

# Koheras ADJUSTIK POWER Y10

Low noise, single frequency fiber laser systems in the 1  $\mu\text{m}$  range

- Ultra narrow linewidth
- Low phase and intensity noise
- Long coherence length
- Stable single frequency operation
- Excellent power stability
- Piezo tuning capability
- PM output



## Applications

- Laser spectroscopy
- Gas absorption measurement
- Wavelength references
- Atomic trapping
- Injection Seeding

The Koheras ADJUSTIK Y10 POWER is a 100 mW turn-key single frequency DFB fiber laser system with active wavelength control and wide-range thermal wavelength tuning. The laser comes with a fast piezo-electric tuning capability, where the laser wavelength can be modulated externally at kHz modulation bandwidth to lock it to a stable reference.

This Y10 benchtop system is based on our industry-leading BASIK OEM laser modules and comes with integrated driver electronics and needs only 110/230 V power supply. The front panel controls ensures easy operation and the benchtop system is ideal for laboratory work and experimental research.

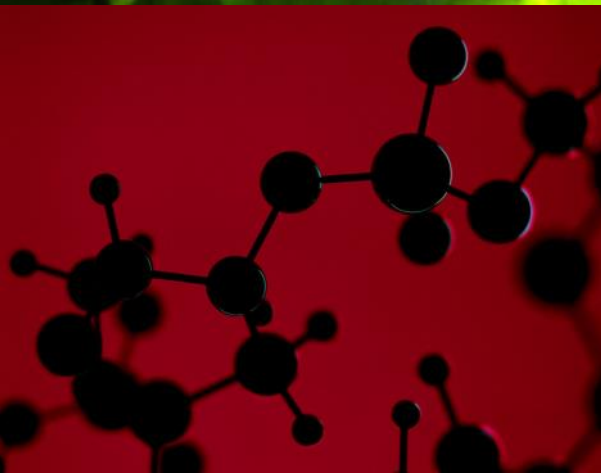
The ADJUSTIK POWER system is also available in the 1550 nm range, or as BOOSTIK with up to 15W (please see separate datasheets).

Model	Wavelength	Output power	PM	Piezo tuning
<b>Power</b>	1064 nm	100 mW	Yes	Yes
<b>Custom</b>	1030 - 1130 nm	5 - 100 mW*	Yes	Optional

\* Depending on center wavelength of the laser. 100 mW is available for lasers in the 1050-1090nm range. Outside this range, the maximum power is lower.

## Thermal Tuning

All Koheras fiber lasers are equipped with thermo electrical temperature controllers (TECs). The TECs not only stabilizes the operation of the laser desensitizing it to environmental temperature fluctuations, but also makes it possible to achieve considerable tuning of the center wavelength by changing the operating temperature of the laser. At standard room temperature (around 20-30°C or 68-86°F) the laser can be thermally tuned an industry leading 700 pm.



## Options

- Custom center wavelengths anywhere in the 1030 to 1130 nm range.

## Service packages

- Koheras Care™ service and warranty package



## Other 1 $\mu$ m range models

### Koheras ADJUSTIK Systems

This benchtop system is based on our industry-leading BASIK OEM laser modules and comes with integrated driver electronics and needs only 110/230 V power supply. The front panel controls ensures easy operation and the benchtop system is ideal for laboratory work and experimental research.



### Koheras BOOSTIK

The BOOSTIK™ systems are narrow linewidth fiber laser turn-key benchtop systems based on a truly single mode, single frequency DFB (Distributed-Feedback) Fiber Laser with extremely high frequency stability and low phase and intensity noise. The Koheras BOOSTIK System delivers up to 15 W at 1  $\mu$ m and 10 W at 1.55  $\mu$ m.



## Features and Options

### PM output

Fixed state of polarization of the laser output with key and polarization aligned to the slow fiber axis.

### Linewidth reduction

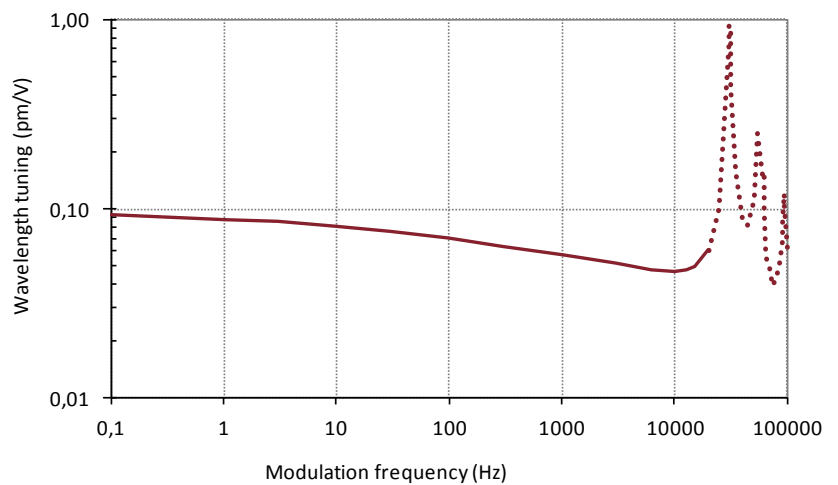
Select our Linewidth Reduction option when extra narrow linewidth is required. With this option you get a linewidth of less than 10 kHz.

