

## FiSpec FBG X400

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

### Overview

With an unprecedented small size, the FBG X400 integrates all necessary components for the analysis of up to 120 fiber Bragg grating (FBG) sensors.

Its compact and energy-efficient design enables FBG based applications where space and power is limited.

### Key Features

- Plug & Play System
- Ultra-compact
- 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

Number of Channels	4
FBG Sensors per Channel	30
Sampling Rate	1 - 200Hz (simultan.)
Wavelength Range	808-880nm
Measurement Precision	from 0,1°C   1µe (10Hz)
Digital Measurement Res.	0,01°C   0,01µe
Thermal Stability	<0,1°C/°C
Polarization Dependency	±5µe/±0,5°C

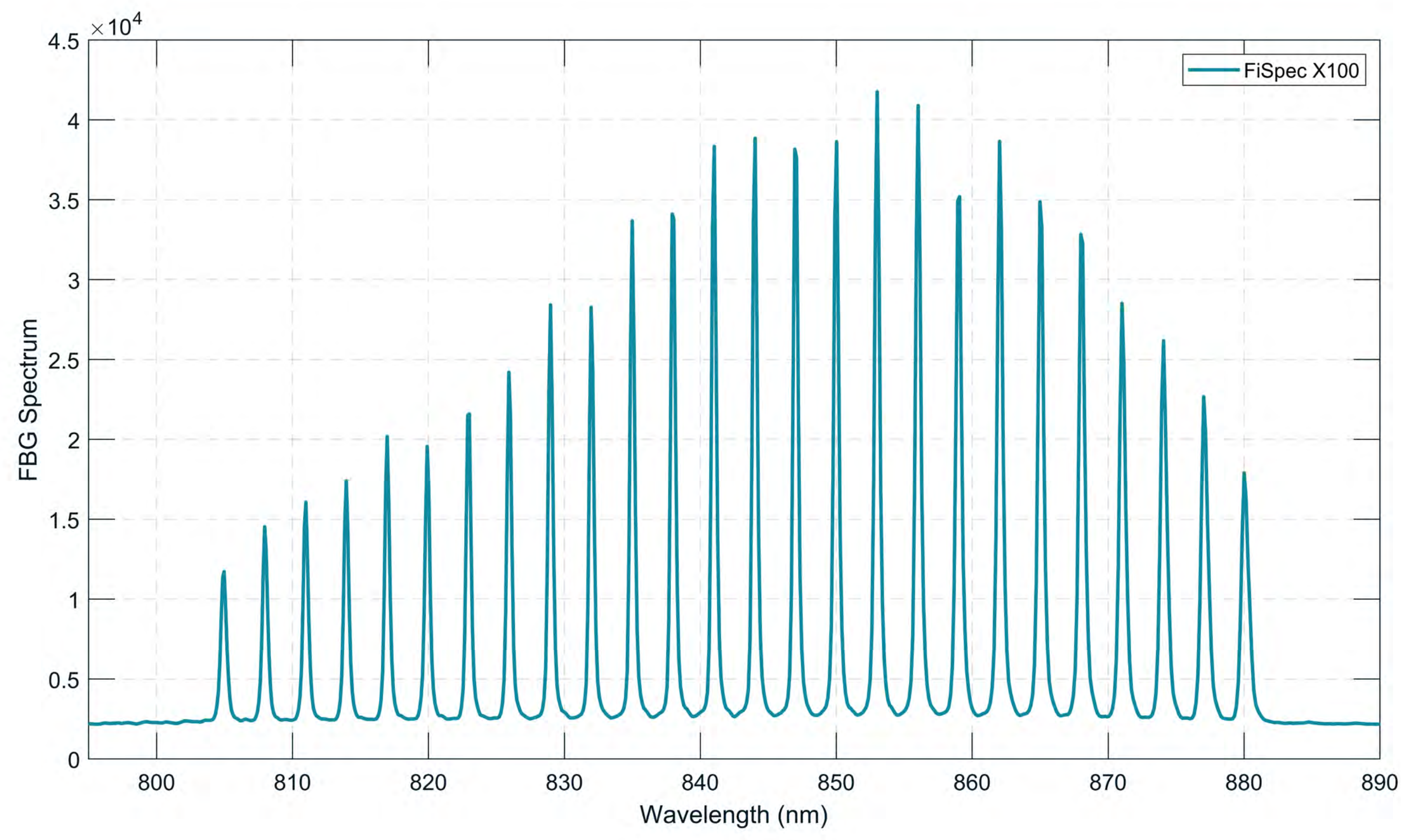
### Physical Properties

Operating Temperature	0 - 60°C
Storage Temperature	0 - 80°C
Dimensions	123 x 68.5 x 15.3mm
Weight	120g
Power Consumption	1,5W

