

### Overview

#### Fiber Optic Power Meter Module

The **OP510** was specifically designed for applications where **cost effective solutions** for measuring, monitoring and logging of insertion loss or power fluctuations are needed. The OP510 is a small (4"x2"x1.25") **desk friendly** module designed such that minimal movement and bending of the reference- and test cables is necessary. This results in stable, accurate and repeatable measurements.

A unique feature of the OP510 is the **16 position bargraph** that displays the user the approximate power absolute or relative power level. The **TEST** button on the module allows the user to the reference function or to trigger a computer based measurement.

The OP510 is offered with various detectors with the commonly used **5/8" adapter system** or fixed optical interfaces. These options cover wide variety of applications.

The **USB powered** module connects directly to the computer. **OptoTest** provides for drivers and applications allowing the user to perform common measurement tasks such as EXCEL compatible **data logging** or time-stamped **stability measurements**.



**Model OP510-IN-FC**  
InGaAs Detector with fixed FC/PC Interface

- High precision fiber optic power measurement

Extended optical power measurement range, depending on the selected detector **+10dBm...-80dBm** for InGaAs detector, **+6dBm...-75dBm** for Silicon detector.

Wide wavelength range **830nm ... 1700nm** (InGaAs), **580nm ... 1080nm** (Si).

Great measurement resolution of **0.001 dB**

Tight linearity specifications: **+/- 0.05dB**

Selectable sample rate selected by application : **1 sample/sec .. 100 samples/sec**

- Integrated ambient temperature tracking

The OP510 measures the ambient temperature (°C or °F) within **-10°C ...+55°C** at a resolution of **0.1°C**. This feature eliminates the needs for an external temperature sensor during long-term stability testing.

- USB Powered, plug&play data acquisition

The OP508 is a bus powered, low power (<100mA) USB device. With the supplied drivers data can be transferred to and from the module at 0.2Mb/s.



### Applications

#### Stability- and Long-term Loss Characteristic of Optical Components

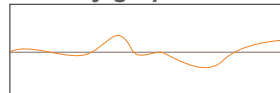
Bundled with the **OPL5 Optical Power Meter Software** the OP510 is a cost-effective system for measuring stability of passive fiber optic components and optical sources. Monitoring the ambient temperature is a necessity, minor fluctuations can influence the outcome of the measurements. The OP510 measures and reports ambient temperature eliminating the need for an external monitor.

#### Production Testing of Connectors and Components

In a production environment where the insertion loss of cables or other components is measured the OP510 offers a cost effective solution. The module offers a programmable **Pass/Fail** indicator indicating the result of the IL measurement to the user instantly. The OPL5-Pro Component Test Software has the capability to log the test data, partnumber, and serial number directly into spreadsheets.

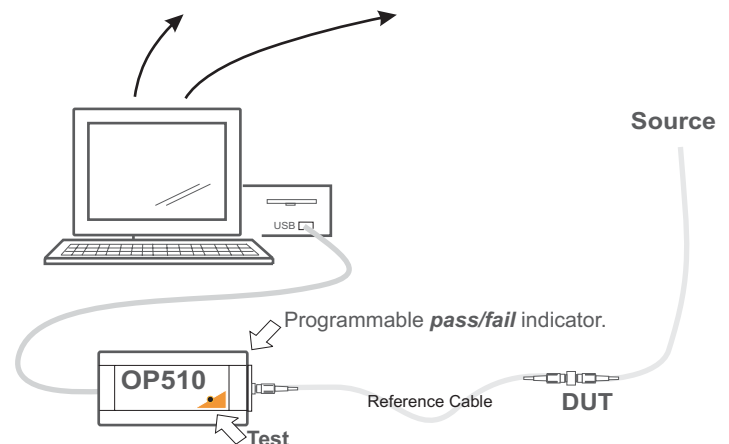
The **Test** button on the module allows the user to trigger measurements on the desk.

