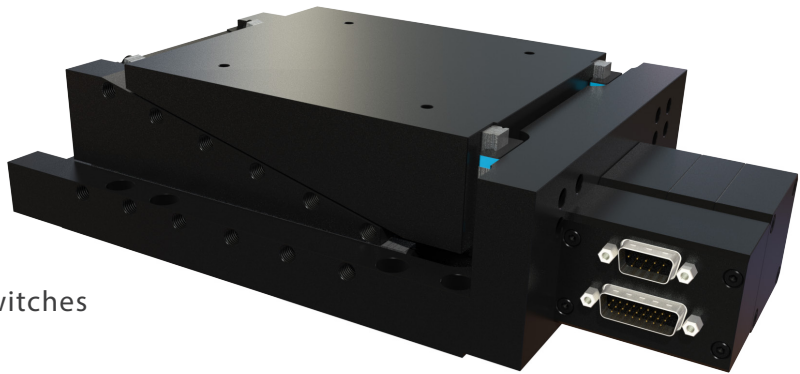


ELV-012 Datasheet

High Precision Height-Adjustment Stage

FEATURES

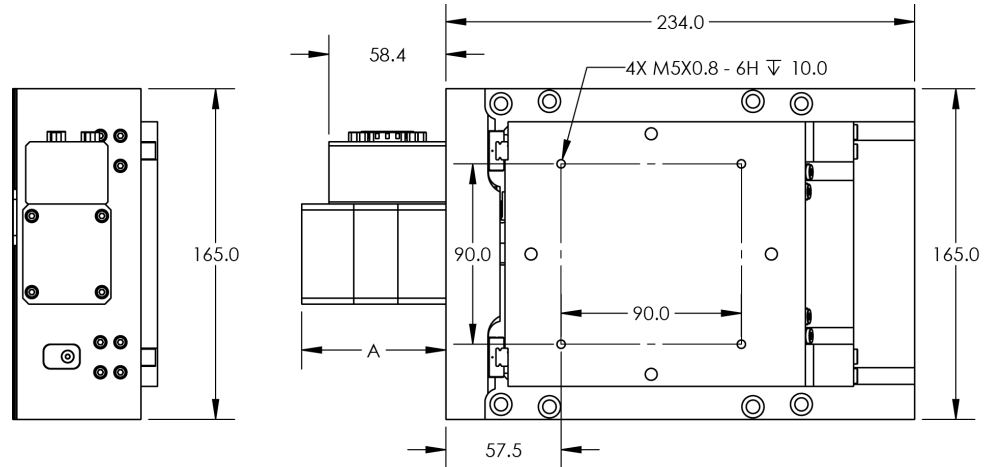
- 12mm Travel
- Up to 1.0 μ m Repeatability
- Brushless DC Motor
- Crossed Roller Bearings
- Optical Limit and Home Switches
- Optional Linear Encoder
- Low Profile Design