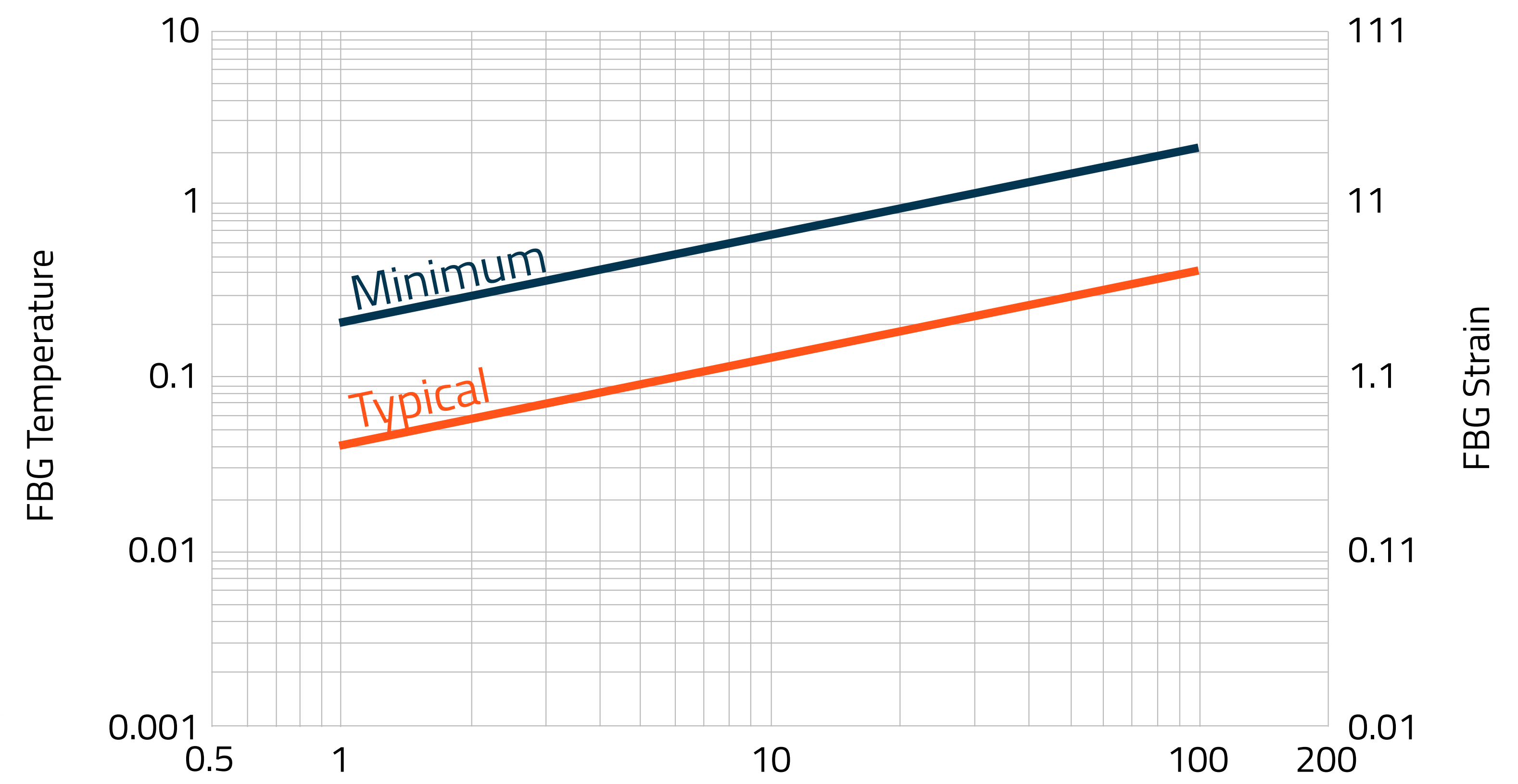
### Communication

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

