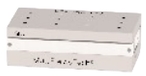
Overview of "LS-Linear Series" Piezoelectric Motion Unit

Low Temperature Piezoelectric Motion - Scanner Series

Choose your suitable MultiFields® "LS-linear Series" product



LS-Linear30

LS-Linear50

LS-Linear75

LS-Linear100

LS-Linear200

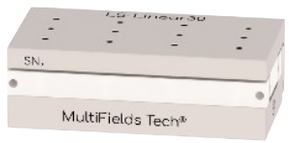
Series defined by size						Series defined by size	
1	Work Environment	• Default: 1.4 K ~ 400 K; 1e-7 mbar; 35 Tesla • Option1 - .ULT, lowest use temperature 30 mK; • Option2 - .UHV, highest vacuum environment 2E-11 mbar;				Work Environment	1
2	Motion Axies	X Axis				Motion Axies	2
3	Dimensions	60 mm × 32 mm × 19.5 mm	90 mm × 32 mm × 19.5 mm	135 mm × 32 mm × 19.5 mm	180 mm × 32 mm × 19.5 mm	320 mm × 32 mm × 19.5 mm	Dimensions 3
4	Travel Range	30 mm	50 mm	75 mm	100 mm	200 mm	Travel Range 4
5	Max. Load	0.75 kg	1.5 kg			2 kg	Max. Load 5
6	Positioner Sensor	Resistive sensor					Positioner Sensor 6
	Sensor Range	30 mm	50 mm	75 mm	100 mm	200 mm	Sensor Range
	Sensor Resolution	150 nm					Sensor Resolution
	Sensor Repeatability	1 -2 μm					Sensor Repeatability
7	Drive Voltage	Max.200 V					Drive Voltage 7
8	Pins	Drive - 2 pins, Sensor - 3 pins					Pins 8
9	Main Body	Default: Pure Ti; ULT: BeCu					Main Body 9
10	Weight	120 g	150 g	200 g	300 g	600 g	Weight 10

Piezoelectric Motion - LT

"LS-linear series" — LS-Linear30

Low Temperature · Piezoelectric Motion- Long Stroke Linear Stage

Long travel range 30 mm (1.2 inch), linear motion stage

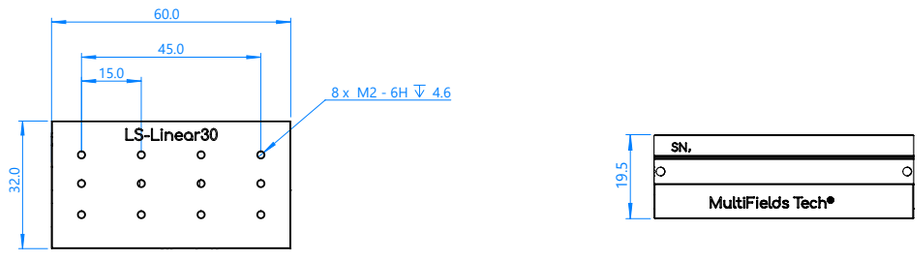


LS-Linear30

Features

- Compact design, dimensions: 60*32*19.5 mm
- Ultra-high vacuum & very low temperature compatible: 2 E-11 mbar & 30 mK
- Non-magnetic material Composed of pure Ti & BeCu, compatible with the 35 Tesla magnetic field
- High loads & high thrusts: 750 g & 3 N
- Long travel range: 30 mm
- Closed-loop control with position sensing up to 0.1 μm resolution

Dimension drawing



LS-Linear30, Specification

*All data below is measured with 50 ohm wires. Though there is no requirement on wires' conductance, we recommend resistance below 50 ohm.

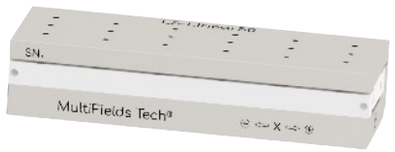
	Optional Versions ⇨	.HV (default)	.ULT	.UHV	.ULT.UHV
		.HV version, default product; .ULT version, used at He3 or dilution cryogenics systems .UHV version, compatible with 2E-11 mbar			
1	Footprint × hight	60 mm × 32 mm × 19.5 mm			
2	Weight	120 g			
Working Environment					
3	Work environment	Temperature range: 1.4 ~ 400 K Vacuum: 1e-7 mbar Max. Magnetic field: 35 Tesla			
4	Option1 - 30 mK		✓		✓
5	Option2 - 2e-11 mbar			✓	✓
Materials					
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			
Motion (Closed Loop Mode)					
10	Travel range	30 mm			
11	Max. Velocity @300 K	~ 3 mm/s			
12	Drive voltage	Max. 200 V			
13	Max. Load	750 g			
14	Dynamic force	3 N			
Position Sensor (Closed Loop Mode)					
15	Position encoder	Resistive Sensor			
16	Encoder range	30 mm			
17	Sensor resolution	~ 150 nm			
18	Repeatability	1 - 2 μm			

