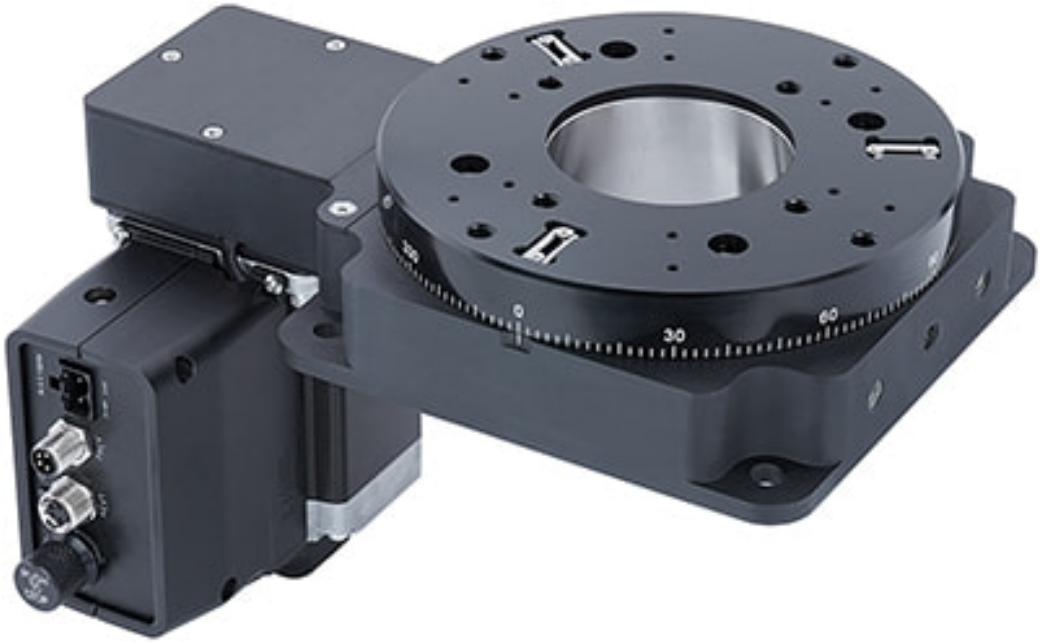
Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB-E Series Datasheet



- Speeds up to 1,200 rpm
- Continuous 360° rotation stage
- Multiple motor configurations
- Encoder position feedback with slip/stall detection and automatic recovery
- Built-in controller; daisy-chains with other Zaber products
- Optional integrated power-off brake

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB-E Series Overview

Zaber's X-RSB-E Series rotation stages feature a compact footprint, low profile, and a load capability of up to 50 kg. With a maximum speed of 1,200 rpm, these rotation stages are ideal for the rapid positioning of light loads to within a fraction of a degree.

They are stand-alone units requiring either a standard 24 V or 48 V power supply. A built-in motor encoder allows for closed-loop operation and slip/stall recovery features. There are two motor configurations available: up and down. Motor up configurations allow flush mounting of the device to a flat surface, and motor down configurations allow for a full 360° movement of loads that extend past the edge of the stage top. An indexed knob provides convenient manual control for versatile operation even without a computer. An optional power-off brake is available to protect the payload from unintended motion in the event of power loss.

These stages connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. Like all of Zaber's products, the X-RSB-E Series is designed to be 'plug and play' and very easy to set up and operate.

For more information visit: https://www.zaber.com/products/rotary-stages/X-RSB-E

X-RSB-E Series Part Numbering & Options

X-RSB 060 A D - _ E01

Stage Diameter
- **060** — 60 mm
- **120** — 120 mm

Gear Ratio Options
- **A** — 5:1

Motor Configuration
- **B** — Down, high torque motor
- **D** — Down, medium torque motor
- **T** — Up, high torque motor
- **U** — Up, medium torque motor

Brake Option
- **None** — No Brake
- **B** — Brake

Encoder Options
- **E01** — Motor Encoder, 500 CPR
- **E08** — Motor Encoder, 400 CPR

X-RSB-E Series Drawings

• View all drawings and documents at zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB-E Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	Yes
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Repeatability	<0.001 ° (<0.017 mrad)
Microstep Size (Default Resolution)	0.005625 ° (98.173 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Brake Torque	7.5 N·m (5.535 lb·ft)

Speed

Specification	Value
Minimum Speed	0.003434 °/s (59.934 µrad/s)
Speed Resolution	0.003434 °/s (59.934 µrad/s)

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC
1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	72 °
Motor Steps Per Rev	200
Motor Type	Stepper (2-phase)

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24 - 48 VDC
Power Plug	2-pin Screw Terminal

Mechanical

Specification	Value
Mechanical Drive System	Synchronous belt

Environmental & Compliance

Specification	Value
Operating Temperature Range	0 - 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Part Number	Weight	Accuracy (unidirectional)	Backlash	Radial Error Motion
X-RSB060AD-E01	0.88 kg (1.94 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")
X-RSB060AU-E01	0.88 kg (1.94 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")
X-RSB120AB-BE08	3.3 kg (7.275 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AB-E08	2.75 kg (6.063 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AD-E01	2.14 kg (4.718 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AT-BE08	2.766 kg (6.098 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AT-E08	2.14 kg (4.718 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AU-E01	2.14 kg (4.718 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")

Part Number	Axial Error Motion	Tilt Error Motion	Maximum Continuous Torque	Maximum Centered Load
X-RSB060AD-E01	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
X-RSB060AU-E01	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
X-RSB120AB-BE08	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
X-RSB120AB-E08	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
X-RSB120AD-E01	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)
X-RSB120AT-BE08	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
X-RSB120AT-E08	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
X-RSB120AU-E01	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)

ZABER

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Part Number	Maximum Moment (Tilt)	Maximum Speed	Encoder Resolution	Motor Rated Current
X-RSB060AD-E01	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	500 CPR (2 states/rev)	2300 mA/phase
X-RSB060AU-E01	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	500 CPR (2 states/rev)	2300 mA/phase
X-RSB120AB-BE08	20 N·m (14.76 lb·ft)	3600 °/s (6 rpm)	400 CPR (16 states/rev)	3000 mA/phase
X-RSB120AB-E08	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	400 CPR (16 states/rev)	3000 mA/phase
X-RSB120AD-E01	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	500 CPR (2 states/rev)	2100 mA/phase
X-RSB120AT-BE08	20 N·m (14.76 lb·ft)	3600 °/s (6 rpm)	400 CPR (16 states/rev)	3000 mA/phase
X-RSB120AT-E08	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	400 CPR (16 states/rev)	3000 mA/phase
X-RSB120AU-E01	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	500 CPR (2 states/rev)	2100 mA/phase

Part Number	Motor Winding Inductance	Maximum Current Draw	Stage Top Dimension	Bearing Plane Offset
X-RSB060AD-E01	2.8 mH/phase	2000 mA	60 mm (2.362 ")	16.37 mm (0.644 ")
X-RSB060AU-E01	2.8 mH/phase	2000 mA	60 mm (2.362 ")	16.37 mm (0.644 ")
X-RSB120AB-BE08	2 mH/phase	3600 mA	120 mm (4.724 ")	20 mm (0.787 ")
X-RSB120AB-E08	2 mH/phase	3600 mA	120 mm (4.724 ")	20 mm (0.787 ")
X-RSB120AD-E01	7.2 mH/phase	2000 mA	120 mm (4.724 ")	20 mm (0.787 ")
X-RSB120AT-BE08	2 mH/phase	3600 mA	120 mm (4.724 ")	20 mm (0.787 ")
X-RSB120AT-E08	2 mH/phase	3600 mA	120 mm (4.724 ")	20 mm (0.787 ")
X-RSB120AU-E01	7.2 mH/phase	2000 mA	120 mm (4.724 ")	20 mm (0.787 ")

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

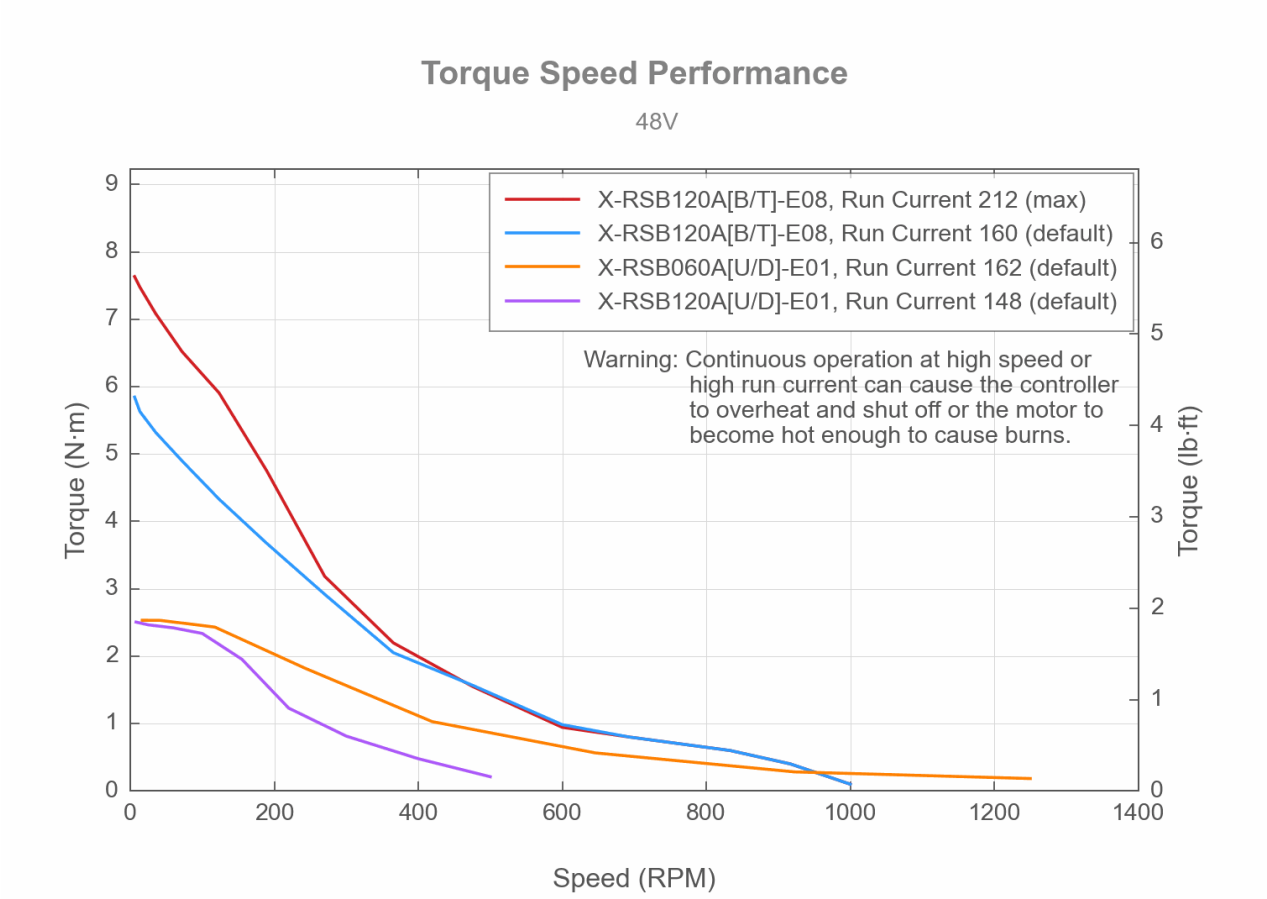
Part Number	Mounting Interface
X-RSB060AD-E01	M6 and #8-32 threaded holes
X-RSB060AU-E01	M6 and #8-32 threaded holes
X-RSB120AB-BE08	Kinematic with M2.5 and M6 threaded holes
X-RSB120AB-E08	Kinematic with M2.5 and M6 threaded holes
X-RSB120AD-E01	Kinematic with M2.5 and M6 threaded holes
X-RSB120AT-BE08	Kinematic with M2.5 and M6 threaded holes
X-RSB120AT-E08	Kinematic with M2.5 and M6 threaded holes
X-RSB120AU-E01	Kinematic with M2.5 and M6 threaded holes

