queensgate
a brand of Elektron Technology

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Nano mechanisms

XPS-θγ-2A

The Queensgate XPS-θγ-2A has been developed for applications requiring ultra-fast precision positioning of mirrors in optical inspection and imaging systems. The mirror is simply fixed onto the tilting platform of the stage to provide > 2 milliradians of travel with sub micro-radian resolution.

Low moving masses and optimised open-loop control offer exceptional response times for high speed application. Flexible digital open loop electronics allow response optimisation to be performed in-situ.

XPS-θγ-2A

Key features

- >2mrad range in each axis with sub micro-radian resolution
- Enclosed mechanism for high stability and reliability
- Bandwidth >2KHz
- Small signal settle times <5ms
- Simple flexure design for low cost/high volume applications
- EEPROM with stage calibration data for 'plug and play' ability
- Low noise and low drift electronics

Applications

- Precision beam steering
- Image jitter correction

Suggested controller

NPS2100

elektron technology

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Nano mechanisms XPS-θγ-2A

Specification

Parameter	Symbol	Value			Units	Comments
Static physical						
		Minimum	Typical	Maximum		
Material		Aluminium (Electroless nickel plated)				
Size		35 high x 30 diameter			mm	
*Range	$d\theta_{p\cdot max}$	±1.25	±1.4		mrad	
Resonant frequency: 0g load	$f_{0\cdot0}$		2000		Hz	Note 1
Dynamic physical						
		Minimum	Typical	Maximum		
Slew rate	$u\theta p\cdot max$		0.9		mrads·ms $^{-1}$	Note 2

Notes
*These parameters are measured and supplied with each mechanism
1. This is the first resonant frequency of the stage.
2. The highest rate of change of true position with time that can be achieved.

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