

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 50 g X/Y	Hz	350/380	300/320
resonant frequency 100 g X/Y	Hz	280/300	250/280
resonant frequency 300 g 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 (L x W x H)	mm	60 x 60 x 20	60 x 87 x 30
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



Room 1302, Westlands Centre, 20 Westlands Road, Quarry Bay, Hong Kong Tel: (852)2885 9525 Fax: (852):28863241 Email: sales@peiport.com.hk
 BEIJING 010-68082790 / SHANGHAI 021-62311092 / GUANGZHOU 020-87375739 / WUHAN 027-87440766 / CHENGDU 028-86669976 / XIAN 029-81298922 / YUNNAN 0871-63601385



phone: +49 (3641) 66880 • fax: +49 (3641) 66886
info@piezोजना.com • <http://www.piezोजना.de>

nanoSXY_120_ds_Rev02_2019_05_10.doc

nanoSXY 400

High speed XY piezo positioner

Concept:

The **nanoSXY 400 stages** have been developed for fast and precise positioning of optical and mechanical components. These systems are specially optimized for very high z-axis stiffness. The special parallel kinematics of the actuator guarantees guidance accuracy at its best.

The FEA designed actuating system, which is based on a hinge flexure design guarantees motion without mechanical play. Overshooting is actively minimized with controllable set and reset forces.

While fully loaded, defined positions can be achieved within a few milli-seconds making these stages an excellent choice for high speed scans used in industrial applications. The **nanoSXY 400** is also available with a capacitive measurement system.

Specials:

The **nanoSXY 400** is temperature compensated, so the stage keeps its position if the surrounding temperature changes.

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:

For stage mounting there are 4 tapped holes and 4 through holes available on the bottom of the actuator. On the top side of the stage the tapped holes and through holes can be used to mount components.



Image: nanoSXY 400CAP

Product highlights:

- travel range 400/320 μm open/closed loop
- excellent guidance accuracy
- high Z-axis stiffness
- central aperture of \varnothing 12.5 mm

Application examples:

- nano positioning
- material research
- microscopy
- semiconductor test equipment

Options:

- vacuum version
- cryogenic version
- special materials

nanoSXY 400

Technical data

	Unit	nanoSXY 400	nanoSXY 400 CAP
Part no.	-	T-224-00	T-224-06
axes	-		X,Y
motion open loop ($\pm 10\%$)*	μm		400
motion closed loop ($\pm 0.2\%$)*	μm	-	320
capacitance**	μF		3.6
feedback sensor	-	-	capacitive
resolution	open loop***		0.8
	closed loop***	-	1
typ. repeatability	nm	-	9
resonant frequency X/Y/Z	Hz	300/450/800	280/380/800
additional load 50 g X/Y	Hz	230/350	215/250
additional load 100 g X/Y	Hz	190/280	180/200
additional load 300 g X/Y	Hz	125/130	120/125
stiffness X/Y/Z	N/ μm		0.35/0.35/2.5
max. push/pull force	N		75/75
max. load	N		50
rotational error	μrad		5 (about all axes)
dimensions (L x W x H)	mm	60x60x20	60 x 82 x 30
central aperture	mm		\varnothing 12.5
voltage range	V		-20 ... +130
connector	voltage	-	ODU L3 pin
	sensor	-	LEMO 05.605
material	-	stainless steel/aluminum	
weight	g	300	410

* typical value measured with 30V300 nanoX amplifier

** typical value for small electrical field strength

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



彼岸科航有限公司
PEIPOINT SCIENTIFIC AERO LIMITED

Room 1302, Westlands Centre, 20 Westlands Road, Quarry Bay, Hong Kong Tel: (852)2885 9525 Fax: (852):28863241 Email: sales@peiport.com.hk
BEIJING 010-68082790 / SHANGHAI 021-62311092 / GUANGZHOU 020-87375739 / WUHAN 027-87440766 / CHENGDU 028-86669976 / XIAN 029-81298922 / YUNNAN 0871-63601385

