

Variable Ratio Fiber Optical Inline Tap Monitor

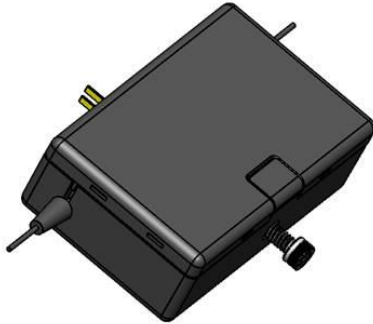
(350 to 2400nm, up to 200W)



(US Patent No: 9535218)

DATASHEET

BUY NOW



Applications

- Systems
- Instruments
- Laboratory

Features

- All Fiber Types
- All Wavelengths
- Lowest insertion loss
- Lowest return loss
- High Power Up To 40W
- High directivity

The VRTM Series Fiber Optic Tap Power Monitors are used for in-line power measurement and precision power controlling of all fiber types, including SM, PM, and large core MM. The ratio variability enables the measurement of high power without saturating the detector. It is based on a patent-pending design that taps light without breaking the fiber, with no coating and no lens. It offers ultra-low loss, high directivity, high return losses, high power, low polarization and wavelength dependence, high directivity, variable tap ratios, as well as low cost and high-reliability continuous transmission fiber.

The continuous fiber device is particularly suited for high-power handling. VRTM integrated a hermetically sealed PIN photodiode, meeting GR1209 and GR1201 compliance qualifications.

Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength	300		2500	nm
Tap Ratio Variation	0		5	%
Responsivity ^[1]	1	20	60	mA/W
Polarization Stability ^[2]	0.1	0.2	0.25	dB
Insertion Loss	0.2	0.6	0.8	dB
Polarization Dependent Loss ^[3]			0.01	dB
Polarization Extinction Ratio ^[4]	23			dB
Directivity ^[5]	25	28	40	dB
Return Loss		55		dB
Optical Power Handling ^[6]			200	W
Dark Current@-5V, 23°C			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 and input optical power dependent. 1% corresponds to the minimum value with sufficient optical input power.
- [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.
- [6]. Need to specify the input optical power range to avoid detect saturation

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 03/12/24

© Photonwares Corporation

P +1 781-935-1200

E sales@photonwares.com

W www.agiltron.com

Variable Ratio Fiber Optical Inline Tap Monitor

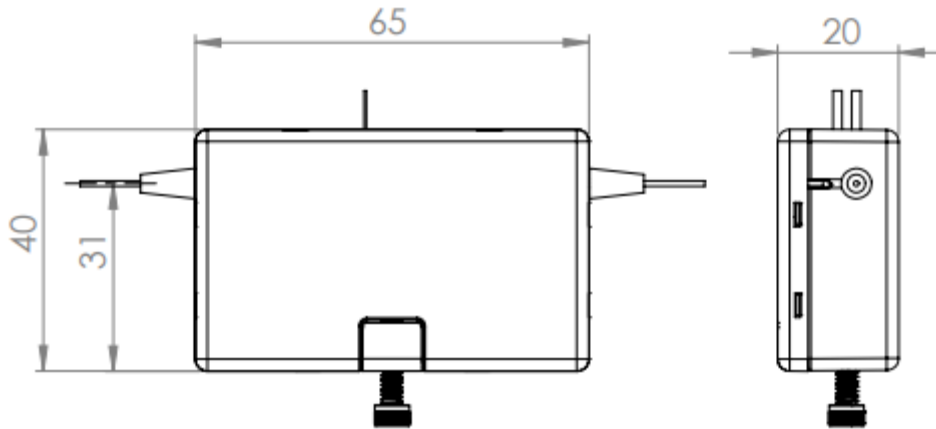
(350 to 2400nm, up to 200W)



(US 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	Wavelength	Directivity	Optical Power	Fiber Type	Fiber Cover	Fiber Length	Connector
VRPM-	350 = 3 530 = 5 850 = 8 1060 = 1 1310 = B 1550 = A 2000 = 2 780 = 7 Special = 0	1	<0.5W = AAA 0.5-5W = AA5 5-10W = A10 10-20W = A20 20-30W = A30 30-40W = A40 100W = 100 200W = 200 Special = 0	SMF28e = 1 PM1550 = 2 Hi1060 = 3 PM980 = 4 MM50/125 = 5 MM62.5/125 = 6 SM850 = 8 PM780 = B PM400 = C 105 μm core = D 200 μm core = E Special = 0	Bare fiber = 1 900um tube = 2 3mm 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

Variable Ratio Fiber Optical Inline Tap Monitor

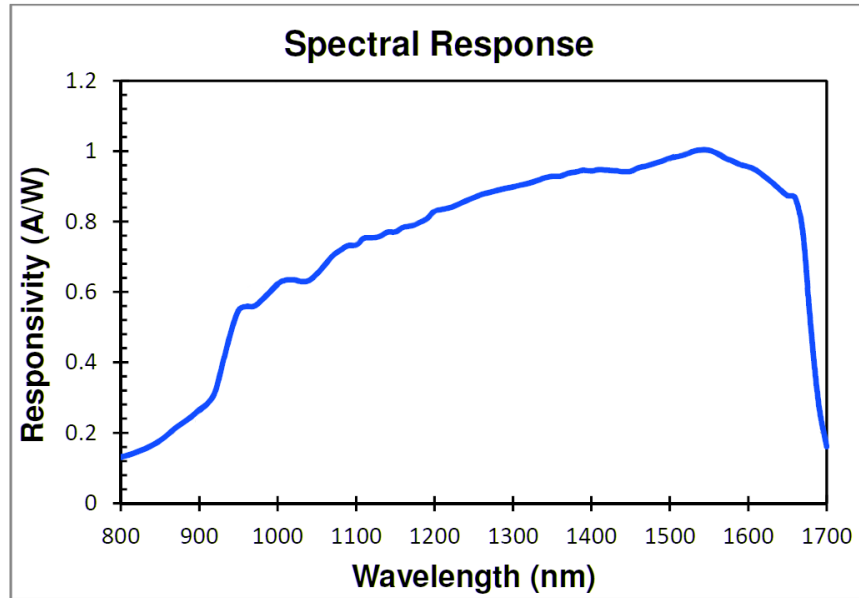
(350 to 2400nm, up to 200W)



(US 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 μm) 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.