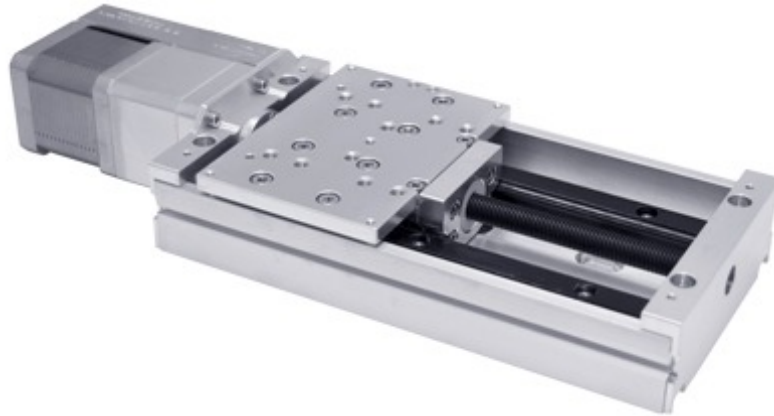


LRQ600AL-V2T4 Datasheet



- Vacuum compatible to 10⁻⁶ Torr
- 75, 150, 300, 450, 600 mm travel
- Up to 205 mm/s speed and up to 100 N thrust
- 100 kg load capacity
- Only 7 feedthrough wires required to control these units
- Designed for use with an X-MCC Series stepper motor controller or any 2-phase stepper motor controller

LRQ-V2 Series Overview

For more information about the basics of a vacuum system and considerations to keep in mind when gathering requirements for your application, read our technical article, "Motion Device Design Considerations for Vacuum Applications".

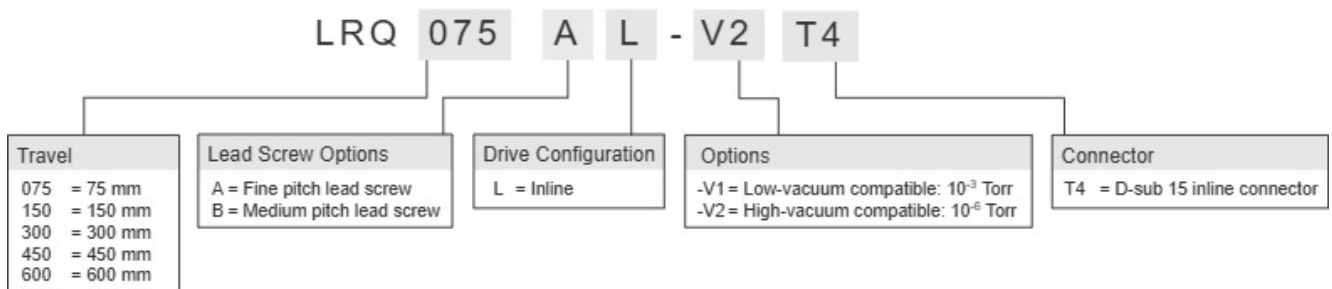
Zaber's LRQ-V2 Series devices are high-vacuum, computer-controlled, motorized linear stages with high stiffness, load, and lifetime capabilities in a compact size

At only 36 mm high, these vacuum stages are excellent for applications where a low profile is required. The LRQ-V2's innovative design allows speeds up to 205 mm/s and loads up to 100 kg. Like all of Zaber's products, the LRQ-V2 Series is designed to be very easy to set up and operate. These stages can bolt together into an XY system.

These stages are wired with a male D-sub 15 connector for plug-and-play use with our X-MCC Series stepper motor controllers. Simply cut the connector off for flying leads in vacuum and match the wire connections outside of the vacuum for an easy connection. Our handy kits include free software, and all of the accessories that you will need to get the stage running right out of the box.

For more information visit: <https://www.zaber.com/products/vacuum-compatible-stages/LRQ-V2>

LRQ-V2 Series Part Numbering & Options



LRQ600AL-V2T4 Drawings

- [LRQxL-V.png \(Drawing for the LRQxL-V\)](#)

