

LN-200 Fiber Optic Inertial Measurement Unit

Northrop Grumman is the world's leading producer of inertial navigation systems with more than 45,000 systems in use worldwide



Description

The LN-200 Inertial Measurement Unit (IMU) has been in high rate production since 1994. It is the latest in applied technology, utilizing state-of-art inertial fiber optic gyros and micro-machined accelerometers.

The LN-200 IMU is produced in a fully complemented and highly robotic production facility.

Applications

The LN-200 IMU has a wide variety of applications. Customers have purchased these products for space stabilization, missile guidance, Radar/EO/FLIR stabilization, motion compensation, UUV/UAV guidance and control, camera/mapping, and as IMUs for higher order integrated systems.

The LN-200 is a versatile inertial unit that is suitable for a wide variety of applications:

- Space Stabilization
- Camera/Mapping

- AHRS
- Motion Compensation
- EO/FLIR Stabilization
- Navigation
- Flight Controls
- ACMI/TSPI*

Advantages

The LN-200 is hermetically sealed and contains no moving parts or gaseous cavities, ensuring long, reliable shelf and usage life.

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Functionality

The LN-200, having been applied to a wide variety of applications, is available in a number of functional and data rate configurations.

* Air Combat Maneuvering Instrumentation/
Time, Space, Position Instrumentation

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LN-200 Features

- 3 solid-state fiber optic gyros
- 3 solid-state silicon accelerometers
- Miniature package <35 cu in. (88.9 cu cm)
- Lightweight package <2 lb (907.2g)

Heritage

LN-200 is on the following platforms:

- Clementine
- Satellites
- AGM-142
- Air Combat Maneuvering Instrumentation Pods
- BQM-74E
- GMLRS ATD
- LANTIRN
- Predator
- Global Hawk
- MK-48
- AMRAAM
- Stingray
- CH-46
- MB-339
- Radar – MoComp
- RAH-66

LN-200 Core IMU

Physical Characteristics

Weight	<1.65 lb (750g)
Size	3.5 D x 3.35 H in. (plus connector) (8.89 D x 8.51 H cm)
Power	12W steady-state (nominal)
Cooling	Conduction to mounting plate

Performance—Accelerometer

Bias Repeatability	300 µg to 3.0 milli-g, 1σ
Scale Factor Accuracy	300 to 5,000 ppm, 1σ

Performance—Gyro

Bias Repeatability	1°/hr to 10°/hr, 1σ
Scale Factor Accuracy	100 to 500 ppm, 1σ
Random Walk	0.07 to 0.15°/sq rt hr
Power Spectral Density (PSD) level	

Operating Range

Angular Rate	Up to ±11,459°/sec
Angular Acceleration	±100,000°/sec/sec
Acceleration	>70g
Angular Attitude	Unlimited

MTBF

Input/Output

RS-485 serial data bus
(SDLC)

Environmental

Temperature	-54°C to +71°C continuous operation
Vibration	15g rms, 20-20,000 Hz @ PSD NTE 0.114g ² /Hz in any bandwidth
Shock	90g, 6 msec terminal sawtooth

For more information, please contact:

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