1x2(2x2) Single Mode Three Window Fused Coupler

Features

- Low Excess Loss / Low PDL
- All Band Operating Wavelength
- Telcordia GR-1221 Compliant
- High Power Handling

Application

- Optical Communication System
- Testing Equipment
- CATV
- FTTH / PON

RoHS Reach

Specifications

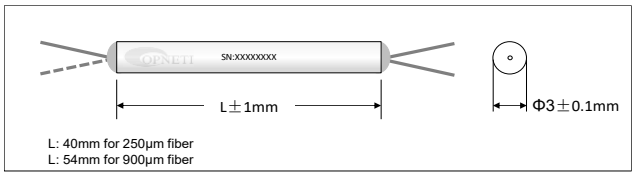
Parameters		Unit	Grade P	Grade A
Center Wavelength		nm	1310/1490/1550 or Others	
Operating Wavelength Bandwidth		nm	1310±40, 1490±10 and 1550±40	
Excess Loss		dB	⩽0.4	⩽0.5
Insertion loss [1]	50/50	dB	⩽3.6	⩽3.8
	40/60	dB	⩽4.7/2.7	⩽4.9/2.9
	30/70	dB	⩽6.0/1.9	⩽6.3/2.1
	20/80	dB	⩽7.9/1.3	⩽8.4/1.4
	10/90	dB	⩽11.2/0.75	⩽12.0/0.8
	5/95	dB	⩽14.6/0.4	⩽15.5/0.5
	2/98	dB	⩽18.8/0.3	⩽19.5/0.4
	1/99	dB	⩽22.5/0.25	⩽23.5/0.35
Uniformity (only for 50/50)		dB	⩽0.2	⩽0.3
PDL		dB	⩽0.15	⩽0.20
Max Optical Power Handling [2]		W	4, 5, 10, 20	
Return Loss [1]		dB	⩾50	
Directivity		dB	⩾50	
Operating Temperature		℃	-20 ~ +70	
Storage Temperature		℃	-40 ~ +85	

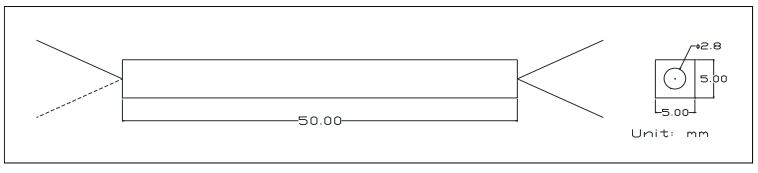
Package Information

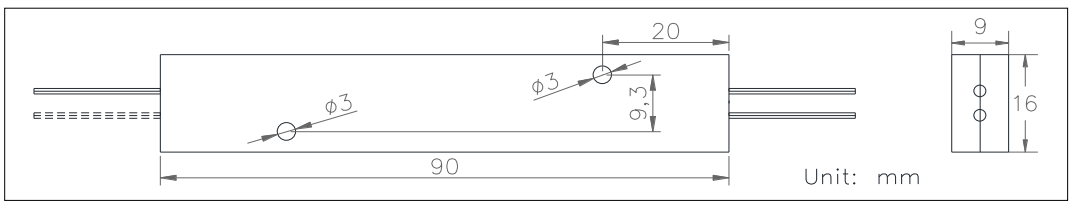
Configuration	1x2 or 2x2		
Fiber Length	1m, others on request		
Fiber Type	SMF-28e or Others		
Pigtail type	250μm Bare Fiber	900μm Loose Tube	2mm/3mm Loose Cable
Dimensions(mm) [2]	φ3.0x40, 5x5x50	φ3.0x54, 90x16x9	90x16x9

[1] With connectors, IL+0.3dB, RL-5dB.

