

Translation Stage | VT-50L

The low cost VT-50 linear stage excels in applications with very limited space due to its compact design. The stage utilizes a 2-phase stepper motor and is equipped with two mechanical limit switches. A pre-loaded ball bearing (optional cross-roller bearing) creates high stiffness and superior performance. The VT-50 is available with an optional linear encoder with 50 nm resolution. VT-50 stages can be mounted XY without any adapters, and a Z-axis can be added with the use of a standard mounting bracket. For elevation travel ranges of 10mm or less the VT-50 can be combined with the ES-50 elevation stage without the use of adapter plates. Versions capable of operation in vacuum (10^{-6} mbar) are available. The VT-50 is compatible with the MMC-200 controller.

KEY FEATURES

- Travel range of 50 to 300 mm (longer travel available on request up to 500 mm)
- 50 nm closed loop resolution
- Load capacity up to 20 kg
- Steel ball bearing
- Integrated mechanical limit switches
- Vacuum versions available

TECHNICAL DATA

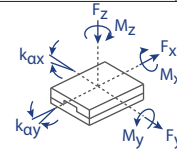
| Travel range [mm] | 50 | 100 | 200 | 300 |
|--|---|----------------------------------|-------------------------|-----------|
| Straightness / Flatness [μm] | ± 5 | ± 7 | ± 10 | ± 12 |
| Pitch [μrad] | ± 100 | ± 125 | ± 150 | ± 200 |
| Yaw [μrad] | ± 100 | ± 125 | ± 150 | ± 200 |
| Weight [g] | - | - | - | - |
| Motor option | 2-Phase Stepper Motor | | | |
| Speed, max [mm/s] | 10 | | | |
| Encoder option | None (open loop) | Analog (1 V_{pp}) | Digital (RS-422) | |
| Resolution, typical [μm] | 0.1 | 0.05 | 0.05 | |
| Repeatability, bi-directional [μm] | ± 10 | ± 0.2 | ± 0.2 | |
| Repeatability, uni-directional [μm] | 10 | 0.2 | 0.2 | |
| Accuracy [μm] | ± 20 | ± 3 | ± 3 | |
| Materials | aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request) | | | |

ORDERING INFORMATION

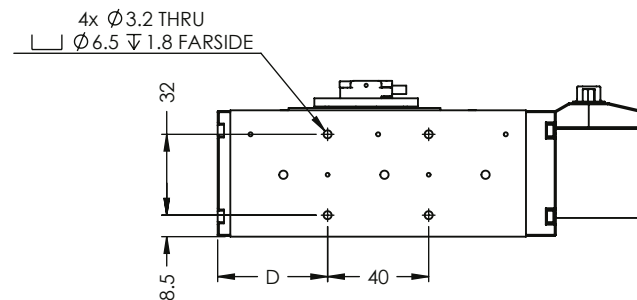
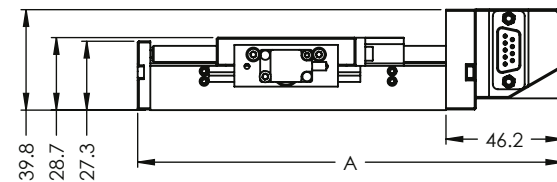
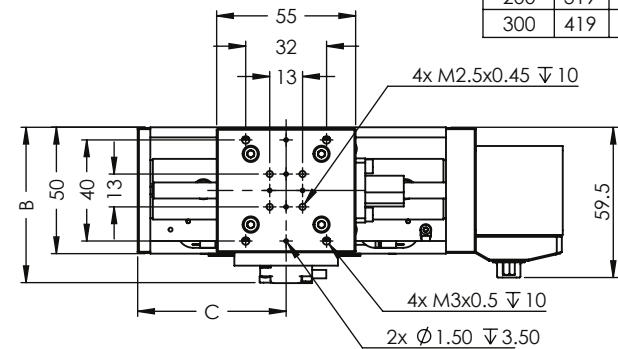
VT-50L- 1 | | | 1

| | | |
|---------------------|-----------------------------------|---|
| DRIVE | Stepper Motor, SM-003 | 1 |
| TRAVEL | 50 mm | 1 |
| | 100 mm | 2 |
| | 200 mm | 3 |
| | 300 mm | 4 |
| ENCODER | None | 0 |
| | Analog (1 V _{pp}) | 2 |
| | Digital (RS-422) | 3 |
| LIMIT SWITCH | Mechanical | 1 |
| ENVIRONMENT | Atmospheric | 0 |
| | High Vacuum, 10^{-6} mbar | 6 |

| Load, max | F _x [N] | F _y [N] | F _z [N] | M _x [N-m] | M _y [N-m] | M _z [N-m] | k _{ax} [$\mu\text{rad/N-m}$] | k _{ay} [$\mu\text{rad/N-m}$] |
|-----------|--------------------|--------------------|--------------------|----------------------|----------------------|----------------------|---|---|
| SM-003 | 50 | 200 | 200 | 10 | 10 | 10 | 100 | 100 |



| Travel | A | B | C | D |
|--------|-----|------|-------|------|
| 50 | 168 | 61.7 | 58.8 | 43.5 |
| 100 | 218 | 61.7 | 83.8 | 68.5 |
| 200 | 319 | 63.3 | 134.3 | 119 |
| 300 | 419 | 63.3 | 184.3 | 169 |



Specifications are subject to change without notice.