

Precision Linear Motion Platform

FEATURES

- Compact Low-Profile Design
- 160mm Travel
- Linear Motor
- Optical limit switches with home
- High resolution linear encoder
- Crossed Roller Bearings



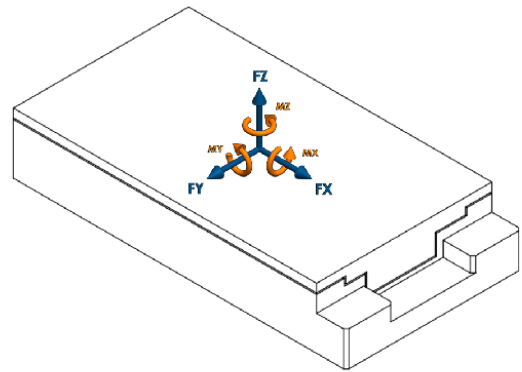
The NPS Series stages are designed for a variety of applications. This compact low profile linear motor stage is built for high duty cycles and long life and attains high velocities for factory automation and semiconductor processing equipment. This stage has exceptional levels of accuracy, repeatability, flatness and straightness. The linear motor and crossed roller bearings provide smooth motion. The NPS Series stages can be stacked to create XY motion.



Product Specifications

Encoder Output	1Vp-p
Force X (N)	19.5
Force Y (N)	100
Force Z (N)	100
Flatness (µm)	6
Height (mm)	45
Length (mm)	298
Limit Switches	Yes
Linear Accuracy (µm)	4
Linear Repeatability (µm)	0.2
Linear Velocity (mm/s)	300
Moment X (N-m)	2.0
Moment Y (N-m)	2.0
Moment Z (N-m)	2.0
Moving Mass X (kg)	1.80
Pitch +/- (arc-sec)	12
Stage Mass (kg)	4.14
Straightness (µm)	6
Width (mm)	130
Yaw +/- (arc-sec)	12

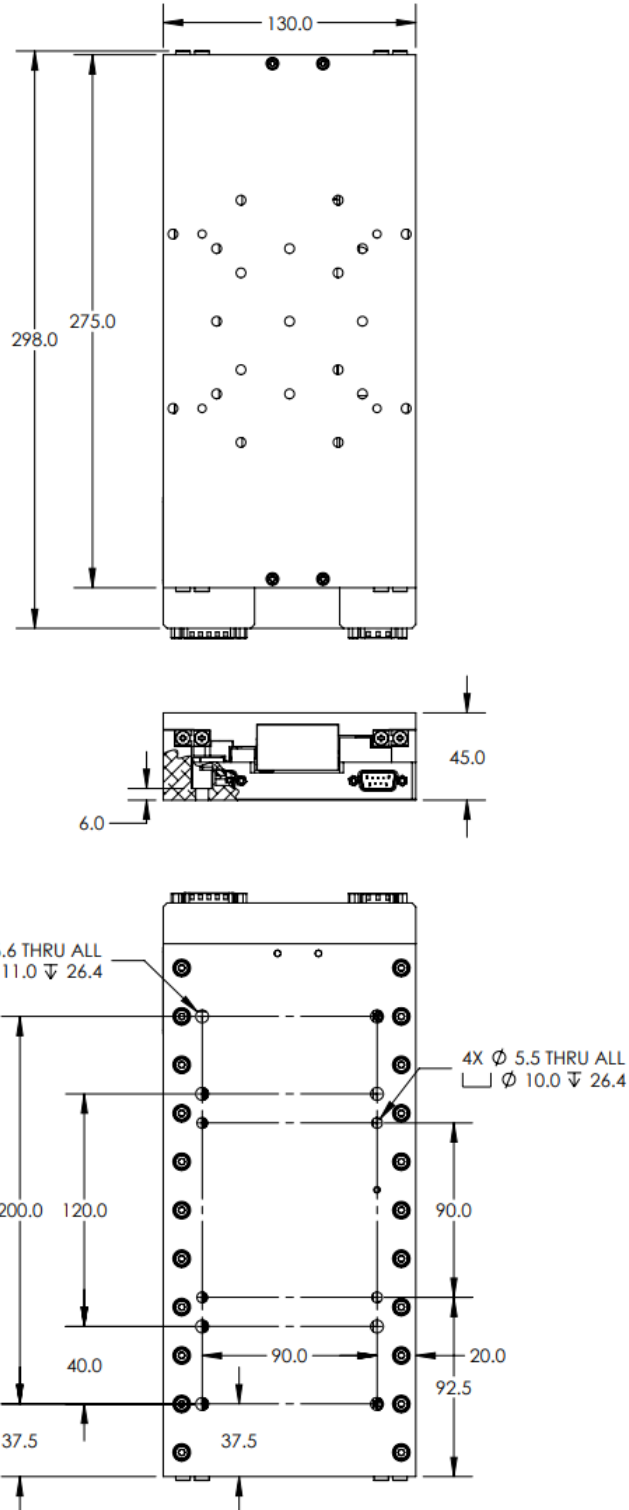
Accuracy specified with stage operating in 20.0±2°C environment.
 Deviations in environment temperature can reduce performance.

