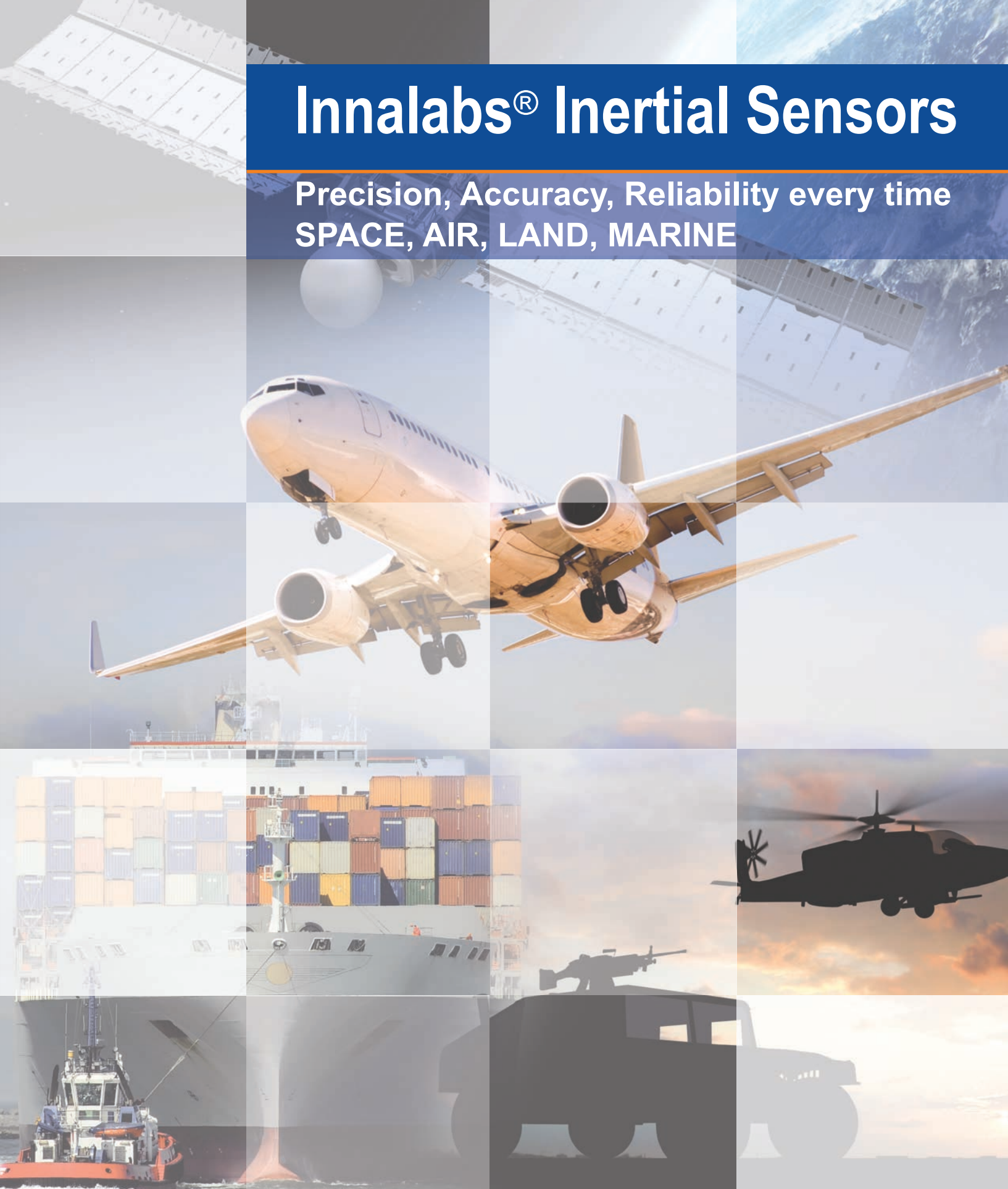


# Innalabs® Inertial Sensors

Precision, Accuracy, Reliability every time  
SPACE, AIR, LAND, MARINE



Parameter	AI-Q-2030	AI-Q-2020	AI-Q-2010	AI-Q-1410	AI-Q-710	AI-Q-550
Input Range, g	±60	±60	±60	±60	±30	±80
Bias, mg	<4	<4	<4	<5	<8	≤4
Bias One Year Repeatability, µg	160	220	550	1000	1200	≤1000
Bias Temperature Sensitivity, µg/°C	<30	<30	<30	<90	<70	≤50
Scale Factor, mA/g:	1.20 - 1.46	1.30 - 1.46	1.40 - 1.46	1.20 - 1.46	1.23 - 1.43	0.65 - 0.85
One Year Repeatability, ppm	<310	<500	<600	<1000	<1200	≤600
Temperature Sensitivity, ppm/°C	<180	<180	<180	<180	<200	≤100
Axis Misalignment µrad:	<2000	<2000	<2000	<7000	<2000	≤1500
Operating Temperature, °C:	-55 to +96	-55 to +96	-55 to +96	-55 to +96	-55 to +96	-55 to +105
Bandwidth, Hz :	>300	>300	>300	>300	>300	≥300
Input Voltage, VDC:	±13 to ±28	±13 to ±28	±13 to ±28	±13 to ±28	±13 to ±28	±13 to ±18

## Products

### InnaLabs® Quartz Accelerometers

InnaLabs® AI-Q-Series Quartz Servo Accelerometers provide navigation, control and measurement solutions across all market segments and support a number of platforms across a global customer base. Based on proven quartz servo technology they provide high accuracy, repeatability and stability even in the harshest of environments.



