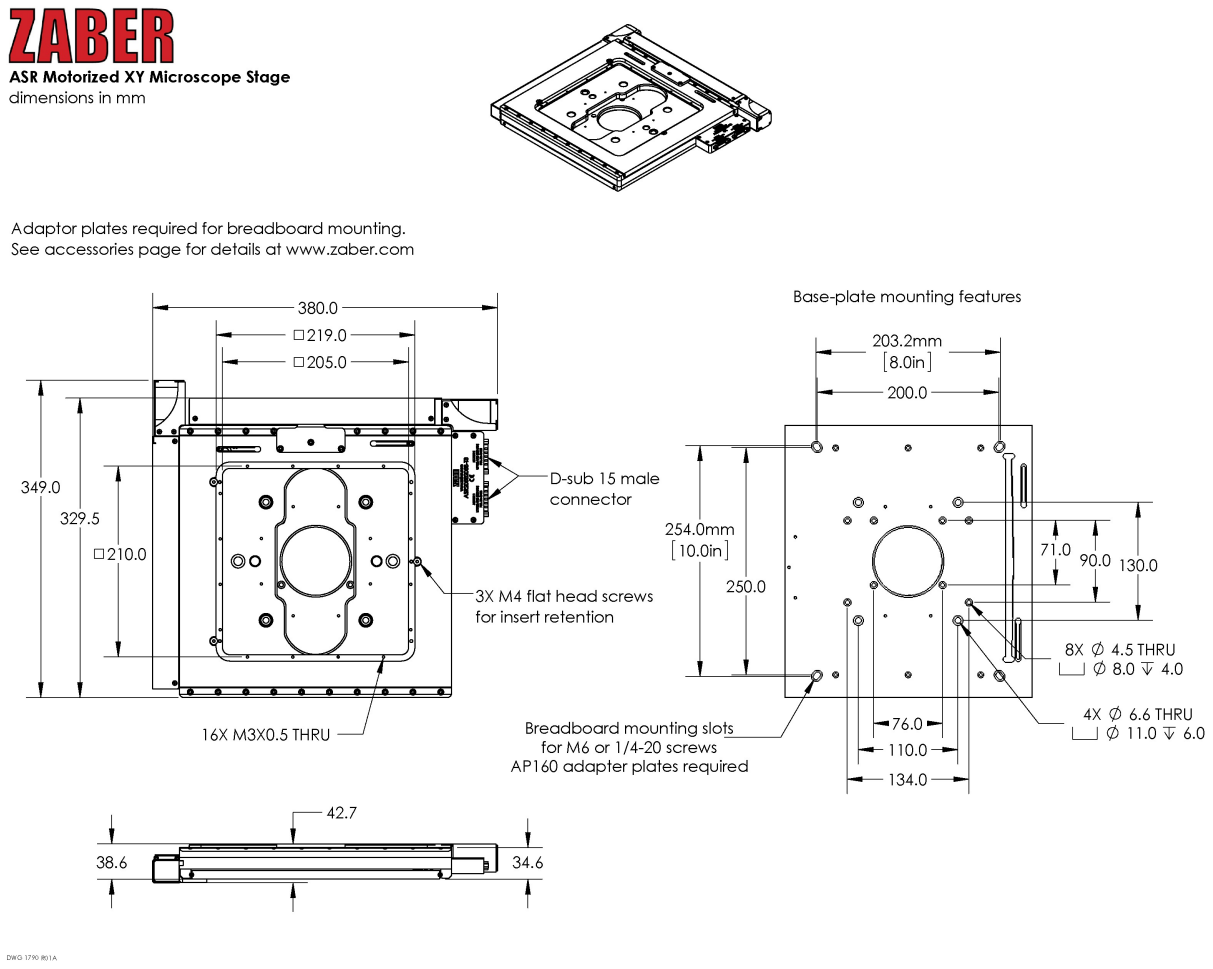
ASR Series Datasheet

- 50 mm up to 305 mm travel per axis
- Easily adjustable non-contact hall sensor limit switches
- Up to 12 µm accuracy; 2 µm repeatability; 85 mm/s speed
- Supported by µManager and MetaMorph® Microscopy Automation & Image Analysis Software
- Custom versions available

Zaber's ASR series microscope stages combined with our X-MCB2 series two-axis controllers are designed as replacements for manual stages on upright and inverted microscopes or for stand-alone operation as scanning stages.

