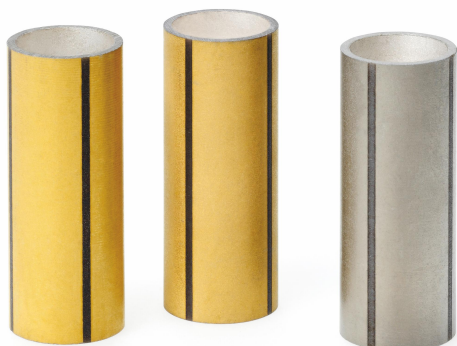


PT Piezo Scanner Tubes

High-Dynamics Operation with Low Loads



PT230

- Radial and axial displacement
- Subnanometer resolution
- Ideal for OEM applications
- Large choice of designs
- UHV-compatible to 10^{-9} hPa

Piezo actuator / scanner tube

Bipolar operating voltage up to ± 250 V. Fourfold segmented electrodes for axial and XY displacement. Monolithic piezoceramic actuator with minimal geometric tolerances. UHV-compatible to 10^{-9} hPa. Short lead times.

Custom designs with modified specifications

- Materials
- Operating voltage range, displacement
- Tolerances
- Applied sensors
- Special high / low temperature versions
- Segmentation of the electrodes, wrap-around electrodes, circumferential insulating borders
- Non-magnetic

Possible dimensions

- Length L max. 70 mm
- Outer diameter OD 2 to 80 mm
- Inner diameter ID 0.8 to 74 mm
- Min. wall thickness 0.30 mm

Fields of application

Industry and research, UHV environment up to 10^{-9} hPa. For microdosing, micromanipulation, scanning microscopy (AFM, STM, etc.), fiber stretching.

Motion	Unit		PT230.14	PT230.24	PT230.94
Max. axial displacement	μm		± 4.5	± 4.5	± 4.5
Max. XY deflection	μm		± 16	± 10	± 35

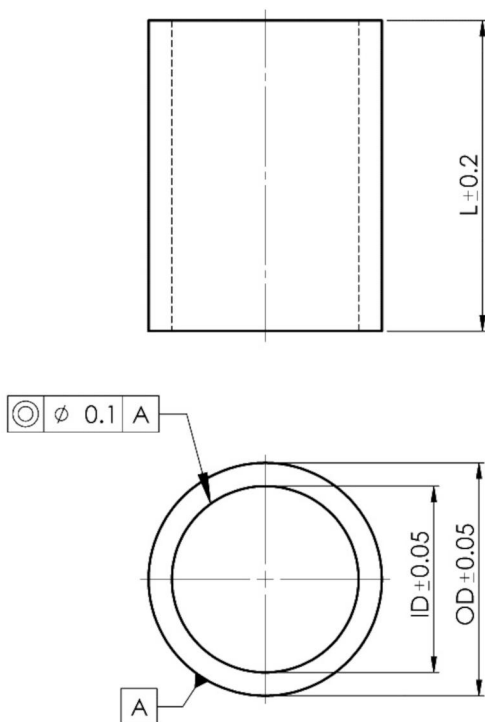
Drive Properties	Unit	Tolerance	PT230.14	PT230.24	PT230.94
Actuator type			Piezo scanner tube	Piezo scanner tube	Piezo scanner tube
Operating voltage	V		± 250	± 250	± 250
Number of amplifier channels			4	4	4
Electrical capacitance per amplifier channel	nF	$\pm 20\%$	4.5	6.9	2.1

Mechanical Properties	Unit	Tolerance	PT230.14	PT230.24	PT230.94
Cross section			annular	annular	annular
Piezo material			PIC255	PIC255	PIC255
Length	mm	$\pm 0,2$ mm	30	30	30
Outer diameter	mm	± 0.05 mm	6.35	10	3.2
Inner diameter	mm	± 0.05 mm	5.35	9	2.2

Miscellaneous	Unit		PT230.14	PT230.24	PT230.94
Vacuum class	hPa		10^{-9}	10^{-9}	10^{-9}
Recommended controllers / drivers			E-413.2 - E-413.6	E-413.2 - E-413.6	E-413.2 - E-413.6

Maximum displacement: When operated with +250 V / -250 V at opposite electrodes.
 Electrical capacitance: Measured at 1 V_{pp}, 1 kHz, RT.
 Piezo ceramic: Bakeout when short-circuited at 150 °C.
 Inner electrode: GND. Outer electrodes: Thin film (CuNi, Au); inner electrodes: fired silver.
 Ask about custom designs!

Drawings / Images



PT piezo tube actuators, dimensions in mm. Length L, outer diameter OD, and inner diameter ID see data table.

Drawings / Images



Special versions of the piezo scanner tubes with multi-segmented outer electrodes and wraparound electrodes

Order Information

PT230.14

Piezo scanning tube; piezo actuator drive; L 30 mm × OD 6.35 mm × ID 5.35 mm; $\pm 16 \mu\text{m}$ XY deflection; $\pm 4.5 \mu\text{m}$ axial displacement; vacuum compatible to 10^{-9} hPa

PT230.24

Piezo scanning tube; piezo actuator drive; L 30 mm × OD 10 mm × ID 9 mm; $\pm 10 \mu\text{m}$ XY deflection; $\pm 4.5 \mu\text{m}$ axial displacement; vacuum compatible to 10^{-9} hPa

PT230.94

Piezo scanning tube; piezo actuator drive; L 30 mm × OD 3.2 mm × ID 2.2 mm; $\pm 35 \mu\text{m}$ XY deflection; $\pm 4.5 \mu\text{m}$ axial displacement; vacuum compatible to 10^{-9} hPa