

## Precision Linear Motion Platform

### FEATURES

- High capacity
- 150mm Travel
- Ironcore linear servo motor
- Optical limit switches
- Index mark at center travel
- High resolution linear encoder
- Recirculating ball linear ways
- Side seals
- Extended life trackless cable



The LM7 series stages are designed for high loading capacities and long travels to suit a variety of applications. This linear motor stage is built for high duty cycles and long life and can attain high velocities for factory automation and semiconductor processing equipment. The recirculating ball linear ways and the linear motor offer extremely smooth operation and velocity control. This stage has exceptional levels of accuracy, repeatability, flatness and straightness. The trackless flat cable minimizes vibrations and increases service life over traditional round cables. Side seals and a hard cover make it excellent choice for dirty environments. The LM7 Series stages can be stacked to create X, Y and Z motion.

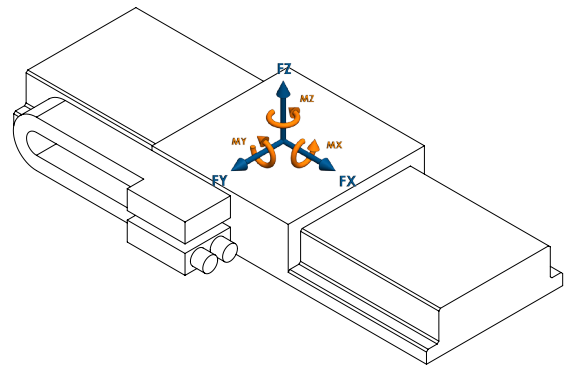


LM7-150-LM-F-U-S-F-00

## Motion Specifications

## Product Specifications

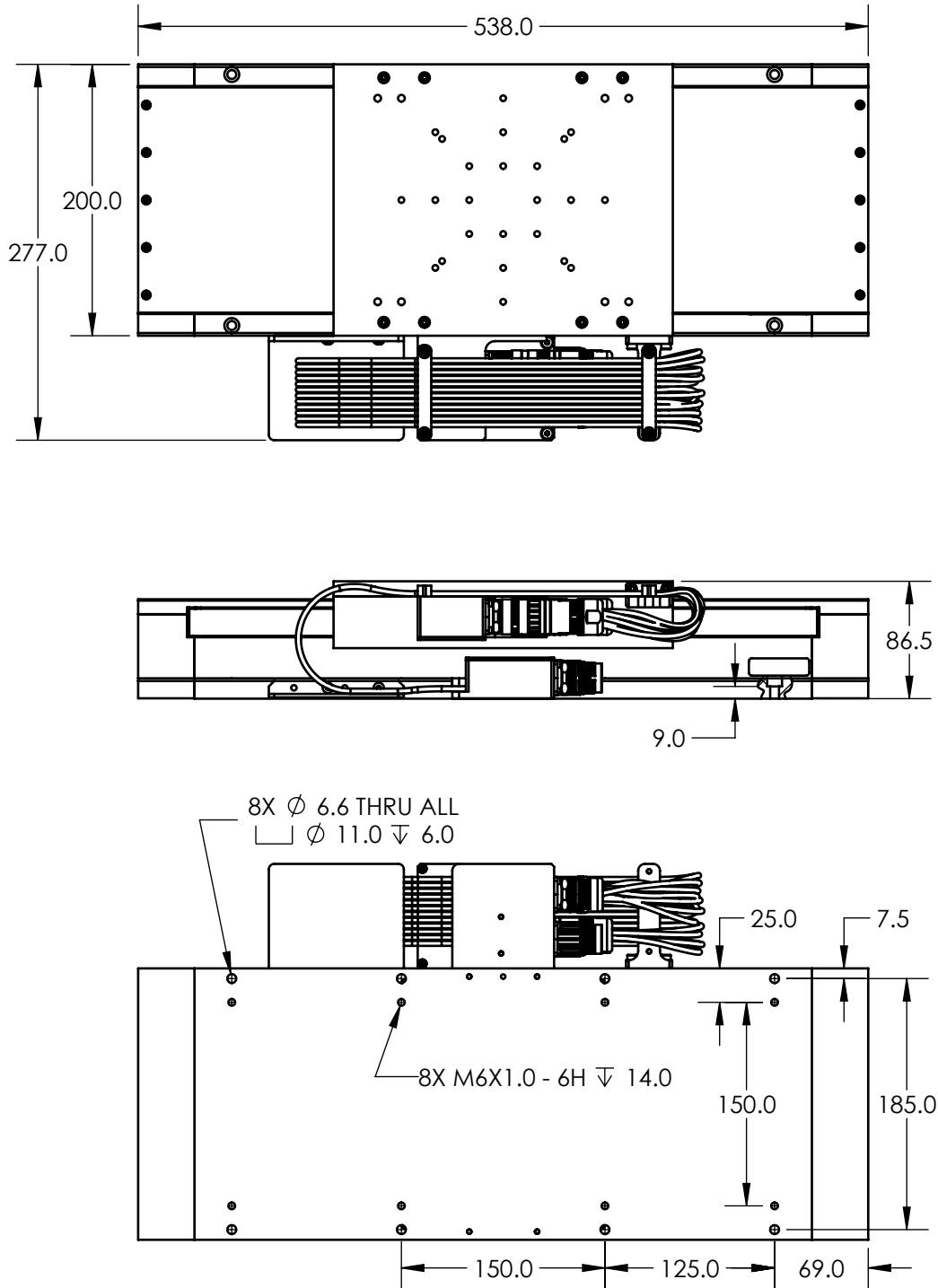
Encoder Output	1Vp-p
Peak Force X (N)	510
Continuous Force X (N)	250
Force Y (N)	1000
Force Z (N)	1500
Flatness (µm)	8
Height (mm)	86.5
Length (mm)	538.0
Limit Switches	Yes
Linear Accuracy (µm)	10
Linear Encoder Resolution (µm)	40µm period
Linear Repeatability (µm)	1
Linear Velocity (mm/s)	1000
Moment X (N-m)	400
Moment Y (N-m)	600
Moment Z (N-m)	200
Moving Mass X (kg)	6.22
Pitch +/- (arc-sec)	10
Stage Mass (kg)	19.8
Straightness (µm)	8
Width (mm)	277.0
Yaw +/- (arc-sec)	10