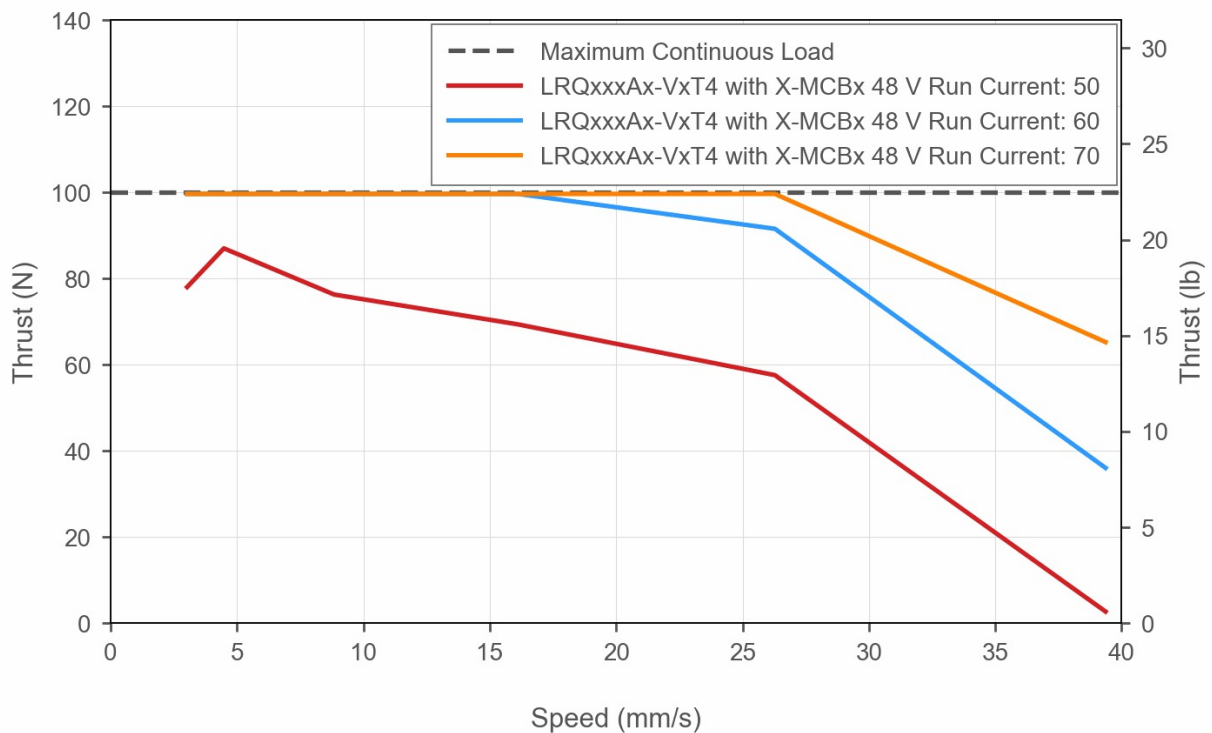
LRQ600AL-V2T4 Specifications

| | |
|--|--|
| Microstep Size (Default Resolution) | 0.09921875 μm |
| Built-in Controller | No |
| Recommended Controller | X-MCC (48 V) Recommended |
| AutoDetect | No |
| Travel Range | 600 mm (23.622") |
| Accuracy (unidirectional) | 150 μm (0.005905") |
| Repeatability | < 2.5 μm (< 0.000098") |
| Backlash | < 8 μm (< 0.000315") |
| Maximum Speed | 35 mm/s (1.378"/s) |
| Minimum Speed | 0.000061 mm/s (0.000002"/s) |
| Speed Resolution | 0.000061 mm/s (0.000002"/s) |
| Peak Thrust | 100 N (22.4 lb) |
| Maximum Continuous Thrust | 100 N (22.4 lb) |
| Maximum Centered Load | 1000 N (224.3 lb) |
| Maximum Moment (Pitch) | 30 N-m (22.1 ft-lb) |
| Maximum Moment (Roll) | 30 N-m (22.1 ft-lb) |
| Maximum Moment (Yaw) | 30 N-m (22.1 ft-lb) |
| Vertical Runout | < 75 μm (< 0.002953") |
| Horizontal Runout | < 60 μm (< 0.002362") |
| Pitch | 0.045° (0.785 mrad) |
| Roll | 0.035° (0.611 mrad) |
| Yaw | 0.04° (0.698 mrad) |
| Stiffness in Pitch | 500 N-m/° (35 $\mu\text{rad/N-m}$) |
| Stiffness in Roll | 1180 N-m/° (15 $\mu\text{rad/N-m}$) |
| Linear Motion Per Motor Rev | 1.27 mm (0.050") |
| Motor Steps Per Rev | 200 |
| Motor Type | Stepper (2 phase) |
| Motor Rated Current | 2100 mA/phase |
| Inductance | 2.8 mH/phase |
| Motor Connection | Teflon flying leads with D-sub15 connector |
| Default Resolution | 1/64 of a step |

