

nanoSXY 120

Ultra fast XY piezo positioning stage

Concept:

The **nanoSXY 120** offers a long travel scanning range, combined with a central aperture of 12.5 mm in a compact design. Dynamic performance with a high load capacity, supreme stiffness and a high resonant frequency are major advantages of the **nanoSXY 120**. The **nanoSXY 120** is also available with a capacitive measurement system.

The FEA designed actuating system based on flexure hinges guarantees excellent guidance accuracy without parasitic motion.

The durability of the **nanoSXY 120** makes this series of stages an excellent choice for permanent use in industrial applications.

Specials:

The bi-directional gear design makes the system very robust and makes it non-sensitive against external forces.

Vacuum and cryogenic versions are available on demand as well as body material variations of invar, super invar, aluminum or titanium.

Mounting:

The **nanoSXY 120** can easily be fixed via four rectangular arranged through holes into any application or mechanical setup.



Image: **nanoSXY 120**, vacuum version

Product highlights:

- travel range 120/100 μm open/closed loop
- sub-nm resolution
- excellent guidance accuracy
- high Z-axis stiffness
- 12.5 mm central aperture
- compact design

Application examples:

- nano positioning
- scanning
- microscopy
- metrology
- alignment

Options:

- vacuum version / cryogenic version
- special material
- cable for high load requirements, e. g. 5 million cycles of bending

nanoSXY 120

Technical data

	Unit	nanoSXY 120	nanoSXY 120 CAP
Part no.	-	T-232-00	T-223-06
axis	-		X,Y
motion open loop ($\pm 10\%$)*	μm	120	
motion closed loop ($\pm 0.2\%$)*	μm	-	100
capacitance ($\pm 20\%$ **)	μF		1.5
resolution	open loop***	nm	0.24
	closed loop***	nm	-
typ. repeatability	nm		2.5
typ. non-linearity	%	-	0.02
resonant frequency 50g X/Y	Hz	350/380	300/320
resonant frequency 100g X/Y	Hz	280/300	250/280
resonant frequency 300g X/Y	Hz	165/170	160/105
stiffness X/Y/Z	N/ μm	0.6/0.6/2.5	
max. push/pull force X/Y	N	65/65	12/12
max. load	N		100
rotational error X/Y/Z	μrad		1.5/2.5/0.5
dimensions (LxWxH)	mm	60x60x20	60x87x30
central aperture	mm		\varnothing 12.5
voltage range	V	-20... +130	
connector	voltage	-	ODU L 3 pin
	sensor	-	LEMO 05.605
weight	g	250	350

* typical value measured with 30V300 nanoX amplifier

** typical value for small signal electrical field strength

*** The resolution is only limited by the noise of the power amplifier and metrology.

60x82x30mm