



# Gooch & Housego

## PM Coupler



The G&H PM Coupler enables the accurate monitoring and splitting of optical signals in polarisation maintaining fibre. Manufactured using industry-standard PM fibre, the PM Coupler is available in any coupling ratio from 1% to 50%.

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

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 Features:

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

### Applications:

- Power monitoring of PM sources
- Coherent communications
- Fibre gyroscopes
- High power fibre lasers
- Fibre amplifiers

### Optical Specifications <sub>1</sub>

Parameter	Specification										Unit
Centre Wavelength Range	7xx <sub>5</sub>	8xx <sub>5</sub>	9xx	10xx	11xx	1310	14xx	15xx	16xx		nm
Available Wavelengths <sub>2</sub>	780	800	900	1000	1100	1310	1425	1500	1600		nm
	-799	-899	-999	-1099	-1199		-1499	-1599	-1650		
Coupling Ratio	<b>1/99</b>										%
Coupling Ratio Tolerance	+/- 0.5										%
Extinction Ratio <sub>3</sub>	Grade A		20	20	20	20	20	20	20	20	dB
	Grade B	17	17	17	17	17	17	17	17	17	dB
Coupling Ratio	<b>5/95</b>										%
Coupling Ratio Tolerance	+/- 1.5										%
Extinction Ratio <sub>3</sub>	Grade A		20	20	20	20	20	20	20	20	dB
	Grade B	17	17	17	17	17	17	17	17	17	dB
Coupling Ratio	<b>10/90</b>										%
Coupling Ratio Tolerance	+/- 3.0										%
Extinction Ratio <sub>3</sub>	Grade A		20	20	20	20	20	20	20	20	dB
	Grade B	17	17	17	17	17	17	17	17	17	dB
Coupling Ratio	<b>33/67</b>										%
Coupling Ratio Tolerance	+/- 4.0										%
Extinction Ratio <sub>3</sub>	Grade A		17	17		20	20	20	20	20	dB
	Grade B	15	15	15	15	15	17	17	17	17	dB
Coupling Ratio	<b>50/50</b>										%
Coupling Ratio Tolerance	+/- 5.0										%
Extinction Ratio <sub>4</sub>	Grade A		17	17		20	20	20	20	20	dB
	Grade B	15	15	15	15	15	17	17	17	17	dB
Excess Loss	Grade A		0.3	0.3		0.3	0.3	0.3	0.3	0.3	dB
	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 <sub>6, 7</sub>	4										W
Pigtail Tensile Load	5										N
Operating Temperature	-5 to +75 <sub>1</sub>										°C
Storage Temperature	-40 to +85										°C
Fibre Type	Polarisation maintaining fibre (industry-standard profile)										

1. All specifications are for operation at room temperature.
2. The centre 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. Fibre Single mode cut-off ≤ 770nm
6. For operation at powers of greater than 4W 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 1W.
8. For connectorised component, operating temperature range is -5 to +75°C.

### Housing Options

Housing Code	Description	1x2, 2x2 Dimensions (mm)	Pigtail
3	Regular	3.0 (Ø) x 60 (L)	Primary-coated fibre
5	Semi-ruggedised Slim	3.0 (Ø) x 76 (L)	Ø 0.9 mm loose-tube
7	High Power Housing	5 (W) x 5 (H) x 85 max (L)	Primary-coated fibre
C	Regular High Power	3.0 (Ø) x 60 (L)	Primary-coated fibre

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### Configuration



### Ordering Code Information

**Example: FFP-CK3250A10** (C band, PM Coupler, 50/50 coupling ratio, regular housing, 2x2, channel centre = 1550nm, grade A, 1m pigtail, no connector)

<b>F</b>	<b>F</b>	<b>P</b>	-												
<b>Code</b>	<b>Passband</b>	<b>Code</b>	<b>Housing<sub>5 &amp; 6</sub></b>	<b>Code</b>	<b>Channel Centre<sub>1</sub></b>	<b>Code</b>	<b>Connectors<sub>3, 6</sub></b>	<b>Code</b>	<b>Coupling Ratio<sub>4</sub></b>	<b>Code</b>	<b>Configuration<sub>5</sub></b>	<b>Code</b>	<b>Grade</b>	<b>Code</b>	<b>Pigtail Length<sub>2</sub></b>
D	7XX	3	Regular		Last 2 digits of centre wavelength.	0	NONE	1	1	1	1x2	A	Grade A	0	0.5m 250µm Fibre
E	8XX	5	Semi-ruggedised Slim		For example:	P	FC-APC/PM	5	5	2	2x2	B	Grade B	1	1m 250µm Fibre
5	9XX	7	High Power		45 xx45nm	R	FC-PC/PM	10	A						
8	10XX	C	Regular High Power		50 xx50nm			33	F						
J	11XX							50	K						
4	1310														
S	14xx														
C	15xx														
L	16xx														

1. Channel centre must be within the wavelength ranges shown in the Optical Specifications table.
2. Minimum pigtail length. Other pigtail lengths are available on request. Where connectorised, 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 connectorisation of other housings contact G&H Sales.

PM Products are manufactured using 250µm PANDA PM fibre, 400µm PANDA PM fibre available at wavelengths higher than 1400nm.