



# 1.5 $\mu\text{m}$ Single Frequency PM Fiber Amplifiers (Gen. II)

The Nufern NuAMP PSFA series of high power, polarization maintaining fiber amplifiers are specifically designed to operate in conjunction with ultra narrow linewidth, single frequency seed lasers based on distributed feedback (DFB) fiber lasers or solid state technologies. Capable of amplifying low power input signals with kHz linewidth to 2, 5 and 10 W of power, these monolithic amplifiers use large mode area fiber technology to overcome non-linearities such as stimulated Brillouin scattering (SBS) and maintain critical seed laser characteristics such as narrow linewidth and relative intensity noise (RIN). The NuAMP PSFA series includes input isolation (>30 dB at RT) and input/output interlocks to prevent system failure due to loss of signal and high back reflection, and to protect the seed source (response time of <10  $\mu\text{sec}$ ).

## Typical Applications

- LIDAR & sensing
- Spectroscopy
- Test and Measurement
- Frequency conversion
- Atom cooling & trapping

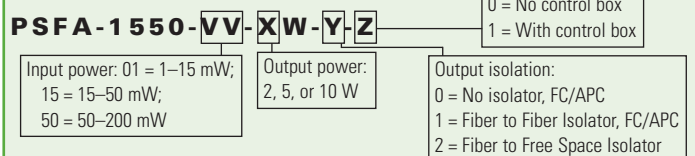
## Features and Benefits

- Single mode, TEM<sub>00</sub> beam with linearly polarized output — Useful for high-precision applications
- Optimized for single frequency seed lasers — Maintain linewidth, frequency stability and RIN of the seed
- Complete optical train including pump diodes with integrated diode drivers — Highly flexible for OEM integration
- Signal input, output power & back-reflection monitoring — Automatic system protection
- Optional control box — Provides PC control via USB, E-stop, key switch, and remote interlock

Optical Specifications <sup>1</sup>	PSFA-1550-VV-2W-Y-Z	PSFA-1550-VV-5W-Y-Z	PSFA-1550-VV-10W-Y-Z
Output Power	2 W	5 W	10 W
Input Isolation (nominal)	30 dB	30 dB	30 dB
Mode of Operation	CW	CW	CW
Output Power Tunability	10–100%	10–100%	10–100%
Polarization	Linear	Linear	Linear
PER at Rated Power with Isolator (nominal)	13 dB	13 dB	13 dB
Input Signal Linewidth (nominal)	10 kHz	10 kHz	10 kHz
Peak-to-Peak Power Stability (nominal) <sup>2</sup>	3%	3%	3%
Beam Quality	Single Mode, TEM <sub>00</sub>	Single Mode, TEM <sub>00</sub>	Single Mode, TEM <sub>00</sub>
<b>Mechanical Specifications</b>			
Input Fiber and Connector	FC/APC bulkhead	FC/APC bulkhead	FC/APC bulkhead
Package Size <sup>3</sup>	275 mm x 250 mm x 36.5 mm	275 mm x 250 mm x 36.5 mm	275 mm x 250 mm x 36.5 mm
Output Cable	Armored Flex Cable	Armored Flex Cable	Armored Flex Cable
<b>Electrical Requirements</b>			
Drive Voltage/Current	24 VDC/3 A	24 VDC/6 A	24 VDC/8 A
<b>Options</b>			
Central Wavelength	1540–1560 nm	1540–1560 nm	1540–1560 nm
Input Power	1–10, 15–50, or 50–200 mW	1–10, 15–50, or 50–200 mW	1–10, 15–50, or 50–200 mW
Output Isolation (-Z)	No Isolator, Fiber to Fiber Isolator, or Fiber to Free Space Isolator	No Isolator, Fiber to Fiber Isolator, or Fiber to Free Space Isolator	No Isolator, Fiber to Fiber Isolator, or Fiber to Free Space Isolator

<sup>1</sup>All specifications are at RT and proper heatsinking is required. <sup>2</sup>Stability is measured over 2-hour period and calculated using (max-min)/Avg. Lower noise options are available. <sup>3</sup>Custom OEM packaging available on request.

## Naming Conventions:



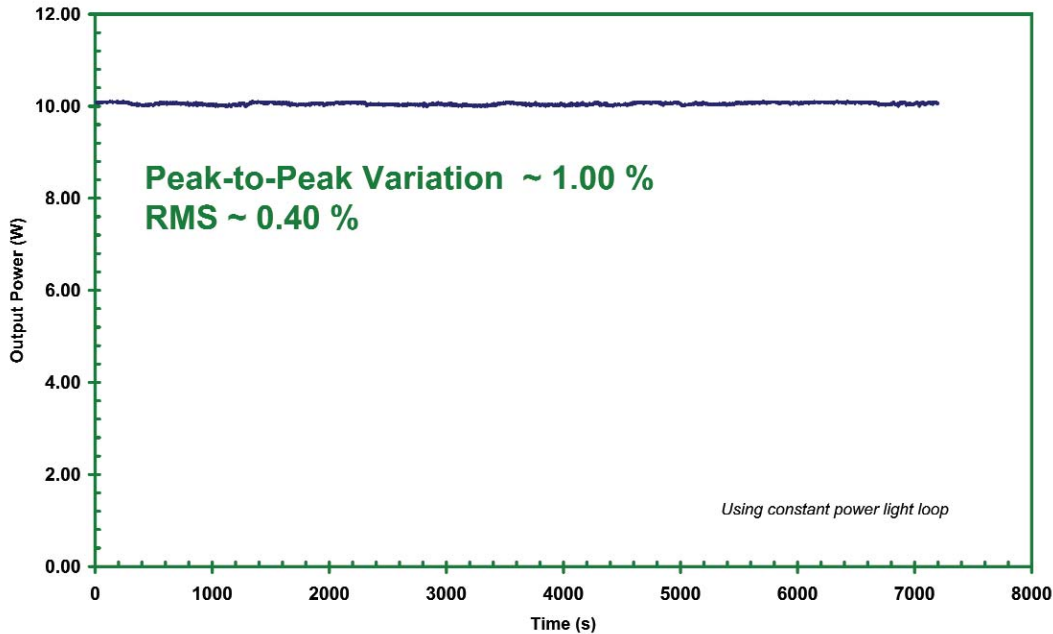
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Nufern products are manufactured under an ISO 9001:2000 certified quality management system.

Standard specifications and design parameters are listed above. Specifications are subject to change without notice.

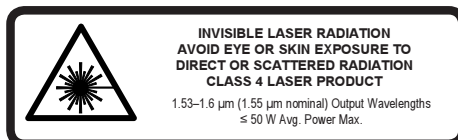


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Typical Output Stability of 10 W Single Frequency Linearly Polarized Amplifier Operating at < 2 kHz Linewidth



Standard Amplifier Package



**POWERED BY**  
**NUFERN**

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