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB-E Series Charts

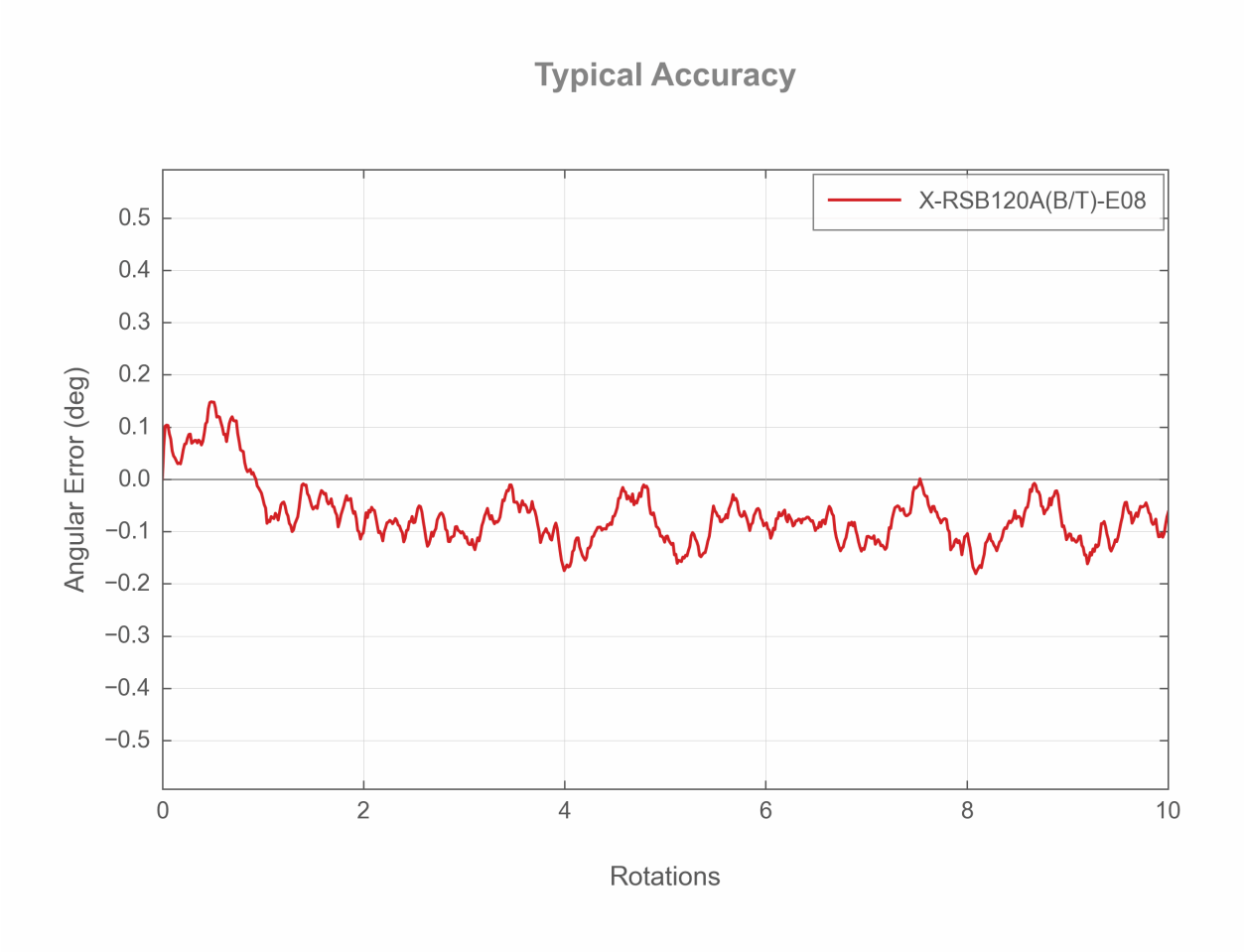
X RSB060A[U D] E01 Torque Speed Performance



Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

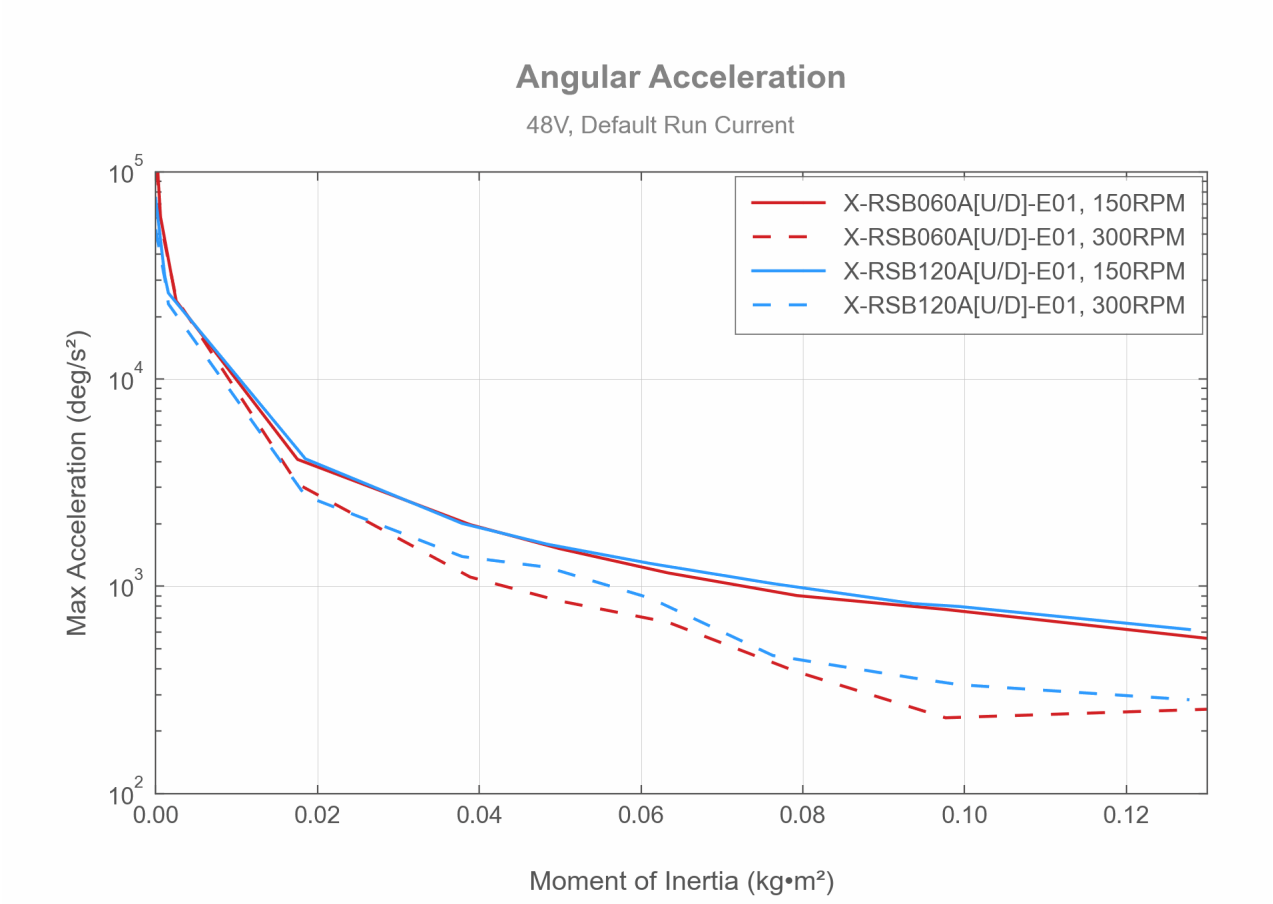
X RSB120AB T E08 Typical Accuracy



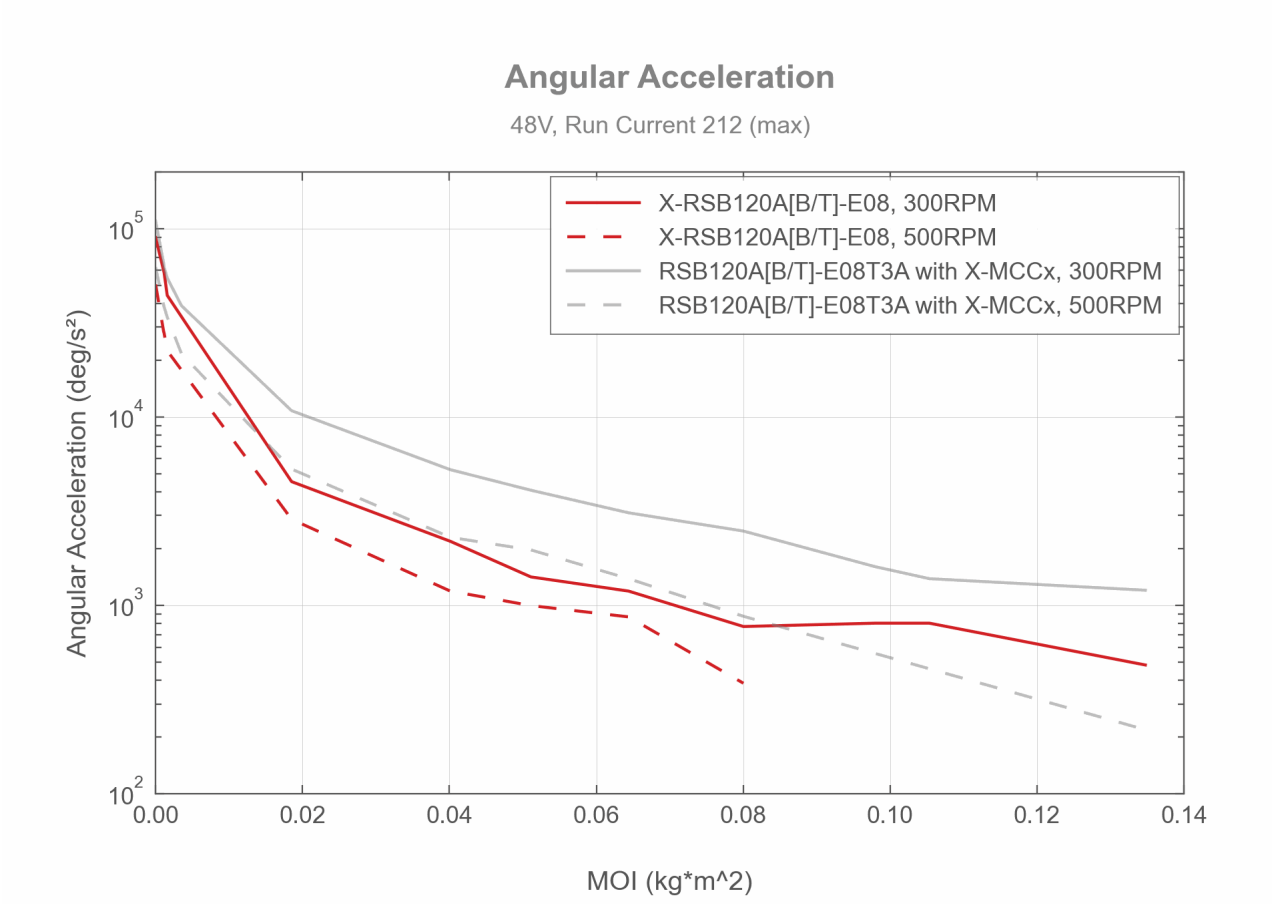
Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X RSB[U D] E01, Angular Acceleration



X RSB120A[B T] E08, Angular Acceleration



Contact

Email: contact@zaber.com

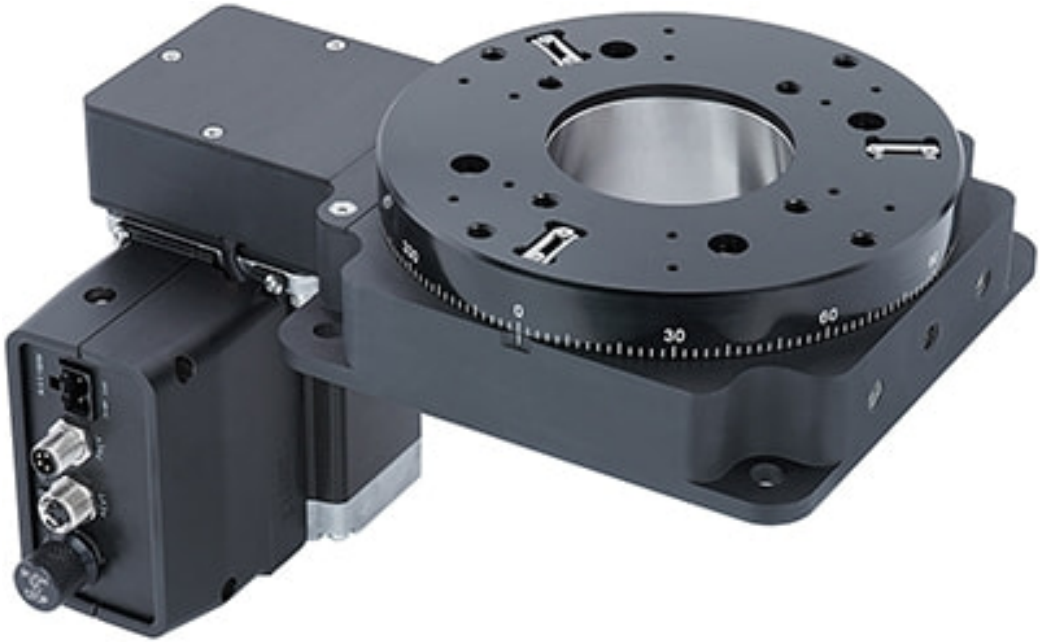
Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB Series Datasheet



- Speeds up to 1,200 rpm
- Continuous 360° rotation stage
- Multiple motor configurations
- Built-in controller; daisy-chains with other Zaber products

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB Series Overview

Zaber's X-RSB Series rotation stages feature a compact footprint, low profile, and a load capability of up to 50 kg. With a maximum speed of 1,200 rpm, these rotation stages are ideal for the rapid positioning of light loads to within a fraction of a degree.

They are stand-alone units requiring either a standard 24 V or 48 V power supply. There are two motor configurations available: up and down. Motor up configurations allow flush mounting of the device to a flat surface, and motor down configurations allow for a full 360° movement of loads that extend past the edge of the stage top. An indexed knob provides convenient manual control for versatile operation even without a computer.

These stages connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. Like all of Zaber's products, the X-RSB Series is designed to be 'plug and play' and very easy to set up and operate.

For more information visit: https://www.zaber.com/products/rotary-stages/X-RSB

X-RSB Series Part Numbering & Options

X-RSB 060 A D

Stage Diameter	Gear Ratio Options	Motor Configuration
060 — 60 mm	**A** — 5:1	**B** — Down, high torque motor
120 — 120 mm		**D** — Down, medium torque motor
		T — Up, high torque motor
		U — Up, medium torque motor

X-RSB Series Drawings

• View all drawings and documents at zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	Yes
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Repeatability	<0.001 ° (<0.017 mrad)
Microstep Size (Default Resolution)	0.005625 ° (98.173 µrad)
Default Resolution	1/64 of a step

Speed

Specification	Value
Minimum Speed	0.003434 °/s (59.934 µrad/s)
Speed Resolution	0.003434 °/s (59.934 µrad/s)

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Motor

Specification	Value
Angular Motion Per Motor Rev	72 °
Motor Steps Per Rev	200
Motor Type	Stepper (2-phase)

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24 - 48 VDC
Power Plug	2-pin Screw Terminal

Mechanical

Specification	Value
Mechanical Drive System	Synchronous belt

Environmental & Compliance

Specification	Value
Operating Temperature Range	0 - 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Weight	Accuracy (unidirectional)	Backlash	Radial Error Motion
X-RSB060AD	0.82 kg (1.808 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")
X-RSB060AU	0.82 kg (1.808 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB120AB	2.04 kg (4.497 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AD	2.04 kg (4.497 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AT	2.04 kg (4.497 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
X-RSB120AU	2.04 kg (4.497 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")

Part Number	Axial Error Motion	Tilt Error Motion	Maximum Continuous Torque	Maximum Centered Load
X-RSB060AD	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
X-RSB060AU	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
X-RSB120AB	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
X-RSB120AD	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)
X-RSB120AT	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
X-RSB120AU	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)

Part Number	Maximum Moment (Tilt)	Maximum Speed	Motor Rated Current	Motor Winding Inductance
X-RSB060AD	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	2300 mA/phase	2.8 mH/phase
X-RSB060AU	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	2300 mA/phase	2.8 mH/phase
X-RSB120AB	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	3000 mA/phase	2 mH/phase
X-RSB120AD	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	2100 mA/phase	7.2 mH/phase
X-RSB120AT	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	3000 mA/phase	2 mH/phase
X-RSB120AU	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	2100 mA/phase	7.2 mH/phase

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

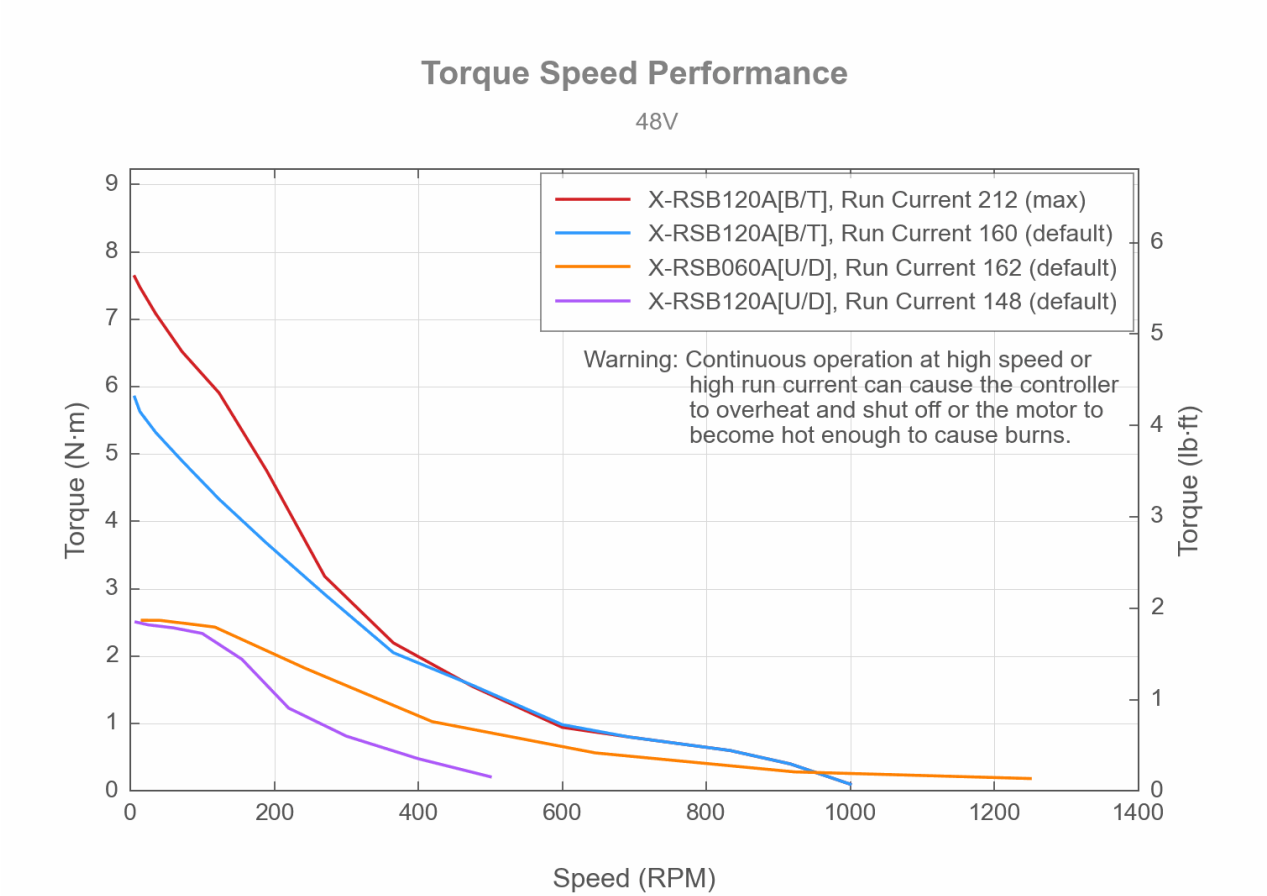
Part Number	Maximum Current Draw	Stage Top Dimension	Bearing Plane Offset	Mounting Interface
X-RSB060AD	2000 mA	60 mm (2.362 ")	16.37 mm (0.644 ")	M6 and #8-32 threaded holes
X-RSB060AU	2000 mA	60 mm (2.362 ")	16.37 mm (0.644 ")	M6 and #8-32 threaded holes
X-RSB120AB	3600 mA	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
X-RSB120AD	2000 mA	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
X-RSB120AT	3600 mA	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
X-RSB120AU	2000 mA	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSB Series Charts

