

FiSpec FBG X1002/-4



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

Overview

The FBG X1000 combines high measurement performance at fast sampling rates up to 2kHz, a compact form factor and low power consumption.

Its uncompromising design sets a new standard for FBG Interrogators.

Key Features

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

Used For

- Temperature
- Strain
- Pressure
- Force

Applications

- Process Control
- Predictive Maintenance
- Condition Monitoring
- Thermal Mapping

Performance Properties

Spectrometer Channels	1
Number of Optical Channels	2/-4
Max FBG Number (System)	30
Sampling Rate	1,2kHz (normal) 2kHz (fast)
Wavelength Range	808-868nm
Measurement Precision	from 0,1°C 1µe (1kHz)
Digital Measurement Res.	0,01°C 0,01µe
Thermal Stability	<0,1°C/°C
Polarization Dependency	±7µe/±0,7°C (typical)

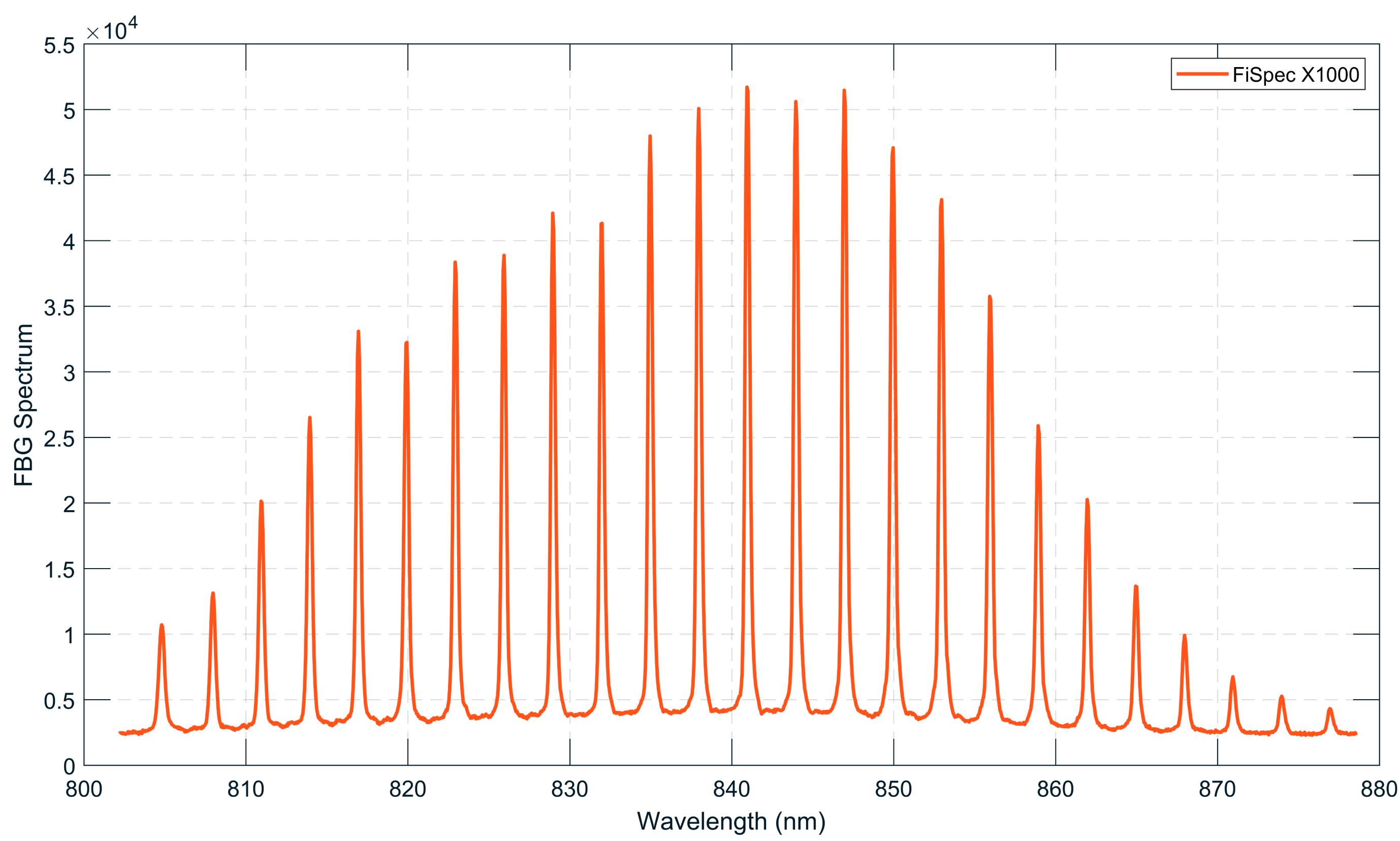
Physical Properties