#### stability graph



#### spreadsheet data

#12A	0.15dB	1310nm
#12B	0.12dB	1310nm
#16A	0.55dB	850nm



The **Test** button executes a reference or it is used to command the computer to advance to the next measurement.

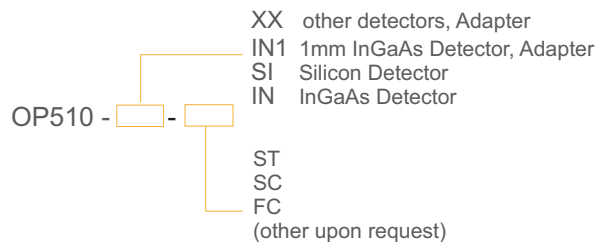
	OP510-IN-XX	OP510-SI-XX	OP510-IN1	
Detail Specifications	Measurement Range	+6dBm..-75dBm	+6dBm..-75dBm	+10dBm..-80dBm
	Wavelength Range	830nm .. 1700nm	580nm .. 1080nm	830nm .. 1700nm
	Selectable Wavelength <sup>1)</sup>	16	16	16
	Calibration Points <sup>2)</sup>	850/1310/1550nm	630/850/980nm	850/1310/1550nm
	Measurement Resolution	0.001dB	0.001dB	0.001dB
	Measurement Linearity, Relative Accuracy <sup>3)</sup>	0.05dB	0.05dB	0.05dB
	Power & Data Interface	USB powered, less than 100mA, USB 1.1 compatible data rate		
	Operating Temperature Range	-10 °C ... 55 °C (32°F ... 131°F)		
	Mech Dimension	105x55x30 mm (4 x 2 x 1.25 inch)		
	Optical Interface	fixed optical interface FC/ST/SC		5/8" Adapter

All specifications are valid within temperature range of 18 C to 24 C unless otherwise noted.

- 1) Selectable wavelength points every 10nm based on spectral response of detector.  
 2) Calibration against NIST traceable standard at -10dBm. Additional wavelength points upon request.  
 3) Linearity for loss <5dB and absolute power within 0dBm and -60dBm

NOTE: Specifications are subject to change, please confirm specific performance characteristics of the product at the time of ordering.

### OP510 with fixed optical interface



For example a **OP510-IN1-FC** is the fiber optics power meter with 1mm InGaAs detector and FC/PC interface.

### High Precision Reference Cables

#### Certified Specifications:

- Insertion loss <0.05dB
- Return loss >55dB(PC) >72dB(APC)
- Apex offset <50um
- Fiber height +/-50um(PC) +/-100um(APC)
- Fiber core position (excentricity) <0.25um



For measuring insertion loss and return loss accurately and repeatedly the reference connector needs to outperform the connector under test. Reference cables from OptoTest are manufactured and certified to exceed FOTP171A A2.2.1.

### about OptoTest

With in-depth fiber optics experience dating back to the entrepreneurial years of Photodyne Inc. and RIFOCS Corp. **OptoTest** continues the rich tradition of break-through products and innovative solutions for the testing of fiber optics components and systems. Founded as a privately held company in Thousand Oaks, California, the OptoTest team pursues it's vision to become a leading provider of **Test Solutions for Fiber Optics** supported by the strong brand of **OptoTest™** products.

Based on our standard product line we implement your specific needs cost effectively and efficiently. We are open to design your **custom products** from scratch or tackle other challenges.

- **Optical power meters** for specific applications, custom detectors, optical interfaces, various sampling speeds
- **Singlemode LED and laser sources** for specific wavelength, odd size fiber, POF and PM
- **Multimode sources** with specific mode conditioning
- **Polarization and wavelength measurement** products

OptoTest offers engineering services in the areas of design, implementation and deployment of test & measurement systems for fiber optic components (including sensors and cables) as well as fiber optics systems.

- **Test solutions** conforming to TIA and FOTP
- Rugged qualification setups for R&D, QA and QC

design  
 outstanding  
 service & support  
 fundamental technology in  
 fiber optics test & measurement