NAVIGATION AND POINTING SOLUTIONS FOR LAND DEFENSE

iXblue, a global partner for all Armed Forces in the fields of undisrupted navigation, positioning and pointing. Today's Armed Forces require high performance navigation, with or without GNSS, as well as swifter and more accurate pointing. iXblue's pioneering work on Fiber-Optic Gyroscope (FOG) technology has revolutionized inertial navigation in the last decade, providing state-of-the-art performances, low cost of ownership and the highest reliability in harsh environments.

The French company develops, manufactures and integrates all critical FOG components and is therefore able to adapt, produce, export and maintain its Inertial Navigation Systems (INS) with outstanding efficiency. With the full control of the value chain, iXblue can design tailored solutions for its customers, stay on the cutting edge of technology and provide systems that are ITAR-free and subject to French export regulation only.

By combining FOG technology's intrinsic high performances with advanced modeling of environmental sensitivities, specific designs and in-house testing and calibration, iXblue's INS can operate in severe environments and withstand extreme shocks, vibrations, sand, dust or rain according to military standards. Robustness against GNSS drop outs provides reliable, accurate and uninterrupted position information, ensuring continuous military operations for all forces on the field.

Beside these operational requirements, iXblue' systems also meet the needs of industrial integrators for equipment that is both cost-effective and easy to integrate. The full product range share strong commonalities with regards to hardware, software and interfaces, resulting in significant savings in terms of time for integration, installation, and configuration as well as logistics and maintenance costs.

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www.ixblue.com

iXblue at a glance
YEARS OF EXPERIENCE 750+
EMPLOYEES 65+
NAVIES AND ARMIES SERVED 147+
MILLION EUROS OF TURNOVER 80%
OF TURNOVER ACHIEVED ABROAD 30,000+
FIBER-OPTIC GYROSCOPES SOLD 20%
OF TURNOVER REINVESTED EACH YEAR 30
DELIVERING OVER 500 CUSTOMERS EVERY YEAR 24/7 TECHNICAL SUPPORT
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A COMBAT-PROVEN SOLUTION

ADVANS SERIES

Based on Fiber-Optic Gyroscope (FOG) technology, the Advans Inertial Navigation Systems (INS) are designed to provide highly accurate positioning and pointing. North-seeking even in GNSS-denied environments, the series covers the needs of the full range of land applications from tactical navigation to high-grade artillery systems.

Very compact and adaptable to any communication protocol, they are developed from the same architecture, making them easy to integrate and operate.

ITAR-free, the Advans Inertial Navigation Systems have been selected by many integrators and armies worldwide.

Advans Ursa
COST-EFFECTIVE INS FOR ALL TACTICAL VEHICLES

Advans Lyra
MID-GRADE INS FOR NAVIGATION AND POINTING

Advans Vega
HIGH-GRADE INS FOR LONG RANGE APPLICATIONS

UNRIVALED PERFORMANCE

The FOG is an extremely high-performance rotation sensing device based on the Sagnac Effect. A fiber-optic gyroscope uses optical waves propagating in a fiber-optic coil to accurately measure a rotation rate. This apparently simple design takes full advantage of the reciprocity principle in the propagation of light which enables a perfect device to be created from imperfect components. A FOG is therefore a genuine strapdown solid-state gyroscope exempted from all physical drawbacks that may affect other existing technologies (vibration, mechanical dither, sealed cavity and mirrors wearing away over time, etc.). This results in unrivaled longevity and reliability as well as very low power consumption and silent operation.
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POSITIONING & POINTING

TACTICAL NAVIGATION & TARGETING

Radar and Air defense
Rocket launchers
155-152 mm self-propelled
155 mm 52 cal howitzers
105-122 mm towed
105-122 mm self-propelled
81-120 mm mortars

Navigation
Blue force tracking
Navigation for autonomous systems
Targeting
Missile alignment
Weapon vertical sensor
Predictive maintenance
Collaborative combat

1: In percentage of distance traveled. Expressed in CEP50
2: After dynamic alignment is completed. Expressed in RMS
## SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>Ursa U5</th>
<th>Lyra L7</th>
<th>Vega</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horizontal position (without GNSS)</strong></td>
<td>0.4% DT</td>
<td>0.2% DT</td>
<td>0.1% DT</td>
</tr>
<tr>
<td><strong>Heading</strong></td>
<td>4 mils</td>
<td>1 mil</td>
<td>0.5 mil</td>
</tr>
<tr>
<td><strong>Roll and pitch</strong></td>
<td>1 mils</td>
<td>0.5 mil</td>
<td>0.2 mil</td>
</tr>
<tr>
<td><strong>Volume (mm)</strong></td>
<td>166x160x136</td>
<td>275x136x150</td>
<td>180x180x162</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>3.8</td>
<td>4.5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>&lt;12 W</td>
<td>&lt;18 W</td>
<td>&lt;18 W</td>
</tr>
<tr>
<td><strong>Initial alignment</strong></td>
<td>4 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fast alignment (stored values)</strong></td>
<td>30 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Optional GNSS</strong></td>
<td>Advans GNSS or any GNSS providing NMEA 0183 messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Communication input/output</strong></td>
<td>RS-232 / RS-422 / CAN / Ethernet - Web-based interface for configuration</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reliability</strong></td>
<td>MTBF &gt; 100,000hrs - No moving parts - No periodic maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shocks</strong></td>
<td>40g/10ms without shock absorbers - Lyra &amp; Vega are howitzer qualified</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-32°C to +71°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Export control</strong></td>
<td>French export legislation applies - No ITAR/EAR restricted components</td>
<td></td>
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2: After dynamic alignment is completed. Expressed in RMS
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