

# Koheras BoostiK™ High Power Laser

*Low noise, narrow linewidth, single frequency fiber laser*

- Stable single frequency fiber laser
- Ultra narrow linewidth and low phase noise
- Up to 15W output power
- 1 or 1.5  $\mu\text{m}$  output wavelength range
- Turn-key 19" benchtop box system
- Available with KHz frequency modulation

The Koheras BoostiK™ is a high power, narrow linewidth single frequency DFB fiber laser system in a compact turn-key design. This fiber laser features a unique narrow linewidth combined with high output power.

The product is supplied as stand-alones units in a 19" rack system including control electronics and power supply ready for operation. It is ideal for laboratory work and experimental research.



## Key features

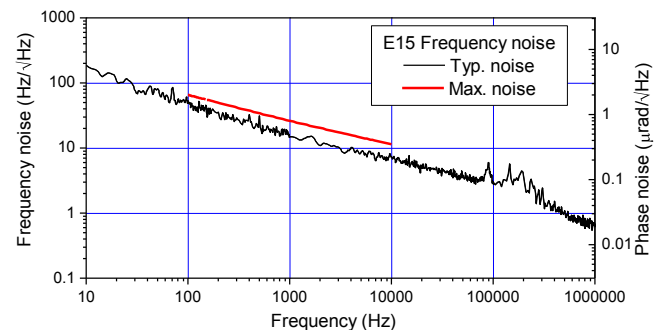
- Stable single mode and single frequency operation
- Unprecedented low phase and intensity noise
- Up to 15W CW output power @ 1.0 $\mu\text{m}$
- Up to 10W CW output power @ 1.5 $\mu\text{m}$
- Burst noise and mode hop free operation
- Ultra narrow linewidth
- Many wavelengths available
- Compact and reliable stand-alone unit in 19" rack system
- Digital control interface
- Available with Koheras Care™ warranty & service package

## Options

- Y10 AdjustiK seeder for 1  $\mu\text{m}$  range
- C15 AdjustiK seeder for 1.5  $\mu\text{m}$  range with low RIN
- E15 AdjustiK seeder for 1.5  $\mu\text{m}$  range with low phase noise
- Fast Piezo tuning capability
- FC/APC output (up to 5W)
- Collimator output (5W at above)
- PM Output

## Examples of applications

- Quantum optics / computing and phenomena (optical trapping, optical lattice, Bose-Einstein condensate (BEC), atom interferometer, squeezing)
- Nonlinear optics pump source (SHG, DFG, OPO)
- Laser-based metrology (precision laser interferometry, spectroscopy)
- Optical heterodyning and coherent communication
- Coherent beam combining
- Optical length and frequency standards
- Metrology / LIDAR



Specifications are subject to change without notice.  
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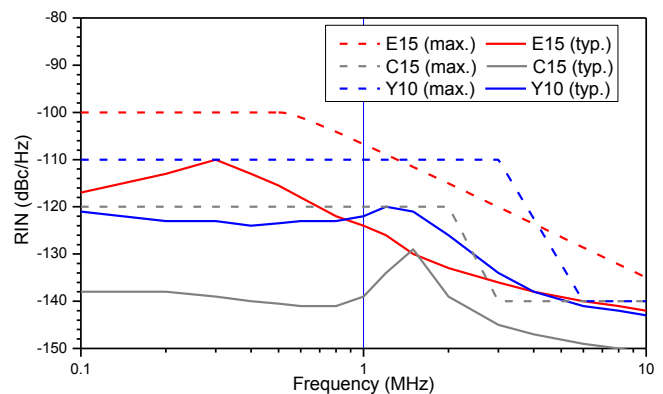
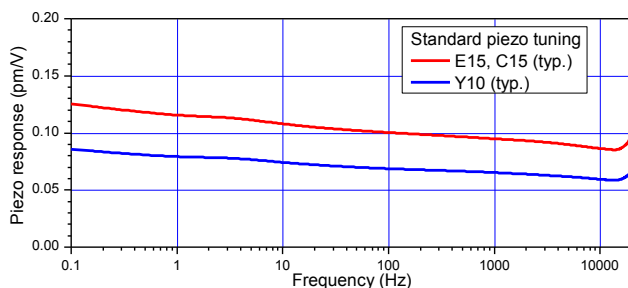
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**Optical specifications**

