

Technological Services for Navigation Systems

Inertial Sensors Characterization

The Acutronic motion simulator installed in CTC's facilities is a high grade **2 axis rotary table** that incorporates a **removable temperature chamber** to study the behavior of the sensors and its variation with temperature. This equipment exhibits a high accuracy both in terms of position and angular velocity, being able to generate angular velocities and accelerations within a wide range of values.

The use of this equipment together with proper processing techniques allows to characterize numerous parameters useful in the development of applications in the navigation field in devices such as accelerometers, gyroscopes, Inertial Measurement Units (IMU) or Inertial Navigation Systems.



Specifications

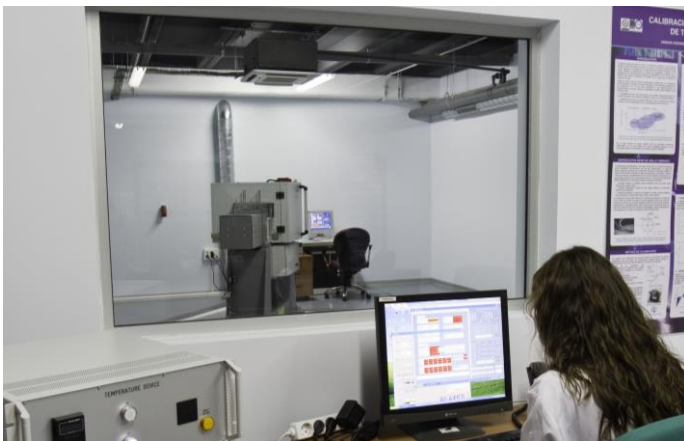


Specification	Inner axis	Outer axis
Position Accuracy	±10 arc sec	
Rate stability	0.001 % over 360°	
Maximum rate	2200 Deg/s	500 Deg/s
Acceleration no load	10.000 deg/s ²	200 deg/s ²
Acceleration 20 kg load	3.000 deg/s ²	150 deg/s ²
Temperature range	-50 °C to +115 °C	
Stability	±2 °C	

Services

Our facility is equipped with and monitoring and controlling room, data adquisition means, CO2 detectors and air extractor to ensure safe working conditions. CTC offers full flexibility in the use of its facilities:

- **Rental service:** motion simulator can be rented with full support from our team during the sensor installation process.
- **Sensor characterization:** CTC has wide experience in the characterization and modelling of inertial sensors. Some typical parameters are:
 - Bias (stability, variation with temperature, etc...).
 - Axis misalignment.
 - Scale factor (variation with temperature, linearity, asymmetry, etc ...).
 - Random Walk.
- **Consultancy service / other tests:** Other tests as **Hardware in the Loop tests** can be performance in our motion simulator, temperature chamber can be removed if needed. Besides, our engineering team can provide full **consultancy** or **customized tests**.



Benefits for our Clients

- Speed up and enhance the placing on the market of new products.
- Risk reduction in decision making during critical design phases.
- Report including the assessment and interpretation of the results.
- Collaboration with a highly qualified team with considerable practical skills and experience.



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