Mounting adaptors are available for breadboards and most common microscopes. Custom adaptors and plates are available upon request.

Drawings



Specifications

Specification	Value	Alternate Unit
Microstep Size (Default Resolution)	0.15625 µm	
Built-in Controller	No	
Recommended Controller	X-MCB2 (48 V) Recommended	
Repeatability	< 2 µm	< 0.000079 "
Maximum Speed	85 mm/s	3.346 "/s
Minimum Speed	0.000095 mm/s	0.000004 "/s
Speed Resolution	0.000095 mm/s	0.000004 "/s
Peak Thrust	95 N	21.3 lb
Maximum Continuous Thrust	95 N	21.3 lb
Guide Type	Crossed roller bearing	
Linear Motion Per Motor Rev	2.00 mm	0.079 "
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	670 mA/phase	
Motor Winding Resistance	9.2 ohms/phase	
Inductance	5.6 mH/phase	
Motor Rated Power	4.2 Watts	
Motor Connection	D-sub 15	
Mechanical Drive System	Precision lead screw	
Limit or Home Sensing	Magnetic, adjustable home and away sensors	
Axes of Motion	2	
Mounting Interface	Separate mounting adaptors available	
Vacuum Compatible	No	
Operating Temperature Range	0 to 50 °C	
RoHS Compliant	Yes	
CE Compliant	Yes	

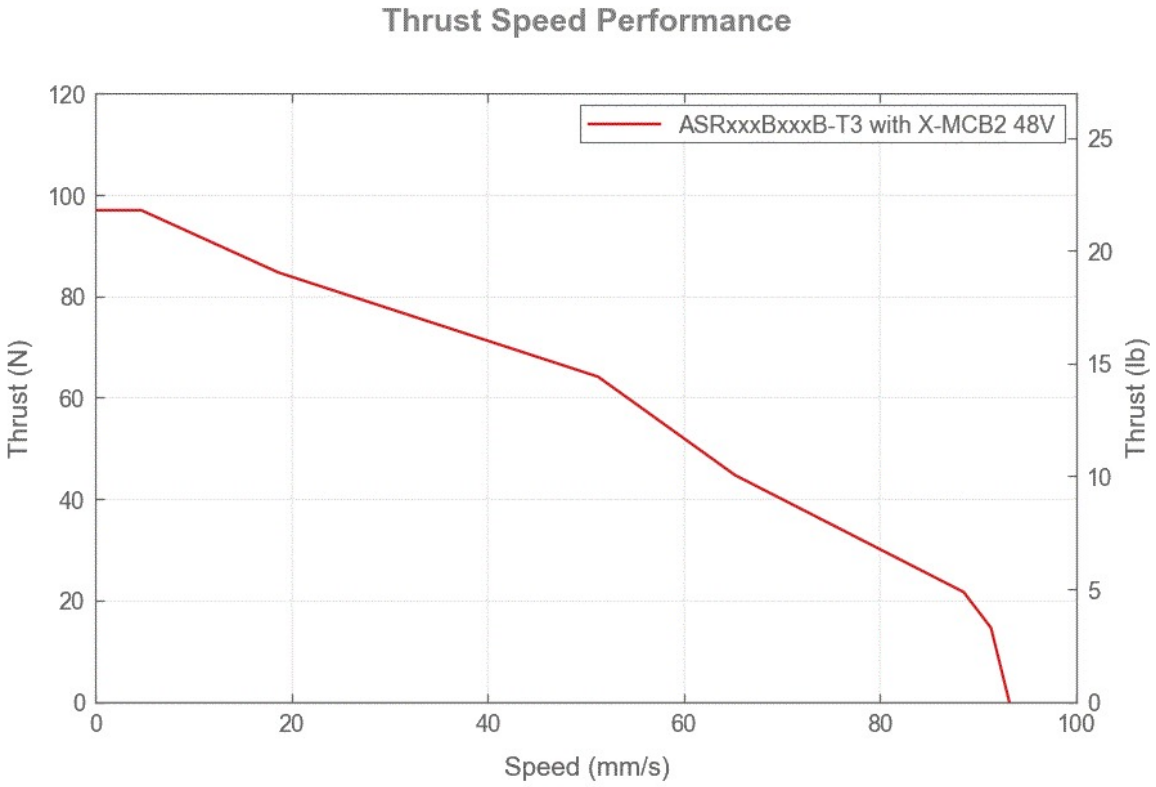
Part Number	Y Travel Range	X Travel Range	Accuracy (unidirectional)	Backlash
			12 µm	< 4 µm

