

EXALOS 840nm Swept Sources

Applications

- SS-OCT with faster swept sources for refractive surgical lasers at 1060nm
- Line-field OCT with swept lasers at 0.5-2 kHz sweep rate
- Full-field OCT with DC-tunable swept lasers up to 20 Hz
- Seed laser for OPO
- Metrology and sensing

Product Features

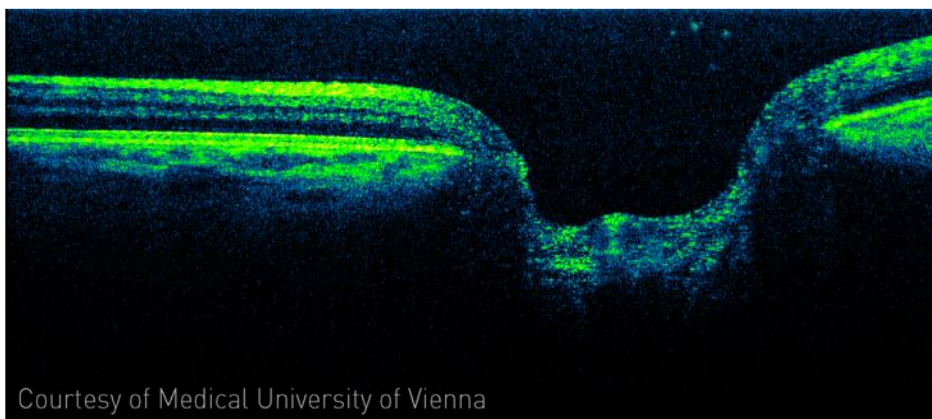
- Compact OEM module in 3.5" HDD format or turn-key benchtop unit
- Wide selection of sweep rates (from DC to 50 kHz or up to 150 kHz)
- Wide sweep range (up to 60 nm)
- Long imaging range
- High output power (up to 15 mW)
- Optional electrical k-clock output
- Various mounting options

Description

EXALOS is the only supplier of fast swept sources in the 800-900 nm wavelength range. Such swept sources are of interest for ophthalmic laser surgical systems (LASIK) that operate at 1060 nm where the use of 1060-nm SS-OCT may not be an option.

For next-generation line-field (LF) and full-field (FF) OCT systems using parallel detection instead of raster scanning and point-wise sampling as in SS-OCT, swept sources with a slow resonant or even a DC-tunable MEMS scanners are the preferred choice and allow sweep rates that are compatible with fast 1D and 2D camera systems. Such OCT systems will benefit from high optical output power directly from the laser source, which currently scales up to 15 mW maximum with higher values being available in the near future.

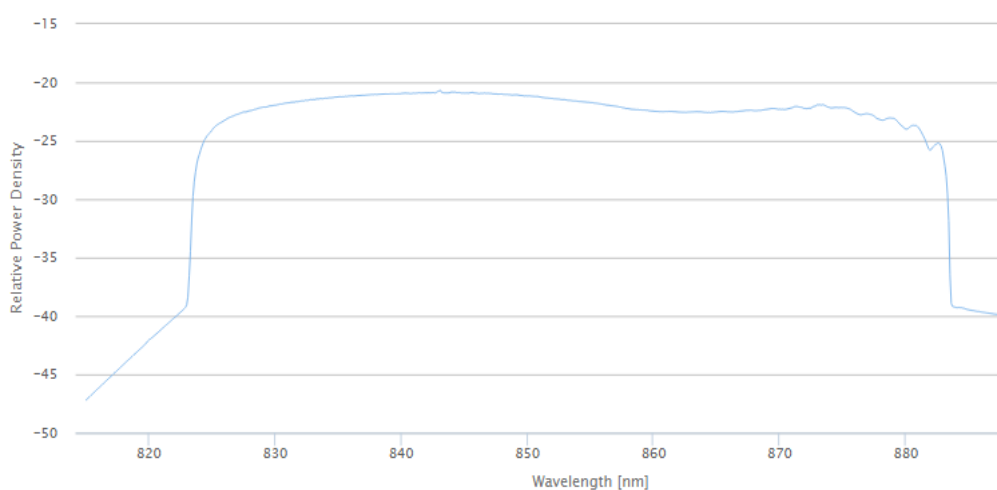
DC-tunable swept sources feature an analog input port that allows for direct control of the MEMS scanner and hence of the wavelength sweep operation of the laser.



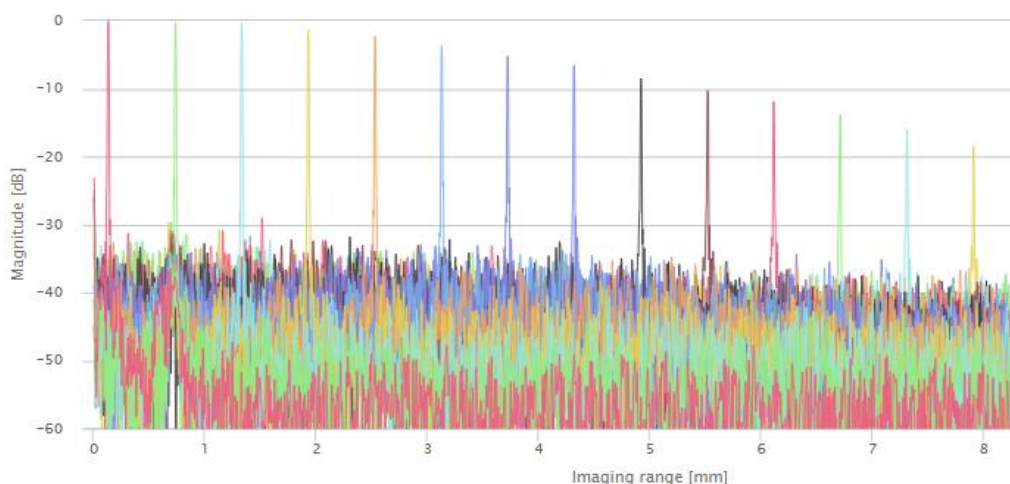
850nm ESM @ DC / 20kHz

Swept Source Parameters	Min	Typ	Max	Unit
Center Wavelength	840	850	860	nm
Sweep Range (-10dB)	50	60		nm
A-scan frequency	0/19	DC / 20	0.5/21	kHz
Coherence length (in air) ¹	7	8		mm
6-dB Amplitude Fall-off	3	4		mm
Average output power ²	7	8	12	mW
Product Code	ETL390001-00 / ESM340018-00			

Sweep Spectrum



PSF



Notes:

1 The coherence length is the optical path difference (OPD) at which the amplitude of the optical fringe signal drops to 50% of its initial value for OPD=0 mm. Typically the so-called *image depth* is half the coherence length value.

2 Under sweep operation. For a sweep duty cycle of 100%.