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

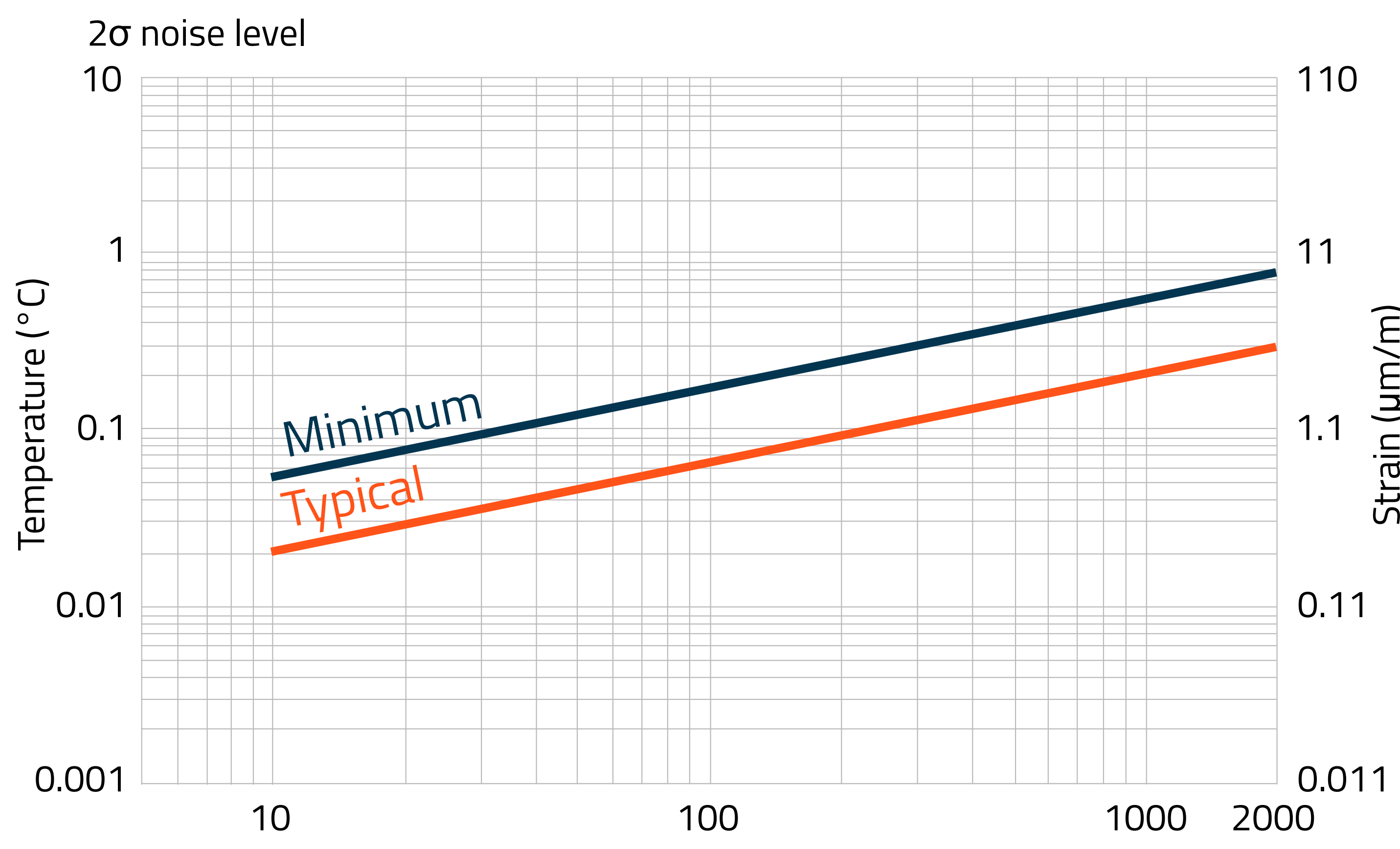
Communication

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

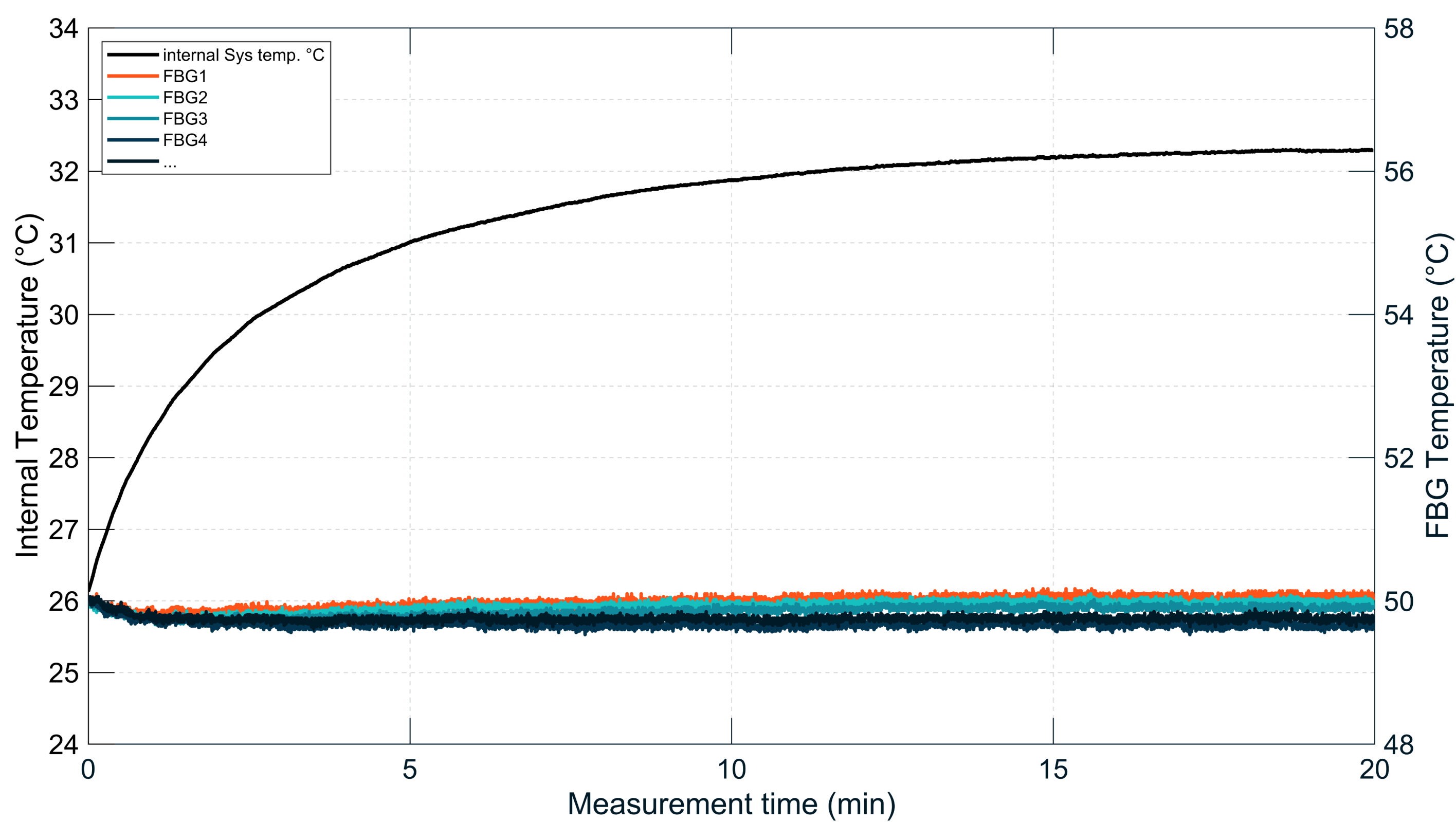
Exemplary FBG Spectrum @ 850nm



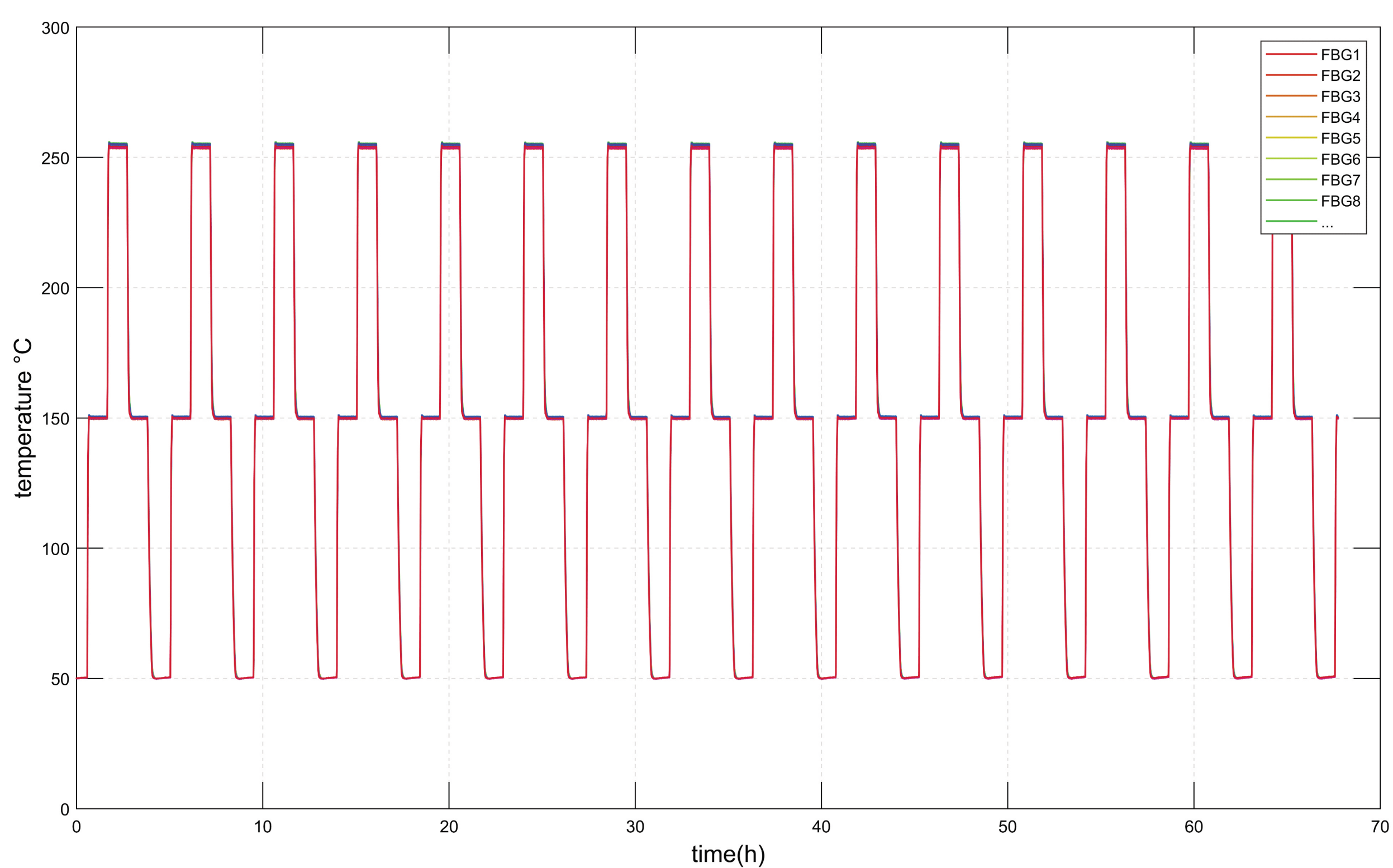
Precision in ($\mu\epsilon$) vs. Sampling Rate (Hz)



