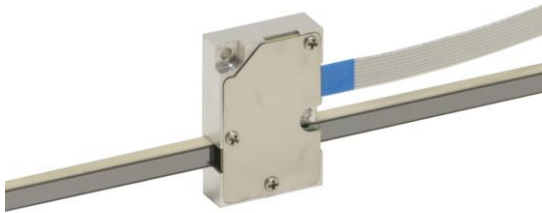


# XLA-1 Closed-loop series

## Fast and compact linear actuator



The XLA closed-loop micro linear actuators are world class in terms of weight, size and precision. The actuator is driven by the Crossfixx™ ultrasonic piezo motor, allowing an extremely compact design, variable speeds up to 200 mm/s and a total weight of less than 6 gram! The XLA-1 Closed-loop has an integrated encoder with a 1250, 312 or 78 nm resolution. Two cable positions are possible (top or side) and a wide range of rod lengths is available, allowing stroke lengths from 5 mm to 185 mm!

### Key features

drive principle	patented Crossfixx™ ultrasonic piezo technology
lifetime	> 100 km / 1 million cycles
control principle	closed-loop control
operating voltage	20 to 48 V
controller	external Xeryon controller required

### Model code structure

actuator type	rod length (mm)	encoder resolution (nm)	FPC cable outlet (flexible printed cable)
XLA-1	-20	1250	top side (-T)
	-30		
	-40		
	-50		
	-60	312	right side (-R)
	-70		
	-80		
	-100		
	-120	78	
	-140		
	-160		
	-200		

Example: **XLA-1-40-312-R**

- └ XLA-1 series linear actuator
- └ Rod length of 40 mm
- └ Closed-loop actuator with integrated encoder with a resolution of 312 nm
- └ Cable outlet to the right side (see drawing below for cable orientation convention).

## Environmental compatibility

temperature range	-30°C to +70°C
humidity range	20% to 90% RH (non-condensing)
heat dissipation (motor only)	< 1 W

## Motion performance

		XLA-1 all rod lengths			unit	tolerance	
		-1250	-312	-78			
<b>LIMITS</b>	type	-					
	type	optical, incremental					
<b>ENCODER</b>	grating period	80			µm		
	resolution	1250	312	78	nm		
	index	1 per full stroke					
	accuracy	± 5			µm	typ.	
	resolution = min. step size = min. incremental motion (MIM)	1250	350	80	nm	typ.	
<b>ACTUATOR</b>	<b>positioning</b>	unidirectional repeatability	± 1250	± 350	± 80	nm	typ.
		bidirectional repeatability	± 2500	± 700	± 160	nm	typ.
		max. speed	200			mm/s	typ.
	<b>speed</b>	min. speed	2 to 5			µm/s	typ.
		stability (at typical speed of 10 mm/s)	± 1			%	typ.
		point-to-point positioning time for a 1 mm step* 0 g load	200			msec	typ.

## Mechanical properties

	XLA-1												unit	tolerance
rod length	-20	-30	-40	-50	-60	-70	-80	-100	-120	-140	-160	-200	mm	± 0.1
dimensions	22.7 x 14.8 x 5.4												mm	± 0.1
stroke/ travel range	5	15	25	35	45	55	65	85	105	125	145	185	mm	± 0.1
mass	5.5	5.9	6.3	6.7	7.1	7.5	7.9	8.7	9.5	10.3	11.1	12.7	g	± 5%
holding force	1												N	min.
driving force	1												N	min.
actuator materials	anodised aluminium (housing) stainless steel (rod and housing cover)													
cable type	FPC, 8 core, 0.5 mm pitch with same side contacts													

