

# Koheras BOOSTIK

## Fiber amplifier module for ACOUSTIK integration



## AMPLIFIER MODULE FOR SINGLE AND MULTI-WAVELENGTH SYSTEMS

### Ideal for laser metrology and quantum physics

The Koheras BOOSTIK is a compact fiber amplifier module designed for our low-noise, narrow-linewidth Koheras seed lasers and is available for the 1.5-micron wavelength range.

The amplifier module is designed as a line card for the Koheras ACOUSTIK multi-wavelength system which also supports the Koheras BASIK seed lasers.

### Applications

- Metrology
- Atomic physics
- Laser vibrometry
- Quantum physics
- Wind LIDAR sensing
- Sensor interferometry
- Frequency conversion
- Coherent communication

# KOHERAS BOOSTIK

## High performance, ultra-low phase noise and low RIN

The Koheras BOOSTIK fiber amplifier extends the output power of the Koheras BASIK seed laser while preserving the ultra-low noise and narrow linewidth operation.

## Ideal for metrology and sensing

Designed to preserve the ultra-low phase noise and low RIN of the Koheras seed lasers it is the ideal choice for noise sensitive applications in high precision metrology, laser cooling, quantum physics and sensing, and various scientific applications.

## Wavelength ranges and output power

The amplifier is designed for operation in the 1545-1565 nm range. It is fully compatible with the BASIK E15 and C15 seed laser models and has an optical output power up to 2 W.

## Multi-wavelength system integration and modularity

The amplifiers are designed as compact line cards for the Koheras ACOUSTIK multi-wavelength system seeded by our range of ultra-low phase noise single-frequency lasers: E15 and C15.

This offers high flexibility and freedom to choose the specific wavelengths and power levels required for each individual application. Laser and amplifier wavelengths can be changed to accommodate the system to future needs which makes the system highly versatile and upgradeable.

The amplifier module occupies two slots in the Koheras ACOUSTIK system.

## Features

- Designed for narrow linewidth operation
- Line card amplifier module
- Plug and Play
- Robust and maintenance-free
- Multi-channel system or stand-alone



Koheras ACOUSTIK system

# OPTIONS

## Polarization-maintaining fiber output

The Koheras BOOSTIK amplifier is provided with standard single-mode fiber or a polarization-maintaining option.

## Low-RIN feature

For applications that require low RIN (Relative Intensity Noise), the Koheras BOOSTIK amplifier can optionally be provided with up to 20 dB reduction in RIN level. For more information, please contact your sales representative.

## Easy to control via a graphical user interface

For easy control, the Koheras BOOSTIK is available with an optional USB interface kit and can be controlled via our NKTP CONTROL graphical user interface.

## Options

- Polarization-maintaining fiber output
- Graphical user interface



## Software

### — NKT Photonics CONTROL

Like other NKT Photonics lasers, the Koheras BOOSTIK can be controlled by our intuitive CONTROL software that gives easy access to all the functions in the laser.

The software automatically detects all units attached to the computer. You can control several lasers simultaneously. It is easy to use and supports touch input as well as traditional mouse+keyboard control.

# SPECIFICATIONS

## Optical

Model	Seed laser E15/X15 <sup>1)</sup>	Seed laser C15
Mode of operation	Continuous wave - inherently single frequency	
Seed laser linewidth [kHz] <sup>2)</sup>	< 0.1	< 15
Operating wavelength [nm]	1545 – 1565	1545 – 1565
Input power [mW]	1 – 50, typically 40	1 – 50, typically 10
Output power [W]	2.0	2.0
Output power tuneability [%]	10 – 100	10 – 100
RIN peak [MHz]	Appr. 0.7	Appr. 1.0
RIN level [dBc/Hz]	< -100 @ peak	< -120 @ peak
	< -135 @ 10 MHz	< -140 @ 10 MHz
Optical S/N (50 pm res.) [dB]	> 45	> 60
PER [dB]	> 23	> 23
Output isolation [dB]	> 30	> 30
Beam quality, single-mode fiber termination	$M^2 < 1.05$	$M^2 < 1.05$
Control mode	Constant pump current, constant power	

1) X15 phase noise app. 20 dB lower in the 1 Hz-10 kHz frequency range compared to E15.

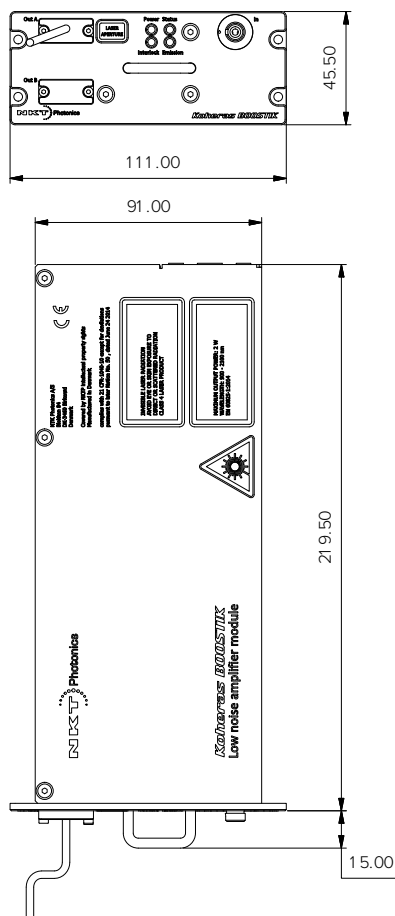
2) Lorentzian.

# SPECIFICATIONS

## Mechanical/Electrical/Environmental

Power supply requirements [VDC]	12
Power consumption [W]	< 20
Electrical interface	30 pin DIN41612 male
Connectors	Input: FC/APC bulkhead Output: FC/APC pigtail 1 m
Operation temperature [°C] <sup>1)</sup>	15 – 55
Storage temperature [°C]	-20 – 60
Dimensions (WxHxL) [mm <sup>3</sup> ]	111/92 x 45 x 220
Weight [kg]	< 1
Humidity non-condensing [% RH]	0 – 70

1) Module temperature. For other temperature options, please contact us.



All Koheras products are produced under our quality management system certified in accordance with the ISO 9001:2015 standard.



## Reliability

The Koheras range of single frequency fiber lasers and accessories are based on telecom-grade fiber components and built to last thousands of hours with no service or maintenance.

With several thousand lasers installed in environments varying from fully climate controlled national standards laboratories to the demanding environment on oil rigs and submarines, the Koheras line is the most robust single-frequency laser range on the market with an unmatched reliability track record.

## Service and warranty extensions

The Koheras warranty and service package ensures trouble free operation of your Koheras laser.

The Standard Package gives you a two year warranty extension plus remote diagnostics of key laser parameters through a remote connection to the system.

Our Premium Package adds a guarantee that we always stock a laser with your specifications - ready to ship - should you need it.

### Standard package

- Extension of warranty period to 2 years
- Remote diagnostics
- Preventive laser health checks

### Premium package

- All the benefits of the standard package
- Pre-produced custom-specific laser in stock