DATASHEET
Axsun OCT

# High Speed Swept Laser Engines at 1060, 1310, & 1220 nm

## Axsun Swept Lasers

The Axsun laser provides an optimal balance of tuning bandwidth, output power, sweep speed, and coherence length to enable **cutting-edge performance** in next-generation Swept-Source Optical Coherence Tomography (SS-OCT) systems.

## A Unique Design

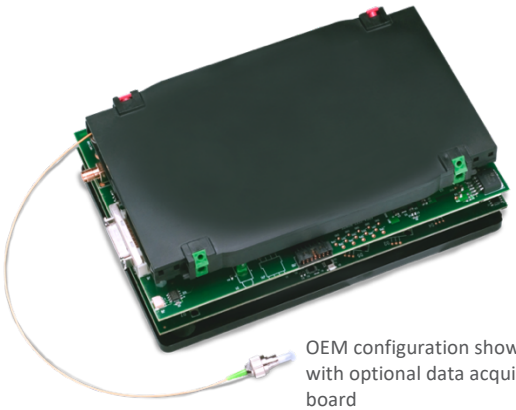
Based on our micro-optical integration capabilities and patented MEMS tunable filter, the highly scalable Axsun laser platform is the **preferred choice** for OCT system vendors in multiple markets.

## Integrated Solutions

Axsun laser modules are paired with driver electronics and optional k-clock, balanced photoreceivers, interferometers, and high-speed data acquisition electronics in compact and **highly cost-effective** OEM configurations or benchtop enclosures.

## Reliability & Support

Axsun products have logged billions of hours in telecom and imaging systems around the world since 2001. Our products meet rigorous Telcordia qualification standards and are supported by a team with **decades of expertise** in laser and OCT system technology.



OEM configuration shown with optional data acquisition board


Benchtop enclosure


Small Form Factor OEM configuration with EMI shield

## *Largest Selection of Laser Specifications Available*

| Center Wavelength | 1310 nm | | | | 1060 nm | | | |
|---|---|---|---|---|---|---|---|---|
| Sweep Rate, kHz | 50 | 100 | 100 | 200 | 100 | 100 | 200 | 1-30 |
| Tuning Range, nm (-10 dB) | 110 | 110 | 140 | 100 | 110 | 140 | 100 | 30 |
| Coherence Length, mm (1) | 28 | 20 | 20 | 16 | 12 | 12 | 10 | 50-80 |
| Average Output Power, mW | 20 | 20 (3) | 20 | 18 | 15 | 15 | 15 | 15 |
| Scan Depth in Air, mm (2) | 5 | 5 | 5 | 5 | 3.7 | 3.7 | 3.7 | - |
| Common Applications | Anterior Segment Ophthalmic Imaging, Endoscopy, Dermatology, Cardiology, Nondestructive Testing, etc… | | | | High Speed Retinal Imaging | | | Biometry, Topography |

(1) Measured as double-sided 6dB fringe contrast roll-off
(2) With optional k-clock output
(3) High power (>40mW) option available

Typical specifications shown.
Custom configurations available on request.
Please inquire about 1220 nm swept laser specifications.

AXSUN
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EXCELITAS TECHNOLOGIES®

www.excelitas.com

# High Speed Swept Laser Engines at 1060, 1310, & 1220 nm

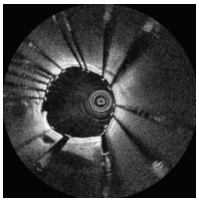
## Features & Available Options

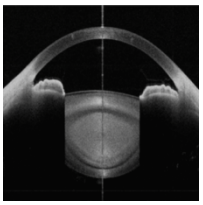
| |
|---|
| Configured in **Standard OEM** [1], **Small Form Factor OEM** [2], or **Benchtop Enclosure** [3] |
| Emission control via hardware line or software (Windows XP or later) |
| Latching hardware-based emission interlock and LED emission indicator |
| Quasi-linear laser sweep trajectory; ≈42-55% sampled duty cycle |
| Optional **K-clock Output** for direct A/D sampling [1 & 3 only] |
| Phantom sample clock generated during laser fly-back for compatibility with Axsun's and other common third-party data acquisition boards |
| Programmable k-clock delay to manage time-of-flight difference between k-clock and main OCT interferometers |
| Optional **Balanced Photoreceivers** (single or dual-channel) [1 only] |
| Optional 500MS/s, 12-bit **Data Acquisition Board** [1 only] |
| 2-Channel DAQ with 1G Ethernet, PCIe, and USB 3.0 interface |
| 1-Channel DAQ with CameraLink interface (to PCIe frame grabber) |
| Optional Power Monitor [1 only], Optional EMI Shield [1 & 2 only] |
| Optional OCT Mach Zehnder Interferometer and reference Variable Delay Line [1 only] |

