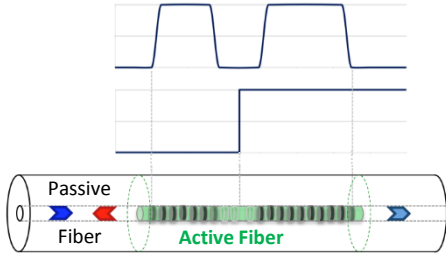


IXC-CLFO @ 1.5 μm

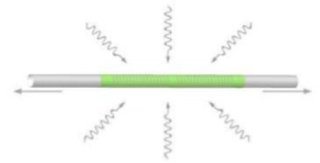
SINGLE-FREQUENCY FIBER LASER

APPLICATION: Sensing for acoustic (hydro and seismic), interferometry and spectroscopy

CLFO based on Distributed Feedback (DFB) LASER



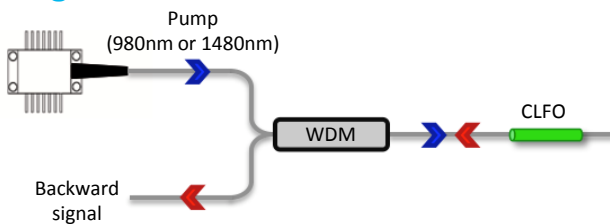
- Bragg grating inscribed in active fiber
- Amplification thanks to photosensitive rare-earth fiber
- π phase-shifted \rightarrow resonant cavity
- Ultra-short cavity length (30 to 55mm)



Description

- Single-frequency fiber lasers are based on UV Bragg grating technology applied to active doped fibers
- Ultra-short cavity length and π phase-shifted design permit ultra-narrow linewidth and robust mode-hop-free laser source properties
- Because of very low intrinsic phase noise, these lasers are suitable for acoustic applications (ULF to MF/HF range)
- 2 available versions depending on the application: Low Noise (LN) or High Power (HP)

Configuration



Key features & benefits

- Narrow-linewidth
- Single longitudinal mode
- Mode-hop-free
- Low intrinsic phase noise
- Array configuration and WDM compatible

Specifications

Product Name	IXC-CLFO-LN			IXC-CLFO-HP		
	Spec.	Typ.		Spec.	Typ.	
Signal wavelength	1530 – 1565 nm			1535 – 1565 nm		
Pump wavelength	1480 or 980 nm			980 nm		
Laser threshold	<10	5	mW	<10	5	mW
Laser power @100mW	>10	50	μW	>5	10	mW
PER @100mW	>20	30	dB	>20	30	dB
Linewidth @100mW	<10	1	kHz	<100	30	kHz
RIN peak value @100mW	<-80	-100	dB/Hz	<-90	-110	dB/Hz
Relaxation frequency @100mW	>100	200	kHz	0.5-2	1	MHz
Intrinsic phase noise @1kHz	<30	20	Hz/ $\sqrt{\text{Hz}}$	-	-	
Signal to noise ratio (res. 50pm) @100mW	>50	60	dB	>50	60	dB
Pump @1480nm transmission loss	<1.0	0.5	dB	-	-	
Signal transmission loss outside stop band	<1.0	0.7	dB	-	-	
Thermal sensitivity	-	10	pm/ $^{\circ}\text{C}$	-	10	pm/ $^{\circ}\text{C}$

- PM active fiber available for IXC-CLFO-LN and HP with custom passive pigtailed