Technical Specifications

Model Number	ASIS-UWFBG
Product Name	Ultra-Weak FBG Interrogator
Version	V1.2
Revision Date	07.08.2025

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1. Product Overview

The ASIS-UWFBG is an embedded ultra-weak fiber Bragg grating (UWFBG) demodulation module designed for high-precision optical sensing. It emits near-infrared laser pulses into the sensing fiber, where the pulses propagate forward and are partially reflected by a series of ultra-weak FBG sensors along the fiber. The reflected signals then travel back through the same fiber to the acquisition card, where they are detected and analyzed in real time to extract critical sensing information.

Equipped with an ARM processor and a Linux operating system, the module supports both low-speed and high-speed demodulation algorithms, enabling precise determination of each sensor's position, temperature, or strain value, which is then transmitted for further processing. Its high level of integration—combining optics, electronics, and advanced signal processing—ensures efficient and accurate performance.

With high precision, fast response time, and low power consumption, the ASIS-UWFBG is an ideal solution for real-time monitoring in industries such as energy, aerospace, civil infrastructure, and intelligent manufacturing.

2. Optical Specifications

Parameter	ASIS-UWFBG
Operating Wavelength (nm)	1528-1568
Spatial Resolution (m)	≥1 (customizable)
Single Channel Measurement Distance (km)	≤10 (customizable)
Strain Accuracy (με)	≤2
Temperature Accuracy (°C)	≤0.2
Bragg Grating Reflectivity	0.001%-0.1%
Data Refresh Rate (Hz)	≤3
Number of Channels	4 (customizable)
Fiber Optic Port	FC/APC

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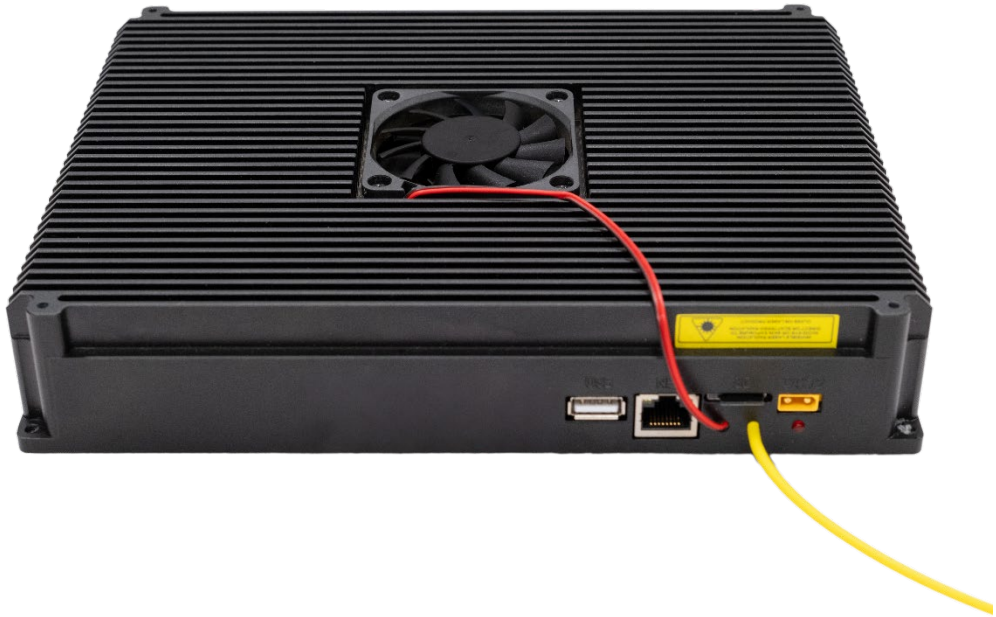
3. Other Specifications

Parameter	ASIS-UWFBG
Communication Interface	Gigabit Ethernet
Operating System and Software	Windows 10/11, C#
Input Power	DC 12V/13W (full load)
Operating Temperature (°C)	0-50
Dimensions (mm)	230 × 180 × 45
Weight (kg)	1.65



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