

# SUBMINIATURE PUMP SIGNAL WDM

## Fused Fiber Coupler

### DATASHEET

---

The subminiature pump signal WDM provides low loss multiplexing of pump and signal in an ultra-short 32 mm length package.

Designed for space constrained optical amplifiers, the product is manufactured using  $\varnothing 80 \mu\text{m}$  cladding fiber. This enables low fiber bend radius without compromising mechanical integrity.

G&H proprietary manufacturing technology provides uniquely low insertion loss for signal and pump paths. This promotes low noise figure and the efficient use of pump power in optical amplifiers.

Standard wavelengths of operation are based on 980 nm pumping and C, L or C+L signal bands. However, many other wavelength combinations are available for diverse requirements such as sensing, fiber lasers and fiber Gyros. Do not hesitate to contact us with your specific requirements.

Reliability is assured through qualification to Telcordia GR-1221.



#### Key Features

- 32 mm package length
- $\varnothing 80 \mu\text{m}$  cladding fiber
- C, L or C+L signal bands
- Ultra-low typical  $<0.05\text{dB}$  excess loss
- High power handling
- Proven reliability

#### Applications

- Miniature optical amplifiers
- Miniature modules
- Fiber Gyros
- Fiber lasers
- Sensors

#### Compliance

- Telcordia GR-1221

## Optical Specifications

Wavelength		Grade	Available Fiber Type Option <sup>5</sup>	Insertion Loss (dB) <sup>1</sup>	WDL (dB) <sup>2</sup>	PDL (dB) <sup>3</sup>	TDL (dB) <sup>4</sup>	Isolation (dB)
Pump	Signal			Max	Max	Max	Max	Min
980nm	C band L band	M	4	0.10	0.07	0.02	0.02	18
		N	4	0.15	0.10	0.02	0.02	18
		B	4,9	0.20	0.10	0.02	0.02	16
980nm	C+L band	B	4,9	0.50	0.40	0.02	0.02	10

<sup>1</sup> Insertion loss over operating wavelength range (not including PDL and TDL).

<sup>2</sup> Change in insertion loss over the operating wavelength range.

<sup>3</sup> Change in insertion loss over all input polarization states in signal wavelength range.

<sup>4</sup> Change in insertion loss from -5 – 75°C.

<sup>5</sup> Cross reference to ordering information table for available options.

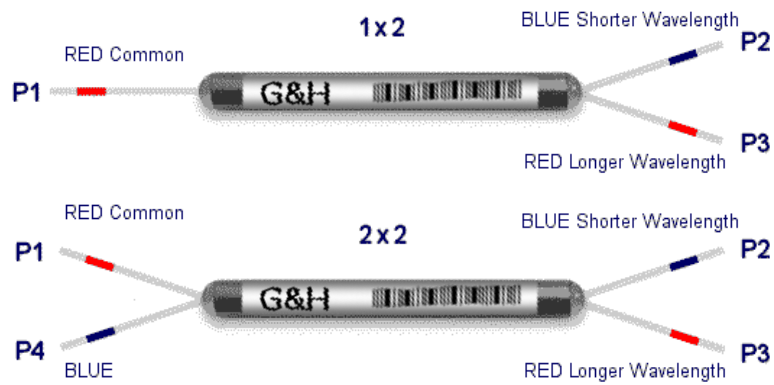
Parameter	Specification	
Operating wavelength range <sup>1</sup>	C band	1528-1563 nm
	C + L band	1528-1605 nm
	L band	1570-1605 nm
	980 nm	970-990 nm
Return loss/directivity <sup>1</sup>	55 dB	
Pigtail tensile load	5 N	
Optical power handling	4 W	
Operating/storage temperature range	-40 – +75°C/-40 – +85°C	
Environmental qualification	Telcordia GR 1221	

<sup>1</sup> Measured reference port P3 input for signal wavelength, P2 input for pump wavelength and P1 input for signal and pump wavelengths.

## Housing Option

Housing Code	Description	1x2, 2x2 Dimensions (mm)	Pigtail
1	Subminiature	3.0 (Ø) x 32 (L)	Primary-coated fiber, 80 µm cladding

## Configuration




## Order code

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

**Sample:** FFW-5C11M2410 (Fused Fiber WDM, 980 nm pump, C band signal, subminiature housing, 1x2, M grade, ø80 µm cladding fiber (980 nm), 1 m pigtail, no connector).

Order code				①	②	③	④	⑤	⑥	⑦	⑧	⑨
F	F	W	-	5		1			2			0
①	Pump wavelength			980 nm								
	Code			5								
②	Signal wavelength			C+L band			C band			L band		
	Code			1			C			L		
③	Housing			Subminiature								
	Code			1								
④	Port configuration			1x2				2x2				
	Code			1				2				
⑤	Grade			Grade M			Grade N			Grade B		
	Code			M			N			B		
⑦	Fiber type			ø80 µm cladding fiber (980 nm)				ø80 µm cladding high NA fiber (980 nm)				
	Code			4				9				
⑧	Pigtail length <sup>1</sup>			0.5 m				1 m				
	Code			0				1				
⑨	Connector			None								
	Code			0								

<sup>1</sup> Minimum pigtail length. Further pigtail lengths available on request.

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

---

Other products which may be of interest

- HI REL couplers
- High power multimode combiners
- Combiners with all types of signal feedthrough fiber
- Ultra-low ratio tap couplers
- WDMs for combining signals with red pointer lasers
- OCT wideband couplers