

## Precision XY Motion Platform

### FEATURES

- Compact Low-Profile Design
- 50mm XY Travel
- Zero backlash, precision ground ball screws
- Optical limit switches
- High resolution linear encoder
- Brushless servo motor drive
- Crossed Roller Bearings



The CXY-BS series stages are designed for a variety of applications. This compact low profile ball screw stage is built for high duty cycles and long life and can attain high velocities for factory automation and semiconductor processing equipment. The CXY series offers extraordinary levels of orthogonality and parallelism resulting in high accuracy for combined axis motion. Recirculating ball linear ways and precision ground ball screws offer extremely smooth operation and velocity control. The XY stage can operate in any orientation and has optional brakes for added safety.

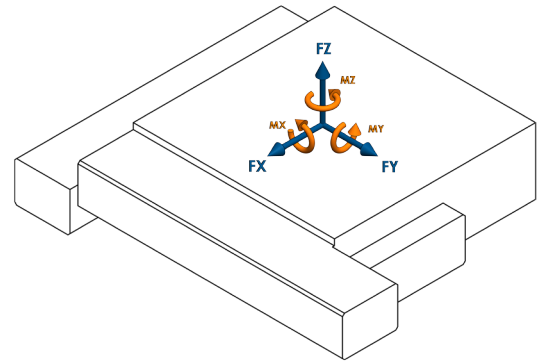


CXY-C-050-BS-A-M-P-0-00

## Motion Specifications

## Product Specifications

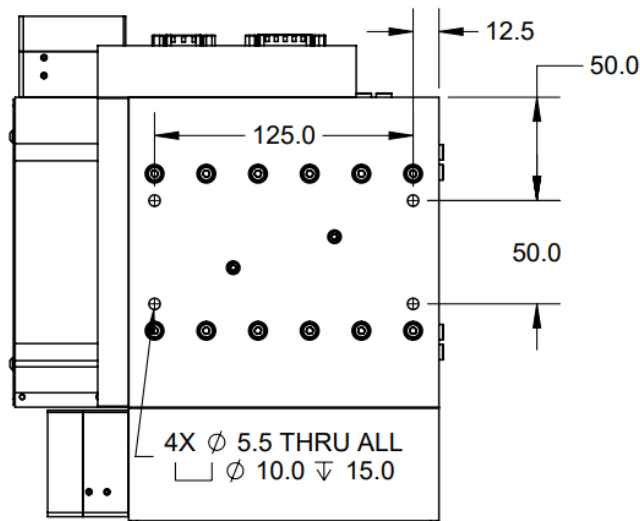
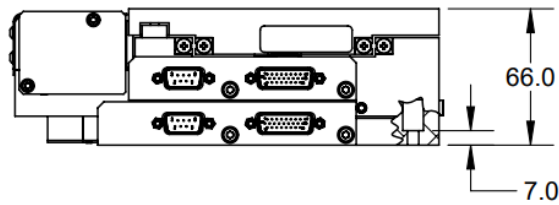
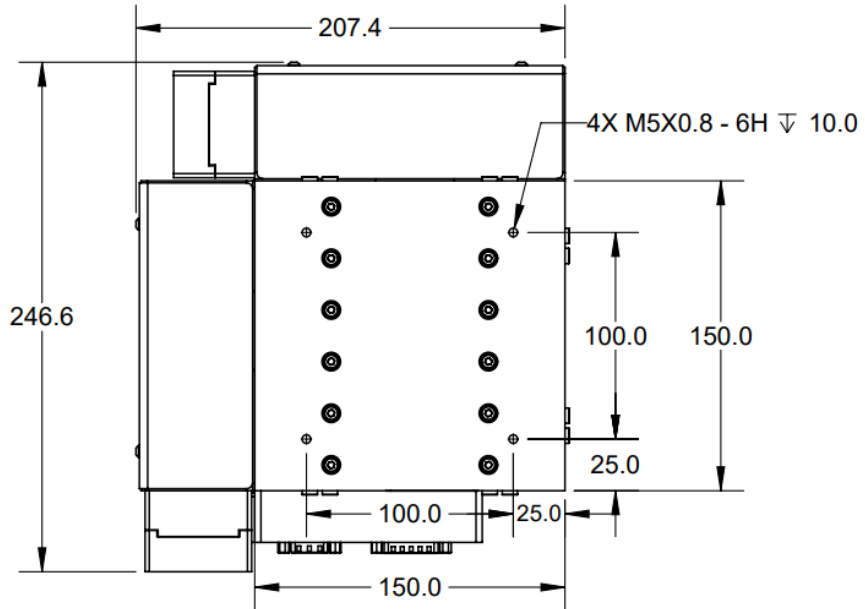
Encoder Output	A quad B, index
Force X/Y, Continuous (N)	165
Force X/Y, Peak (N)	330
Force Z (N)	400
Flatness ( $\mu\text{m}$ )	4
Height (mm)	66
Length (mm)	247
Limit Switches	Yes
Linear Accuracy, Calibrated ( $\mu\text{m}$ )	1*
Linear Accuracy, Mechanical ( $\mu\text{m}$ )	5
Linear Encoder Resolution ( $\mu\text{m}$ )	0.1
Linear Repeatability ( $\mu\text{m}$ )	0.5
Linear Velocity (mm/s)	140
Moment X (N-m)	80
Moment Y (N-m)	80
Moment Z (N-m)	50
Moving Mass X (kg)	4.09
Moving Mass Y (kg)	1.22
Orthogonality (arc-sec)	5
Pitch +/- (arc-sec)	4
Screw Lead (mm)	2
Stage Mass (kg)	6.11
Straightness ( $\mu\text{m}$ )	4
Width (mm)	208
Yaw +/- (arc-sec)	4
*Subject to control configuration	



