THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

LN-200C

Inertial Measurement Unit (IMU)

The LN-200C fiber-optic gyro (FOG) inertial measurement unit (IMU) for commercial, aerospace and industrial applications gives customers from around the world greater flexibility and ease of use since it is only subject to Export Administration Regulation (EAR) for export control.

Description

The commercial-off-the-shelf LN-200C is a small, lightweight and highly reliable FOG IMU. This compact unit consists of three solid-state fiber-optic gyros and three solid-state silicon Micro Electro-Mechanical System (MEMS) accelerometers that measure velocity and angle changes in a coordinate system fixed relative to its case. Digital output data of incremental velocity and angle are provided to user equipment over a digital serial data bus.

Derived from the high-performing and reliable LN-200 IMU, the LN-200C has the same form factor, including a hermetic seal and no moving parts. This helps to ensure low noise, long usage and shelf life. Additionally, the LN-200C has the same electrical and mechanical interface as the LN-200, meeting the high reliability and quality standards for which the LN-200 is renowned.

Configurations

The LN-200C is available in multiple configurations to meet different price and performance requirements, giving the customer tremendous flexibility. Performance options for the gyro's bias repeatability and angle random walk, as well as the accelerometer's bias repeatability and scale factor vary for different applications.

Applications

Designed for global commercial and industrial applications, the LN-200C is ideally suited for applications that include:

- Commercial pipeline inspection
- Radars and Synthetic Aperture Radar
- Remotely operated vehicles
- Electro-optical and infrared products
- Aerial and marine geomapping
- GPS-aided tactical navigation
- Light Detection And Ranging (LIDAR)
- Mining / Agriculture

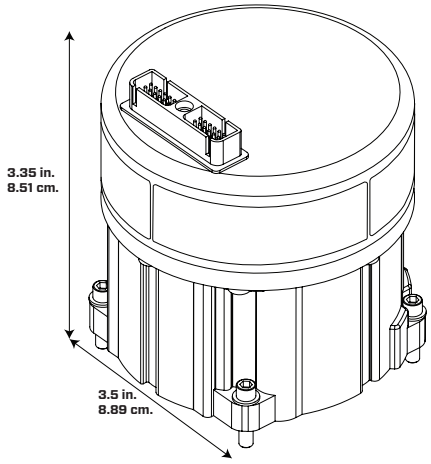
Advantages

The LN-200C is a commercial product that can be licensed under the U.S. Department of Commerce for international use.

Performance					
Part Number	**311953-1**	**311953-3**	**311953-5**	**311953-7**	**311953-9**
Accelerometer					
Bias Repeatability	300 µg, 1σ	1.0 milli-g, 1σ	1.0 milli-g, 1σ	2.0 milli-g, 1σ	2.0 milli-g, 1σ
Scale Factor Accuracy	300 ppm, 1σ	300 ppm, 1σ	300 ppm, 1σ	1000 ppm, 1σ	1000 ppm, 1σ
Noise	35 µg RMS (10 sec)	35 µg RMS (10 sec)	35 µg RMS (10 sec)	35 µg RMS (10 sec)	35 µg RMS (10 sec)
Gyro					
Bias Repeatability	1°/hr 0.65°/hr stability, 1σ	1°/hr 0.65°/hr stability, 1σ	1°/hr 0.65°/hr stability, 1σ	1°/hr 0.65°/hr stability, 1σ	2°/hr 0.65°/hr stability, 1σ
Scale Factor Accuracy	100 ppm, 1σ	100 ppm, 1σ	100 ppm, 1σ	100 ppm, 1σ	100 ppm, 1σ
Random Walk	0.07°/√hr	0.07°/√hr	0.025°/√hr	0.07°/√hr	0.15°/√hr

LN-200 All Configurations

Characteristics	
Power	12W steady-state (nominal)
Dimensions	Diameter: 3.5 in. (8.89 cm) Height: 3.35 in. (8.51 cm) (plus connector)
Weight	<1.65 lb (750g)
Temperature	-54°C (-65°F) to + 71°C (160°F) continuous operation
Shock	90g, 6 msec terminal sawtooth
Input Voltage	+5 Volt, ±15 Volt
Cooling	Conduction to mounting plate
Vibration	3.75g rms, 20-2,000 Hz @ PSD NTE 0.007 g^2/Hz in any bandwidth
MTBF	>20,000 hrs
Features	
Angular Rate	Up to ±490°/sec
Angular Acceleration	±100,000°/sec^2
Acceleration	±15g
Angular Attitude	Any Orientation
Input/Output	RS-485 serial data bus (SDLC)



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