



Piezoelectric Motion

Non-magnetic, ultra-high vacuum compatible

1 Piezo Motor Positioning 1-36

Nanometer precision, up to 1000 mm travel

1.1



Lab Series

Stick-slip piezo motor driven stage, Classical design, 6 freedom available

3

1.2



Speed Series

High speed ultra-sonic motor driven, up to 200 mm/s

19

1.3



Force Series

High force and long range piezo motor actuator & stage

26

1.4



Indus Series

Stick-slip piezo motor driven, elegant design, up to 200mm

31

1.5



mini Series

Ultra-small footprint, down to 11 mm × 11 mm

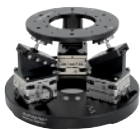
35

2

Multi Degrees of Freedom
Parallel-optimized for your application

37-50

2.3



Free XD Series

Long-travel parallel stage: 3 or 6-DOF

37

2.3.1

6 DoF X Y Z · Tx Ty Rz Stage

Ultra-compact 6-DOF parallel platform, user-definable origin, nanometer-scale precision.

39

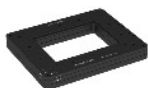
2.3.2

3 DoF ZTxTy Stage

3-DOF parallel stage: leveling + lift in one.

42

2.4



Carrier Series

2D planar stage, ultra-compact

46

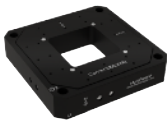
2.5



Piezo Motor Controller

Single / multi-channels, powerful driver

49

3	Piezo Scanner	51- 66
	Sub-nanometer resolution, dynamic scanning & tracking, flexure guided, frictionless motion	
3.1	 Compact series <i>Ultra-compact, capacitive closed-loop, ultra-precision S,SH,SD</i>	53
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4 Optics Automation 85-89
Precise beam steering, fast-tracking response, and ultra-static stability

4.1



Fast Steering Mirror 85

4.1.1 Z · Optical Tip-Tilt Stage 87
Mirrors.Z12

4.1.2 Tx Ty · Optical Tip-Tilt Stage 88
Mirrors.TxTy.1010, Mirrors.TxTy.0303

4.1.3 Z Tx Ty · Optical Tip-Tilt Stage 89
Mirrors.Z12TxTy0101

4.2



Piezo Motorized Mirror Mount and Autoscrew Actuator 90-91

4.2.1 AutoScrew.LR 90
Piezo Actuator, Long range, High force, Self-lock

4.2.2 AutoScrew.Nano 91
Piezo Actuator, Dynamic

4.3



Piezo Mirror Mount Driver 92-93

Chap.01

Long Stroke Motion Units (Piezoelectric Motion Stages)

Nano-scale smallest step size, completely silent operation.

1.1

Lab Series

Precision, speed,
and load balancing



1.1.1

LSx.Lab Series
X-axis motion platform



1.1.2

RSx.Lab Series
Rotational motion platform



1.1.3

GSx.Lab Series
Angular motion platform

1.2.

Speed Series

high-speed



1.2.1

LSx.Speed Series
High-speed X-axis motion
platform



1.2.2

RSx.Speed Series
High-speed rotational
motion platform

1.3. Force Series

Maximum 100N thrust



1.3.1
FDU Series
Basic motion module



1.3.2
LSx.Force Series
X-axis motion platform

1.4. Indus Series

Ultra-long range



1.4.1
Lxxx.indus Series
X-axis motion platform

1.5. mini Series

tiny footprint



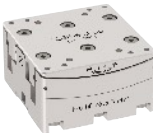
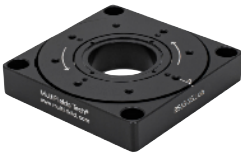
1.5.1
x.mini Series
X-axis motion platform

Part 1.1

“Lab series” Product Matrix

Balance of Speed,Minimum Incremental Motion and Load, 100+ standard modules

	X	Z
Piezo Motion - RT	 LS35x.Lab series	 LS35z.Lab series
3	 LS65x.Lab series	 LS65z.Lab series
	N/A	 LS80z.Lab series
	 LS105x.Lab series	N/A
.NM Non-magnetic, .HV, High Vacuum Version, .UHV, Ultra High Vacuum Version		

Tx		Rz	
			35 mm
GS35-35.Lab series	GS35-55.Lab series	RS35.Lab series	
			65 mm
GS65-77.Lab series	GS65-97.Lab series	RS65.Lab series	
N/A		N/A	80mm
N/A		N/A	105mm

.NM Non-magnetic, .HV, High Vacuum Version, .UHV, Ultra High Vacuum Version

“Lab Series”

Balance of Speed, Load and Size

Environment 

Standard

Atmosphere

	Dimensions 	Motion Direction 	Product Code 	
Standard, 12 / 72	35 mm × 35 mm	X	LS35x.Lab	✓
		Z	LS35z.Lab	✓
		Rz	RS35.Lab	✓
		Tx	GS35-35.Lab	✓
		Ty	GS35-55.Lab	✓
	65 mm × 65 mm	X	LS65x.Lab	✓
		Z	LS65z.Lab	✓
		Rz	RS65.Lab	✓
		Tx	GS65-77.Lab	✓
		Ty	GS65-97.Lab	✓
Cost Effective, 4 / 4	80 mm x 80 mm	Z	LS80z.Lab	✓
	105 mm x 105 mm	X	LS105x.Lab	✓
	35 mm × 35 mm	X	LS35x.Lab.E	✓
		Rz	RS35.Lab.E	✓
	65 mm × 65 mm	X	LS65x.Lab.E	✓
		Rz	RS65.Lab.E	✓
Advanced, 5 / 30	35 × 35 mm	X	LS35x.Lab.adv	✓
		Z	LS35z.Lab.adv	✓
	65 × 65 mm	X	LS65x.Lab.adv	✓
		Z	LS65z.Lab.adv	✓
	105 mm x 105 mm	X	LS105x.Lab.adv	✓

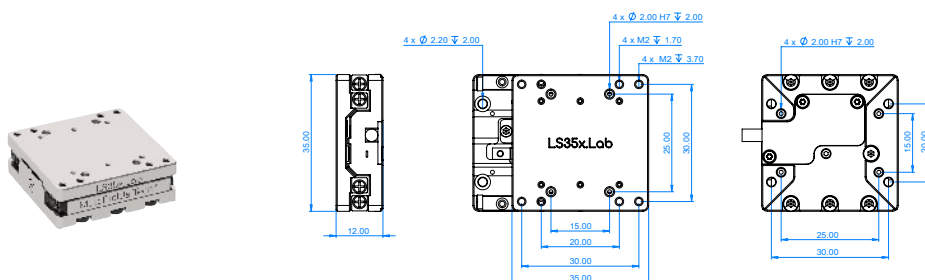
	.HV	.UHV	.NM	.NM.HV	.NM.UHV
	High Vacuum	Ultra High Vacuum	Non-magnetic	NM and HV	NM and UHV
	1E - 7 mabr	2E - 11 mbar	Atmosphere Non-magnetic	1E - 7 mbar Non-magnetic	2E - 11 mbar Non-magnetic
	✓	✓	✓	✓	✓
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“Lab series” Linear Stage — LS35x.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

- ➔ Feature
 - Sub nanometer tuning resolution
 - UHV, Non-magnetic
 - Millions cycle life time
 - Stackable with rotary stages, goniometers, and more.

➔ Photo & Drawing



➔ Specification		LS35x.Lab	LS35x.Lab.E
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Dimensions	35 × 35 × 12 mm	
3	Materials	Standard, .HV, .UHV Stainless steel: 85 g; .NM,Ti; 60g	Stainless steel; 85 g
4	Travel Range	20 mm	
5	Velocity	Default: 0.1 μm/s ~ 20 mm/s; .HV & .UHV: 0.1 μm/s ~ 2 mm/s	
6	Driving Force	Typical: 2 N ; On request: 4 N	2 N
7	Holding Force	Typical: 3 N ; On request: 5 N	
8	Horizontal Max Load	1 kg	
9	Vertical Max Load	Default: 100 g,Selectable: 250 g	
10	Bidirectional Repeatability	± 100 nm	± 300 nm
11	Pitch / Yaw	0.3 mrad	
12	Minimum Incremental Motion (Close-loop)	5 nm	100 nm
13	Displacement Sensor	Optical Sensor	
14	Position Sensor Resolution	Default: 2 nm; .adv 0.5 nm;	50 nm
15	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)	
16	Motion Controller	MC-Newton.S	

* For detail drawing and 3D model please contact us.

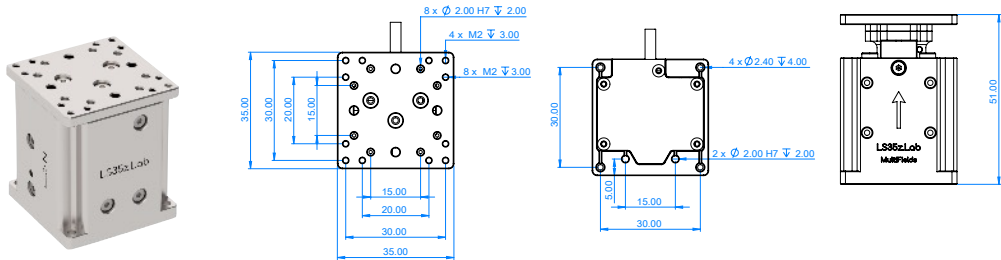
“Lab series” Elevation Stage — LS35z.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➡ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Stackable with other Lab series stage
- Nanometer Resolution

➡ Photo & Drawing



➡ Specification

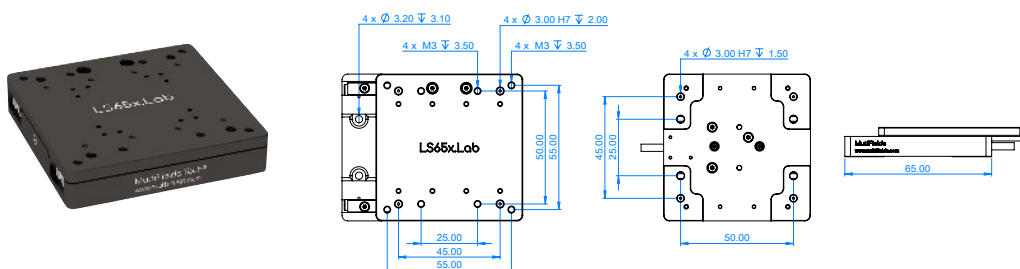
		LS35z.Lab	LS35z.Lab.E
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	/
2	Dimensions	35 × 35 × 41 mm	
3	Materials	Standard .HV, .UHV Stainless steel: 250 g; .NM,Ti,Ceramic: 160 g	Stainless steel; 250 g
4	Travel Range	10 mm	
5	Velocity	Default: 0.1 μm/s ~ 10 mm/s; .HV & .UHV : 1 mm/s	
6	Holding Force	7.5 N	
7	Horizontal Max Load	Typical: 500 g; Selectable: 1.5 kg	
8	Bidirectional Repeatability	± 150 nm	± 300 nm
9	Pitch / Yaw	0.3 mrad	
10	Minimum Incremental Motion (Close-loop)	5 nm	100 nm
11	Displacement Sensor	Optical Sensor	
12	Position Sensor Resolution	Default: 2 nm; .Optional: 0.5 nm;	50 nm
13	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)	
14	Motion Controller	MC-Newton.S	

更多产品详情、图纸及三维模型,请联系我们获取。

“Lab series” Linear Stage — LS65x.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

- ➔ Feature
 - UHV, Non-magnetic
 - Millions cycle life time
 - Nanometer resolution
 - Stackable with rotary stages, goniometers, and more.
- ➔ Photo & Drawing



➔ Specification		LS65x.Lab	LS65x.Lab.E
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Dimensions	65 × 65 × 13 mm	
3	Materials	Standard Aluminum,Steel: 160 g; .HV, .UHV Ti,Steel: 260 g; NM,Ti,Ceramic; 110 g	Aluminum,Steel; 160 g
4	Travel Range	30 mm	
5	Velocity	Default: 0.1 μm/s ~ 20 mm/s; .HV & .UHV: 0.1 μm/s ~ 2 mm/s	
6	Driving Force	Typical: 2 N ; On request: 4 N	
7	Holding Force	Typical: 3 N ; On request: 5 N	
8	Horizontal Max Load	2 kg	
9	Vertical Max Load	Default: 100 g, On request: 250 g	
10	Bidirectional Repeatability	± 100 nm	± 300 nm
11	Pitch / Yaw	0.3 mrad	
12	Minimum Incremental Motion (Close-loop)	5 nm	100 nm
13	Displacement Sensor	Optical Sensor	
14	Position Sensor Resolution	Default: 2 nm; .adv 0.5 nm;	50 nm
15	Cable & Connector	Default: Shielded CableD-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)	
16	Motion Controller	MC-Newton.S	

* For detail drawing and 3D model please contact us.

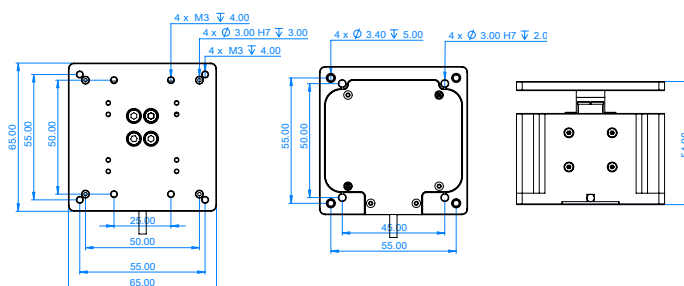
“Lab series” Elevation Stage — LS65z.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➔ Feature

- UHV, Non-magnetic
- Millions cycle life time
- Nanometer resolution
- Stackable with rotary stages, goniometers, and more.

➔ Photo & Drawing



➔ Specification

		LS65z.Lab	LS65z.Lab.E
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	/
2	Dimensions	65 × 65 × 44 mm	
3	Materials	Standard Aluminum,Steel: 310 g; .NM Ti,Ceramic: 270 g; .HV .UHV Ti,Steel: 500 g	Aluminum,Steel: 310 g
4	Travel Range	10 mm	
5	Velocity	Default: 0.1 μm/s ~ 10 mm/s; .HV & .UHV: 1 mm/s	
6	Holding Force	7.5 N	
7	Horizontal Max Load	Typical: 500 g; On request: 1.5 kg	
8	Bidirectional Repeatability	± 150 nm	± 300 nm
9	Pitch / Yaw	0.3 mrad	
10	Minimum Incremental Motion (Close-loop)	5 nm	100 nm
11	Displacement Sensor	Optical Sensor	
12	Position Sensor Resolution	Default: 2 nm; .adv 0.5 nm;	50 nm
13	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)	
14	Motion Controller	MC-Newton.S	

* For detail drawing and 3D model please contact us.

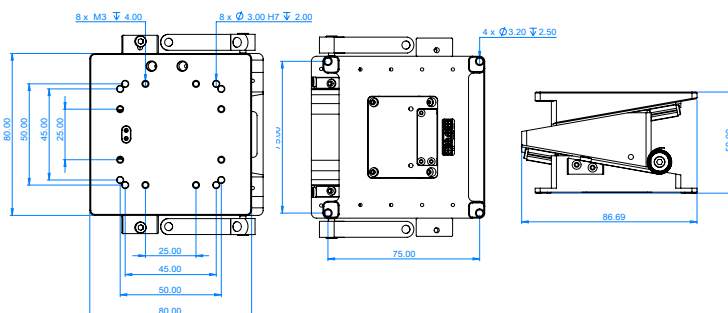
“Lab series” Elevation Stage — LS80z.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➡ Feature

- Quiet Motion
- Self-lock
- Higher Force
- Nanometer Resolution
- Optical Sensor Inside
- Stackable with other Lab series stage

➡ Photo & Drawing



➡ Specification

LS80z.Lab

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	80 × 80 × 40 mm
3	Materials	Standard Aluminum, Steel: 720 g; .HV .UHV Ti, Steel: 840 g; .NM Ti, Ceramic: 640 g
4	Travel Range	10 mm
5	Velocity	Default: 0.1 µm/s ~ 3 mm/s; .HV & .UHV: 0.3 mm/s
6	Holding Force	15 N
7	Horizontal Max Load	Typical: 1 kg; (up to 3 kg on request)
8	Bidirectional Repeatability	± 150 nm
9	Pitch / Yaw	0.3 mrad
10	Minimum Incremental Motion (Close-loop)	5 nm
11	Displacement Sensor	Optical Sensor
12	Position Sensor Resolution	Default: 2 nm; .adv 0.5 nm; .E 50 nm
13	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
14	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

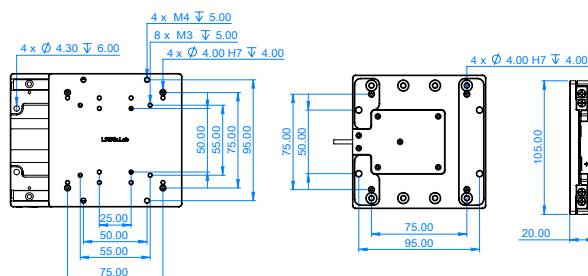
“Lab series” Linear Stage — LS105x.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➡ Feature

- Quiet Motion
- Self-lock
- Higher Force
- Nanometer Resolution
- Optical Sensor Inside
- Stackable with other Lab series stage

➡ Photo & Drawing



➡ Specification

LS105x.Lab

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	105 × 105 × 20 mm
3	Materials	Standard Aluminum,Steel: 630 g; .HV .UHV Ti,Steel: 910 g; .NM Ti,Ceramic: 770 g
4	Travel Range	60 mm
5	Velocity	Default: 0.1 μm/s ~ 20 mm/s; .HV & .UHV: 0.1 μm/s ~ 2 mm/s
6	Driving Force	3 N
7	Holding Force	5 N
8	Horizontal Max Load	4 kg
9	Bidirectional Repeatability	±100 nm
10	Pitch / Yaw	0.2 mrad
11	Minimum Incremental Motion (Close-loop)	5 nm
12	Displacement Sensor	Optical Sensor
13	Position Sensor Resolution	Default: 2 nm; .adv 0.5 nm; .E 50 nm
14	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
15	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

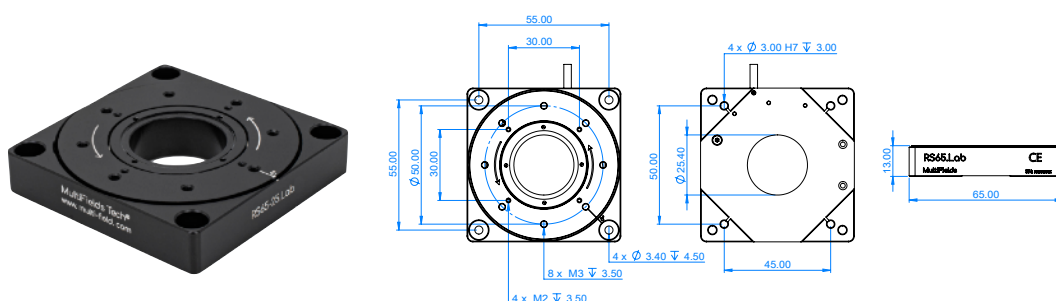
“Lab series” Rotary Stage — RS65.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➡ Feature

- Quiet Motion
- Self-lock
- Clear Aperture
- Nanometer Resolution
- Optical Sensor Inside
- Stackable with other Lab series stage

➡ Photo & Drawing



➡ Specification

		RS65.Lab	RS65.Lab.E
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	/
2	Dimensions	65 × 65 × 13 mm	
3	Aperture	Φ 25.4 mm	
4	Rotary table Diameter	Φ 62 mm	
5	Materials	Standard Aluminum,Steel: 120 g; .HV, .UHV Ti,Steel: 170 g; .NM Ti,Ceramic: 120 g	Aluminum,Steel: 120 g
6	Travel Range	360 °	
7	Velocity	Default: 0.0005 °/s ~ 25 °/s; .HV & .UHV: 2.5 °/s	
8	Max. Load(horizontal mounting)	1 kg	
9	Holding torque	0.1 N·m	
10	Driving torque	0.04 N·m	
11	Minimum Incremental Motion	3 μrad	10 μrad
12	Bidirectional Repeatability	± 5 μrad	± 20 μrad
13	Displacement Sensor	Optical Sensor	
14	Position Sensor Resolution	Default: 0.07 μrad; 经济版本 .E: 2 μrad	
15	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)	
16	Motion Controller	MC-Newton.S	

* For detail drawing and 3D model please contact us.

