

Koheras BasiK Y10

Low noise, single frequency fiber laser modules in the 1 μm range

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



The Koheras BasiK™ Y10 is an industrial single frequency DFB fiber laser module with active wavelength control and wide-range thermal wavelength tuning. It features ultra-narrow linewidth down to 3 kHz and exceptionally low frequency and intensity noise.

The Y10 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. The output power is 10 mW and the center wavelength can be chosen freely in the 1030-1130 nm range.

For easy control of the BasiK module, an USB to IDC-16 interface adapter is available including control software with graphical user interface.

The BasiK™ module is also available in the 1.5 μm range as the BasiK™ E15 and with output power up to 15 W as the BoostiK™ series (please see separate datasheets).

Model	Wavelength	Output power	PM	Piezo tuning
Standard	1053 or 1064 nm	10 mW	Yes	Yes
Custom	1030-1130 nm	10 mW	Optional	Optional

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. Approximately 225 pm above normal operation and 475 pm below.

Applications

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



Options

- Linewidth reduction to 3 kHz
- Custom center wavelengths anywhere in 1030-1130 nm range
- USB to IDC-16 adapter

Service packages

- Koheras Care™ service and warranty package



Other 1 μm models

Koheras AdjustiK™ Modules

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™ Systems

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 15W at 1 μm and 10 W at 1.55 μm.



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

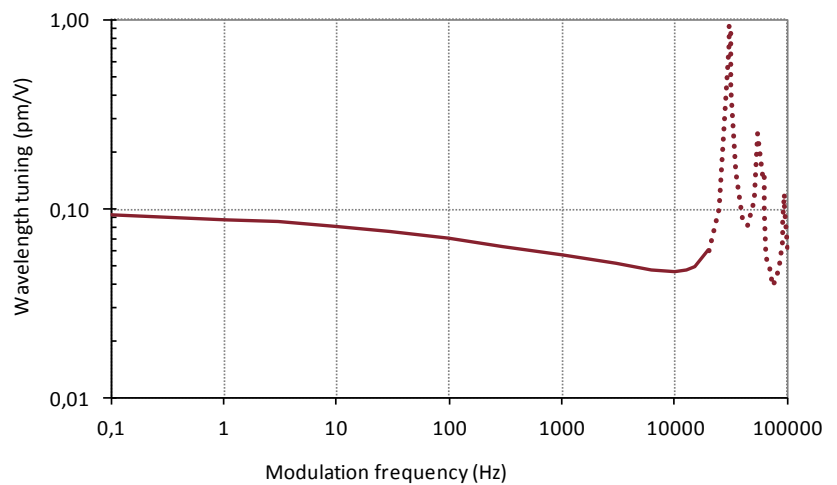
Select our Linewidth Reduction option when extra narrow linewidth is required. With this option you get a linewidth of less than 3 kHz.

Operating Wavelengths

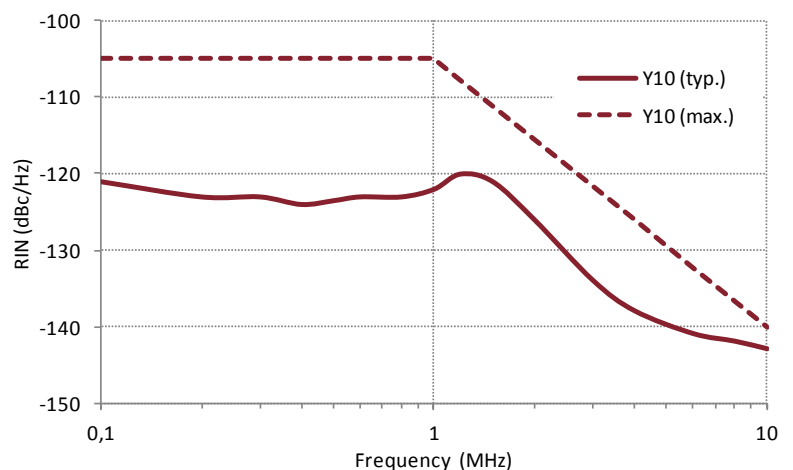
One of the key advantages of our DFB fiber laser technology is the freedom to choose the operating wavelength. Our standard systems are available at 1053 and 1064 nm and we offer custom wavelengths anywhere in the 1030 to 1130 nm range.

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] ¹	< 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)
PER	> 23 dB (with PM option)
Thermal tuning	Standard
Total thermal tuning range [pm] ²	700 (at room temperature)
Piezo-electric tuning range [pm]	> 15 (0-200 VDC)
Piezo-electric tuning bandwidth [kHz] ³	up to 20
Optical monitor output [mW]	~0.1

1. Self heterodyne with optical delay of 120 μ 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]	12 V
Power consumption	Typical 3 W, max 12 W
Control connector	IDC-16 (Digital PC interface)
Piezo drive voltage [V]	0-200
Fiber pigtail length [m]	app. 0.5 m
Connectors	FC/APC
Dimensions (HxWxD) [mm]	23X92X240 (23X92X200 no cooling fins)
Weight [kg]	0.6-0.9

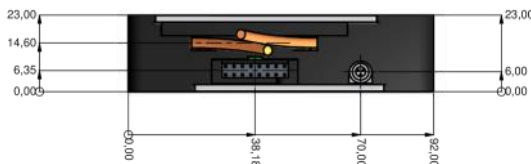
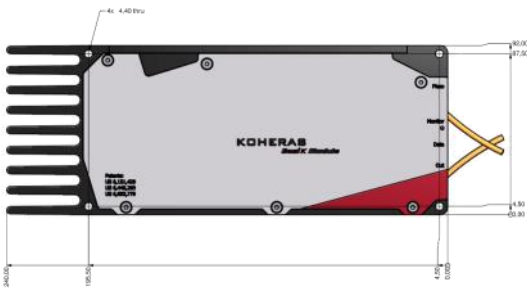
Environmental

Operating temperature range [°C]	15 - 55 (module case temperature)
Storage temperature range [°C]	-20 - 60
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.



Koheras_BasiK-Y10_141029



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

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