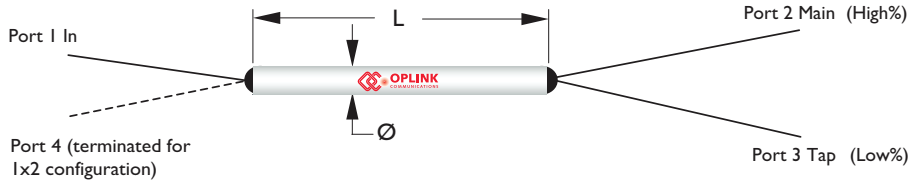
Mini Single Window Single Mode Fiber Coupler

Mini SWFC Series

Product Description

The Oplink mini fused single window wideband fiber 1x2 (2x2) couplers provide accurate optical signal coupling and splitting over wide bandwidth with high performance and high reliability in miniature or sub-miniature package. These couplers have excellent uniformity, low excess loss and very low polarization sensitivity and are available with various tap ratios, wavelength ranges, fiber types, and connector options. The small form factor with reduced cladding fiber is essential for compact system integration. All devices are shown to be able to handle high optical power up to 4W and are tested according to industry standard procedures. Reliability is guaranteed through stringent tests to fully meet Telcordia GR-1221 requirements.

Oplink can provide customized designs to meet specialized feature applications. Also, Oplink offers modular assemblies that integrate other components to form a full function module or subsystem.



Performance Specification

Mini SWFC Series	980 nm	1310 nm	S Band	C Band	L Band	C+L Band	Unit
Wavelength Range	970 ~ 990	1270 ~ 1350	1420 ~ 1500	1530 ~ 1565	1570 ~ 1605	1530 ~ 1610	nm
Fiber Type	Corning HI980 Corning HI1060FLEX OFS BF05635-02	Corning SMF-28					
Insertion Loss [1]	See Insertion Loss Table I, II, III						dB
Return Loss	≥ 55						dB
Directivity	≥ 55						dB
TDL [2]	Signal Path: <0.1dB, Tap Path: <0.15 dB						dB
Optical Power Handling	≤ 4						W
Operating Temperature Range [3]	- 40 to + 75						°C
Storage Temperature Range	- 40 to + 85						°C
Package Dimension	P5 : 250 µm bare fiber	(Ø) 3.0 (±0.1) x (L) 35.0 (±1)					mm
Qualifications	Telcordia GR-1221						

[1] Values are referenced without connector loss.
[2] Temperature Sensitivity Coefficient ~0.002dB/°C at the range of –5 to 75°C.
[3] Operating temperature range changes to -5 to 75°C in P2, P3 package and all package with connectors

Features

- Miniagure Package
- Wavelength Independent
- Low Insertion Loss and PDL
- High Power Handling
- Guranteed Reliability

Applications

- Signal Monitoring in EDFA
- Network Monitoring
- CATV
- Local Area Networks
- Testing Instruments
- Laboratory R&D

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Insertion Loss Tables

Insertion Loss (IL) I : C or L band coupler

Coupling Ratio	Premium Grade				A Grade			
	IL[1] (dB)		PDL[2] (dB)		IL[1] (dB)		PDL[3] (dB)	
	Signal	Tap	Signal	Tap	Signal	Tap	Signal	Tap
99/1	≤0.18	19.0 - 21.0	≤0.04	≤0.12	≤0.20	17.7 - 21.5	≤0.05	≤0.15
98/2	≤0.25	16.4 - 18.4	≤0.04	≤0.12	≤0.30	16.0 - 19.4	≤0.05	≤0.15
97/3	≤0.30	14.6 - 16.2	≤0.04	≤0.12	≤0.35	14.0 - 16.8	≤0.05	≤0.15
95/5	≤0.35	12.4 - 13.8	≤0.04	≤0.10	≤0.40	12.0 - 14.4	≤0.05	≤0.15
90/10	≤0.60	9.60 - 10.8	≤0.05	≤0.10	≤0.65	9.20 - 11.2	≤0.06	≤0.14
85/15	≤0.85	7.80 - 8.80	≤0.05	≤0.10	≤0.90	7.5 - 9.0	≤0.06	≤0.14
80/20	≤1.15	6.60 - 7.60	≤0.05	≤0.10	≤1.15	6.4 - 8.0	≤0.07	≤0.13
75/25	≤1.35	5.75 - 6.50	≤0.06	≤0.10	≤1.44	5.6 - 6.7	≤0.07	≤0.13
70/30	≤1.75	5.00 - 5.50	≤0.06	≤0.10	≤1.82	4.9 - 5.8	≤0.08	≤0.12
65/35	≤2.10	4.40 - 4.90	≤0.07	≤0.10	≤2.15	4.3 - 5.0	≤0.08	≤0.12
60/40	≤2.50	3.95 - 4.30	≤0.07	≤0.09	≤2.60	3.7 - 4.6	≤0.08	≤0.10
55/45	≤2.85	3.35 - 3.80	≤0.07	≤0.09	≤2.90	3.1 - 4.0	≤0.09	≤0.10
50/50	2.80 - 3.30		≤0.08		2.70 - 3.30		≤0.10	

1. Insertion loss over operating wavelength range at ~23°C (excluding PDL and TDL).
2. Insertion loss change over the all input polarization states

