

# **YAR-LP-SF Series**

## **1 to 50 W Single-Mode, Linearly Polarized, Single Frequency Ytterbium Fiber Amplifiers**

### **Description**

The **YAR-LP-SF Series** is a line of universal broadband, high power single-mode fiber amplifiers covering the spectral range from 1060 to 1090nm. The series includes 1 W to 50 W versions. These user friendly and highly efficient bench-top or 19" rack mountable devices are designed for maintenance free applications over a temperature range of 0°C to +50°C. **YAR-LP-SF Series** is optimized for linearly polarized, single frequency input signals and can be used for variety of applications including coherent beam combining, detection systems, He<sup>3</sup> pumping, sensing and other applications. **YAR-LP-SF Series** amplifiers do not need water cooling or replacement parts. They required only a 110/220V AC power source to provide amplification for your low power signal.



## **Main Features**

Up to 50 W saturated output power

>15% overall wall-plug efficiency

No water cooling

Single mode fiber delivery

Operation in adverse ambient conditions

Extremely reliable

Automatic power and current controls

### **Common Parameters**

The standard **YAR-LP-SF Series** amplifier provides amplification of linearly polarized single frequency input signals in the 1060-1090nm region. Typical bandwidth of the amplifier is 10-20nm (depending on output power) which allows tunability of input signal for exact wavelength matching.

Amplifier input and output are provided by a 1-2 meter optical fiber cable with connector or bare fiber at the input and a bare fiber or beam collimator (standard beam diameter is 5mm) at the output. Typical amplifier has 25 dB input optical isolation and <-30 dB residual pump power at the input and output ports. Typical extinction ratio is ~17-20 dB. The **YAR-LP-SF Series** amplifier provides control over all amplifier parameters as a saturated output power and pump diodes current as well as readings of temperature and output power over GPIB, RS-232 or user friendly manual interfaces.

All **YAR-LP-SF Series** amplifiers utilize broad stripe (1x100μm) pump diodes with a nominal wavelength of ~965nm. An estimated lifetime of this diodes is >100,000 hrs at 25°C.

## Typical Performance

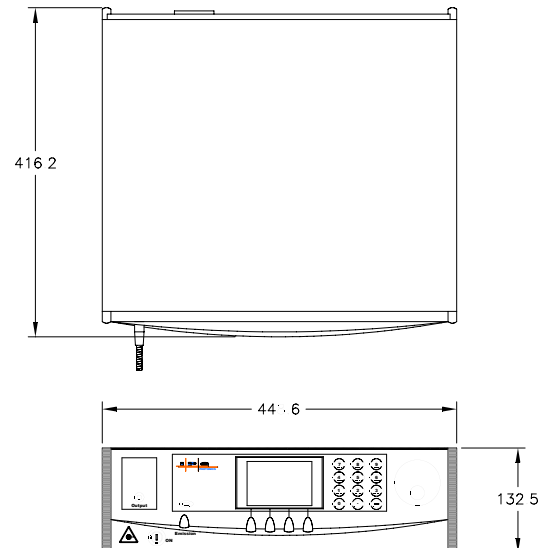
Parameters	Unit	YAR-5K-LP-SF	YAR-10K-LP-SF	YAR-25K-LP-SF	YAR-50K-LP-SF
Mode of operation <sup>1</sup>		CW	CW	CW	CW
Polarization of output signal		linear	linear	linear	linear
Operating wavelength range <sup>2</sup>	nm	1050-1120	1055-1090	1060-1085	1060-1070
Operating bandwidth (FWHM)	nm	20	15	10	10
Central operating wavelength <sup>3</sup>	nm	1 0 6 4 ;	1 0 8 3		1 0 6 4
Input power range <sup>4</sup>	mW	1-30	1-30	1-30	1-30
Minimum input signal linewidth <sup>5</sup>	MHz	0.01	0.01	100 <sup>4</sup>	300 <sup>4</sup>
Saturated output power (P <sub>IN</sub> =3 mW)	W	5	10	25	50
Output power tunability	%	10-100	5-100	5-100	5-100
Output power stability (over 8 hrs) (ACC) <sup>6</sup>	%	2	2	2	3
Relative residual pump at input/output ports	dB	-30	-30	-30	-30
Maximum power consumption (at 20°C)	W	75	100	250	500
Dimensions <sup>7</sup>		3RU 19"	3RU 19"	4RU 19"	4RU 19"

- 1 - Pulsed operation is available on request.
- 2 - Extended wavelength range is available on request.
- 3 - Other central wavelengths are available on request.
- 4 - Higher and lower powers are also available.
- 5 - <10kHz input linewidth version is available on request for up to 30W output.  
100MHz input linewidth version is available up to 50W output.
- 6 - More stable versions (<1%) are available on request.
- 7 - OEM module packages are available on request.

## Options:

- ✓ Output Isolator
- ✓ Output Beam Diameter Size
- ✓ Improved Extinction Ratio
- ✓ Integrated <100kHz Seed Source
- ✓ Input/Output Optical Monitors
- ✓ <1% Output Power Stability
- ✓ Customized OEM Package

## 3RU 19" rack drawings



Performance can be matched to the customer's requirements. Contact IPG Photonics to discuss specific OEM configuration.

CAUTION: USE OF CONTROLS, ADJUSTMENTS AND PROCEDURES OTHER THAN THOSE SPECIFIED MAY RESULT IN HAZARDOUS LASER RADIATION EXPOSURE. WEAR PROPER SAFETY EYEWEAR DURING OPERATION.

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