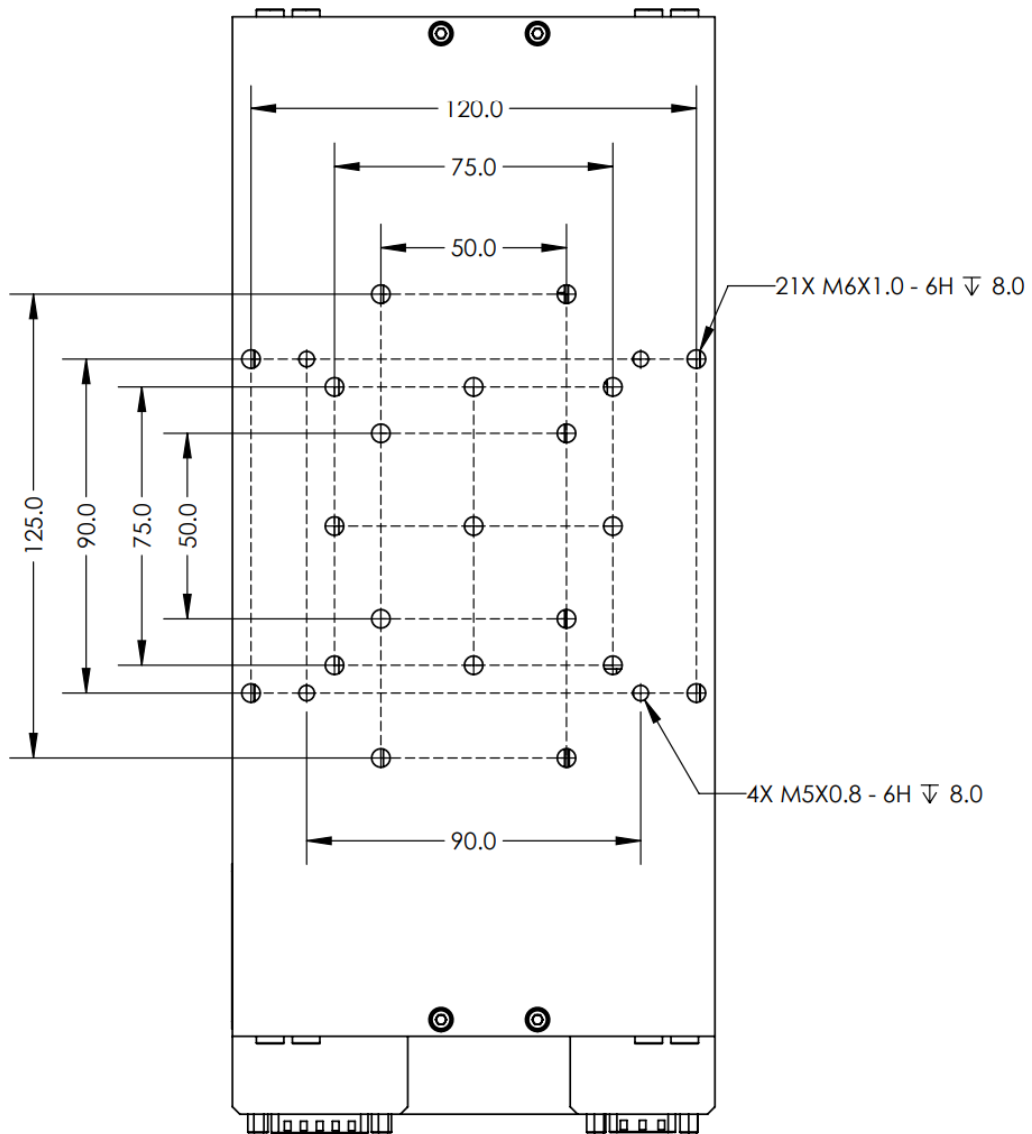


LOAD DIRECTIONS

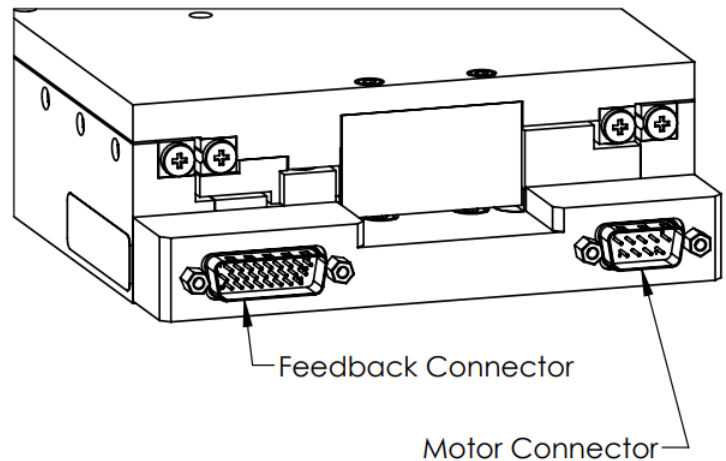
Part Number Description

NPS	NPS Series
160	160mm Travel
LM	Linear Motor
G	Ironless Linear Servo Motor
HH	20µm Linear SS, Sinusoidal
S	Standard Precision
0	No Additional Options
00	Standard Product (Call for custom)





Feedback Connector (DSUB26HD MALE)	
PIN	NAME
1	+5V
2	Sin +
3	Cos +
4	Index +
5	LIM+
6	*
7	*
8	*
9	*
10	TEMP
11	Sin -
12	Cos -
13	Index -
14	LIM -
15	*
16	*
17	*
18	*
19	GND
20	HALL A
21	HALL B
22	HALL C
23	*
24	*
25	*
26	*
* Reserved	



Motor Connector (DSUB9 MALE)	
PIN	NAME
1	*
2	*
3	*
4	*
5	*
6	PHASE A
7	PHASE B
8	PHASE C
9	*
* Reserved	



Motor Specifications	
Motor Type	3 Φ Brushless DC
BEMF Constant (V/m/s)	10.1
Electrical Time Constant (ms)	0.36
Max Bus Voltage (VDC)	60
Max Continuous Current (A)	2.23
Motor Force Constant (N/A)	8.67
Peak Current (A)	4.9
Pin to Pin Inductance (mH)	2.48
Pin to Pin Resistance (ohm)	7.0
Magnetic Pole Pitch (mm)	24

Feedback Specifications	
Supply Voltage (V)	5.0 \pm 10%
Supply Current (mA)	200
Encoder Feedback	Yes
Encoder Type	Sinusoidal
Encoder Output	Sin, Cos, Index; Differential Pairs, 1Vpp
Encoder Resolution	20um Signal Period
Hall Switch Output	CMOS
Hall Switch max current (mA)	\pm 20
Limit Switches	Yes
Limit Switch Output Type	CMOS
Limit Switch Output current (mA)	\pm 20
Limit Switch Output Low (V)	0.8
Index Pulse	Yes, center stroke
Over Temp switch	Yes
Over Temp switch type	CMOS
Over Temp switch polarity	Logic high is over-temp; low is normal

The encoder will output one index pulse near center travel. This pulse is highly repeatable and can be used upon power-up to find an absolute position to use for further measurements.

Two limit switches are provided at the ends of travel. The limit switches will be pulled low throughout the travel range of the stage. The output will swing to high-impedance at the end of travel and remain high-impedance until the mechanical limit of the stage is reached.