

X-GSR-E Series Datasheet



- Integrated, 500 CPR, motor mounted encoder provides slip/stall detection and automatic recovery
- Built-in controller; daisy-chains with other Zaber products
- Up to 80 deg/s speed and up to 60 Nm of torque
- 50 kg centred load capacity
- 150 mm and 225 mm centre of rotation options allow for two axes of motion about a common centre of rotation

Overview

Zaber's X-GSR-E Series devices are computer-controlled, motorized goniometers with a large diameter of rotation and long travel. They are stand-alone units requiring only a standard 48 V power supply. The built-in motor encoder allows closed-loop operation and slip/stall recovery features. 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.

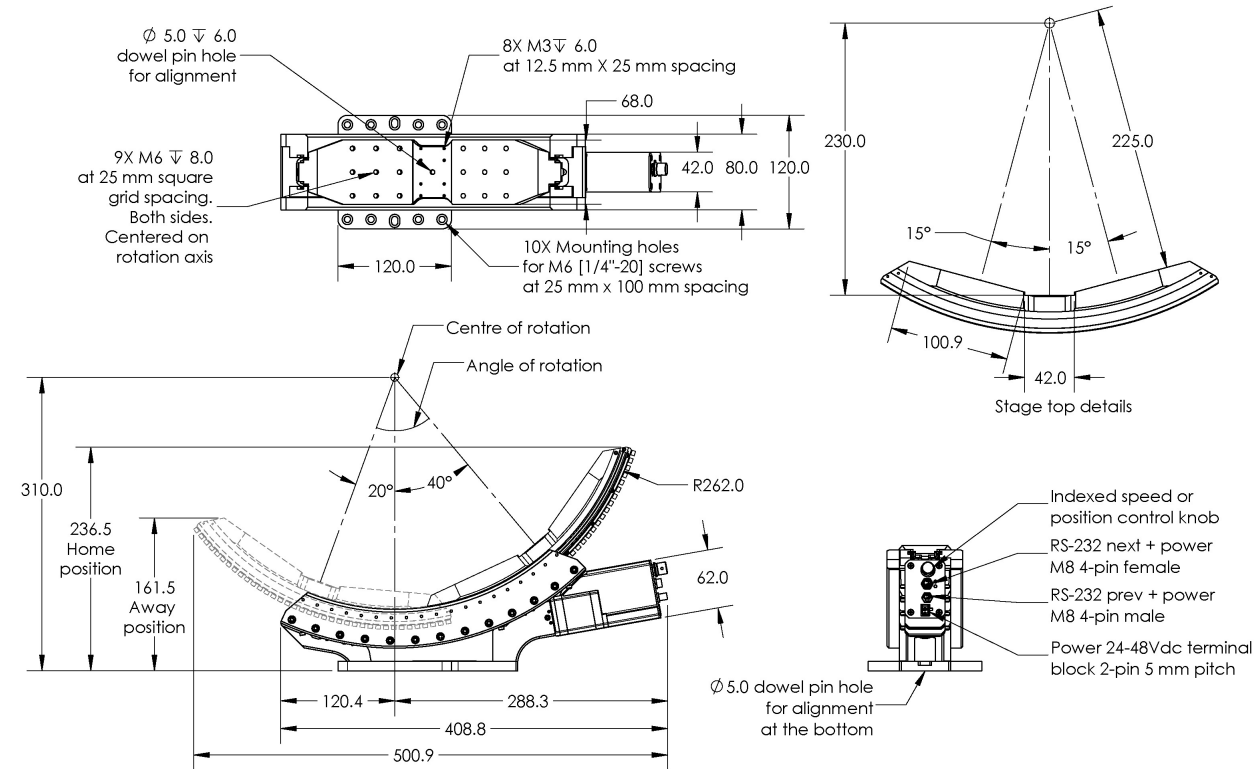
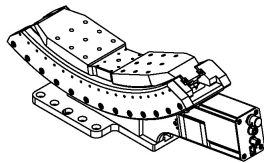
With a low, narrow profile and asymmetric mounting options, these stages excel at angular

scanning applications where keeping a clear view of the central target is critical. Curved crossed-roller supports give these devices smooth motion and the roller cam drive provides exceptional accuracy and eliminates backlash. Like all of Zaber's products, the X-GSR-E Series is designed to be 'plug and play' and very easy to set up and operate.