### Operating Wavelengths

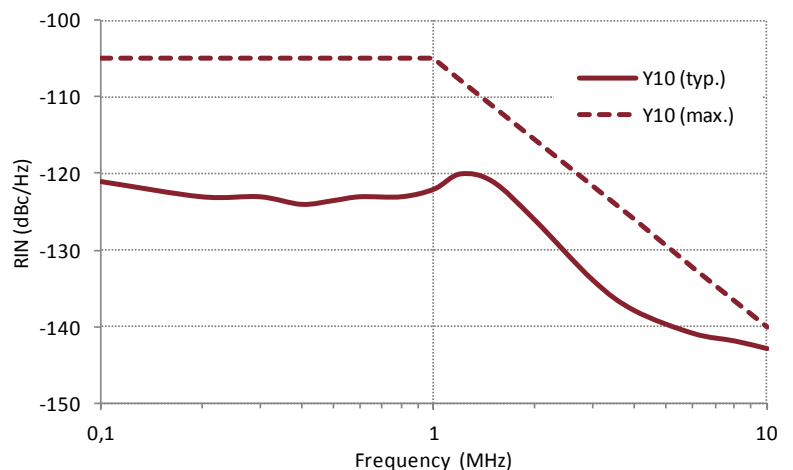
One of the key advantages of our DFB fiber laser technology is the freedom to choose the operating wavelength. Our standard systems are available at 1053 and 1064 nm and we offer custom wavelengths anywhere in the 1030 to 1130 nm range.

### Fast Piezo Tuning

With the Fast Piezo Tuning capability, the laser wavelength can be modulated at kHz modulation bandwidth to lock it to a stable reference. Below are plots of the typical piezo responses.



### Relative Intensity Noise



## Specifications

### Optical

Laser emission	CW - inherently single frequency
Beam quality	$M^2 < 1.05$
Line width [kHz] <sup>1</sup>	< 20 (optionally <3)
RIN peak [MHz]	app. 1.5
RIN level [dBc/Hz]	<-105 @ peak/<-140 @ 10MHz
Optical S/N [dB] (50 pm res.)	> 65 (typ. > 70)
Thermal tuning	Standard
Total thermal tuning range [pm] <sup>2</sup>	700 (at room temperature)
Piezo-electric tuning range [pm]	> 15 (0-200 VDC)
Piezo-electric tuning bandwidth [kHz] <sup>3</sup>	up to 20
Optical monitor output [mW]	~0.1

1. Self heterodyne with optical delay of 120  $\mu$ s
2. If the laser is operated in very cold or hot environments, this tuning range is truncated on either the upper or lower side.
3. Upper limit due to mechanical resonances above 30 kHz. Max. slew rate: 200 V/ms

### Mechanical/Electrical

Power supply requirements [VDC]	90-240 VAC, 50-60Hz
Digital interface	USB 2.0
Piezo drive voltage [V]	0-200
Fiber pigtail length [m]	app. 1 m
Connectors	FC/APC
Dimensions (HxWxD) [mm]	104x449x383 (19"- 2U)
Weight [kg]	6.5-8.5

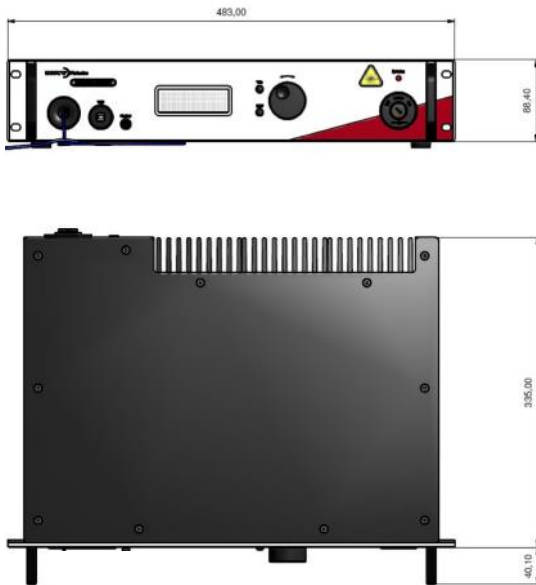
### Environmental

Operating temperature range [°C]	15 - 50
Storage temperature range [°C]	-20 - 50
Humidity non condensing [%RH]	0-70
Vibration [G @ 15-200 Hz]	0.2

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



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## Koheras Care™

### Service and warranty extensions

The Koheras Care 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 an internet connection to the AdjustiK 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 laser with specific customer specifications in stock

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