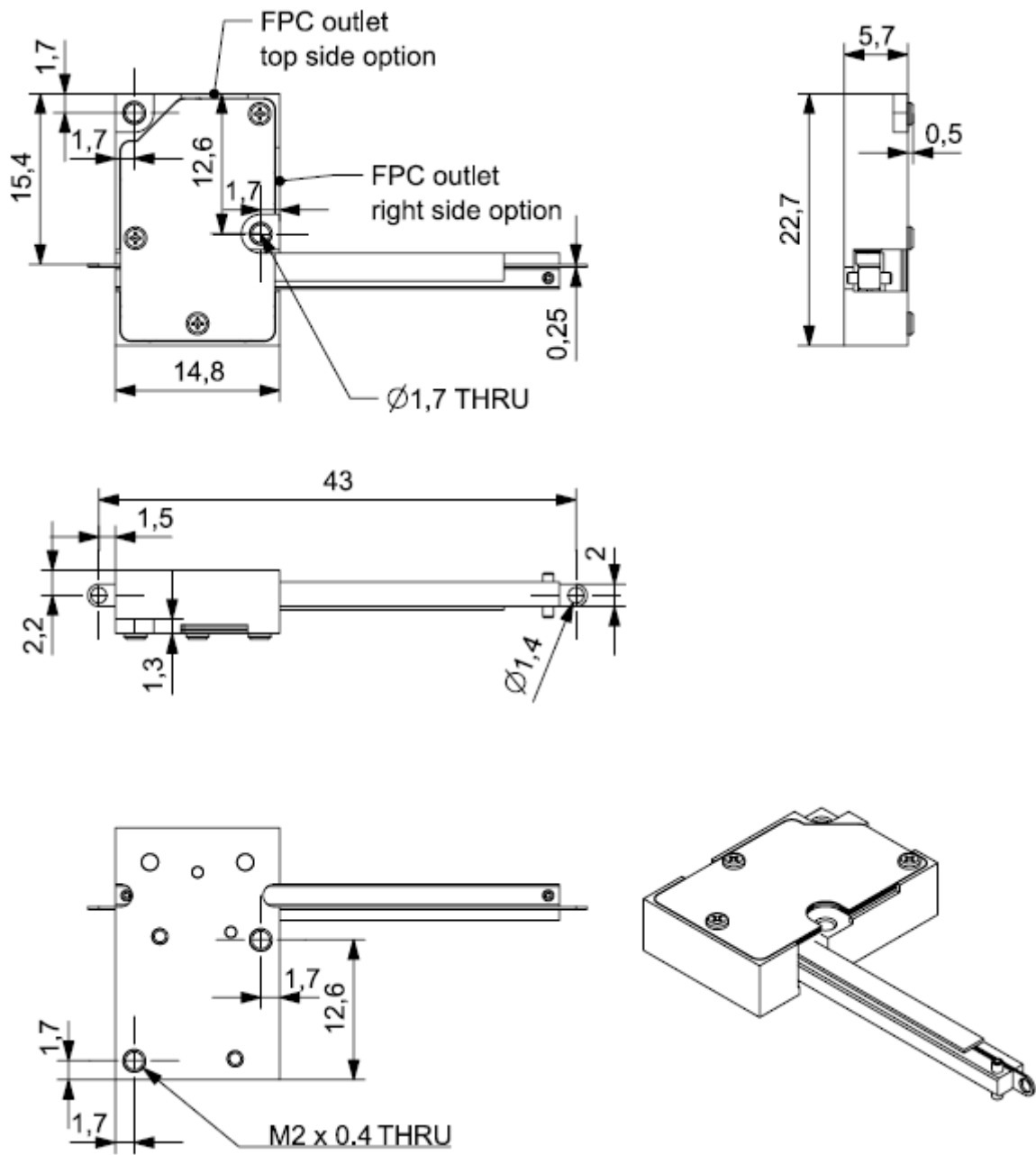
## Controller/software

In **closed-loop configuration**, the XLA-1 series actuators are compatible with all Xeryon controllers.

Controlling of the stage is done with:

- easy-to-use Windows interface
- LabVIEW interface program (compiled program or source)
- MATLAB interface script
- C++ and Python libraries

Drawing



Last updated: 22/06/2020. All specifications are subject to change without prior notice.