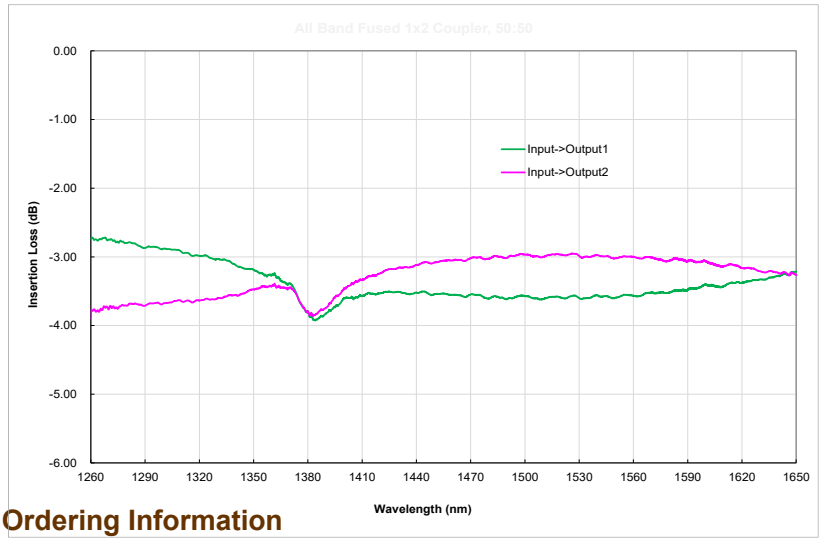
[2] Package 5x5x50mm is for power handling ⩾5W, and with bare fiber.

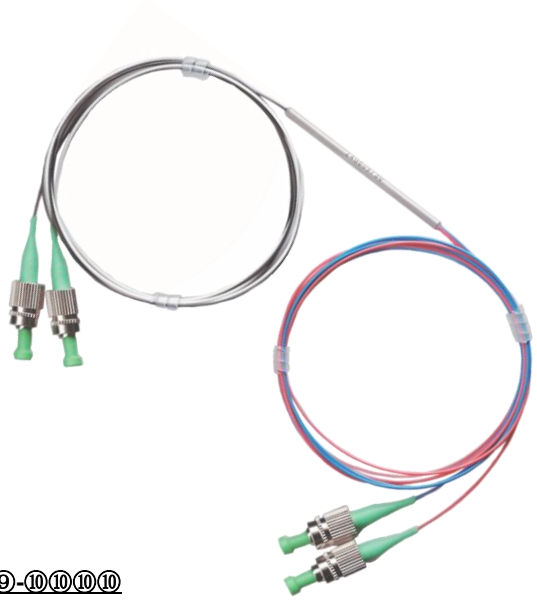






Typical Spectrum for 50:50 Coupler





Ordering Information

CP- ①①-②-③③③-④④④④④④④④④-⑤⑤⑤⑤-⑥⑥⑥-⑦-⑧-⑨⑨-⑩⑩⑩⑩

①	Type	T=Three Window Fused Coupler;
②	Grade	P=Grade P; A=Grade A;
③	Port Type	1x2; 2x2;
④	Wavelength	1310/1490/1550=1310&1490&1550nm;
⑤	Coupling Ratio	1/99; 2/98; 3/97; …; 50/50;
⑥	Pigtail Type	250=250μm Bare Fiber; 900=900μm Loose Tube; 2000=2mm Loose Cable; 3000=3mm Loose Cable;
⑦	Fiber Type	1=SMF-28e;
⑧	Length	1=1m; X=Other;
⑨	Connector	NE=None; FA=FC/APC; FC=FC/UPC; SA=SC/APC; SC=SC/UPC; LC=LC/UPC; XX=Others;
⑩	Package	3x40; 3x54; 5x5x50; 90x16x9;

Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled polished (APC).

Coupling / split ratio will be very strange comparing to OPNETI's test data if additional connector mating loss is added.

Fiber Bending Loss

A shorter fiber and straightening the fiber or with larger bend radius will be very helpful to get lower Excess Loss.

Fiber Cleanliness

Fibers with smaller core diameters (<5μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed above table specified, if higher power handling is needed, please contact OPNETI technicians.

Standard connector power handling max 1W(CW), Optical connectors can be removed and the device can be spliced into optical path at higher optical powers.

Optical Path

All of our fused fiber couplers are bidirectional, means that all ports can be used as an input.

Coupler split ratio configuration refer to:

Coupler Split Ratio Configuration