

# ULTRA-LOW PDL FUSED TAP COUPLER

(1310, S, C, L BAND)

## LPTC Series

### Features

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

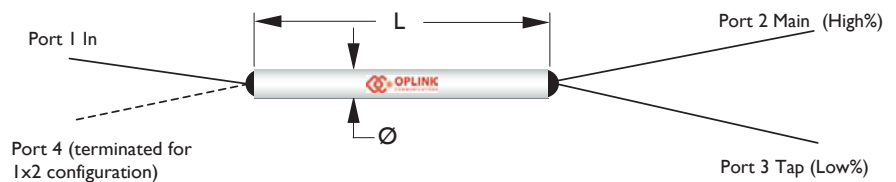
### Applications

- ◆ CATV
- ◆ Local Area Networks
- ◆ Testing Instruments
- ◆ Signal Monitoring in EDFA

### Ultra-Low PDL Fused Tap Coupler (1310, S, C, L band)

The Oplink LPTC (1x2 and 2x2) coupler series feature exceptionally low polarization dependent loss on both signal and tap ports as well as excellent uniformity and low excess loss. They are available with various tap ratios, wavelength ranges, fiber types, and connector options. 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 Specifications

Parameter		1310nm	S band	C band	L band	
Wavelength Range		1270~1350	1420~1500	1530~1565	1570~1605	nm
Fiber Type		Corning SMF-28				
Insertion Loss <sup>1</sup>		See Insertion Loss Table I, II				
Return Loss	min	55				dB
Directivity	min	55				dB
Temperature Dependent Loss <sup>2</sup>	max	Signal Path: 0.02~0.10, Tap Path: 0.10~0.20				dB
Optical Power Handling	max	4				W
Operating Temperature Range <sup>3</sup>		-40 to 75				°C
Storage Temperature Range		-40 to 85				°C
Package Dimension <sup>4</sup>		P1: 250µm SMF-28 bare fiber		(Ø) 3.0 x (L) 47		mm
		P2: 900µm loose tube		(Ø) 3.0 x (L) 60		
		P3: 3mm cable		(L) 96 x (W) 12 x (H) 6.4		
Qualifications		Telcordia GR-1221				

1. Values are referenced without connector loss.

2. Change in insertion loss from -5 to 75°C. Values are depended on coupling ratio, for 99/1 coupler Temperature Dependent Loss (TDL) ~0.02/0.20dB. As tap ratio increase, TDL decreases for tap path, while increases for signal path. All TDL is specified from -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.



## Insertion Loss Tables

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

Coupling Ratio	P Grade				A Grade			
	IL <sup>1</sup> (dB)		PDL <sup>2</sup> (dB)		IL <sup>1</sup> (dB)		PDL <sup>2</sup> (dB)	
	Signal	Tap	Signal	Tap	Signal	Tap	Signal	Tap
99/1	≤0.18	19.0-21.0	≤0.03	≤0.03	≤0.20	17.7-21.5	≤0.05	≤0.05
98/2	≤0.25	16.4-18.4	≤0.03	≤0.03	≤0.30	16.0-19.4	≤0.05	≤0.05
97/3	≤0.30	14.6-16.2	≤0.03	≤0.03	≤0.35	14.0-16.8	≤0.05	≤0.05
95/5	≤0.35	12.4-13.8	≤0.03	≤0.03	≤0.40	12.0-14.4	≤0.05	≤0.05
90/10	≤0.60	9.60-10.8	≤0.03	≤0.03	≤0.65	9.20-11.2	≤0.05	≤0.05
85/15	≤0.85	7.80-8.80	≤0.03	≤0.03	≤0.90	7.5-9.0	≤0.05	≤0.05
80/20	≤1.15	6.60-7.60	≤0.03	≤0.03	≤1.15	6.4-8.0	≤0.05	≤0.05
75/25	≤1.35	5.75-6.50	≤0.03	≤0.03	≤1.44	5.6-6.7	≤0.05	≤0.05
70/30	≤1.75	5.00-5.50	≤0.03	≤0.03	≤1.82	4.9-5.8	≤0.05	≤0.05
65/35	≤2.10	4.40-4.90	≤0.03	≤0.03	≤2.15	4.3-5.0	≤0.05	≤0.05
60/40	≤2.50	3.95-4.30	≤0.03	≤0.03	≤2.60	3.7-4.6	≤0.05	≤0.05
55/45	≤2.85	3.35-3.80	≤0.03	≤0.03	≤2.90	3.1-4.0	≤0.05	≤0.05
50/50	2.80-3.30		≤0.03		2.70-3.30		≤0.05	

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 band coupler

Coupling Ratio	P Grade				A Grade			
	IL <sup>1</sup> (dB)		PDL <sup>2</sup> (dB)		IL <sup>1</sup> (dB)		PDL <sup>2</sup> (dB)	
	Signal	Tap	Signal	Tap	Signal	Tap	Signal	Tap
99/1	≤0.18	18.2-21.0	≤0.03	≤0.03	≤0.23	17.4-21.5	≤0.05	≤0.05
98/2	≤0.25	16.0-18.6	≤0.03	≤0.03	≤0.30	15.2-19.8	≤0.05	≤0.05
97/3	≤0.30	14.4-16.4	≤0.03	≤0.03	≤0.34	13.7-17.1	≤0.05	≤0.05
95/5	≤0.35	12.2-14.0	≤0.03	≤0.03	≤0.40	11.8-14.7	≤0.05	≤0.05
90/10	≤0.60	9.40-11.0	≤0.03	≤0.03	≤0.65	9.00-11.3	≤0.05	≤0.05
85/15	≤0.90	7.70-8.85	≤0.03	≤0.03	≤0.85	7.4-9.1	≤0.05	≤0.05
80/20	≤1.15	6.30-7.80	≤0.03	≤0.03	≤1.15	6.0-8.1	≤0.05	≤0.05
75/25	≤1.50	5.45-6.70	≤0.03	≤0.03	≤1.44	5.5-6.8	≤0.05	≤0.05
70/30	≤1.75	4.60-5.75	≤0.03	≤0.03	≤1.82	4.7-5.9	≤0.05	≤0.05
65/35	≤2.05	4.10-5.05	≤0.03	≤0.03	≤2.02	4.2-5.0	≤0.05	≤0.05
60/40	≤2.50	3.85-4.40	≤0.03	≤0.03	≤2.60	3.7-4.6	≤0.05	≤0.05
55/45	≤2.85	3.15-3.80	≤0.03	≤0.03	≤2.81	3.1-4.0	≤0.05	≤0.05
50/50	2.70-3.40		≤0.03		2.60-3.50		≤0.05	

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.

### 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.

