



Compact, precise and fast fully-integrated FBG Interrogator with embedded light source, on-board processing and high-speed streaming capability.

Overview

The FBG X1000 combines high measurement performance at fast sampling rates up to 2kHz, a compact form factor, low power consumption and a high thermal/polarization stability. Its uncompromising design sets a new standard for FBG Interrogators.

Key Features

Plug & Play	Fast Sampling
Compact	High Thermal Stability
Low Weight	Energy-efficient
High Precision	On-board FBG Analysis

Applications

Process Control
 Predictive Maintenance
 Condition Monitoring
 Thermal Mapping

Used for

Vibrations
 Strain
 Pressure
 Temperature

Performance Properties

Number of Channels	1
Number of Fiber Ports	-2/-4
FBG Sensors per Channel	Up to 24
Max. Sampling Rate (USB)	2kHz (High-speed mode)
Wavelength Range	815-865nm
Measurement Precision	from 0,1°C 1µe (1kHz)
Digital Measurement Res.	0,01°C 0,01µe
Thermal Stability	<1µe/0,1°C per 1°C
Polarization Stability	<5µe/0.5°C (2σ)

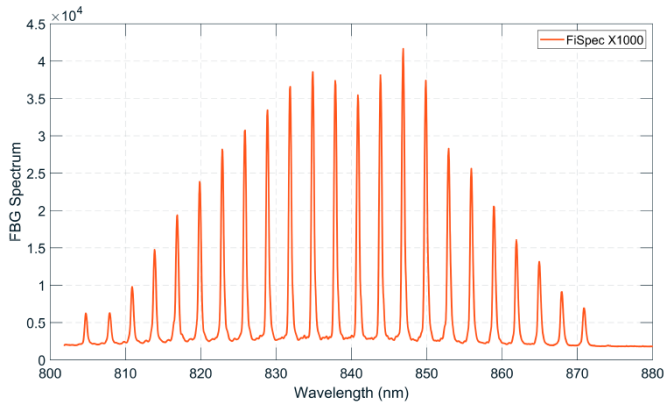
Physical Properties

Operating Temperature	5-50°C
Storage Temperature	0-70°C
Dimensions	142 x 78 x 20mm
Weight	210g
Power Consumption	2W

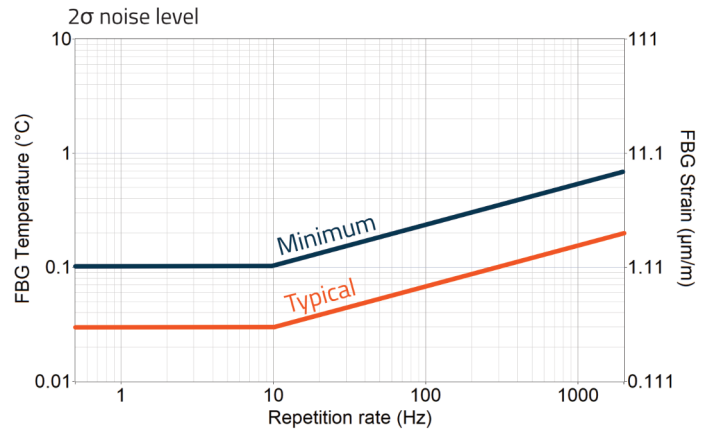
Communication

Optical Interface	FC/APC
Electrical Interface	USB, RS-485, Ethernet
Data Protocol	Data Transfer Protocol, Modbus

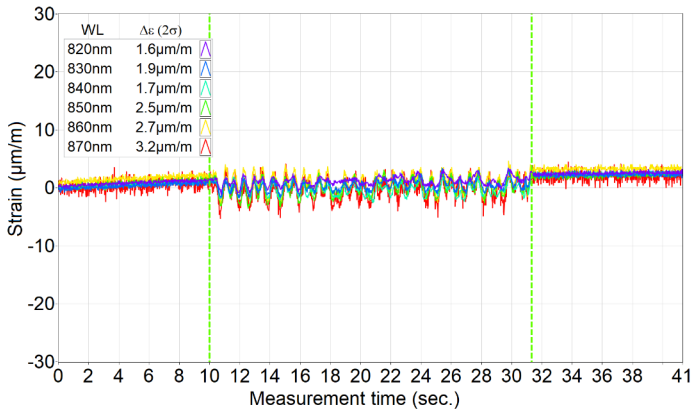
Exemplary FBG Spectrum @ 850nm



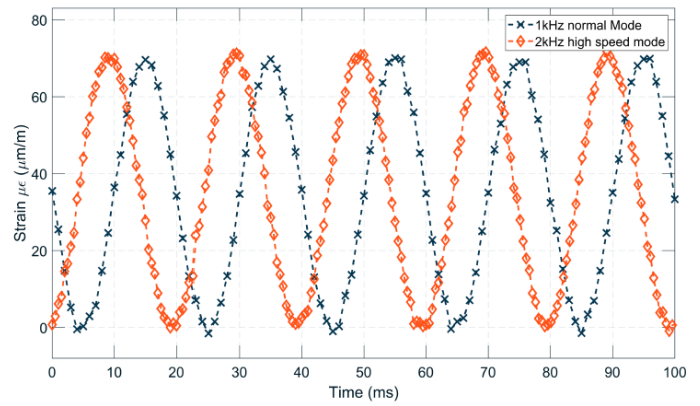
Precision in ($\mu\epsilon$) vs. Sampling Rate (Hz)



Typical FBG Stability over all Poincare Sphere Polarization States

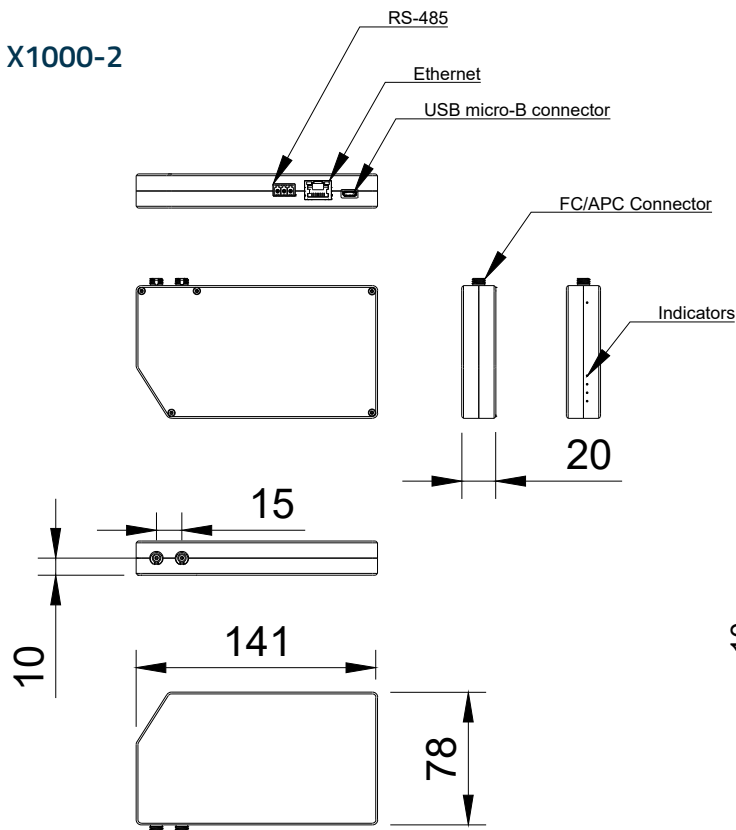


Vibration Measurement (Piezo, 50Hz)



Technical Drawings

X1000-2



X1000-4

