

# DUAL WINDOW COUPLER

## Fused Fiber Coupler

### DATASHEET

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G&H's dual window coupler provides new levels of performance and reliability for two-window couplers.

The coupler enables coupling and splitting simultaneously over the 1310 nm and 1550 nm windows.

Within optical networks the ultra-low insertion loss of the wideband coupler makes it easier to meet stringent optical power budgets. Furthermore the component is designed for high reliability and low FIT rates, through robust fusion and advanced component packaging.

Components are available in a variety of package styles to suit a wide range of applications, including optical networking. Wavelengths other than 1310/1550 nm are also available as a custom product. Please contact us to discuss your specific requirements.



### Key Features

- 1310 nm and 1550 nm operation
- High performance
- $\pm 20$  nm bandwidth in each window
- Consistently reliable
- Low loss

### Applications

- Optical networking
- Passive optical networks
- CATV
- Undersea systems

## Optical Specifications

Coupling Ratio	Grade	Signal Path			Tap Path		
		Insertion Loss <sup>1,2</sup> (dB)		PDL <sup>3</sup> (dB)	Insertion Loss <sup>1,2</sup> (dB)		PDL <sup>3</sup> (dB)
Example <sup>4</sup>		Min	Max	Max	Min	Max	Max
5%	P	-	0.4	0.10	11.9	14.7	0.35
5%	A	-	0.5	0.10	11.6	15.3	0.35
10%	P	-	0.7	0.10	9.1	11.2	0.30
10%	A	-	0.8	0.10	8.9	11.5	0.30
33%	P	-	2.1	0.15	4.4	5.5	0.20
33%	A	-	2.2	0.15	4.3	5.7	0.20
50%	P	2.6	3.5	0.15	2.7	3.4	0.15
50%	A	2.6	3.6	0.20	2.6	3.6	0.20

1 Insertion loss over operating wavelength range (not including PDL, TDL or any connector losses).

2 In 2x2 couplers insertion loss is not specified for launch through second input port P4 (coloured blue).

3 Change in insertion loss over all input polarisation states at band centre wavelength.

4 Any coupling ratio available – contact G&H for specification of coupling ratios not listed.

Parameter	Specification
Operating wavelength range	1310/1550 nm 1310±20 nm and 1550±20 nm
Return loss/directivity <sup>1</sup>	55 dB
Pigtail tensile load	5 N
Optical power handling <sup>3,4</sup>	4 W
Operating temperature range <sup>2</sup>	-40 – +75°C
Storage temperature range	-40 – +85°C

1 Return loss is the ratio of power launched to power reflected for port P1. Directivity for the 2x2 component is the ratio of power launched to P1 to the power reflected to P4.

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

3 For operation at powers of greater than 4 W the component housing and fiber 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.

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

### DUAL BAND COUPLER

## Housing Option

Housing Code	Description	Dimensions (mm)	Pigtail
3	Regular	3.0 (Ø) x 50 (L)	Primary-coated fiber
4	Semi-ruggedized slim	3.0 (Ø) x 60 (L)	Ø0.9 mm loose-tube
5	Semi-ruggedized	5.0 (Ø) x 75 (L)	Ø0.9 mm loose-tube
6	Fully-ruggedized	80 (L) x 10 (W) x 8 (H)	Ø3.0 mm fan-out sleeving
7	High power	5 (W) x 5 (H) x 85 (L max)	Primary-coated fiber
C	Regular high power	3.0 (Ø) x 50 (L)	Primary-coated fiber

## Configuration



## Order code

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

**Sample:** FFC-AE41A113 (Fused fibre dual band coupler, 33% tap coupling ratio, semi-ruggedized slim housing, 1x2 port configuration, A grade, corning SMF-28, 1 m pigtail lengths, FC/APC connectors).

Order code				①	②	③	④	⑤	⑥	⑦	⑧	⑨	
F	F	C	-						B				
①	Passband	A											
	Code	1310/1550 nm											
②	Coupling ratio <sup>5</sup>	5%			10%			33%			50%		
	Code	5			A			E			K		
③	Housing <sup>4,6</sup>	Regular	Semi-ruggedized slim	Semi-ruggedized	Fully-ruggedized	High power	Regular high power						
	Code	3	4	5	6	7	C						
④	Port configuration <sup>6</sup>	1x2					2x2						
	Code	1					2						
⑤	Grade	Grade A						Grade B					
	Code	A						B					
⑦	Fiber type	Corning SMF-28											
	Code	1											
⑧	Pigtail length <sup>2</sup>	0.5 m						1 m					
	Code	0						1					
⑨	Connector <sup>3,4</sup>	None	FC/PC	FC/APC	SC/APC	FC/UPC	SC/UPC	LC <sup>1</sup>					
	Code	0	1	3	5	9	A	B					

1 Not available for housing option 6.

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


3 Insertion loss in specification table does not include connector losses.

4 Connectors may be fitted to housing types 4, 5 and 6. To request connectors fitted to other housings please contact the sales office.

5 Any coupling ratio available – contact G&H for specification and ordering codes of coupling ratios not listed.

6 7 and C not available in 1x2 port configuration.

**Ordering Information:**



800 Village Walk #316  
 Guilford, CT 06437  
 Ph: 203-401-8093  
 Email orders to: [sales@xsoptix.com](mailto:sales@xsoptix.com)  
 Fax orders to: 800-878-7282

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