



componous
DEMOCRATIZING PHOTONICS

FBG Interrogator

Componous FBGI

- > In-house design and manufacturing
- > State-of-the-art spectral resolution and stability
- > Low power consumption (USB-C powered)
- > Integrated customizable software
- > Dual-mode operation (spectral sweep, edge detection)



Portable / Desktop or OEM



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Two Modes of Operation

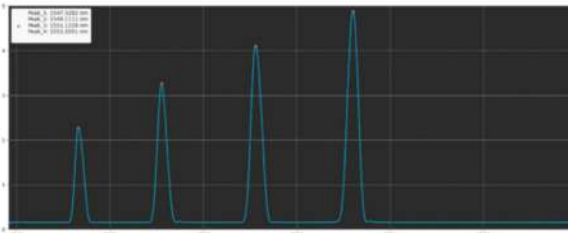
1 Full-spectrum sweep (wavelength-based)

Advantages

- > State-of-the-art spectral resolution
- > Excellent dynamic range
- > Compatible with multiplexed FBG arrays for multi-point sensing
- > High precision and stability for slowly varying events (e.g., temperature, strain, pressure, displacement, etc.)

Applications

- > Structural health monitoring (bridges, buildings, aerospace)
- > Industrial process control
- > Precision shape sensing



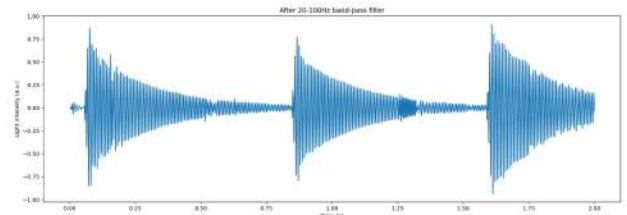
2 Acoustic emission (intensity-based)

Advantages

- > High-speed acquisition for dynamic events (0-300kHz)
- > Low latency (~10s), suitable for real-time event detection
- > Full acoustic coverage (+part of ultrasonics)

Applications

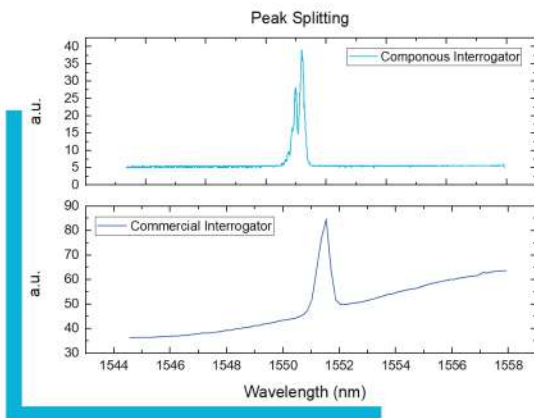
- > Acoustic emission monitoring
- > Vibration and modal analysis
- > Impact and high-speed structural diagnostics



Componous FBGI High Resolution Vs The Competition

Weight loading of embedded FBG:

Componous FBGI resolves peak splitting due to diametric loading, while competitor's unit cannot.



FBG Interrogator

Channels	1-4
Spectral range (per channel)	10-20 nm
Spectral resolution	1 pm (minimum)
FS sampling frequency	10 Hz (@ 5pm)
AE sampling frequency	300 kHz
Data interface	Ethernet (TCP/UDP) SBC
Operating conditions	from -15 up to 60°C
Dimensions	205x160x48mm

Source specs

Wavelength stability	1 pm/5 hrs 3pm/13hrs
Spectral tuning step (hardware)	2pm
Power stability	<0.7% / 13 hrs
Optical signal detection dynamic range	36 dB
Maximum optical output power:	1.5 mW /channel
Power consumption while sweeping	5 W

Let's construct a sensing strategy tailored to your needs!