IMU-LN200C

Tactical grade, low noise IMU combines with SPAN GNSS+INS technology from Hexagon | NovAtel to provide 3D position, velocity and attitude solution.

World-leading GNSS+INS technology

SPAN GNSS+INS technology brings together two different but complementary technologies: Global Navigation Satellite Systems (GNSS) positioning and inertial navigation. The absolute accuracy of GNSS positioning and the stability of Inertial Measurement Unit (IMU) gyro and accelerometer measurements are deeply coupled to provide an exceptional 3D navigation solution that is stable and continuously available, even through periods when satellite signals are blocked.

IMU-LN200C overview

The IMU-LN200C is a tactical grade IMU containing closed-loop fiber optic gyros and solid-state silicon accelerometers. Low noise and stable accelerometer and gyro sensor biases make the IMU-LN200C an ideal choice for airborne mapping applications. IMU mounting is made easy by its small footprint.

The IMU-LN200C is available as a complete assembly, including the IMU and environmentally sealed enclosure. The LN200C is also available as a stand alone OEM product so integrators can easily pair it with a SPAN enabled receiver. The LN200C is a commercial product that can be licensed under the jurisdiction of the U.S. Department of Commerce for customers outside the United States.

Improve IMU-LN200C accuracy

Receivers from NovAtel provide your choice of accuracy and performance, from decimetre to RTK-level positioning. For more demanding applications, Waypoint Inertial Explorer post-processing software can be used to post-process real-time data on the LN200C and offers the highest level of accuracy with the system.

Benefits

- Premium performance IMU
- Optimal for aerial, hydrographic survey and industrial applications
- Easy integration with NovAtel’s SPAN capable GNSS+INS receivers
- Rugged design ideal for challenging environments
- High sensor dynamic range

Features

- Closed loop fiber optic gyros
- Stationary INS alignment capable
- IMU data rate: 200 Hz
- Enclosure comes with optional wheel sensor input
- SPAN GNSS+INS capability with configurable application profiles
## SPAN System Performance

**Horizontal Position Accuracy (RMS)**
- Single point L1/L2: 1.2 m
- SBAS: 60 cm
- DGPS: 40 cm
- TerraStar-L3: 40 cm
- TerraStar-C PRO3: 2.5 cm
- TerraStar-X3: 2 cm
- RTK: 1 cm +1 ppm

**Data Rate**
- IMU Raw Data Rate: 200 Hz
- INS Solution: Up to 200 Hz

**Time Accuracy**
- 20 ns RMS

**Max Velocity**
- 515 m/s

## IMU Performance

**Gyroscope Performance**
- Gyro input range: ±490 deg/sec
- Gyro rate bias: 1.0 deg/hr
- Gyro scale factor error: 100 ppm
- Angular random walk: 0.07 deg/√hr

**Accelerometer Performance**
- Accelerometer input range: ±15 g
- Accelerometer linearity: 150 ppm
- Accelerometer scale factor error: 300 ppm
- Accelerometer bias: 0.3 mg

## Environmental

**Temperature**
- Operating: -40°C to +55°C
- Storage: -40°C to +80°C

**Humidity**
- MIL-STD-810G(Ch1), Method 507.6

**Random Vibe**
- MIL-STD-810G(Ch1), Method 514.7 (2.0g)

**Environment**
- MIL-STD-810G(Ch1), Method 512.6

**Compliance**
- FCC, ISED, CE

## Included Accessories
- Power cable
- Communication cable
- Wheel sensor cable

## Optional Accessories
- Mounting plate
- Inertial Explorer post-processing software

## Performance During GNSS Outages

<table>
<thead>
<tr>
<th>Outage Duration</th>
<th>Positioning Mode</th>
<th>Positioning Accuracy (M) RMS</th>
<th>Velocity Accuracy (M/S) RMS</th>
<th>Attitude Accuracy (Degrees) RMS</th>
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<tr>
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<td>Horizontal</td>
<td>Vertical</td>
<td>Horizontal</td>
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<td>SP</td>
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<td>Post-Processed</td>
<td>0.09</td>
<td>0.06</td>
<td>0.020</td>
</tr>
</tbody>
</table>

1. Typical values. Performance specifications subject to GNSS system characteristics, Signal-in-Space (SIS) operational degradation, ionospheric and tropospheric conditions, antenna geometry, baseline length, multipath effects and the presence of intentional or unintentional interference.
2. GPS-only.
3. Requires subscription to TerraStar data service. Subscriptions available from NovAtel.
4. TerraStar service available depends on the SPAN enabled receiver used. See the receiver product sheet for details.
5. Time accuracy does not include biases due to RF or antenna delay.
6. Export licensing restricts operation to a maximum of 515 metres/second.
7. Supplied by IMU manufacturer.
8. GNSS receiver sustains tracking up to 4 g.
9. Steady state and outage performance remains the same for the C model.
10. 1 ppm should be added to all values to account for additional error due to baseline length.
11. Post-processing results using Inertial Explorer software.

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**Contact Hexagon | NovAtel**

sales.nov@hexagon.com | 1-800-NOVATEL (U.S. and Canada) or 403-295-4900 | China: 0086-21-68882300 | Europe: 44-1993-848-736 | SE Asia and Australia: 61-400-883-601.

For the most recent details of this product: novatel.com

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