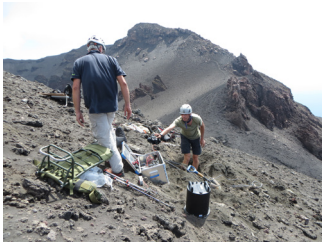


blueSeis-3A

Portable rotational
3-component seismometer
absolute & broadband

iXblue can now offer to the field of geosciences the possibility to explore rotational ground motion. Recognized throughout the industry for its mastery of Fiber Optic Gyroscopes (FOG), the iXblue group stands as the global leader in high-grade applications such as inertial navigation, hydrography and space satellite attitude control.

Based on 30 years of unchallenged expertise, iXblue revolutionizes geosciences by offering a brand-new product that seismology has always been looking for. blueSeis-3A is today the best and most reliable rotational seismometer: 3-axis, low-noise, broadband, high dynamic range and flat passband solution with “geosciences-ready” interfaces including heading and time stamping.



FEATURES

- 3 Interferometric Fiber Optic Gyroscopes (I-FOG) for low self-noise and broadband measurement
- DC signal for absolute rotation measurement
- High dynamic range
- Ethernet output of time stamped data
- Field-proven technology
- Flat frequency response

BENEFITS

- Rotation as a new observable in seismology!
- Easy to deploy: no calibration, no tilt range limitation, insensitive to environmental conditions
- Heading provided by the system
- 2-in-1: «weak motion» low-noise + «strong motion» dynamic
- Plug and play interfaces

APPLICATIONS

- Volcanology
- Seismology
- Ground tomography
- Earthquake physics

SPECIFICATIONS

Performance

Sensor self-noise in nrad/s/ $\sqrt{\text{Hz}}$ Typical (maximum)	10 ⁻² Hz	10 ⁻¹ Hz	1 Hz	10 Hz	50 Hz
	20 (25)	20 (25)	20 (25)	20 (25)	20 (25)
Passband	Flat from DC to 50 Hz				
DC rotation rate accuracy	< 2.4 $\mu\text{rad/s}$ (0.5 $^\circ/\text{h}$)				
Heading	< 2.0 $^\circ$ x secant(lat) ⁽¹⁾				
Scale factor stability	< 1 % guaranteed for life				
Calibration	Not needed				
Settling time	< 1 minute				

Operating range / environment

Operating / storage temperature	-10 to 50 $^\circ\text{C}$ / -40 to 80 $^\circ\text{C}$
Dynamic range	500 000 $\mu\text{rad/s}$ 125 dB LSB = 116 picorad/s 32 bit
Operational tilt range	Any
Cross coupling	< 60 dB
Acceleration susceptibility	None
Pressure susceptibility	None
MTBF	100,000 hours

Physical characteristics

Ingress protection	IP66
Dimensions	h-335 x ϕ -318 mm
Weight	20 kg

Interfaces

Output	Ethernet miniSEED (TCP/UDP)
Inputs	NMEA serial RS232 GNSS frame + TTL pulse from GNSS
Data output rate	200 Hz
Power supply / consumption	11.5 to 14.5 V / 14-16 W depending of T $^\circ\text{C}$
Man Machine Interface (MMI)	Web-based interface for configuration

(1) secant(lat) = 1 / cos(latitude) : at 0 $^\circ$ latitude => 2.0 $^\circ$ heading, at 45 $^\circ$ latitude => 2.0 x 2 = 2.8 $^\circ$