

STANDARD FEATURES

- **Position Accuracy:** ± 15 arc sec (all axes)
- Max Rate (varies depending on axis configuration)
 - **Inner Axis:** 1080 deg/sec (standard); 2000 deg/sec (optional)
 - **Middle Axis:** 150 deg/sec (standard); 350 deg/sec (optional)
 - **Outer Axis:** 150 deg/sec (standard); 350 deg/sec (optional)
- Direct-drive, brushless servo system
- Precision-ground anodized aluminum tabletop
- 10 (254 mm) or 14 (356 mm) inch diameter tabletop
- Fail-safe brakes (all axes)
- Rotational freedom
 - **Inner Axis:** Unlimited
 - **Middle Axis:** ± 185 deg or unlimited
 - **Outer Axis:** ± 370 deg or unlimited
- AERO 5 EITE Digital Controller
- RS-232, IEEE-488 and Ethernet interface
- 20 kHz servo update rate
- Optional rack-mount kit with 19-inch rack, display, keyboard and mouse
- User-friendly Ideal Aerosmith Table Language (ATL)
- Trapezoidal motion profiles with programmable velocity and acceleration
- Sinusoidal Motion profiles with variable amplitude and frequency
- Position Profile, Velocity Profile and Flight Profile Mode for simulating complex motion profiles
- Analog position and velocity input
- Analog position, velocity and position error output
- Absolute Optical Encoders
- Capable of querying the current position, velocity, and acceleration
- CE Mark



DESCRIPTION

The Model 2103VE Three-Axis Positioning and Rate Table System is designed to provide precise position, rate, and acceleration motion for the development and/or production testing of military and/or commercial antenna stabilization systems and/or heading sensors.

The 2103VE test table achieves accurate and reliable motion control with a servo-controlled system consisting of direct-drive brushless torque motors, precision absolute optical encoders and the Ideal Aerosmith AERO 5 ELITE microprocessor based three-axis motion controller.

OPTIONS

- Unlimited rotation available on all axes
- Customer defined user lines to the tabletop
- 19 inch controller console, approximately 73 inches tall
- Custom tabletop mounting hole pattern

For much more detailed information, contact Ideal to request a Specification Document.

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2103VE Performance Specifications

Rotational Freedom (standard)*	Inner Axis		Middle Axis		Outer Axis	
	Unlimited		± 185 deg or Unlimited		± 370 deg or Unlimited	
Position						
• Accuracy, arc sec (deg)	±15 (0.00417)		±15 (0.00417)		±15 (0.00417)	
• Repeatability, arc sec (deg)	± 3 (0.00083)		± 3 (0.00083)		± 3 (0.00083)	
• Command/Display Resolution, deg	0.0001		0.0001		0.0001	
Rate *						
• Maximum, deg/sec (optional rates require unlimited rotation) *	±1080 Optional: 2000		Limited rotation axis: ±150 Optional: ±350		Limited rotation axis: ±150 Optional: ±350	
• Command/Display Resolution, deg/sec	0.0001		0.0001		0.0001	
• Accuracy, % ± resolution	±0.001%		For limited rotation: ±0.5% For unlimited rotation: ±0.001%		For limited rotation: ±0.5% For unlimited rotation: ±0.001%	
Acceleration / Bandwidth						
	Inner Axis		Middle Axis		Outer Axis	
	10 inch tabletop	14 inch tabletop	10 inch tabletop	14 inch tabletop	10 inch tabletop	14 inch tabletop
• Peak, deg/sec ² (2 second duration)	10000	6700	1000	850	200	195
• Max Continuous, deg/sec ²	10000	2900	420	375	85	80
• -3dB Bandwidth, Hz (no load)	5	5	5	5	5	5
• Tare Inertia, lbm*in ² (kg*m ²)	104 (0.031)	288 (0.084)	4507 (1.32)	5082 (1.49)	22063 (6.46)	22631 (6.62)
Axis Wobble, arc sec (deg)	10 (0.00278)		10 (0.00278)		10 (0.00278)	
Axis Orthogonality, arc sec (deg)	± 10 (0.00228) between consecutive axes					

* For limited rotation axis, the maximum rate may not be achievable as it is dependent upon acceleration capabilities, which may vary with payload.

System Physical Configuration

Table Surface Characteristics	
• Diameter	Standard: 10 inches (254mm) Optional: 14 inches (356mm)
• Hole Pattern	10 inch table top: 1/4-20 threaded holes on a one inch (25 mm) grid pattern. 14 inch table top: 1/4-20 threaded holes on a two inch (51 mm) grid pattern. (Other interface patterns available upon request.)
• Face Flatness; Material; Finish	0.003 TIR (.076); Aluminum; 32 RMS
Test Load Capacity	15 lbs (6.8 Kg) (Centered) Height: 12.5 inches (318 mm) for 10 inch table top Height: 12 inches (305 mm) for 14 inch table top Center of Gravity: less than 6 inches (152mm) above tabletop
Electrical Access to the UUT	User lines: 34 lines @ 2A each, 17 twisted shielded pair
Table Configuration	
• Dimensions	39.5 W x 28.25 D x 54.2 H inches (1003 W x 718 D x 1377 H mm)
• Weight	500 lbs. (226 Kg)
Axis Lock	Fail-Safe Electric Brake (all axes)
Leveling Range	± 1 degree
Controller	Refer to AERO 5 ELITE Data Sheet for more detailed information.
• Type and Configuration	AERO 5 ELITE Controller
• Communication Interface	RS-232, IEEE-488 and Ethernet ports available to use
Analog Input	±10V input proportional to position or velocity with resolution of 0.31 mV
Analog Output	±10V input proportional to position or velocity with resolution of 0.31 mV

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