



# VISIBLE WAVELENGTH COUPLER

## Fused Fiber Coupler

### DATASHEET

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The visible wavelength coupler splits or combines light in the visible region. Versions optimised for any wavelength within the range 450 - 700 nm may be selected.

Designed for applications in display systems, sensors and biomedical equipment, the coupler utilizes Gooch & Housego's low loss fused fiber technology.

No light leaves the fiber, therefore no alignment is required and there are no unwanted reflections. Furthermore the output fiber pigtails may be directly integrated into beam delivery systems.

For components and modules which combine different wavelengths within the visible region please refer to the datasheet visible wavelength combiners.



#### Key Features

- Visible wavelength operation
- Any coupling ratio available
- All fiber - no lens alignment
- No unwanted reflections
- Low light loss
- High power handling

#### Applications

- Visible and display systems
- Sensors
- Biomedical equipment
- Research

## Optical Specifications

Coupling Ratio (%) <sup>3</sup>	Available Housing Option	Grade <sup>1</sup>	Available Wavelength(nm)	Coupling Ratio Tolerance (%)	Excess Loss (dB) <sup>2</sup>
10	3,4,5,6	A	500 to 700	±2	0.3
		B	450 to 700	±3	0.5
20	3,4,5,6	A	500 to 700	±3	0.3
		B	450 to 700	±4	0.5
30	3,4,5,6	A	500 to 700	±3	0.3
		B	450 to 700	±4	0.5
40	3,4,5,6	A	500 to 700	±4	0.3
		B	450 to 700	±5	0.5
50	3,4,5,6	A	500 to 700	±5	0.3
		B	450 to 700	±6	0.5

<sup>1</sup> In 2x2 couplers, performance is not specified for launch through second input port P4 (coloured blue).

<sup>2</sup> Includes fibre losses for up to 1 m pigtail length. Does not include connector losses.

<sup>3</sup> Any coupling ratio available. Please contact us for specifications of coupling ratios not listed.

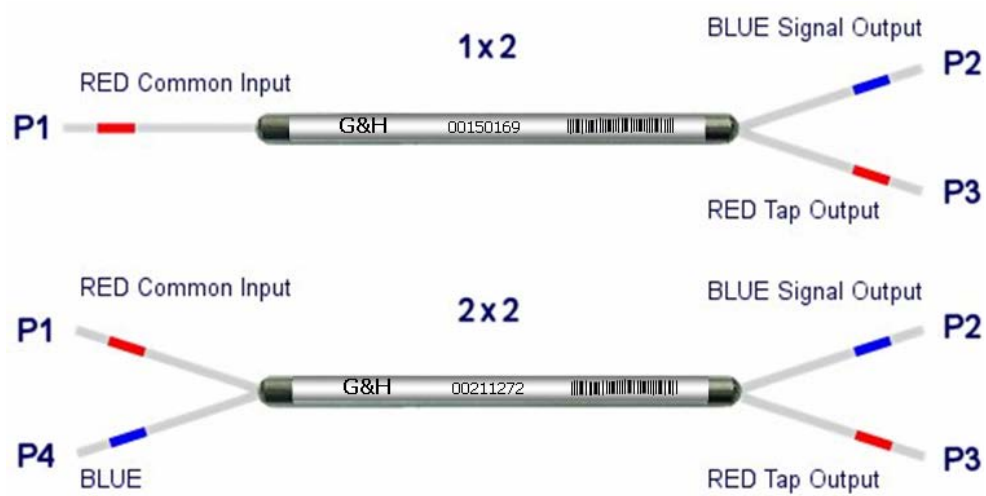
Parameter	Specification
Operating wavelength	Specified wavelength within the range 450-700 nm
Operating/storage temperature range <sup>1</sup>	-40 - +75°C/-40 - + 85°C
Pigtail tensile load	5 N
Fiber type	Short wavelength speciality fiber

<sup>1</sup> For connectorized component, operating temperature range is -5 - +75°C.

## Housing Option

Housing Code	Description	Dimensions (mm)	Pigtail
3	Regular	3.0 (Ø) x 55 (L) max.	Primary-coated fiber
4	Ø0.9 mm slim	3.0 (Ø) x 76 (L) max	Ø0.9 mm loose-tube
5	Ø0.9 mm semi-ruggedized	5.0 (Ø) x 85 (L) max	Ø0.9 mm loose-tube
6	Ø3.0mm fully-ruggedized	80 (L) x 10 (W) x 8 (H)	Ø3.0 mm fan-out sleeving

## Configuration<sup>1</sup>



<sup>1</sup> 1x2 couplers for blue wavelengths i.e. <500 nm are supplied as a 2x2 with an external termination on port P4.

## Order code

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

**Sample:** FFS-R50C32A13 (650 nm center channel wavelength, 20% tap coupling ratio, regular housing, 2x2 port configuration, A grade, 1 m pigtail length, FC/APC connectors).

Order code				①	②	③	④	⑤	⑥	⑦	⑧	⑨
F	F	S	-									
①	<b>Passband</b>			4XX		5XX			6XX			
	Code			B		G			R			
②	<b>Last two digits of center wavelength</b>			e.g. X20		e.g. X50		e.g. X70		e.g. X80		
③	Code			20		50		70		80		
④	<b>Coupling ratio<sup>4</sup></b>			10%	20%	30%	40%	50%				
	Code			A	C	E	H	K				
⑤	<b>Housing<sup>6</sup></b>			Regular	Semi-ruggedized slim		Semi-ruggedized		Fully-ruggedized			
	Code			3	4		5		6			
⑥	<b>Port configuration<sup>3</sup></b>			1x2				2x2				
	Code			1				2				
⑦	<b>Grade</b>			Grade A				Grade B				
	Code			A				B				
⑧	<b>Pigtail length<sup>1</sup></b>			0.5 m				1 m				
	Code			0				1				
⑨	<b>Connector<sup>2,6</sup></b>			None	FC/PC	FC/APC	SC/APC	FC/UPC	SC/UPC	LC <sup>5</sup>		
	Code			0	1	3	5	9	A	B		

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

2 Excess Loss in specification table does not include connector losses.

3 1x2 couplers for blue wavelengths i.e. <500nm are supplied as a 2x2 with an external termination on port P4.

4 Any coupling ratio available. Please contact G&H for ordering codes of coupling ratios not listed.

5 LC connector not available for housing code 6, fully ruggedized housing.

6 Connectors may be fitted to housing types 4, 5 and 6. For connectorization of housing type 3 please contact the sales office.

**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

For further information

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