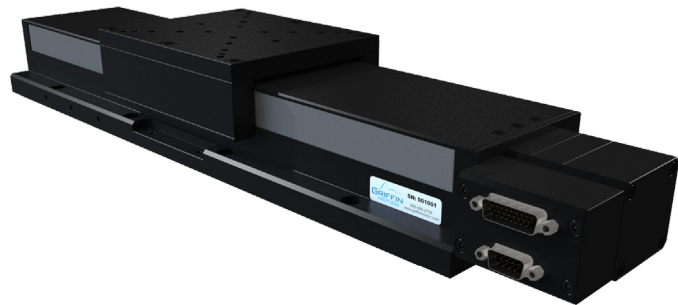


## Precision Linear Motion Platform

### FEATURES

- High speed
- 200mm Travel
- Precision ground ball screw drive
- Optical limit switches with home
- High resolution rotary encoder
- Recirculating ball linear ways
- Side seals

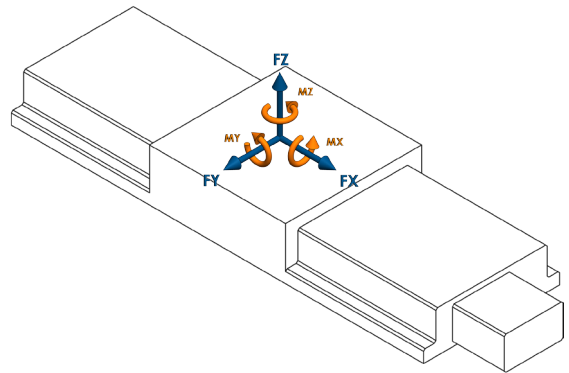


The LM2 Series stages are designed for a variety of applications. This compact low profile linear stage is built for high duty cycles and long life and attains high velocities for factory automation and semiconductor processing equipment. This stage has exceptional levels of accuracy, repeatability, flatness and straightness. Recirculating ball linear ways and the precision ground ball screw offer extremely smooth operation and velocity control. Side seals and a hard cover make it an excellent choice for dirty environments. A removable payload plate allows a reduction in overall height. The LM2 Series stages can be stacked to create XY motion.



## Product Specifications

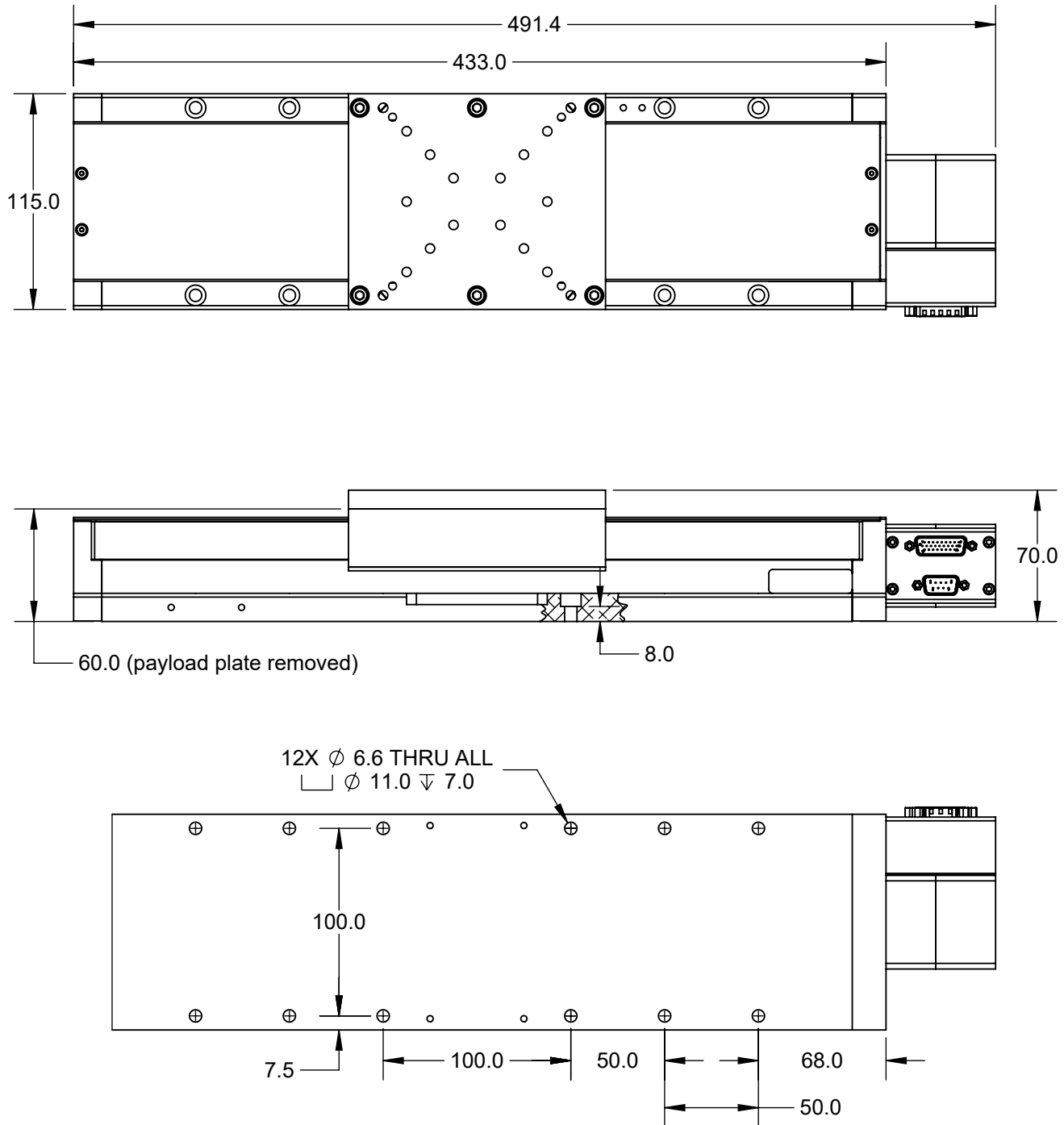
Encoder Output	A quad B, index
Force X (N)	180
Force Y (N)	180
Force Z (N)	360
Flatness ( $\mu\text{m}$ )	8
Height (mm)	70
Length (mm)	492
Limit Switches	Yes
Linear Accuracy ( $\mu\text{m}$ )	12
Linear Encoder Resolution ( $\mu\text{m}$ )	0.125
Linear Repeatability ( $\mu\text{m}$ )	2
Linear Velocity (mm/s)	150
Moment X (N·m)	30
Moment Y (N·m)	30
Moment Z (N·m)	20
Moving Mass X (kg)	1.1
Pitch +/- (arc-sec)	9
Screw Lead (mm)	2
Stage Mass (kg)	5.35
Straightness ( $\mu\text{m}$ )	8
Width (mm)	115
Yaw +/- (arc-sec)	9

