
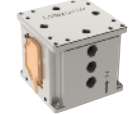

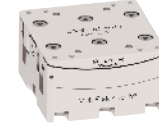








Table 1 - Piezoelectric Motion Units - "Lab" Series Products

	Linear Motion Unit		Rotary Motion Unit		
	X direction, Motion Stag	Z direction, Motion Stage	Tx, Tilting Stage		Tz, Rotary Stage
35 mm	 LS35x.Lab.O/.E Sereis Options: .NM / .HV/ .UHV	 LS35z.Lab.O Sereis Options: .NM / .HV/ .UHV	 GS35-35.Lab.O Sereis Options: .NM / .HV/ .UHV	 GS35-55.Lab.O Sereis Options: .NM / .HV/ .UHV	 RS35.Lab.O/.E Sereis Options: .NM / .HV/ .UHV
65 mm	 LS65x.Lab.O/.E Sereis Options: .NM / .HV / .UHV	 LS65z.Lab.O Sereis Options: .NM / .HV / .UHV	 GS65-77.Lab.O Sereis Options: .NM / .HV / .UHV	 GS65-97.Lab.O Sereis Options: .NM / .HV / .UHV	 RS65.Lab.O/.E Sereis Options: .NM / .HV / .UHV

.NM, non-magnetic; .HV, high vacuum compatible; .UHV, ultra-high vacuum compatible

Optional models ⇔

- .E ~ 100 nm Optic Encoder
- .O ~ 2nm Optic Encoder
- .adv ~ 0.5 nm Optic Encoder

- .HV ~ 1e-7 mbar high vacuum compatible
- .UHV ~ 2e-11 mbar ultra-high vacuum compatible

.NM ~ non-magnetic

"LS35x.Lab" Sereis

- LS35x.Lab.E
- LS35x.Lab.O
- LS35x.Lab.O.HV
- LS35x.Lab.O.UHV
- LS35x.Lab.O.NM
- LS35x.Lab.O.HV.NM
- LS35x.Lab.O.UHV.NM
- LS35x.Lab.adv
- LS35x.Lab.adv.HV
- LS35x.Lab.adv.UHV
- LS35x.Lab.adv.NM
- LS35x.Lab.adv.HV.NM
- LS35x.Lab.adv.UHV.NM

LS35z.Lab Sereis

- LS35z.Lab.O
- LS35z.Lab.O.HV
- LS35z.Lab.O.UHV
- LS35z.Lab.O.NM
- LS35z.Lab.O.HV.NM
- LS35z.Lab.O.UHV.NM
- LS35z.Lab.adv
- LS35z.Lab.adv.HV
- LS35z.Lab.adv.UHV
- LS35z.Lab.adv.NM
- LS35z.Lab.adv.HV.NM
- LS35z.Lab.adv.UHV.NM

LS65x.Lab Sereis

- LS65x.Lab.E
- LS65x.Lab.O
- LS65x.Lab.O.HV
- LS65x.Lab.O.UHV
- LS65x.Lab.O.NM
- LS65x.Lab.O.HV.NM
- LS65x.Lab.O.UHV.NM
- LS65x.Lab.adv
- LS65x.Lab.adv.HV
- LS65x.Lab.adv.UHV
- LS65x.Lab.adv.NM
- LS65x.Lab.adv.HV.NM
- LS65x.Lab.adv.UHV.NM

LS65z.Lab Sereis

- LS65z.Lab.O
- LS65z.Lab.O.HV
- LS65z.Lab.O.UHV
- LS65z.Lab.O.NM
- LS65z.Lab.O.HV.NM
- LS65z.Lab.O.UHV.NM
- LS65z.Lab.O.LR
- LS65z.Lab.O.LR.HV
- LS65z.Lab.O.LR.UHV
- LS65z.Lab.O.LR.NM
- LS65z.Lab.O.LR.HV.NM
- LS65z.Lab.O.LR.UHV.NM
- LS65z.Lab.adv
- LS65z.Lab.adv.LR
- LS65z.Lab.adv.LR.HV
- LS65z.Lab.adv.LR.UHV
- LS65z.Lab.adv.LR.NM
- LS65z.Lab.adv.LR.HV.NM
- LS65z.Lab.adv.LR.UHV.NM

