NxM Single Mode Fiber Splitter/Coupler

DATASHEET

BUY NOW

Features

- Ultra-Low PDL
- Low Excess Loss
- Low Insertion Loss
- Highly Directivity
- Stable and Reliable

Applications

- Telecommunications
- Optical Testing System
- Passive Optical Network
- Optical Power distributor

The NxM PM couplers/splitters are based on cascading 2x2 fused couplers in a star/tree configuration, featuring low optical loss, good uniformity, and high extinction ratio. In comparison with other approaches, this device has the best performance in industry for splitting light over a wide wavelength and temperature range. Customer configuration is available. We produce NxM Single Mode Coupler covering the spectral range from 370 to 2400nm.

Couplers incur significant losses when combining lights; for example, a 50/50 coupler produces a 50% loss to each beam when combined. For beam-combining applications, search Combiner.

Specifications (N x 4 Splitter Module)

Parameter		Grade U	Grade P	Grade A	Unit
Bandwidth		± 40			nm
Insertion Loss [1]	Max.	6.8	6.8	7.2	dB
Excess Loss [1]	Typ.	0.3	0.3	0.5	dB
Uniformity	Max.	0.7	0.7	0.9	dB
PDL	Max.	0.02	0.2		dB
Operating Power	Max.	5			W
Operating Temperature		-20 ~ +85			°C
Storage Temperature		-50 ~ +85			°C
Package Type		A: 18 x 114 x 140			mm
		B: 29 x 130 x 132			
		C: 10 x 80 x 100 for 900um tube			

Specifications (N x 8 Splitter Module)

Parameter		Grade U	Grade P	Grade A	Unit
Bandwidth		± 40			nm
Insertion Loss [1]	Max.	10.2	10.2	11.3	dB
Excess Loss [1]	Typ.	0.5	0.5	0.7	dB
Uniformity	Max.	1.2	1.2	1.5	dB
PDL	Max.	0.03	0.3		dB
Operating Power	Max.	5			W
Operating Temperature		-20 ~ +85			°C
Storage Temperature		-50 ~ +85			°C
Package Type		D: 43 x 322 x 480			mm
		E: 58 x 130 x 132			
		C: 10 x 80 x 100 for 900um tube			

Notes:

[1]. Without connector. Each connector adds 0.3dB and 0.5dB for short wavelength. The values are for wavelength >1310nm. For wavelength < 1310nm, the loss increase proportionally

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

Rev 09/11/24

Star & Tree Single Mode Broadband Splitter Module

(patents pending)

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Specifications (continue)

Specifications (N x 16 Splitter Module)

Parameter		Grade U	Grade P	Grade A	Unit
Bandwidth		± 40			nm
Insertion Loss [1]	Max.	13.6	13.6	15.1	dB
Excess Loss [1]	Typ.	0.8	0.8	1.0	dB
Uniformity	Max.	1.6	1.6	2.0	dB
PDL	Max.	0.04	0.4		dB
Operating Power	Max.	5			W
Operating Temperature		-20 ~ +85			°C
Storage Temperature		-50 ~ +85			°C
Package Type		D: 43 x 322 x 480			mm
		F: 18 x 115 x 141 for 900um tube			

Specifications (N x 32 Splitter Module)

Parameter		Grade U	Grade P	Grade A	Unit
Bandwidth		± 40			nm
Insertion Loss [1]	Max.	17.5	17.5	18.5	dB
Excess Loss [1]	Typ.	1.0	1.0	1.4	dB
Uniformity	Max.	2.0	2.0	2.5	dB
PDL	Max.	0.05	0.5		dB
Operating Power	Max.	5			W
Operating Temperature		-20 ~ +85			°C
Storage Temperature		-50 ~ +85			°C
Package Type		F: 18 x 115 x 141 for 900um tube			mm

Notes:

[1]. Without connector. Each connector adds 0.3dB and 0.5dB for short wavelength

Ordering Information

	☐	☐	☐	☐	☐☐	☐	☐	☐
Prefix	**Wavelength**	**Grade**	**Package**	**Input**	**Output**	**Fiber Type**	**Fiber Length**	**Connector**
FCNM-	980 = 9 1060 = 1 1310 = 3 1480 = 4 1550 = 5 2000 = 2 400 =A 450 =B 520 =C 650 =B 750 =C 850 =D Special =0	U = 1 P = 2 A = 3	Size A = 1 Size B = 2 Size C = 3 Size D = 4 Size E = 5 Size F = 6	1 Port = 1 2 Port = 2 4 Port = 4 8 Port = 8	4 Port = 04 8 Port = 08 16 Port = 16 32 Port = 32	SM28/0.9mm = 1 SM1950/0.9mm = 2 SM400 =4 SM450=5 SM600=6 Hi780=7 SM800=8 50/125=M 62.5/125=H	0.5m = 1 0.75m = 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

Note: 1m fiber length is default. Other fiber length is available, please add the extension -xxm, such as – 2.0m after 9-digital. The customized fiber length may cause long lead time and higher cost.

Star & Tree Single Mode Broadband Splitter Module

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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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