HIGH PERFORMANCE PM COUPLERS

(index.html)

Fixed Couplers

- 954P Fixed Ratio PM Coupler (products/?id=16)
- 954 Fixed Ratio SM Coupler (products/?id=18)
- 954P-P WDM PM Coupler (products/?id=15)
- 968P Polarization Splitter/Coupler (products/?id=19)

Coupler Arrays

- Spliceless PM Coupler arrays (products/?id=20)

Product Data 954P-P WDM

WDM, AMPLIFIER PUMP COUPLERS

For optical pumping applications in PM or non-PM fibers

Low signal loss

High polarization isolation (PM versions)

1550/980 nm Erbium

Standard pump/signal combiners or pump/separators

1550/980 nm Erbium

Standard pump/signal combiners or pump/separators

Variable Ratio Couplers

- Model 905/905P/905(P)-M (products/?id=21)

Piezo Fiber Stretchers

- 915B (products/?id=22)
- 916B (products/?id=24)
- Model 914 Controller (products/?id=23)

Non-contact Displacement Sensor

- PD-1001 (products/?id=25)

Evanescent Access Blocks

- 953(P)/903(P) (products/?id=27)

Patch Cords

- Fiber-optic patch cords (products/?id=28)

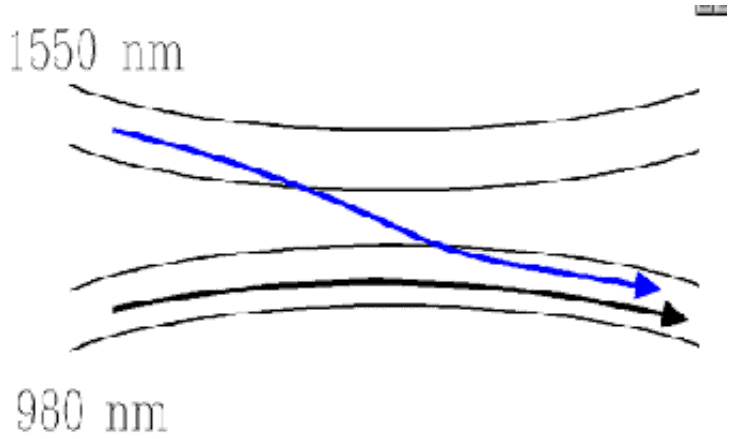
Pump and signal wavelengths are combined in an output fiber of a 2 by 2 port coupler, using fiber with a cut off below 980 such that both signal and pump are guided in the fundamental mode. The device is set for maximum coupling at 1550 nm from primary to secondary fiber. There is little coupling at the shorter wavelength, which has a smaller mode field diameter, therefore the pump light remains in the secondary fiber. All ports are equivalent and can be used as inputs or outputs.

Manufacturing with a longer output pigtail that can be coiled at a specific radius acts as an in line polarizer and increases the polarization isolation by up to 10dB with little loss penalty.

Launching 1.55 nm into a small core fiber with a cut off below 980 nm is more demanding than with a larger core fiber. The quality of a splice from small core to larger core signal fiber must also be considered when using this coupler.

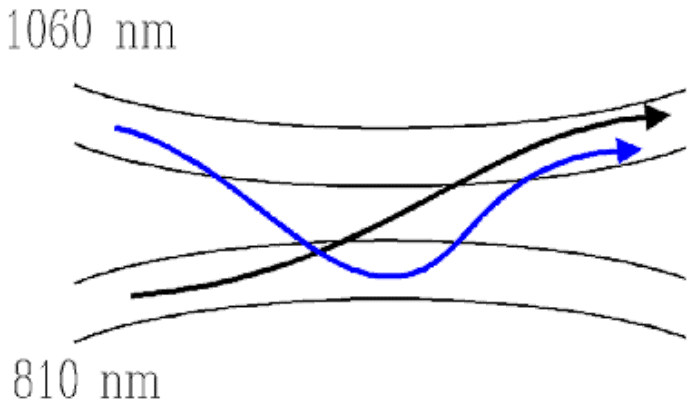
Alternative pump/signal combiners

Couplers made with larger core fibers with a higher cut off wavelength are more efficient for launching 1550 nm, but they also guide higher order 980 nm modes that have pumping action. Higher order modes have increased coupling at 980 nm, reducing pump efficiency. Care in mode launching and fiber layout is needed to optimize use of the larger core fiber but potential problems with splicing and launching are removed.



1060 / 810 nm Neodymium Version

The device is set so that 1060 nm wavelength is 200% coupled, so that it returns to the primary fiber (effectively 0% coupling). Coupling at 810 nm is approximately 100%, resulting in very high efficiency multiplexing/demultiplexing. Depending on the fiber singlemode cutoff and actual wavelengths, both wavelengths can be combined in a single fiber with 99% efficiency, or separated with better than -20 dB isolation.



General WDM Specifications

Coupling:

1060/810 version: < 3% at 1064 nm

> 90% at 810 nm

1550/980 version: > 97% at 1550 nm

< 10% at 980 nm, fundamental

Coupler Bandwidth (/technical-info/?id=2)

Polarization Isolation (904P-P)

Standard and High Isolation types:

Available range from -28 dB to -20 dB

Operating Temperature:

0 to +50 degrees C

Excess Loss:

<0.1 dB typical, 0.2 dB maximum

Packaging & Sleeving:

No sleeving over fiber (coupler unpackaged) dim. 0.59" x 0.1" x 0.1"

Pigtails sleeved in 900 micron HYTREL (coupler in aluminum tubing) dim. Length 1.125" x Dia. 0.19"

Pigtails sleeved with 3mm cable (coupler housed in 2.5" x 2.5" aluminum package)

Pigtails:

1 m standard length (longer available - up to 20m in 3mm sleeved configurations)

Terminations:

FC/SPC, FC/APC, LC/APC, SC/APC, SC/PC

Evanescent Optics Inc.

Home (home/) About Us (about-us/) Products (products/) Applications (applications/) Technical Info (technical-info) FAQ's (faq) Request Info (request-info) Contact Us (contact-us)