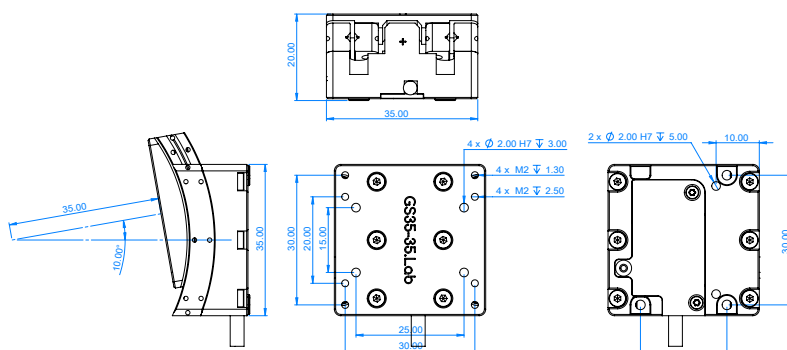
“Lab series” Goniometer Stage — GS35–35.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➔ Feature

- Nanometer Resolution
- Self-lock
- Optical Sensor Inside
- Stackable with other Lab series stage
- Co-pivot Center with GS35–55.Lab

➔ Photo & Drawing



➔ Specification

GS35–35.Lab

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	35 × 35 × 20 mm
3	Materials	Standard .HV, .UHV Stainless steel: 250 g; .NM Ti,Ceramic: 90 g
4	Travel Range	± 8 °
5	Swing Radius	35 mm
6	Velocity	Default: 0.0005 °/s ~ 3 °/s; .HV & .UHV : Recommended 0.3 °/s
7	Max. Load	1 kg
8	Holding torque	0.2 N·m
9	Driving torque	0.07 N·m
10	Minimum Incremental Motion (Close-loop)	2 μrad
11	Bidirectional Repeatability	± 10 μrad
12	Displacement Sensor	Optical Sensor
13	Position Sensor Resolution	0.05 μrad
14	Cable & Connector	Default: Shielded Cable D–Sub15; .UHV: Kapton wire, D–Sub15 (PEEK)
15	Motion Controller	MC–Newton.S

* For detail drawing and 3D model please contact us.

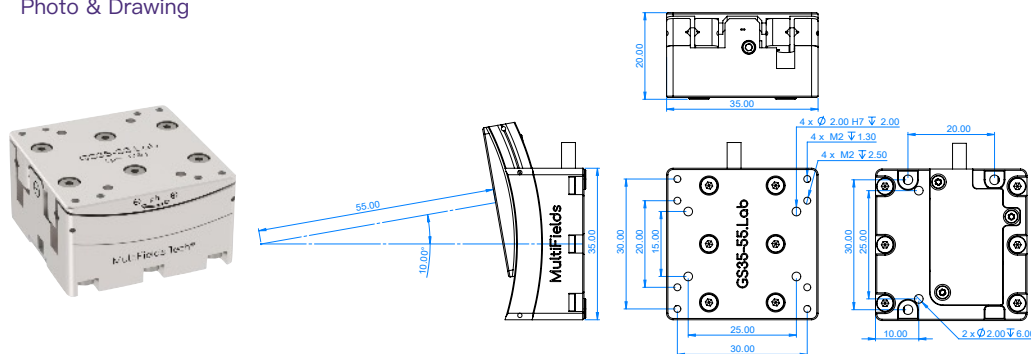
“Lab series” Goniometer Stage — GS35-55.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➔ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution
- Stackable with other Lab series stage
- Co-pivot Center with GS35-35.Lab

➔ Photo & Drawing



➔ Specification

GS35-55.Lab

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	35 × 35 × 20 mm
3	Materials	Standard .HV, .UHV Stainless steel: 250 g; .NM Ti,Ceramic: 90 g
4	Travel Range	± 8 °
5	Swing Radius	55 mm
6	Velocity	Default: 0.0005 °/s ~ 3 °/s; .HV & .UHV : Recommended 0.3 °/s
7	Max. Load	1 kg
8	Holding torque	0.2 N·m
9	Driving torque	0.07 N·m
10	Minimum Incremental Motion (Close-loop)	2 μrad
11	Bidirectional Repeatability	± 10 μrad
12	Displacement Sensor	Optical Sensor
13	Position Sensor Resolution	0.03 μrad
14	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
15	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

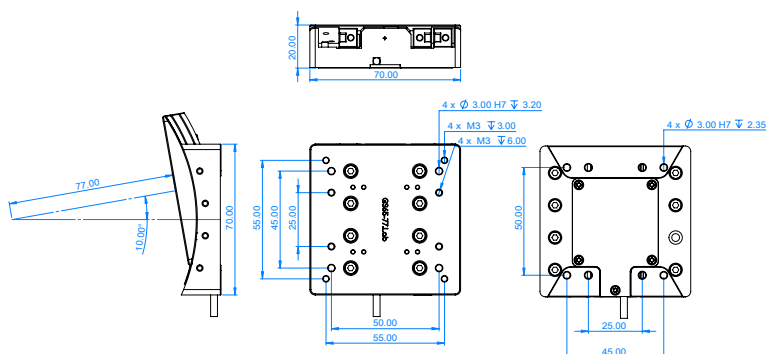
“Lab series” Goniometer Stage — GS65–77.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

➔ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution
- Stackable with other Lab series stage
- Co-pivot Center with GS65–97.Lab

➔ Photo & Drawing



➔ Specification

GS65–77.Lab

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	70 × 70 × 20 mm
3	Materials	Standard Aluminum: 310 g; .HV Ti,Steel: 310 g; .UHV Ti,Steel: 430 g; .NM Ti,Ceramic: 290 g
4	Travel Range	± 10 °
5	Swing Radius	77 mm
6	Velocity	Default: 0.0005 °/s ~ 3 °/s; .HV & .UHV : Recommended 0.3 °/s
7	Max. Load	2 kg
8	Holding torque	0.4 N·m
9	Driving torque	0.15 N·m
10	Minimum Incremental Motion	1 μrad
11	Bidirectional Repeatability	± 7.5 μrad
12	Displacement Sensor	Optical Sensor
13	Position Sensor Resolution	0.02 μrad
14	Cable & Connector	Default: Shielded Cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
15	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

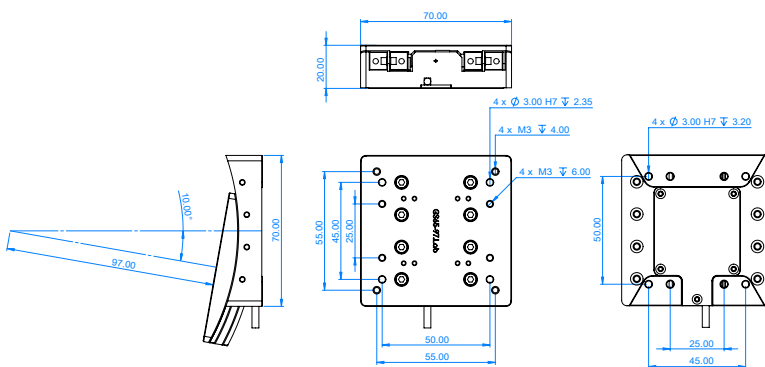
“Lab series” Goniometer Stage — GS65–97.Lab

Balance of Speed, Travel Range and Resolution, Quiet Motion

Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution
- Stackable with other Lab series stage
- Co-pivot Center with GS65–77.Lab

Photo & Drawing



Specification

GS65–97.Lab

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	70 × 70 × 20 mm
3	Materials	Standard Aluminum: 310 g; .HV Ti,Steel: 310 g; .UHV Ti,Steel: 430 g; .NM Ti,Ceramic: 290 g
4	Travel Range	± 10 °
5	Swing Radius	97 mm
6	Velocity	Default: 0.0005 °/s ~ 3 °/s; .HV & .UHV : Recommended 0.3 °/s
7	Max. Load	2 kg
8	Holding torque	0.4 N·m
9	Driving torque	0.15 N·m
10	Minimum Incremental Motion	1 μrad
11	Bidirectional Repeatability	± 7.5 μrad
12	Displacement Sensor	Optical Sensor
13	Position Sensor Resolution	0.02 μrad
14	Cable & Connector	Default: Shielded Cable D–Sub15; .UHV: Kapton wire, D–Sub15 (PEEK)
15	Motion Controller	MC–Newton.S

* For detail drawing and 3D model please contact us.

Part 1.2

“Speed Series”

Speed up to 200 mm/s, driven by ultrasonic piezo motor



➔ LS50x.Speed

Piezoelectric ultrasonic drive, closed-loop, linear motion

Range: 20 mm (up to 50 mm optional)

Speed: 200 mm/s

Minimum Incremental Motion: 50 nm



➔ LS65x.Speed

Piezoelectric ultrasonic drive, closed-loop, linear motion

Range: 30 mm (up to 100 mm optional)

Speed: 200 mm/s

Minimum Incremental Motion: 50 nm



➔ LS105x.Speed

Piezoelectric ultrasonic drive, closed-loop, linear motion

Range: 60 mm (up to 200 mm optional)

Speed: 200 mm/s (up to 500 mm/s optional)

Minimum Incremental Motion: 50 nm

RS65.Speed ➔

Piezoelectric ultrasonic drive, closed-loop, rotational motion

Range: > 360°

Speed: 720 °/s

Minimum Incremental Motion: 5 µrad



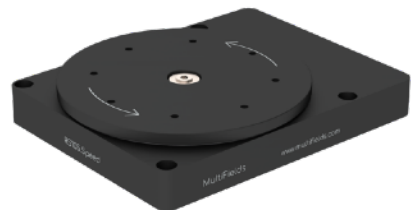
RS105.Speed ➔

Piezoelectric ultrasonic drive, closed-loop, rotational motion

Range: > 360°

Speed: 200 °/s

Minimum Incremental Motion: 5 µrad



Part 1.3

“Force Series”

Powerful & long range piezo actuator, output force exceed 100N.



➔ FDU030

Piezoelectric inchworm drive, linear motion.

Travel Range: 20 mm

Driving Force: 30 N

Minimum Incremental Motion: 2 nm



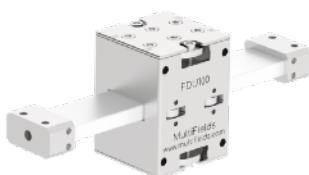
➔ FDU030.Pro

Piezoelectric inchworm drive, linear motion.

Travel Range: 15 mm

Driving Force: 30 N

Minimum Incremental Motion: 2 nm



➔ FDU100

Piezoelectric inchworm drive, linear motion.

Travel Range: 70 mm (up to 100 mm optional)

Driving Force: 100 N

Minimum Incremental Motion: 2 nm

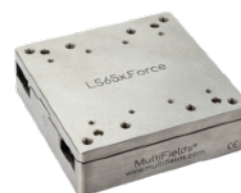
➔ LS65x.Force

Piezoelectric inchworm drive, optical encoder closed-loop, linear motion

Travel Range: 30 mm

Driving Force: 30 N

Minimum Incremental Motion: 5 nm



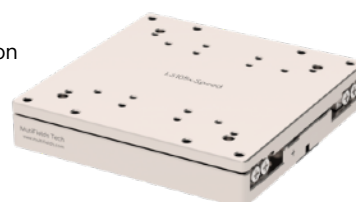
➔ LS105x.Force

Piezoelectric inchworm drive, optical encoder closed-loop, linear motion

Travel Range: 60 mm

Driving Force: 60 N

Minimum Incremental Motion: 5 nm



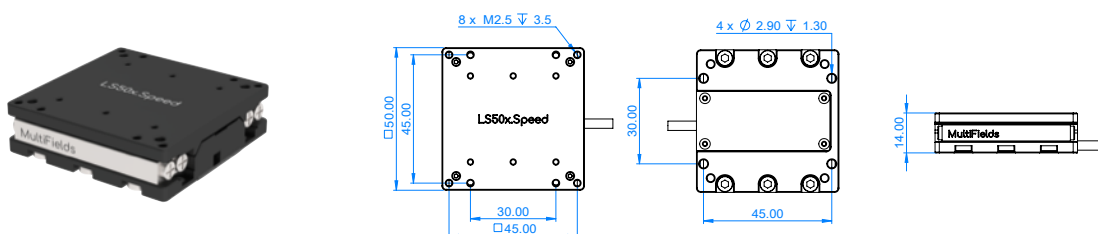
“Speed Series” Linear Stage — LS50x.Speed

Quiet, high-speed, long life time

➔ Feature

- Quiet Motion
- High-speed motion
- Closed-loop Motion Control
- Nanometer Resolution

➔ Photo & Drawing



➔ Specification

LS50x.Speed

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	50 x 50 x 14 mm
3	Materials	Standard/.NM: Aluminum; .HV/.UHV: Ti
4	Travel Range	24 mm (up to 50 mm)
5	Cable & Connector	Standard/.NM/.HV: Shielded Cable&D-SUB15; .UHV: kapton & PEEK D-SUB15
6	Max. Velocity	200 mm/s
7	Minimum Incremental Motion	50 nm
8	Driving Force	2 N
9	Holding Force	2 N
10	Pitch / Yaw	0.3 mrad
11	Horizontal Max Load	2 kg
12	Vertical Max Load	150 g
13	Sensor Type	Optical Sensor
14	Sensor Resolution	2 nm
15	Motion Controller	MC-Doppler

* For detail drawing and 3D model please contact us.

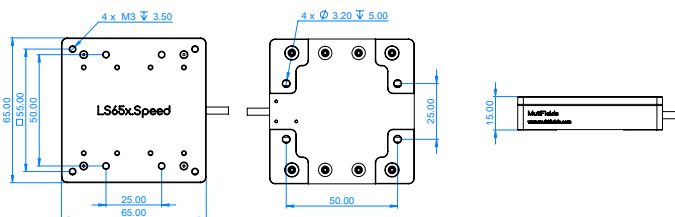
“Speed Series” Linear Stage — LS65x.Speed

Quiet, high-speed, long life time

➔ Feature

- Quiet Motion
- High-speed
- Closed-loop Motion Control
- Nanometer Resolution

➔ Photo & Drawing



➔ Specification

LS65x.Speed

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	65 x 65 x 15 mm
3	Materials	Standard/.NM: Aluminum; .HV/.UHV: Ti
4	Travel Range	30 mm (up to 100 mm)
5	Cable & Connector	Standard/.NM/.HV: Shielded Cable&D-SUB15; .UHV: kapton&PEEK D-SUB15
6	Max. Velocity	200 mm/s
7	Minimum Incremental Motion	50 nm
8	Driving Force	3 N
9	Holding Force	3 N
10	Pitch / Yaw	0.2 mrad
11	Horizontal Max Load	3 kg
12	Vertical Max Load	150 g (up to 250 g for the high-thrust version)
13	Sensor Type	Optical Sensor
14	Sensor Resolution	2 nm
15	Motion Controller	MC-Doppler

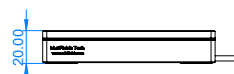
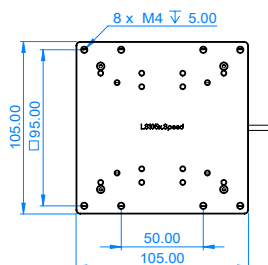
* For detail drawing and 3D model please contact us.

“Speed Series” Linear Stage — LS105x.Speed

Quiet, high-speed, long life time

- ➔ Feature
 - Quiet Motion
 - High-speed
 - Closed-loop Motion Control
 - Nanometer Resolution

➔ Photo & Drawing



➔ Specification

LS105x.Speed

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	105 x 105 x 20 mm
3	Materials	Standard/.NM: Aluminum; .HV/.UHV: Ti
4	Travel Range	60 mm (customization up to 200 mm)
5	Cable & Connector	Standard/.NM/.HV: Shielded Cable&D-SUB15; .UHV: kapton&PEEK D-SUB15
6	Max. Velocity	200 mm/s
7	Minimum Incremental Motion	50 nm
8	Driving Force	4 N
9	Holding Force	4 N
10	Pitch / Yaw	0.2 mrad
11	Horizontal Max Load	5 kg
12	Vertical Max Load	Not recommended
13	Sensor Type	Optical Sensor
14	Sensor Resolution	2 nm
15	Motion Controller	MC-Doppler

* For detail drawing and 3D model please contact us.