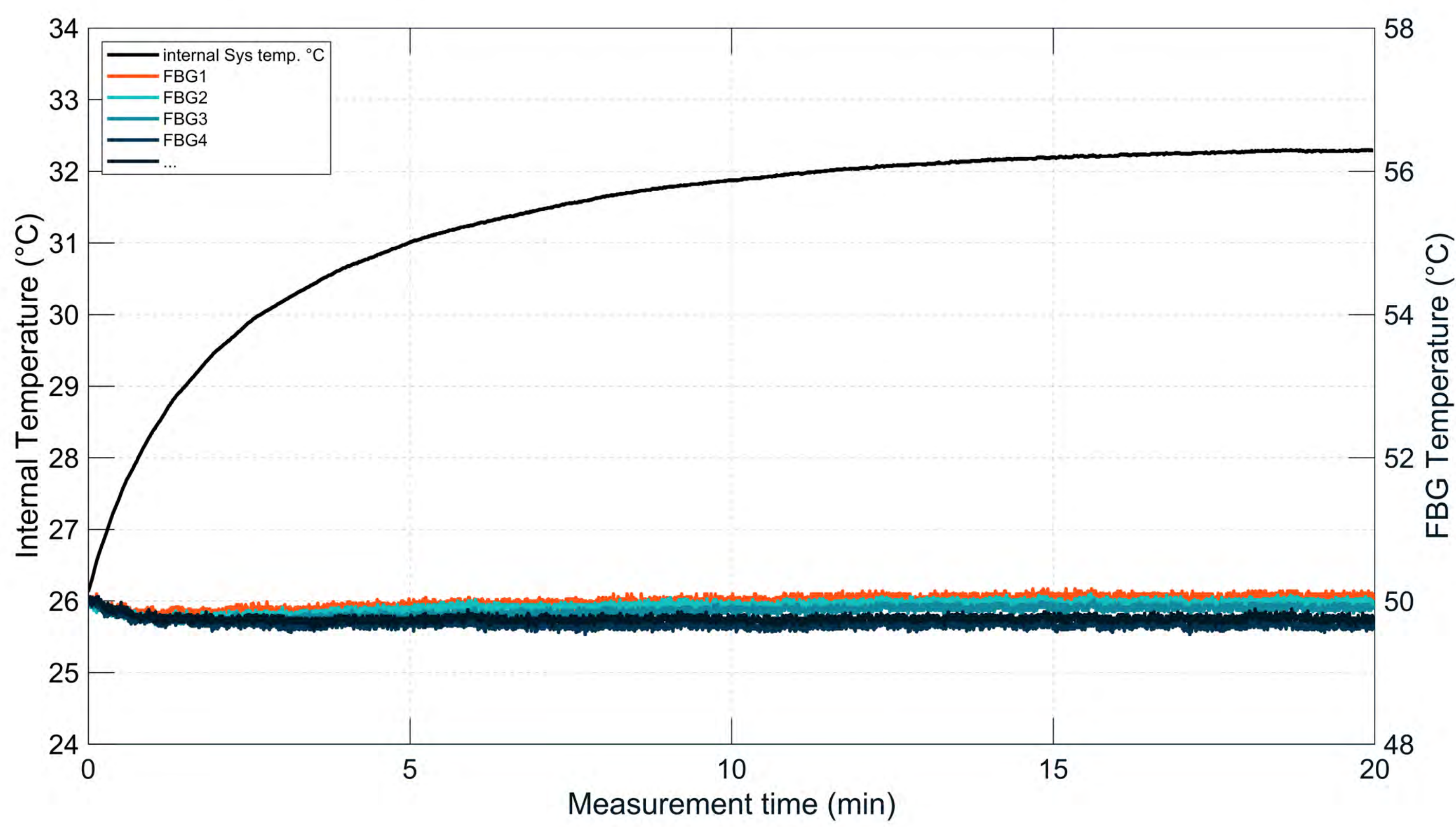
## Exemplary FBG Spectrum @ 850nm



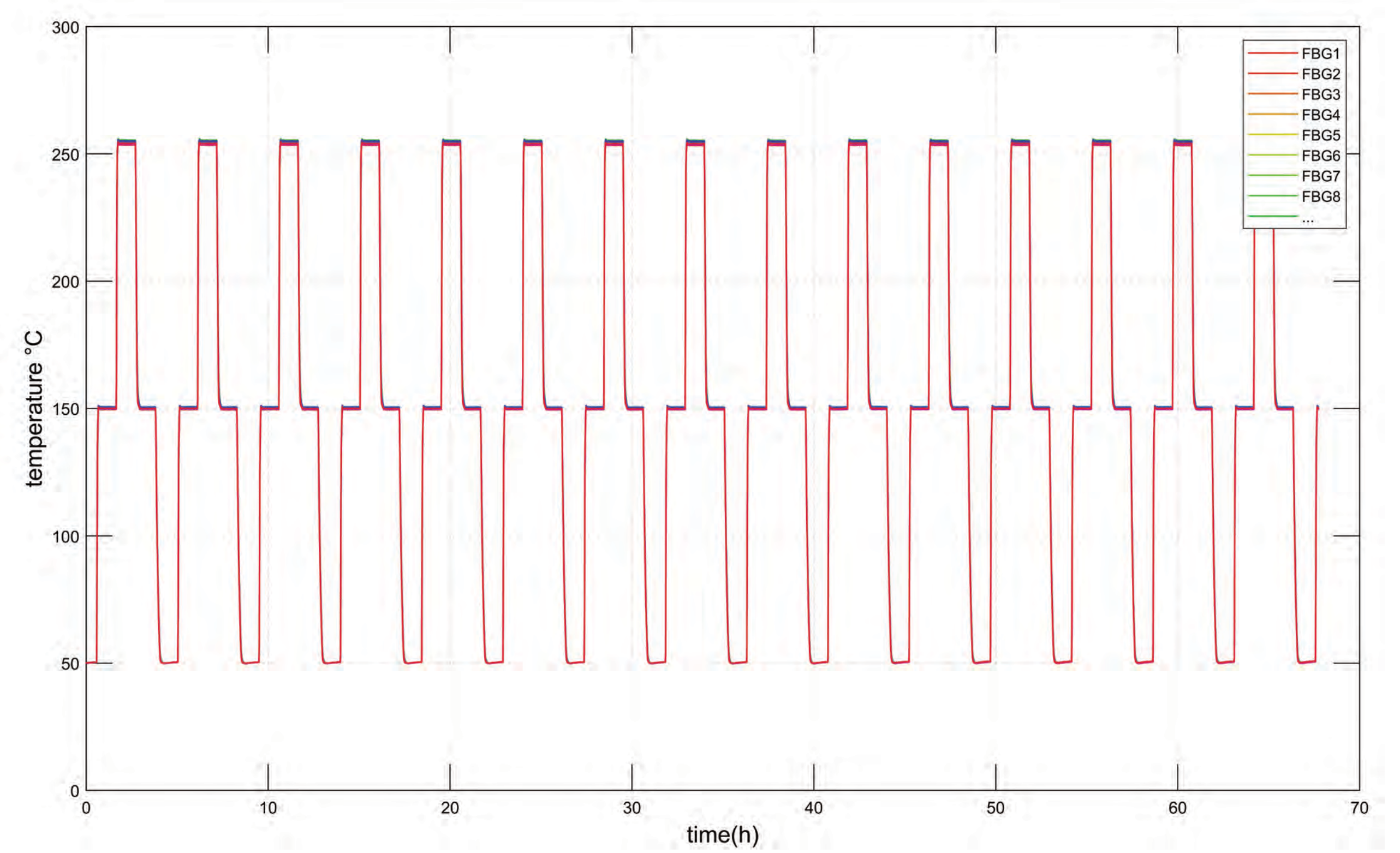
