1.5um High Power Single Frequency Polarization Maintaining Fiber Amplifier

Product Description:

The MARS series high power single frequency polarization maintaining optical fiber amplifiers of Connet are designed specifically for the ultra-narrow linewidth single frequency laser source, such as single frequency External Cavity Lasers and fiber lasers based on the principle of DFB or DBR. This kind of amplifiers has the capability of boosting the low power optical signal at kHz magnitude up to 50W output power and meanwhile preserves the spectral property of the input signal. The MARS series amplifiers use high power high performance multi-mode pump internally, employ the technology of double cladding fiber amplification, and have the integrated design of all polarization-maintaining structure. The output power can be continuously tunable. MARS series fiber amplifiers are integral Turn-Key system with the microprocessor inside for controlling. The front panel is equipped with the switch to start the laser, the LCD to display the state of the power and the knob to adjust the output power.

Due to the extensive experience of handling the double cladding fiber, Connet conducts proper optimal design to the high power polarization maintaining fiber amplifiers, thus achieving high efficiency output while suppressing the nonlinear effects of the fiber. The unique thermal treatment technology guarantees that the benchtop fiber amplifier can operate stably for a long time. The high-speed response protection circuit monitor the power of input and signal automatically so that it can cut down the operation of the high power pump in case of the falling off of the input signal to ensure the safety of the whole system.

Connet MARS series high power benchtop polarization-maintaining fiber amplifiers can be widely used in scientific research, coherent beam combining, coherent detection sensing system, etc.

Applications:

· Coherent detection
· Coherent combining
· Quantum optics
· Optical heterodyning & coherent communication
· Laser-based metrology

Features:

· High output power: up to 50W
· Low noise figure
· Turn-Key system
· Total PM fiber structure, high PER
· High stability, high reliability

Specifications:

Parameter	Unit	Specification				
Part no.		MFAP-EY-1-SF	MFAP-EY-5-SF	MFAP-EY-10-SF	MFAP-EY-20-SF	MFAP-EY-50-SF
Center wavelength[1]	nm	1540-1565				
Output power[2]	W	1	5	10	20	50
Input power	mW	>1				
Linewidth of seed	KHz	0.1~50				
Operation mode		Continuous Wave				
Polarization		Linear				
Relative Intensity Noise (RIN)	dBc/Hz	<-100@<10MHz				
Input isolation	dB	>30				
Output isolation	dB	>30				
Optical Signal Noise Ratio (OSNR)	dB	>50			>40	
Output power tunable range	%	10~100				
Polarization Extinction Ratio (PER)	dB	>20			>17	
Output power stability[3] (8hrs)	%	±1			±2	
Beam quality	M^2	TME00, M2<1.1			1.2	
Input fiber type		PM1550-XP				
Output fiber type		PM1550-XP			PLMA fiber	
Output fiber length	m	>1				
Optical connector		FC/APC or Collimator			Collimator	
Power supply	V_{AC}	100-240				
Operation temperature	℃	0~+35				
Storage temperature	℃	-40~+85				
Cooling mode		Air-Cooled				
Dimension		19” 2U			19” 3U	

Specifications:

· 1. Typical operating wavelength: 1540nm, 1550nm

· 2. Typical output power: 1W, 5W, 10W, 20W

· 3. The output power stability is measured under 25℃after 30 minutes' warm-up.

Ordering information:

· MFAP-EY-15xx-B-PW-SF: PM

· 15xx: Operating wavelength in nm.

· B: Benchtop

· PW: Output power in W, e.g.: 0.5-0.5W, 1-1W, 10-10W

· SF: Single Frequency