Part Number	Y Travel Range	X Travel Range	Accuracy (unidirectional)	Backlash
ASR050B050B-T3	50 mm (1.969 ")	50 mm (1.969 ")	(0.000472 ")	(< 0.000157 ")
ASR100B120B-T3	100 mm (3.937 ")	120 mm (4.724 ")	40 µm (0.001575 ")	< 4 µm (< 0.000157 ")
ASR205B205B-T3	205 mm (8.071 ")	205 mm (8.071 ")	50 µm (0.001968 ")	< 10 µm (< 0.000394 ")
ASR305B305B-T3	305 mm (12.008 ")	305 mm (12.008 ")	80 µm (0.003150 ")	< 10 µm (< 0.000394 ")

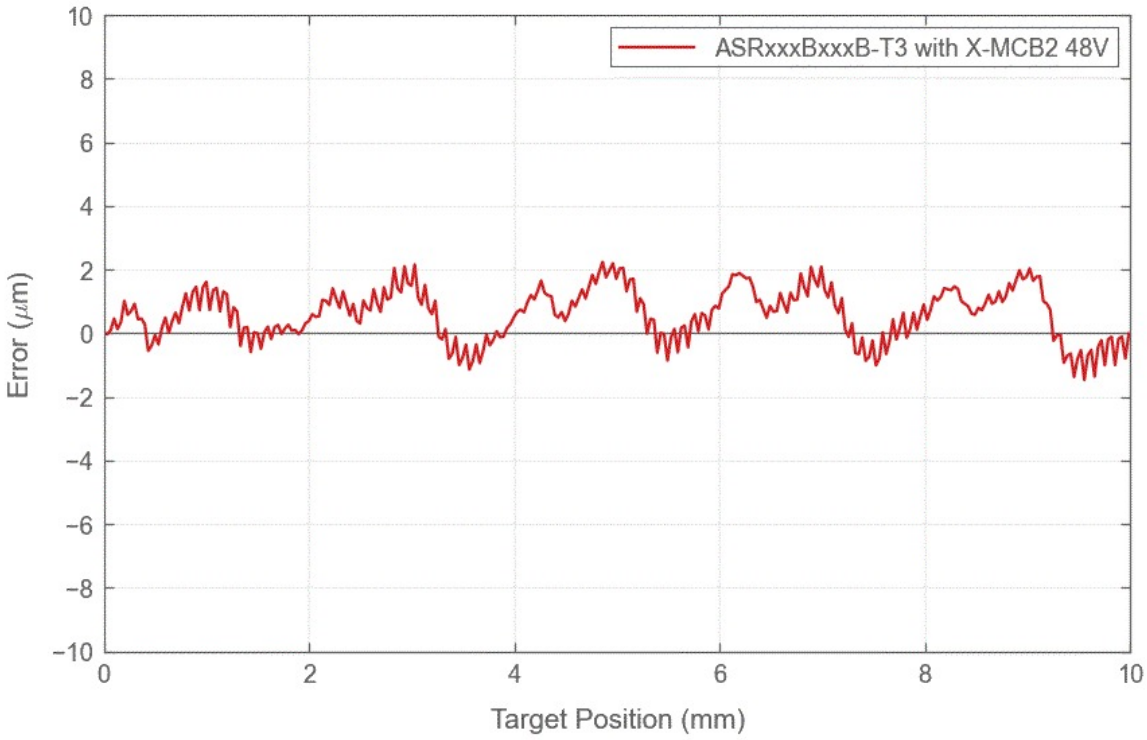
Part Number	Flatness	Maximum Centered Load	Pitch	Roll
ASR050B050B-T3	8 µm (0.0003 ")	200 N (44.9 lb)	0.02 ° (0.349 mrad)	0.02 ° (0.349 mrad)
ASR100B120B-T3	15 µm (0.0006 ")	100 N (22.4 lb)	0.02 ° (0.349 mrad)	0.02 ° (0.349 mrad)
ASR205B205B-T3	25 µm (0.0010 ")	100 N (22.4 lb)	0.02 ° (0.349 mrad)	0.01 ° (0.174 mrad)
ASR305B305B-T3	50 µm (0.0020 ")	100 N (22.4 lb)	0.04 ° (0.698 mrad)	0.015 ° (0.262 mrad)

