

NG-FDML | Multi-MHz Swept Laser

1060 nm / 1310 nm / 1550 nm

Optores NG-FDML is the world's only swept laser with sweep rates of more than 1 million sweeps per second, enabling (multi) megahertz optical coherence tomography (MHz-OCT). Designed for record sweep speed, the Optores swept laser also features long coherence length, broad sweep range and very high optical output power.



Based on all-fiber Fourier domain mode-locking (FDML) technology, the laser has user-adjustable sweep range and output power, plus a variety of programmable synchronization and control signals.



MHz sweep rate

- World-record sweep speeds of up to 1 MHz

1060 nm / 1310 nm / 1550 nm

- Available at three central wavelengths, depending on your application

Long coherence length

- Less than 3 dB signal drop up to full usable image range (1.5 GHz fringe frequency)

Large sweep range

- Large wavelength sweep range for high resolution OCT

Remote control

- Network-based remote control with LabVIEW support

Massive output power

- Sufficient power for the most demanding applications (typically >100 mW)

Advanced synchronization

- Built-in sweep trigger output and user-programmable IO (TTL) channels
- PLL extension for ADC sample clock generation and X/Y beam scanner control

Fully adjustable

- User-adjustable sweep range and output power
- Programmable synchronization signal outputs

Specifications



Available variants and accessories

Variant	Characteristics
-2B / -4B / -8B	2x/4x/8x buffered sweep; with booster SOA
FDML-PLL	Phase locked loop (PLL) for A/D sample clock generation, synchronization and beam scanner control

Optical

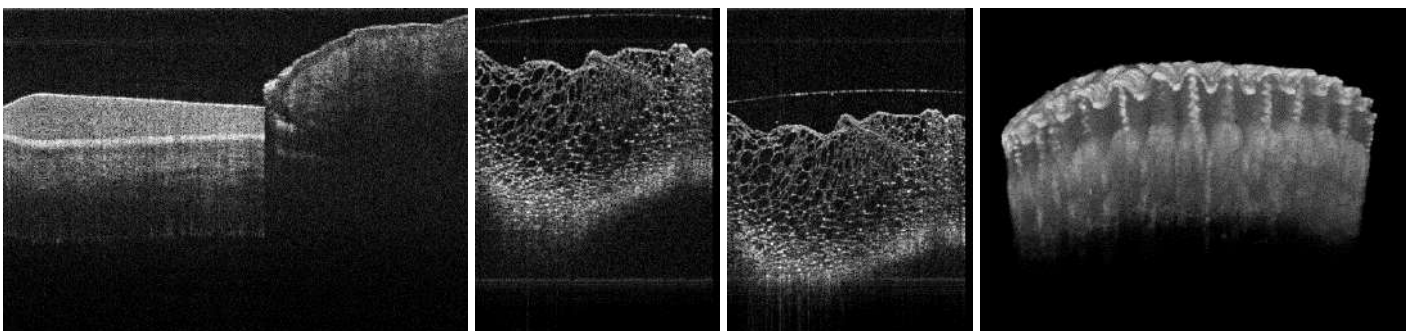
Sweep	Min.	Typ.	Max.	Unit	Condition
Central wavelength	1060 or 1310 or 1550			nm	
Sweep range (-15 dB) ¹	70	75	>120	nm	1060 nm
	100	110			1310 nm, 1550 nm
Average output power ¹	60	80	200	mW	1550 nm
	60	100			1060 nm, 1310 nm
Sweep rate	2800	3200	3520		Variant -8B
	1400	1600	1760	kHz	Variant -4B
	700	820	880		Variant -2B
Sweep duty cycle	98	100	100	%	
Coherence length ²	> 10			mm	1310 nm, 110 nm sweep

¹ User adjustable; ² 6 dB Michelson PSF decay, typically limited by electronic detector bandwidth.

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

General

Connectivity	
Synchronization I/O	User configurable, TTL signal levels, BNC and SMA connectors
Remote control	via USB, Ethernet, including LabVIEW support
Mechanical	
Dimensions (L x W x H)	40.3 x 24.7 x 14.7 cm Without connectors



OCT B-scan at 1.6 MHz A-scan rate, 1310 nm, raw unaveraged & unprocessed images

3D view (courtesy of BMO Lübeck)



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