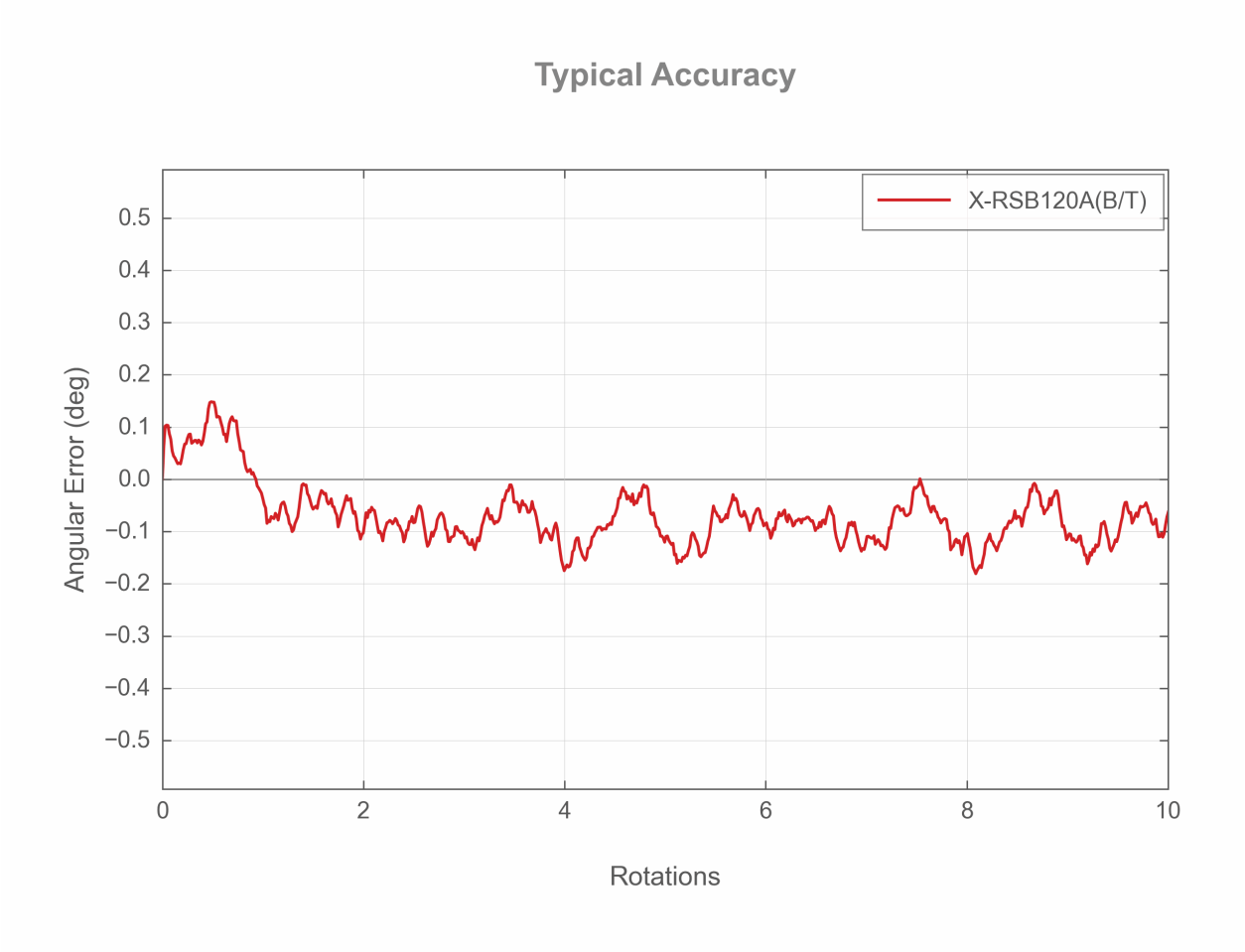
X RSB060A[U D] Torque Speed Performance



Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

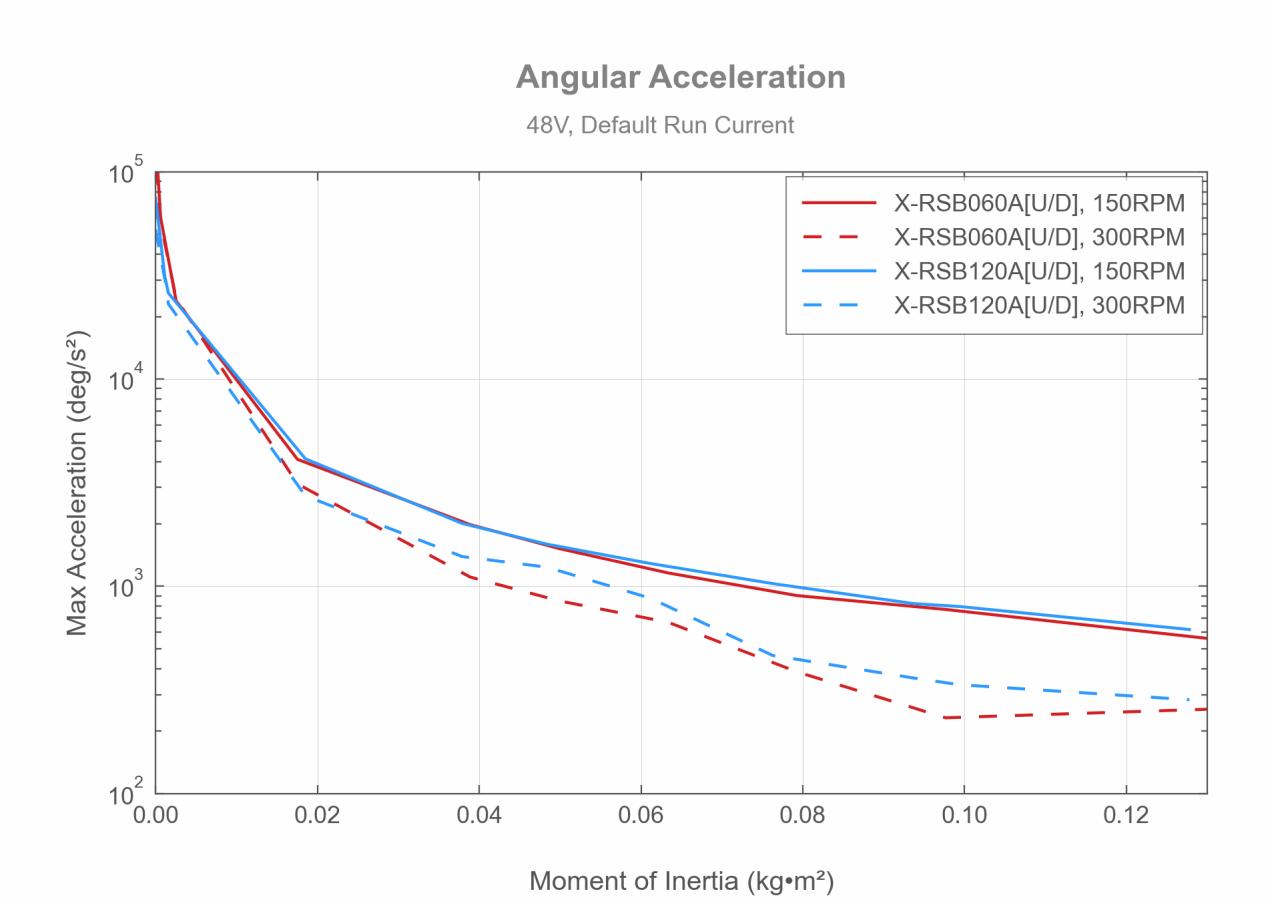
X RSB120AB T Typical Accuracy



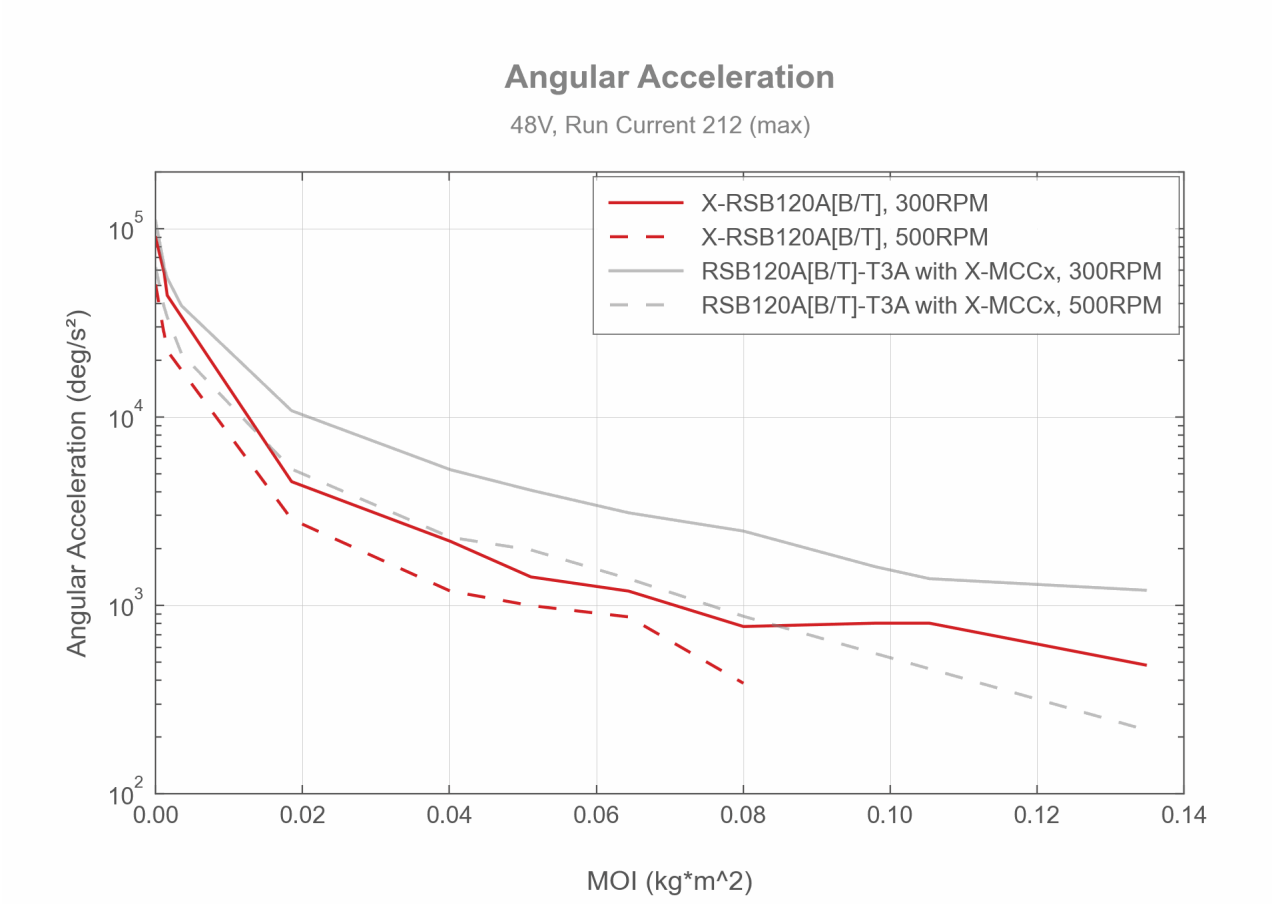
Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X RSB[U D], Angular Acceleration



X RSB120A[B T], Angular Acceleration



Contact

Email: contact@zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB-E Series Datasheet



- Speeds up to 1,200 rpm
- Continuous 360° rotation stage
- Multiple motor configurations
- Encoder position feedback with slip/stall detection and automatic recovery
- Optional integrated power-off brake
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB-E Series Overview

Zaber's RSB-E Series motorized rotation stages feature a compact footprint, low profile, and a load capability of up to 50 kg. With a maximum rotational speed of 1,200 rpm, these rotation stages are ideal for the rapid positioning of light loads. A built-in motor encoder allows for closed-loop operation and slip/stall recovery features.

There are two motor configurations available: up and down. Motor up configurations allow flush mounting of the device to a flat surface, and motor down configurations allow for full 360° movement of loads that extend past the edge of the stage top. An optional power-off brake is available to protect the payload from unintended motion in the event of power loss.

The stages are designed to connect directly to our MCC Family universal motor controllers, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector or DB26 connector for brake variants. Set up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the RSB-E.

For more information visit: https://www.zaber.com/products/rotary-stages/RSB-E

RSB-E Series Part Numbering & Options

RSB 060 A D - _ E01 T3A

Stage Diameter
- **060** — 60 mm
- **120** — 120 mm

Gear Ratio Options
- **A** — 5:1

Motor Configuration
- **B** — Down, high torque motor
- **D** — Down, medium torque motor
- **T** — Up, high torque motor
- **U** — Up, medium torque motor

Brake Option
- **None** — No Brake
- **B** — Brake

Encoder Options
- **E01** — Motor Encoder, 500 CPR
- **E08** — Motor Encoder, 400 CPR

Connector
- **T3A** — D-sub 15 panel mount connector with Auto Detect
- **T10A** — D-sub 26 panel mount connector with Auto Detect

RSB-E Series Drawings

• View all drawings and documents at zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB-E Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Range	+/-360 °

Positioning Performance

Specification	Value
Repeatability	<0.001 ° (<0.017 mrad)
Microstep Size (Default Resolution)	0.005625 ° (98.173 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Brake Torque	7.5 N·m (5.535 lb·ft)

Speed

Specification	Value
Minimum Speed	0.003434 °/s (59.934 µrad/s)
Speed Resolution	0.003434 °/s (59.934 µrad/s)

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	72 °
Motor Type	Stepper (2 phase)

Mechanical

Specification	Value
Mechanical Drive System	Synchronous belt

Environmental & Compliance

Specification	Value
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Weight	Accuracy (unidirectional)	Backlash	Radial Error Motion
RSB060AD-E01T3A	0.84 kg (1.852 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")
RSB060AU-E01T3A	0.84 kg (1.852 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")