Insertion Loss (IL) II : 1310nm, S or C+L band coupler

Coupling Ratio	Premium Grade				A Grade			
	IL[1] (dB)		PDL[2] (dB)		IL[1] (dB)		PDL[2] (dB)	
	Signal	Tap	Signal	Tap	Signal	Tap	Signal	Tap
99/1	≤0.18	18.2 - 21.0	≤0.04	≤0.15	≤0.23	17.4 - 21.5	≤0.05	≤0.20
98/2	≤0.25	16.0 - 18.6	≤0.04	≤0.12	≤0.30	15.2 - 19.8	≤0.05	≤0.15
97/3	≤0.30	14.4 - 16.4	≤0.04	≤0.12	≤0.34	13.7 - 17.1	≤0.05	≤0.15
95/5	≤0.35	12.2 - 14.0	≤0.04	≤0.10	≤0.40	11.8 - 14.7	≤0.05	≤0.15
90/10	≤0.60	9.40 - 11.0	≤0.05	≤0.10	≤0.65	9.0 - 11.3	≤0.06	≤0.15
85/15	≤0.90	7.70 - 8.85	≤0.05	≤0.10	≤0.85	7.4 - 9.1	≤0.06	≤0.15
80/20	≤1.15	6.30 - 7.80	≤0.05	≤0.10	≤1.15	6.0 - 8.1	≤0.07	≤0.14
75/25	≤1.50	5.45 - 6.70	≤0.06	≤0.10	≤1.44	5.5 - 6.8	≤0.07	≤0.14
70/30	≤1.75	4.60 - 5.75	≤0.06	≤0.10	≤1.82	4.7 - 5.9	≤0.08	≤0.13
65/35	≤2.05	4.10 - 5.05	≤0.07	≤0.10	≤2.02	4.2 - 5.0	≤0.08	≤0.13
60/40	≤2.50	3.85 - 4.40	≤0.07	≤0.09	≤2.60	3.7 - 4.6	≤0.09	≤0.11
55/45	≤2.85	3.15 - 3.80	≤0.07	≤0.09	≤2.81	3.1 - 4.0	≤0.09	≤0.11
50/50	2.70 - 3.40		≤0.08		2.60 - 3.50		≤0.10	

1. Insertion loss over operating wavelength range at ~23°C (excluding PDL and TDL). For S-band product, add 0.1dB due to water absorption peak of fiber.
2. Insertion loss change over the all input polarization states.

Insertion Loss (IL) III : 980nm coupler

Coupling Ratio	Premium Grade				A Grade			
	IL[1] (dB)		PDL[2] (dB)		IL[1] (dB)		PDL[2] (dB)	
	Signal	Tap	Signal	Tap	Signal	Tap	Signal	Tap
99/1	≤0.20	18.5 - 21.0	≤0.05	≤0.12	≤0.25	15.5 - 21.5	≤0.07	≤0.15
98/2	≤0.28	16.0 - 18.6	≤0.05	≤0.12	≤0.30	15.2 - 19.5	≤0.07	≤0.15
95/5	≤0.38	11.4 - 14.8	≤0.05	≤0.12	≤0.50	11.2 - 15.2	≤0.07	≤0.15
90/10	≤0.60	9.20 - 11.3	≤0.07	≤0.12	≤0.70	8.70 - 11.7	≤0.10	≤0.15
80/20	≤1.30	5.70 - 7.90	≤0.10	≤0.12	≤1.50	5.40 - 8.50	≤0.10	≤0.15
70/30	≤1.90	4.30 - 6.00	≤0.10	≤0.10	≤2.20	4.20 - 6.40	≤0.10	≤0.15
60/40	≤2.60	3.40 - 4.70	≤0.10	≤0.10	≤2.80	3.20 - 4.70	≤0.10	≤0.15
50/50	2.70 - 3.40		≤0.10		2.60 - 3.60		≤0.15	

1. Insertion loss over operating wavelength range at ~23°C (excluding PDL and TDL).
2. Insertion loss change over the all input polarization states.

Ordering Information

Oplink can provide a remarkable range of customized optical solutions. For detail, please contact Oplink's OEM design team or account manager for your requirements and ordering information (510) 933-7200.

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Wavelength
980 nm = 9
1310 nm = 3
C band = 5
S band = 4
L band = 6
C+L band = 1

Type
1x2 = 1
2x2 = 2

Tap Ratio
50/50 = 50
45/55 = 45
40/60 = 40
35/65 = 35
30/70 = 30
25/75 = 25
20/80 = 20
15/85 = 15
10/90 = 10
5/95 = 05
3/97 = 03
2/98 = 02
1/99 = 01

Grade
Premium Grade = P
A Grade = A

Package & Fiber Type
P5 + Corning SMF-28 = 51
P5 + Corning HI1060FLEX = 56
P5 + Corning HI980 = 59
P5 + OFS BF05635-02 = 57

Fiber Length*
0.5 Meter = H
1.0 Meter = 1
1.5 Meters = 5
2.0 Meters = 2

Connector Type**
None = 1
FC/PC = 2
FC/SPC = 3
FC/APC = 4
SC/PC = 5
SC/SPC = 6
SC/APC = 7
ST = 8
LC/UPC = 9
MU = A
LC/APC = B

Notes :
** The tolerance of fiber length is +/-0.1m. 1 meter is standard. The lead time for special fiber length will be longer.*
*** HI1060, HI980 and OFS BF05635-02 fiber option is for bare fiber only (no connectors). 980-16 fiber option is for bare fiber only (no connectors).*

46335 Landing Pkwy Fremont, CA 94538 Tel: (510) 933-7200 Fax: (510) 933-7300 Email: Sales@Oplink.com • www.oplink.com