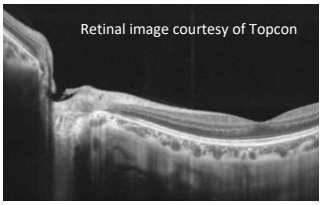
## Interface Specifications

| | |
|---|---|
| Optical Output | OEM: ≈1m 900µm-jacketed fiber, FC/APC connector |
| | Benchtop: FC/APC bulkhead |
| Sweep Trigger Output | Standard OEM: LVDS (1.0-1.4V), 100Ω termination, SATA* |
| | Benchtop & SFF OEM: LVTTL (0-3.3V), unterminated, SMA |
| K-clock Output | Standard OEM: ECL (1.6-2.4V), 100Ω termination, SATA* |
| | Benchtop: 0.2-0.8V, 50Ω termination, SMA |
| USB 2.0 Control & Diagnostics | OEM: mini-B receptacle |
| | Benchtop: type B receptacle |
| Power Consumption | 12 W typical at 25˚C, 12 $V_{DC}$ supply included |
| Dimensions | [1] Standard OEM: 54 x 144 x 178 mm (2.1 x 4.5 x 7") |
| | [2] SFF OEM: 25 x 85 x 110 mm (1 x 3.5 x 4.5") |
| | [3] Benchtop: 76 x 152 x 208 mm (3.1 x 6 x 8.2") |
| Environmental Requirements | OEM: maintain heatsink @ 10-45˚C, 10-90% humidity NC |
| | Benchtop: 10-35˚C, 10-90% humidity NC |

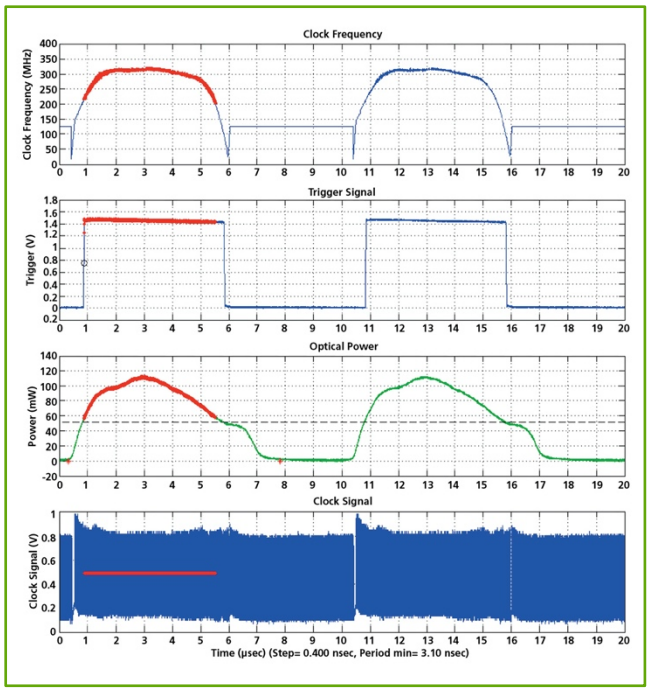
*Benchtop signal levels available on OEM configuration with included interface board



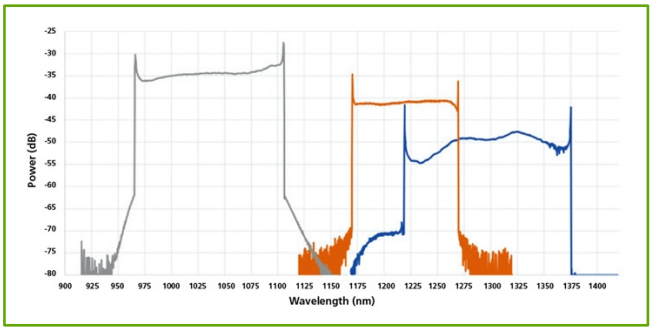





## Typical Oscilloscope Capture (100 kHz)




## Typical Optical Spectra of Axsun Lasers




***Contact Us with Special Requests!***

### About Excelitas Technologies

Excelitas Technologies® Corp. is a photonics technology leader focused on delivering innovative, high-performance, market-driven solutions to meet the lighting, optronics, detection and optical technology needs of our OEM customers.

Serving a vast array of applications across biomedical, scientific, safety, security, consumer products, semiconductor, industrial manufacturing, defense and aerospace sectors, Excelitas stands committed to enabling our customers' success in their end-markets. Our photonics team consists of 7,000 professionals working across North America, Europe and Asia, to serve customers worldwide.

For a complete listing of our global offices, visit www.excelitas.com/locations



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