RSB120AB-BE08T10A	2.726 kg (6.01 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
RSB120AB-E08T3A	2.1 kg (4.63 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB120AD-E01T3A	2.1 kg (4.63 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
RSB120AT-BE08T10A	2.726 kg (6.01 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
RSB120AT-E08T3A	2.1 kg (4.63 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
RSB120AU-E01T3A	2.1 kg (4.63 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")

Part Number	Axial Error Motion	Tilt Error Motion	Maximum Continuous Torque	Maximum Centered Load
RSB060AD-E01T3A	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
RSB060AU-E01T3A	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
RSB120AB-BE08T10A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
RSB120AB-E08T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
RSB120AD-E01T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)
RSB120AT-BE08T10A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
RSB120AT-E08T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
RSB120AU-E01T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)

Part Number	Maximum Moment (Tilt)	Maximum Speed	Encoder Resolution	Motor Rated Current
RSB060AD-E01T3A	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	500 CPR (2 states/rev)	2300 mA/phase
RSB060AU-E01T3A	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	500 CPR (2 states/rev)	2300 mA/phase
RSB120AB-BE08T10A	20 N·m (14.76 lb·ft)	3600 °/s (6 rpm)	400 CPR (16 states/rev)	3000 mA/phase
RSB120AB-E08T3A	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	400 CPR (16 states/rev)	3000 mA/phase

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB120AD-E01T3A	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	500 CPR (2 states/rev)	2100 mA/phase
RSB120AT-BE08T10A	20 N·m (14.76 lb·ft)	3600 °/s (6 rpm)	400 CPR (16 states/rev)	3000 mA/phase
RSB120AT-E08T3A	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	400 CPR (16 states/rev)	3000 mA/phase
RSB120AU-E01T3A	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	500 CPR (2 states/rev)	2100 mA/phase

Part Number	Motor Winding Resistance	Motor Winding Inductance	Motor Connection	Stage Top Dimension
RSB060AD-E01T3A	1 ohms/phase	2.2 mH/phase	D-sub 15	60 mm (2.362 ")
RSB060AU-E01T3A	1 ohms/phase	2.2 mH/phase	D-sub 15	60 mm (2.362 ")
RSB120AB-BE08T10A	0.53 ohms/phase	2 mH/phase	D-sub 26	120 mm (4.724 ")
RSB120AB-E08T3A	0.53 ohms/phase	2 mH/phase	D-sub 15	120 mm (4.724 ")
RSB120AD-E01T3A	2.9 ohms/phase	7.2 mH/phase	D-sub 15	120 mm (4.724 ")
RSB120AT-BE08T10A	0.53 ohms/phase	2 mH/phase	D-sub 26	120 mm (4.724 ")
RSB120AT-E08T3A	0.53 ohms/phase	2 mH/phase	D-sub 15	120 mm (4.724 ")
RSB120AU-E01T3A	2.9 ohms/phase	7.2 mH/phase	D-sub 15	120 mm (4.724 ")

Part Number	Bearing Plane Offset	Mounting Interface
RSB060AD-E01T3A	16.37 mm (0.644 ")	M6 and #8-32 threaded holes
RSB060AU-E01T3A	16.37 mm (0.644 ")	M6 and #8-32 threaded holes
RSB120AB-BE08T10A	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
RSB120AB-E08T3A	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

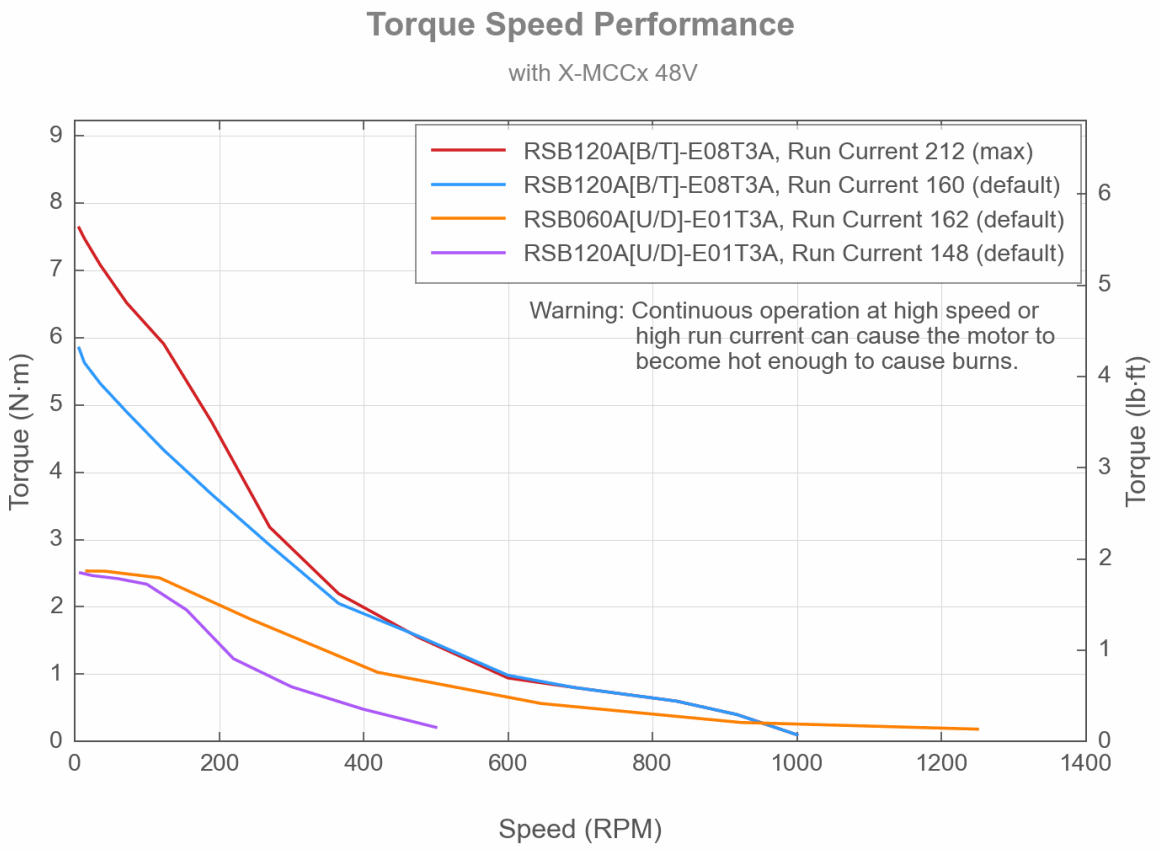
RSB120AD-E01T3A	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
RSB120AT-BE08T10A	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
RSB120AT-E08T3A	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
RSB120AU-E01T3A	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB-E Series Charts