## Precision 2σ noise level



## Heat-up Behaviour

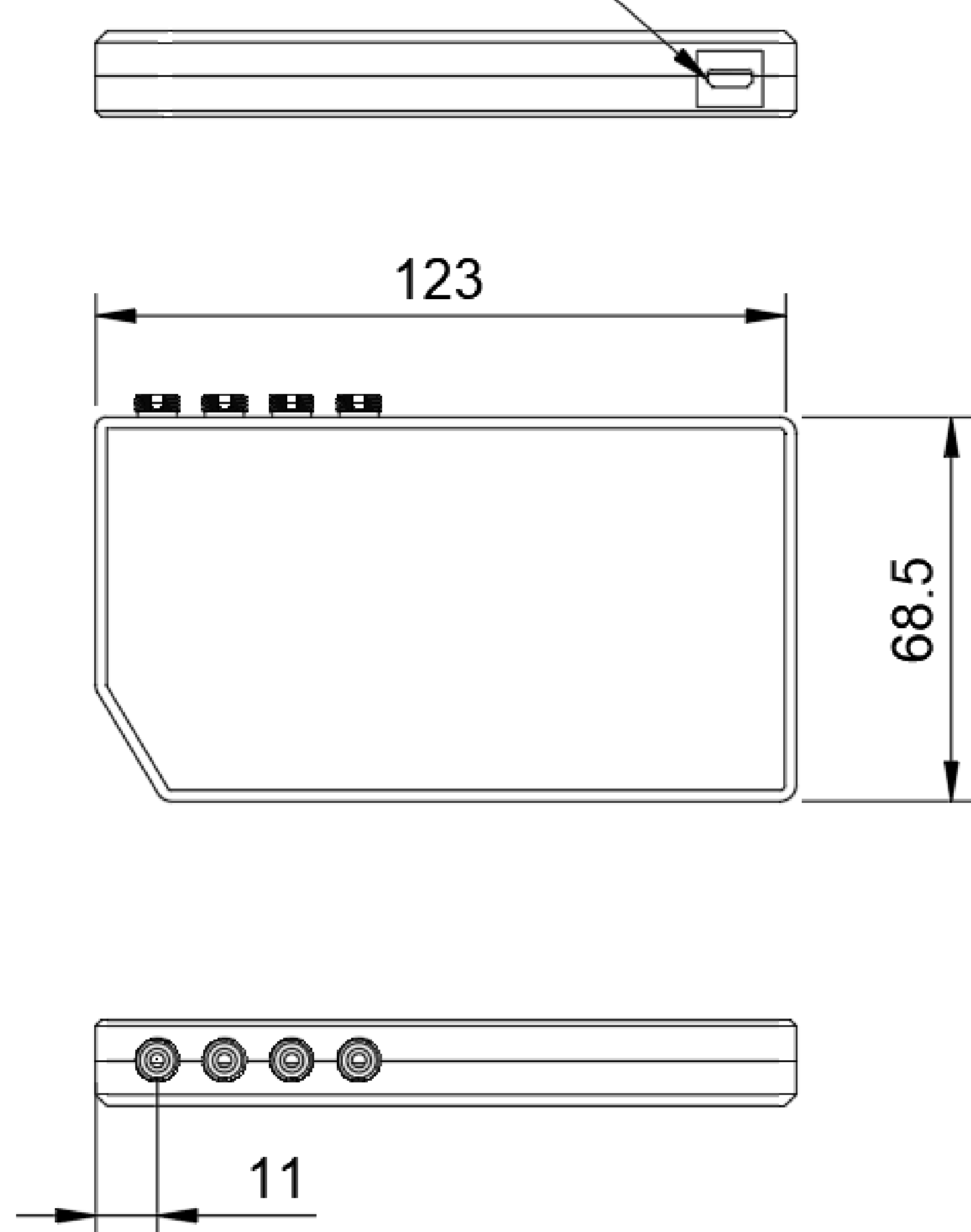


## High Repeatability



## Technical