

# In-line Optical Power Monitor

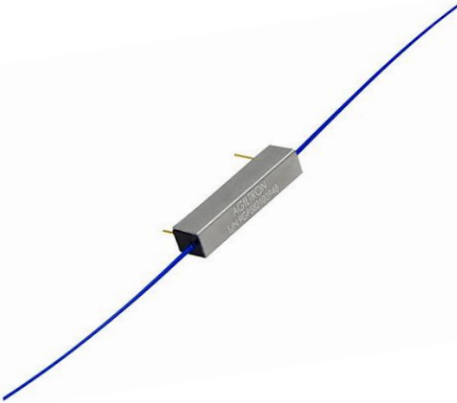
(Integral Optical Tap and PIN Photodiode)



(Protected by U.S. Patent No: 9535218)

DATASHEET

BUY NOW



## Applications

- ASE light sources
- EDFA gain modules
- Raman amplifiers
- Optical channel monitoring
- Optical fiber test instruments

## Features

- Low insertion loss
- Ultra low return loss
- Flat broadband response
- Low PDL
- High directivity
- High reliability

Agiltron's ILPM Series Fiber Optic Tap Power Monitors are used for in line power measurement and precision power controlling. It is based on a patent pending design that taps light without bending and grooving fiber, or using lens and optical coating. This novel power monitor provides industrial exceptional performance in ultra-low loss, low polarization and wavelength dependence, high directivity, variable tap ratios, as well as low cost and high reliability.

The continuous fiber device is particularly suited for adapting to various types of fiber and for high power handling. This power monitor has a miniature ceramic package houses offering a stable optical tap and PIN photodiode as well as GR1209 and GR1201 compliance qualification.

## Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength		300-2000		nm
Responsivity <sup>[1]</sup>	5	20	60	mA/W
Polarization Stability <sup>[2]</sup>	0.1	0.2	0.25	dB
Insertion Loss	0.2	0.6	0.8	dB
Polarization Dependent Loss <sup>[3]</sup>			0.01	dB
Extinction Ratio <sup>[4]</sup>	23			dB
Directivity <sup>[5]</sup>	25	28	40	dB
Return Loss		55		dB
Max Optical Power		500		mW
Dark Current@-5V, 23C			1	nA
3dB bandwidth@-5V bias	10	200	2000	MHz
Capacitance			10	pF
Max. Forward Current		10		mA
Max. Reverse Current		5		mA
Max. Reverse Voltage		10		V
Operating Temperature	-5		75	°C
Storage Temperature	-40		85	°C

### Notes:

- [1]. It is tap ratio depended.
- [2]. PDR, responsivity variation with polarization, only for polarization independent version.
- [3]. PDL for polarization independent version.
- [4]. ER for polarization maintaining version.
- [5]. The responsivity ratio between forward and backward directed light.

**Warning:** The device is extremely ESD-sensitive. Its dark current increases by unprotected handling. It is recommended to be handled under a certified ion fan once the package is removed.

**Legal notices:** All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application.

Rev 01/16/24

© Photonwares Corporation

P +1 781-935-1200

E [sales@photonwares.com](mailto:sales@photonwares.com)

W [www.agiltron.com](http://www.agiltron.com)

