

## Scan XY40

### 2D scan and positioning stage

#### Concept:

The Scan XY40 piezoelectric actuating stage offers a travel range of 40 microns per axis. The nanopositioning piezo stage is mainly designed to fulfill requirements for 2D scanning applications. The superiorly performing scanning stage can offer a resonant frequency of more than 1.4kHz per axis. The Scan XY40 is ideally suited for nm-precise positioning of light weight optic components such as mirror prisms or laser diodes. The Scan XY40 can offer significant advantages when used in a variety of applications where speed and a low settling time play an important role. These applications include semiconductor technologies and electronics, and applications in measurement technologies and quality assurance as well as microbiology.

#### Specials:

The X- and Y-axis of the 2D piezo scanner can be controlled separately. The axes are positioned orthogonally to each other and the direction of motion is shown by small markings on the stage. The FEM optimized flexure hinge design provides the lowest settling time and superior trajectory accuracy. piezosystem jena piezo stage designs offer motion without mechanical play or mechanical wear. The optimized stage design offers the unique nanoX® drive principle. The bidirectional actuating system is characterized by active set and reset forces. Thus the essential features of these high speed positioners are the very high stiffness and natural resonant frequency

#### Interfaces:

The Scan XY40 can be easily mounted by using the four mounting hole set up. For component assembling, the moving part offers 4 pieces and M2 threading holes with a 13x13 mm pattern in the center of the piezoelectric positioning stage.

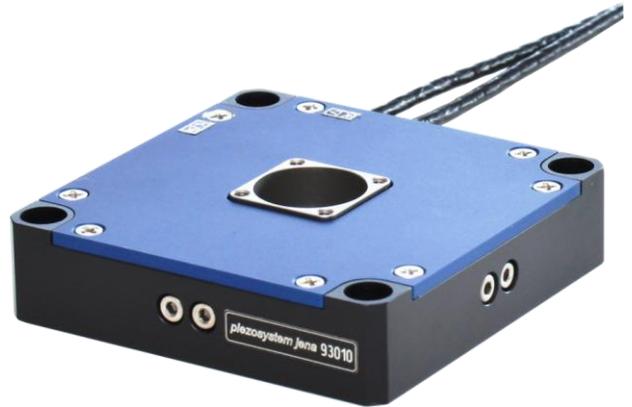


Image: Scan XY40

#### Product highlights:

- 2D motion in XY
- 40 µm travel range per axis
- motion without mechanical play
- 1.4 kHz unloaded resonant frequency
- lowest settling time
- large central opening

#### Applications:

- mirror and lens positioning
- 2D-scanning systems
- beam alignment
- semiconductor
- micro manipulation

## Scan XY 40

### Technical data:

2D scan and positioning stage	unit	Scan XY40
<b>part no.</b>		T-221-60
<b>axis</b>	-	X,Y
<b>motion (<math>\pm 10\%</math>)*</b>	$\mu\text{m}$	40
<b>capacitance per axis (<math>\pm 20\%</math>)**</b>	$\mu\text{F}$	3.6
<b>resolution ***</b>	nm	0.1
<b>integrated measurement system</b>	-	-
<b>typ. repeatability</b>	nm	-
<b>resonant frequency (per axis)</b>	0g load	1430Hz
	15g load	880Hz
	40g load	610Hz
<b>stiffness x/y</b>	N/ $\mu\text{m}$	1.1
<b>voltage range</b>	V	-20...+130V/+130...-20V
<b>connector (additional variation please see table below) ****</b>	-	ODU 3pin (nanoX® drive)
<b>cable length</b>	m	1
<b>min. bend radius of cable</b>	mm	15
<b>temperature range</b>	$^{\circ}\text{C}$	-20 $^{\circ}\text{C}$ ... +80 $^{\circ}\text{C}$
<b>material</b>	-	aluminum/stainless steel
<b>dimensions (LxWxH)</b>	mm	58x58x15
<b>weight</b>	g	70

\* typical value measured with ENV 800nanoX amplifier

\*\* typical value for small electrical field strength

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

\*\*\*\* additional connectors configuration examples please see table below

Product name	Description	Specials	Part. No Suffix.
Scan XY40 Digital	Version for d-Drive digital controller series and 30DV50 in combination with additional functionalities	Connector Sub-D 15	T-211-60D

Specifications subject to change without notice