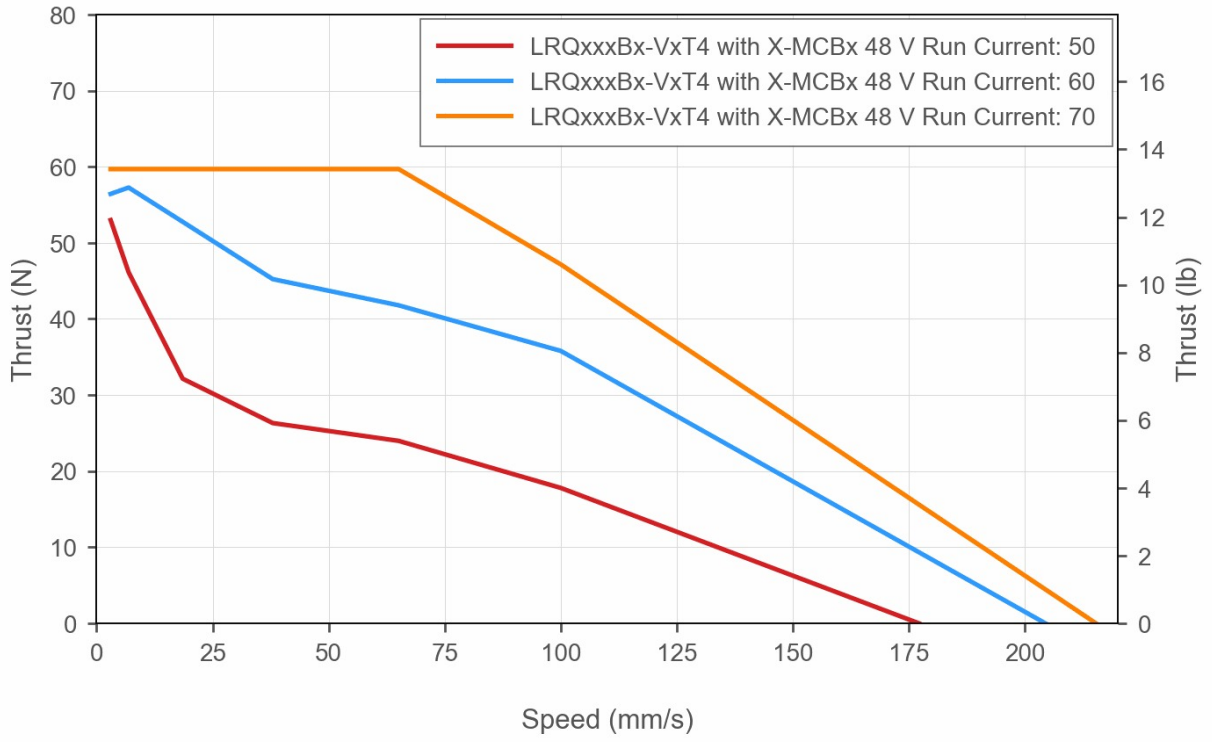
| | |
|--|--|
| Microstep Size (Default Resolution) | 0.09921875 μm |
| Guide Type | Recirculating Ball Linear Guide |
| Mechanical Drive System | Precision lead screw |
| Limit or Home Sensing | Magnetic home sensor |
| Manual Control | No |
| Axes of Motion | 1 |
| Mounting Interface | M6 and M3 threaded holes |
| Operating Temperature Range | 0 to 50 °C |
| CE Compliant | Yes |
| Vacuum Compatible | High vacuum (10 ⁻⁶ Torr) |
| Weight | 4.86 kg (10.714 lb) |