RS35.Lab Sereis

- RS35.Lab.E
- RS35.Lab.O
- RS35.Lab.O.HV
- RS35.Lab.O.UHV
- RS35.Lab.O.NM
- RS35.Lab.O.HV.NM
- RS35.Lab.O.UHV.NM
- RS65.Lab.E
- RS65.Lab.O
- RS65.Lab.O.HV
- RS65.Lab.O.UHV
- RS65.Lab.O.NM
- RS65.Lab.O.HV.NM
- RS65.Lab.O.UHV.NM

GS35-35.Lab.O Sereis

- GS35-35.Lab.O
- GS35-35.Lab.O.HV
- GS35-35.Lab.O.UHV
- GS35-35.Lab.O.NM
- GS35-35.Lab.O.HV.NM
- GS35-35.Lab.O.UHV.NM

GS35-55.Lab.O Sereis

- GS35-55.Lab.O
- GS35-55.Lab.O.HV
- GS35-55.Lab.O.UHV
- GS35-55.Lab.O.NM
- GS35-55.Lab.O.HV.NM
- GS35-55.Lab.O.UHV.NM

GS65-77.Lab.O Sereis

- GS65-77.Lab.O
- GS65-77.Lab.O.HV
- GS65-77.Lab.O.UHV
- GS65-77.Lab.O.NM
- GS65-77.Lab.O.HV.NM
- GS65-77.Lab.O.UHV.NM

GS65-97.Lab.O Sereis

- GS65-97.Lab.O
- GS65-97.Lab.O.HV
- GS65-97.Lab.O.UHV
- GS65-97.Lab.O.NM
- GS65-97.Lab.O.HV.NM
- GS65-97.Lab.O.UHV.NM

Piezoelectric Motion - RT

Piezoelectric Motion - RT

Linear Stage - LS35x.Lab Series (closed-loop)

Linear motion with position control, high resolution & super-quiet motion



LS35x.Lab.O

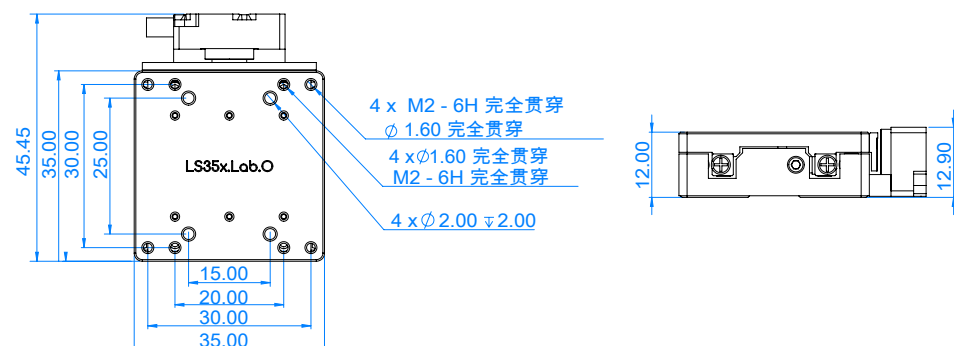
Features

- Very Quiet, 20 kHz drive frequency
- Compact Design, 35 × 35 mm × 12 mm
- High Precision -Resolution (.O): 2nm (default), 1nm optional
- Mini Step Size, ~ 5 nm
- Controller compatible with rotary and tilting stage
- Support Options, non-magnetic (.NM), high vacuum (.HV) & ultra- high vacuum (.UHV)