Drawings

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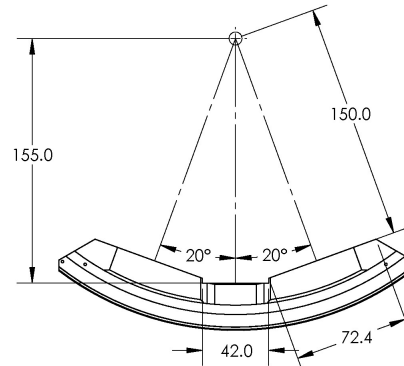
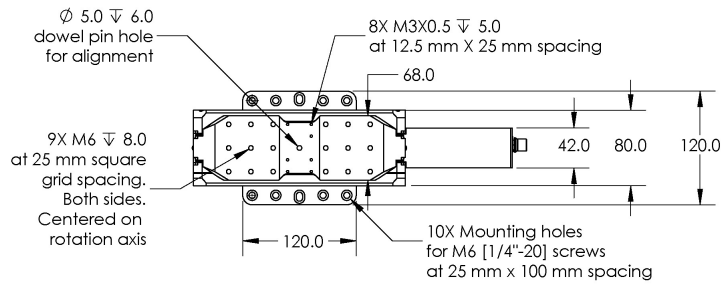
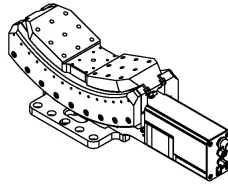
X-GSR225-E Motorized Goniometer Stage With Built In Controller
dimensions in mm



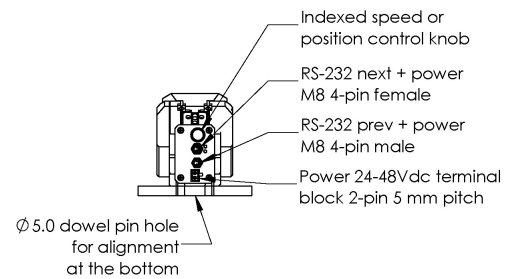
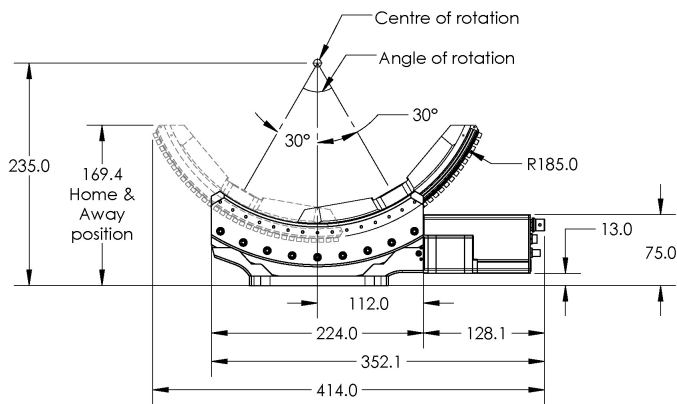
DWG 2109 R01

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X-GSR150-E Motorized Goniometer Stage With Built In Controller
 dimensions in mm



Stage top details



DWG 2108 R01

Specifications

Specification	Value	Alternate Unit
Built-in Controller	Yes	
Range	60 °	
Repeatability	< 0.005 °	< 0.087 mrad
Encoder Resolution	500 CPR	2000 states/rev
Encoder Type	Rotary quadrature encoder	
Communication Interface	RS-232	
Communication Protocol	Zaber ASCII (Default), Zaber Binary	
Guide Type	Crossed roller bearing	
Rotation Centre Accuracy	< 0.4 mm	< 0.016 "
Power Supply	24-48 VDC	
Power Plug	2-pin Screw Terminal	
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Inductance	2.8 mH/phase	
Default Resolution	1/64 of a step	
Data Cable Connection	Locking 4-pin M8	
Motor Frame Size	NEMA 17	
Mechanical Drive System	Roller cam drive	
Limit or Home Sensing	Magnetic home sensor	
Manual Control	Yes	
Axes of Motion	1	
LED Indicators	Yes	
Mounting Interface	M6 mounting holes	
Vacuum Compatible	No	
Operating Temperature Range	0-50 °C	
RoHS Compliant	Yes	
CE Compliant	Yes	

Part Number	Microstep Size (Default Resolution)	Accuracy (unidirectional)	Backlash	Maximum Speed

Part Number	Microstep Size (Default Resolution)	Accuracy (unidirectional)	Backlash	Maximum Speed
X-GSR150-E01	0.0001875 ° (3.272 µrad)	0.05 ° (0.872500 mrad)	< 0.018 ° (< 0.314 mrad)	80 °/s (13.3 rpm)

X-GSR225-E01	0.000140625 ° (2.454 µrad)	0.04 ° (0.698000 mrad)	< 0.012 ° (< 0.209 mrad)	60 °/s (10.0 rpm)
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Part Number	Minimum Speed	Maximum Torque	Maximum Centered Load	Rotation Centre Height
X-GSR150-E01	0.00011382 °/s (1.987 µrad/s)	4000 N-cm (5664.5 oz-in)	400 N (89.7 lb)	150 mm (5.905 ")

X-GSR225-E01	0.00008583 °/s (1.498 µrad/s)	6000 N-cm (8496.7 oz-in)	500 N (112.1 lb)	225 mm (8.858 ")
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Part Number	Angular Motion Per Motor Rev	Weight
X-GSR150-E01	2.4 °	4.1 kg (9.039 lb)
X-GSR225-E01	1.8 °	5.04 kg (11.111 lb)