



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

The NuAMP family of high power, polarization maintaining fiber amplifiers offers 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

	NUA-UUUU-PV-0002-YZ	NUA-UUUU-PV-0005-YZ	NUA-UUUU-PV-0010-YZ	NUA-UUUU-PV-0015-YZ
Output Power	2.0 W	5.0 W	10.0 W	15.0 W*
Output Power Adjustment (nominal)	10–100%	10–100%	10–100%	10–100%
Power Stability ²	$\leq 3.0\%$	$\leq 3.0\%$	$\leq 3.0\%$	$\leq 3.0\%$
Mode	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀
Output Type	No isolator, FC/APC connector	No isolator, FC/APC connector	No isolator, FC/APC connector	No isolator, FC/APC connector
Fiber to fiber Isolator, FC/APC connector	Fiber to fiber Isolator, FC/APC connector	Fiber to fiber Isolator, FC/APC connector	Fiber to fiber Isolator, FC/APC connector	Fiber to fiber Isolator, FC/APC connector
Fiber to free space isolator	Fiber to free space isolator	Fiber to free space isolator	Fiber to free space isolator	Fiber to free space isolator
Input Type	FC/APC bulkhead	FC/APC bulkhead	FC/APC bulkhead	FC/APC bulkhead
Mode of Operation	CW	CW	CW	CW
Polarization	Linear	Linear	Linear	Linear
PER at Rated Power ³	≥ 15 dB	≥ 15 dB	≥ 15 dB	≥ 15 dB
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	1.0–15.0 mW 15.0 – 50.0 mW 50.0 – 200.0 mW	1.0–15.0 mW 15.0 – 50.0 mW 50.0 – 200.0 mW	1.0–15.0 mW 15.0 – 50.0 mW 50.0 – 200.0 mW	1.0–15.0 mW 15.0 – 50.0 mW 50.0 – 200.0 mW
Signal Input Isolation	≥ 30 dB	≥ 30 dB	≥ 30 dB	≥ 30 dB
Input Signal Linewidth	≤ 10.0 kHz	≤ 10.0 kHz	≤ 10.0 kHz	≤ 10.0 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 Measured with isolator

⁴ Custom OEM packaging available on request.

Naming Conventions:

NUA-UUUU-PV-XXXX-YZ

Operating Wavelength Range
1064 = 1064-1083 nm
1084 = 1084-1100 nm
1110 = 1100-1110 nm

Signal Input Power
B = 1.0-15.0 mW
C = 15.0-50.0 mW
D = 50.0-200.0 mW

Output Power
0002 = 2W
0005 = 5W
0010 = 10W
0015 = 15W

Output Type
A = No isolator, FC/APC connector
B = Fiber to fiber isolator, FC/APC connector
C = Fiber to free space isolator

Other Options

- 0 = No Options
- 1 = With NuControl Box
- 2 = With Cold Plate
- 3 = With NuControl Box & Cold Plate

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



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Nufern products are manufactured under an ISO 9001:2008 certified quality management system.


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



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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
Dimensions ⁴	275 x 250 x 37 mm	275 x 250 x 37 mm	275 x 250 x 37 mm	275 x 250 x 37 mm
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
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	2.0 A	3.0 A	4.0 A	5.0 A
Digital Interfaces	NuCONTROL	NuCONTROL	NuCONTROL	NuCONTROL
Environmental Specifications				
Cooling	Water cooled cold plate	Water cooled cold plate	Water cooled cold plate	Water cooled cold plate

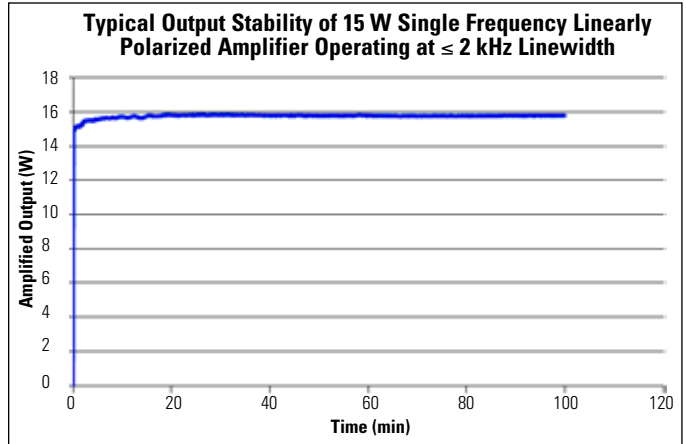




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Rev C




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.