

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 μm 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

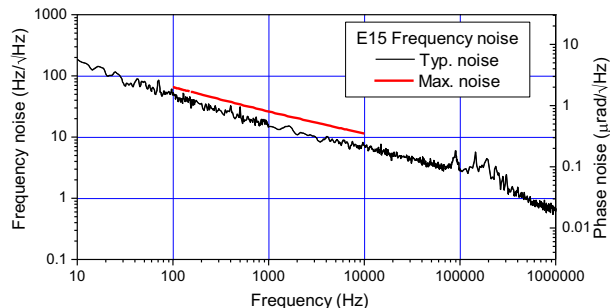
- Stable single mode and single frequency operation
- Unprecedented low phase and intensity noise
- Up to 15W CW output power @ 1.0 μm
- Up to 10W CW output power @ 1.5 μm
- Burst noise and mode hop free operation
- Ultra narrow linewidth
- Many wavelengths available
- Compact and reliable stand-alone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

Options

- Y10 AdjustiK seeder for 1 μm range
- C15 AdjustiK seeder for 1.5 μm range with low RIN
- E15 AdjustiK seeder for 1.5 μm 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



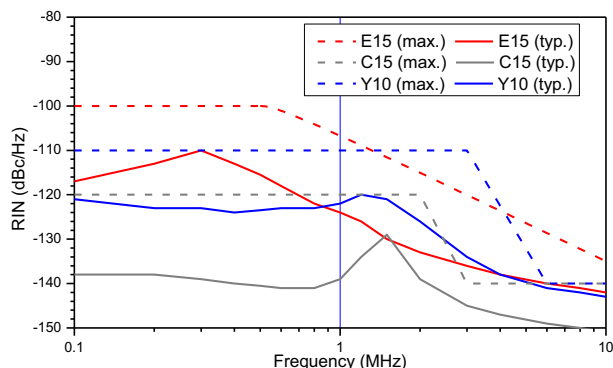
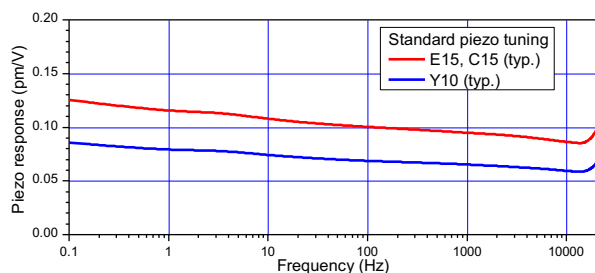
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boostik system-111010

Optical specifications

Koheras Boostik™ System	E15	C15	Y10
Center wavelength [nm] ¹	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] ²	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 μsec) [kHz]	< 1	< 50 (optionally <10)	< 70 (optionally <10)
Linewidth (Lorentzian) [kHz]	< 0.1	-	-
Phase-noise [μrad/√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 ³	<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 ⁴	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 ⁵ (RMS, 1h@25°C) [%]	< +/- 2 %	< +/- 2 %	< +/- 2 %
Output fibre termination (<5W output)	FC/APC or Collimator	FC/APC or Collimator	FC/APC or Collimator
Output fibre termination (5W and up)	Collimator	Collimator	Collimator
Typical beam diameter @1/e ²	< 1mm	< 1mm	< 1mm

- The center wavelength is selectable within the specified range.
- Depends on the center wavelength.
- Shot-noise limited > 5 MHz.
- External piezo driver required.
- 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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