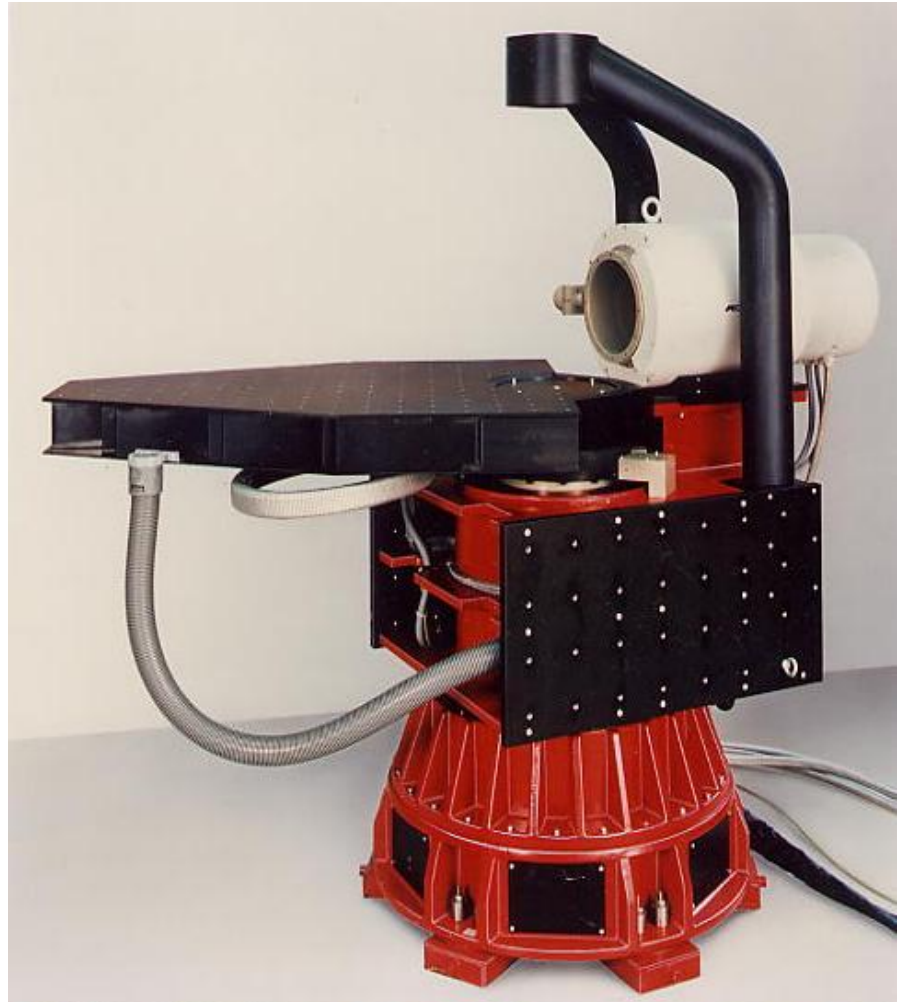


Missile Motion Simulator for Infra Red (IR) seeker test

Three Axis Motion Simulator Model AC3355

Modes of Operation

- Absolute Positioning:
0.00001 deg. resolution
- Rate – absolute and relative, excellent instantaneous rate stability
- Track Mode – for real time simulation of complex motion profiles
- Synthesis Mode – Sinusoidal motion, command amplitude, frequency and phase.
- Local or remote control via touch sensitive operator panel or digital interface
- Analog readout and command with 16 bit resolution



Feature

High torque, direct drive, brushless motors produce high acceleration in all axes. The rigid structural design caters for high bandwidth applications and high fidelity real time motion simulation.

Description

The model AC3355 has been designed to test missiles and missile seekers that operate in the Infra-Red (IR) spectrum. A high speed Roll Barrel supports the missile with the seeker gimbal coincident with the simulator's axis intersection. The Roll Barrel can be moved in azimuth with high acceleration and rate. Electrical and gas sliprings at the rear of the Roll Barrel provide access for the necessary facilities of the missile seeker.

The surface plate or Look Angle Fixture (LAF) supports the target which, for simulation purposes, is typically point source IR and associated collimator. The collimated beam is directed onto the missile seeker. The LAF can be moved in front of the missile in azimuth to simulate motion of the target and off bore-sight testing.

Saddle mounting surfaces on the side of the missile azimuth axis support the customer electronics for the IR source and missile control.

A gantry assembly above the axis intersection supports the customer droop cables and gas lines.

The ACUTROL®3000 controls the table. The digital controller has a touch sensitive operator interface and scalable analog input/output interface. Programmable Event Pulses can be used for calibration and synchronization with external computers or test equipment. Optionally, the standard digital interfaces, Ethernet (TCP/IP) and IEEE-488 can be supplemented with real time reflective memory interfaces SCRAMNet or VMIC.

Dimensions

Height, max	1'525 mm
Length	2'200 mm
Turn radius of Look Angle Fixture	2'200 mm
Look Angle Fixture Hole pattern	M6 x 50 mm grid
Base, diameter	800 mm

Unit under Test (UUT)

Payload, nominal LAF	30 kg
Payload, peak Roll Barrel	13 kg
Gas line through sliping	one
Sliping lines through Roll Barrel (standard, options available)	: 2 x 10 A 5 x 5 A 65 x 2 A

	Missile		Target
	Roll	Azimuth	Look Angle Fixture, Azimuth
Orthogonality	15 arc sec		+/- 5 arc sec
Wobble	2 arc sec	5 arc sec	2 arc sec
Dynamic Parameters			
Angular freedom	continuous	continuous	+/-95 deg
Positioning accuracy	3,6 arc sec RSS	3,6 arc sec RSS	3,6 arc sec RSS
Position resolution	0.00001 deg	0.00001 deg	0.00001 deg
Rate range	+/-300 deg/sec	+/-300 deg/sec	+/-300 deg/sec
Rate resolution	0.0001 deg/sec	0.0001 deg/sec	0.0001 deg/sec
Rate accuracy	0.005%	0.005%	0.005%
Installed torque	40 Nm	1000 Nm	300 Nm
Inertia no load	0.25 kgm ²	25 kgm ²	14 kgm ²
Acceleration, no load	4'800 deg/sec ²	1'100 deg/ sec ²	1100 deg/ sec ²
Bandwidth (-3dB)	60 Hz	25 Hz	Not applicable

Options

- Digital interface in addition to the std. IEEE-488 and Ethernet (TCP/IP) optional available are: SCRAMNet, or VMIC
- Roll barrel may be deleted
- Larger torque motors for increased acceleration