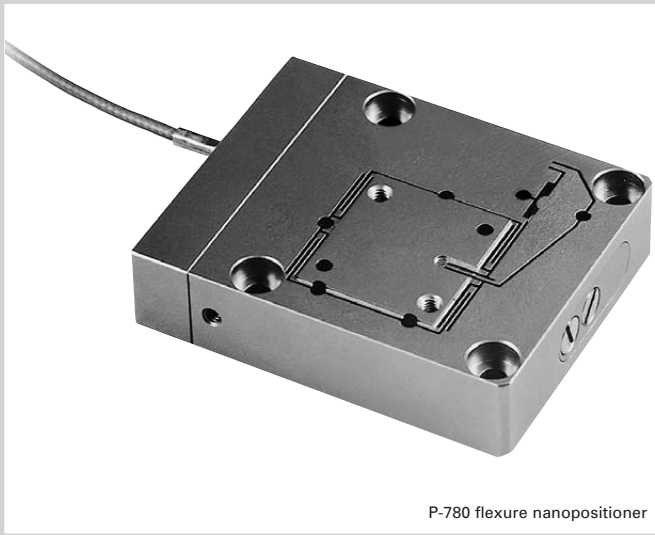
P-780

Miniature Piezo Nanopositioning/Scanning Stage with Direct Metrology



P-780 flexure nanopositioner

system. The wire-EDM-cut flexures are FEA modeled for zero stiction, zero friction and exceptional guiding precision. The ceramic-encapsulated PICMA® drives are more robust than conventional piezo actuators, featuring superior lifetime and performance in both dynamic and static applications.

Because guidance, actuators and sensors are all frictionless and maintenance-free, these nanopositioning systems achieve outstanding levels of reliability.

Ordering Information

P-780.00
Miniature Piezo Flexure Stage, 80 µm

Ask about custom designs!

- **Fast Response (1 kHz Resonant Frequency)**
- **Stainless Steel Construction**
- **Frictionless Precision Flexure Guiding System**
- **80 µm Travel Range**
- **Resolution <5 nm**
- **PICMA® High-Performance Piezo Drives**

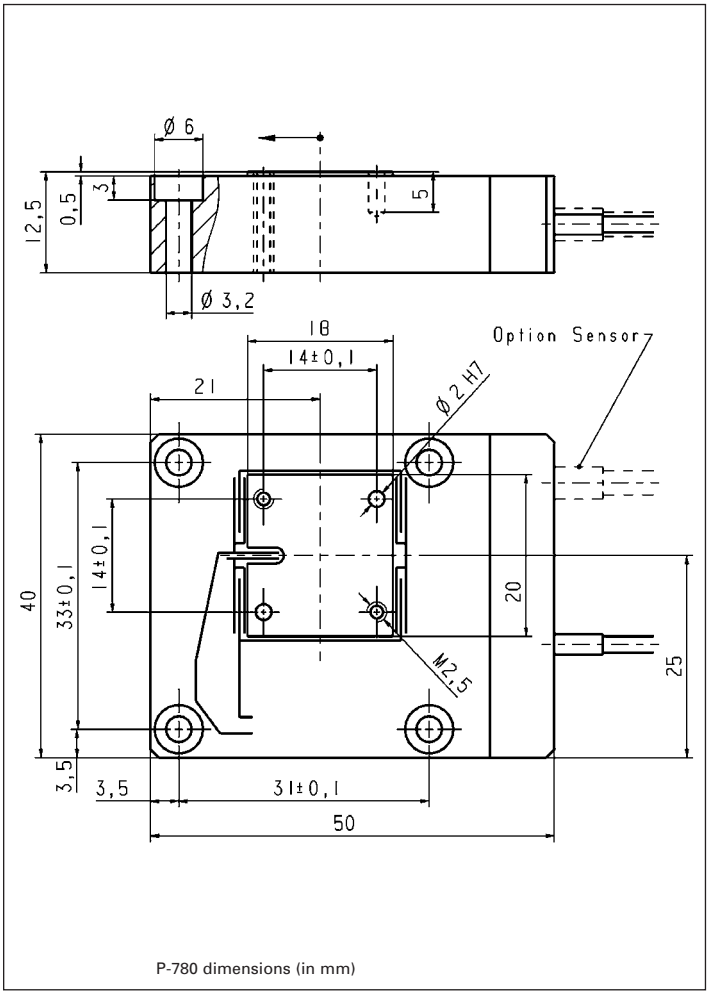
P-780 piezo-driven, flexure-guided stages are extremely compact and fast devices, providing a positioning and scanning range of up to 80 µm with settling times of only a few milliseconds. The P-780 is designed for applications with loads up to 100 g. Closed-loop and open-loop versions are offered to fit your application.

Working Principle / Reliability

P-780 nanopositioning stages are equipped with the award winning PICMA® piezo drives, integrated into a sophisticated single-module, flexure guiding

Application Examples

- Metrology
- Nanopositioning
- Scanning microscopy
- Disk drive testing
- Fiber optics
- Scanning interferometry
- Biotechnology
- Micromanipulation



P-780 dimensions (in mm)

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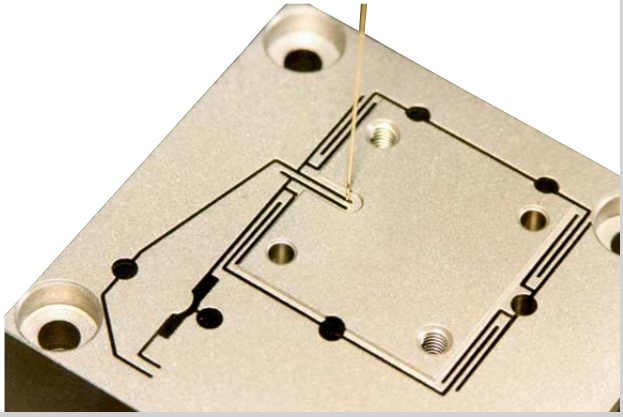

Wire EDM cutting process being used on a P-780 flexure NanoPositioner

Technical Data

Models	P-780.00	Units
Active axes	X	
Open-loop travel @ 0 to 100 V	80	
Closed-loop travel	-	µm
Integrated feedback sensor	-	
* Closed-loop / open-loop resolution	- / 1	nm
Closed-loop linearity (typ.)	-	
Full-range repeatability (typ.)	-	nm
Stiffness	1.5	
Push/pull force capacity (in operating direction)	50 / 5	N
Max. (±) normal load	10	
Lateral force limit	10	N
Lateral runout (X/Y/Z) (typ.)	10	
Electrical capacitance	3.0	µF ±20%
** Dynamic operating current coefficient (DOCC)	4.7	
Unloaded resonant frequency	1000	Hz ±20%
Resonant frequency @ 100 g load	600	
Operating temperature range	-20 to 80	°C
Voltage connection	VL	
Sensor connection	-	
Weight (with cables)	150	
Body material	N-S	
Recommended amplifier/controller (codes explained p. 2-17)	G, C	