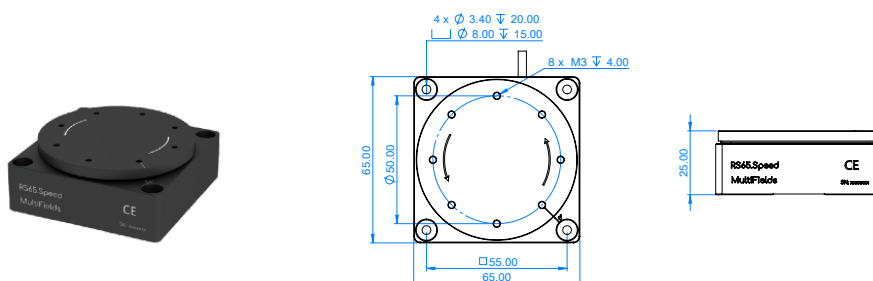
“Speed Series” Rotary Stage — RS65.Speed

Quiet, high-speed, long life time

➔ Feature

- High torque
- Compact size
- High rotational speed
- Closed-loop control with built-in grating position sensor

➔ Photo & Drawing



➔ Specification

RS65.Speed

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	65 x 65 x 25 mm
3	Materials	Standard/.NM: Aluminum; .HV/.UHV: Ti
4	Travel Range	360°
5	Driving Frequency	40~50 kHz
6	Cable & Connector	Standard/.NM/.HV: Shielded Cable&D-SUB15
7	Maximum rotational speed	720 °/s
8	Minimum Incremental Motion	50 μrad
9	Driving torque	0.1 N·m
10	Holding torque	0.1 N·m
11	Horizontal Max Load	2 kg
12	Sensor Type	Optical Sensor
13	Sensor Resolution	5 μrad
14	Motion Controller	MC-Doppler

* For detail drawing and 3D model please contact us.

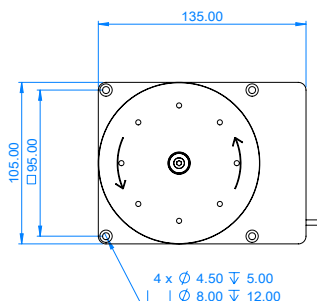
“Speed Series” Rotary Stage — RS105.Speed

High-speed, long life time

➔ Feature

- High torque
- High rotational speed
- Closed-loop control with built-in grating position sensor

➔ Photo & Drawing



➔ Specification

RS105.Speed

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	135 x 105 x 23 mm
3	Materials	Standard/.NM: Aluminum; .HV/.UHV: Ti
4	Travel Range	360°
5	Driving Frequency	70~80 kHz
6	Cable & Connector	Standard/.NM/.HV: Shielded Cable&D-SUB15 .UHV: kapton&PEEK D-SUB15
7	Maximum rotational speed	200 °/s
8	Minimum Incremental Motion	10 μrad
9	Driving torque	0.2 N·m
10	Holding torque	0.2 N·m
11	Horizontal Max Load	5 kg
12	Sensor Type	Optical Sensor
13	Sensor resolution	1 μrad
14	Motion Controller	MC-Doppler

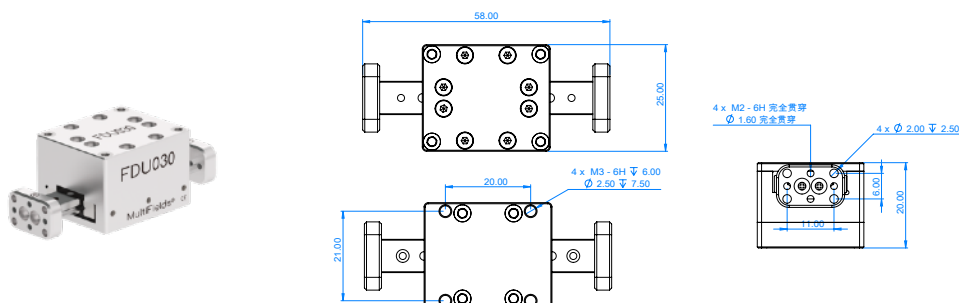
* For detail drawing and 3D model please contact us.

“Force Series” Actuator — FDU030

Ultra-high resolution, high-power piezoelectric actuators

- ➔ Feature
- High-driving force
 - High-resolution precision displacement

➔ Photo & Drawing



➔ Specification

FDU030

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	58 x 25 x 20 mm
3	Materials	Standard, .HV, .UHV Steel: 100 g; .NM Titanium Alloy,Ceramic: 60 g
4	Travel Range	20 mm
5	Velocity	Default: 0.1 mm/s ~ 3 mm/s; .HV & .UHV: 0.1 mm/s ~ 0.3 mm/s
6	Driving Force	30 N
7	Holding Force	40 N
8	Minimum Incremental Motion (Open-loop)	2 nm
9	Open-loop Motion Resolution	0.02 nm
10	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
11	Motion Controller	MC-LuZhishen

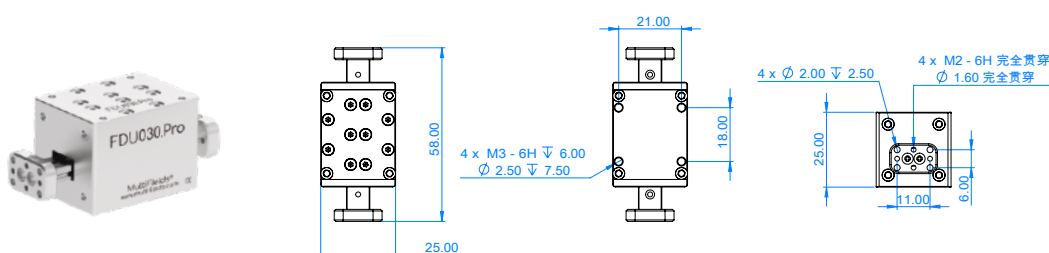
* For detail drawing and 3D model please contact us.

“Force Series” Actuator — FDU030.Pro

Ultra-high resolution, high-power piezoelectric actuators

- ➔ Feature
 - High-driving force
 - High-resolution precision displacement

➔ Photo & Drawing



➔ Specification

FDU030.Pro

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	58 x 25 x 25 mm
3	Materials	Standard, .HV, .UHV Steel: 130 g; .NM Titanium Alloy, Ceramic: 75 g
4	Travel Range	15 mm
5	Velocity	Default: 0.1 mm/s ~ 3 mm/s; .HV & .UHV : 0.1 mm/s ~ 0.3 mm/s
6	Driving Force	30 N
7	Holding Force	40 N
8	Bidirectional Repeatability	± 125 nm
9	Pitch / Yaw	0.3 mrad
10	Minimum Incremental Motion (Open-loop)	2 nm
11	Minimum Incremental Motion (Close-loop)	5 nm
12	Open-loop Motion Resolution	0.02 nm
13	Sensor Type	Optical Sensor
14	Position Sensor Resolution	2 nm
15	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
16	Motion Controller	MC-LuZhishen

* For detail drawing and 3D model please contact us.

“Force Series” Actuator — FDU100

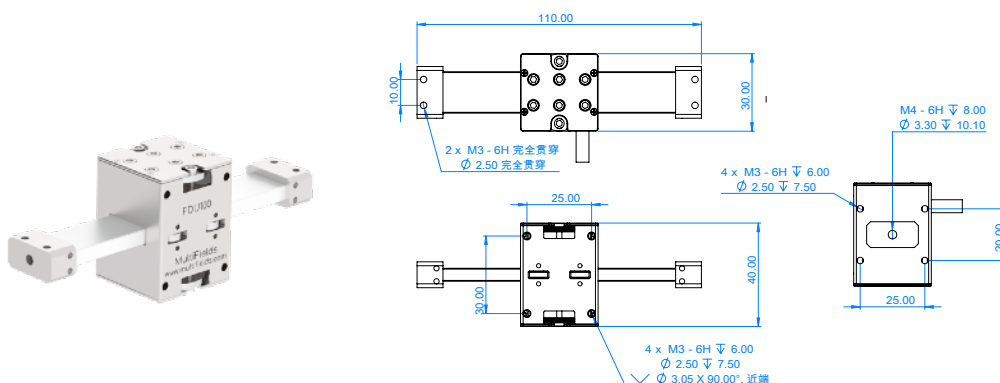
Ultra-high resolution, high-power piezoelectric actuators

➔ Feature

• High-driving force

• High-resolution precision displacement

➔ Photo & Drawing



➔ Specification

FDU100

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	110 x 30 x 40 mm
3	Materials	Standard, .HV, .UHV Steel: 200 g; .NM Titanium Alloy, Ceramic: 130 g
4	Travel Range	70 mm
5	Velocity	Default: 0.1 mm/s ~ 9 mm/s; .HV & .UHV : 0.1 mm/s ~ 0.9 mm/s
6	Driving Force	100 N
7	Holding Force	120 N
8	Minimum Incremental Motion (Open-loop)	2 nm
9	Open-loop Motion Resolution	0.02 nm
10	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
11	Motion Controller	MC-LuZhishen

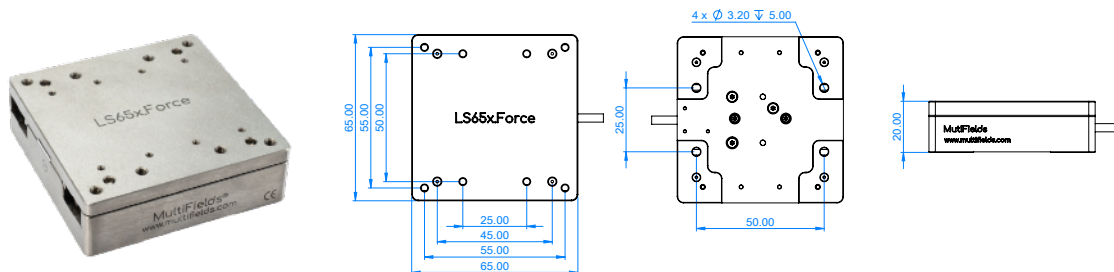
* For detail drawing and 3D model please contact us.

“Force Series” Linear Stage — LS65x.Force

➡ Feature

- High-driving force
- Direct drive zero backlash
- High-load vertical lifting
- Closed-loop control with built-in optical sensor
- Excellent guiding system
- Complete motion stage design for easy installation and use

➡ Photo & Drawing



➡ Specification

LS65x.Force

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	65 x 65 x 20 mm
3	Materials	Standard, .HV, .UHV Steel: 550 g; .NM Titanium Alloy,Ceramic: 300 g
4	Travel Range	30 mm
5	Velocity	Default: 0.1 mm/s ~ 3 mm/s; .HV & .UHV : Recommended 0.3 mm/s
6	Driving Force	30 N
7	Holding Force	40 N
8	Horizontal Max Load	5 kg
9	Vertical Max Load	3 kg
10	Bidirectional Repeatability	± 125 nm
11	Pitch / Yaw	0.3 mrad
12	Minimum Incremental Motion (Open-loop)	2 nm
13	Minimum Incremental Motion (Close-loop)	5 nm
14	Sensor Type	Optical Sensor
15	Position Sensor Resolution	2 nm
16	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
17	Motion Controller	MC-LuZhishen

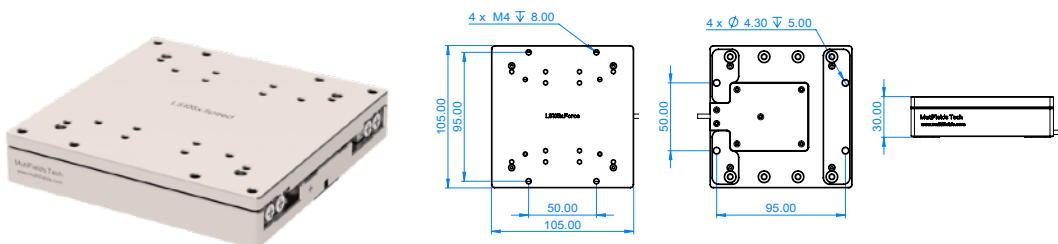
* For detail drawing and 3D model please contact us.

“Force Series” Linear Stage — LS105x.Force

➡ Feature

- High-performance driving force
- Direct drive with zero backlash
- High-load vertical lifting
- Closed-loop control with built-in grating position sensor
- Excellent guiding system

➡ Photo & Drawing



➡ Specification

LS105x.Force

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	105 x 105 x 30 mm
3	Materials	Standard, .HV, .UHV Steel: 2 kg; .NM Titanium Alloy,Ceramic: 1.2 kg
4	Travel Range	60 mm
5	Velocity	Default: 0.1 mm/s ~ 3 mm/s; .HV & .UHV: Recommended 0.3 mm/s
6	Driving Force	60 N
7	Holding Force	80 N
8	Horizontal Max Load	10 kg
9	Vertical Max Load	6 kg
10	Bidirectional Repeatability	± 125 nm
11	Pitch / Yaw	0.2 mrad
12	Minimum Incremental Motion (Open-loop)	2 nm
13	Minimum Incremental Motion (Close-loop)	5 nm
14	Sensor Type	Optical Sensor
15	Position Sensor Resolution	2 nm
16	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
17	Motion Controller	MC-LuZhishen

* For detail drawing and 3D model please contact us.

Part 1.4

“Indus Series”

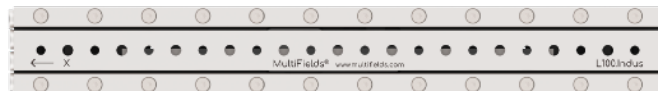
Stick-slip piezo motor driven stage,
Elegant design, travel range up to 200mm

L050.Indus ➡



Dimensions: 24 × 90 × 14 mm

L100.Indus ➡



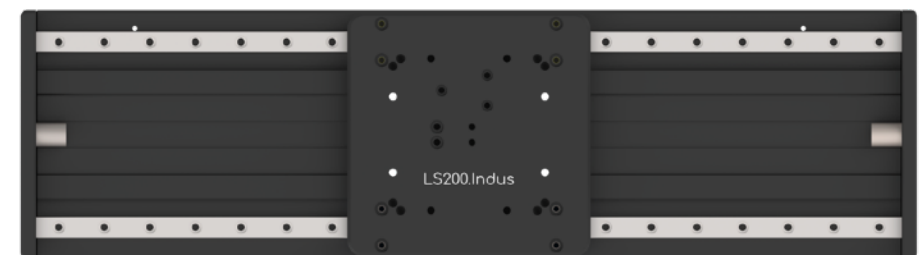
Dimensions: 24 × 180 × 14 mm

L150.Indus ➡



Dimensions: 36 × 250 × 16.5 mm

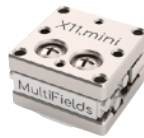
LS200.Indus ➡



Dimensions: 82 × 295 × 20 mm

Part 1.5 “mini Series”

Ultra compact form, linear motion stage.



➔ X11.mini

Dimensions: 11 × 11 × 6.5 mm



➔ X20.mini

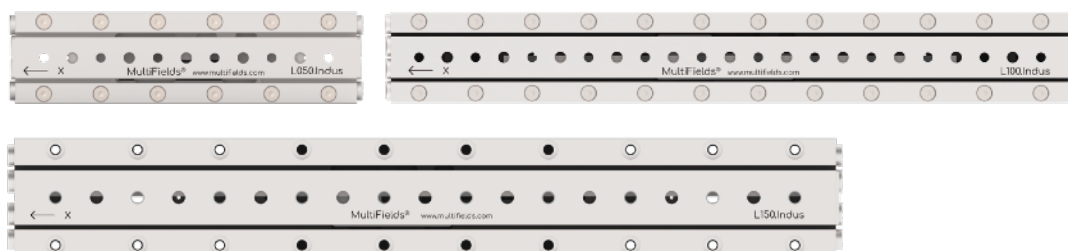
Dimensions: 20 × 20 × 12 mm

“Indus Series” Linear Stage — L050.Indus ~ L150.Indus

Easy Integration Module with Multiple Travel Range

- Feature
 - Quiet Motion
 - Self-lock
 - Optical Sensor Inside
 - Nanometer Resolution
 - Multiple Travel Range

产品图片



Specification

		L050.Indus	L100.Indus	L150.Indus
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;		
2	Dimensions	90 × 24 × 14 mm	180 × 24 × 14 mm	250 × 36 × 16.5 mm
3	Materials	Standard, .HV, .UHV; .NM: Ti,Ceramic		
4	Mass	174 g (Standard)	388 g (Standard)	840 g (Standard)
~	Travel Range	50 mm	100 mm	150 mm
6	Mounting Space	140 × 24 × 14 mm	280 × 24 × 14 mm	400 × 36 × 16.5 mm
7	Velocity	Default: 0.1 μm/s ~ 10 mm/s; .HV & .UHV: 0.1 μm/s ~ 1 mm/s		
8	Driving Force	2 N		
9	Holding Force	3 N		
10	Horizontal Max Load	1 kg	2 kg	3 kg
11	Bidirectional Repeatability	± 150 nm		
12	Pitch / Yaw	0.2 mrad		
13	Minimum Incremental Motion (Close-loop)	5 nm		
14	Displacement Sensor	Optical Sensor		
15	Position Sensor Resolution	2 nm		
16	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)		
17	Motion Controller	MC-Newton.S		

* For detail drawing and 3D model please contact us.

