

Piezo Hexapod

FINE ADJUSTMENT AND ACTIVE, DYNAMIC ERROR CORRECTION

P-915KWEF



- + Load capacity up to 1500 g
- + Min. incremental motion 1 nm / 0.07 μ rad
- + Travel ranges to 70 μ m
- + Capacitive sensors for dynamic scanning and precision positioning

Highly dynamic reference- class 6- axis positioning system

Parallel- kinematic design for six degrees of freedom making it significantly more compact and stiff than serial- kinematic systems, higher dynamic range, no moved cables: Higher reliability, reduced friction.

Piezo actuator direct drives with high stiffness and resonant frequency for dynamic positioning.

A powerful real- time digital controller controls the drive axes

Capacitive position sensors

Direct, absolute position measurement with subnanometer accuracy and a high bandwidth and stability

Applications

Dynamic optimization of axial runout, eccentricity and evenness of rotation stages. Vibration insulation, fine adjustment

Specifications

Preliminary Data	P-915KWEF	Unit
Active axes	X, Y, Z, θ_x , θ_y , θ_z	200 N
Motion and positioning		
Travel range* X, Y, Z	± 35	μm
Travel range* θ_x , θ_y , θ_z	± 0.04	$^\circ$
Min. incremental motion X, Y, Z	1	nm
Min. incremental motion θ_x , θ_y , θ_z	0.07	μrad
Repeatability X, Y	± 1	nm
Repeatability Z	± 0.2	nm
Repeatability θ_x , θ_y	± 0.03	μrad
Repeatability θ_z	± 0.05	μrad
Resonant frequency X, Y	900	Hz
Resonant frequency X, Y, Z	1300	Hz
Resonant frequency θ_x , θ_y	1500	Hz
Resonant frequency θ_z	1700	Hz
Mechanical properties		
Max. load	2.5	kg
Miscellaneous		
Material	Aluminum	
Dimensions	Base plate $\varnothing$ 135 Moving platform $\varnothing$ 100 Clear aperture $\varnothing$ 50 Hexapod height in home position 50	mm
Mass	1.6	kg

Ask about custom designs!

Technical data specified at $20 \pm 3^\circ\text{C}$.

* 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.

Order Information

P-915KWEF

Piezo Hexapod for Active and Dynamic Correction of Angular Errors of Rotation Stages

Technology

[Piezo Actuators | Piezoelectric actuators offer sub- nanometer resolution and very short response times, making them ideally suitable for nanometer- precision positioning at high dynamics. Learn more ...](#)

[Hexapods – Parallel- Kinematics Positioning Systems | Hexapod platforms are used for precision positioning and alignment of loads in all six degrees of freedom, three linear axes, and three rotational axes. Learn more ...](#)

