

# Fast Linear Actuator with PIShift Piezomotor

Cost-Effective and Easy to Integrate



## N-412

- Easy frontal mounting
- Silent: Operating frequency to >20 kHz
- Velocity over 5 mm/s
- Sub-micron resolution
- Holding force to 10 N
- Low operating voltage to 48 V<sub>pp</sub>
- Self-locking when at rest, no heat generation

### Piezomotor-based direct drive

OEM actuator without position sensor. Continuous motion with step frequencies in the ultrasound range. Frontal mounting with M10x1 thread or 9.5 mm shank

### PIShift piezo inertia drive

Self-locking when at rest, no heat generation. Noiseless drive with operating frequencies beyond 20 kHz. Resolution in step mode approx. 300 nm, open-loop

### Fields of application

Industry and research. Alignment of optical elements, micromanipulation, biotechnology, cell manipulation, medical technology

### Recommended controllers / amplifiers

E-870 PIShift drive electronics



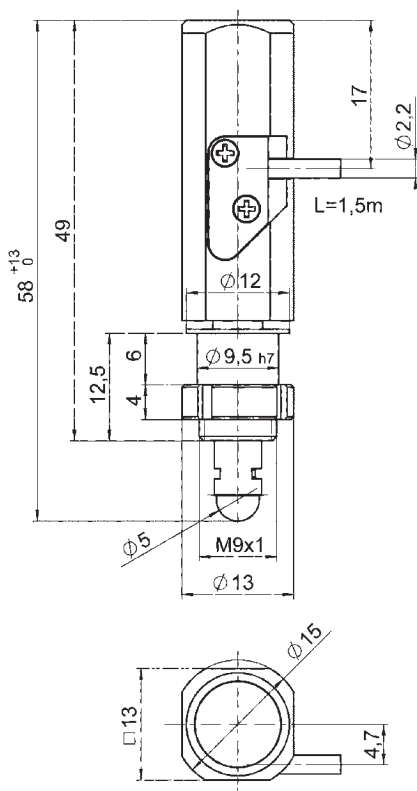
N-412 PIShift linear actuators with a kinematic mirror mount for the adjustment of optics

Preliminary Data	N-412.50	N-412	Unit	Tolerance
Active axes	X	X		
Mechanical interface	PIShift linear actuator, 9.5 mm shank	PIShift linear actuator, M10x1 thread		
<b>Motion and positioning</b>				
Travel range	13	13	mm	
Step frequency*	>20	>20	kHz	max.
Max. velocity*	5	5	mm/s	min.
<b>Mechanical properties</b>				
Stiffness in motion direction	>4	>4	N/ $\mu$ m	$\pm 20$ %
Push / pull force (active)	7	7	N	max.
Max. holding force (passive)	10	10	N	min.
<b>Drive properties</b>				
Drive type	PIShift piezo inertia drive	PIShift piezo inertia drive		
Operating voltage	48	48	V <sub>pp</sub>	max.
<b>Miscellaneous</b>				
Operating temperature range	0 to 50	0 to 50	$^{\circ}$ C	
Material**	Stainless steel	Stainless steel		
Dimensions	58 mm length, 15 mm diameter	58 mm length, 15 mm diameter		
Mass	25	25	g	$\pm 5$ %
Cable length	1.5	1.5	m	$\pm 10$ mm
Connector	DIN 4-pin	DIN 4-pin		
Recommended controller / driver	E-870 PIShift drive electronics	E-870 PIShift drive electronics		

Ask about custom designs!

\* Depending on the drive electronics

\*\* Ceramic rod



N-412, dimensions in mm