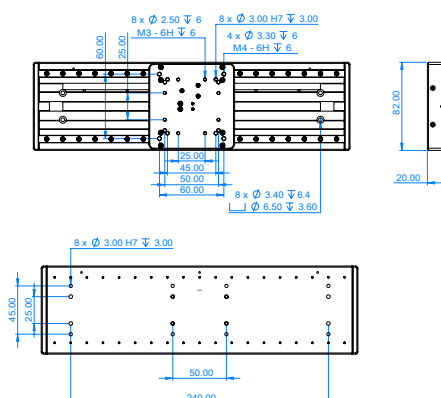
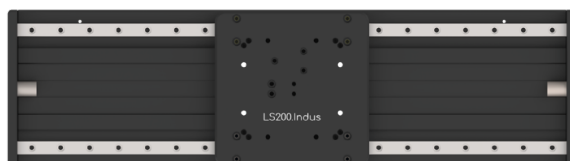
“Indus Series” Linear Stage — LS200.Indus

Easy Integration Module with Multiple Travel Range

➔ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution
- Long Travel Range

➡ Photo & Drawing



➔ Specification

LS200.Indus

LS200.Indus.E

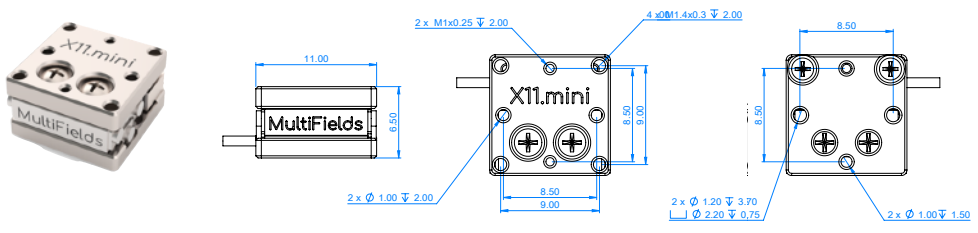
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	/
2	Dimensions	82 × 295 × 20 mm	
3	Materials	Standard, .HV, .UHV Steel,Aluminum: 1 kg	Steel,Aluminum: 1 kg
4	Travel Range	200 mm	
5	Velocity	Default: 0.1 μm/s ~ 10 mm/s; .HV & .UHV: 0.1 μm/s ~ 1 mm/s	
6	Driving Force	3 N	
7	Holding Force	5 N	
8	Horizontal Max Load	2 kg	
9	Bidirectional Repeatability	± 100 nm	± 300 nm
10	Pitch / Yaw	0.3 mrad	
11	Minimum Incremental Motion (Close-loop)	5 nm	100 nm
12	Displacement Sensor	Optical Sensor	
13	Position Sensor Resolution	2 nm	50 nm
14	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)	
15	Motion Controller	MC-Newton.S	

* For detail drawing and 3D model please contact us.

“mini Series” Linear Stage — X11.mini

Ultra compact linear stage

- ➡ Feature
- Tiny Structure
 - Quiet Motion
 - Self-lock
 - Nanometer Resolution
- ➡ Photo & Drawing



➡ Specification

X11.mini

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version;
2	Dimensions	11 × 11 × 6.5 mm
3	Materials	Standard, .HV, .UHV Steel: 10 g; .NM: Ti,Ceramic: 10 g
4	Travel Range	6 mm
5	Velocity	Default: 10 mm/s; .HV & .UHV : 1 mm/s
6	Driving Force	0.3 N
7	Holding Force	0.5 N
8	Horizontal Max Load	50 g
9	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: kapton wire, PEEK-D-Sub15
10	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

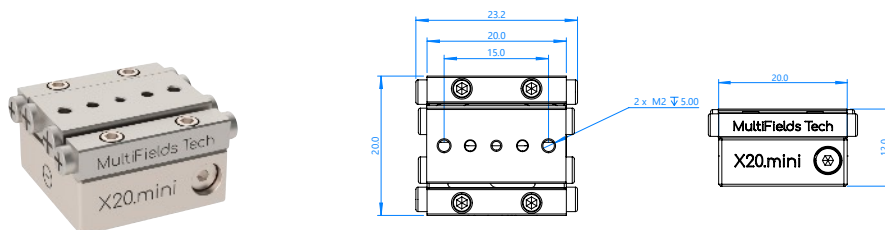
“mini Series”Linear Stage — X20.mini

Ultra compact linear stage

➡ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution

➡ Photo & Drawing



➡ Specification

X20.mini

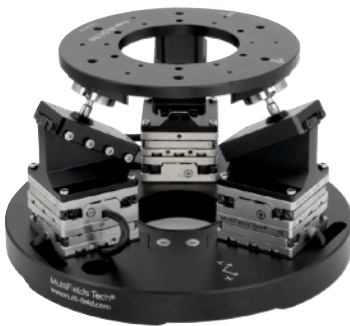
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	20 × 20 × 12 mm
3	Materials	Standard, .HV, .UHV Steel: 30 g; .NM: Ti,Ceramic: 30 g
4	Travel Range	10 mm
5	Velocity	Default: 10 mm/s; .HV & .UHV : 1 mm/s
6	Driving Force	1.5 N
7	Holding Force	3 N
8	Horizontal Max Load	300 g
9	Vertical Max Load	100 g
10	Minimum Incremental Motion (Close-loop)	5 nm
11	Displacement Sensor	Optical Sensor
12	Position Sensor Resolution	2 nm
13	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: kapton wire, PEEK-D-Sub15
14	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

Part 2.1

“FreeXD Series”

Parallel structure • The best choice to ensure both freedom and precision.



➔ Free6D.3 - 2.150

XYZTxTyRz 6DoF Motion, Optical Sensor Feedback

Travel Range:

X,Y,Z: ± 10 mm, ± 10 mm, ± 5 mm

$\theta X, \theta Y, \theta Z$: $\pm 9^\circ$, $\pm 8^\circ$, $\pm 14^\circ$

Minimum Incremental Motion:

X,Y,Z: 10 nm, 10 nm, 10 nm

$\theta X, \theta Y, \theta Z$: 1 μ rad, 1 μ rad, 1 μ rad



➔ Free6D.3 - 2.070

Ultra compact parallel structure, closed – loop, 6DOF adjustment of XYZTxTyRz.

Travel Range:

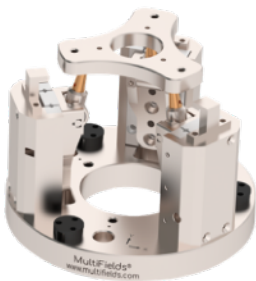
X,Y,Z: ± 5 mm, ± 5 mm, ± 2.5 mm

$\theta X, \theta Y, \theta Z$: $\pm 16^\circ$, $\pm 13^\circ$, $\pm 26^\circ$

Minimum Incremental Motion:

X,Y,Z: 10 nm, 10 nm, 10 nm

$\theta X, \theta Y, \theta Z$: 1 μ rad, 1 μ rad, 1 μ rad



➔ Free3D.ZTxTy.100

ZTxTy 3DoF Motion, Optical Sensor Feedback

Travel Range:

Z: 0~20 mm; $\theta X, \theta Y$: $\pm 30^\circ$, $\pm 30^\circ$

Minimum Incremental Motion:

Z: 10 nm; $\theta X, \theta Y$: 1 μ rad, 1 μ rad

Part 2.2

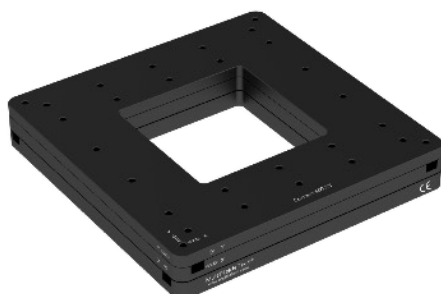
“Carrier Series”

Long range planar stage for microscopy



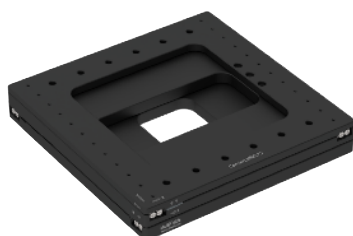
➡ Carrier.L7550s.XY

Piezo Motor Positioning Stage, Optical Sensor Feedback
Travel Range: 75 × 50 mm
Minimum Incremental Motion 10 nm
Resolution 2 nm
Load 4 kg



➡ Carrier.L1010.XY

Piezo Motor Positioning Stage, Optical Sensor Feedback
Travel Range: 100 × 100 mm
Minimum Incremental Motion 10 nm
Resolution 2 nm
Load 4 kg



➡ Carrier.L1010s.XY

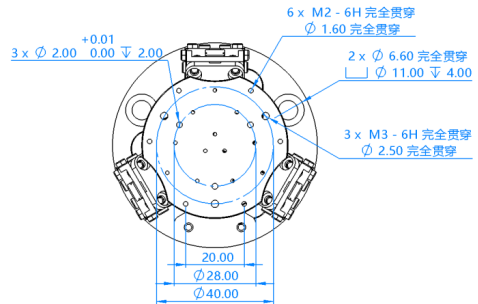
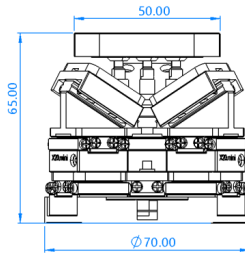
Piezo Motor Positioning Stage, Optical Sensor Feedback
Travel Range: 100 × 100 mm
Minimum Incremental Motion 10 nm
Resolution 2 nm
Load 4 kg

6 DoF Parallel Stage — Free6D.3-2.070

Ultra-compact 6-DOF parallel stage

- ➔ Feature
- Quiet Motion
 - Self-lock
 - Optical Sensor Inside
 - Nanometer Resolution
 - Parallel Kinematic

➔ Photo & Drawing



➔ Specification

Free6D.3-2.070

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	Ø70 × 65 mm
3	Materials	Standard, .HV, .UHV Aluminum, Steel: 400 g; .NM Ti, Ceramic: 600 g
4	Max vertical load	300 g
5	Travel Range X,Y,Z	± 5 mm, ± 5 mm, ± 2.5 mm
6	Travel Range θX,θY,θZ *	± 16 °, ± 13 °, ± 26 °
7	Unidirectional Repeatability X,Y,Z *	± 0.15 μm, ± 0.15 μm, ± 0.1 μm
8	Unidirectional Repeatability θX,θY,θZ	± 8 μrad, ± 8 μrad, ± 8 μrad
9	Minimum Incremental Motion X,Y,Z	10 nm, 10 nm, 10 nm
10	Minimum Incremental Motion θX,θY,θZ	1 μrad, 1 μrad, 1 μrad
11	Sensor Type	Optical Sensor
12	Position Sensor Resolution	2 nm
13	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
14	Motion Controller	MC-Free6D

◆ Axes of Parallel kinematic system are not independent. The specified value represents the maximum Travel Range achievable under independent single-axis motion conditions.

For detail drawing and 3D model please contact us.

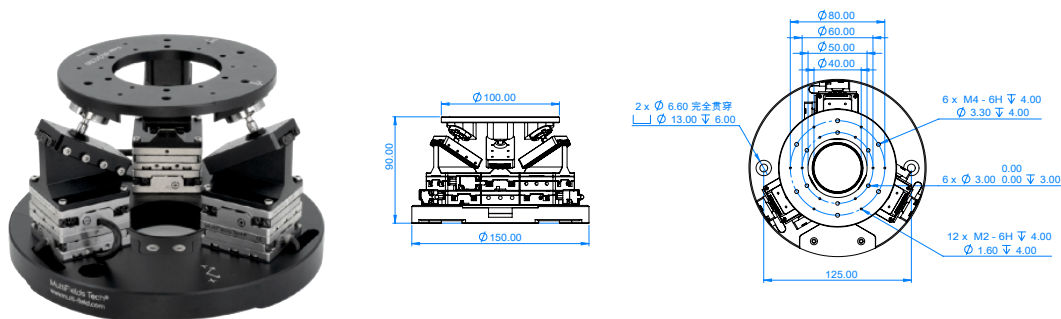
6 DoF Parallel Stage — Free6D.3–2.150

6-DOF parallel design

➔ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution
- Parallel Kinematic

➔ Photo & Drawing



➔ Specification

Free6D.3–2.150

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	Ø150 × 90 mm
3	Materials	Standard, .HV, .UHV Aluminum, Steel: 1.4 kg; .NM Ti, Ceramic: 2.1 kg
4	Max vertical load	1 kg
5	Central clear aperture	Ø40 mm
6	Travel Range X,Y,Z *	± 10 mm, ± 10 mm, ± 5 mm
7	Travel Range $\theta X, \theta Y, \theta Z$ *	± 9°, ± 8°, ± 14°
8	Unidirectional Repeatability X,Y,Z	± 0.15 μm , ± 0.15 μm , ± 0.1 μm
9	Unidirectional Repeatability $\theta X, \theta Y, \theta Z$	± 5 μrad , ± 5 μrad , ± 5 μrad
10	Minimum Incremental Motion X,Y,Z	10 nm, 10 nm, 10 nm
11	Minimum Incremental Motion $\theta X, \theta Y, \theta Z$	1 μrad , 1 μrad , 1 μrad
12	Sensor Type	Optical Sensor
13	Position Sensor Resolution	2 nm
14	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
15	Motion Controller	MC-Free6D

◆ Axes of Parallel kinematic system are not independent. The specified value represents the maximum Travel Range achievable under independent single-axis motion conditions.

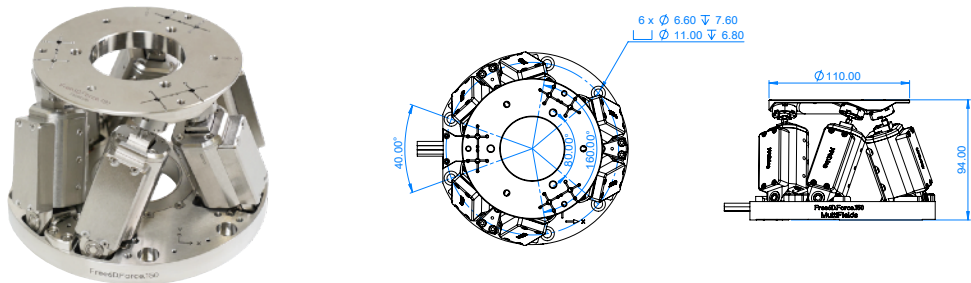
For detail drawing and 3D model please contact us.

6 DoF Parallel Stage — Free6D.Force.150

Ultra-compact 6-DOF parallel stage

- ➔ Feature
- Quiet Motion
 - Self-lock
 - Optical Sensor Inside
 - Nanometer Resolution
 - Parallel Kinematic

➔ Photo & Drawing



➔ Specification

Free6D.Force.150

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	Ø150 x 94 mm
3	Materials	Standard, .HV, .UHV Aluminum,Steel: 3.5 kg; .NM Ti, Ceramic: 2.5 kg
4	Max vertical load	10 kg
5	Central clear aperture	Ø50 mm
6	Travel Range X,Y,Z	± 10 mm, ± 10 mm, ± 5 mm
7	Travel Range $\theta X, \theta Y, \theta Z$ *	± 5 °, ± 5 °, ± 12.5 °
8	Unidirectional Repeatability X,Y,Z *	± 250 nm, ± 250 nm, ± 100 nm
9	Unidirectional Repeatability $\theta X, \theta Y, \theta Z$	± 3 μ rad, ± 3 μ rad, ± 6 μ rad
10	Minimum Incremental Motion X,Y,Z	50 nm, 50 nm, 20 nm
11	Minimum Incremental Motion $\theta X, \theta Y, \theta Z$	0.5 μ rad, 0.5 μ rad, 1 μ rad
12	Sensor Type	Optical Sensor
13	Position Sensor Resolution	2 nm
14	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)

♦ Axes of Parallel kinematic system are not independent. The specified value represents the maximum Travel Range achievable under independent single-axis motion conditions.
For detail drawing and 3D model please contact us.

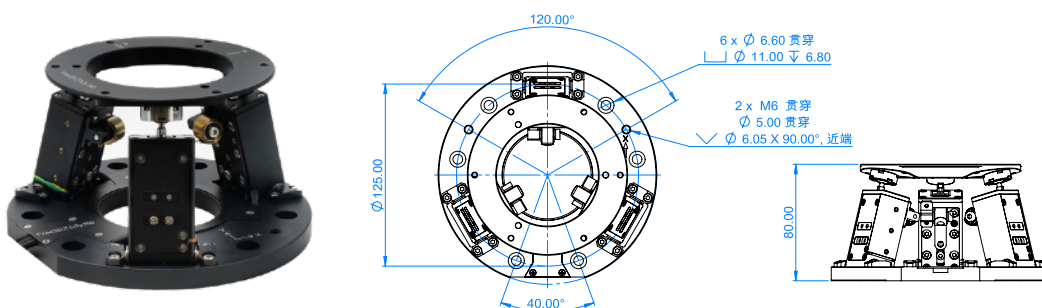
3 DoF Parallel Stage — Free6D.3–2.150

3-DOF parallel design

➡ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution
- Parallel Kinematic

➡ Photo & Drawing



➡ Specification

Free3D.ZTxTy.150

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	Ø150 x 80 mm
3	Materials	Standard, .HV, .UHV Aluminum, Steel: 1 kg; .NM Ti, Ceramic: 1.3 kg
4	Max vertical load	2 kg
5	Central clear aperture	Ø60 mm
6	Travel Range Z, θX , θY *	± 5 mm, $\pm 7^\circ$, $\pm 7^\circ$
7	Unidirectional Repeatability Z, θX , θY *	$\pm 0.3 \mu\text{m}$, $\pm 5 \mu\text{rad}$, $\pm 5 \mu\text{rad}$
8	Minimum Incremental Motion Z, θX , θY *	10 nm, 1 μrad , 1 μrad
9	Sensor Type	Optical Sensor
10	Position Sensor Resolution	2 nm
11	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)

♦ Axes of Parallel kinematic system are not independent. The specified value represents the maximum Travel Range achievable under independent single-axis motion conditions.

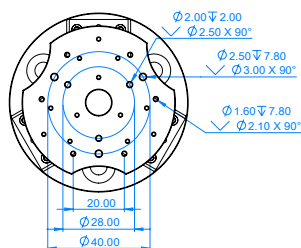
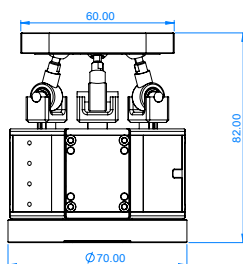
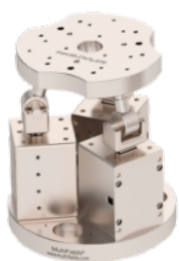
For detail drawing and 3D model please contact us.

