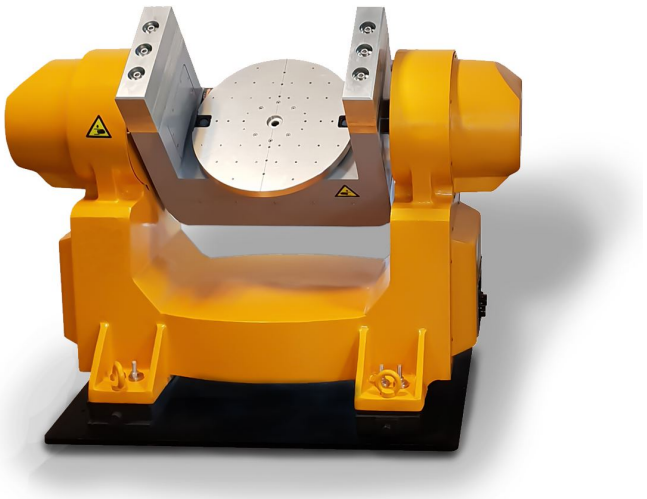
FDA -222

The FDA-222 motion simulator is designed to be an economic rate table. This model allows testing of several medium and large Inetial Measurement Units (IMU's) or Micro Electro Mechanical Systems (MEMS) sensors simultaneously and also for the development, testing and calibration of stabilized optical sights or startrackers.



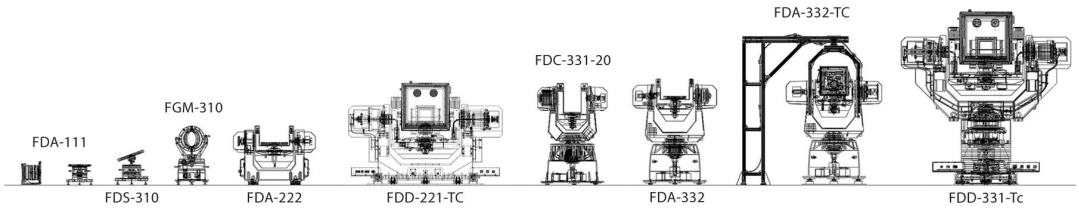
This model has two degrees-of-freedom; Roll and Pitch or inner and outer respectively. The outer gimbal has a "U-shape" design allowing unobstructed optical access to the tabletop. The simulator's axes are equipped with stow locks to facilitate the safe loading/unloading of the UUT. The simulator is secured to the facility floor using four leveling wedges.

A temperature chamber with gas cooling and electric heating is fastened to the middle axis gimbal as an option.

Slip ring assemblies featuring power rings and shielded signal rings permit electrical access to the UUT and allow to simulate continuous rotation. Beside the standard slip ring configuration, a wide variety of slip ring capsule designs and wiring schematics are available.

AC direct drive brushless motors are used for all the simulator's axes. The servo feedback transducers are also direct mounted to the axes and perform high precise positioning performances.

The ACCUDYNA nonlinear multi-variable controller is embedded in a special console, which has a power cabinet with amplifiers, power supplies, chokes, and motor filters.
The controller can be configured as determined by the customer's application. It is capable of providing position, rate and acceleration control either manually from the GUI or remotely through the RS232/RS422 computer interfaces. UDP (Up to 4 kHz) can be an option.



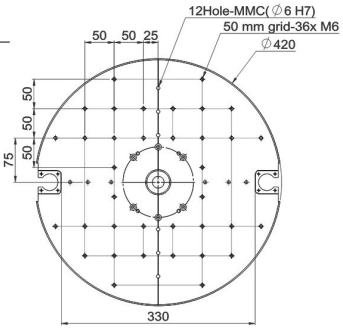
We can do more :

Version A: October, 2019.

FDA-222 PARAMETERS

UUT SPECIFICATIONS

UUT weight	25 Kg (Option: Up to 50)
UUT dimensions	H: 400 mm, D:300 mm
Flatness	0.03 mm
Material	Aluminum (Hard Anodized)
Table top mounting pattern	50 mm grid M6,12Hole-MMC(ø6H7)
Table top distance from floor	745 mm
Axes intersection distance from floor	765 mm
Electrical lines to UUT	50 lines rated 2A,10 lines rated 5A (Option: Up to 70 lines) With D-Sub or KPT style type connectors



SIMULATOR SPECIFICATIONS

		INNER AXIS (ROLL)	OUTER AXIS (PITCH)
Degrees of freedom			
Angular freedom		Continuous	Continuous (Option: ±180°)
		Direct / AC brushless motors	
Position			
Accuracy	arcsec	< ± 5 P-P	< ± 5 P-P
Repeatability	arcsec	< ± 1.5	< ± 1.5
Cmd. resolution	deg	0.0001	0.0001
Rate			
Range	°/s	± 1000	± 1000 (± 100 with limited rotation)
Resolution	°/s	0.0001	0.0001
Stability (Over 360° interval)	%	< 0.0001 (1 ppm)	< 0.0001 (1 ppm)
Dynamic			
Maximum torque	N.m	36	180
Momentum inertia	kg.m²	0.25	5.6
Bandwidth (-3db, no load)	Hz	Up to 90	Up to 50
Acceleration (no load)	°/s²	± 8000	± 1800
Orientation error			
Wobble	arcsec	< ± 5 P-P	< ± 5 P-P
Orthogonality	arcsec	< 5	
Temperature chamber (Option)			
Temperature range	˚c	-45 to +90	
Stability	˚c	± 1	
Thermal gradiant (Heating & cooling)	˚c/min	± 3	
Operating and physical conditions			
Operating temperature	˚c	22 ± 2	
Storage temperature	˚c	0 to 50	
EMC/EMI considerations		According to IEC61000-5	
Rate table dimensions	mm	(L x W x H) 1270 x 640 x 1000	
Rate table weight	kg	770	
Power supply		380V ± 10 %, 50 Hz, 3 Phase, N, PE, 15 A	
Software			
Language of software		Russian or English	

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