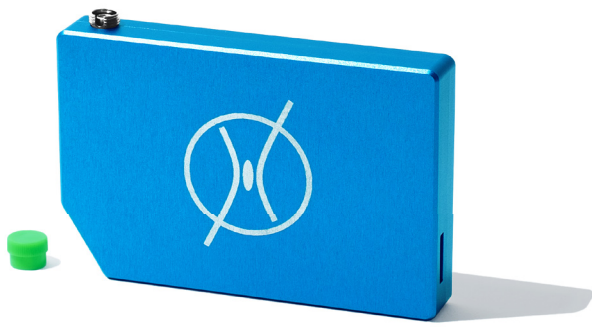


Datasheet Rev3- January 2024



Key Features

Plug & Play	High Accuracy
Ultra-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

Force
Strain
Pressure
Temperature

FiSpec FBG X100

Ultraminiature, precise and rugged fully-integrated FBG Interrogator with embedded light source and on-board processing.

Overview

With an unprecedented small size, the FBG X100 integrates all necessary components for the accurate analysis of up to 30 fiber Bragg grating (FBG) sensors. Its compact and energy-efficient design enables FBG based applications where space and power is limited.

Performance Properties

Number of Channels	1
FBG Sensors per Channel	30
Sampling Range	1-200Hz (simultaneous)
Wavelength Range	808-880nm
Measurement Precision	from 0,1°C 1µε (10Hz)
Digital Measurement Res.	0,01°C 0,01µε
Thermal Stability	<0,1°C/°C
Polarization Stability	±7µε/±0,7°C (typical)

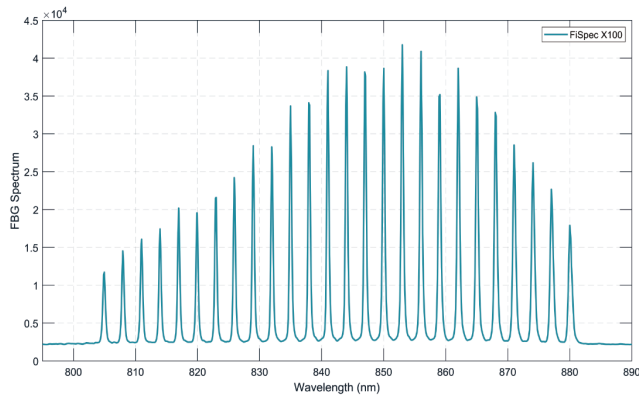
Physical Properties

Operating Temperature	0-60°C
Storage Temperature	0-80°C
Dimensions	74 x 50 x 15mm
Weight	60g
Power Consumption	1W

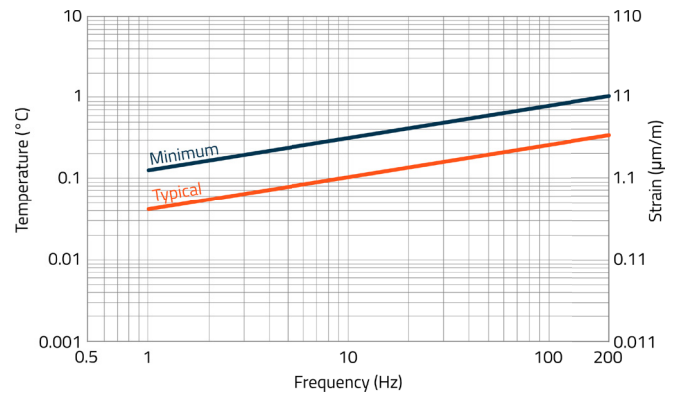
Communication

Optical Interface	FC/APC
Electrical Interface	USB, UART (RS-232)
Software Protocol	User Data Protocol (UDP)
Hardware Protocol	Direct Serial Communication

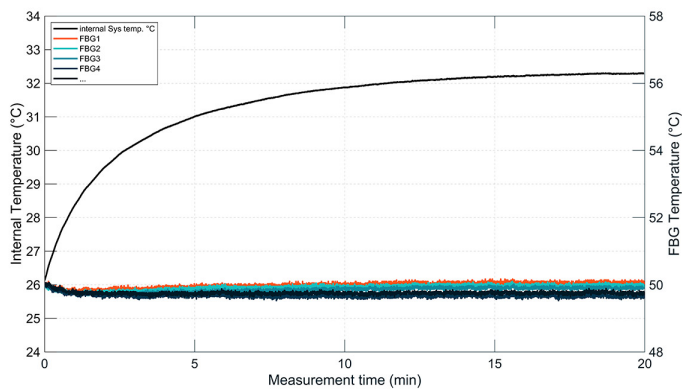
Exemplary FBG Spectrum @ 850nm



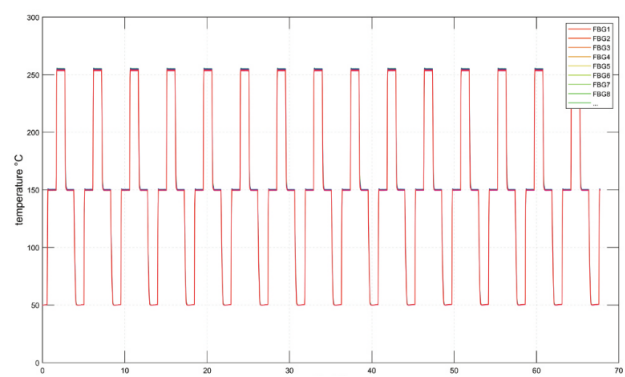
Precision in ($\mu\epsilon$) vs. Sampling Rate (Hz) Noise level (2σ)



Heat-up Behavior



High Repeatability



Technical Drawing

