

NPS Datasheet

Ultra-High Precision Linear Motor Driven Stage

FEATURES

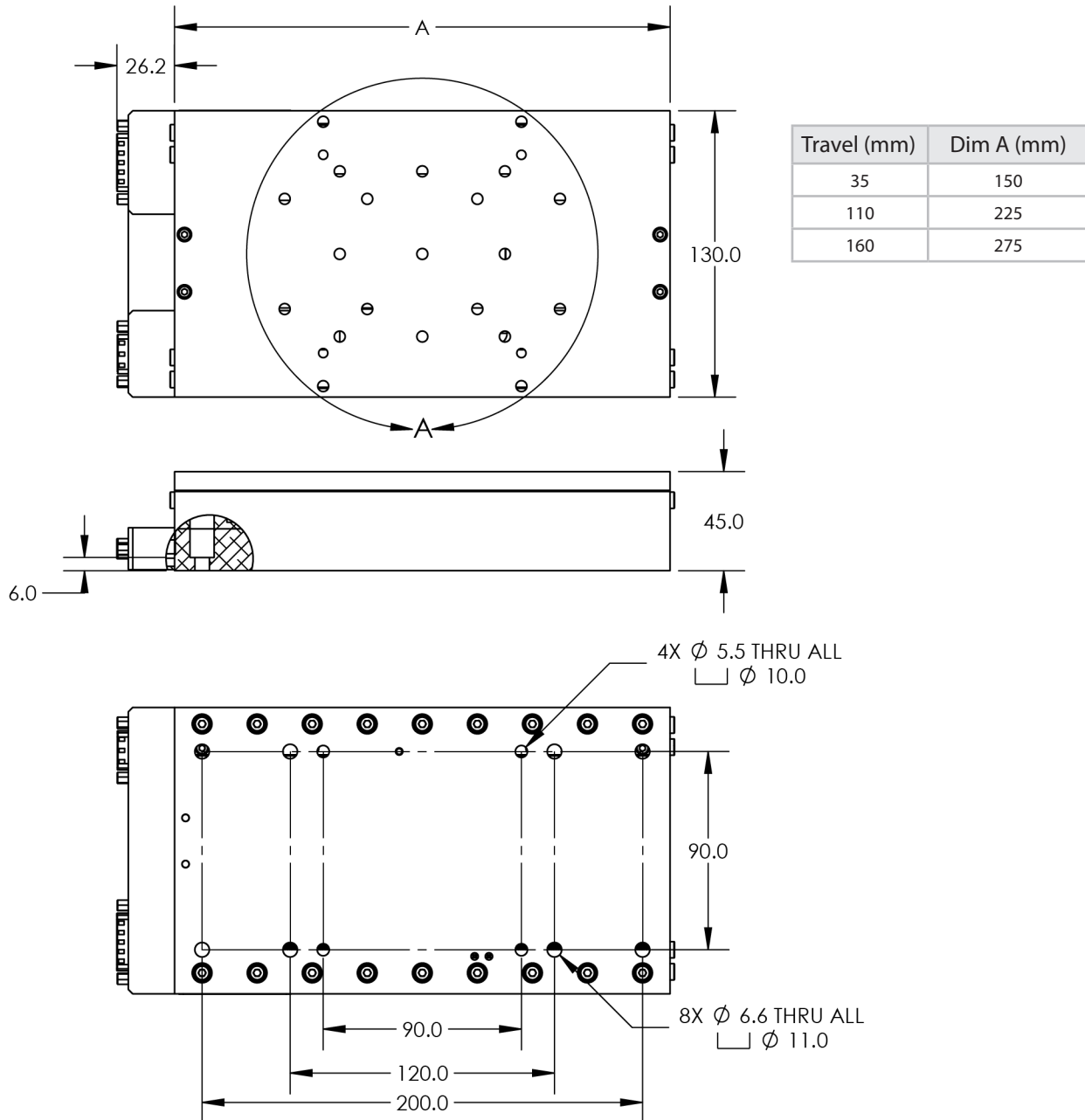
- 35, 110, or 160mm Travel
- 0.2µm Repeatability
- Ironless Linear Motor
- Crossed Roller Bearings
- Optical Limit Switches and Home Index
- Variety of Feedback Options
- Low Profile Design



