

## OPTICAL AMPLIFICATION **POLARIZATION PUMP COMBINERS** EDFA AND RAMAN APPLICATIONS

ITF Polarization Pump Combiners, based on ITF All-Fiber® technology, are designed to meet the requirements of the new generation of EDFA and Raman amplifiers.

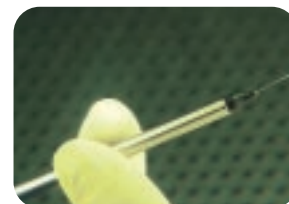
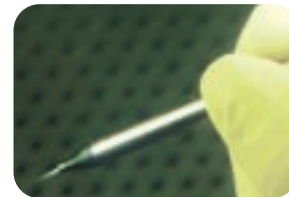
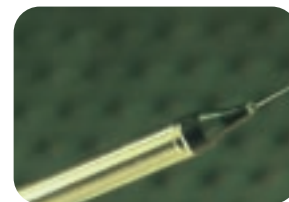
They are used to combine two polarized pump laser sources into a single fiber.

Because of their very low insertion loss, typically less than 0.2 dB, and high extinction ratio, greater than 15 dB, they can be used either in EDFA or in Raman amplifiers.

ITF Polarization Pump Combiners can be custom-designed to accommodate any pump laser center wavelength, from 970 nm to 990 nm and 1410 nm to 1510 nm.

They are characterized by very low insertion loss and are able to sustain considerable continuous optical power without degradation, adapting to conditions demanding a level of reliability that is more critical than ever.

ITF's All-Fiber® technology allows for fast turn-around design and prototyping cycles thus enabling amplifier manufacturers to accelerate their product development.



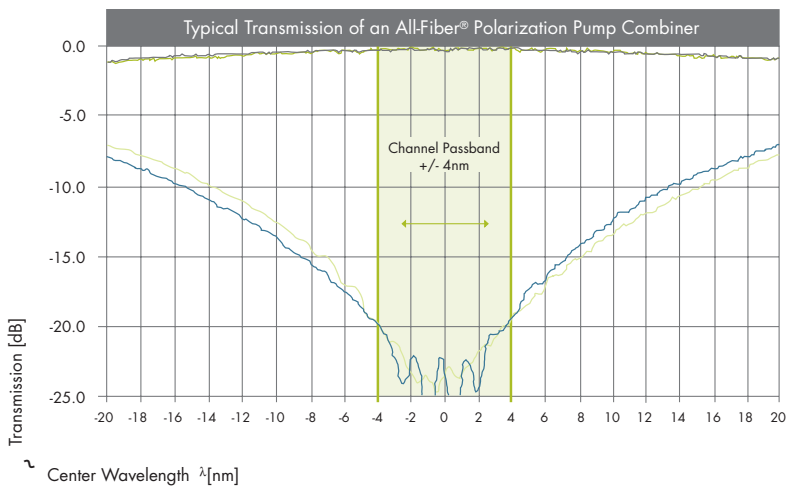
VERY LOW INSERTION LOSS ~  
VERY LOW TEMPERATURE DEPENDENT LOSS ~  
HIGH OPTICAL POWER HANDLING ~

## TECHNICAL DATA

### ALL-FIBER® POLARIZATION PUMP COMBINER SPECIFICATIONS

Parameter	Typical Value	
Operating Wavelength Range	970 to 990 nm	1410 to 1510 nm
Channel Passband	$\pm 2.5$ nm	$\pm 4$ nm
Insertion Loss <sup>1</sup>	< 0.15 dB	
Insertion Loss <sup>2</sup>	< 0.25 dB	
Extinction Ratio <sup>2</sup>	> 15 dB	
Optical Return Loss	> 60 dB	
Directivity	> 65 dB	
Operating Temperature	-5 to 70°C	
Storage Temperature	-40 to 85°C	
Overall Length	70 mm	
Diameter	4.6 mm	

[1] At target wavelength ~ [2] Within the channel passband



To find out how ITF Optical Technologies can help meet your need of increased optical amplification power and efficiency in high capacity transmission systems, contact us now for additional information on our Polarization Pump Combiners.

ITF OPTICAL TECHNOLOGIES

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All-Fiber®