

GTR

FBG Interrogator

GTR1001-E

Special features

- Small, reliable, and high performance
- 1 optical channel, 8 FBG sensors
- 19,23kHz sampling rate



Description

The GTR features new and innovative FBG Sensing functionality, based on integrated photonics. The platform is a miniature, out-of-the-box system platform supporting optical chipsets for a wide range of applications and environments. The basic GTR device is a single channel FBG interrogator that features 1pm resolution, highspeed sampling and easy integration to your applications. The mezzanine interface concept allows custom data interfacing by easy sub-component replacement. The standard USB interface is supported by operating systems as Windows, MacOS, Linux and Android. Numerous applications are supported through many markets. High-resolution Strain Sensing and Thermal Mapping for the High-tech Industry, Structural Health Monitoring, Damage & Impact Detection, Shape Sensing in Aeronautics, Cardiovascular Diagnostics, Haptic Feedback, Pressure and Temperature sensing for Medical, and Vibration Monitoring, Heat Flux sensing, Displacement and Force-tip sensing, and many more.

Benefits

- Small size, low weight, and low power consumption
- Available for OEM integration
- Compliant to PhotonFirst modular technology platform

Specifications

Property	Specification
Performance properties	
Number of optical channels	1
Channel sampling type	Continuous
Sampling rate	1kHz, 5kHz, 10kHz, default at 19.23kHz
Wavelength measurement range ^A	1516 nm ... 1583 nm
Wavelength output resolution	< 1 pm/bit, ≈ 0.275 pm/bit typical
Wavelength repeatability ^B	< 5 pm nominal
Wavelength precision	σ < 2 pm (over 1000 samples at 19.23 kHz)
Power consumption	< 10 W (≈ 5 W at 25°C)
Communication properties	
Data protocol	USB2.0
Output data rate	6,461,280 bits per second @19.230kHz sample rate
Output data unit ^C	Centre of Gravity value
Physical properties	
Dimensions ^D	100 mm x 114 mm x 35 mm
Weight	310 grams
Power input (DC)	9 VDC ... 36 VDC
Power adapter input (AC)	80 VAC ... 264 VAC (47Hz - 63Hz)
Optical interface	FC/APC, Single Mode Fibre
Communication interface	USB-B
Environmental properties	
Operating temperature range	0°C ... 45°C
Storage temperature range	-20°C ... 75°C
Degree of protection	IP20
Sensor array properties	
Max number of FBG per channel	8
Minimum sensor spacing ^E	5.1 mm

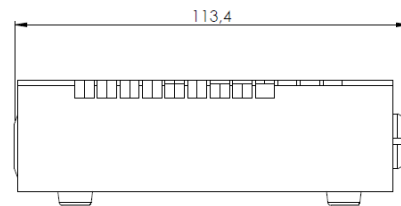
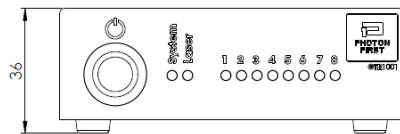
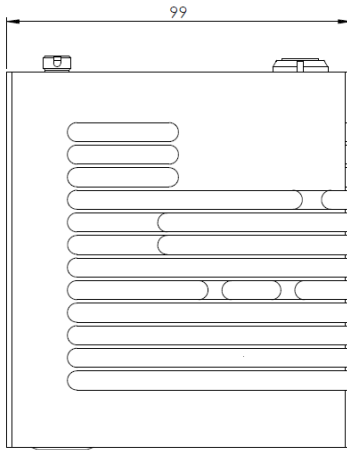
^A Wavelength range guaranteed for all GTR devices, typical range is 1515 nm ... 1585 nm.

^B Repeatability defined as the nominal average wavelength drift over a period of 20 minutes, in a steady state environment. Maximum allowed wavelength drift <30pm. Contact PhotonFirst for extensive repeatability and reproducibility information.

^c Refer to Annex B in the User Manual

^d Including FC/APC coupler and rubber feet.

^e Typical minimum spacing 4.8 nm. [Refer to FBG definition in the User Manual]



Ordering Information

Description	Specification
Part number	1001-000
Device Type	G
HW Version	E