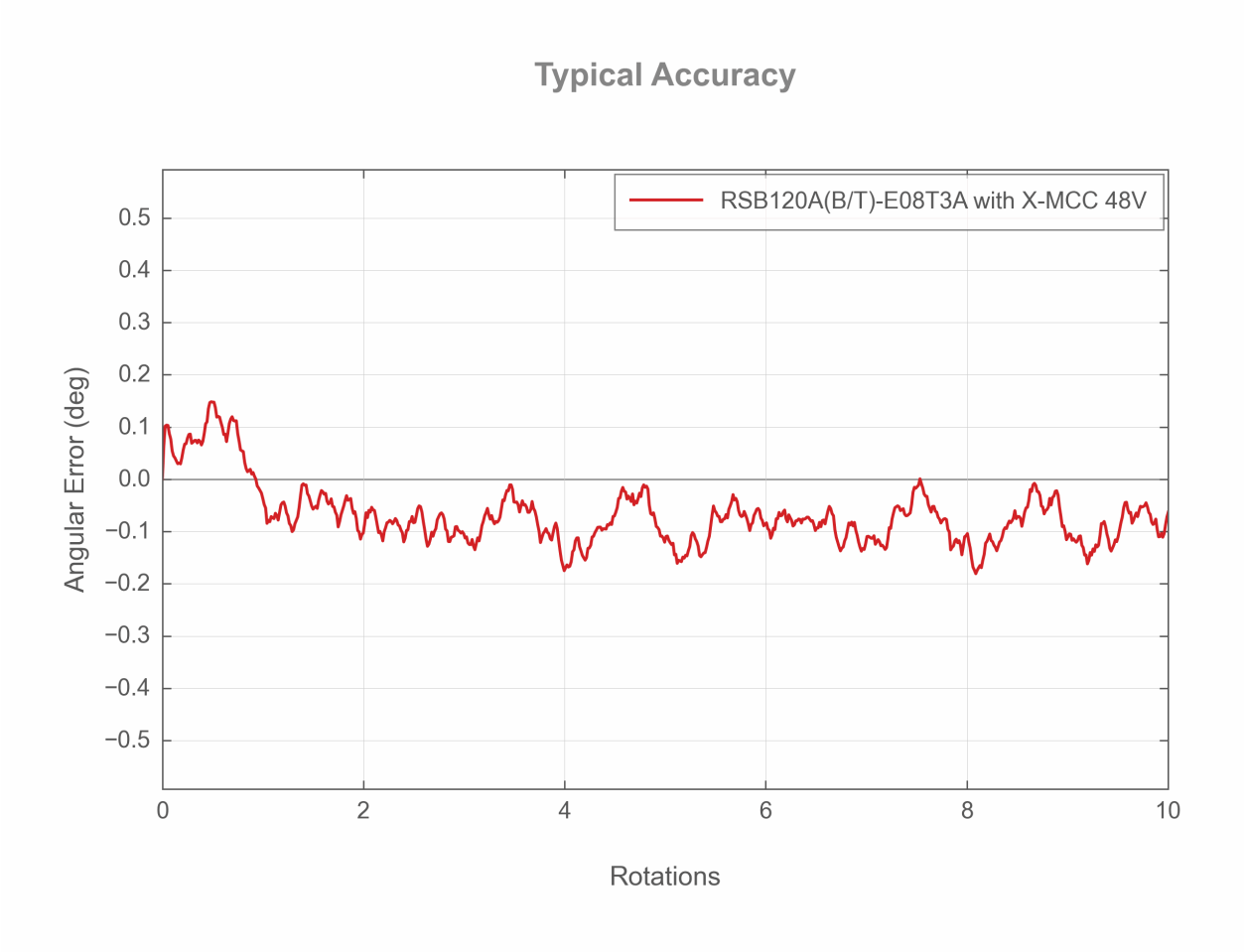
RSB060A[U D] E01T3A Torque Speed Performance



Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

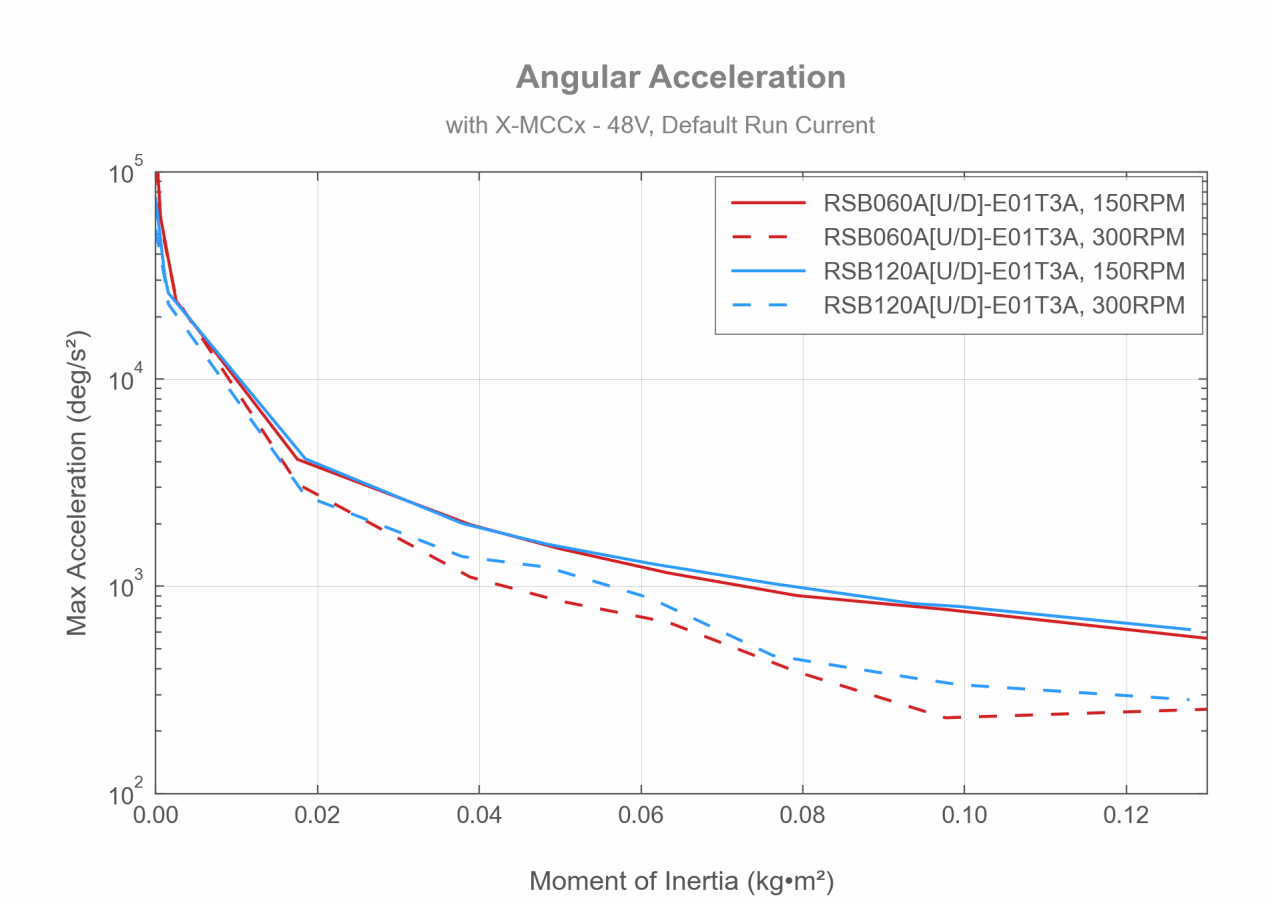
RSB120AB T E08T3A Typical Accuracy



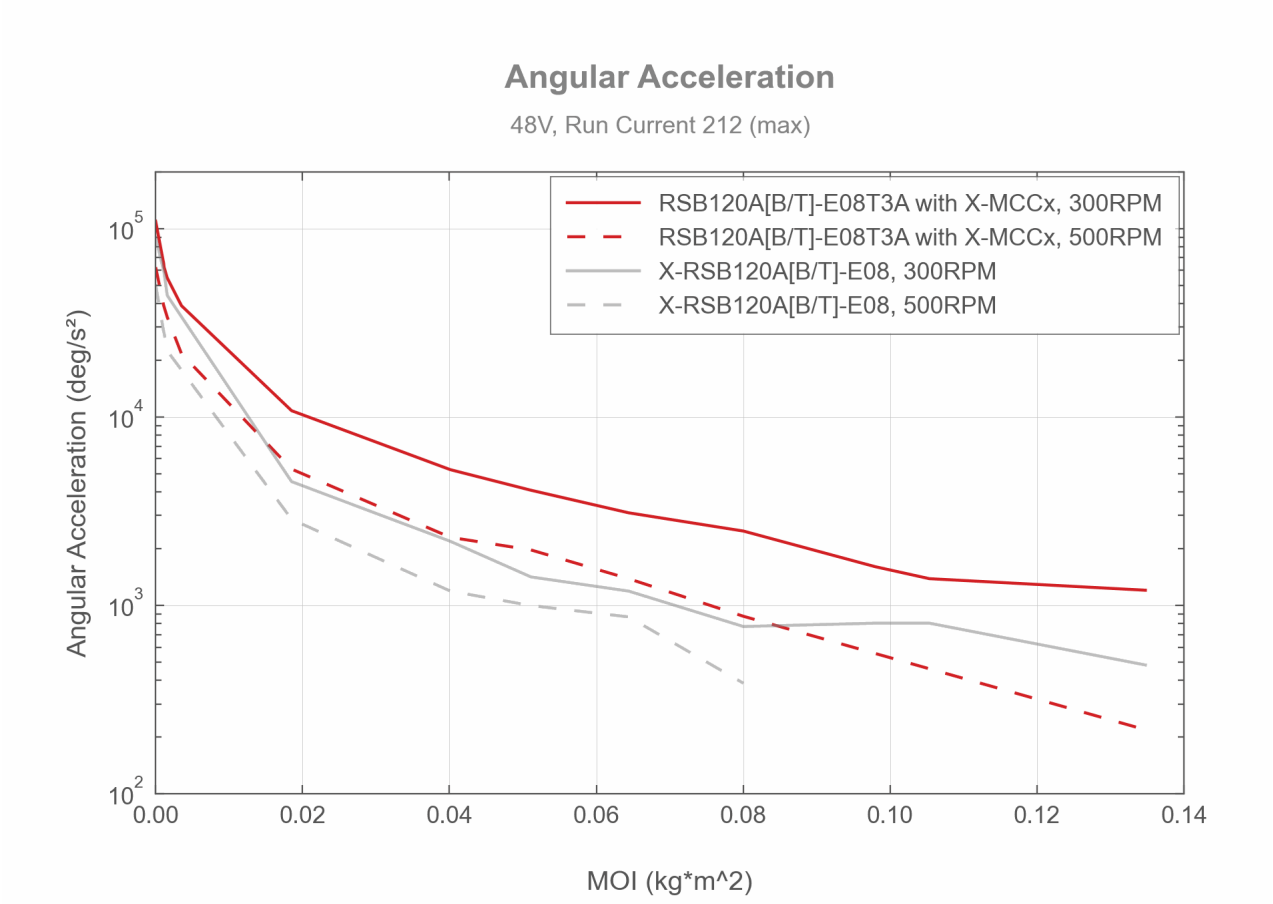
Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB[U D] E01T3A, Angular Acceleration