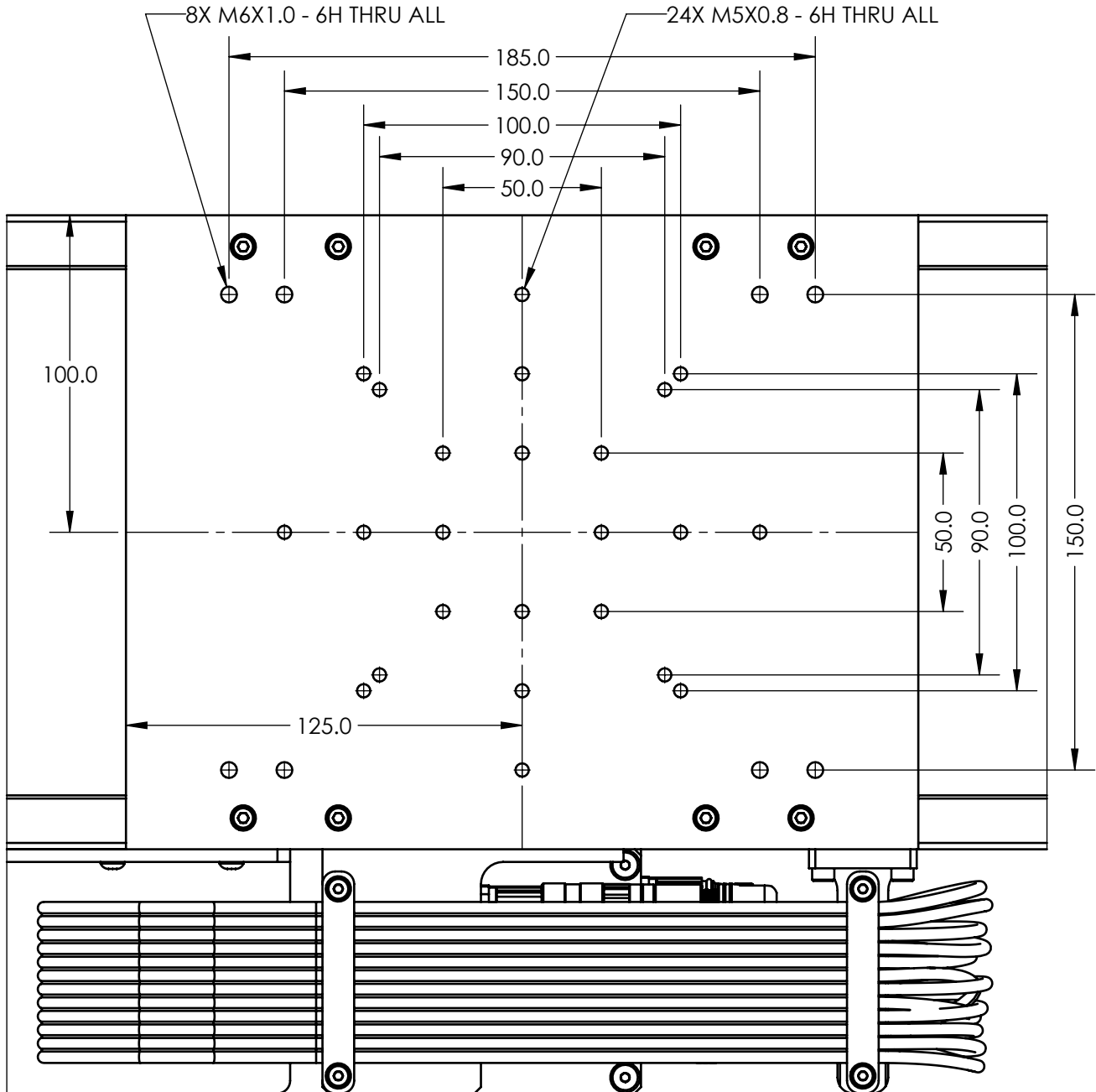


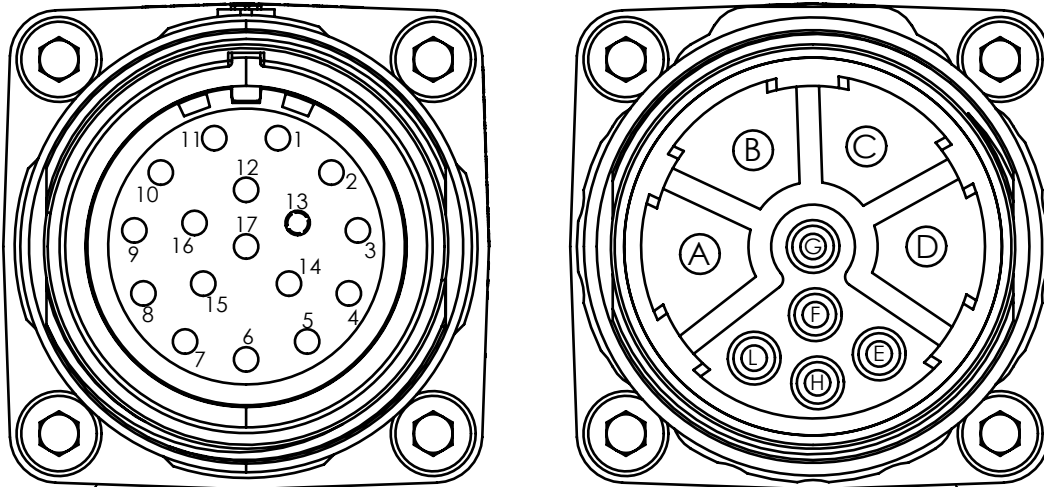
**LOAD DIRECTIONS**

## Part Number Description

LM7	LM7 Series
150	150mm Travel
LM	Linear Motor
F	Ironcore Linear Servo Motor
U	40µm Linear SS Scale
S	Standard Precision
F	Side Seals
00	Standard Product (Call for custom)