Drawings

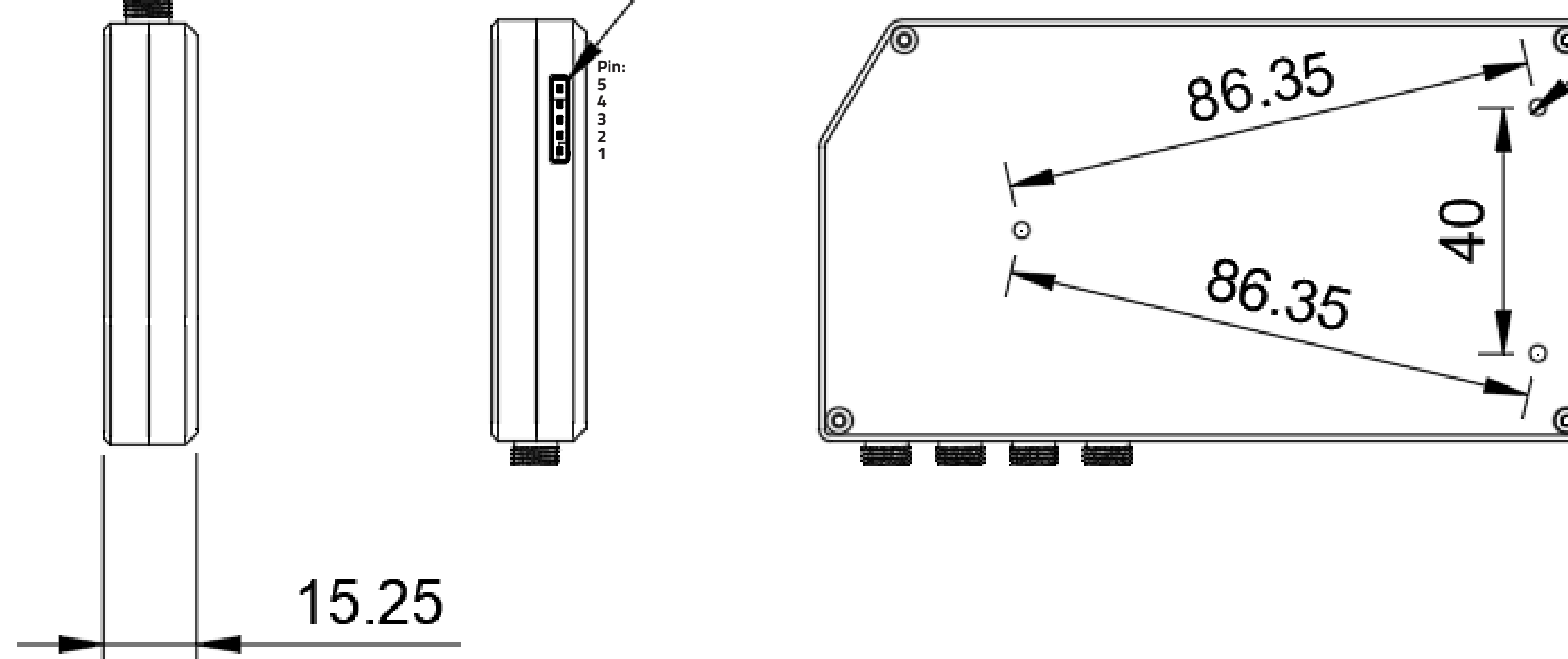
USB micro-B connector



FC/APC Connector

UART Interface

3x Mounting hole  
Thread: M3  
Depth = 3.0 mm



UART interface layout	
Pin No.	Signal
1	+5V
2	+3.3V (output)
3	GND
4	RX
5	TX