Piezoelectric Motion - LT

"LS-linear series" — LS-Linear50

Low Temperature · Piezoelectric Motion- Long Stroke Linear Stage

Long travel range 50 mm (2 inch), linear motion stage

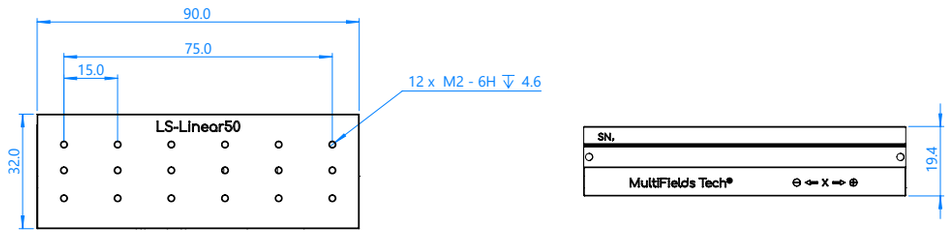


LS-Linear50

Features

- Compact design, dimensions: 90*32*19.5 mm
- Ultra-high vacuum & very low temperature compatible: 2 E-11 mbar & 30 mK
- Non-magnetic material Composed of pure Ti & BeCu, compatible with the 35 Tesla magnetic field
- High loads & high thrusts: 750 g & 3 N
- Long travel range: 50 mm
- Closed-loop control with position sensing up to 0.1 μm resolution

Dimension drawing



LS-Linear50, Specification

*All data below is measured with 50 ohm wires. Though there is no requirement on wires' conductance, we recommend resistance below 50 ohm.

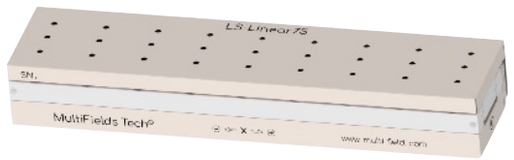
	Optional Versions ⇨	.HV (default)	.ULT	.UHV	.ULT.UHV
		.HV version, default product; .ULT version, used at He3 or dilution cryogenics systems .UHV version, compatible with 2E-11 mbar			
1	Footprint × hight	90 mm × 32 mm × 19.5 mm			
2	Weight	150 g			
Working Environment					
3	Work environment	Temperature range: 1.4 ~ 400 K Vacuum: 1e-7 mbar Max. Magnetic field: 35 Tesla			
4	Option1 - 30 mK		✓		✓
5	Option2 - 2e-11 mbar			✓	✓
Materials					
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			
Motion (Closed Loop Mode)					
10	Travel range	50 mm			
11	Max. Velocity @300 K	~ 3 mm/s			
12	Drive voltage	Max. 200 V			
13	Max. Load	750 g			
14	Dynamic force	3 N			
Position Sensor (Closed Loop Mode)					
15	Position encoder	Resistive Sensor			
16	Encoder range	50 mm			
17	Sensor resolution	~ 150 nm			
18	Repeatability	1 - 2 μm			

