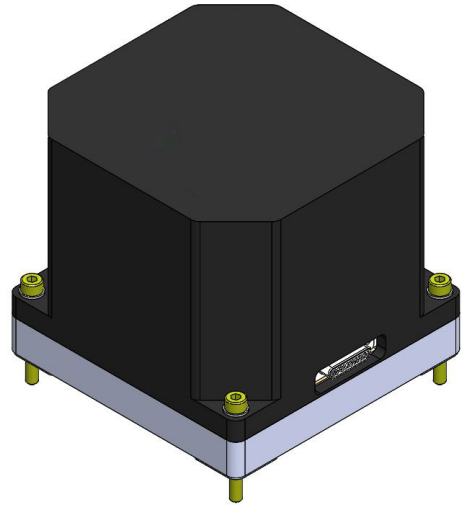


# Astrix NS

## The new 3-axis Fiber-Optic Gyroscope for space applications

Based on FOG technology mastered by iXblue and qualified by Airbus Defence and Space for over 20 years, Astrix NS addresses the new challenges of the space industry bringing performance, compactness and reliability at a very competitive price.



### FEATURES

- Very compact and lightweight product
- Low-power consumption
- Competitive price
- Electronic design based on automotive components qualified for space operations with Airbus
- Rad tolerant and withstanding harsh environments
- ITAR-free

### APPLICATIONS

Astrix NS is well-suited for constellation projects thanks to its competitive price and the possibility to produce it in large quantities (hundreds).

Astrix NS is compatible for missions in geostationary orbit, in medium and low Earth orbits and also with electric orbit raising.

### BENEFITS

- Highly reliable thanks to the FOG technology and 20 years of space experience
- Solid-state technology proven with 100 years of cumulated flight in more than 25 satellites without incident
- Compatible for GEO, MEO, LEO missions and EOR
- 15-year guaranteed lifetime
- No complex or costly recalibration pre or post launch needed
- ARW below  $0.005 \text{ } ^\circ/\text{h}$

## TECHNICAL SPECIFICATIONS

### Performances

Bias stability over 1 h	< 0.02°/h (steady temperature)
Bias stability end of life	0.3 °/h (all effects included)
Scale factor linearity	500 ppm @ 36
Scale factor stability after launch	300 ppm @ 36
Measurement range	> 60 °/s (full performances)
ARW	< 0.005 °/√h
No other noise contributor for FOG technology (no AWN, RF, etc)	

### Environment / Operating conditions

Temperature	-20°C to 65°C (operating)
Vibration	25g sine and 20g rms random
Shock	2 000 g from 1 000 Hz to 10 kHz
Radiation	> 25 krad at component level
Lifetime	up to 15 years and compatible GEO, EOR, MEO and LEO

### Mechanical interfaces

Mass	0.8 kg to 1.5 kg (depending on required shielding)
Volume	100 x 100 x 95 mm

### Electrical interfaces

Power bus	20 V – 52 V
Turn-on	< 1 s
Communication	2x RS422 / RS485 full duplex
Power	below 7 W (end of life)

## FOG TECHNOLOGY

iXblue is recognized throughout the world for its pioneering work on the development of the ultimate-performance Fiber-Optic Gyroscope (FOG), a unique technology at the heart of inertial navigation systems.

The FOG is an extremely high-performance rotation sensing device based on the Sagnac Effect discovered at the beginning of the 20th century.

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. iXblue is providing FOG products for many challenging applications like submarines, deep-sea AUV, naval force, satellites...