

FBS050/020/050

## Linear Stage



### Mechanical Design Characteristics

MODEL	FBS050020	FBS050050
Stage Plate Material	Aluminum — Black Anodized	
Motor	HR4 Piezo, ultrasonic standing wave	
Bearing Type	Precision crossed rollers with anti-migration device	
Encoder	Linear optical encoder with gold tape scale	
Cable Lengths (m)	3m	
MTBF (hours)	30,000	
Stage Mass (g)	405g	550g
Carriage Moving Mass (g)	158g	230g
RoSH	Compliant	
Vacuum Compatible Options	High Vacuum (to $10^{-7}$ Torr) / UHV (to $10^{-10}$ Torr) available	

### Performance Specifications

MODEL	FBS050020	FBS050050
Travel Range (mm)	20mm	50mm
Encoder Resolution	Standard: 100nm Optional: 10nm	100nm
Bi-directional Repeatability	Standard: 1µm Optional: 100nm	1µm
Absolute Accuracy	Standard: 5µm Optional: 2.5µm	10µm
(Error mapping available)		7µm
Minimum Incremental	AC Mode: 100nm	100nm
Move Convergence	UHR Mode: 5nm DC Mode: <1nm	5nm
Maximum Velocity	200mm/sec	200mm/sec
Straightness & Flatness	±4µm	±4µm
Pitch & Yaw	±40µrad	±40µrad
Load Capacity - Horizontal	1.8kg	1.8kg
Load Capacity - Vertical	0.4kg	0.3kg
Dynamic Stall Force	16N	16N
Motor Stiffness	1.7N/µ	1.7N/µ
Holding Force without Power	14N	



