

PM COUPLER

Fused Fiber Coupler

PRODUCT DATASHEET

The G&H PM coupler enables the accurate monitoring and splitting of optical signals in polarization maintaining fiber.

Manufactured using industry-standard PM fiber, the PM coupler is available in any coupling ratio from 1 – 50%.

Based on G&H's fused fiber technology, the PM coupler demonstrates very low loss, high power handling and there is no price penalty for adding a second input port. The center operating wavelength may be chosen from within a wide variety of operating passbands, including 780, 820, 980, 1064, 1310, 14xx, 15xx and 16xx nm.

In common with all PM components, it is necessary to launch into either the slow or the fast axis to maintain polarisation. For the G&H PM coupler, specifications are based on slow axis launch, although fast axis versions are also available if requested.



Key Benefits

- All PM fiber construction
- Low excess loss
- High power handling
- 780 nm, 820 nm, 980 nm, 1064 nm, C, L, S bands available
- Slow axis operation as standard
- Fast axis operation also available

Applications

- Power monitoring of PM sources
- Coherent communications
- Fiber gyroscopes
- High power fiber lasers
- Fiber amplifiers

Optical Specification¹

Parameter	Specification									
Center wavelength range	(nm)	7xx ⁵	8xx ⁵	9xx	10xx	11xx	1310	14xx	15xx	16xx
Available wavelengths ²	(nm)	780 -799	800 -899	900 -999	1000 -1099	1100 -1199	1310	1425 -1499	1500 -1599	1600 -1650
Coupling ratio	1/99%									
Ratio tolerance	+/- 0.5%									
Extinction ratio (dB) ³	Grade A			20	20	20	20	20	20	20
	Grade B	17	17	17	17	17	17	17	17	17
Coupling ratio	5/95%									
Ratio tolerance	+/- 1.5%									
Extinction ratio (dB) ³	Grade A			20	20	20	20	20	20	20
	Grade B	17	17	17	17	17	17	17	17	17
Coupling ratio	10/90%									
Ratio tolerance	+/- 3.0%									
Extinction ratio (dB) ³	Grade A			20	20	20	20	20	20	20
	Grade B	17	17	17	17	17	17	17	17	17
Coupling ratio	33/67									
Ratio tolerance	+/- 4.0									
Extinction ratio (dB) ³	Grade A			17	17		20	20	20	20
	Grade B	15	15	15	15	15	17	17	17	17
Coupling ratio	50/50%									
Ratio tolerance	+/- 5.0%									
Extinction ratio (dB) ⁴	Grade A			17	17		20	20	20	20
	Grade B	15	15	15	15	15	17	17	17	17
Excess loss (dB)	Grade A			0.3	0.3		0.3	0.3	0.3	0.3
	Grade B	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Return loss/directivity	50 dB									
Optical power handling ^{6, 7}	4 W									
Pigtail tensile load	5 N									
Operating temperature	-5°C – +75oC1									
Storage temperature	-40°C – +85oC									
Fiber type	Polarization maintaining fiber (industry-standard profile)									

¹ All specifications are for operation at room temperature.

² The center wavelength may be selected from within the available wavelength ranges supplied.

³ Defined for signal path P1-P2.

⁴ Defined for both signal path P1-P2 and tap path P1-P3.

⁵ Fiber single mode cut-off ≤ 770 nm.

⁶ For operation at powers of greater than 4 W the component housing and fibre must be adequately heat-sunk (for additional information contact G&H sales). Components intended for high power operation are only available in the 2x2 configuration. Component performance and reliability under high power must be determined within the customer system.

⁷ The performance and reliability of optical connectors is not guaranteed for optical powers of greater than 1 W.

⁸ For connectorized component, operating temperature range is -5 – +75°C.

PM FUSED FIBER COUPLER

Housing Options

Housing Code	Description	1x2, 2x2 Dimensions (mm)	Pigtail
3	Regular	3.0 (Ø) x 60 (L)	Primary-coated fiber
5	Semi-ruggedized slim	3.0 (Ø) x 85 (L)	Ø0.9 mm loose-tube
7	High power housing	5 (W) x 5 (H) x 85 max (L)	Primary-coated fiber
C	Regular high power	3.0 (Ø) x 60 (L)	Primary-coated fiber

Configuration



Order code

Order codes are comprised of a standard device prefix (e.g. FFP) followed by code letters or numbers which correspond to available options.

Sample: FFP- CK7250A00 (PM fused fiber coupler, 1550 nm center wavelength, 50/50 coupling ratio, high power housing, 2x2 port configuration, A grade, 0.5 m pigtail length, no connectors).

Order code		①	②	③	④	⑤	⑥	⑦	⑧	⑨
F	F	P	-							
①	Passband	7XX	8XX	9XX	10XX	11XX	1310	14XX	15XX	16XX
	Code	D	E	5	8	J	4	S	C	L
②	Coupling ratio⁴	1%	5%	10%	33%	50%				
	Code	1	5	A	F	K				
③	Housing^{5,6}	Regular	Semi-ruggedized slim	High power	Regular high power					
	Code	3	5	7	C					
④	Port configuration⁵	1x2		2x2						
	Code	1		2						
⑤	Last two digits of center wavelength¹	e.g. XX20	e.g. XX50	e.g. XX70	e.g. XX80					
⑥	Code	20	50	70	80					
⑦	Grade	Grade A		Grade B						
	Code	A		B						
⑧	Pigtail length²	0.5 m		1 m						
	Code	0		1						
⑨	Connector^{3,6}	None		FC/APC-PM		FC/PC-PM				
	Code	0		P		R				

1 Channel center must be within the wavelength ranges shown in the optical specifications table.

2 Minimum pigtail length. Other pigtail lengths are available on request. Where connectorized, pigtail length is to connector end face.

3 Optical specifications in specification table do not include connector loss.

4 Other coupling ratios available on request.

5 7 & C not available in 1x2 Configuration.

6 Connectors can only be fitted to housing type 5. For connectorization of other housings contact G&H sales.

PM products are manufactured using 250 µm PANDA PM fiber, 400 µm PANDA PM fiber available at wavelengths higher than 400 nm.

<p>Ordering Information:</p>  <p>800 Village Walk #316 Guilford, CT 06437 Ph: 203-401-8093 Email orders to: sales@xsoptix.com Fax orders to: 800-878-7282</p>
--

PM FUSED FIBER COUPLER