# In-line Optical Power Monitor

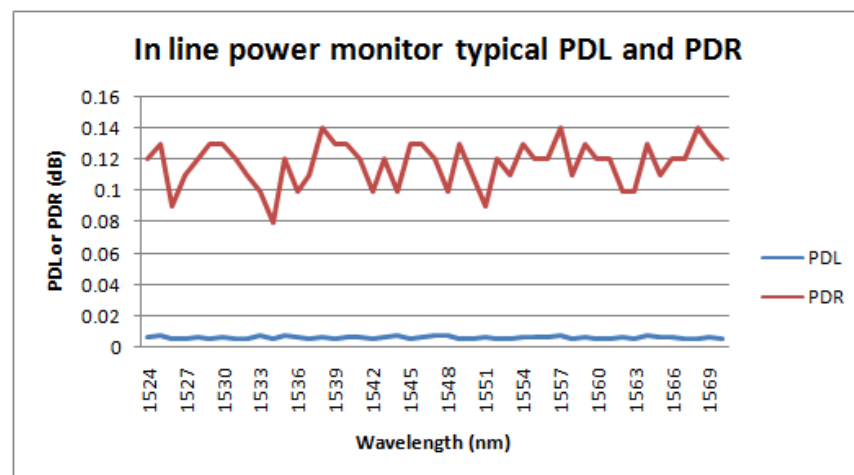
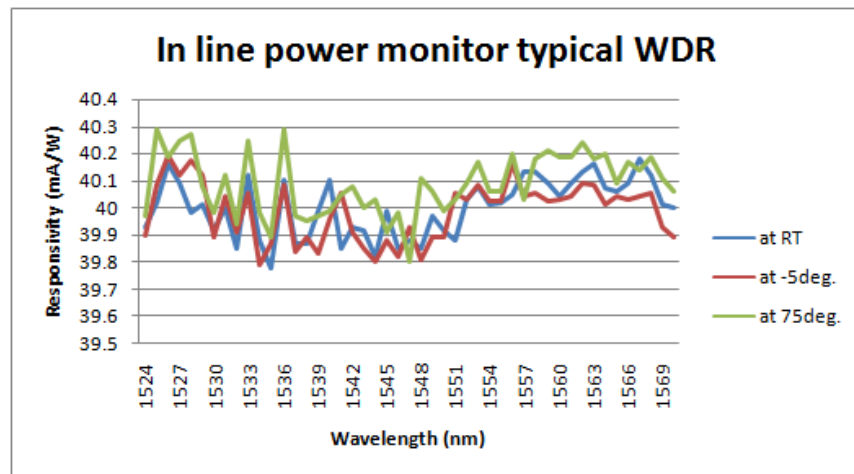
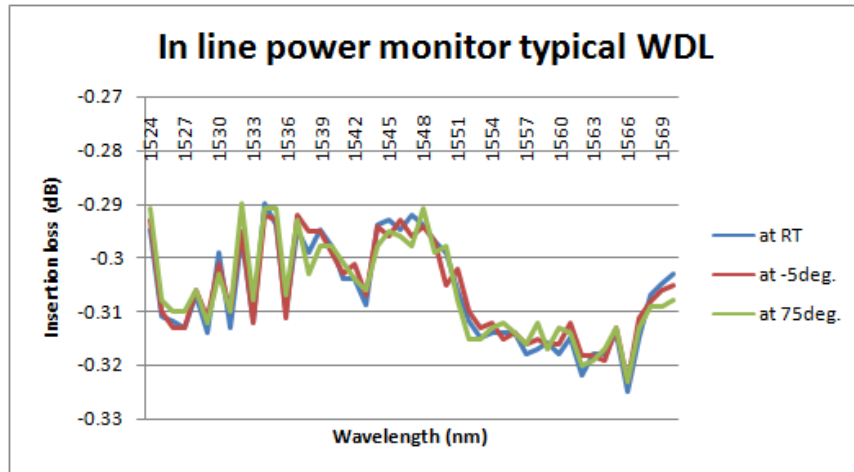
(Integral Optical Tap and PIN Photodiode)



(Protected by U.S. Patent No: 9535218)

## DATASHEET

### Typical Performance with SMF-28e Fiber



# In-line Optical Power Monitor

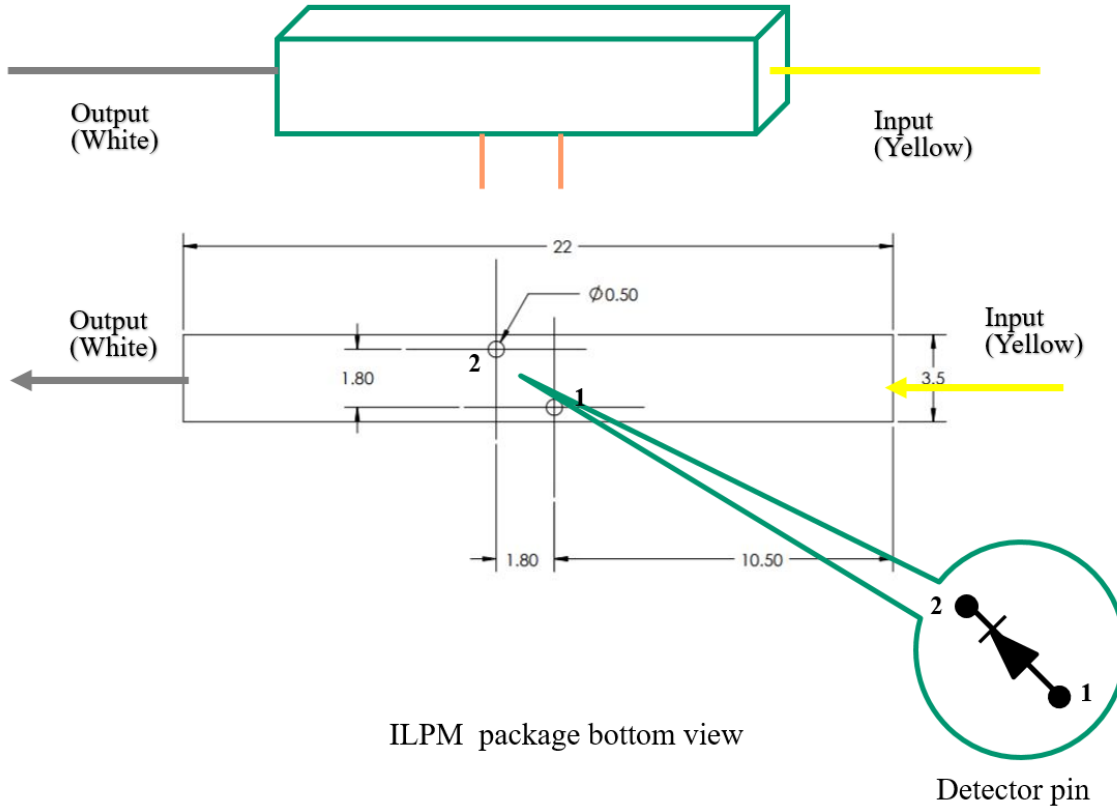
(Integral Optical Tap and PIN Photodiode)



