Bell Everman

Embedded Motion Systems

DATA SHEET

LOWBOY PRECISION STAGE

Self-contained, scalable motion modules offer easy integration.

- **Speed and Precision.** LowBoys reach speeds up to 4 m/s with a bi-directional repeatability of ± 1 encoder count.
- **Low Profile Design.** Even when stacked in a dual-axis configuration, LowBoys have a stacked height of 169 mm.
- **Precision Drives.** LowBoy stages are available with two different drive options. Units with ServoNut linear drives strike the best balance between precision and high forces. Units with linear motor units maximize precision and speed.
- **Integration Options.** LowBoys can be configured with an integrated rotary axis. Utilities can exit from the stage end or base. Top plates can be configured to customer specifications. Thanks to their self-contained covers, LowBoys lend themselves to clean room operation.
- **Rugged Construction.** LowBoys feature an anodized aluminum and stainless steel construction. Their linear bearings are lubed for life.

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TECHNICAL SPECIFICATIONS	LowBoy Precision Stage	
	LB-LM LowBoy Linear Motor	LB-SN LowBoy ServoNut
Type	Direct Drive Linear	Rotating Nut Drive Linear
Bearing type	Preloaded 4-row ricirculating ball	
Length max (m)	1.8	
Motor type	Air core 3-phase linear motor	3-phase brushless servo
Lead	N/A	5 mm, 10 mm
Accuracy (µm) Linear accuracy at stage centerline, after two-point temperature scale correction.	±4/meter	
Angular deviation (±arc-sec) Yaw angle maximum in the plane of the base.	±10	
Bi-directional repeatability (µm) At stage centerline, linear encoder only. Rotary encoder servonut repeatability dependent on payload and motion profile, but will be in a range from ±4 to ±15.	±2	
Encoder type and resolutions: linear (µm), rotary (CPR)	Renishaw Tonic 1µm, 0.5µm, 0.1µm	Renishaw Tonic or A-B Rotary 1µm, 0.5µm, 0.1µm, 8000 CPR
Speed (m/sec)	4	0.2, 0.4
Continuous linear force (N)	70-280	780-1560
Max shear for 10^6 m @ 2m/sec (N)	4000	
Max shear for 10^6 m @ 0.5m/sec (N)	16000	
Max moment Pitch, Yaw, Roll for 10^6 m @ 2m/sec (N-m)	250	
Max moment Pitch, Yaw, Roll for 10^6 m @ 0.5m/sec (N-m)	1000	
Moving mass (kg)	3.5-4.1	4.7
Chassis mass constants F, C Chassis mass = Length x F+C (kg)	-1,-2 motor: F= 0.026 -3 motor: F=0.034 C=1.3	F=.023 C=1.7
Cable length from end of stage, std (±25 mm)	2775 - <Length> (add 2m as an option)	

Configure and request a quote online at **www.bell-everman.com/lowboy**.

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