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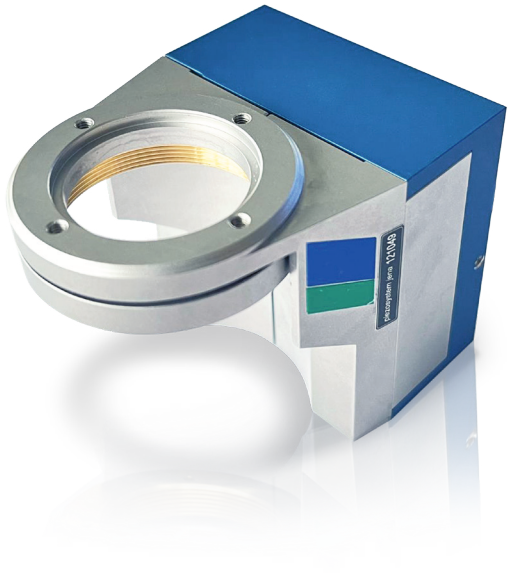
MIPOS 800 SG

Long Travel Lens Positioning System

- ***800 µm Focusing Range***
- ***Typ. Step Resolution 12 nm in Closed-Loop***
- ***Resonant Frequency up to 100 Hz***
- ***Standard Integrated Strain Gauge Sensor***



The objective positioner MIPOS 800 SG is a long travel positioning and scanning system, based on a high stiffness flex hinge piezo design. It offers a travel range of up to 800 µm in open-loop operation, and 650 µm in closed-loop.

A unique parallelogram design guarantees high parallel motion without influencing the optical axis. The precise positioning repeatability of the MIPOS 800 SG can be guaranteed by the use of the integrated measurement system. The design includes an integrated preload so that the actuator can operate at a high resonant frequency.

Due to the unique design of the MIPOS 800, fast scanning applications are possible with the short settling times.

Variants:

- Strain gauge (SG) and open-loop
- Different thread rings
- Vacuum version
- For all standard microscopes
- OEM customization possible

Recommended Controller:

NV 200/D NET

E-730-820

Applications

- Surface scanning and analysis
- AFM microscopy
- Biotechnology (e.g. cell scanning)
- Beam focusing for printing processes
- Semiconductor testing

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Technical Data

		Unit	MIPOS 800		MIPOS 800 SG	
Part #			O-341-00D		O-341-01D	
Axis		-	z			
Voltage range (depending on amplifier configuration)		V	-20..130	-20..180	-20..130	-20..180
Motion Open-Loop (±10%)*		µm	620	800	620	800
Motion Closed-Loop (±0,2%)*		µm	-	-	600	650
Capacitance (±20%)**		µF	6 (2x3)			
Integrated Measurement System		-	-		strain gauge	
Resolution Open-Loop****		nm	1			
Resolution Closed-Loop****			-		12	
Typ. Repeatability*		nm	-		20	
Resonant frequency	unloaded***	Hz	100			
	load 80 g		99			
	load 180 g		96			
	load 282 g		93			
	load 330 g		92			
Stiffness		N/ µm	0.3			
Rotational Error (full motion)	x axis	µrad	34	43	34	43
	y axis		13	17	13	17
Connector		-	DSub 15 pin			
Cable length		m	1		2	
Dimensions (L x W x H)		mm	76 x 56 x 49			
Material		-	aluminium and stainless steel			
Weight		g	350		360	
Max. Lens Diameter		mm	42			
Max. Lens Weight		g	600			

Calibration example @ 650 µm closed-loop with 330g load (measured)			
Non-linearity	%	-	0.068
Repeatability	%	-	0.001
Resolution open loop	nm	5	
Resolution closed-loop	nm	-	14

*) Typical value measured with 0.7 mV controller
**) Typical value for small electrical field strength
***) Fitted value
****) The resolution is only limited by the noise of the power amplifier and metrology