3 DoF ZTxTy Stage — Free3D.ZTxTy.070

Parallel Kinematic, Clear Aperture, Flexible Design

- ➡ Feature
- Quiet Motion
 - Self-lock
 - Optical Sensor Inside
 - Nanometer Resolution
 - Parallel Kinematic
 - Customize Available

➡ Photo & Drawing



➡ Specification

Free3D.ZTxTy.070

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	Ø70 × 82 mm
3	Materials	Standard, .HV, .UHV Aluminum,Steel: 800 g; .NM Ti,Ceramic: 460 g
4	Max vertical load	5 kg
5	Central clear aperture	Ø10 mm
6	Travel Range Z,θX,θZ *	± 2.5 mm, ± 9 °, ± 10 °
7	Unidirectional Repeatability X,θY,θZ	± 0.2 μm, ± 8 μrad, ± 8 μrad
8	Minimum Incremental Motion X,θY,θZ	10 nm, 1 μrad, 1 μrad
9	Sensor Type	Optical Sensor
10	Position Sensor Resolution	2 nm
11	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
12	Motion Controller	MC-Free3D

♦ Axes of Parallel kinematic system are not independent. The specified value represents the maximum Travel Range achievable under independent single-axis motion conditions.

For detail drawing and 3D model please contact us.

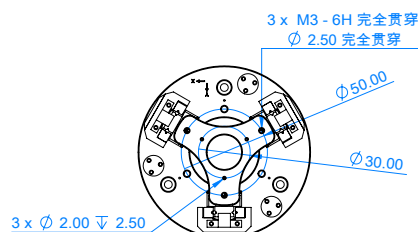
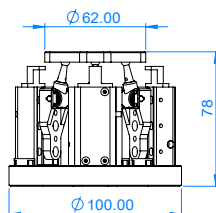
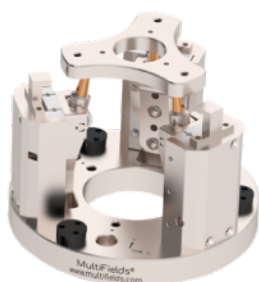
3 DoF ZTxTy Stage — Free3D.ZTxTy.100

Parallel Kinematic, Clear Aperture, Flexible Design

➡ Feature

- Quiet Motion
- Self-lock
- Optical Sensor Inside
- Nanometer Resolution
- Parallel Kinematic
- Customize Available

➡ Photo & Drawing



➡ Specification

Free3D.ZTxTy.100

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	$\phi 100 \times 78$ mm
3	Materials	Standard, .HV, .UHV Aluminum, Steel: 1010 g; .NM Ti, Ceramic: 580 g
4	Max vertical load	500 g
5	Central clear aperture	$\phi 20$ mm
6	Travel Range Z, $\theta X, \theta Z$ *	0~20 mm, $\pm 30^\circ$, $\pm 30^\circ$
7	Unidirectional Repeatability X, $\theta Y, \theta Z$	$\pm 0.2 \mu\text{m}$, $\pm 10 \mu\text{rad}$, $\pm 10 \mu\text{rad}$
8	Minimum Incremental Motion X, $\theta Y, \theta Z$	10 nm, $1 \mu\text{rad}$, $1 \mu\text{rad}$
9	Sensor Type	Optical Sensor
10	Position Sensor Resolution	2 nm
11	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
12	Motion Controller	MC-Free3D

◆ Axes of Parallel kinematic system are not independent. The specified value represents the maximum Travel Range achievable under independent single-axis motion conditions.

For detail drawing and 3D model please contact us.

6 DoF Controller — MC-Free6D

- ➡ Feature
- 6 Channels
 - Close-loop Control
- Multiple Interface
 - Advance Algorithm
- ➡ Photo & Drawing



➡ Specification

MC-Free6D

1	Function	Controller for “Free series” stage motion and positioning.
2	Control Mode	Close-loop control for each driving unit. Parallel Kinematic algorithm.
3	Dimensions	200 × 200 × 140 mm
4	Mass	2.7 kg
5	Max. Frequency	20 kHz
6	Max. Output Power	100 W
7	Work Environment	0~50 °C,<70 % RH
8	Channels	6
9	Connector	DB15 female ×6
10	Communication Interface	USB Type-C,EtherNet,EtherCAT (on request)
11	Software	PC GUI, SDK
12	Feature	3D module simulation, trajectory distribution, rotary pivot user define

* For detail drawing and 3D model please contact us.

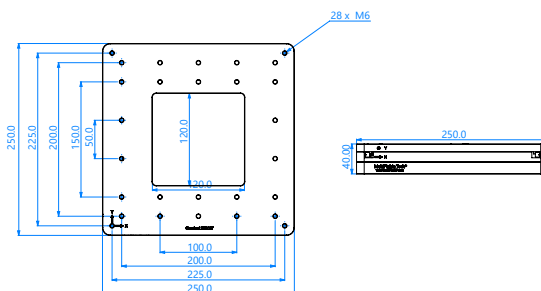
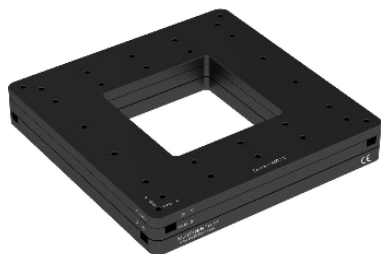
Planar Linear Motion — Carrier.L1010.XY

High Resolution Piezo Motor Driving, Close-loop Control, for Microcopy

➡ Feature

- Quiet Motion
- Nanometer Resolution
- Stackable with Piezo Scanner
- XY Planar Structure
- Self-lock
- Clear Aperture
- Optical Sensor Inside

➡ Photo & Drawing



➡ Specification

Carrier.L1010.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	250 × 250 × 40 mm
3	Materials	Aluminum / Stainless Steel
4	Travel Range	100 × 100 mm
5	Velocity	Default: 0.1 μm/s ~ 10 mm/s; .HV & .UHV: 0.1 μm/s ~ 1 mm/s
6	Driving Force	2 N
7	Holding Force	4 N
8	Horizontal Max Load	4 kg
9	Minimum Incremental Motion (Close-loop)	10 nm
10	Pitch / Yaw	0.3 mrad
11	Displacement Sensor	Optical Sensor
12	Position Sensor Resolution	2 nm (Default)
13	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: kapton wire, PEEK-D-Sub15
14	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

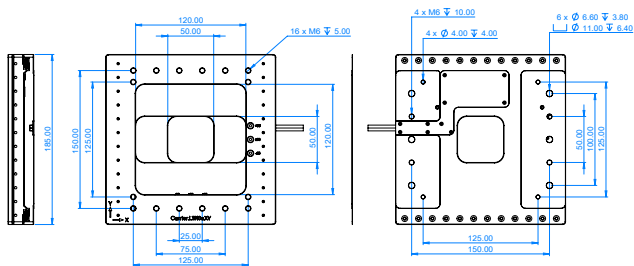
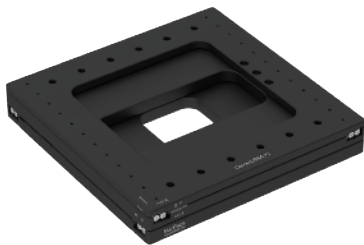
Planar Linear Motion — Carrier.L1010s.XY

High Resolution Piezo Motor Driving, Close-loop Control, for Microcopy

- ➔ Feature

- Quiet Motion
 - Nanometer Resolution
 - Stackable with Piezo Scanner
- ➔ Photo & Drawing

- XY Planar Structure
 - Self-lock
- Clear Aperture
 - Optical Sensor Inside



➔ Specification

Carrier.L1010s.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	185 × 185 × 28 mm
3	Materials	Standard, .HV, .UHV , .NM Aluminum, Stainless Steel/Ceramic: 2 kg
4	Travel Range	100 x 100 mm
5	Velocity	Default: 0.1 μm/s ~ 10 mm/s; .HV & .UHV : 0.1 μm/s ~ 1 mm/s
6	Driving Force	2 N
7	Holding Force	4 N
8	Horizontal Max Load	4 kg
9	Minimum Incremental Motion (Close-loop)	10 nm
10	Pitch / Yaw	0.3 mrad
11	Displacement Sensor	Optical Sensor
12	Position Sensor Resolution	2 nm
13	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
14	Motion Controller	MC-Newton.S

* For detail drawing and 3D model please contact us.

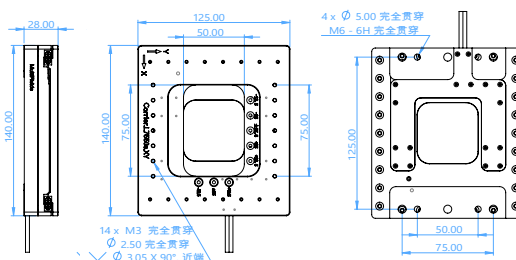
Planar Linear Motion — Carrier.L7550s.XY

High Resolution Piezo Motor Driving, Close-loop Control, for Microcopy

➡ Feature

- Nanometer Resolution
- Self-lock
- Clear Aperture
- Compatible with microscopy
- XY Planar Structure
- Optical Sensor Inside
- Stackable with Piezo Scanner

➡ Photo & Drawing



➡ Specification

Carrier.L7550s.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	140 × 125 × 28 mm
3	Materials	Standard, .HV, .UHV, .NM Aluminum/Stainless Steel: 1.5 kg
4	Travel Range	75 × 50 mm
5	Velocity	Default: 0.1 μm/s ~ 10 mm/s; .HV & .UHV : 0.1 μm/s ~ 1 mm/s
6	Driving Force	2 N
7	Holding Force	4 N
8	Horizontal Max Load	4 kg
9	Minimum Incremental Motion (Close-loop)	10 nm
10	Pitch / Yaw	0.3 mrad
11	Displacement Sensor	Optical Sensor
12	Position Sensor Resolution	2 nm
13	Cable & Connector	Default: Shielded cable D-Sub15; .UHV: Kapton wire, D-Sub15 (PEEK)
14	Motion Controller	MC-Newton.S

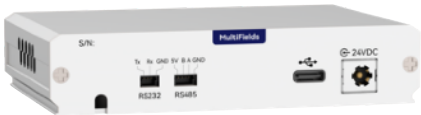
* For detail drawing and 3D model please contact us.

Piezo Motor Controller — MC-Newton.E

For Room Temperature Piezo Motor

- ➔ Feature
- Compact design
 - OEM integration
 - Advanced motion control algorithm
 - Closed-loop control, supports position sensor

➔ Photo & Drawing



➔ Specification

MC-Newton.E

1	Control Mode	Open-loop and Close-loop
2	Dimensions	105 × 68 × 22 mm
3	Motor Type	For Room Temperature Piezo Inertia Motor
4	Channels	Single
5	Sensor Type	Incremental Optical Sensor
6	Communication Interface	USB、RS485、RS232
7	Motor Connector	Direct connection on PCB
8	Power Supply	24 VDC
9	Max output power	15 W
10	Max output frequency	5 kHz
11	Connector (Power Input)	DC5525
12	Output Voltage Range	0 ~ 50 V
13	Remote Upgrade	Yes
14	Software	PC GUI, SDK

* For detail drawing and 3D model please contact us.

Piezo Motor Controller — MC-Newton.S & MSx

For Room Temperature Piezo Motor

- ➔ Feature
 - Module Design
 - Advance Algorithm
 - Close-loop Control with Optical Sensor
 - High Performance
 - Up to 10 Channels

➔ Photo & Drawing



MC-Newton.S



MC-Newton.MSx

➔ Specification

MC-Newton.S

MC-Newton.MSx

1	Control Mode	Open-loop and Close-loop	
2	Dimensions	136 × 131 × 32 mm	136 × 131 mm (32 × (x + 1)) mm
3	Motor Type	For Room Temperature Piezo Inertia Motor	
4	Channels	Single	x channels (x ≤ 10)
5	Sensor Type	Incremental Optical Sensor	
6	Communication Interface	USB,EtherNet,RS485	USB,EtherNet,RS485,EtherCAT (on request)
7	Motor Connector	D-Sub15	
8	Power Supply	24V DC	24 V DC & 120 W
9	Max output power	30 W	30 W single-channel, 100 W multi-channel
10	Connector (Power Input)	DC5525	
11	Output voltage range	0 ~ 75 V	
12	Analog In	-10 V ~ 10 V (single-ended)	
13	Manual Control	Button on front panel	
14	Hardware Trigger	SMA, TTL (3.3V), I/O	
15	Remote Upgrade	Yes	
16	Software	PC GUI, SDK	

* For detail drawing and 3D model please contact us.

Chap.03

Short-stroke Scanning Products

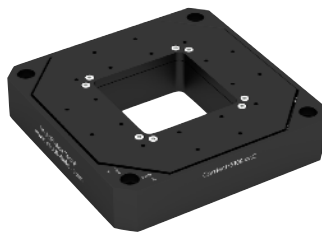
Piezo Scanner Series, All types using Direct Metrology

3.1.
Compact



3.1.1
S Series
Serial Kinematic

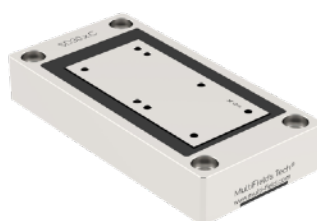
3.2.
Clear Aperture



3.2.1
Carrier.S Series
High Performance
Parallel Kinematic



3.1.2
SH Series
Heavy-load Scanner



3.1.3
SD Series
High Dynamic Response



3.2.2
Carrier.SL Series



3.2.3
OB Series
Objective Lens Focusing
& Scanning

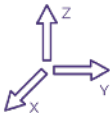
Part 3.1

S,SH & SD Series (Compact)

Compact Design, Capacitive Sensor Close-loop Control

Multi Degrees of Freedom, Travel Range up to 500 μm , High Dynamic and High Load optional

Standard

1 Axis		S100.X 100 μm	S200.X 200 μm	S300.X 300 μm	S500.X 500 μm
		S100.Z 100 μm	S200.Z 200 μm	S300.Z 300 μm	
2 Axes		S100.XY 100 $\times$ 100 μm	S200.XY 200 $\times$ 200 μm	S300.XY 300 $\times$ 300 μm	S500.XY 500 $\times$ 500 μm
3 Axes		S100.XYZ 100 $\times$ 100 $\times$ 100 μm	S200.XYZ 200 $\times$ 200 $\times$ 200 μm	S300.XYZ 300 $\times$ 300 $\times$ 300 μm	

* Non-magnetic, Ultra High Vacuum Versions available



High Dynamic

High Load

SD15.X

15 μm

SD30.X

30 μm



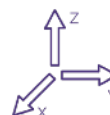
1 Axes



2 Axes

SH30.XYZ

30 μm , 30 μm , 15 μm



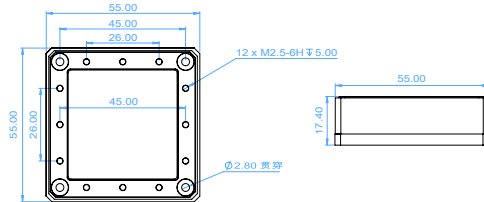
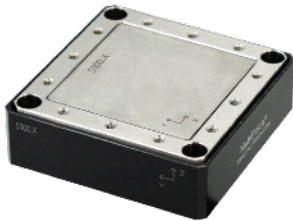
3 Axes

X Piezo Scanner — S100.X

Standard Single Axis Piezo Scanner Module

- ➔ Feature
- Piezo Stack Driving
 - Flexure Guiding
 - Sub-nanometer Resolution
 - Long Travel Range
 - CAP Sensor, Close-loop Control
 - Direct Metrology

➔ Photo & Drawing



➔ Specification

S100.X

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	55 × 55 × 17 mm
3	Motion Direction & Stroke (Close-loop)	100 μm
4	Materials	Standard, .HV, .UHV Aluminum,Steel: 220 g; .NM Aluminum,Titanium Alloy: 200 g
5	Non-linearity	0.02%
6	Repeatability	5 nm
7	Resolution (Closed-loop)	0.5 nm
8	Resolution (Open-loop)	0.2 nm
9	Stiffness	1 N/μm
10	Resonant Frequency, 0 Load (±20%)	750 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	200 Hz
12	Max. Load	500 g
13	Displacement Sensor	Capacitive
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA
15	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

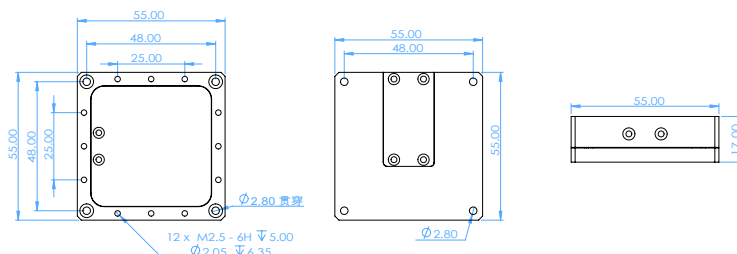
X Piezo Scanner — 200/300.X

Standard Single Axis Piezo Scanner Module

➔ Feature

- Piezo Stack Driving
- Flexure Guiding
- Sub-nanometer Resolution
- Long Travel Range
- CAP Sensor, Close-loop Control
- Direct Metrology

➔ Photo & Drawing



➔ Specification

S200.X

S300.X

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Dimensions	55 × 55 × 17 mm	
3	Motion Direction & Stroke (Close-loop)	200 μm	300 μm
4	Materials	Standard, .HV, .UHV Aluminum, Steel: 220 g; .NM Aluminum, Titanium Alloy: 200 g	
5	Non-linearity	0.02%	
6	Repeatability	5 nm	
7	Resolution (Closed-loop)	0.6 nm	0.9 nm
8	Resolution (Open-loop)	0.3 nm	0.5 nm
9	Stiffness	0.65 N/μm	0.25 N/μm
10	Resonant Frequency, 0 Load (±20%)	590 Hz	310 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	162 Hz	100 Hz
12	Max. Load	500 g	
13	Displacement Sensor	Capacitive	
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA	
15	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

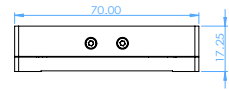
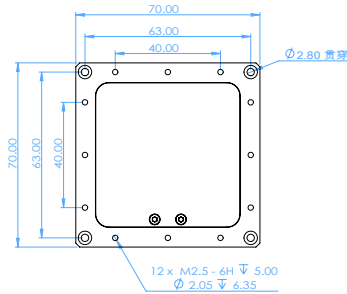
X Piezo Scanner — 500.X

Standard Single Axis Piezo Scanner Module

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- Sub-nanometer Resolution
- Long Travel Range
- CAP Sensor, Close-loop Control
- Direct Metrology