View of stage connectors from outside of stage

FEEDBACK CONNECTOR  
(ENCODER, LS, HALLS)

POWER CONNECTOR  
(MOTOR)

FEEDBACK CONNECTOR	
PIN	NAME
1	A +
2	A -
3	B +
4	B -
5	Z +
6	Z -
7	LIM +
8	LIM -
9	+5VDC
10	GND
11	HOME
12	*
13	*
14	*
15	HALL A
16	HALL B
17	HALL C
*	Reserved

POWER CONNECTOR	
PIN	NAME
A	PHASE A (U)
B	PHASE B (V)
C	PHASE C (W)
D	PE GROUND
E	*
F	*
G	*
H	*
L	*
*	Reserved

Connectors on Stage		
Manufacturer	Part No.	Description
Amphenol	MA11AE1700	Connector, REC, 17POS
Amphenol	MB11LN0900	Connector, REC, 9POS
Amphenol	SC000035	Connector Pin, Male, 1mm
Amphenol	SC000036	Connector Pin, Male, 2mm



LM7-150-LM-F-U-S-F-00

## Electrical Specifications

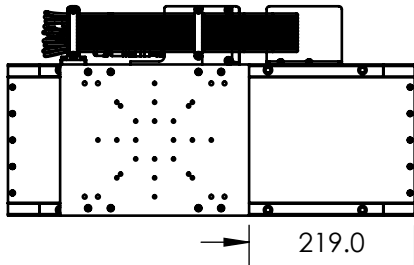
Motor Specifications	
Motor Type	3 $\Phi$ Brushless DC
BEMF Constant (V/m/s)	114
Electrical Time Constant (ms)	7.5
Max Bus Voltage (VDC)	600
Max Continuous Current (A)	2.15
Motor Force Constant (N/A)	140
Peak Current (A)	5.0
Pin to Pin Inductance (mH)	162
Pin to Pin Resistance (ohm)	21.6
Magnetic Pitch (mm)	24

Feedback Specifications	
Supply Voltage (V)	5.0 $\pm$ 10%
Supply Current (mA)	250
Encoder Feedback	Yes
Encoder Type	Incremental
Encoder Output	1Vpp Sin & Cos, Differential Pairs
Encoder Resolution	40 $\mu$ m period
Hall Switch Output	CMOS
Hall Switch max current (mA)	$\pm$ 20.0
Limit Switches	Yes
Limit Switch Output Type	CMOS
Limit Switch Output current (mA)	$\pm$ 20.0
Home Switch	No
Index Pulse	Yes, center travel

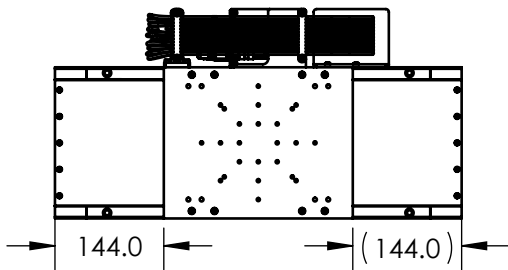
**LM7-150-LM-F-U-S-F-00**

**End of Travel Locations**

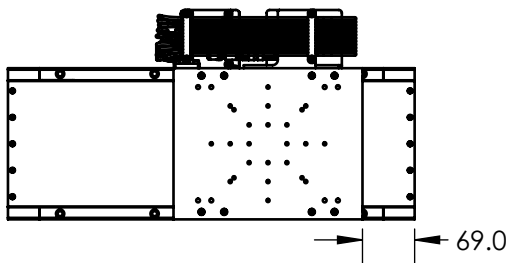
Positive Motion →



Negative Limit Switch



Home Position



Positive Limit Switch