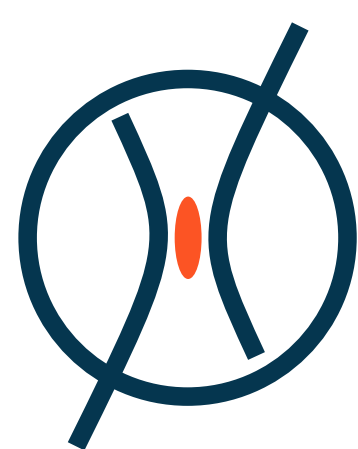
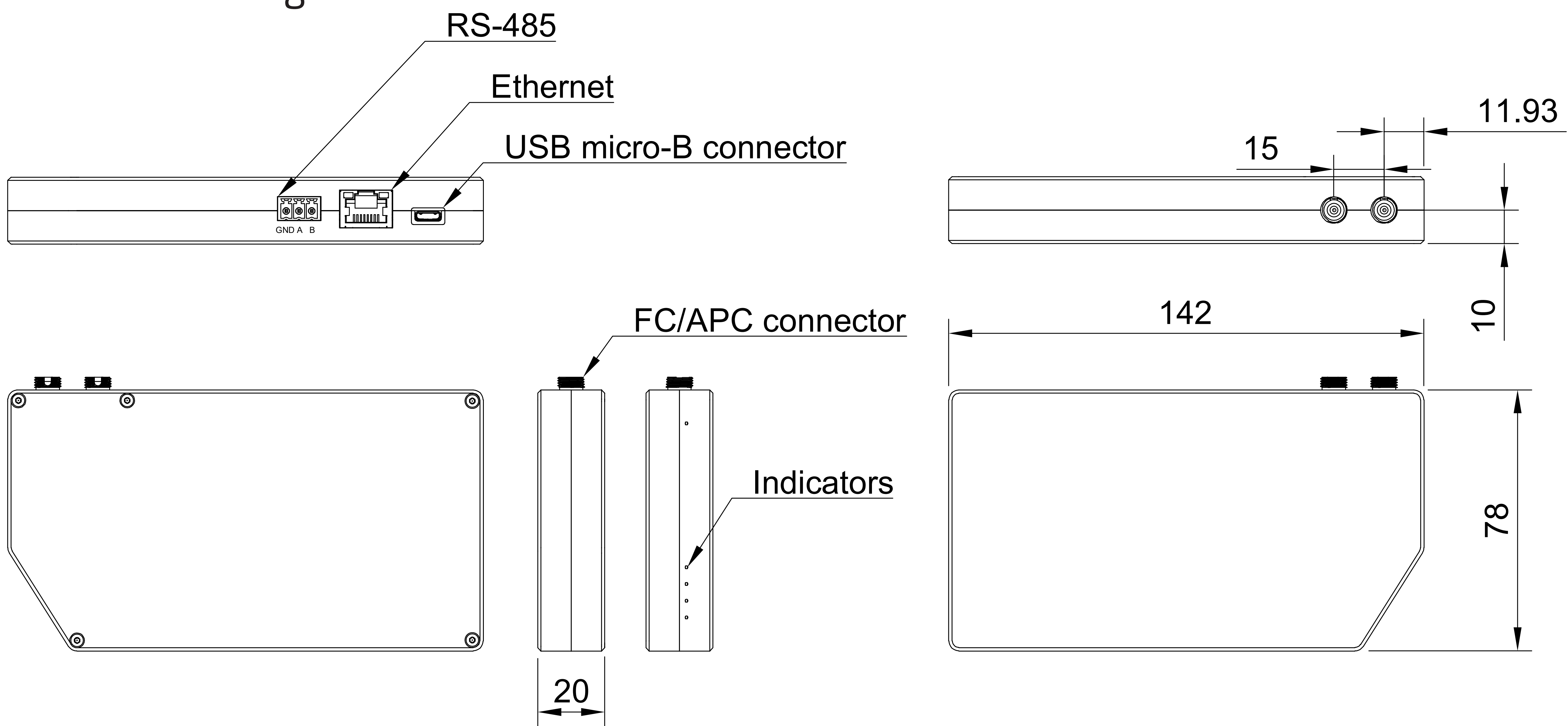
Heat-up Behaviour



High Repeatability



Technical Drawings



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