

Overview of “Linear Series” Piezoelectric Motion Unit

Low Temperature Piezoelectric Motion - Linear Series

Choose your suitable MultiFields® “Linear Series” products



Linear16-x



Linear16-z



Linear25-x

Defined by size	“16mm Series”		“25mm Series”
1 Work Environment	Default: 1.4 K ~ 400 K; 1e-7 mbar; 35Tesla Option1 - .ULT, lowest use temperature 30 mK; Option2 - .UHV, highest vacuum environment 2E-11 mbar;		
2 Dimensions	16 × 16 × 10.5 mm	16 × 16 × 16 mm	25 × 25 × 9.5 mm
3 Travel Range	3 mm	3 mm	6 mm
4 Max. Load	50 g	250 g	500 g
5 Dynamic Drive Force	1.5 N	3 N	2 N
6 Position Sensor	Resistive sensor		
Sensor Range	3 mm	3 mm	6 mm
Sensor Resolution	150 nm		
Sensor Repeatability	1 ~ 2 μm		
7 Drive Voltage	Max. 200 V		
8 Fine Tune Resolution @ 2 K*	sub-nanometer @ 2 K		
9 Step Size (min) @ 300 K*	~ 10 nm @ 300 K		
10 Pins Number	Drive - 2 pins Sensor - 3 pins	Drive - 4 pins Sensor - 3 pins	Drive - 2 pins Sensor - 3 pins
11 Weight	10 g	12 g	24 g

Fine Tune Resolution @2 K–Fine tune mode is a unique analog motion driven method, where piezo units are controlled by analog voltage signal, instead of continuous high frequency wave sequence. Because the resolution of the analog signal is very high, the stage can achieve sub-nano meter positioning accuracy.

Step Size (min) @300 K–The open loop minimum incremental step size that the stage can move when it's doing stick-slip motion, driven by continuous high frequency wave sequence.

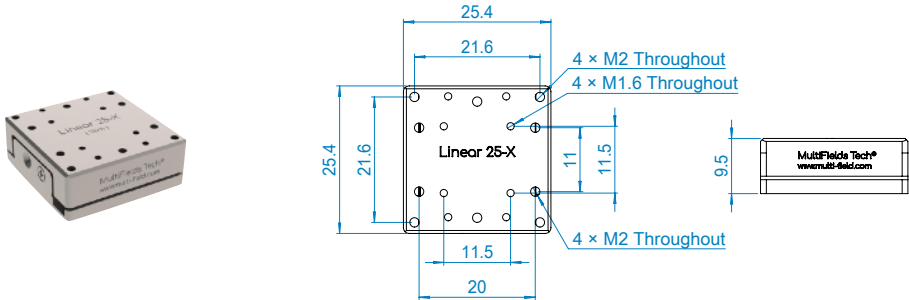


"25mm Series" – Linear25-x (closed-loop)

A stage with precise rails performs excellent linearity and high load

- ➔ Features
- Compact design
 - 500g high load
 - Ultra-high vacuum & low temperature compatible
 - Non-magnetic material
 - Long travel range

➔ Picture & dimensions



➔ Specifications

Optional Versions ⇨		.HV (default)	.ULT	.UHV	.ULT.UHV
		.HV version, compatible with 1E-7 mbar .ULT version, used at He3 or dilution cryogenics systems .UHV version, compatible with 2E-11 mbar			
1	Footprint × hight	25.4 × 25.4 × 9.5 mm			
2	Weight	24 g			
3	Work environment	Temperature range: 1.4 ~ 400 K, Max. Magnetic field: 35 Tesla			
4	Option1 - 30 mK		✓		✓
5	Option2 - 2e-11 mbar			✓	✓
6	Mainbody	Pure Ti	BeCu	Pure Ti	BeCu
7	Wires	Phosphor Bronze Twisted Paired Wires, 20cm			
8	Pin materials	Polyster (glass fiber filled), BeCu		Peek, BeCu	
9	Pins number	Drive - 2 pins, Sensor - 3 pins			
10	Fine Tune Resolution @2 K*	sub - nm			
11	Step Size (min) @300 K*	~ 10 nm			
12	Travel range	6 mm			
13	Max. Velocity @300 K	~ 3 mm/s			
14	Max. Load	500 g			
15	Dynamic force	2 N			
16	Position encoder	Resistive Sensor			
17	Encoder range	6 mm			
18	Sensor resolution	~ 150 nm			
19	Repeatability	1 - 2 μm			

For detail drawing and 3D model please contact us.

"25mm Series" – Linear25-x (closed-loop)

Linear stage combines compact size with excellent motion performance

The 25mm size positioning stages are interconnected to a six-degree-of-freedom module