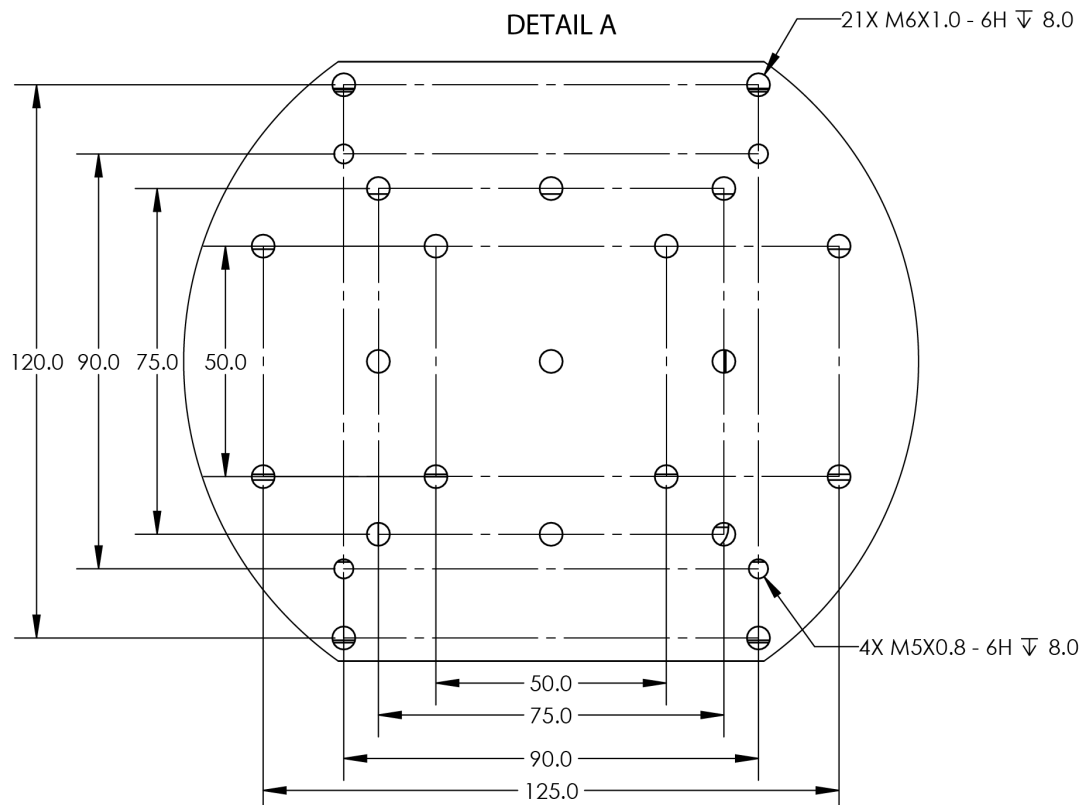
The NPS is Griffin Motion's highest-precision stage, engineered for applications that demand exceptional accuracy and dynamic performance with light payloads. Featuring crossed-roller bearings, high-resolution encoders, and an ironless linear motor, the NPS achieves sub-micron positioning with unmatched reliability.

Ideal for research, metrology, photonics, and semiconductor applications, the NPS delivers the precision typically associated with air-bearing stages while maintaining a clean, low-maintenance design. Its compact form factor and seamless integration into larger motion systems make it a trusted solution for researchers and engineers facing the most demanding positioning challenges.

NPS Dimensions



NPS Mounting and Options



NPS Ordering Options	
Product Series	NPS: Linear Motor Driven, Crossed-Roller Linear Stage
Stage Travel (mm) ¹	035 110 160
Drive Type	LM: Direct Drive Linear Motor
Motor Code	AA: Ironless Linear Motor
Feedback Code	HH: Linear Encoder, 1Vpp, 50 Periods/mm, Limits, Index, and Home KK: Linear Encoder, RS422, 200,000 cts/mm, Limits, Index, and Home LL: Linear Encoder, RS422, 400,000 cts/mm, Limits, Index, and Home MM: Linear Absolute Encoder, BiSS C, 10,000 cts/mm
Precision Grade	S: Standard Precision P: High Precision ³
Additional Options	0: No Additional Options
Customizations	00: Standard Product 01-99: Custom Stage, Customer Specific ³
Example Part Number	NPS-110-LM-AA-LL-S-0-02
Notes	1: Custom travels may be available, maximum 160mm 2: Contact Griffin Motion for high precision specification options 3: Common customizations include: custom hole patterns and cleanroom preparation

NPS Options and Specifications

NPS Specifications			
Stage Travel (mm)	35	110	160
Mechanical Accuracy ($\pm\mu\text{m}$) ^{1,3}	2.0	4.0	6.0
Calibrated Accuracy ($\pm\mu\text{m}$) ^{2,3}	0.4		
Bi-Directional Repeatability (μm) ^{1,3}	0.2		
Straightness (μm) ⁴	2.0	4.0	6.0
Flatness (μm) ⁴			
Pitch ($\pm\text{arc-sec}$) ^{1,3}	4.0	8.0	12.0
Yaw ($\pm\text{arc-sec}$) ^{1,3}			
Maximum Velocity (mm/s)	300 (Encoder Dependent)		
Continuous Motor Force (Fx) (N)	13.8		
Y Load Capacity (Fy) (N)	100		
Z Load Capacity (Fz) (N)	100		
Moment Load Capacity (Mx) (Nm)	1.8		
Moment Load Capacity (My) (Nm)			
Moment Load Capacity (Mz) (Nm)			
Moving Mass (kg)	1.0	1.35	1.80
Stage Mass (kg)	2.24	3.13	4.14
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			

