

ES-4

Elevator Stage



- Aperture Z-Axis stage with nanometer performance.
- Very low hysteresis drive mechanism.
- High payload capacity to 15 kg.
- Non-back driving single plane wedge drive.
- Optional integrated rotary axis.

ES-4 Precision Elevator Stage is designed for short travel, compact vertical Z-axis applications requiring extremely fine incremental up-down motions with high resolution, high repeatability, and high mechanical stability.

Precision Positioning

ES-4 Stages are designed with high density cross-roller guides for both the vertical guide and the wedge drive to assure maximum stability within the smallest footprint. Single column vertical cross roller guides offer high stiffness with appropriate levels of preload create a unit with very low hysteresis and considerable loading capacity. The design is fully metric and modular in style. The wedge drive mechanism is separate from the elevator mechanism permitting various combinations of wedge angle, drive screw lead, and linear/rotary encoder options. This adaptable design allows the elevator stage to be configured to match the application exactly.

Applications

Primary applications of the elevator stage include short travel, compact vertical positioning in optical systems, video metrology, laser work, inspection, semiconductor testing and manufacturing processes, and similar applications where compact size is a priority. The modularity of the design permits the ES-4 Stage to be easily integrated into existing stage systems, including open frame metrology stages, or to be used as a standalone stage. The stage is easily interfaced, both mechanically and electrically, with standard BSM40 servo motor face connection interface.

ES-4 Specifications

	ES-4
Travel	4 mm
Drive System	Precision Ground Ball Screw
Maximum Acceleration	Payload Dependent
Ballscrew Lead	1 mm Lead
Maximum Speed	Unladen 10 mm/s
Recommended Payload Limit	15 kg
Motor	BSM 40 Motor
Resolution	50 nm
Construction	Aluminum Alloy Body, Hard Coat Anodize
Repeatability	< 1 μ m
Trajectory Control	
Accuracy	$\pm 1 \mu$ m F.T.
Straightness/Flatness	$\pm 1 \mu$ m F.T.

- All trajectory data based on axis uniformly supported over full length on precision mounting surface with vibration isolation.
- Payload capacities are recommended values to achieve maximum lifetime in the worst-case scenario featuring maximum dynamic operation and off-center loading.
- Force, acceleration and speed performance are based on operations with NUTEC ELECTRONIC controls.
- F.T. is described by Full Travel

ES-4 Dimensions

