

# 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.

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***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](http://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 <sup>1</sup> [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 |

<sup>1</sup> 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