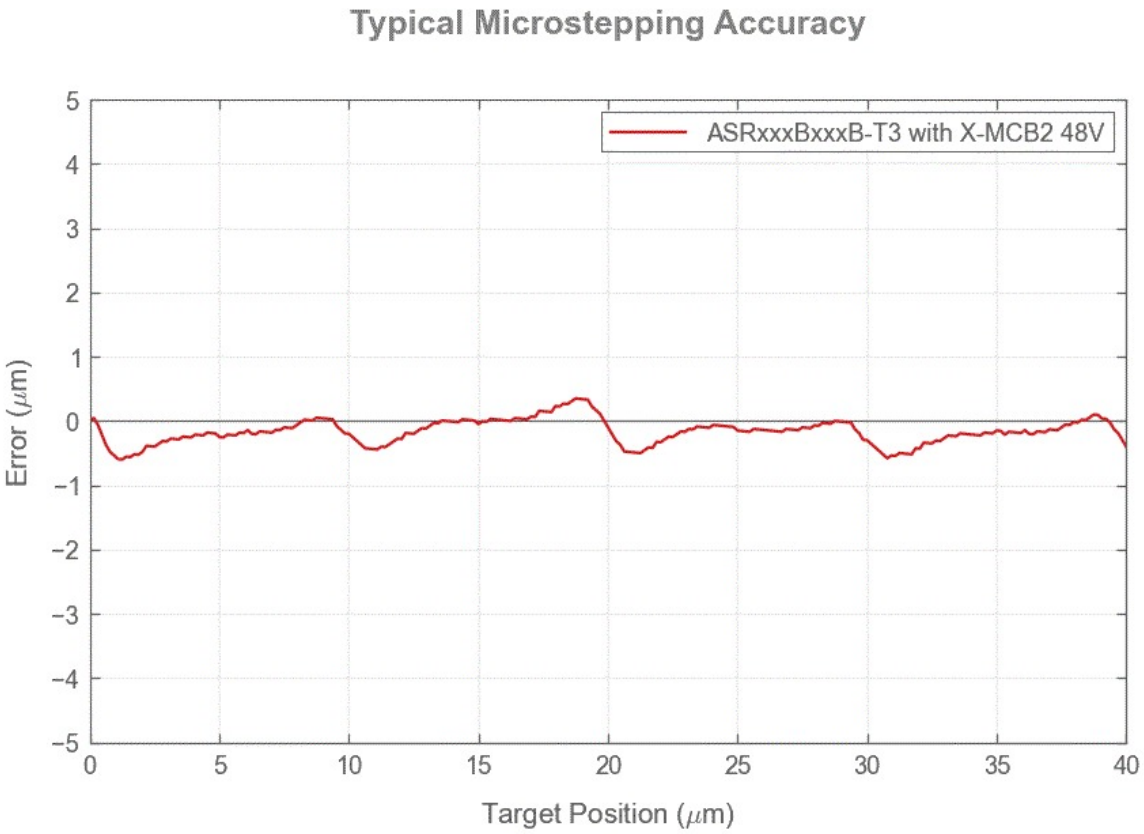
Part Number	Yaw	Weight
ASR050B050B-T3	0.005 ° (0.087 mrad)	1.78 kg (3.924 lb)
ASR100B120B-T3	0.005 ° (0.087 mrad)	3 kg (6.614 lb)
ASR205B205B-T3	0.01 ° (0.174 mrad)	6.60 kg (14.550 lb)
ASR305B305B-T3	0.015 ° (0.262 mrad)	10.30 kg (22.708 lb)

Charts


Thrust Speed Performance
ASRxxxBxxxB-T3 with X-MCB2 48V
Thrust (N)
Thrust (lb)
Speed (mm/s)
0
20
40
60
80
100
120
0
5
10
15
20
25

Typical Accuracy




Typical Microstepping Accuracy
ASRxxxBxxxB-T3 with X-MCB2 48V
Error (μm)
Target Position (μm)
5
4
3
2
1
0
−1
−2
−3
−4
−5
0
5
10
15
20
25
30
35
40