



*flawless fusion with infinite possibilities*

**SIFAM**  
F I B R E O P T I C S



## Fused Coupler C+L or S band

The Fused Coupler, C+L or S band enables the accurate splitting and monitoring of optical signals in singlemode fibre. SIFAM proprietary manufacturing technology provides uniquely low excess loss and wavelength dependence, along with low polarisation and temperature dependence for both signal and tap ports.

These high performance parts are available in a wide variety of tap ratios, wavelength ranges, housing and connector options and can therefore be readily specified in a wide variety of applications, enabling rapid design cycles and new project builds.

Reliability is assured through qualification to Telcordia GR-1221, with a field proven FIT rate of < 1.

For the subminiature version of this product please refer to the datasheet 'Subminiature Tap Couplers'.

### Key Features:

- Ultra low typical <0.05dB excess loss
- Low wavelength dependence
- Any coupling ratio available
- High power handling
- Proven reliability
- < 1 FITs

### Applications:

- Signal monitoring in C+L band EDFA or RAMAN amplifier.
- Network monitoring
- Network expansion
- Fixed attenuation

### Compliance:

Telcordia GR-1221

SIFAM Fibre Optics Ltd  
Broomhill Way, Torquay  
Devon TQ2 7QL  
England



Certificate No. 0962231

As part of our policy of continuous product improvement we reserve the right to change specifications at any time  
PEC0101 Rev 2

Tel: +44(0) 1803 407784  
Fax: +44(0) 1803 407786  
sales@sifamfo.com  
www.sifamfo.com

## Optical Specifications

Coupling Ratio	Grade	Signal Path					Tap Path				
		Insertion Loss <sub>1,2</sub> (dB)		WDL <sub>3</sub> (dB)	PDL <sub>4</sub> (dB)	TDL <sub>5</sub> (dB)	Insertion Loss <sub>1,2</sub> (dB)		WDL <sub>3</sub> (dB)	PDL <sub>4</sub> (dB)	TDL <sub>5</sub> (dB)
Example <sub>7</sub>		Min	Max	Max	Max	Max	Min	Max	Max	Max	Max
1%	P		0.15	0.04	0.03	0.02	18.2	23.0	0.90	0.20	0.20
1%	A		0.18	0.06	0.05	0.02	17.4	23.0	1.20	0.25	0.20
2%	P		0.18	0.05	0.03	0.02	16.0	18.6	0.60	0.15	0.15
2%	A		0.20	0.07	0.05	0.02	15.2	20.0	1.00	0.20	0.15
3%	P		0.23	0.05	0.03	0.04	14.2	16.5	0.50	0.14	0.15
3%	A		0.28	0.07	0.05	0.04	13.7	17.4	0.90	0.20	0.15
5%	P		0.32	0.06	0.03	0.08	12.1	14.3	0.45	0.12	0.15
5%	A		0.40	0.08	0.05	0.08	11.8	14.8	0.80	0.20	0.15
10%	P		0.60	0.07	0.04	0.08	9.4	11.1	0.40	0.10	0.13
10%	A		0.70	0.09	0.06	0.08	9.0	11.4	0.60	0.15	0.13
50%	P	2.65	3.35 <sub>6</sub>	0.25	0.08	0.10	2.7	3.3	0.25	0.08	0.10
50%	A	2.60	3.50	0.40	0.10	0.10	2.6	3.5	0.40	0.10	0.10

1. Insertion loss over operating wavelength range (not including PDL, TDL or 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 the operating wavelength range
4. Change in insertion loss over all input polarisation states at band centre wavelength
5. Change in insertion loss from -5 to 75°C
6. Housing option 2 (miniature) insertion loss 2.65/3.40dB
7. Any coupling ratio available – contact SIFAM for specification of coupling ratios not listed.

Parameter		Specification	Unit
Operating Wavelength Range <sub>1</sub>	C+L Band	1528-1605	nm
	S Band	1425-1500	nm
Return Loss/Directivity <sub>2</sub>		55	dB
Pigtail Tensile Load		5	N
Optical Power Handling		4	W
Operating / Storage Temperature Range <sub>3</sub>		-40 to +75 / -40 to +85	°C
Environmental Qualification		Telcordia GR 1221	

1. For wavelengths within +/-5nm of the specified range performance will be maintained for signal path insertion loss, PDL, TDL, directivity and return loss. The only parameters to increase will be tap insertion loss and WDL. Maximum values of increase for both parameters are 0.15dB for 1% tap, 0.10dB for 2-9%, 0.08dB for 10-50%.
2. 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.
3. For connectorised component, operating temperature range is -5 to +75°C.

