

VERTICAL Z FOCUS STAGE

We offer an ultra-high resolution Z focus stage engineered for performance, reliability and versatility to meet the most demanding Z-focusing requirements.



Vertical Z Focus Stage

VFS1850



Ultra Precise
Movement



Wide Travel
Range



Compact
Design

ABOUT OUR PRODUCT

Featuring an innovative vertical Z focus stage, this precision solution delivers ultra-precise movement, exceptional accuracy and outstanding value. Designed for demanding applications such as nanotechnology and high-resolution imaging, it offers a wide travel range that adapts easily to different system setups. Its compact design allows flexible placement of the built-in controller for convenient drop-in replacement. The stage is orientation-independent with no counter-balance required, supports dynamic loads reliably, and provides a cost-effective solution without compromising performance or reliability.

Features

- Ultra precise movement (20nm) with exceptional precision & repeatability
- Wide travel range of 50mm
- Compact design with flexible placement of control box
- Enhanced stability with ball screw drive and anti-creep cross roller guide
- Integrated solution with built-in smart controller
- Orientation-independent with no counterbalance required
- Supports daisy-chaining with other V-BMB modules for more optimized cable management



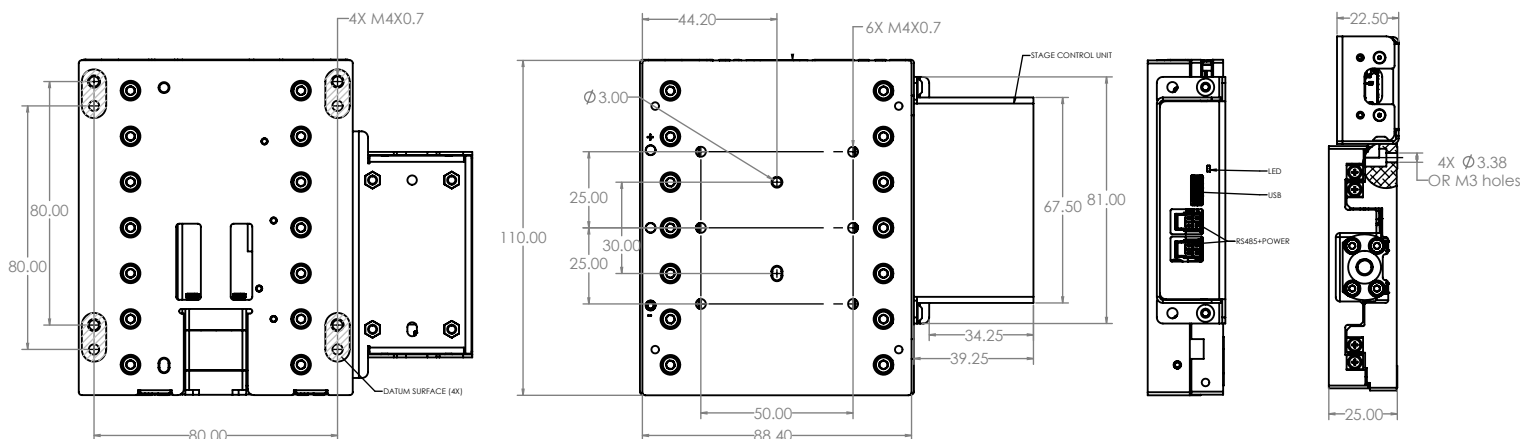
Specifications

	VFS1850 (Vertical Z Focus Stage)
Travel Range	50mm
Motor Type	Nema-8 Ball Screw Linear Actuator
Guide	Anti-Creep Cross Roller Guide
Encoder Resolution	10nm
Accuracy ¹ (2σ)	10μm
Bi-directional Repeatability (2σ)	0.5μm
Homing Repeatability	0.5μm
Minimum Move	20nm
Load Capacity	Up to 1.0kg
Maximum Acceleration ²	200mm/s ²
Maximum Velocity ²	80mm/s
Flatness & Straightness	3μm
Weight	0.7kg
Moving Mass	0.15kg
Travel Life ³	>1 million cycles
Yaw / Orthogonality, μrad	150 / ≤50
Power Requirement	Input Voltage: 24-48VDC, Max Input Power: 5W
Connectivity	USB / RS-485 / TTL UART
Daisy-Chain Capability	Yes
Dimension, WxDxH, mm	88.4 x 110 x 25 (without Control Box)

¹ Accuracy has 2 point slope correction applied

² The maximum acceleration and velocity is encoder and load dependent

³ Calculated based on the maximum focusing distance of 50mm + 50mm



VBMB PTE LTD (V-BMB)

All product specifications are subject to change without notice. Last updated: JAN-2026
Copyright © 2026 VBMB Pte Ltd. All rights reserved.
No part of this document may be photocopied, reproduced, or translated to another language without the prior written permission of VBMB Pte Ltd.



Website: v-bmb.com
Email: sales@v-bmb.com
E-Shop: shop.v-bmb.com
LinkedIn: www.linkedin.com/company/v-bmb/