Optional models

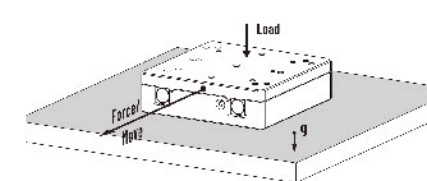
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|-------------------|----------------------------------|------------------------------------|---|
| | <i>.E ~ 100 nm Optic Encoder</i> | <i>.adv ~ 0.5 nm Optic Encoder</i> | <i>.UHV ~ 2e-11 mbar ultra- high vacuum</i> |
| | <i>.O ~ 2nm Optic Encoder</i> | <i>.HV ~ 1e-7 mbar high vacuum</i> | <i>.NM ~ non-magnetic</i> |
| • LS35x.Lab.E | • LS35x.Lab.O.NM | • LS35x.Lab.adv.HV | • LS35x.Lab.adv.UHV.NM |
| • LS35x.Lab.O | • LS35x.Lab.O.HV.NM | • LS35x.Lab.adv.UHV | |
| • LS35x.Lab.O.HV | • LS35x.Lab.O.UHV.NM | • LS35x.Lab.adv.NM | |
| • LS35x.Lab.O.UHV | • LS35x.Lab.adv | • LS35x.Lab.adv.HV.NM | |

2D Drawings

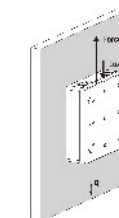


LS35x.Lab Series – Specification

Optional Versions ⇨	LS35x.Lab.O	LS35x.Lab.E
Special version is optional ⇨	.NM, non-magnetic; .HV, high vacuum compatible; .UHV, ultra-high vacuum compatible;	/
1 Dimension	35 × 35 mm × 12 mm	
2 Main Material	标准版 .HV, .UHV Stainless; NM, 纯钛	Stainless
3 Mass	200 g	
4 Travel Range	20 mm	
5 Drive Frequency	Max. 20 kHz (very quiet)	
6 Open loop : spatial motion resolution	0.1 nm	
7 Cable & Connectors	默认, 屏蔽线缆 D-Sub15 .UHV 版本, kapton漆包线, PEEK-2mm插针	
Motion parameters for recommended installation I		
7 Velocity	~ 20 mm/s (max)*	
8 Mini Step Size (closed-loop)	5 nm	100 nm
9 Dynamic Force	2 N	
10 Holding Force	5 N	
11 Pitch / Yaw	0.3 mrad	
12 Load	默认 1kg, 支持更大负载 (下单时需要标注)	
Motion parameters for recommended installation II		
13 Load	200 g	
14 Holding Force	5 N	
Sensor		
15 Sensor Type	- Optic Encoder (.O)	
16 Sensor Range	20 mm	
17 Sensor Resolution	标准版本 - 2 nm; .adv 版本 - 0.5 nm;	50 nm 分辨率



Installation I



Installation II

Linear Stage - LS35z.Lab Series (closed-loop)

Vertical motion with special design, various versions supplied.



LS35z.Lab.O

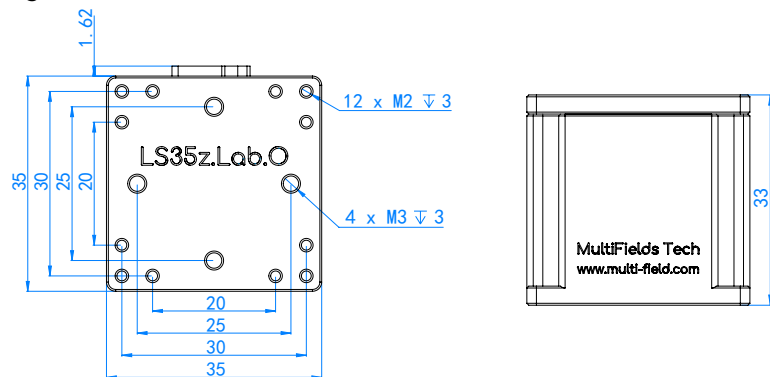
Features

- Very Quiet, 20 kHz drive frequency
- Compact Design, 35 × 35 mm × 33 mm
- Closed-loop control, Resistive Position Sensor (.R) or Optic Encoder (.O)
- High Precision -Resolution (.O): 2nm (default), 1nm optional
- Economy type -Resolution (.R): 100 - 200nm
- Mini Step Size, ~ 5 nm
- Multi-axis stacking adapters available
- Controller compatible with rotary and tilting stage
- Support Options, high vacuum (.HV) & ultra- high vacuum (.UHV)

