability Z	±0.2 µm
Repeatability θX, θY, θZ	±2 µrad
Backlash X, Y	1 µm
Backlash Z	0.2 µm
Max. velocity X, Y, Z	10 mm/s
Max. velocity θX, θY, θZ	250 mrad/s
Typ. velocity X, Y, Z	5 mm/s
Typ. velocity θX, θY, θZ	120 mrad/s
Mechanical properties	
Stiffness X, Y	0.2 N/µm
Stiffness Z	3.6 N/µm
Load (baseplate horizontal / any orientation)	5 / 2.5 kg
Miscellaneous	
Operating temperature range	0 to +50 °C
Material	Stainless steel, aluminum
Mass	2.2 kg
Controller	
Operating voltage	100-240 VAC, 50/60 Hz

* The travel ranges of the individual coordinates (X, Y, Z, θX, θY, θZ) 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.

** Six-axis move. No moving cables (unlike serial-kinematic stacked systems). Eliminates bending, inertia and friction, improving accuracy.

Technical data are specified at 20 ±3 °C. Data for vacuum versions may differ.