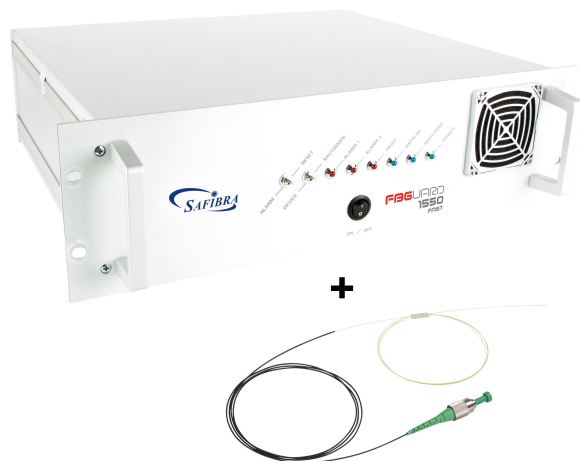


COMPLETE INDUSTRIAL FBG INTERROGATION UNIT + SENSORS

Fiber sensors



1/2



The FBGuard 1550 FAST is the first industrial grade FBG interrogation unit for high accuracy static and dynamic measurements of Fiber Bragg Grating (FBG) sensors that can be used for a broad field of applications.

The device covers a wide range of wavelength range and provides simultaneous measurements at very fast response rates and excellent wavelength resolution. The system can measure up to 8 optical channels with 40 FBG sensors per channel.

Furthermore, IDIL can provide specific sensor types (strain, temperature, displacement, vibration, acceleration, inclination, pressure, load) covering all applications. This offer a compact, field-proven and cost-effective solution for industrial measurements.

The system is supplied with an analysis and configuration software.

FEATURES

- Up to 8 parallel optical channels (1,2,4,8)
- Maximum scan frequency (up to 11 kHz)
- 40 FBG sensors per channel (with the measuring range 1nm/FBG sensor)
- Static and dynamic measurements
- Compact and robust design for 24/7 operation
- Self data logging
- Event detection (direct alarm relays, notification via email and SMS)
- Excellent wavelength precision and accuracy
- Large distance between the object and the measurement unit
- User-friendly web-based interface

SPECIFICATIONS

OPTICAL	
Wavelength range *	1510 – 1590 nm
Number of channels	1,2,4 or 8
Wavelength resolution	≤ 1 pm
Wavelength repeatability	±5 pm
Absolute wavelength accuracy (EOL)	±30 pm
Scan frequency	Up to 11 kHz for single channel Up to 1 kHz for two channels Up to 500 Hz for four channels Up to 250 Hz for eight channels Up to 125 Hz for sixteen channels
Dynamic range	30 dB

Optical connector **	FC/APC
Durability of optical switch	$\leq 10^{11}$ cycles
ELECTRICAL, ENVIRONMENTAL & MECHANICAL	
Power supply	12 V (adaptor to 230 V included)
Power consumption	≤ 50 W
Operating temperature	0°C to 40°C
Operating humidity	$\leq 80\%$, non-condensing
Dimensions	482 x 415 x 140 mm ³ (3U, 19 rack)
Weight	7.5 kg
EMBEDDED PC	
Processor	Intel Core i3
Memory	4 GB
Hard disk	120 GB SSD Disk (no moving parts)
Communication protocol	TCP/IP (MODBUS available on request)
Interface	Ethernet, USB 3.0 host port, 1x VGA 4x alarm relays RS-485 available on request RS-232 available on request
External trigger	TTL, 2CH
Remote Control	Full control
Manufacturer	Safibra s.r.o (cz)
Software	FBGuard Configuration Interface

*depending on light source

** be customized

APPLICATIONS

- Civil structure : tunnels, bridges, mines, buildings, dams
- Transportation: railways, trains, roadways, specialty vehicles, cranes
- Energy: wind turbines, pipelines, nuclear reactors, solar panel farms, electricity pylons
- Homeland security: perimeter intrusion, vehicle detection and classification, security gate monitoring
- Aerospace vehicles: airframes, composite structures; wind tunnels, dynamic tests
- Marine vessels: hull, mast, rudder, deck, cargo containers
- Medical devices: probes, catheters

HOW IT WORKS

The interrogator contains a broadband light source and performs spectral analysis by means of a linear array detector and a spectrometer platform. The input channel which should be monitored can be selected through an optical switch which is integrated in the unit. The interrogator has an Ethernet interface, which allow remote control from any standard PC through the TCP/IP protocol. the configuration of alarms, frequency of measurements, data logging on an integrated SSD or others is possible by SSH.