

MIPOS R 120

Piezoelectric fine focusing device for nosepiece

Concept

The MIPOS R 120 serves for the fine focusing and positioning of microscope objectives. The MIPOS R 120 was especially developed for the positioning of a complete nosepiece. It is possible to focus probes with a sub nanometer precision. Due to the well proven parallelogram principle of **piezosystem jena** and an integrated pre-load, a highly parallel movement is guaranteed without influencing the optical axis.

Therefore rapid and exact movements can be operated with a short rise time.

Specials

Special highlight of the MIPOS R 120 is that the operator can switch between the lenses of the nosepiece without changing the set-up, and without losing the focus on the probe. This saves the user a significant amount of time.

The MIPOS R 120 provides a positioning range of up to 150 µm and can bear a nosepiece with a total mass of up to 3kg.

Optionally, special solutions for the integration of the MIPOS R 120 in the microscope main body, arm, base etc. can also be offered.

Adapter plates for the mounting of the MIPOS R 120 to your existing assembly are easily installed.



image: MIPOS R 120

characteristics:

- 150 µm focusing range
- precise movement of the nosepiece
- high resonant frequency
- sustainability of up to 3kg
- optional: integrated positioning sensor
- different attachments for microscopes from different manufacturers
- positioning solution in the microscope set-up

applications:

- surface analysis
- semiconductor equipment
- interferometry
- biotechnology (e.g. cell inspection)
- ray focusing for print processes

options:

- active tilt correction*
- special solutions for the integration of the MIPOS R 120 in the microscope main body, arm, base

* special controller configurations required

MIPOS R 120

Technical data

	unit	MIPOS R 120	MIPOS R 120 SG	MIPOS R 120 CAP
part no.		O-396-00	O-396-01 D	O-396-06 D
axis	-	z		
stroke (open loop) ($\pm 10\%$)*	μm	150		
stroke (closed loop) ($\pm 0,2\%$)*	μm	-	120	
capacitance ($\pm 20\%$)**	μF	21		
sensor	-	-	strain gauge	capacitive
resolution open loop	nm	0.3		
resolution closed loop	nm	-	4	1
typ. repeatability	nm	-	15	7
resonance frequency with additional load=1500g	Hz	280		
stiffness	N/ μm	0,5		
max. load	N	30		
rotational error (full motion) (roll/pitch/yaw)	μrad	<20		
dimensions (LxWxH)	mm	100/100/<25		
central aperture	mm	32		
voltage range	V	-20 ... +130		
temperature range	$^{\circ}\text{C}$	-20...+80		
material	-	aluminium/ stainless steel		
weight	g	680		
for standard microscopes	-	yes		
for inverse microscopes	-	yes		

* typical value measured with ENV 800 amplifier

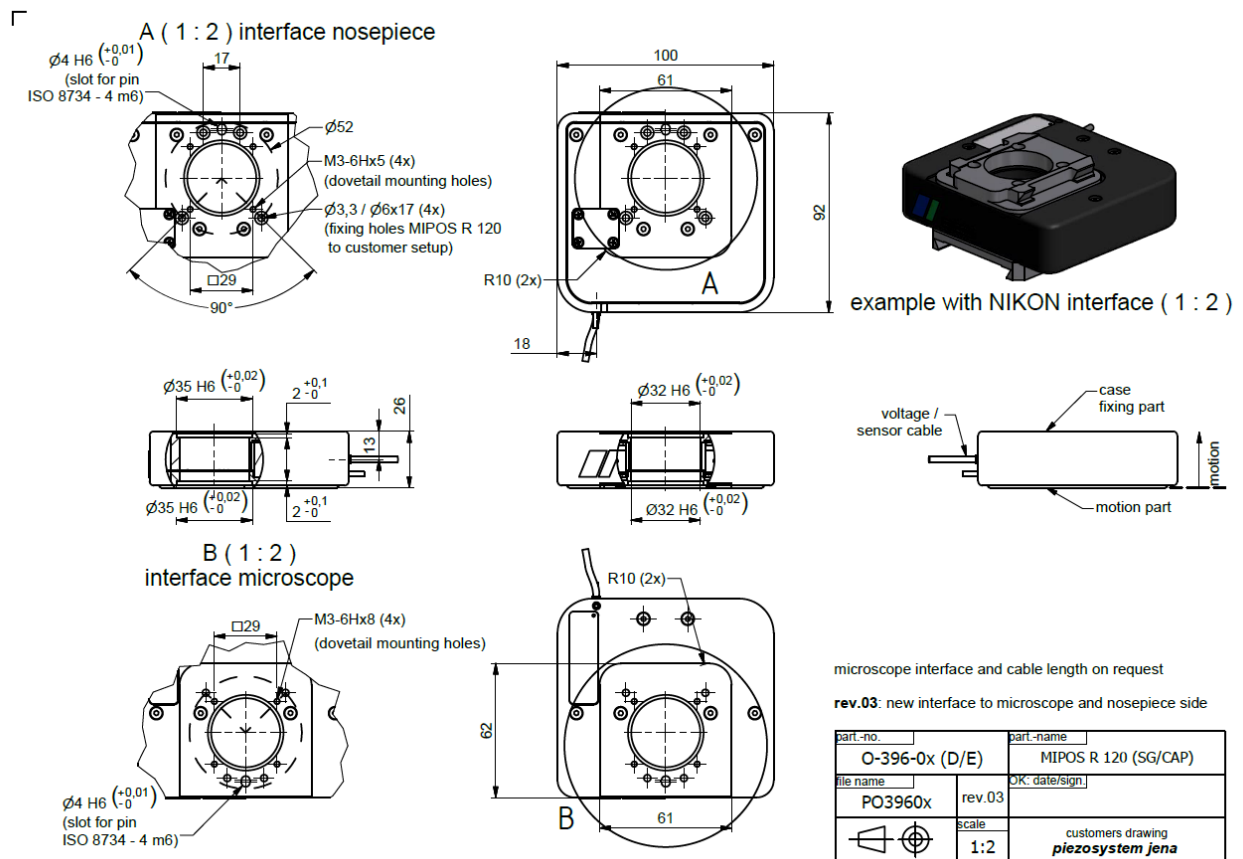
** typical value for small electrical field strength

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Recommended controller/amplifier

actuator	MIPOS R 120 (O-396-00)	MIPOS R 120 SG (O-396-01 D)	MIPOS R 120 CAP (O-396-06 D)
amplifier/ controller (analog)	NV 120/1	NV 120/1 CLE	NV120/1 CLE
amplifier/ controller (digital)	30DV50	30DV50	30DV50

Drawings



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