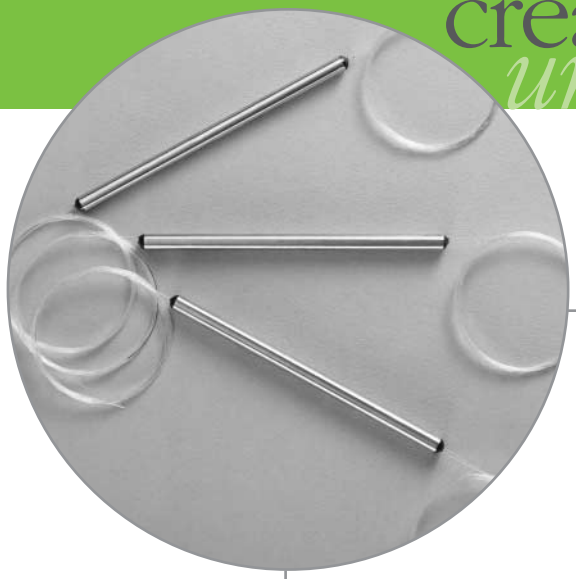
creating *unique advantages* together®



WavePump™ 1480 & 980nm Pump Laser Combiner

Features

- High optical power handling
- Very low insertion loss
- Multi-channel pumping
- Telcordia™ reliability
- Flexible wavelength and channel spacing

Benefits

- Increased amplifier power
- Enhanced amplifier reliability
- Higher amplifier efficiency
- Raman or EDFA design
- Economical

Product Capabilities and Value

Higher power amplifiers are needed in order to handle the ever-increasing channel counts and bit rates of DWDM telecommunication systems. This requires combining multiple pump lasers in the amplifier in the most efficient and economical way possible.

The WavePump is a reliable, low-loss, all-fiber pump laser combiner for use in EDFA and Raman amplifier designs. The Fused Cascaded Fiber (FCF) approach offers an intrinsically low loss design while allowing many pump lasers to be combined to achieve high amplification. High pump power levels are easily handled with the all-fiber design, and the available wavelengths cover 980nm, 1480nm, or Raman pump lasers. The WavePump can accommodate your design needs with its range of center wavelength and channel spacing options.

WaveSplitter understands that excellent performance is just one of the many selection criteria for choosing a pump laser combiner, and the WavePump has been designed to high reliability standards.

Finally, WavePump offers a low-cost alternative to other methods of combining pump lasers. When you combine the technical benefits of low-loss, multiple channels, and high power handling capability with the Telcordia™ reliability and value, the WavePump makes an excellent choice to meet your amplifier design goals.

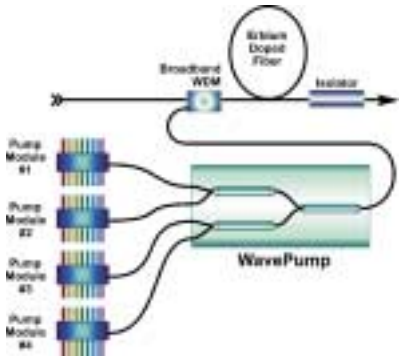
WAVESPLITTER™
Lighting the Internet on Fiber™

Performance Specifications for 1480 and 980nm WavePump Pump Laser Combiner[1-3]

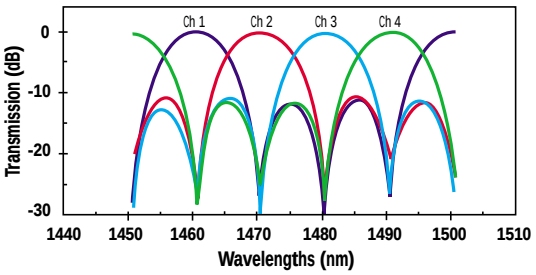
Parameters	1480	980
Available Channel Wavelength Range[4] (nm)	1420 to 1495	970 to 990
Available Number of Channels[5]	2, 3 and 4	
Available Channel Spacing Range[6] (nm)		
2 channels (nm)	7 to 60	5 to 10
3 & 4 channels (nm)	7 to 25	5 to 10
0.5 dB Bandwidth	35% of channel spacing	
Insertion Loss		
2 Channel (dB)	≤ 0.3	≤ 0.4
3 & 4 Channel (dB)	≤ 0.6	≤ 0.8
PDL (dB)	≤ 0.1	
Isolation (dB)	≥15	≥ 14
Directivity (dB)	≤ -60	
Return Loss (dB)	≥55	
Typical Thermal Wavelength Drift (pm/°C)	5 to 7	3 to 5
Operating Temperature (°C)	-20 to 70	
Storage Temperature (°C)	-40 to 85	
Fiber Type	SMF 28	Flexcor™ 1060
Optical Power (W)	≥ 5	

Insertion loss, isolation, and PDL are typical values measured at the target wavelengths and room temperature. US patent no. 5,809,190

1 - Options include packaging couplers as an assembly or an unspliced kit.
2 - Both internal and external termination of unused ports are available upon request.
3 - Standard pigtail length = 100 (±10) cm.
4 - Measured wavelengths are referenced to vacuum unless otherwise requested.
5 - Higher channel counts up to to 8 channels are available upon request.
6 - Custom channel spacing available.
Note: All data taken prior to connectorization.



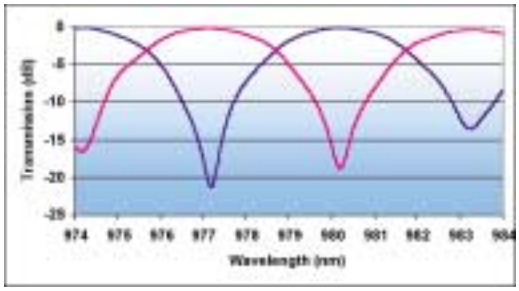
The WavePump™ is used to combine multiple pump lasers at different wavelengths in an EDFA.



Spectral performance of a 4x1 1480nm WavePump.™ The WavePump has very low insertion loss at the pump laser wavelengths.

WavePump Ordering Information: Standard WavePump devices are specified with appropriate model number options. If you require devices with different specifications, please contact your sales representative for product availability.

	Channel Count	Channel Spacing	Channel Wavelength	Package Dimension
WP	__-	___ ___ ___-	___ ___ ___ ___ ___ ___-	___
	Ex. 2 = 2 Ch 3 = 3 Ch 4 = 4 Ch	Select a channel spacing Ex. 5nm=050 15.5nm=155	Select a starting wavelength Ex. 1450.00nm=145000 973.00nm=097300	1 = D 1.2 2 = D 2.0



Spectral performance of a 2x1 980nm WavePump.™ The WavePump has low insertion loss at the pump laser wavelengths.

For more information on any WaveSplitter product contact your sales representative listed on our web site www.wavesplitter.com. Or contact WaveSplitter Technologies, Inc. directly at 510.580.8888.

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