➡ Photo & Drawing



➡ Specification

S500.X

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	70 × 70 × 17 mm
3	Motion Direction & Stroke (Close-loop)	500 μm
4	Materials	Standard, .HV, .UHV Aluminum, Steel: 250 g; .NM Aluminum, Titanium Alloy: 230 g
5	Non-linearity	0.02%
6	Repeatability	6 nm
7	Resolution (Closed-loop)	1.5 nm
8	Resolution (Open-loop)	0.7 nm
9	Stiffness	0.16 N/μm
10	Resonant Frequency, 0 Load (±20%)	210 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	80 Hz
12	Max. Load	500 g
13	Displacement Sensor	Capacitive
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA
15	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

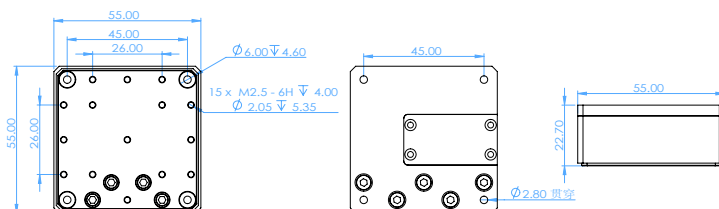
Z Piezo Scanner — S100/200/300.Z

Standard Single Axis Piezo Scanner Module, Vertical Motion

➔ Feature

- Piezo Stack Driving
- Direct Metrology
- Flexure Guiding
- Sub-nanometer Resolution
- CAP Sensor, Close-loop Control

➔ Photo & Drawing



➔ Specification

		S100.Z	S200.Z	S300.Z
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;		
2	Dimensions	55 × 55 × 23 mm		
3	Motion Direction & Stroke (Close-loop)	100 μm	200 μm	300 μm
4	Materials	Standard, .HV, .UHV Aluminum, Steel: 260 g; .NM Aluminum, Titanium Alloy: 240 g		
5	Non-linearity	0.02%		
6	Repeatability	5 nm		
7	Resolution (Closed-loop)	0.5 nm	0.6 nm	0.9 nm
8	Resolution (Open-loop)	0.2 nm	0.3 nm	0.5 nm
9	Stiffness	1 N/μm	0.7 N/μm	0.4 N/μm
10	Resonant Frequency, 0 Load (±20%)	550 Hz	540 Hz	430 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	230 Hz	210 Hz	150 Hz
12	Max. Load	500 g		
13	Displacement Sensor	Capacitive		
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA		
15	Motion Controller	MC-Archimedes.N		

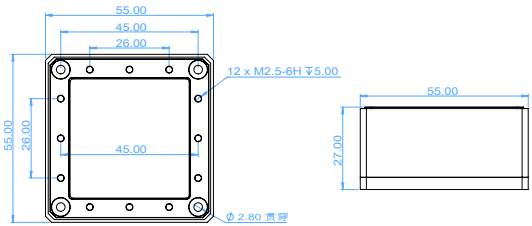
* For detail drawing and 3D model please contact us.

XY Piezo Scanne — S100.XY

Compact XY Stack System

- ➔ 产品特色
- Piezo Stack Driving
 - Direct Metrology
 - Flexure Guiding
 - Sub-nanometer Resolution
 - CAP Sensor, Close-loop Control
 - Compact Serial Structure

➔ 产品图片 & 尺寸



➔ 产品参数

S100.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	55 × 55 × 28 mm
3	Motion Direction & Stroke (Close-loop)	100 μm
4	Materials	Standard, .HV, .UHV Aluminum,Steel: 450 g; .NM Aluminum,Titanium Alloy: 410 g
5	Non-linearity	0.02%
6	Repeatability	5 nm
7	Resolution (Closed-loop)	0.5 nm
8	Resolution (Open-loop)	0.2 nm
9	Stiffness	0.7 N/μm
10	Resonant Frequency, 0 Load (±20%)	X: 570 Hz ; Y: 530 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	X: 130 Hz Y: 120 Hz
12	Max. Load	500 g
13	Displacement Sensor	Capacitive
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA
16	Motion Controller	MC-Archimedes.N

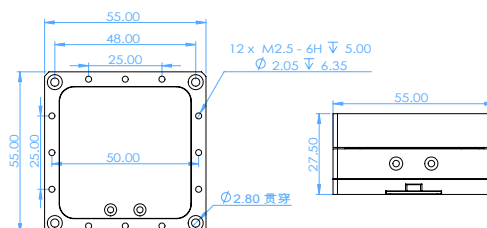
* For detail drawing and 3D model please contact us.

XY Piezo Scanne — 200/300.XY

Compact XY Stack System

- ➡ 产品特点
- Piezo Stack Driving
 - Flexure Guiding
 - CAP Sensor, Close-loop Control
 - Direct Metrology
 - Sub-nanometer Resolution
 - Compact Serial Structure

➡ 产品图片 & 尺寸



➡ 产品参数

S200.XY

S300.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Dimensions	55 × 55 × 28 mm	
3	Motion Direction & Stroke (Close-loop)	200 μm	300 μm
4	Materials	Standard, .HV, .UHV Aluminum,Steel: 450 g; .NM Aluminum,Titanium Alloy: 410 g	
5	Non-linearity	0.02%	
6	Repeatability	5 nm	
7	Resolution (Closed-loop)	0.6 nm	0.9 nm
8	Resolution (Open-loop)	0.3 nm	0.5 nm
9	Stiffness	0.5 N/μm	0.2 N/μm
10	Resonant Frequency, 0 Load (±20%)	X: 480 Hz Y: 400 Hz	X: 300 Hz Y: 260 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	X: 130 Hz Y: 115 Hz	X: 85 Hz Y: 80 Hz
12	Max. Load	500 g	
13	Displacement Sensor	Capacitive	
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA	
16	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

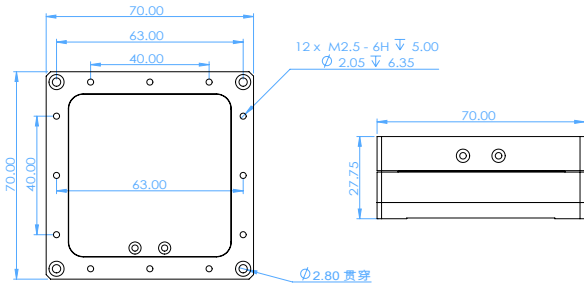
XY Piezo Scanner — S500.XY

Compact XY Stack System

➔ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Sub-nanometer Resolution
- Compact Serial Structure

➔ Photo & Drawing



➔ Specification

S500.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	70 × 70 × 28 mm
3	Motion Direction & Stroke (Close-loop)	500 μm
4	Materials	Standard, .HV, .UHV Aluminum,Steel: 500 g; .NM Aluminum,Titanium Alloy: 460 g
5	Non-linearity	0.02%
6	Repeatability	6 nm
7	Resolution (Closed-loop)	1.5 nm
8	Resolution (Open-loop)	0.7 nm
9	Stiffness	0.13 N/μm
10	Resonant Frequency, 0 Load (±20%)	X: 190 Hz Y: 150 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	X: 68 Hz Y: 66 Hz
12	Max. Load	500 g
13	Displacement Sensor	Capacitive
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA
16	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

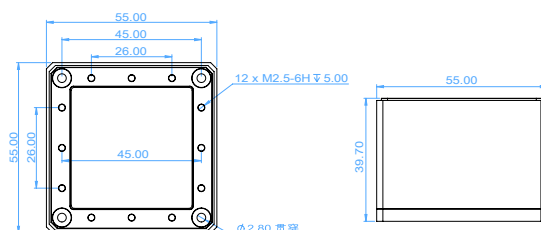
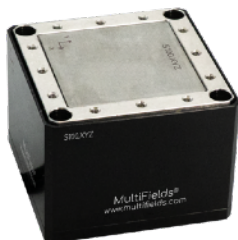
XYZ Piezo Scanner — S100.XYZ

Compact XYZ Stack System

➔ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Sub-nanometer Resolution
- Compact Serial Structure

➔ Photo & Drawing



➔ Specification

S100.XYZ

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	55 × 55 × 40 mm
3	Motion Direction & Stroke (Close-loop)	100 μm
4	Materials	Standard, .HV, .UHV Aluminum, Steel: 650 g; .NM Aluminum, Titanium Alloy: 600 g
5	Non-linearity	0.02%
6	Repeatability	5 nm
7	Resolution (Closed-loop)	0.5 nm
8	Resolution (Open-loop)	0.2 nm
9	Stiffness	0.6 N/μm
10	Resonant Frequency, 0 Load (±20%)	X: 490 Hz ; Y: 480 Hz Z: 350 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	X: 110 Hz Y: 115 Hz Z: 170 Hz
12	Max. Load	500 g
13	Displacement Sensor	Capacitive
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA
16	Motion Controller	MC-Archimedes.N

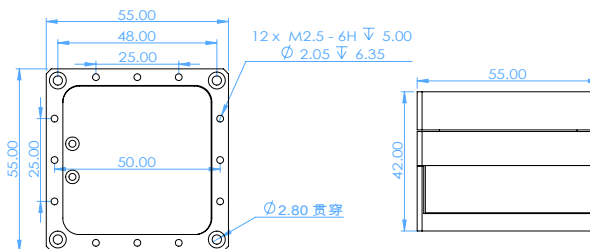
* For detail drawing and 3D model please contact us.

XYZ Piezo Scanner — 200/300.XYZ

Compact XYZ Stack System

- ➔ Feature
- Piezo Stack Driving
 - Direct Metrology
 - Flexure Guiding
 - Sub-nanometer Resolution
 - CAP Sensor, Close-loop Control
 - Compact Serial Structure

➔ Photo & Drawing



➔ Specification

S200.XYZ

S300.XYZ

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Dimensions	55 × 55 × 42 mm	
3	Motion Direction & Stroke (Close-loop)	200 μm	300 μm
4	Materials	Standard, .HV, .UHV Aluminum,Steel: 650 g; .NM Aluminum,Titanium Alloy: 600 g	
5	Non-linearity	0.02%	
6	Repeatability	5 nm	
7	Resolution (Closed-loop)	0.6 nm	0.9 nm
8	Resolution (Open-loop)	0.3 nm	0.5 nm
9	Stiffness	0.5 N/μm	0.2 N/μm
10	Resonant Frequency, 0 Load (±20%)	X: 410 Hz ; Y: 380 Hz Z: 320 Hz	X: 310 Hz ; Y: 250 Hz Z: 230 Hz
11	Resonant Frequency, 0.5 kg Load (±20%)	X: 100 Hz Y: 105 Hz Z: 155 Hz	X: 75 Hz Y: 80 Hz Z: 110 Hz
12	Max. Load	500 g	
13	Displacement Sensor	Capacitive	
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA	
16	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

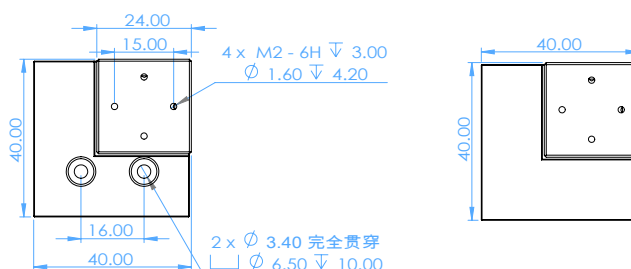
XYZ Piezo Scanner — S100.XYZ.P

Ultra Compact XYZ Stack System

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Sub-nanometer Resolution
- Parallel Motion

➡ Photo & Drawing



➡ Specification

S100.XYZ.P

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Dimensions	40 × 40 × 40 mm
3	Motion Direction & Stroke (Close-loop)	100 μm
4	Materials	Standard, .HV, .UHV Aluminum, Steel: 200 g; .NM Aluminum, Titanium Alloy: 190 g
5	Non-linearity	0.02%
6	Repeatability	6 nm
7	Resolution (Closed-loop)	1 nm
8	Resolution (Open-loop)	0.5 nm
9	Stiffness	0.6 N/μm
10	Resonant Frequency, 0 Load (±20%)	XYZ: 750 Hz
11	Resonant Frequency, 0.2 kg Load (±20%)	XYZ: 230 Hz
12	Max. Load	200 g
13	Displacement Sensor	Capacitive
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA
15	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

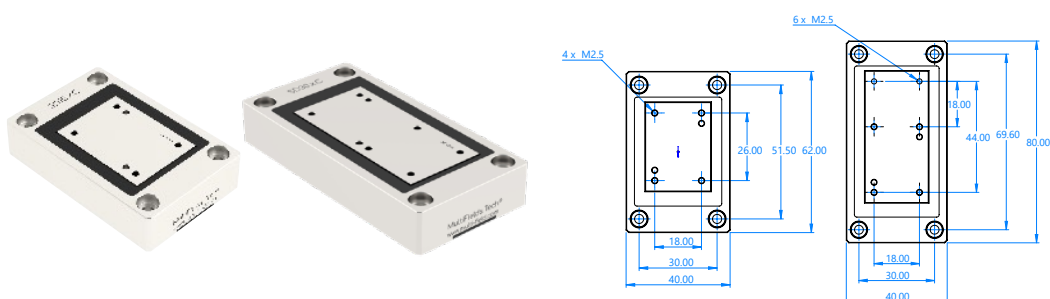
High-speed 1-axis Scanner — SD15/30.X

Standard Single Axis Piezo Scanner Module, High Dynamic

➔ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Sub-nanometer Resolution
- ms Response Time

➔ Photo & Drawing



➔ Specification

SD15.X

SD30.X

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Dimensions	62 × 40 × 13.5 mm	80 × 40 × 13.5 mm
3	Motion Direction & Stroke (Close-loop)	15 μm	30 μm
4	Materials	Standard, .HV, .UHV Aluminum, Steel: 180 g .NM Aluminum, Titanium Alloy: 160 g	Standard, .HV, .UHV Aluminum, Steel: 250 g .NM Aluminum, Titanium Alloy: 220 g
5	Non-linearity	0.03%	
6	Repeatability	2 nm	4 nm
7	Resolution (Closed-loop)	0.2 nm	0.5 nm
8	Resolution (Open-loop)	0.1 nm	0.2 nm
9	Stiffness	28 N/μm	18 N/μm
10	Resonant Frequency, 0 Load (±20%)	3.3 KHz	2.2 KHz
11	Resonant Frequency, 0.3 kg Load (±20%)	1 KHz	0.625 KHz
12	Max. Load	300 g	
13	Displacement Sensor	Capacitive	
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA	
15	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

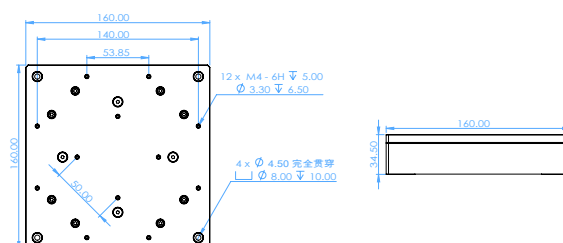
XYZ Piezo Scanner — SH30.XYZ

10 kg ultra-load, 3-DOF XYZ linear motion

➡ Feature

- Piezo Stack Driving
- High Load
- Flexure Guiding
- Sub-nanometer Resolution
- CAP Sensor, Close-loop Control
- Direct Metrology

➡ Photo & Drawing



➡ Specification

SH30.XYZ

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
3	Dimensions	160 × 160 × 34.5 mm
4	Motion Direction & Stroke (Close-loop)	30 × 30 × 15 μm
5	Materials	Standard, .HV, .UHV Aluminum, Steel: 4.5 kg; .NM Aluminum, Titanium Alloy: 4.2 kg
6	Non-linearity	0.03%
7	Repeatability	4 nm
8	Resolution (Closed-loop)	0.3 nm
9	Resolution (Open-loop)	0.2 nm
10	Stiffness	25 N/μm
11	Resonant Frequency, 0 Load (±20%)	X: 760 Hz ; Y: 760 Hz ; Z: 830 Hz
12	Resonant Frequency, 10 kg Load (±20%)	X: 220 Hz ; Y: 220 Hz ; Z: 340 Hz
13	Max. Load	10 kg
14	Displacement Sensor	Capacitive
15	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA
16	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

Part 3.2.1

Carrier.S Series

The perfect balance choice of load, operating frequency and accuracy.