## Housing Option

Housing Code	Description	Dimensions (mm)	Pigtail
2	Miniature	3.0 (∅) x 45 (L)	Primary-coated fibre
3	Regular	3.0 (∅) x 50 (L)	Primary-coated fibre
4	∅ 0.9 mm slim	3.0 (∅) x 60 (L)	∅ 0.9 mm loose-tube
5	∅ 0.9 mm semi-ruggedised	5.0 (∅) x 75 (L)	∅ 0.9 mm loose-tube
6	∅ 3.0 mm fully-ruggedised	80 (L) x 10 (W) x 8 (H)	∅ 3.0 mm fan-out sleeving

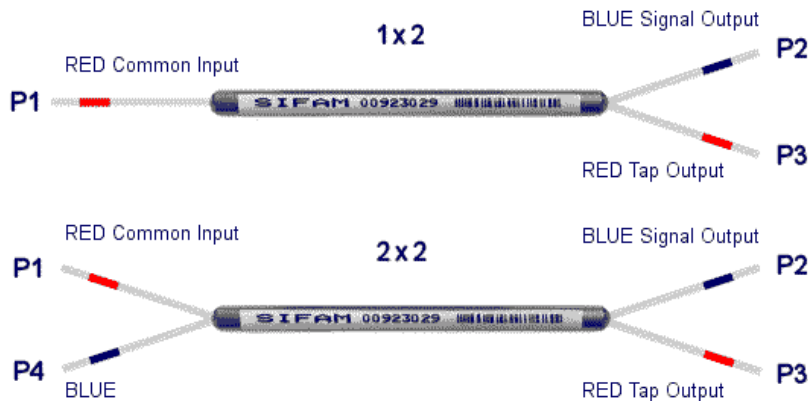
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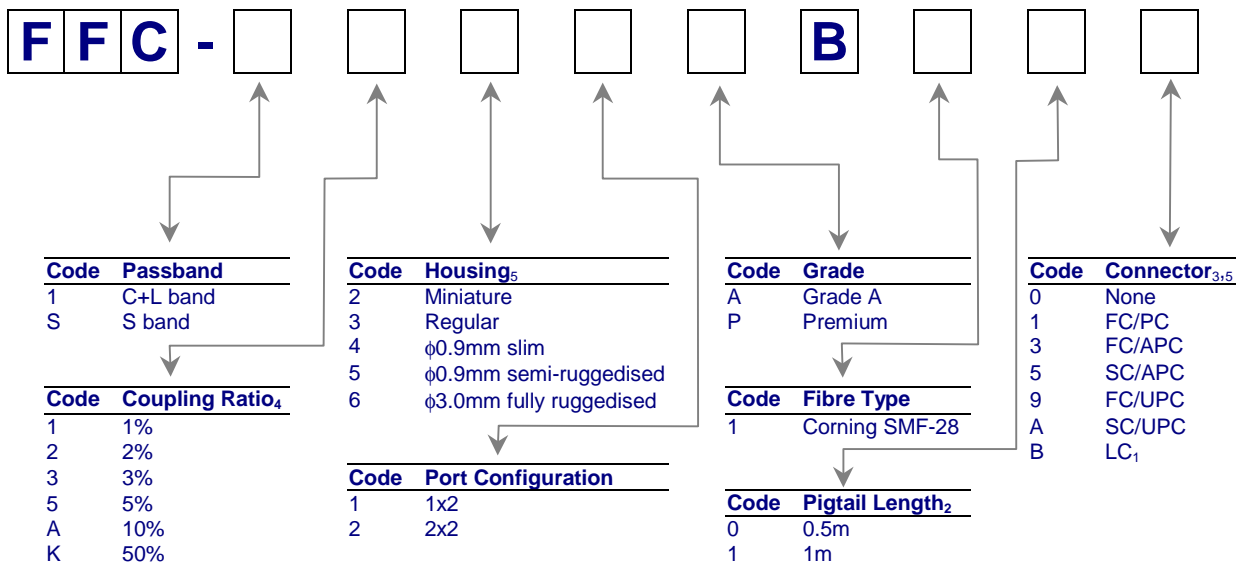
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### Configuration



### Ordering Code Information

Sample: FFC-1231PB110 (C+L Band, 2% tap, regular housing, premium grade, SMF-28 fibre, 1m pigtail, no connector)



1. Not available for housing option 6.
2. Minimum pigtail length. Further pigtail lengths available on request. Where connectorised, pigtail length is to connector end face.
3. Insertion loss in specification table does not include connector losses.
4. Any coupling ratio available – contact SIFAM for specification and ordering codes of coupling ratios not listed.
5. Connectors may be fitted to housing types 4, 5 and 6. For connectorisation of housing types 2 and 3 please contact the sales office.

