

MIPOS 800 SG

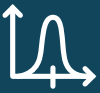
Long Travel Lens Positioning System



800 μm Focusing Range



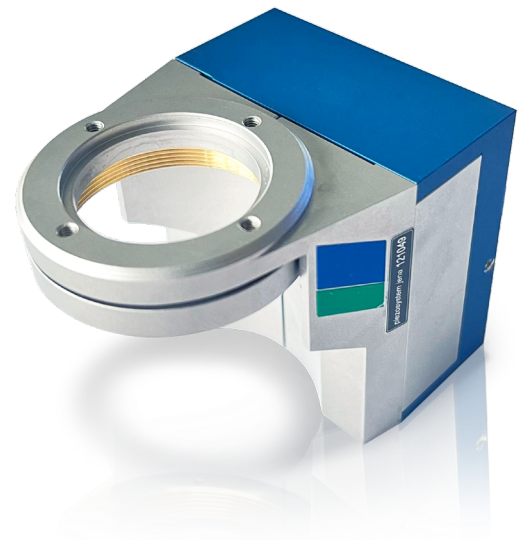
**Typ. Step Resolution 12 nm
in Closed-Loop**



**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 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 pre-load 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 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

MIPOS 800 SG

Technical Data

		Unit	MIPOS 800		MIPOS 800 SG	
Part #			O-380-50D		O-380-53D	
Axis		-	z			
Voltage range (depending on amplifier configuration)		V	-20..130	-20..180	-20..130	-20..180
Motion Open-Loop ($\pm 10\%$)*		μm	620	800	620	800
Motion Closed-Loop ($\pm 0,2\%$)*		μm	-	-	600	650
Capacitance ($\pm 20\%$)**		μF	6 (2 x 3)			
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

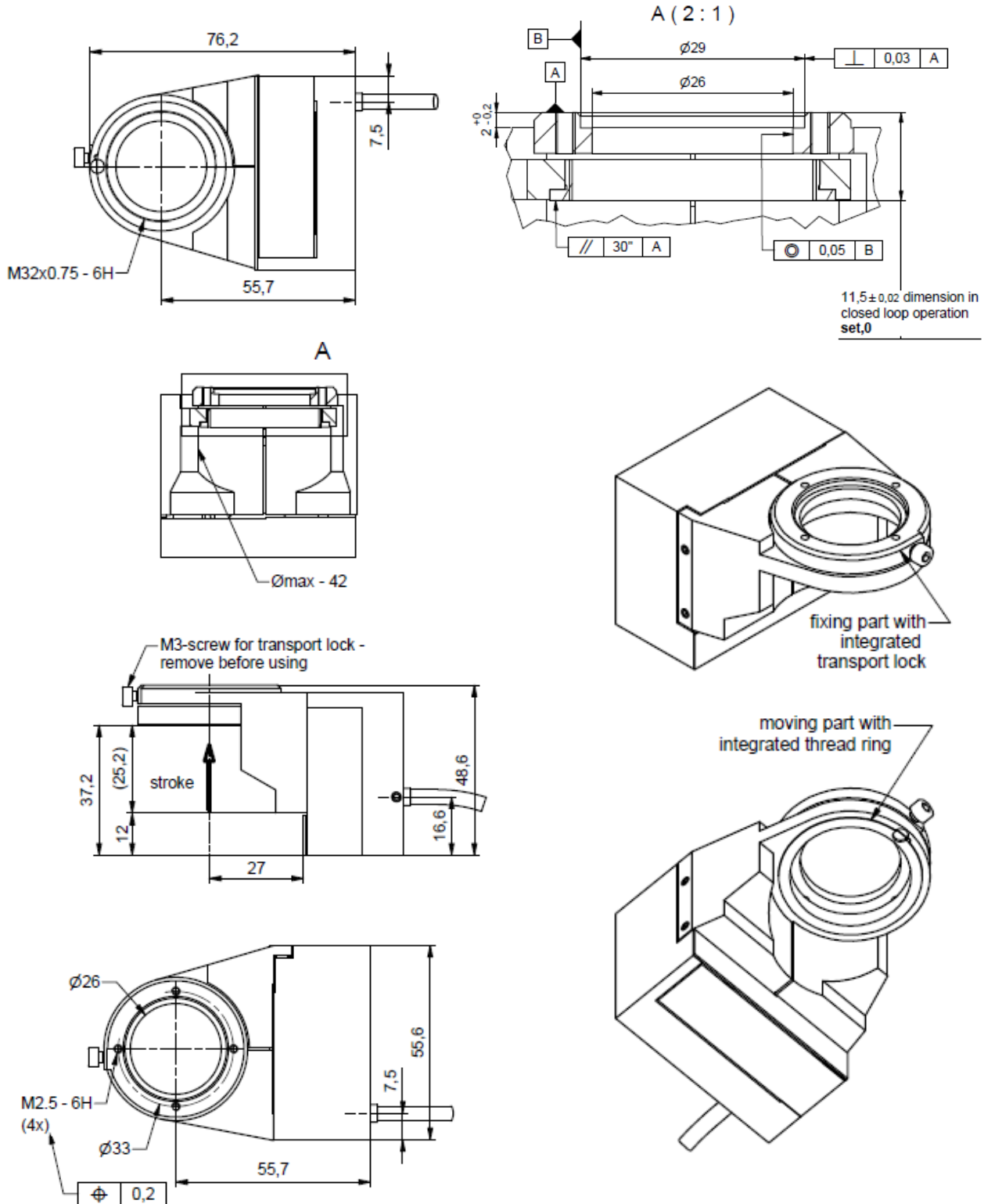
***) Typical value for small electrical field strength

****) Fitted value

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

MIPOS 800 SG

Technical Drawing



Dimensions given in mm.

Rights reserved to change specifications as progress occurs without notice.

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