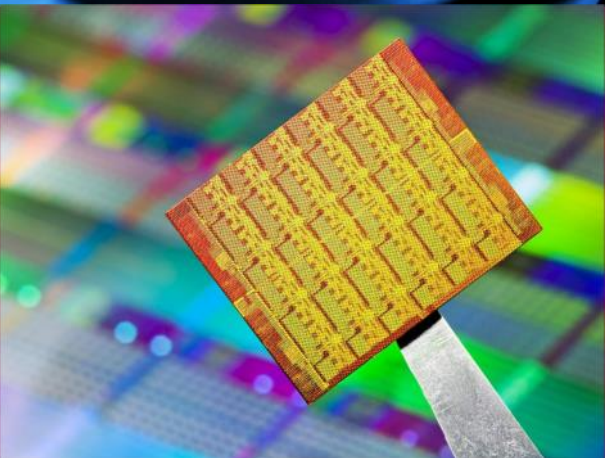
aeroGAIN-BASE-1.3

High power ytterbium fiber gain module

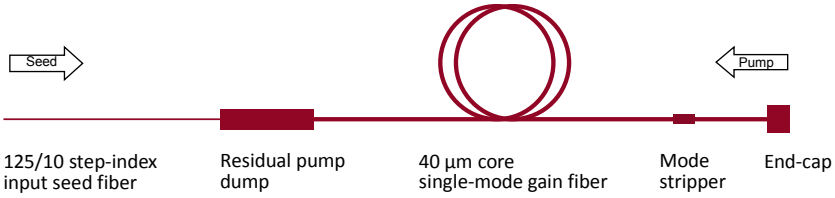
- Truly single mode polarization maintaining system
- Excellent pointing stability
- Robust industrial construction
- 10 µm or 15 µm step-index fiber input
- Easy thermal management
- Long lifetime

Applications

- Ultrafast fiber lasers

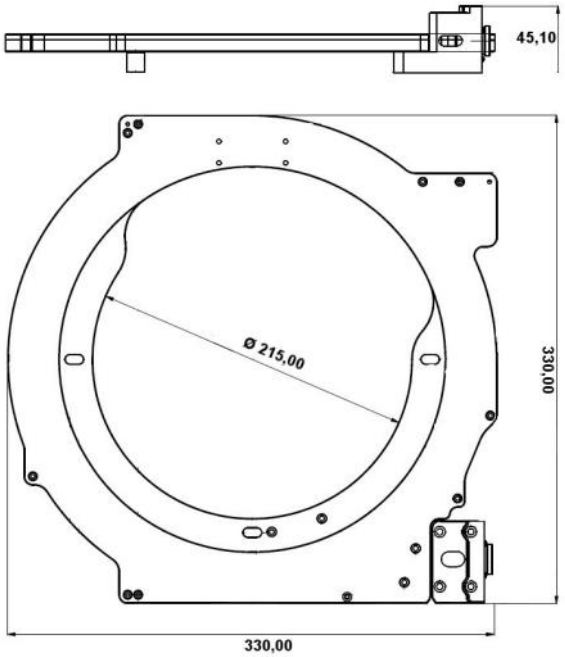


The aeroGAIN-BASE-1.3 is a high performance ytterbium fiber gain module designed for industrial manufacturers of pulsed fiber lasers, and is also suited as an easy entry into ultrafast scientific setups. The module is equipped with either a 10 or 15 µm step-index single-mode fiber input that can easily be spliced to a seed source. The gain medium is our industry leading DC-200/40-PZ-Yb fiber providing the largest single mode MFD in the industry. This model of the aeroGAIN-BASE is without direct watercooling of the gain fiber. Instead, the gain fiber is heatsunk to the aluminum base-plate which can be clamped to e.g. a water chilled plate or an air-cooled heat sink. The output end of the module is equipped with a large AR coated end-cap that provides mode expansion and reduces reflections. The module is designed for counter-propagating pumping through the output end-cap for optimal performance in order to keep nonlinearity to a minimum. Excess pump light is removed by the integrated residual pump dump.



Model	Yb Fiber Length	Recommended signal wavelength
aero**GAIN**-BASE-1.3	1.8 m	1030 - 1040 nm

All modules are assembled and tested in cleanrooms, and the design has proven its industrial 24/7 reliability through a significant number of long term tests including continuous 25,000 hours operation. Lifetime in specific OEM systems depends on pump power, pump wavelength, cooling efficiency etc. and NKT Photonics is available for supporting system design.



Specifications

Optical

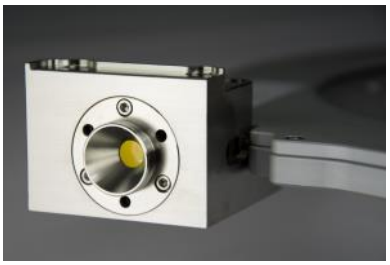
Seed input	
Signal wavelength	1030 – 1040 nm
Recommended signal input power	> 500 mW
Recommended pulse duration	fs, ps or ns pulses
Signal input fiber	-10 µm core PM 125 µm / 250 µm or -15 µm core PM 250 µm / 350 µm
Signal Output	
Max signal gain	< 20 dB
Rated output power	30 W
M^2	≤ 1.3
Mode field diameter	31 ± 2 µm
PER	≥ 15 dB
Typical optical efficiency*	> 70 %
Typical core to clad power ratio**	> 96 %
Pump Input	
Pump center wavelength	976 ± 2 nm
Maximum pump power P_p	40 W @ fiber facet
Recommended pump type	Fiber delivered 200/0.22 (max NA<0.55)
Pump cladding diameter	200 ± 2 µm

* At max power ** Amplified signal

Mechanical

Weight	1.8 kg
Length of input pigtail	1 m
Output end facet angle	0 degree
Endcap length / diameter	6 mm / 7 mm* - AR coated

* Open aperture



All NKT Photonics products are produced under our quality management system certified in accordance with the ISO 9001:2008 standard.

FORCE Certification
Certification of Management Systems DS/EN ISO 9001 Quality

CE

RoHS Compliant

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Other aeroGAIN products

aeroGAIN-ROD

Whenever a 40 µm core is not large enough our aeroGAIN-ROD modules deliver the ultimate gain solution. With MFDs in excess of 65 µm, ROD systems sits at the very top of the amplifier chain reaching power levels normally only found in DPSS systems but with the benefits of a fiber waveguide and the efficient ytterbium material system.

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