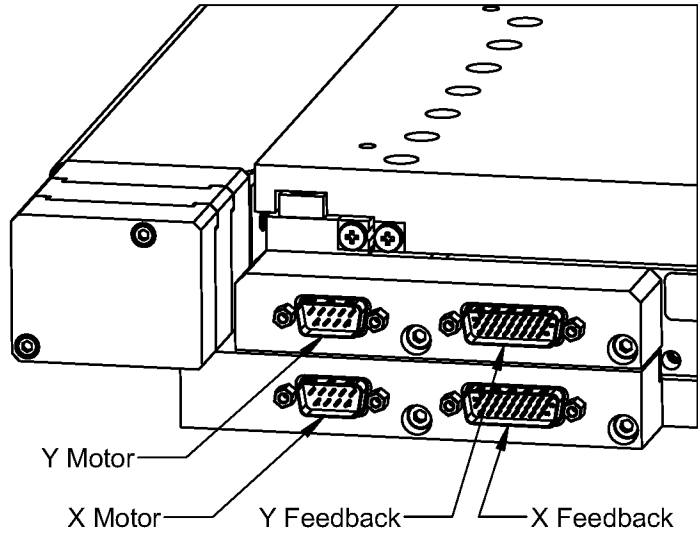
**LOAD DIRECTIONS**

## Part Number Description

CXY	CXY Series
C	No Aperture
050	50mm Travel
BS	Ball Screw Drive
A	Brushless Servo Motor
M	0.1 $\mu\text{m}$ Linear SS Scale
P	High Precision
0	No Additional Options
00	Standard Product (Call for custom)



Feedback Connector (DSUB26HD MALE)	
PIN	NAME
1	+5Vdc
2	A+
3	B+
4	Z+
5	LIM+
6	*
7	*
8	*
9	*
10	*
11	A-
12	B-
13	Z-
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	PE
2	*
3	*
4	*
5	*
6	PHASE A
7	PHASE B
8	PHASE C
9	*
*Reserved	



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### Encoder Output

Motor Specifications	
Motor Type	3 phase brushless DC
BEMF Output (V/Krpm)	2.57
Electrical Time Constant (msec)	0.38
Bus Voltage (Vdc)	24 nominal (100 max)
Max Continuous Current (A <sub>pk</sub> )	3.36
Motor Force Constant (Nm/A <sub>pk</sub> )	0.0216
Peak Current (A <sub>pk</sub> )	6.73
Pin to Pin Inductance (mH)	0.55
Pin to Pin Resistance (ohm)	1.51
Poles Per Revolution	6

Feedback Specifications	
Supply Voltage (Vdc)	5.0 ± 10%
Supply Current (mA)	250
Encoder Feedback	Yes
Encoder Type	Incremental
Encoder Output	Square Wave Quadrature, RS-422 compatible, A,B,Z, Differential Pair
Encoder Resolution	10000 cts/mm
Hall Switches	Yes
Hall Switch Output Type	Open-collector, no internal pullup resistor
Hall Switch max current (mA)	-20
Limit Switches	Yes
Limits Switch Output Type	Open-collector, no internal pullup resistor
Limit Switch Output current (mA)	-20

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.