Optional models

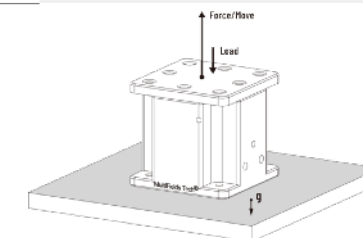
- | | | |
|-----------------------------|--------------------------------------|------------------------|
| .O ~ 2nm Optic Encoder | .HV ~ 1e-7 mbar high vacuum | .NM ~ non-magnetic |
| .adv ~ 0.5 nm Optic Encoder | .UHV ~ 2e-11 mbar ultra- high vacuum | |
| • LS35z.Lab.O | • LS35z.Lab.O.HV.NM | • LS35z.Lab.adv.UHV |
| • LS35z.Lab.O.HV | • LS35z.Lab.O.UHV.NM | • LS35z.Lab.adv.NM |
| • LS35z.Lab.O.UHV | • LS35z.Lab.adv | • LS35z.Lab.adv.HV.NM |
| • LS35z.Lab.O.NM | • LS35z.Lab.adv.HV | • LS35z.Lab.adv.UHV.NM |

2D Drawings



LS35z.Lab Series – Specification

Optional Versions ⇨	LS35z.Lab.O
Special version is optional ⇨	.NM, non-magnetic; .HV, high vacuum compatible; .UHV, ultra-high vacuum compatible;
1 Dimension	35 × 35 mm × 33 mm
2 Main Material	标准版 .HV, .UHV Stainless; .NM, 纯钛
3 Mass	200 g
4 Travel Range	10 mm
5 Drive Frequency	Max. 20 kHz (very quiet)
6 Open loop · spatial motion resolution	0.1 nm
7 Cable & Connectors	默认, 屏蔽线缆 D-Sub15 .UHV 版本, kapton漆包线, PEEK D-Sub15
Motion parameters for recommended installation I	
8 Velocity	~ 10 mm/s (max)*
9 Mini Step Size (closed-loop)	~ 5 nm
10 Dynamic Force	500 g
11 Holding Force	0.3 mrad
12 Pitch / Yaw	0.3 mrad
Motion parameters for recommended installation II	
13 Sensor Type	Optic Encoder (.O)
14 Sensor Range	20 mm
15 Sensor Resolution	标准版本 - 2 nm; adv 版本 - 0.5 nm;
精细调控 开环	
16 调控分辨率	亚纳米
17 调控行程	1 um



Linear Stage - LS65x.Lab Series

High-load horizontal motion units with high resolution



LS65x.Lab.O

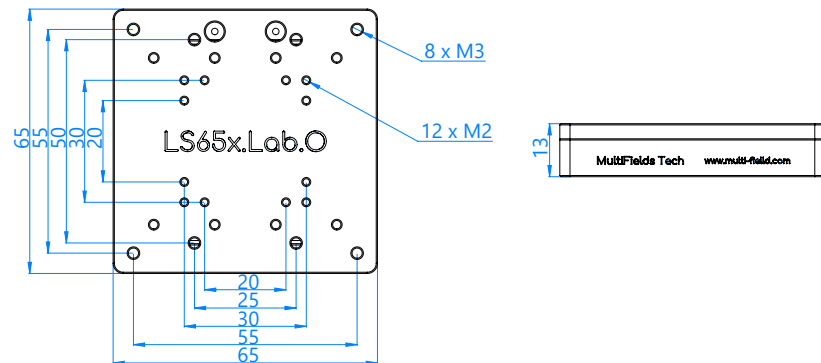
Features

- Very Quiet, 20 kHz drive frequency
- Compact Design, 65 mm × 65 mm × 13 mm
- Closed-loop control, Resistive Position Sensor (.R) or Optic Encoder (.O)
- High Precision -Resolution (.O): 2nm (default), 1nm optional
- Economy type -Resolution (.R): 100 - 200nm
- Mini Step Size, ~ 5 nm
- Multi-axis stacking adapters available
- Controller compatible with rotary and tilting stage
- Support Options, non-magnetic (.NM), high vacuum (.HV) & ultra- high vacuum (.UHV)