## Features

- Navigation and tactical grade performance
- High input range (up to ±80g measurement range)
- Analogue current output
- Compact, rugged design
- High stability under temperature changes
- High reliability
- Internal temperature sensor for thermal compensation
- Dual built-in self-test
- ITAR-Free

## Applications

- Inertial Navigation Systems (INS)
- Inertial Measurement Units (IMU)
- Attitude and Heading Reference Systems (AHRS)
- Commercial and military aircraft
- Unmanned systems and helicopters
- Land and marine vehicles
- Train and rail measurement systems
- Robotic systems control

Parameter	GI-CVG-U2X00A/D	GI-CVG-N2X00A/D	GI-CVG-B2205D
Number of Axes	1 or 2	1 or 2	2
Interface	Analogue/ Digital RS-422	Analogue/ Digital RS-422	Digital RS-422
Housing	Packaged	Unpackaged	Packaged
In Run Bias stability (room temp.) <b>deg/hr</b>	<0.22	<0.22* (note 1)	≤ 0.03
Bias stability, full temperature range 1σ	<10	<10	≤20
Bandwidth (-3dB) Hz	≥300	≥300	≥300
Angular Random Walk (steady conditions) <b>deg/√hr</b>	0.01 typical	0.01 typical	0.01 typical
Shock	800 g	800 g* (note 1)	800 g
Quiescent noise (1 - 100 Hz), RMS, deg/sec	≤0.01	≤0.01	≤0.02
MTBF, (MIL-HDBK 217F) hours	>500,000	>500,000	>500,000

**Note #1: Only applicable when the unit is rigidly fixed in appropriate housing**

## Products

### InnaLabs® CVG Tactical Grade Gyroscopes

InnaLabs® 2000 Series Gyroscopes provides <math><10^\circ/\text{hr}</math> tactical grade performance in a variety of compact robust form factors. Combining exceptional performance in bias stability, scale factor and angle random walk with the highest MTBF (500,000 hrs) on the market, very low noise ( $\leq 0.01^\circ/\text{s}$  RMS at 100 Hz) and excellent shock (800g) they provide ideal solutions for air, land or sea stabilisation and pointing applications.

## Features

- Single and dual axis variants
- Bias  $<10^\circ/\text{hr}$   $1\sigma$ ,  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$  at  $2\text{deg}/\text{min}$ .
- High MTBF  $>500,000$  hrs – typically x10 greater than FOG and DTG solutions
- ARW  $<0.01^\circ/\sqrt{\text{hr}}$
- Rate range\* selectable up to  $250\text{deg}/\text{s}$
- Bandwidth\* selectable 300Hz or 100Hz (-3dB)
- Shock tested up to 850g/0.6ms with no detrimental effect on performance
- Vibration  $<5\text{deg}/\text{hr}/\text{grms}$  bias offset under random vibration



## Applications

- Platform stabilization of optical systems and payloads, or other sensitive systems on airborne, land-based or marine platforms
- Stabilization of pointing and directional systems
- Industrial control systems
- Rail measurement and rail-tilt compensation systems

# Company Profile

InnaLabs® is a leading designer and manufacturer of navigation and tactical grade inertial sensors. Combining rare inertial sensor expertise, with operational excellence and world class customer engineering support we solve complex navigation, stabilization and guidance system challenges within the space, aerospace, land and marine markets.

## Capabilities

InnaLabs® core expertise is inertial sensor development and manufacture. With decades of inertial sensor technology and precision manufacturing experience, InnaLabs® delivers value to our customers through our proprietary inertial sensor technology.

From design to integration support our engineering teams create products our customers can rely on to meet the unique challenges of their programs.

InnaLabs® AI-Q-Series accelerometers offer an ITAR-Free drop in replacement for market leading accelerometers with shorter lead times, reduced export compliance paperwork, competitive pricing and excellent engineering pre and post-sale customer support. InnaLabs® proprietary Coriolis Vibratory Gyroscope (CVG) technology allows us to deliver solid state gyroscopes with ultra-low noise and a market leading lifetime of 10 times our competition.

## Production Facilities

Our best in class production facility consists of 6000m<sup>2</sup> plant room with 4 separate foundations containing ISO- Class 7 and ISO - Class 5 clean rooms.

We have invested in state-of-the-art equipment including rate tables, temperature & pressure chambers, shakers, high precision soldering and etching machines to ensure our finished products are manufactured and tested to the highest quality.



# Quality Policy

InnaLabs® Ireland will be world class in everything we do: including product quality, customer fulfillment, ease of doing business and value to our customers.

Our primary goal is continual improvement in quality, cost, delivery and customer satisfaction.

We achieve this by:

- Every individual being responsible for the quality of their work, following basic principles and striving for defect-free product quality.
- Creating a culture to continually meet and exceed our customers current and future expectations
- Pursuing sensor design and manufacturing excellence in a safe, healthy and enjoyable environment.

The InnaLabs® Quality Management System is certified under the ISO 9001 standard for the design and manufacture of precision electromechanical sensors. Our quality system has been independently audited by NSAI (National Standards Authority of Ireland). NSAI is a member of IQNet (the International Certification Network) based in Bern, Switzerland which gives NSAI certification worldwide recognition.

Quality is a top strategic priority for InnaLabs and ISO 9001 certification as an internationally recognized standard for quality management systems, helps us to strengthen our leadership in this area. The certification reflects our continual efforts to improve and our commitment to on-going investment in technology, development and process maturity.

