

# Koheras BasiK™ Module

*Small compact OEM module for industrial systems*

- Inherently single frequency fiber laser
- Ultra narrow linewidth and low phase noise
- Reduced vibration sensitivity
- Ideal for sensor interrogation

Koheras BasiK™ Module is a single frequency DFB fiber laser system in a new rugged package with passive vibration reduction, offered as single laser or building block for e.g. multi-channel DWDM systems.

Specifications include up to 40 mW output, wavelengths (e.g. ITU grid) within 1535-1575 nm and 1030-1121 nm, optionally with fast piezo-electric modulation.

The BasiK™ Module features ultra-narrow linewidth in the Hz range and exceptionally low frequency and intensity noise superior to other comparable sources.

The BasiK™ Module is ideal for coherent sensor applications in oil/gas exploration, perimeter and submarine detection, and wind LIDAR.

## Key features

- Stable single mode and inherent single frequency operation
- Burst noise and mode hop free operation
- Ultra narrow linewidth and long coherence length
- Low phase and intensity noise
- High wavelength selectability
- Power and wavelength control via digital interface
- User controlled RIN suppression for E15 version
- Piezo tuning capability (optional)
- PM output (optional)
- Very compact and robust module
- Multi-channel solution
- Low power consumption



## Examples of applications

- Sensor interferometry e.g. oil and gas exploration
- Acoustic sensing for e.g. marine and security applications
- Motion and intrusion detection
- Laser spectroscopy, gas absorption measurement
- LIDAR
- Scientific applications

basik module-110325

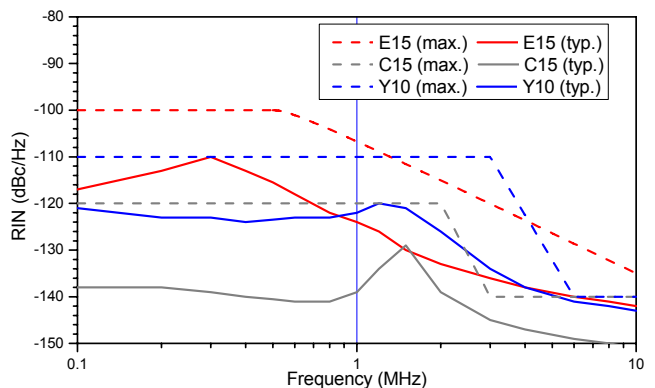
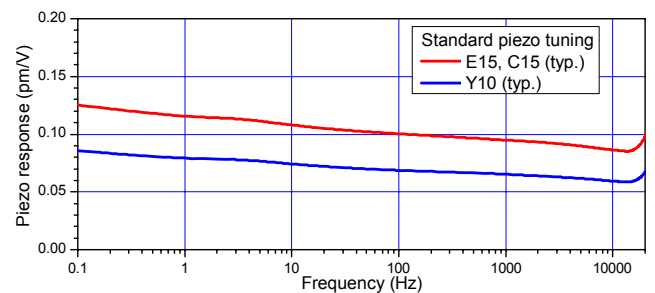
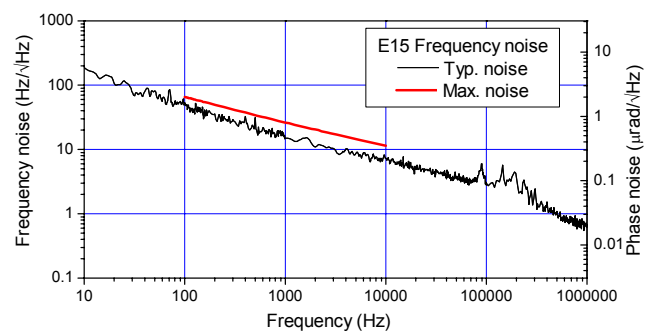


Optical specifications			
Koheras Basik™ Module	E15	C15	Y10
Center wavelength [nm] <sup>1</sup>	1535-1575, optionally other	1535-1575, optionally other	1030-1121
Laser emission	CW - inherently single frequency	CW - inherently single frequency	CW - inherently single frequency
Beam quality	M <sup>2</sup> < 1.05	M <sup>2</sup> < 1.05	M <sup>2</sup> < 1.05
Output power [mW] <sup>2</sup>	up to 40	>10	> 10
Line width [kHz]	< 0.1 (Lorentzian)	< 50 (optionally <10)	< 70 (optionally <10)
Frequency stability [MHz] <sup>3</sup>	< 10	< 50	< 30
Frequency-noise [Hz/√Hz]	65@100Hz, 26@1kHz, 13@10kHz	-	-
Phase-noise [μrad/√Hz] 1m opt. path	2.0@100Hz, 0.8@1kHz, 0.4@10kHz	-	-
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>4</sup>	<-105 @ peak/<-140 @ 10MHz
Optical S/N [dB] (50 pm res.)	> 50 (typ. > 55)	> 70 (typ. > 75)	> 65 (typ. > 70)
PM output	Optional	Optional	Optional
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>5</sup>	Optional	Optional	Optional
Piezo-electric tuning range [pm]	> 18 (0-200 VDC)	> 18 (0-200 VDC)	> 12 (0-200 VDC)
Piezo-electric tuning bandwidth [kHz] <sup>6</sup>	up to 20	up to 20	up to 20
Optical monitor output	Incl (FC/APC)	Incl (FC/APC)	Incl (FC/APC)

1. The center wavelength is selectable within the specified range.
2. Depends on the center wavelength.
3. Over 1 hour after warm-up and ambient temperature variation < 2 °C.
4. Shot-noise limited @ f > 5 MHz, optionally lower.
5. External piezo driver required.
6. Upper limit due to mechanical resonances above 30 kHz. Max. slew-rate: 200 V/ms (max. 8 V/ms for wide tuning option).

Other specifications	
KOHERAS Basik™ Module	E15/C15/Y10
Power supply requirements [VDC]	12V
Control connector	IDC-16 (Digital PC interface)
Fiber pigtail length [m]	app. 0.5 m
Connectors	FC/APC
Dimensions (HxWxD) [mm]	23x92x240 incl. fins
Operating temperature range [°C]	15 - 50
Storage temperature range [°C]	-20 - 50

Electrical pin-out specifications	
Pin 1	Not used
Pin 2	Emission LED
Pin 3	RS485-
Pin 4	RS485+
Pin 5	Interlock Loop +
Pin 6	General System Enable
Pin 7	Interlock Loop -
Pin 8	Interlock
Pin 9-12	GND
Pin 13-16	12 VDC



Specifications are subject to change without notice.  
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