

HYPERION Single Board Interrogator



Description

The **HYPERION Single Board Interrogator** is a high performance optical sensing instrument that offers unmatched ease of integration for OEM systems. A full suite of software tools typically only available to high end instruments is among one of the many features of the Single Board Interrogator.

Derived from the HYPERION si155 platform, the HYPERION Single Board Interrogator leverages the unmatched gains which are realized with Micron Optics patented Fiber Fabry-Perot filter and wavelength reference technology.

The HYPERION Single Board Interrogator features groundbreaking capabilities including high-performance DSP and real-time FPGA processing on-board, which enables rapid, flexible peak detect algorithms of Fiber Bragg Gratings (FBG), Long Period gratings, Fabry-Perot (FP), Mach-Zehnder (MZ) sensors, and others with low-latency access to data for closed loop feedback applications.

The HYPERION Single Board Interrogator is compatible with ENLIGHT, Sensing Analysis Software, which provides a single suite of tools for data acquisition, computation, and analysis of optical sensor networks. See www.micronoptics.com for more information. This interrogator also includes a comprehensive Application Programming Interface (API) and examples written in LabVIEW, Python, Matlab, C++, and C#.

Flexible peak and valley detection on 1 through 4 parallel channels with widest available wavelength range

Key Features

Truly turn-key solution providing quick start-up and data collection with minimal software or electronic design required for system implementation with added benefit of reduced cost.

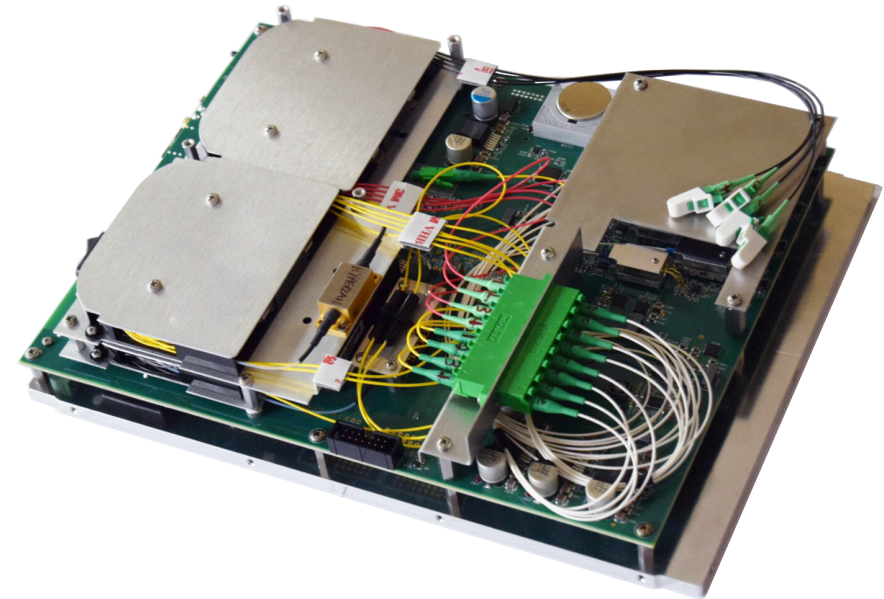
Dynamic measurements of FBGs, LPGs, FP and MZ sensors from detailed optical spectrum.

Data verification key guarantees only valid output. Each data set is calibrated and verified against an available permanent NIST traceable reference.

Feature rich ENLIGHT software and API support, available at no cost for sensor conditioning, data visualization, and data saving definitions.

Deep, continuous dynamic range is available to each sensor on each channel, independent of differential system losses.

Proven reliability and longevity of the Micron Optics swept wavelength source, with over 100 million hours logged since 2000.



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Performance Properties

Measurement options	Enhanced Visibility, Standard, High Speed (10 Hz, 100 or 1000 Hz, 5000 Hz)
Number of channels	1 through 4 channels
Wavelength range	60, 80, 100, or 160 nm
Wavelength repeatability/accuracy ¹	1 pm
Dynamic range / continuous ²	17 - 45 dB
Full spectrum measurement	Included, data rate at 10 Hz
Optical connectors	LC/APC
Compatible sensors ³	Fiber Bragg Gratings, Long period gratings, Fabry-Perot, Mach-Zehnder Sensors, and others

Interfaces and Software

Interface	Ethernet
Software	Comprehensive API and example support for LabVIEW™, Python, Matlab, C++, C#

Physical Properties

Design	203 x 273 x 53.5 mm
Operating / storage temperature ⁴	Capable of operating temperature range of -20 to 60 degree C
Input voltage	9 - 36 VDC, optional AC/DC converter included (100~240 VAC, 47~63 Hz)
Power consumption at 12 V	30 W typ, 40 max

Options and Accessories

Available for purchase:
LC/APC-FC/APC connectivity kit
Power Supply

Notes

- 1 Repeatability as per NIST Technical Note 1297, 1994 Edition, Section D.1.1.2, definition of "repeatability [of results of measurements]". (Assumes an FBG bandwidth of 0.25nm). Accuracy per NIST Technical Note 1297, 1994 Edition, Section D. 1.1.1, definition of "accuracy of measurement." Stability captures effects of long term use over operating temperature range.
- 2 Loss and/or sensor shape may affect repeatability and for each option as described in Micron Optics TN 1115.
- 3 FBG bandwidths of 0.25 nm used for performance qualification.
- 4 User is responsible for thermal management. HYPERION platform was tested and qualified using a finned heat sink and a convective airflow. Reference design documentation available by request.



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