Optional models

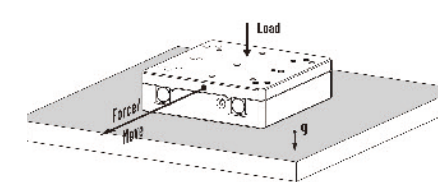
- | | | |
|---------------------------|-----------------------------|--------------------------------------|
| .E ~ 100 nm Optic Encoder | .adv ~ 0.5 nm Optic Encoder | .UHV ~ 2e-11 mbar ultra- high vacuum |
| .O ~ 2nm Optic Encoder | .HV ~ 1e-7 mbar high vacuum | .NM ~ non-magnetic |
| • LS65x.Lab.E | • LS65x.Lab.adv.HV | • LS65x.Lab.adv.UHV.NM |
| • LS65x.Lab.O | • LS65x.Lab.adv.UHV | |
| • LS65x.Lab.O.HV | • LS65x.Lab.adv.NM | |
| • LS65x.Lab.O.UHV | • LS65x.Lab.adv.HV.NM | |
| • LS65x.Lab.O.NM | | |
| • LS65x.Lab.O.HV.NM | | |
| • LS65x.Lab.O.UHV.NM | | |
| • LS65x.Lab.adv | | |

2D-Drawings

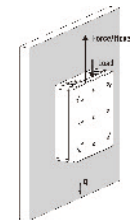


LS65x.Lab Series – Specification

Optional Versions ⇔	LS65x.Lab.O	LS65x.Lab.E
Special version is optional ⇔	.NM, non-magnetic; .HV, high vacuum compatible; .UHV, ultra-high vacuum compatible;	/
1 Dimension	65 × 65 mm × 13 mm	
2 Main Material	标准版 .HV .UHV Aluminium; .NM 纯Ti	铝合金
3 Mass	332 g	
4 Travel Range	30 mm	
5 Drive Frequency	Max. 20 kHz (very quiet)	
6 Open loop - spatial motion resolution	0.1 nm	
7 Cable & Connectors	默认, 屏蔽线缆 D-Sub15 .UHV 版本, kapton漆包线, PEEK D-Sub15	
Motion parameters for recommended installation I		
8 Velocity	~ 20 mm/s (max)*	
9 Dynamic Force	5 nm	100 nm
10 Holding Force	2 N	
11 Pitch / Yaw	5 N	
12 Mini Step Size (closed-loop)	0.3 mrad	
13 Load	2 kg	
Motion parameters for recommended installation II		
14 Load	150 g	
15 Holding Force	5 N	
Sensor		
16 Sensor Type	Optic Encoder (.O)	
17 Sensor Range	30 mm	
18 Sensor Resolution	.O 版本 - 2 nm; .adv 版本 - 0.5 nm;	50 nm 分辨率



空间安装形式 I



空间安装形式 II

Linear Stage - LS65z.Lab .O/.LR (closed-loop)

外形紧凑，动力性能不折扣的压电线性台；



LS65z.Lab.O



LS65z.Lab.O.LR

Features

- Very Quiet, 20 kHz drive frequency
- Compact Design, 65 × 65 mm × 42.5 mm
- Closed-loop control, Resistive Position Sensor (.R) or Optic Encoder (.O)
- High Precision -Resolution (.O): 2nm (default), 1nm optional
- Economy type -Resolution (.R): 100 - 200nm
- Mini Step Size, ~ 5 nm
- Multi-axis stacking adapters available
- Controller compatible with rotary and tilting stage
- Support Options, high vacuum (.HV) & ultra- high vacuum (.UHV)

Optional models

- LS65z.Lab.O
- LS65z.Lab.O.HV
- LS65z.Lab.O.UHV
- LS65z.Lab.O.NM
- LS65z.Lab.O.HV.NM
- LS65z.Lab.O.UHV.NM