RSB120A[B T] E08T3A Angular Acceleration



Contact

Email: contact@zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB Series Datasheet



- Speeds up to 1,200 rpm
- Continuous 360° rotation stage
- Multiple motor configurations
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB Series Overview

Zaber's RSB motorized rotation stages feature a compact footprint, low profile, and a load capability of up to 50 kg. With a maximum speed of 1,200 rpm, these rotation stages are ideal for the rapid positioning of light loads to within a fraction of a degree.

There are two motor configurations available: up and down. Motor up configurations allow flush mounting of the device to a flat surface, and motor down configurations allow for full 360° movement of loads that extend past the edge of the stage top.

The stages are designed to connect directly to our MCC Family universal motor controllers, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector. Set up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the RSB.

For more information visit: https://www.zaber.com/products/rotary-stages/RSB

RSB Series Part Numbering & Options

RSB 060 A D - T3A

Stage Diameter
- **060** — 60 mm
- **120** — 120 mm

Gear Ratio Options
- **A** — 5:1

Motor Configuration
- **B** — Down, high torque motor
- **D** — Down, medium torque motor
- **T** — Up, high torque motor
- **U** — Up, medium torque motor

Connector
- **T3A** — D-sub 15 panel mount connector with Auto Detect

RSB Series Drawings

• View all drawings and documents at zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Range	+/-360 °

Positioning Performance

Specification	Value
Repeatability	<0.001 ° (<0.017 mrad)
Microstep Size (Default Resolution)	0.005625 ° (98.173 µrad)
Default Resolution	1/64 of a step

Speed

Specification	Value
Minimum Speed	0.003434 °/s (59.934 µrad/s)
Speed Resolution	0.003434 °/s (59.934 µrad/s)

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Motor

Specification	Value
Angular Motion Per Motor Rev	72 °
Motor Type	Stepper (2 phase)
Motor Connection	D-sub 15

Mechanical

Specification	Value
Mechanical Drive System	Synchronous belt

Environmental & Compliance

Specification	Value
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Weight	Accuracy (unidirectional)	Backlash	Radial Error Motion
RSB060AD-T3A	0.78 kg (1.72 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")
RSB060AU-T3A	0.78 kg (1.72 lb)	0.2 ° (3.49 mrad)	<0.1 ° (<1.745 mrad)	+/-4 µm (+/-0.000157 ")
RSB120AB-T3A	2 kg (4.409 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
RSB120AD-T3A	2 kg (4.409 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
RSB120AT-T3A	2 kg (4.409 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")
RSB120AU-T3A	2 kg (4.409 lb)	0.28 ° (4.886 mrad)	<0.25 ° (<4.362 mrad)	+/-3 µm (+/-0.000118 ")

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Part Number	Axial Error Motion	Tilt Error Motion	Maximum Continuous Torque	Maximum Centered Load
RSB060AD-T3A	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
RSB060AU-T3A	<4 µm (<0.000157 ")	+/-0.0033 ° (+/-57.6 µrad)	2.3 N·m (1.697 lb·ft)	200 N (44.9 lb)
RSB120AB-T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
RSB120AD-T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)
RSB120AT-T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	7.5 N·m (5.535 lb·ft)	500 N (112.1 lb)
RSB120AU-T3A	<3 µm (<0.000118 ")	+/-0.0014 ° (+/-24.43 µrad)	2.5 N·m (1.845 lb·ft)	500 N (112.1 lb)

Part Number	Maximum Moment (Tilt)	Maximum Speed	Motor Rated Current	Motor Winding Resistance
RSB060AD-T3A	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	2300 mA/phase	1 ohms/phase
RSB060AU-T3A	4.1 N·m (3.026 lb·ft)	7200 °/s (12 rpm)	2300 mA/phase	1 ohms/phase
RSB120AB-T3A	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	3000 mA/phase	0.53 ohms/phase
RSB120AD-T3A	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	2100 mA/phase	2.9 ohms/phase
RSB120AT-T3A	20 N·m (14.76 lb·ft)	5400 °/s (9 rpm)	3000 mA/phase	0.53 ohms/phase
RSB120AU-T3A	20 N·m (14.76 lb·ft)	3000 °/s (5 rpm)	2100 mA/phase	2.9 ohms/phase

Part Number	Motor Winding Inductance	Stage Top Dimension	Bearing Plane Offset	Mounting Interface
RSB060AD-T3A	2.2 mH/phase	60 mm (2.362 ")	16.37 mm (0.644 ")	M6 and #8-32 threaded holes
RSB060AU-T3A	2.2 mH/phase	60 mm (2.362 ")	16.37 mm (0.644 ")	M6 and #8-32 threaded holes

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

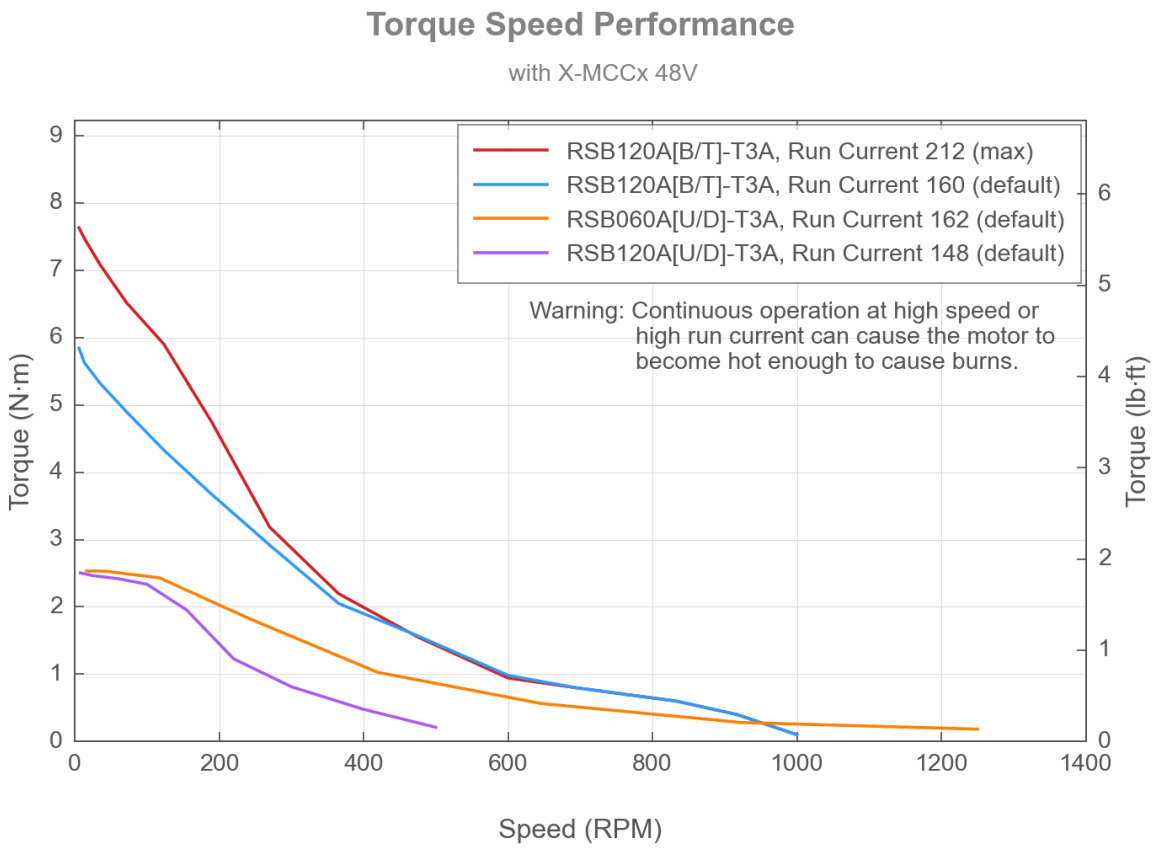
RSB120AB-T3A	2 mH/phase	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
RSB120AD-T3A	7.2 mH/phase	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
RSB120AT-T3A	2 mH/phase	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes
RSB120AU-T3A	7.2 mH/phase	120 mm (4.724 ")	20 mm (0.787 ")	Kinematic with M2.5 and M6 threaded holes