(Protected by U.S. Patent No: 9535218)

## DATASHEET

### Mechanical Footprint Dimensions (mm)



\*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

### Ordering Information

Prefix	Tap ratio	Wavelength	Directivity	Package Type	Fiber Type	Fiber Cover	Fiber Length	Connector
<b>ILPM-</b>	1% = 01 3% = 03 5% = 05 0.1% = 06 0.3% = 07 0.5% = 08 0.7% = 09 Special = 00	350 = 7 530 = 9 850 = 8 1060 = 6 1310 = 3 1550 = 5 2000 = 2 Special = 0	Standard = 1 No = 2 Special = 0	Standard = 1 Reflection <sup>[1]</sup> = 2 Special = 0	SMF28e = 1 PM250 = 2 Hi1060 = 3 PM980 = 4 MM50/125 = 5 MM62.5/125 = 6 SM850 = 8 Special = 0	Bare fiber = 1 900um tube = 3 Special = 0	0.25m = 1 0.5m = 2 1.0m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Duplex LC/PC = 8 MTP = 9 LC/APC = A LC/UPC = U Special = 0

[1]. No directivity

# In-line Optical Power Monitor

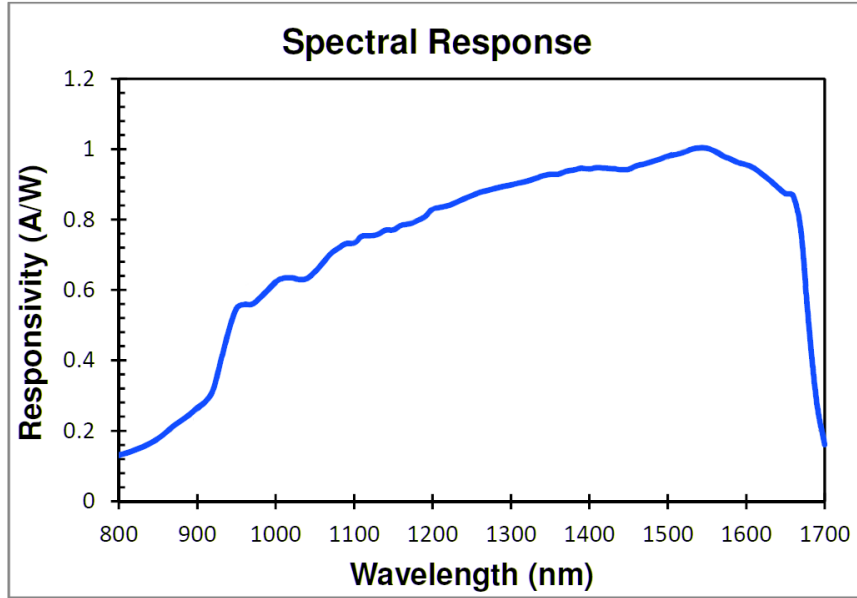
(Integral Optical Tap and PIN Photodiode)



(Protected by U.S. Patent No: 9535218)

## DATASHEET

### Spectral Response



### Application Notes

#### Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

#### Fiber Cleanliness

Fibers with smaller core diameters (<5  $\mu\text{m}$ ) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

#### Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the handling by expanding the core side at the fiber ends.