

CALIPER-FLEX: VCSEL SWEPT SOURCE LASER

LONG-RANGE 3D OCT IMAGING



- **Narrow linewidths at adjustable kHz scan rates**
- **Compact modular platform**
- **Single-mode optical spectrum**
- **Continuous wavelength tuning**
- **Optical spectrum shaping**

THE COMPACT AND FLEXIBLE SOLUTION FOR 3D IMAGING

The CALIPER-FLEX is a compact turn-key 1060nm laser module with tunable kHz wavelength sweeping frequency for long-range 3D OCT imaging applications, using MS/s data acquisition. The long coherence length enables large imaging depth, and combined with stable continuous wavelength sweeping, the FLEX is the ideal choice for 3D imaging application requiring long-range and/or frame rate flexibility. The FLEX is equipped with signal outputs for safety and synchronization.

The CALIPER-FLEX VCSEL swept source laser is using a monolithic MEMS-VCSEL structure with reliable datacom VCSEL technology and a single material MEMS for increased reliability.

We Build Bridges Between Our Cutting-Edge Technology and Your Product Innovations

OCTLIGHT is a world-leading company within VCSEL Swept Source laser technology. We focus exclusively on developing and producing VCSEL Swept Source laser modules, and on helping our customers integrate our VCSEL technology into their products. Read more on octlight.com and download our whitepapers about how to build an OCT A-scan system and our VCSEL technology.

TECHNICAL SPECIFICATIONS

Model	Standard	Superior
Center wavelength [nm]	1060 ± 20	1060 ± 10
Sweep range, 10 dB [nm]	>20	>25
Optical power [mW]	>15	15-50
Sweep rate, uni-dir ¹ [kHz]	2-60 ± 1%	2-60 ± 1%
Coherence length [mm]	>100	>100
Spectrum ripple [dB]		< 0.1
Ortho-RIN [%]		< 2
Envelope shaping	Factory setting	User programmable

¹ Bi-directional sweep rate 2-120 kHz

Interface and size	
Fiber output	FC/APC connector
Power supply	12V input or 100-230V 50-60 Hz power supply, max current 3A
A-scan trigger	TTL 1-1.4V min/max, 100 Ohm termination, SMA connector
Control	Serial/USB
Safety interlock	Safety interlock < 5 us delay, EN 60825-1
Dimensions	189x114x56.5 mm

APPLICATIONS

- 3D full-eye biometry for safer and more precise cataract surgery
- Micrometer resolution in-line process monitoring
- Long-range LiDAR detection