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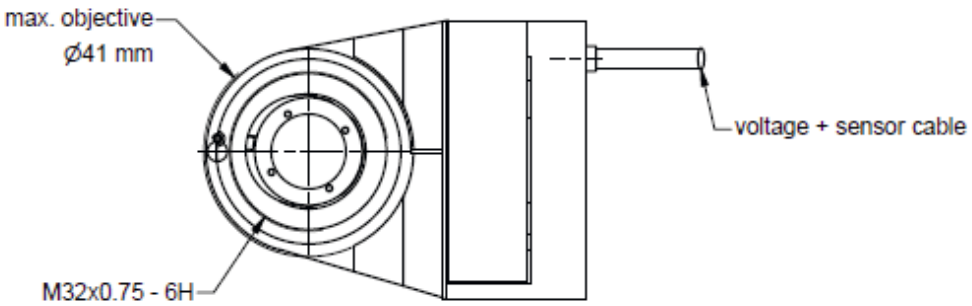
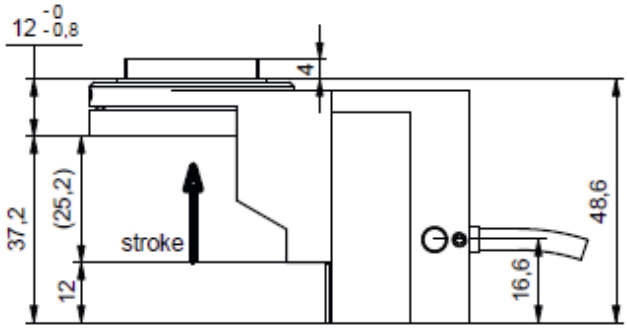
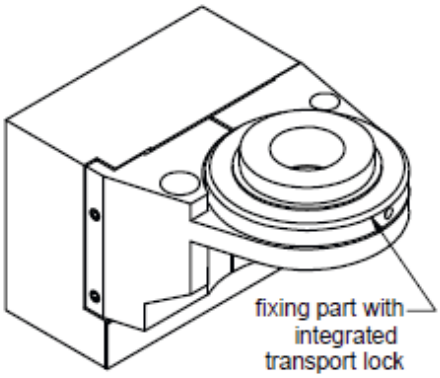
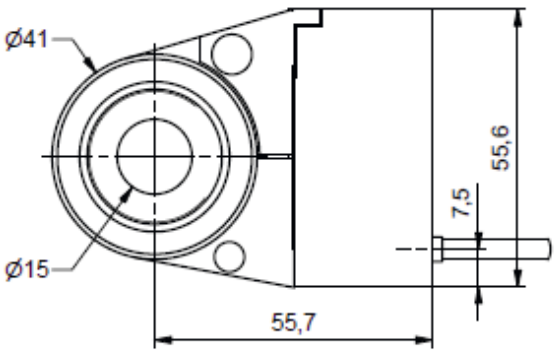
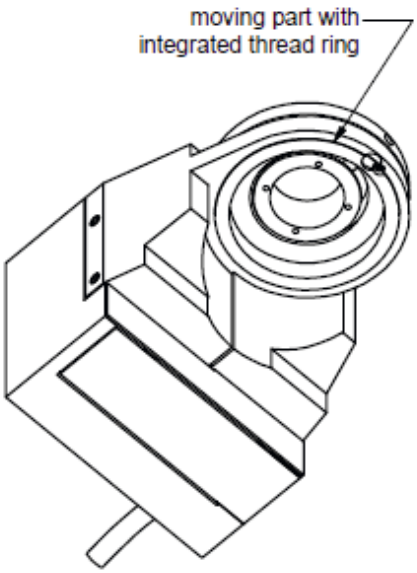
Technical Drawing

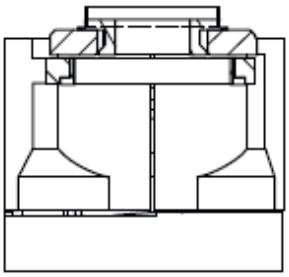












Dimensions given in mm.

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