

1ミクロン帯単一周波数 Ybファイバーレーザー増幅器

1064 - 1110 nm Single Frequency, PM, Fiber Amplifiers (Gen. II)



The Nufern NuAMP PSFA family of high power, polarization maintaining fiber amplifiers offer the broadest operating wavelength range in the industry. They 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, 10 and 15 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 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 msec).

Typical Applications

- LIDAR & sensing
- Spectroscopy
- Test and Measurement
- Frequency conversion
- Coherent or spectral beam combining
- Atom cooling & trapping

Features and Benefits

- Single mode, TEM₀₀ 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 Specification¹

	PSFA-1UUU-VV-2W-Y-Z	PSFA-1UUU-VV-5W-Y-Z	PSFA-1UUU-VV-10W-Y-Z	PSFA-1UUU-VV-15W-Y-Z
Output Power	2 W	5 W	10 W	15 W
Output Power Adjustment (nominal)	10–100%	10–100%	10–100%	10–100%
Power Stability ²	< 3%	< 3%	< 3%	< 3%
Mode	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀
Output Type	No isolator, FC/APC Fiber to fiber isolator, FC/APC Fiber to free space isolator	No isolator, FC/APC Fiber to fiber isolator, FC/APC Fiber to free space isolator	No isolator, FC/APC Fiber to fiber isolator, FC/APC Fiber to free space isolator	No isolator, FC/APC Fiber to free space isolator
Mode of Operation	CW	CW	CW	CW
Polarization	Linear	Linear	Linear	Linear
PER at Rated Power	> 15 dB with isolator	> 15 dB with isolator	> 15 dB with isolator	> 15 dB with isolator
Operating Wavelength	1064 – 1083 nm 1084 – 1100 nm 1100 – 1110 nm	1064 – 1083 nm 1084 – 1100 nm 1100 – 1110 nm	1064 – 1083 nm 1084 – 1100 nm NA	1064 – 1083 nm NA NA
Signal Input Power	1–15 mW 15 – 50 mW 50 – 200 mW	1–15 mW 15 – 50 mW 50 – 200 mW	1–15 mW 15 – 50 mW 50 – 200 mW	1–15 mW 15 – 50 mW 50 – 200 mW
Signal Input Isolation	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Input Signal Linewidth	< 10 kHz	< 10 kHz	< 10 kHz	< 10 kHz

¹ All specifications are at RT and proper heatsinking is required.

² Stability is measured over 2-hour period & calculated using (max-min)/Avg.

³ Custom OEM packaging available on request.



Naming Conventions:

PSFA-1UUU-VV-WW-Y-Z

Operating Wavelength Range 064 = 1064-1083 nm 084 = 1084-1100 nm 100 = 1100-1110 nm	Input Power 01 = 1-15 mW 15 = 15-50 mW 50 = 50-200 mW	Output Power 2 = 2W 5 = 5W 10 = 10W 15 = 15W	Other Options 1 = With NuControl Box 2 = With Cold Plate 3 = With NuControl Box & Cold Plate 0 = No Options
			Output Isolation 0 = No isolator, FC/APC connector 1 = Fiber to fiber isolator, FC/APC connector 2 = Fiber to free space isolator

* Fiber to fiber isolator, FC/APC not available in 15W



光技術をサポートする

株式会社オプトサイエンス

<http://www.optoscience.com>

東京本社 〒160-0014 東京都新宿区内藤町1番地 内藤町ビルディング
TEL: 03 (3356) 1064 FAX: 03 (3356) 3466 E-mail: info@optoscience.com
大阪支店 〒532-0011 大阪市淀川区西中島7-7-2 新大阪ビル西館
TEL: 06 (6305) 2064 FAX: 06 (6305) 1030 E-mail: osk@optoscience.com
名古屋営業所 〒450-0002 名古屋市中村区名駅2-37-21 東海ソフトビル
TEL: 052 (569) 6064 FAX: 052 (569) 8064 E-mail: ngo@optoscience.com



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Mechanical Specifications				
Delivery Fiber Length	1 m	1 m	1 m	1 m
Output Cable Type	Armored cable	Armored cable	Armored cable	Armored cable
Input Type	FC/APC bulkhead	FC/APC bulkhead	FC/APC bulkhead	FC/APC bulkhead
Dimensions ³	275 x 250 x 37 mm	275 x 250 x 37 mm	275 x 250 x 37 mm	275 x 250 x 37 mm
Weight	3.9 kg	3.9 kg	3.9 kg	3.9 kg
Electrical Specifications				
DC Supply Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Current Consumption	2 A	3 A	4 A	5 A
Digital Interfaces	NuCONTROL	NuCONTROL	NuCONTROL	NuCONTROL
Environmental Specifications				
Cooling	Water cooled	Water cooled	Water cooled	Water Cooled
Cold Plate Dimensions	305 x 178 x 14 mm	305 x 178 x 14 mm	305 x 178 x 14 mm	305 x 178 x 14 mm



Standard **nuAMP** Package

Optional **nuCONTROL** Box

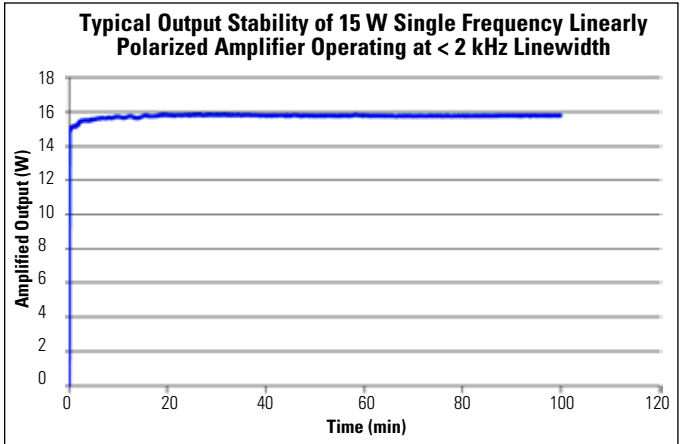



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Rev A





**INVISIBLE LASER RADIATION
 AVOID EYE OR SKIN EXPOSURE TO
 DIRECT OR SCATTERED RADIATION
 CLASS 4 LASER PRODUCT**

0.85–1.2 μm (1.064 μm nominal) Output Wavelengths
 ≤ 50 W Avg. Power Max.

