

## microscope objective / lens positioning system

### MIPOS 250

- 250µm focusing range
- compact design
- high resonant frequency
- easy to attach on microscopes
- flexible use by Flex-Adapter
- optionally integrated measurement system

#### applications:

- surface scanning and analysis
- AFM microscopy
- biotechnology (e.g. cell scanning)
- beam focusing for printing processes
- semiconductor test equipment

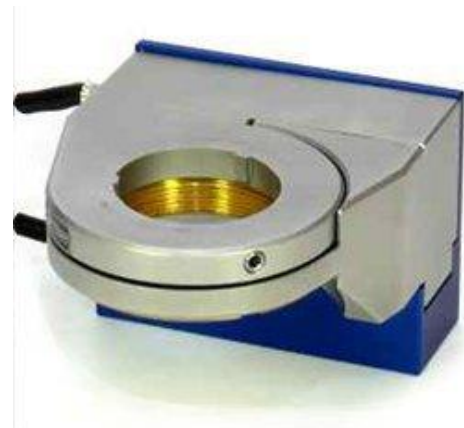




fig.: MIPOS 250

Concept	Specials	Mounting/Installation
<p>The systems in the MIPOS 250 series offer a nano positioning and scanning range up to 250µm in open loop operation, as well as 200µm in closed loop. They can be assembled with objectives that have up to a 40mm diameter.</p> <p>The successful parallelogram design of <b>piezosystem jena</b> guarantees high parallel motion without influencing the optical path.</p> <p>The positioning repeatability can be guaranteed by an integrated measurement system.</p> <p>The design with integrated pre-load of the actuator offers the following advantages:</p> <ul style="list-style-type: none"> <li>• high resonant frequency</li> <li>• highly parallel motion</li> <li>• upside-down version for inverted microscopes</li> </ul> <p>Based on these features, fast scanning applications can be accurately realized with the shortest settling times.</p>	<p>Adapter thread rings for the nose piece are available separately. They allow for fast mounting and exchanging of the MIPOS system on the microscope. Other objectives no longer need to be removed.</p> <p>These Flex-Adapters are available for all standard microscopes, and allow the MIPOS series to be universally applicable.</p> <p>Parfocal tube extensions for each threading type are available as an accessory.</p>	<p><b>Mounting/Installation</b></p>  <ol style="list-style-type: none"> <li>1. Screw the objective into the MIPOS</li> <li>2. Screw the Flex-Adapter into the microscope</li> <li>3. Clamp the MIPOS on the Flex-Adapter using the attachment screw</li> </ol>  <p>Spacer rings to compensate the extended optical path are available and flex adapters for all common threads.</p>

**technical datas:**

series MIPOS		unit	MIPOS 250	MIPOS 250 SG	MIPOS 250 CAP
part no. for thread ...	M25x0.75	-	O-370-00	O-370-01	O-370-06
	W0.8x1/36" (RMS)	-	O-374-00	O-374-01	O-374-06
	M26x0.75	-	O-375-00	O-375-01	O-375-06
	M27x0.75	-	O-376-00	O-376-01	O-376-06
	M32x0.75	-	O-377-00	O-377-01	O-377-06
axis	-	z			
motion open loop ( $\pm 10\%$ )*	$\mu\text{m}$	250			
motion closed loop ( $\pm 0,2\%$ )*	$\mu\text{m}$	-	200		
capacitance ( $\pm 20\%$ )**	$\mu\text{F}$	10.2			
integrated measurement system	-	-	strain gage	capacitive	
resolution open loop***	nm	0.5			
resolution closed loop***	nm	-	5.0	1.0	
typ. repeatability	nm	-	9	8	
resonant frequency	Hz	320			
additional load = 80g	Hz	250			
additional load = 105g	Hz	230			
additional load = 300g	Hz	155			
stiffness	N/ $\mu\text{m}$	0.4			
rotational error (full motion)	$\mu\text{rad}$	<10			<6
voltage range	V	-20...+130			
connector	voltage	-	LEMO 0S 302		
	sensor	-	-	LEMO 0S 304	LEMO 0S.650
cable length	m	1.0	1.2	1.6	
min. bend radius of cable	mm	>15			
material	-	stainless steel			
dimensions (l x w x h)	mm	60.7x50x23.5	60.5x50x35.3	60.2x50x34.5	
weight	g	255	255	350	
max. lens diameter	mm	40			
max. lens weight	g	500			
option for standard microscopes	-	yes	yes	yes	
option for inverse microscopes	-	yes	yes	yes	

\* typical value measured with NV 40/3 CLE amplifier

\*\* typical value for small electrical field strength

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

\*\*\*\*in combination with a digital controller unit the system comes with a Sub-D 15 connector.

The part number is extended by the suffix "D".

**recommended configuration:**

actuator	<b>MIPOS 250 SG</b>	O-37X-01E
amplifier/controller	<b>NV 40/1 CLE</b>	E-101-73

**The series of micro lens and objective positioning systems MIPOS offers a travel range from 20 $\mu\text{m}$  up to 500 $\mu\text{m}$  in z-axis. Available for standard and inverted microscopes  
 More details under „z-axis-lens-positioning“ [www.piezojena.com](http://www.piezojena.com) .**

**Additional microscopy stages for XY axes available under “series-PXY-AP” [www.piezojena.com](http://www.piezojena.com)**

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