Travel Range – 100 μm

1 Axis



Carrier.S100.Z

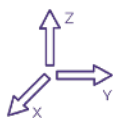
100 μm

2 Axes



Carrier.S100.XY

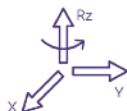
100 $\times$ 100 μm



Carrier.S100.XYZ

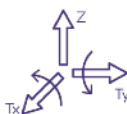
100 $\times$ 100 $\times$ 100 μm

3 Axes



Carrier.S100.XYRz

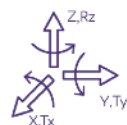
100 $\times$ 100 μm , ± 1 mrad



Carrier.S100.ZTxTy

100 μm , ± 1 mrad, ± 1 mrad

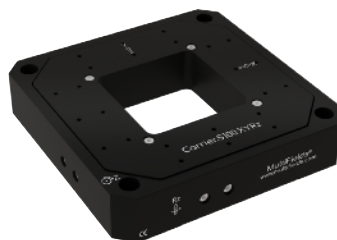
6 Axes



Carrier.S100.6D

100 $\times$ 100 $\times$ 100 μm ,
 ± 0.5 mrad, ± 0.5 mrad, ± 0.5 mrad

* Non-magnetic, Ultra High Vacuum Versions available



Travel Range – 200 μm

Travel Range – 300 μm

Carrier.S200.Z

200 μm

Carrier.S200.XY

200 $\times$ 200 μm

Carrier.S200.XYZ

200 $\times$ 200 $\times$ 200 μm

Carrier.S300.XYZ

300 $\times$ 300 $\times$ 300 μm

Carrier.S200.XYRz

200 $\times$ 200 μm , ± 2 mrad

Carrier.S200.ZTxTy

200 μm , ± 2 mrad, ± 2 mrad

Carrier.S200.6D

200 $\times$ 200 $\times$ 200 μm ,
 ± 1 mrad, ± 1 mrad, ± 1 mrad

Carrier.S300.6D

300 $\times$ 300 $\times$ 300 μm ,
 ± 2 mrad, ± 2 mrad, ± 2 mrad

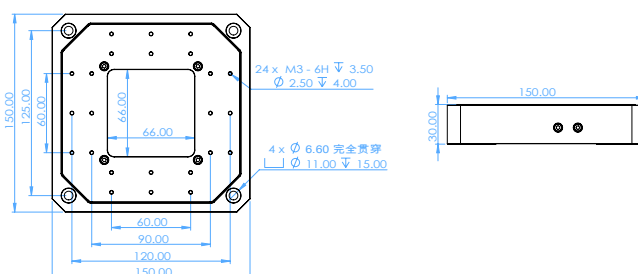
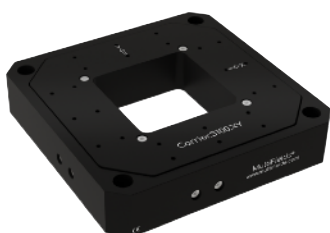
XY Piezo Scanner — Carrier.S100/200.XY

Versatile, High Performance, Clear Aperture, XY Motion

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Parallel Metrology
- Sub-nanometer Resolution

➡ Photo & Drawing



➡ Specification

Carrier.S100.XY

Carrier.S200.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Motion Direction & Stroke (Close-loop)	XY: 100 μm	XY: 200 μm
3	Dimensions	150 $\times$ 150 $\times$ 30 mm	
4	Clear Aperture	66 $\times$ 66 mm	
5	Materials	Standard, .HV, .UHV Aluminum, Steel: 1.4 kg; .NM Aluminum, Titanium Alloy: 1.3 kg	
6	Non-linearity (XY)	0.02%	
7	Repeatability(XY)	5 nm	
8	Resolution (Closed-loop)	1 nm	2 nm
9	Resolution (Open-loop)	0.3 nm	0.6 nm
10	Stiffness(XY)	2.8 N/ μm	3.5 N/ μm
11	Resonant Frequency XY, 0 Load ($\pm 20\%$)	450 Hz	500 Hz
12	Resonant Frequency XY, 0.5 kg Load ($\pm 20\%$)	250 Hz	300 Hz
13	Resonant Frequency XY, 2.5 kg Load ($\pm 20\%$)	150 Hz	180 Hz
14	Max. Load	5 kg	
15	Displacement Sensor	Capacitive	
16	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA	
17	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

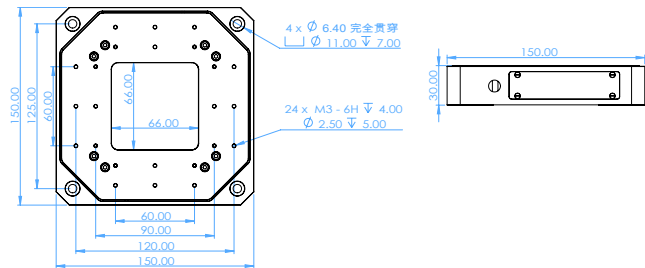
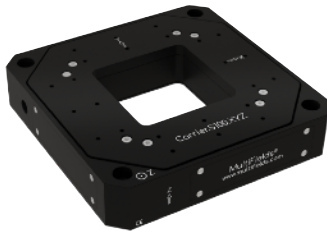
XYZ Piezo Scanner — Carrier.S100/200/300.XYZ

Versatile, High Performance, Clear Aperture, XYZ Motion

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Sub-nanometer Resolution
- Large Aperture

➡ Photo & Drawing



➡ Specification

		Carrier.S100.XYZ	Carrier.S200.XYZ	Carrier.S300.XYZ
1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;		
2	Motion Direction & Stroke (Close-loop)	XYZ: 100 μ m	XYZ: 200 μ m	XYZ: 300 μ m
3	Dimensions	150 $\times$ 150 $\times$ 30 mm		
4	Clear Aperture	66 $\times$ 66 mm		
5	Materials	Standard, .HV, .UHV Aluminum, Steel: 1.4 kg; .NM Aluminum, Titanium Alloy: 1.3 kg		
6	Non-linearity(XYZ)	0.02%		
7	Repeatability(XYZ)	5 nm	5 nm	6 nm
8	Resolution (Closed-loop)	1 nm	1 nm	2 nm
9	Resolution (Open-loop)	0.2 nm	0.4 nm	0.6 nm
10	Resonant Frequency, 0 Load ($\pm$ 20%)	XY: 200 Hz ; Z: 380 Hz	XY: 160 Hz ; Z: 320 Hz	XY: 140 Hz ; Z: 250 Hz
11	Resonant Frequency, 0.5 kg Load ($\pm$ 20%)	XY: 160 Hz ; Z: 210 Hz	XY: 125 Hz ; Z: 180 Hz	XY: 95 Hz ; Z: 150 Hz
12	Resonant Frequency, 2.5 kg Load ($\pm$ 20%)	XY: 120 Hz ; Z: 140 Hz	XY: 100 Hz ; Z: 120 Hz	XY: 75 Hz ; Z: 100 Hz
13	Max. Load	5 kg	5 kg	3 kg
14	Displacement Sensor	Capacitive		
15	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable, SMA		
16	Motion Controller	MC-Archimedes.N		

* For detail drawing and 3D model please contact us.

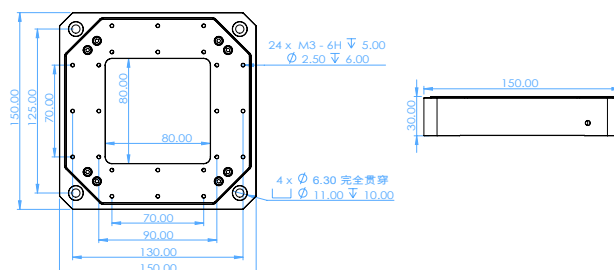
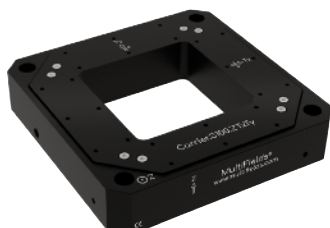
ZTxTy Piezo Scanner — Carrier.S100/200.ZTxTy

Versatile, High Performance, Clear Aperture, Tip and Tilt Motion

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Sub-nanometer Resolution
- Large Aperture

➡ Photo & Drawing



➡ Specification

Carrier.S100.ZTxTy

Carrier.S200.ZTxTy

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Motion Direction & Stroke (Close-loop)	Z: 100 μ m ; Tx, Ty: $\pm$ 1 mrad	Z: 200 μ m ; Tx, Ty: $\pm$ 2 mrad
3	Dimensions	150 $\times$ 150 $\times$ 30 mm	
4	Clear Aperture	80 $\times$ 80 mm	
5	Materials	Standard, .HV, .UHV Aluminum,Steel: 1.4 kg; .NM Aluminum,Titanium Alloy: 1.3 kg	
6	Non-linearity	Z: 0.02% ; Tx, Ty: 0.1%	
7	Repeatability	Z: 5 nm ; Tx, Ty: 0.1 μ rad	
8	Resolution (Closed-loop)	Z: 0.8 nm ; Tx, Ty: 0.05 μ rad	Z: 1 nm ; Tx, Ty: 0.1 μ rad
9	Resolution (Open-loop)	Z: 0.2 nm ; Tx, Ty: 0.04 μ rad	Z: 0.6 nm ; Tx, Ty: 0.06 μ rad
10	Stiffness,Z	3 N/ μ m	2 N/ μ m
11	Resonant Frequency, 0 Load ($\pm$ 20%)	Z: 500 Hz ; Tx, Ty: 540 Hz	Z: 360 Hz ; Tx, Ty: 400 Hz
12	Resonant Frequency, 0.5 kg Load ($\pm$ 20%)	Z: 350 Hz ; Tx, Ty: 370 Hz	Z: 210 Hz ; Tx, Ty: 250 Hz
13	Resonant Frequency, 2.5 kg Load ($\pm$ 20%)	Z: 200 Hz ; Tx, Ty: 210 Hz	Z: 130 Hz ; Tx, Ty: 140 Hz
14	Max. Load	5 kg	
15	Displacement Sensor	Capacitive	
16	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA	
17	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

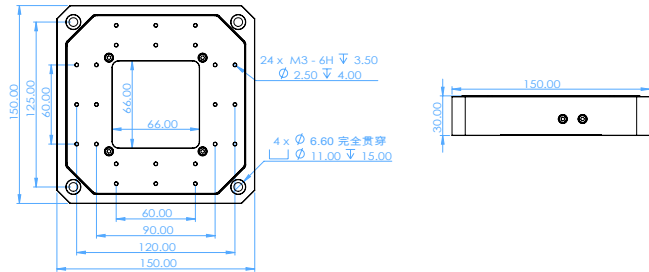
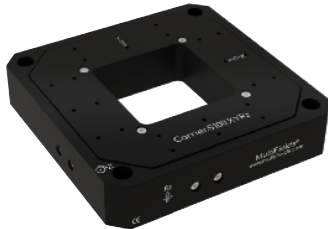
XYRz Piezo Scanner — Carrier.S100/200.XYRz

Versatile, High Performance, Clear Aperture, XY and Rz Motion

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Nanometer Resolution

➡ Photo & Drawing



➡ Specification

Carrier.S100.XYRz

Carrier.S200.XYRz

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
		XY: 100 μm ; Rz: ± 1 mrad	XY: 200 μm ; Rz: ± 2 mrad
3	Dimensions	150 $\times$ 150 $\times$ 30 mm	
4	Clear Aperture	66 $\times$ 66 mm	
5	Materials	Standard, .HV, .UHV Aluminum,Steel: 1.4 kg; .NM Aluminum,Titanium Alloy: 1.3 kg	
6	Non-linearity	XY: 0.02% ; Rz: 0.1%	
7	Repeatability	XY: 5 nm ; Rz: 0.2 μrad	
8	Resolution (Closed-loop)	XY: 1 nm ; Rz: 0.3 μrad	XY: 2 nm ; Rz: 0.5 μrad
9	Resolution (Open-loop)	XY: 0.3 nm ; Rz: 0.1 μrad	XY: 0.6 nm ; Rz: 0.2 μrad
10	Stiffness,XY	2.8 N/ μm	3.5 N/ μm
11	Resonant Frequency XYRz, 0 Load ($\pm 20\%$)	XYRz: 450 Hz	XYRz: 500 Hz
12	Resonant Frequency XYRz, 0.5 kg Load ($\pm 20\%$)	XYRz: 250 Hz	XYRz: 300 Hz
13	Resonant Frequency XYRz, 2.5 kg Load ($\pm 20\%$)	XYRz: 150 Hz	XYRz: 180 Hz
14	Max. Load	5 kg	
15	Displacement Sensor	Capacitive	
16	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA	
17	Motion Controller	MC-Archimedes.N	

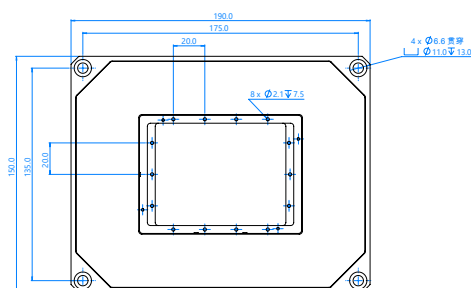
* For detail drawing and 3D model please contact us.

XY Piezo Scanner — Carrier.SL200.XY/XYZ

Large Clear Aperture, XY Motion, Low Profile

- ➡ Feature
- Piezo Stack Driving
 - Flexure Guiding
 - CAP Sensor, Close-loop Control
 - Nanometer Resolution
 - For High Resolution Microscopy
 - Combination with Long Travel Range Piezo Motor Stage

➡ Photo & Drawing



➡ Specification

Carrier.SL200.XY

Carrier.SL200.XYZ

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Motion Direction	XY	XYZ
3	Dimensions	182 × 150 × 19.5 mm	190 × 150 × 19.5 mm
4	Materials	Aluminum, Stainless Steel	
5	Travel Range	200 × 200 μm	200 × 200 × 200 μm
6	Clear Aperture	77 × 65 mm	77 × 65 mm
7	Resolution (Closed-loop)	2 nm	
8	Repeatability	10 nm	
9	Non-linearity	0.03%	
10	Max. Load	500 g	
11	Sensor Type	Capacitive	
12	Driving Voltage	Max. 150 V	
13	Working Temperature	15 ~ 40 °C	
14	Combination	Compatible with Carrier.L7550.XY	
15	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

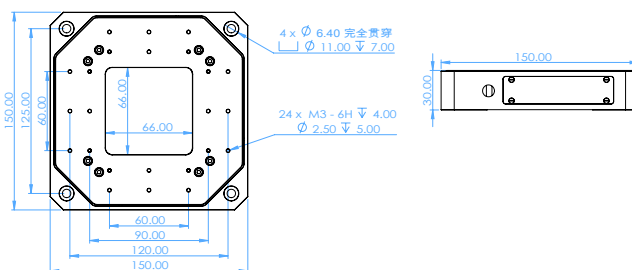
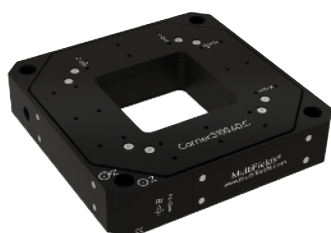
XYZTxTyRz Piezo Scanner — Carrier.S100/200/300.6D

Versatile, High Performance, Clear Aperture, XYZ and TxTyRz Motion

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- CAP Sensor, Close-loop Control
- Direct Metrology
- Nanometer Resolution

➡ Photo & Drawing



➡ Specification

Carrier.S100.6D

Carrier.S200.6D

Carrier.S300.6D

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;		
2	Motion Direction & Stroke (Close-loop)	XYZ: 100 μ m Tx, Ty, Rz: ± 0.5 mrad	XYZ: 200 μ m Tx, Ty, Rz: ± 1 mrad	XYZ: 300 μ m Tx, Ty, Rz: ± 2 mrad
3	Dimensions	150 $\times$ 150 $\times$ 30 mm		
4	Clear Aperture	66 $\times$ 66 mm		
5	Materials	Standard, .HV, .UHV Aluminum,Steel: 1.6 kg; .NM Aluminum,Titanium Alloy: 1.5 kg		
6	Non-linearity	XYZ: 0.02% ; Tx, Ty, Rz: 0.1%		
8	Repeatability	XYZ: 6 nm Tx, Ty, Rz: 0.2 μ rad		XYZ: 8 nm Tx, Ty, Rz: 0.2 μ rad
9	Resolution (Closed-loop)	XYZ: 1 nm Tx, Ty, Rz: 0.1 μ rad	XYZ: 2 nm Tx, Ty, Rz: 0.1 μ rad	XYZ: 2 nm Tx, Ty, Rz: 0.15 μ rad
10	Resonant Frequency, 0 Load ($\pm 20\%$)	XY: 190 Hz ; Z: 380 Hz	XY: 150 Hz ; Z: 300 Hz	XY: 140 Hz ; Z: 240 Hz
11	Resonant Frequency, 0.5 kg Load ($\pm 20\%$)	XY: 150 Hz ; Z: 200 Hz	XY: 120 Hz ; Z: 160 Hz	XY: 90 Hz ; Z: 140 Hz
12	Resonant Frequency, 2.5 kg Load ($\pm 20\%$)	XY: 110 Hz ; Z: 140 Hz	XY: 100 Hz ; Z: 110 Hz	XY: 75 Hz ; Z: 100 Hz
13	Max. Load	5 kg	5 kg	3 kg
14	Displacement Sensor	Capacitive		
15	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA		
16	Motion Controller	MC-Archimedes.N		

* For detail drawing and 3D model please contact us.

Part 3.2.3

OB Series (Hollow • Objective–Only)

Objective lens positioning, 100 μm to 400 μm travel, supports high–load and high–frequency operations.

	Travel Range	Product Code
	100 μm	OB100
	200 μm	OB200
	400 μm	OB400
	100 μm (High Load)	OBHL100
	200 μm (High Load)	OBHL200
	200 $\times$ 200 μm	OB200.XY

* Non-magnetic, Ultra High Vacuum Versions available

Resonant Frequency
(150 g load)

Closed-loop Resolution

250 Hz

1 nm

220 Hz

3 nm

165 Hz

5 nm

560 Hz

1 nm



400 Hz

3 nm

300 Hz

2 nm

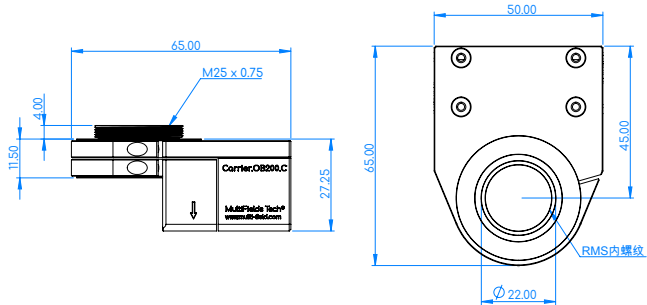


Objective Z Scanner — OB100,OB200,OB400

Customized Super-Resolution Solution for Optical Microscopy

- ➔ Feature
- Piezo stack actuation
 - Flexure Guiding
 - Sub-nanometer Resolution
- CAP Sensor, Close-loop Control
 - Auto Focus Option

➔ Photo & Drawing



➔ Specification

	OB100	OB200	OB400
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1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;		
2	Motion Direction & Stroke (Close-loop)	100 μm	200 μm	400 μm
3	Dimensions	65 $\times$ 50 $\times$ 27 mm		65 $\times$ 50 $\times$ 39 mm
4	Materials	Standard, .HV, .UHV Aluminum,Steel: 220 g; .NM Aluminum,Titanium Alloy: 200 g		Standard, .HV, .UHV Aluminum,Steel: 400 g; .NM Aluminum,Titanium Alloy: 360 g
5	Non-linearity	0.03%		
6	Repeatability	8 nm		
7	Resolution (Closed-loop)	1 nm	3 nm	5 nm
8	Resolution (Open-loop)	0.2 nm	0.4 nm	0.8 nm
9	Stiffness	0.5 N/ μm	0.35 N/ μm	0.25 N/ μm
10	Resonant Frequency, 0 Load ($\pm 20\%$)	600 Hz	480 Hz	380 Hz
11	Resonant Frequency, 150 g Load ($\pm 20\%$)	250 Hz	220 Hz	165 Hz
12	Max. Load	300 g		500 g
13	Displacement Sensor	Capacitive		
14	Cable & Connector	Default: Shielded Cable, D-Sub 7W2; .UHV: Shielded Cable,SMA		
15	Motion Controller	MC-Archimedes.N		

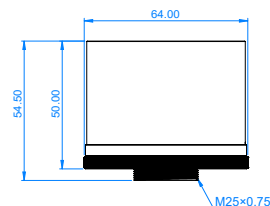
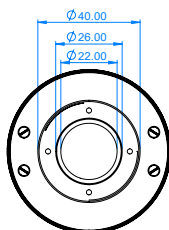
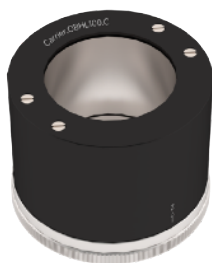
* For detail drawing and 3D model please contact us.