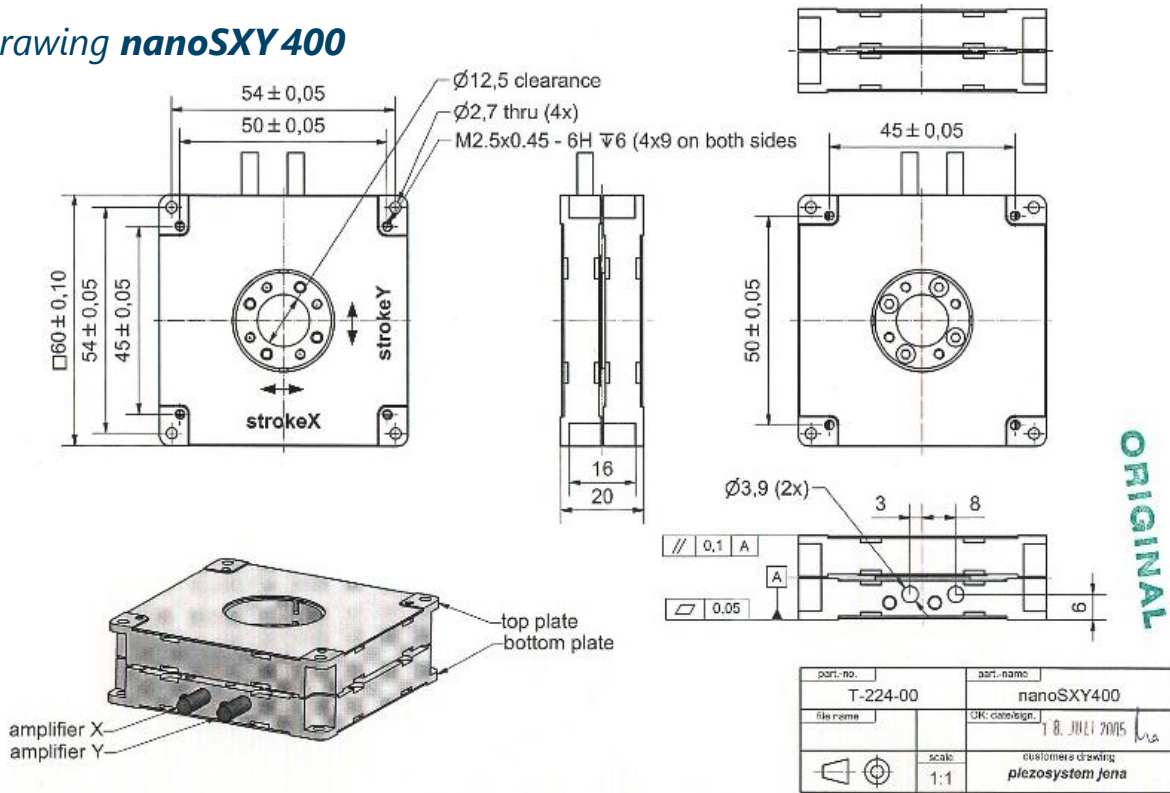


phone: +49 (3641) 66880 • fax: +49 (3641) 66886
info@piezोजना.com • <http://www.piezोजना.de>

NanoSXY_400_ds_Rev03_2018_02_20.doc

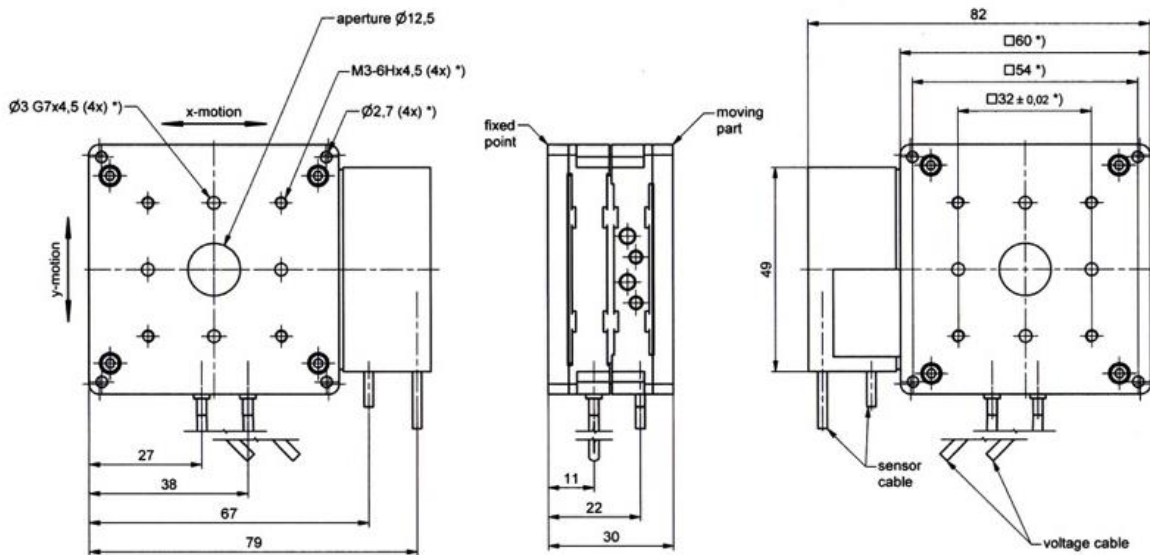
nanoSXY 400

Drawing nanoSXY 400



ORIGINAL

Drawing nanoSXY 400 CAP



ORIGINAL

*) ... on both sides
standard cable length: 1600mm

rev.01 design review of mechanical interface
rev.02 design review of capacitive sensor heads
rev.03 design review of wiring



phone: +49 (3641) 66880 • fax: +49 (3641) 66886
info@piezोजना.com • <http://www.piezोजना.de>