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB Series Charts

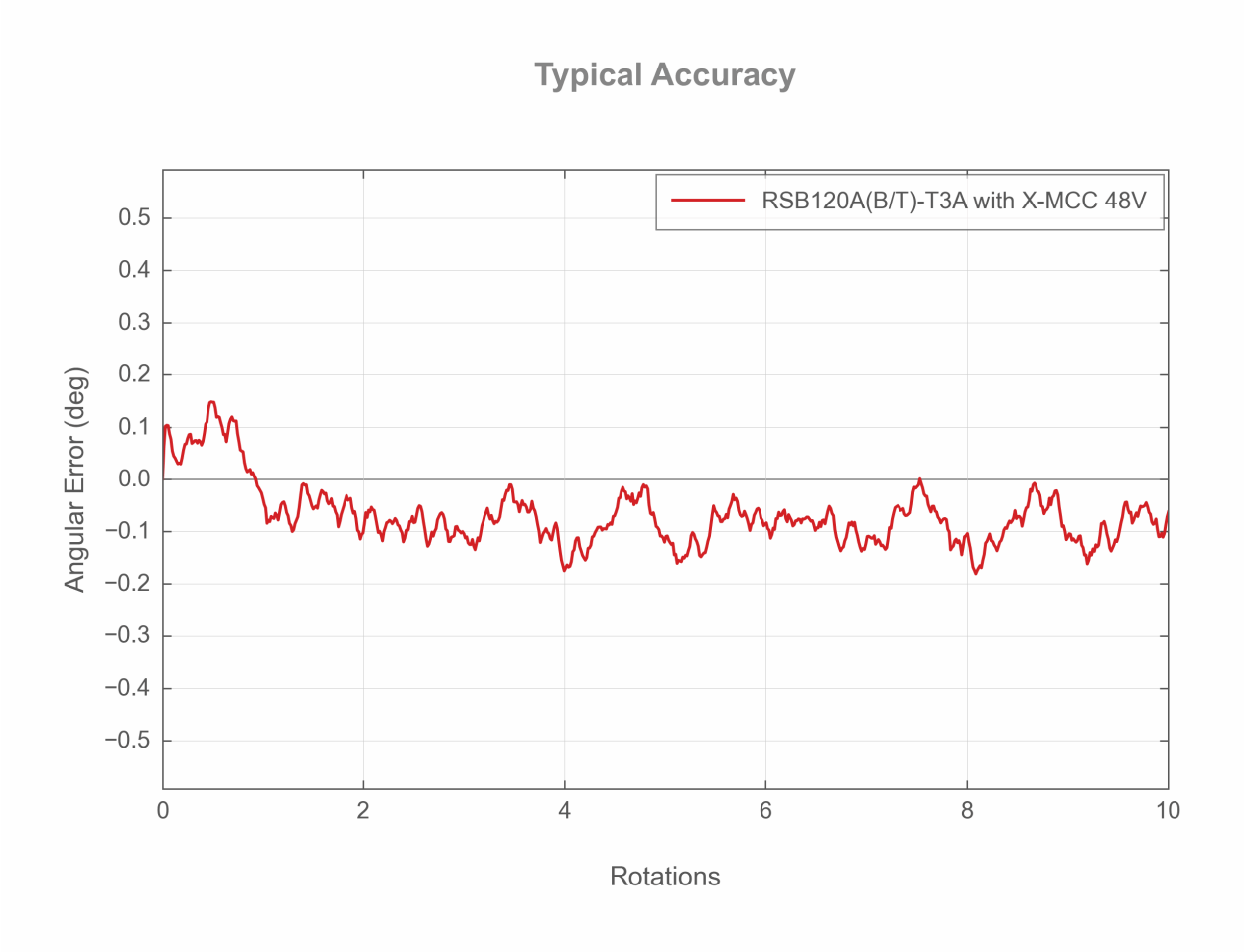
RSB060A[U D] T3A Torque Speed Performance



Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

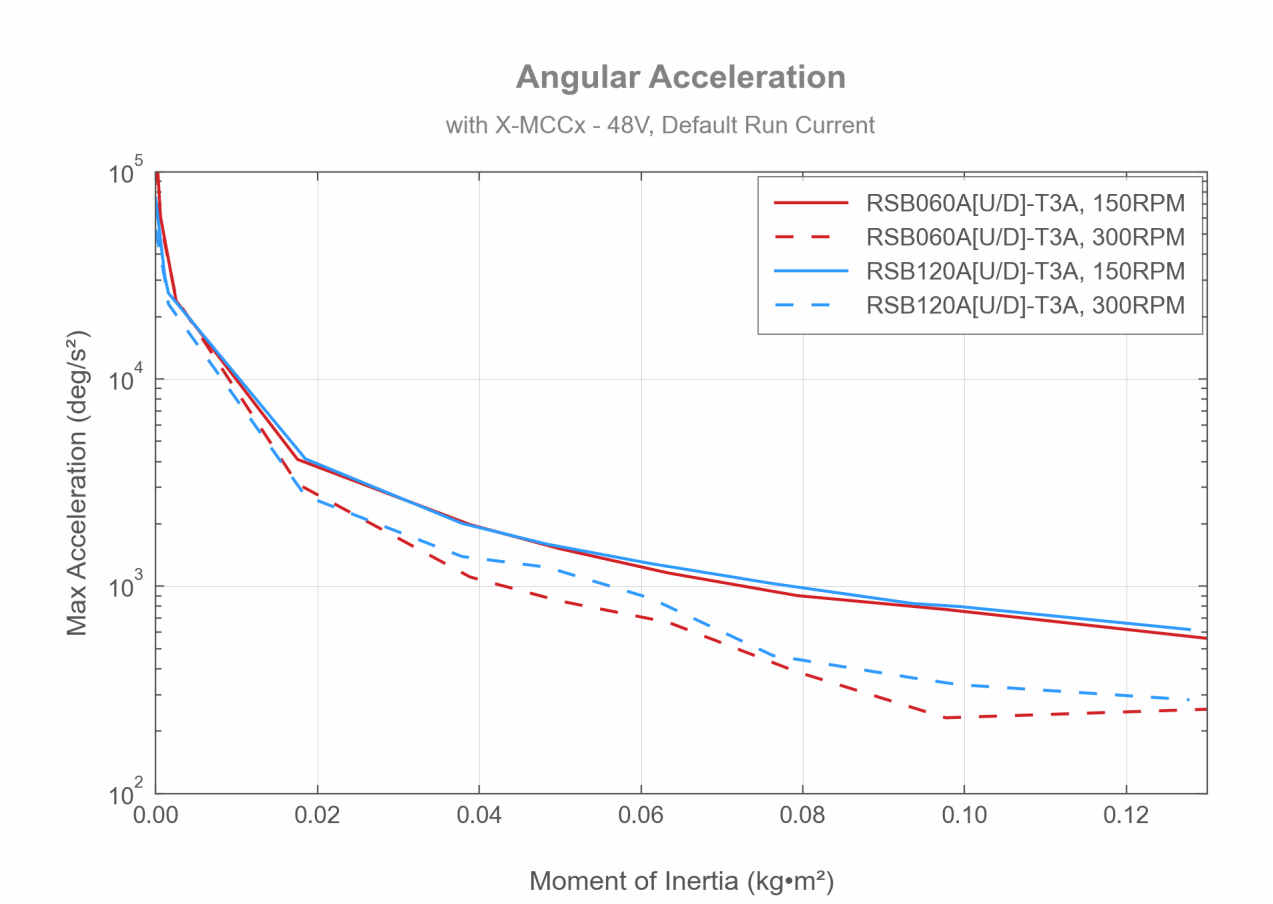
RSB120AB T T3A Typical Accuracy



Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

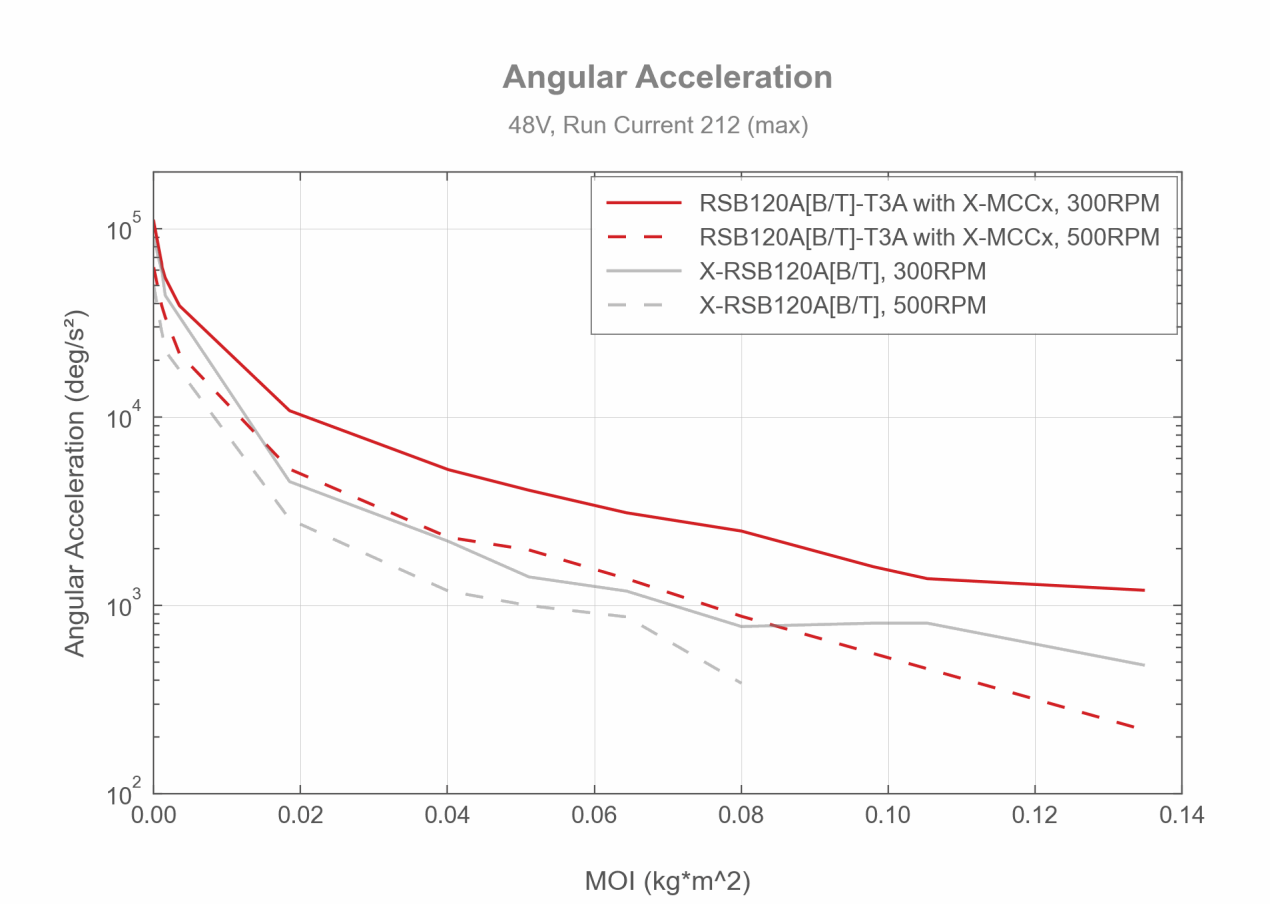
RSB[U D] T3A, Angular Acceleration



Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

RSB120A[B T] T3A Angular Acceleration



Contact

Email: contact@zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com