Mini Single Window Single Mode Fiber Coupler

Mini SWFC Series

Features

- Miniature Package
- Wavelength Independent
- Low Insertion Loss and PDL
- High Power Handling
- Guaranteed Reliability

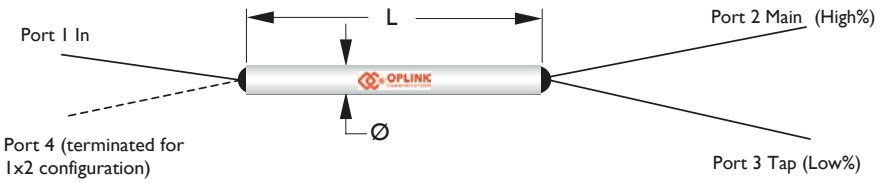
Applications

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

Mini Single Window Single Mode Fiber Coupler

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 functionmodule or subsystem.



Performance Specifications

Parameter		980nm	1310nm	S band	C band	L band	C+L band
Operating Wavelength Range	nm	970~990	1270~1350	1420~1500	1530~1565	1570~1605	1530~1610
Fiber Type		Corning HI980 HI1060 OFSBF05635-02	Corning SMF-28 Corning RC SMF-28				
Insertion loss [1]		See Insertion Loss Table I, II, III					
Return Loss	min	55 dB					
Directivity	min	55 dB					
Temperature dependent Loss [2]	max	Signal Path: < 0.10dB, Tap Path: < 0.15dB					
Optical Power Tolerance	max	4 W					
Operating Temperature Range[3]		-40 to 75 °C					
Storage Temperature Range		-40 to 85 °C					
		P5: 250μm SMF-28 fiber, Miniature				(Ø)3.0 x (L)35 mm	
		P8: 80μm RC SMF-28, Subminiature				(Ø)3.0 x (L)28 mm	
Qualifications		Telcordia GR-1221					

1. Under all states of polarization and within the full operating temperature and wavelength ranges specified, not include contribution from connectors.
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
4. The mechanical tolerance should be +/- 0.2 mm on all package dimensions unless otherwise custom specified.

OPLINK COMMUNICATIONS

Insertion Loss Tables

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

Coupling Ratio	P 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	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	P 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	9.00-11.3	≤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).
2. Insertion loss change over the all input polarization states.

Insertion Loss (IL) III : 980nm coupler

Coupling Ratio	P 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
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	≤1.5	5.4-8.5	≤0.10	≤0.15
70/30	≤1.90	4.30-6.00	≤0.10	≤0.10	≤2.2	4.2-6.4	≤0.10	≤0.15
60/40	≤2.60	3.40-4.70	≤0.10	≤0.10	≤2.8	3.2-4.7	≤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.

Oplink Communications, Inc.

MINI SWFC SERIES

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

Type
1x2= 1
2x2= 2

TapRatio
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

Type
P Grade= P
A Grade= A

Package Type
P5= 5
P8= 8

Fiber Type
Corning SMF-28= 1
Corning HI1060= 6
Corning HI980= 9
OFS BF05635-02= 7
80μm RC SMF-28= 8* (P8 only)

Fiber Length
0.5 meter= H
1.0 meter= 1
1.5 meter= 5
2.0 meter= 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= 9
MU= A

Note: * 80μm RC SMF-28 fiber option is for bare fiber only (no connectors).

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