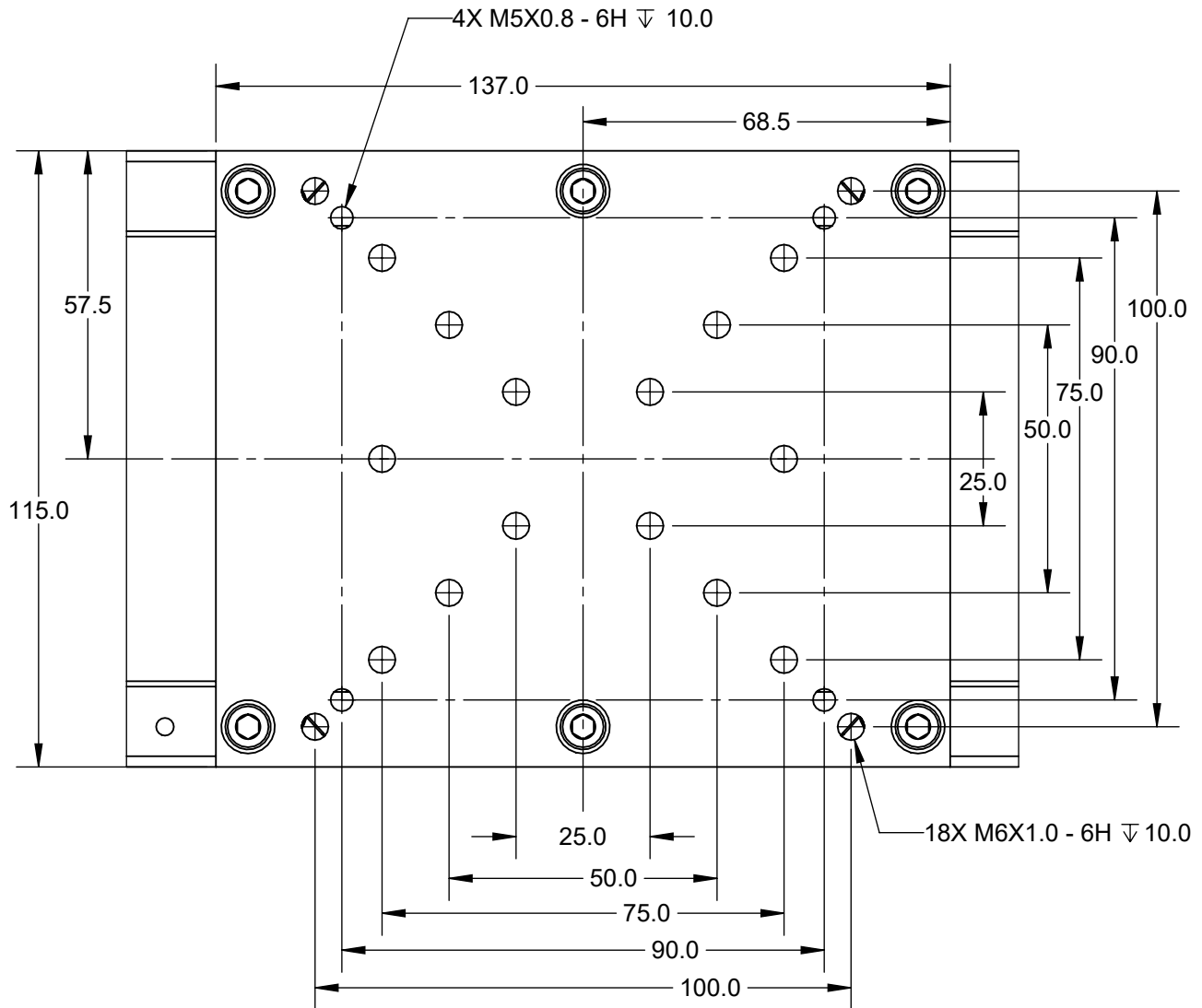


LOAD DIRECTIONS

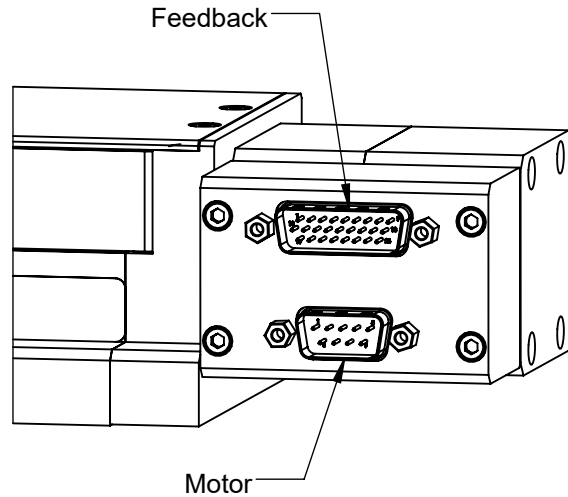
## Part Number Description

LM2	LM2 Series
200	200mm Travel
BS	Ball Screw Drive
A	Brushless Servo Motor
H	0.125 $\mu\text{m}$ Rotary
S	Standard Precision
F	Side Seals
00	Standard Product (Call for custom)





Feedback Connector (DSUB26HD MALE)	
PIN	NAME
1	+5V
2	A+
3	B+
4	RI+
5	LIM+
6	*
7	*
8	*
9	*
10	*
11	A-
12	B-
13	RI-
14	LIM-
15	*
16	*
17	*
18	*
19	GND
20	HALL A
21	HALL B
22	HALL C
23	HOME
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 $\Phi$ Brushless DC
BEMF Constant (V/KRPM)	1.88
Electrical Time Constant (ms)	0.38
Max Bus Voltage (VDC)	24
Max Continuous Current (A)	3.0
Motor Force Constant (N/A)	50.8
Peak Current (A)	10.0
Pin to Pin Inductance (mH)	0.55
Pin to Pin Resistance (ohm)	1.51
Poles per Revolution	6

Feedback Specifications	
Supply Voltage (V)	5.0 $\pm$ 10%
Supply Current (mA)	250
Encoder Feedback	Yes
Encoder Type	Incremental
Encoder Output	Square Wave Quadrature, RS-422 compatible, A,B,Z, Differential Pairs
Encoder Resolution	8000 cts/mm
Hall Switch Output	Open-Collector, No Pullup Resistor
Hall Switch max current (mA)	-20
Limit Switches	Yes
Limit Switch Output Type	CMOS
Limit Switch Output current (mA)	$\pm$ 20.0
Home Switch	Yes
Home Switch Output Type	CMOS
Home Switch Output current (mA)	$\pm$ 20.0

A home switch is provided near center mechanical travel and a limit switch at each end of travel. The encoder will output one index pulse per revolution of the motor. This pulse is highly repeatable and can be used in coordination with the home switch to find an absolute position after power-up.

The limit switches will be pulled low throughout the travel range of the stage. The output will swing high at the end of travel and remain high until the mechanical limit of the stage is reached.