LRQ-V2 Series Charts

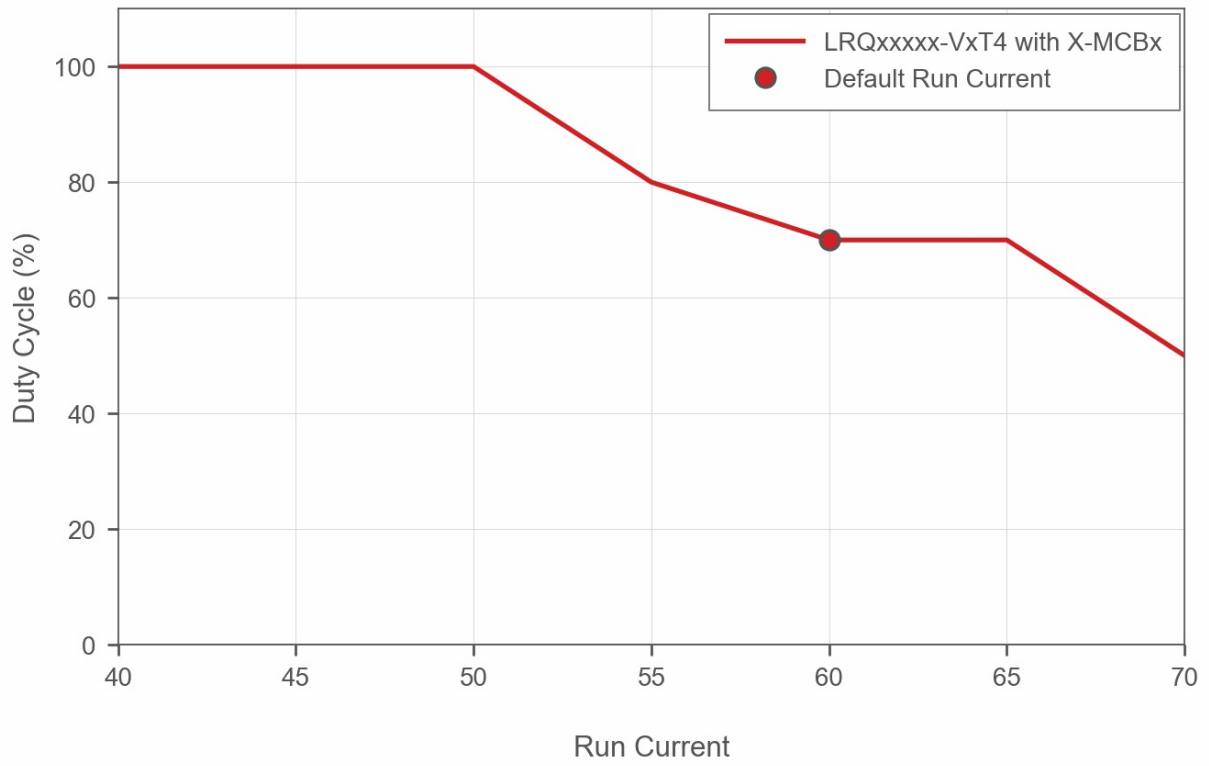
Thrust Speed Performance



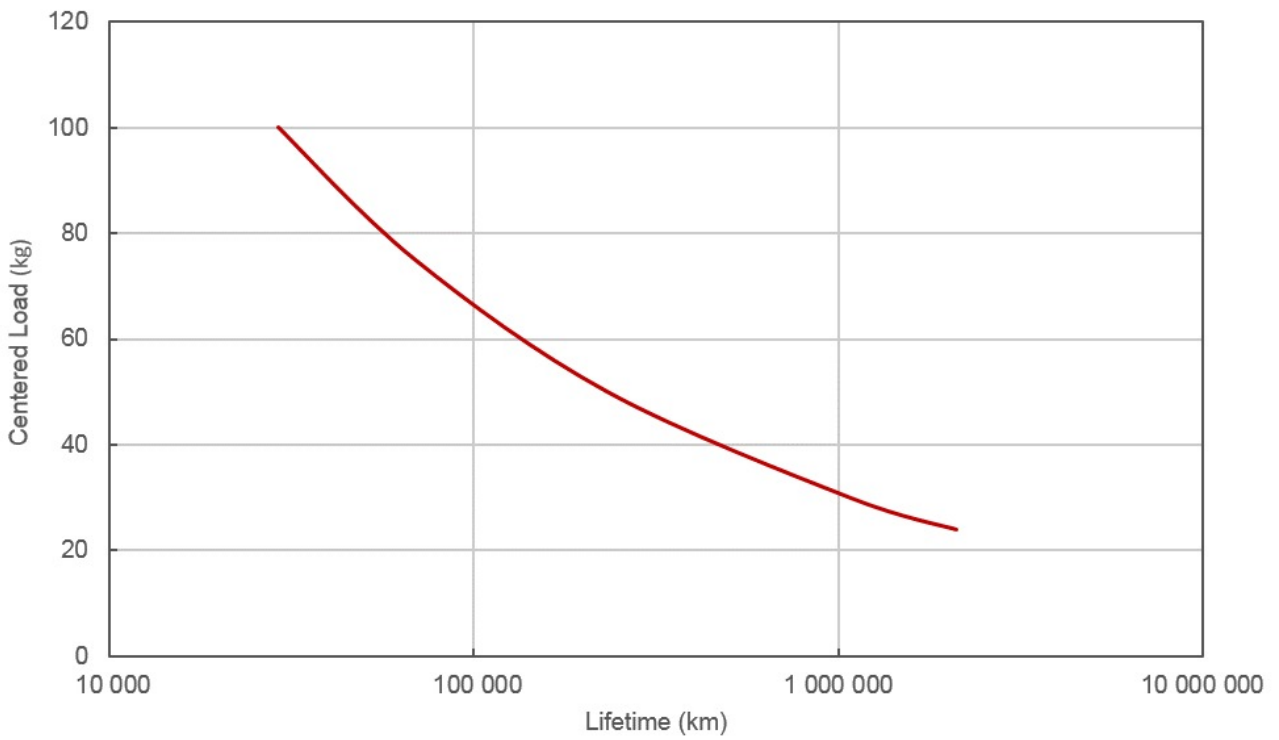
Thrust Speed Performance



Recommended Duty Cycle



LRQ Linear Bearing Lifetime



Contact

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