.O ~ 2nm Optic Encoder
.adv ~ 0.5 nm Optic Encoder

- LS65z.Lab.adv
- LS65z.Lab.adv.HV
- LS65z.Lab.adv.UHV
- LS65z.Lab.adv.NM
- LS65z.Lab.adv.HV.NM
- LS65z.Lab.adv.UHV.NM

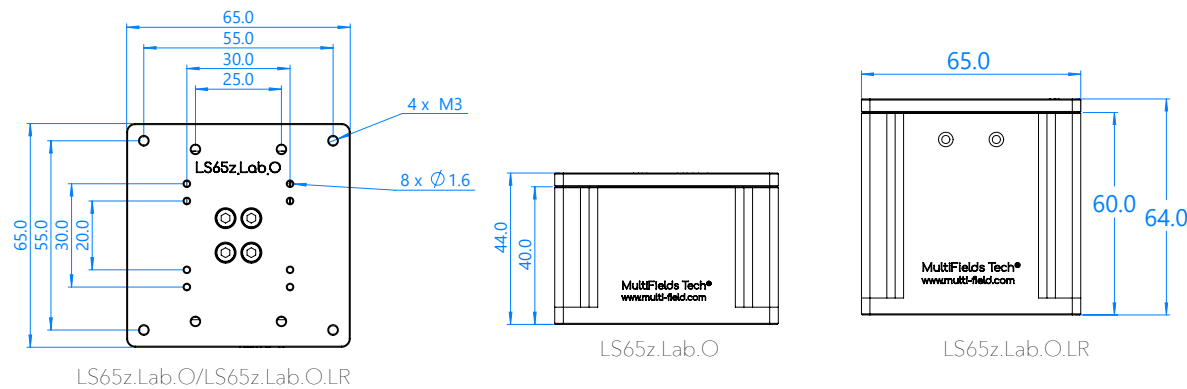
.HV ~ 1e-7 mbar high vacuum
.UHV ~ 2e-11 mbar ultra- high vacuum

- LS65z.Lab.O.LR
- LS65z.Lab.O.LR.HV
- LS65z.Lab.O.LR.UHV
- LS65z.Lab.O.LR.NM
- LS65z.Lab.O.LR.HV.NM
- LS65z.Lab.O.LR.UHV.NM

.NM ~ non-magnetic

- LS65z.Lab.adv.LR
- LS65z.Lab.adv.LR.HV
- LS65z.Lab.adv.LR.UHV
- LS65z.Lab.adv.LR.NM
- LS65z.Lab.adv.LR.HV.NM
- LS65z.Lab.adv.LR.UHV.NM

2D Drawings



LS65z.Lab Series – Specification

Optional Versions ⇨	LS65z.Lab.O	LS65z.Lab.O.LR
Special version is optional ⇨	.NM, non-magnetic; .HV, high vacuum compatible; .UHV, ultra-high vacuum compatible;	
1 Dimension	65 mm × 65 mm × 44 mm	65 mm × 65 mm × 64 mm
2 Main Material	标准版 .HV .UHV Aluminium; .NM 纯Ti	标准版 .HV .UHV Aluminium; .NM 纯Ti
3 Mass		
4 Travel Range	10 mm	20 mm
5 Drive Frequency	Max. 20 kHz (very quiet)	
6 Open loop - spatial motion resolution	0.1 nm	
7 Cable & Connectors	默认, 屏蔽线缆 D-Sub15 .UHV 版本, kapton 漆包线, PEEK D-Sub15	
Motion parameters for recommended installation I		
8 Velocity	~ 10 mm/s*	
9 Mini Step Size (closed-loop)	~ 5 nm	
10 最大推力/Load	500 g	1 kg
11 Pitch	0.3 mrad	
12 Yaw	0.3 mrad	
13 Load	500 g	1 kg
Sensor		
14 Sensor Range	Optic Encoder (.O)	
15 Sensor Resolution	标准版本 - 2 nm; .adv 版本 - 0.5 nm;	