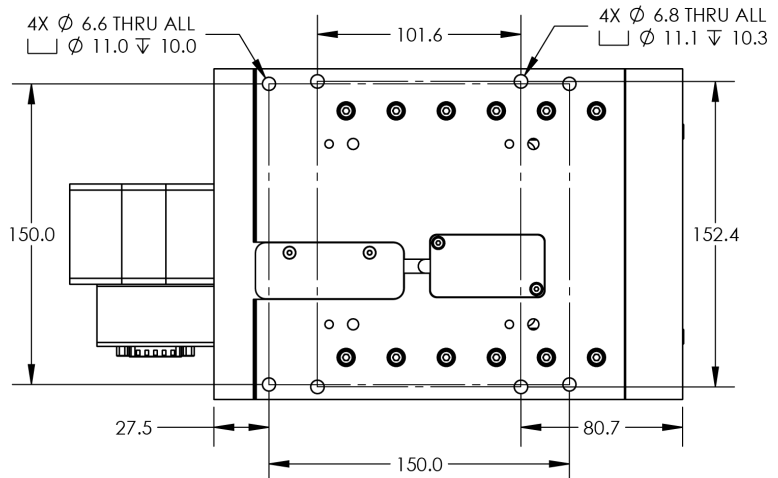
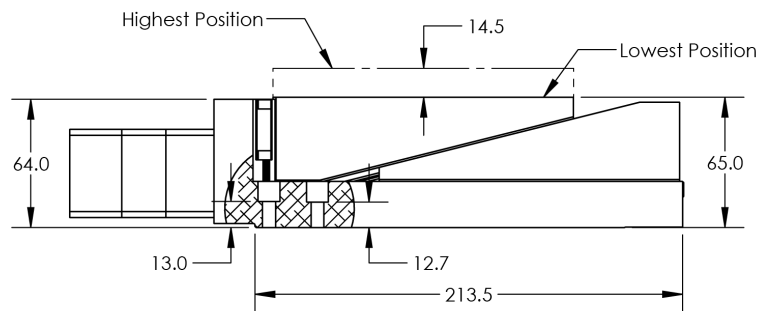
The ELV-012 is one of Griffin Motion's high-precision vertical lifting stages, designed for applications requiring exceptional Z-axis positioning accuracy in a compact footprint. Utilizing a precision ballscrew-driven wedge mechanism with a 4:1 mechanical advantage, the ELV-012 delivers smooth, stable vertical motion across 12 mm of travel while maximizing stiffness and load capacity.

Ideal for microscopy, photonics, semiconductor, and metrology applications, the ELV-012 provides precise height adjustment with excellent repeatability and long-term reliability.

ELV-012 Dimensions



Brake Configuration	Dim A (mm)
No Brake	58.4
Brake	72



ELV Ordering Options

ELV Ordering Options	
Product Series	ELV: Precision Vertical Lifting Stage, "Elevator Stage"
Stage Travel (mm) ¹	012: 4:1 Wedge Ratio 015: 3:1 Wedge Ratio 025: 2:1 Wedge Ratio
Drive Type	BS: 2mm/Rev Ballscrew
Motor Code	A: NEMA17 Brushless DC Motor (012, 015 Only) D: NEMA23 Brushless DC Motor (025 Only)
Feedback Code	H: Rotary Encoder, 16,000 cts/rev, RS422 Compatible M: Linear Encoder, 10,000 cts/mm, RS422 Compatible L: Linear Encoder, 50 Periods/mm, 1Vpp Sin and Cos
Precision Grade	S: Standard Precision P: High Precision ²
Additional Options	0: No Additional Options D: Power-Off Brake
Customizations	00: Standard Product 01-99: Custom Stage, Customer Specific ³
Example Part Number	ELV-012-BS-A-M-S-D-02
Notes	1: Custom travels may be available, maximum 25mm 2: Contact Griffin Motion for high precision specification options 3: Common customizations include: custom hole patterns and cleanroom preparation

ELV-012 Specifications		
Stage Feedback	H	M/L
Mechanical Accuracy ($\pm\mu\text{m}$) ^{1,3}	10.0	5.0
Calibrated Accuracy ($\pm\mu\text{m}$) ^{2,3}	4.0	2.0
Bi-Directional Repeatability (μm) ^{1,3}	2.0	1.0
Pitch ($\pm\text{arc-sec}$) ^{1,3}	10.0	
Yaw ($\pm\text{arc-sec}$) ^{1,3}		
Maximum Velocity (mm/s)	35	
Continuous Motor Force (Fz) (N)	250	
X Load Capacity (Fx) (N)	100	
Y Load Capacity (Fy) (N)		
Moment Load Capacity (Mx) (Nm)	5.0	
Moment Load Capacity (My) (Nm)		
Moment Load Capacity (Mz) (Nm)		
Moving Mass (kg)	1.7	
Stage Mass (kg)	6.0	

Notes:

1. Specification is verified via laser interferometer on every stage

2. In order to have a stage calibrated and verified, Griffin Motion must perform the controls configuration

3. Improved specifications are available by ordering the "P" precision grade

4. Specification may be verified by laser interferometer upon request