Koheras BoostiK™ System	E15	C15	Y10
Center wavelength [nm] <sup>1</sup>	1535-1575, optionally other	1535-1575, optionally other	1050-1100
Laser emission	CW - inherently single frequency	CW - inherently single frequency	CW - inherently single frequency
Beam quality	$M^2 < 1.3$	$M^2 < 1.3$	$M^2 < 1.3$
Output power [W] <sup>2</sup>	1, 3, 5 or 10W	1, 3, 5 or 10W	1, 3, 5, 10 or 15W
Output power regulation [%]	30-100	30-100	30-100
Linewidth (120 $\mu$ sec) [kHz]	$< 1$	$< 50$ (optionally $< 10$ )	$< 70$ (optionally $< 10$ )
Linewidth (Lorentzian) [kHz]	$< 0.1$	-	-
Phase-noise [ $\mu$ rad/ $\sqrt{\text{Hz}}$ ] 1m opt. path	$< 120$ @ 500MHz/ $< 110$ @ 10Hz	$< 100$ @ 500MHz/ $< 95$ @ 10Hz	NA
RIN peak [MHz]	app. 0.3	app. 0.9	app. 1.5
RIN level [dBc/Hz]	$< 100$ @ peak/ $< 135$ @ 10MHz	$< 120$ @ peak/ $< 140$ @ 3MHz <sup>3</sup>	$< 105$ @ peak/ $< 140$ @ 10MHz
Optical S/N [dB] (50 pm res.)	$> 50$ (depending on wavelength)	$> 50$ (depending on wavelength)	$> 50$ (depending on wavelength)
Polarization	Random (linear with PM option)	Random (linear with PM option)	Random (linear with PM option)
Thermal tuning	Standard	Standard	Standard
Thermal tuning range [nm]	-0.4 / + 0.2	-0.4 / + 0.2	-0.3 / + 0.15
Fast Piezo tuning capability <sup>4</sup>	Optional	Optional	Optional
Piezo-electric tuning range [pm]	$> 18$ (0-200 V DC)	$> 18$ (0-200 V DC)	$> 12$ (0-200 V DC)
Piezo-electric tuning bandwidth [kHz]	up to 20	up to 20	up to 20
Optical monitor output (from seed)	Incl. (FC/APC)	Incl. (FC/APC)	Incl. (FC/APC)
Long term stability <sup>5</sup> (RMS, 1h@25°C) [%]	$< \pm 2$ %	$< \pm 2$ %	$< \pm 2$ %
Output fibre termination ( $\leq 5$ W output)	FC/APC or Collimator	FC/APC or Collimator	FC/APC or Collimator
Output fibre termination ( $\geq 5$ W and up)	Collimator	Collimator	Collimator
Typical beam diameter @ $1/e^2$	$< 1$ mm	$< 1$ mm	$< 1$ mm

1. The center wavelength is selectable within the specified range.
2. Depends on the center wavelength.
3. Shot-noise limited  $> 5$  MHz.
4. External piezo driver required.
5. After warm up (10-20 min)


**Mechanical / Electrical specifications— AdjustiK Seeder**

Power supply requirements [VDC]	90-240 VAC; 50-60Hz
Fiber pigtail length [m]	$> 1$
Connectors	FC/APC or collimated
Dimensions (HxWxD) [mm]	104x449x383 (19" 2U)
Operating temperature range [°C]	15 - 40
Storage temperature range [°C]	-20 - 50
Weight [kg]	$< 9$

**Mechanical / Electrical specifications—BoostiK HPA Amplifier**

Power supply requirements [VDC]	90-240 VAC; 50-60Hz
Fiber pigtail length [m]	$> 1$
Connectors	FC/APC or collimated
Dimensions (HxWxD) [mm]	132x448x451 (19" 3U)
Operating temperature range [°C]	15 - 40
Storage temperature range [°C]	0 - 50
Weight [kg]	$< 13$

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