Objective Z Scanner — OBHL100,OBHL200

High-speed scanning, capacitive closed-loop sensing, ultra-high motion resolution

- ➡ Feature
 - Piezo Stack Driving
 - ms Response Time
 - Auto Focus Option
 - Flexure Guiding
 - Sub-nanometer Resolution
 - CAP Sensor, Close-loop Control
 - Higher Payload

➡ Photo & Drawing



➡ Specification

OBHL100

OBHL200

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Motion Direction & Stroke (Close-loop)	100 μm	200 μm
3	Dimensions	64 × 64 × 54 mm	78 × 78 × 67 mm
5	Materials	Standard, .HV, .UHV Aluminum,Steel: 650 g; .NM Aluminum,Titanium Alloy: 600 g	Standard, .HV, .UHV Aluminum,Steel: 850 g; .NM Aluminum,Titanium Alloy: 800 g
6	Non-linearity	0.02%	
7	Repeatability	5 nm	
8	Resolution (Closed-loop)	1 nm	1.5 nm
9	Resolution (Open-loop)	0.3 nm	0.5 nm
10	Stiffness	3 N/ μm	2 N/ μm
11	Resonant Frequency X, 0 Load ($\pm 20\%$)	1 kHz	750 Hz
12	Resonant Frequency X, 150 g Load ($\pm 20\%$)	560 Hz	400 Hz
13	Max. Load	1 kg	
14	Displacement Sensor	Capacitive	
15	Cable & Connector	Default: Shielded Cable,D-Sub 7W2; .UHV: Shielded Cable,SMA	
16	Motion Controller	MC-Archimedes.N	

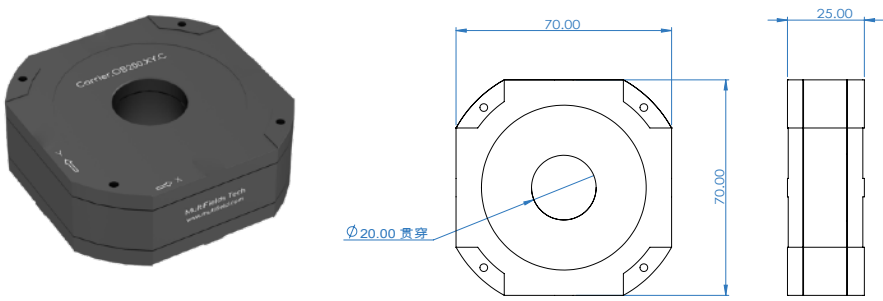
* For detail drawing and 3D model please contact us.

Objective XY Scanner — Carrier.OB200.XY

High-speed scanning, capacitive closed-loop sensing, ultra-high motion resolution

- ➔ Feature
- Piezo Stack Driving
 - Direct Metrology
 - Flexure Guiding
 - Sub-nanometer Resolution
 - CAP Sensor, Close-loop Control

➔ Photo & Drawing



➔ Specification

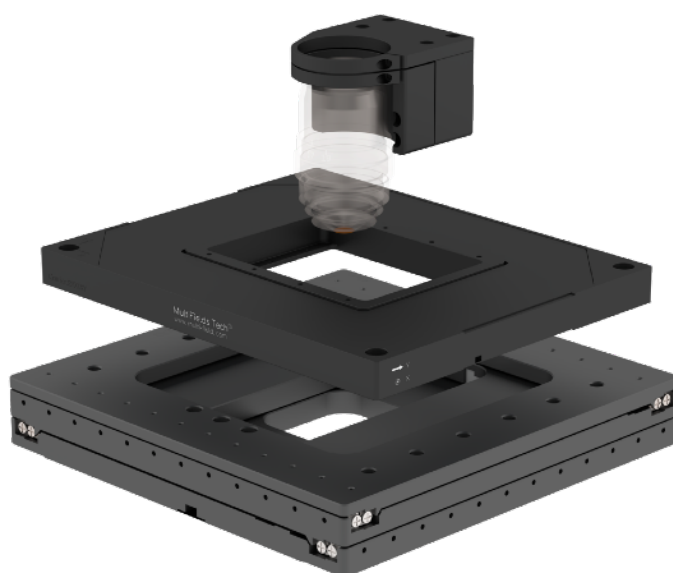
Carrier.OB200.XY

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Motion Direction	XY
3	Dimensions	70 × 70 × 25 mm
4	Materials	Aluminum, Stainless Steel
5	Travel Range	200 × 200 μm
6	Clear Aperture	20 mm
7	Resolution (Close-loop)	2 nm
8	Repeatability	10 nm
9	Non-linearity	0.03%
10	Resonant Frequency (no load)	350 Hz
11	Max. Load	500 g
12	Sensor Type	Capacitive
13	Driving Voltage	Max. 150 V
14	Working Temperature	15 ~ 40 °C
15	Mass	280 g
16	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

Carrier series combination for microscopy

Sample Position, Objective Focus, Beam Scan



➔ Specification

1	Combination (top-down)	OB400 Carrier.SL200.XYZ Carrier.L1010s.XY
2	Motion Direction	XYZ
3	Coarse Travel Range	100 × 100 mm (XY, Carrier.L1010s.XY)
4	Fine Scanning Range	200 × 200 × 200 μm (XYZ, Carrier.SL200.XYZ)
5	Objective Focusing Range	400 μm (Z, OB400)
6	Minimum Incremental Motion (Close-loop)	10 nm (XY, Carrier.L1010s.XY)
7	Fine Scanning Resolution (Close-loop)	2 nm (XYZ, Carrier.SL200.XYZ)

* For detail drawing and 3D model please contact us.

Piezo Scanner Controller — MC-Archimedes.N

Multi-channels, Low Noise, High Bandwidth

- ➡ Feature
- Fully Digital Process
 - Digital Linearization
 - High Performance Algorithm
 - Digital, Analog Control
 - Multi Channels

➡ Photo & Drawing



➡ Specification

MC-Archimedes.N series

1	Control Mode	Open-loop and Close-loop
2	Dimensions	230 × 120 × (30 × (N+1)) mm
3	Structure	FPGA
5	Channels	N Channels (N ≤ 8)
6	Sensor Type	.S Strain Gauge Sensor; .C Capacitive Sensor
7	Sensor Sample Rate	20 kHz / 50 kHz
8	Communication Interface	USB,EtherNET
9	Stage Connector	D-SUB 3W3
10	Power Supply	24V DC
11	Max. Output Power	24 W
12	Power Plug	IEC inlet
13	Output Voltage	-20 ~ 150 V
14	Analog In	0 ~ 10 V (single-ended)
15	Trigger	SMA, TTL (3.3V)
16	Software	PC GUI, SDK

* For detail drawing and 3D model please contact us.

Piezo Scanner Controller — MC-Archimedes.N

High Performance, Digital Process

MultiFields

多场科技



Part 4.1

Mirrors Series (High-speed)

High dynamic beam steering, closed-loop operation.

Multi degrees of freedom, completely non-magnetic and high-vacuum compatible options.

Short Range

1 Axis



Mirrors.Z12

12 μm

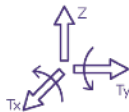
2 Axes

Tx Ty

Mirrors.TxTy0303

± 1.5 mrad, ± 1.5 mrad

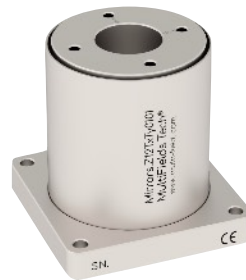
3 Axes



Mirrors.Z12TxTy0101

12 μm , 1 mrad, 1 mrad

* Non-magnetic, Ultra High Vacuum Versions available



Mid Range

Mirrors.TxTy1010

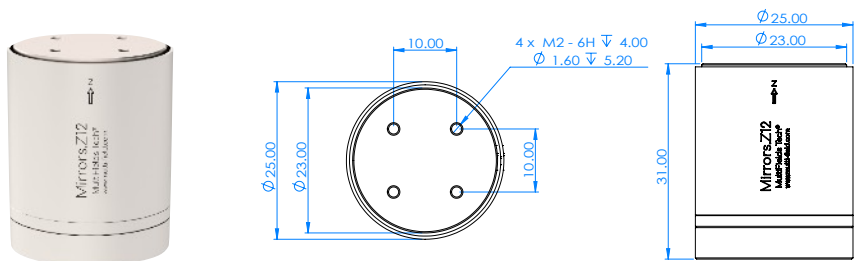
± 5 mrad, ± 5 mrad

Piezo FSM — Mirrors.Z12

High Dynamic Motion for Beam Steering, Phase Turning

- Feature
- Piezo Stack Driving
 - Sub-nanometer Resolution
 - Flexure Guiding
 - ms Response Time
 - SGS sensor, Close-loop

➤ Photo & Drawing



➤ Specification

Mirrors.Z12

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Motion Direction	Z
3	Dimensions	Φ25 × 31 mm
4	Materials	Stainless Steel
5	Travel Range (Open-loop)	15 μm
6	Travel Range (Close-loop)	12 μm
7	Resolution (Close-loop)	0.2 nm
8	Non-linearity	0.1%
9	Stiffness	40 N/μm
10	Resonant Frequency (no load)	4 kHz
11	Max. Load	200 g
12	Sensor Type	SGS
13	Driving Voltage	Max. 150 V
14	Working Temperature	15 ~ 40 °C
15	Cable	D-Sub 3W3
16	Mass	40 g
17	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

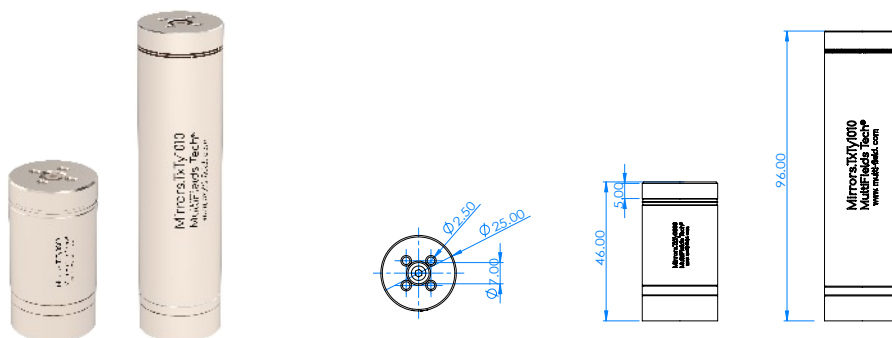
Piezo FSM — Mirrors.TxTy0303/1010

High Dynamic Motion for Beam Steering, Tip and Tilt

➡ Feature

- Piezo Stack Driving
- Flexure Guiding
- SGS sensor, Close-loop
- ms Response Time
- 2 Axes Direct Control

➡ Photo & Drawing



➡ Specification

Mirrors.TxTy.0303

Mirrors.TxTy.1010

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;	
2	Motion Direction	Tx,Ty	
3	Dimensions	Φ25 × 46 mm	Φ25 × 96 mm
4	Materials	Stainless Steel	
5	Travel Range (ΘXΘYClose-loop)	±1.5 mrad, ±1.5 mrad	±5 mrad, ±5 mrad
6	Resolution (Open-loop)	0.05 μrad (Open-loop)	0.2 μrad (Open-loop)
7	Resolution (Close-loop)	0.1 μrad (Close-loop)	0.5 μrad (Close-loop)
8	Non-linearity	0.1%	
9	Resonant Frequency ΘX,ΘY 0 load	2 kHz	1 kHz
10	Swing Radius	6.5 mm	6.5 mm
11	Sensor Type	SGS	
12	Driving Voltage	Max. 150 V	
13	Working Temperature	15 ~ 40 °C	
14	Cable	D-Sub 3W3	
15	Motion Controller	MC-Archimedes.N	

* For detail drawing and 3D model please contact us.

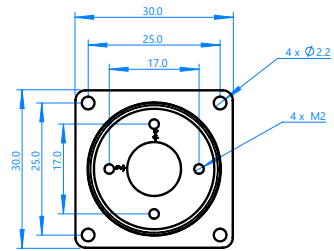
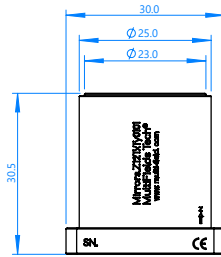
Piezo FSM — Mirrors.Z12TxTy0101

3-DOF hollow tilting stage, ms Response Time

- Feature

 - Piezo stack
 - Hollow center,
 - ms Response Time
- flexure guide
 - sub-nm resolution
- SGS closed-loop
 - 3-DOF parallel stage

➤ Photo & Drawing



➤ Specification

Mirrors.Z12TxTy0101

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version; .NM, Non-magnetic Version;
2	Motion Direction	Z,Tx & Ty
3	Dimensions	30 × 30 mm
4	Materials	Aluminum, Stainless Steel
5	Travel Range (Close-loop Z / Tx / Ty)	12 μm / 1 mrad / 1mrad
6	Resolution (Open-loop Z / Tx / Ty)	0.2 nm / 0.05 μrad / 0.05 μrad
7	Resolution (Close-loop Z / Tx / Ty)	0.4 nm / 0.1 μrad / 0.1 μrad
8	Non-linearity (Z / Tx /Ty)	0.2%
9	Resonant Frequency	5.5 kHz
10	Stiffness	10 N/μm
11	Sensor Type	SGS
12	Driving Voltage	Max. 150 V
13	Working Temperature	– 20 ~ 80 °C
14	Cable	D-Sub 3W3
15	Motion Controller	MC-Archimedes.N

* For detail drawing and 3D model please contact us.

Piezo Screw Actuator — AutoScrew.LR

Piezo Motor Driving with Screw Actuator, for Motorized Mirror Mount

- ➡ Feature
- Self-lock
 - Low drift
 - Large Force, Rigid
 - high-resolution
 - Compatible with Standard Mirror Mount

➡ Photo & Drawing



➡ Specification

AutoScrew.LR

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version;
2	Dimensions	35 × 15 × 57.4 mm
3	Materials	Stainless Steel
4	Cable & Connector	Standard, shield cable and SMB plug; .HV and .UHV, Kapton, PEEK-2mm pins
5	Travel Range	10 mm
6	Max. Velocity	Typical 1.2 mm/min
7	Minimum Incremental Motion	20 nm (typical), up to 50 nm
8	Driving Frequency	2 kHz
9	Max. Output Force	20 N (up to 50N)
10	Holding Force	100 N
11	Lateral Force	1 N
12	Controller	MC-Newton.E4
13	Max. Driving Voltage	Max. 100V

* For detail drawing and 3D model please contact us.

➡ Specification

AutoScrew.LR.Set.01

AutoScrew.LR.Set.02

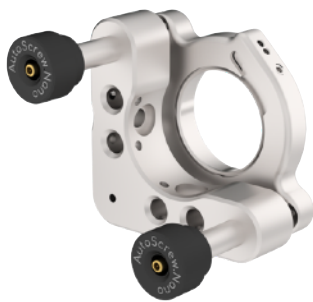
1	Compatible Optics	1 inch	2 inch
2	Angular Motion Range	±4 °	±3 °
3	Angular Motion Resolution	2 μrad	1 μrad

Piezo Screw Actuator — AutoScrew.Nano

Piezo Motor Driving with Screw Actuator, for Motorized Mirror Mount

- ➡ Feature
- Sub-nanometer Resolution
 - Dynamic Tuning
 - Compatible with Standard Mirror Mount

➡ Photo & Drawing



AutoScrew.Nano.Set



AutoScrew.Nano

➡ Specification

AutoScrew.Nano

1	Optional	.HV, High Vacuum Version; .UHV, Ultra High Vacuum Version;
2	Materials	Stainless Steel / Aluminum
3	Cable & Connector	Standard, shield cable and SMB plug; .HV and .UHV, Kapton, PEEK–2mm pins
4	Travel Range	18 μm
5	Resolution (Open-loop)	1 nm
6	Driving Voltage	0 – 120 V
7	Capacitance of Piezo	550 nF
8	Max. Output Force	300 N
9	Compatible Controller	MC–Archimedes.4
10	Mass	9.5 g

* For detail drawing and 3D model please contact us.

➡ Specification

AutoScrew.Nano.Set.01

AutoScrew.Nano.Set.02

1	Compatible Optics	1 inch	2 inch
2	Angular Motion Range	0.5 mrad	0.3 mrad
3	Angular Motion Resolution	0.02 μrad	0.01 μrad

4 Channels Driver — MC-Newton.E4

4 Channels

- ➡ Feature
 - Integrated Manual Control Buttons
 - Daisy chain power supply
 - Supports Software Control

- ➡ Photo & Drawing



➡ Specification

MC-Newton.E4

1	Control Mode	Open-loop, Stepping
2	Channels	4
3	Amplifier	1 channel, relay switch
4	Communication Interface	USB
5	Motor Connector	SMB × 4
6	Driving Voltage	120 V
7	Driving Frequency	2000 Hz
8	Manual Control	Button on front panel
9	Power Supply	12 VDC
10	Control Method	String Command Set
11	Compatible Piezo Motor Types	AutoScrew.LR Series

* For detail drawing and 3D model please contact us.

4 Channels Driver — MC-Archimedes.4

4 Channels

- ➡ Feature
- 4-Channel Independent Control

• Compact Design

• Cost Effective

➡ Photo & Drawing



➡ Specification

MC-Achimedes.4

1	Control Mode	Open-loop, Stepping
2	Channels	4
3	Communication Interface	USB
4	Motor Connector	SMB × 4
5	Input Voltage Range	0 ~ 10 V
6	Output Voltage Range	0 ~ 150 V
7	Max Output Power	30 W
8	Power Supply	24 VDC
9	Control Method	String Command Set
10	Compatible Piezo Motor Types	AutoScrew.Nano Series, Standard Low-Voltage Piezo Stacks

* For detail drawing and 3D model please contact us.

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