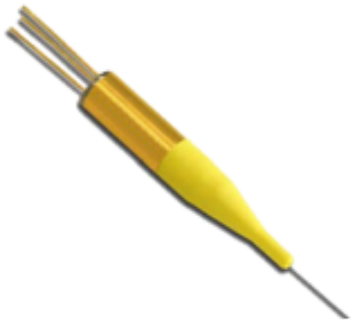
Single Mode Fiber Optical Inline Tap Power Monitor

(SM, PM, 750nm to 2300nm, Directional and Unidirectional)

DATASHEET

BUY NOW



The Tap Optical Power Monitor is a hybrid fiber optical passive component that integrates a thin-film tap of flat spectral response with a high sensitivity PIN photodiode for power monitoring applications. The Power Monitor minimizes component assembly costs and module footprint while increasing module design efficiency by facilitating fiber Management.

The Power Monitor combines the functionality of an optical coupler and a photodiode while delivering low insertion loss and low dark current with high temperature stability over a wide wavelength range. Our directional version works well from 1260nm to 1620nm band.

Applications

- Channel Monitoring
- Power Monitoring in Optical
- Interface Modules
- Gain Monitoring for Amplifier
- DWDM System Monitoring

Features

- Integrated
- Low Loss Device
- Custom Tap Ratios Available
- Compact Design

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength	780		2300	nm
Tap Ratio	1	3	5	%
Insertion Loss [1]	0.3	0.5	1	dB
Responsivity [2]	8	25	45	mA/W
Input Power	-45		27	dBm
WDL		0.02		dB/nm
PDL [3]		0.03	0.05	dB
Polarization extinction ratio [4]	18	23		dB
Tensile load		5		N
Return Loss		45		dB
Dark Current at 23°C		0.4	1.0	nA
Directivity [5]		None or >25		dB
Capacitance		0.7	0.9	pF
Optical Power Handling			0.5	W
Reverse Voltage		5	20	V
Rise/Fall Time		0.3		ns
Cut-Off Frequency		2		GHz
Operating Temperature	-30		75	°C
Storage Temperature	-40		85	°C
Reliability		Telcordia 1209 and 1221		

Notes:

[1]. Insertion Loss excluding connectors.

[2]. It is tap ratio and input optical power dependent. 1% corresponds to the minimum value with sufficient optical input power.

[3]. Single Mode Fiber version only.

[4]. PM Fiber version only.

[5]. Directivity defines the responsivity contrast between the case that light power comes from input fiber port and the case that light power comes from output fiber port. From 1260 to 1620nm.

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.**

Rev 03/12/24

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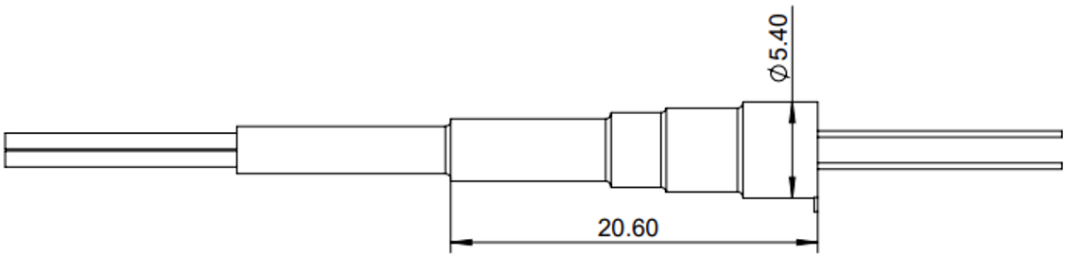
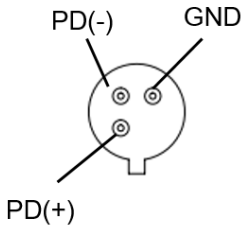
Mechanical Footprint Dimensions (mm)





*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**
TAMR-	1% = 11 3% = 33 5% = 55 Special = 00	1260~1620 = 1 1880 = 2 2000 = 3 850 = 8 980 = 9 780 = 5 Special = 0	None = 1 Yes = 2	Standard = 1 Special = 0	SMF-28 = 1 PM1550 = 5 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 LC/APC = A LC/UPC = U Special = 0

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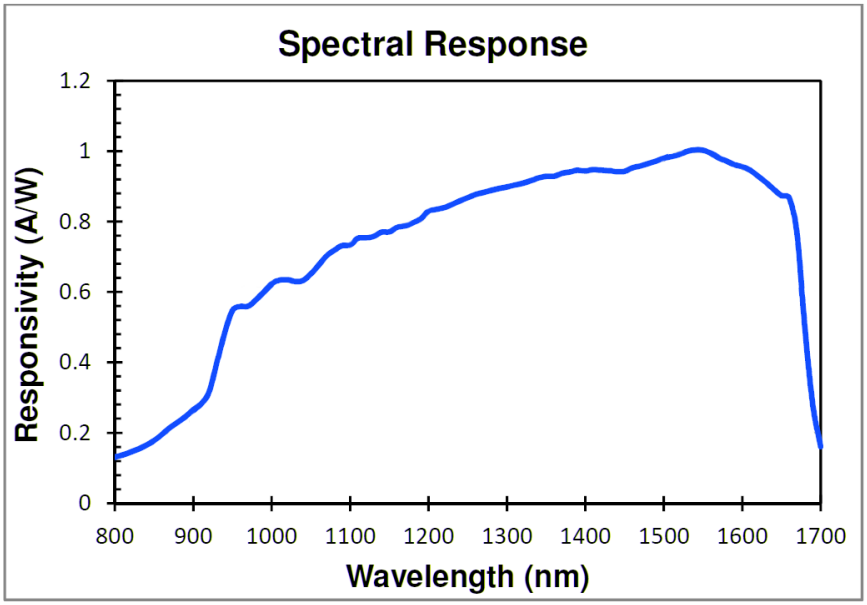
Spectral Response



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 how handling by expanding the core side at the fiber ends.

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