Piezoelectric Motion - LT

"LS-linear-series" – LS-Linear75

Low Temperature · Piezoelectric Motion- Long Stroke Linear Stage

Long travel range 75 mm (3 inch), linear motion stage

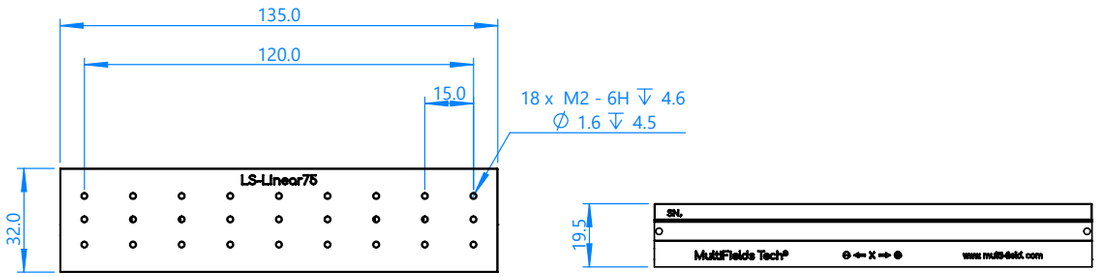


LS-Linear75

Features

- Compact design, dimensions: 135*32*19.5 mm
- Ultra-high vacuum & very low temperature compatible: 2 E-11 mbar & 30 mK
- Non-magnetic material Composed of pure Ti & BeCu, compatible with the 35 Tesla magnetic field
- High loads & high thrusts: 1000 g & 3 N
- Long travel range: 75 mm
- Closed-loop control with position sensing up to 0.1 μm resolution

Dimension drawing



LS-Linear75, Specification

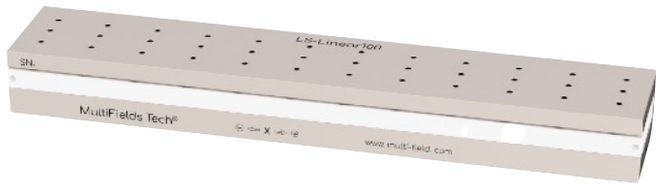
*All data below is measured with 50 ohm wires. Though there is no requirement on wires' conductance, we recommend resistance below 50 ohm.

	Optional Versions ⇨	.HV (default)	.ULT	.UHV	.ULT.UHV
		.HV version, default product; .ULT version, used at He3 or dilution cryogenics systems .UHV version, compatible with 2E-11 mbar			
1	Footprint × hight	135 mm × 32 mm × 19.5 mm			
2	Weight	200 g			
Working Environment					
3	Work environment	Temperature range: 1.4 ~ 400 K Vacuum: 1e-7 mbar Max. Magnetic field: 35 Tesla			
4	Option1 - 30 mK		✓		✓
5	Option2 - 2e-11 mbar			✓	✓
Materials					
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			
Motion (Closed Loop Mode)					
10	Travel range	75 mm			
11	Max. Velocity @300 K	~ 3 mm/s			
12	Drive voltage	Max. 200 V			
13	Max. Load	1000 g			
14	Dynamic force	3 N			
Position Sensor (Closed Loop Mode)					
15	Position encoder	Resistive Sensor			
16	Encoder range	75mm			
17	Sensor resolution	~ 150 nm			
18	Repeatability	1 - 2 μm			

"LS-linear-series" – LS-Linear100

Low Temperature · Piezoelectric Motion- Long Stroke Linear Stage

Long travel range 100 mm (4 inch), linear motion stage

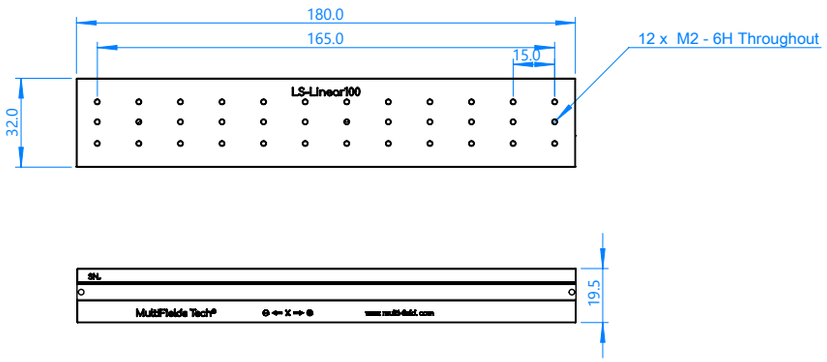


LS-Linear100

Features

- Compact design, dimensions:180*32*19.5 mm
- Ultra-high vacuum & very low temperature compatible: 2 E-11 mbar & 30 mK
- Non-magnetic material Composed of pure Ti & BeCu, compatible with the 35 Tesla magnetic field
- High loads & high thrusts: 1000 g & 3 N
- Long travel range: 100 mm
- Closed-loop control with position sensing up to 0.1 μm resolution

Dimension drawing



LS-Linear100, Specification

*All data below is measured with 50 ohm wires. Though there is no requirement on wires' conductance, we recommend resistance below 50 ohm.

