High Temperature Fused PM Fiber Coupler 1310, 1550nm

Features

- Low Excess Loss
- High Power Handling
- Both Slow and Fast Axes Working

Applications

- Optical Amplifier
- Power Monitoring
- Coherent Communication

Specifications

Parameters	Unit	Values							
Center Wavelength	nm	1310, 1550							
Operating Wavelength Bandwidth	nm	±15							
Max Excess Loss (EL) [1]	dB	0.4							
Max Loss for Each Connector	dB	0.3							
Coupling/Split Ratio	%	1/99	2/98	5/95	10/90	20/80	30/70	40/60	50/50
Insertion Loss at λ_C (IL) [2]	dB	21.5/0.4	19/0.5	14.6/0.6	11.0/0.85	8.0/1.35	6.0/1.95	4.8/2.6	3.4
Polarization Extinction Ratio (ER)[3]	dB	≥18							
Fiber Type	-	PM1017-NT (YOFC)							
Return Loss (RL)	dB	≥50							
Directivity (DIR) [4]	dB	≥50							
Max Power Handling CW [5]	mW	4000							
Operating Temperature	℃	-60 ~ +300							
Storage Temperature	℃	-60 ~ +300							

[1] EL=10 * $\log_{10}$ (P_{in}÷(P_{out1}+P_{out2})), P=power in mW,

[2] Test at room temperature without connectors. With connectors, IL+0.3dB, RL-5dB. For short wavelength, IL+1.5dB.

[3] With connectors, ER-2dB,RL-5dB.

[4] DIR=10 * $\log_{10}$ (P_{out2}÷P_{out1}), or DIR=10 * log10 (P_{in2}÷P_{in1}), P=power in mW, test light input from Port1,
When test DIR at output port, coil all input fibers 3-5 turns around a 10-30mm diameter loop, This prevents back reflections into output port2, which would significantly lower DIR.

[5] Higher power up to 20W available on request.

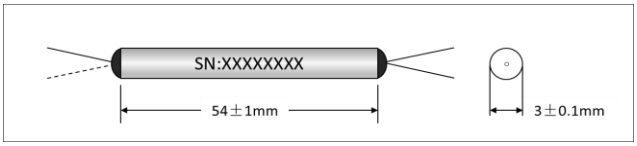
Coupling/Split Ratio Tolerance [1]

1/99%	±0.3%
2/98%	±0.5%
5/95%	±0.7%
10/90%	±1.0%
20/80%	±2.0%
30/70%	±2.0%
40/60%	±2.5%
50/50%	±3.0%

[1] Test/calculate without connector loss.

Package Information

Port Configuration	1x2 or 2x2
Fiber Length	1m, others on request
Pigtail Type	250μm Bare Fiber
Dimensions(mm)	φ3x54
Approx Weight (g)	30



Ordering Information

CP- ①①-②-③③③-④④④④-⑤⑤⑤⑤-⑥⑥⑥-⑦⑦⑦⑦-⑧-⑨⑨-⑩⑩⑩⑩

①	Type	PS=PM Fiber Standard Coupler;
②	Grade	P=Grade P;
③	Port Type	1x2; 2x2;
④	Wavelength	1310; 1550;
⑤	Coupling Ratio	1/99; 2/98; 5/95; … ; 50/50;
⑥	Pigtail Type	250=250μm Fiber;
⑦	Fiber Type	PY10=PM1017-NT (YOFC);
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	3x54;

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 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, especially for visible wavelength testing.

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) with connectors, 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:

https://opneti.com/uploads/couplerconfig.mp4