ACUTRONIC

The Driving Force in Motion Simulation

Inertial Guidance Test and Calibration System

One-Axis Motion Simulator BD125

The Series BD125 is a one-axis test table specifically designed to provide stimuli in the form of angular rates, accelerations, and positions to angular sensors such as gyroscopes, accelerometers and rate switch assemblies. This system features a very reliable closed-loop in-direct drive servo system consisting of a drive assembly, a servo controller and drive power amplifier.

The Series BD125 is controlled by the ACUTROL®3000 digital motion control system which allows precise measurement and closed-loop control of positions, rates and accelerations. The system may be commanded from a touch-screen operator interface or from a host computer via a remote interface.

The standard table top and slipring configuration may be tailored to achieve the requirements of the testing or simulation task. The system may also satisfy the testing of single test units or multiple units during high volume production testing. Temperature chambers may be provided with the single axis table or added at a later date. The temperature chamber exposes the unit under test to high and low temperature extremes.

All Series BD125 tables come complete with a one-axis table, rack mountable controller, drive power amplifier, one set of mating customer connectors, interconnect cables from controller to table and documentation.

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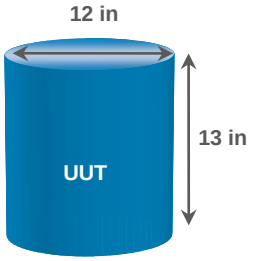
Unit Under Test (UUT)	
Mass	1‘000 lbs (454 kg)
Inertia	3.89 ft-lb-sec^2
Maximum envelope	12 in dia. x 13 in (305 mm x 330 mm)
Table top diameter	14 in dia.(356 mm dia)
Sliprings to UUT	signal 24 ways, 2 amps (custom options available)



Specifications	
Angular freedom	continuous
Position	
Accuracy	1 arc sec RSS
Command resolution	0.00001 deg
Repeatability	± 0.1 arc sec
Rate	
Range	1,000 deg/sec
Stability over 360 deg	0.001
Command resolution	0.00001 deg/sec
Dynamic	
Bandwidth (no load)	25 Hz at -3dB Gain w/o chamber
Acceleration (no load)	4,200 deg/sec^2
Mechanical	
Wobble	10 arc sec RMS

Major Simulator Dimensions	
Simulator (L x W x H)	31 in x 22 in. x 51 in w/chamber
Payload / table top height (from floor)	29 in (737 mm) w/o chamber / 34 in (864 mm) w/chamber

Temperature Chamber (TC)	
Working volume	14 in dia. x 13 in height
Temperature range	-55°C to +85°C
Temperature stability (working volume)	± 1.0°C
Cooling/heating gradients	
-LN_2 (TC**N**)	5°C/min (heating and cooling)
-CO_2 (TC**C**)	5°C/min (heating and cooling)
-Mechanical refrigeration (TC**M**)	5°C/min (heating)/1.5°C/min (cooling)

Options

- Temperature chamber, cooled and heated by customer supplied air flow
- Increased/decreased rate/acceleration/G-range/bandwidth for higher performance/lower cost
- Custom UUT mounting arrangements and fixtures
- Custom tabletop/mounting surfaces and/or boom
- Mechanical brake, Stow Lock, or Slow Motion Clamp
- Optional real time computer interfaces; SCRAMNet GT200, or VMIC
- LabVIEW user interface for playback and recording of motion profiles with data acquisition system
- Installation support, training and calibration
- Customized sliprings up on request: High pressure gas line or fluid joints, 20 amp lines, 5 amp lines, 3 amp lines, RF rotary joints, Fiber Optic rotary joints

The specifications identified in this data sheet are representative of standard systems. To satisfy customer specific requirements ACUTRONIC is able to design systems with specifications that are increased or decreased relative to standard systems.