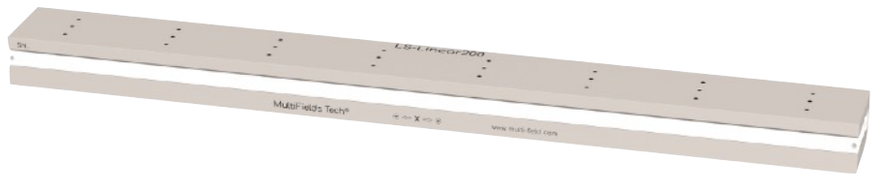
	Optional Versions ⇨	.HV (default)	.ULT	.UHV	.ULT.UHV
		.HV version, default product; .ULT version, used at He3 or dilution cryogenics systems .UHV version, compatible with 2E-11 mbar			
1	Footprint × hight	180 mm × 32 mm × 19.5 mm			
2	Weight	300 g			
Working Environment					
3	Work environment	Temperature range: 1.4 ~ 400 K Vacuum: 1e-7 mbar Max. Magnetic field: 35 Tesla			
4	Option1 - 30 mK		✓		✓
5	Option2 - 2e-11 mbar			✓	✓
Materials					
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			
Motion (Closed Loop Mode)					
10	Travel range	100 mm			
11	Max. Velocity @300 K	~ 3 mm/s			
12	Drive voltage	Max. 200 V			
13	Max. Load	1000 g			
14	Dynamic force	3 N			
Position Sensor (Closed Loop Mode)					
15	Position encoder	Resistive Sensor			
16	Encoder range	100 mm			
17	Sensor resolution	~ 150 nm			
18	Repeatibility	1 - 2 μm			

Piezoelectric Motion - LT

"LS-linear-series" – LS-Linear200

Low Temperature · Piezoelectric Motion- Long Stroke Linear Stage

Long travel range 200 mm (8 inch), linear motion stage

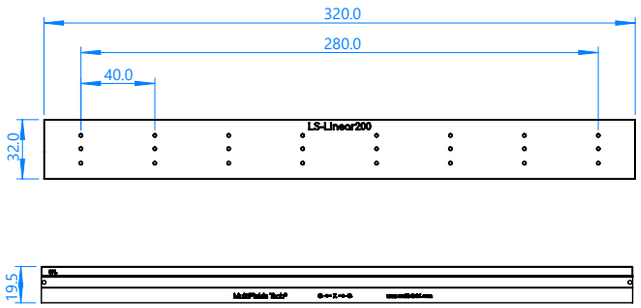


LS-Linear200

Features

- Compact design, dimensions: 320*32*19.5 mm
- Ultra-high vacuum & very low temperature compatible: 2 E-11 mbar & 30 mK
- Non-magnetic material Composed of pure Ti & BeCu, compatible with the 35 Tesla magnetic field
- High loads & high thrusts: 1500 g & 3 N
- Long travel range: 200 mm
- Closed-loop control with position sensing up to 0.1 μm resolution

Dimension drawing



LS-Linear200, Specification

*All data below is measured with 50 ohm wires. Though there is no requirement on wires' conductance, we recommend resistance below 50 ohm.

	Optional Versions ⇨	.HV (default)	.ULT	.UHV	.ULT.UHV
		.HV version, default product; .ULT version, used at He3 or dilution cryogenics systems .UHV version, compatible with 2E-11 mbar			
1	Footprint × hight	320 mm × 32 mm × 19.5 mm			
2	Weight	600 g			
Working Environment					
3	Work environment	Temperature range: 1.4 ~ 400 K Vacuum: 1e-7 mbar Max. Magnetic field: 35 Tesla			
4	Option1 - 30 mK		✓		✓
5	Option2 - 2e-11 mbar			✓	✓
Materials					
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			
Motion (Closed Loop Mode)					
10	Travel range	200 mm			
11	Max. Velocity @300 K	~ 3 mm/s			
12	Drive voltage	Max. 200 V			
13	Max. Load	1500 g			
14	Dynamic force	3 N			
Position Sensor (Closed Loop Mode)					
15	Position encoder	Resistive Sensor			
16	Encoder range	320 mm			
17	Sensor resolution	~ 150 nm			
18	Repeatibility	1 - 2 μm			

Piezoelectric Motion - LT