

# SWEPT LASERS FOR OCT

## 1060 & 1310 nm HIGH SPEED SWEEP LASER ENGINES

### AXSUN SWEPT LASERS

provide 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

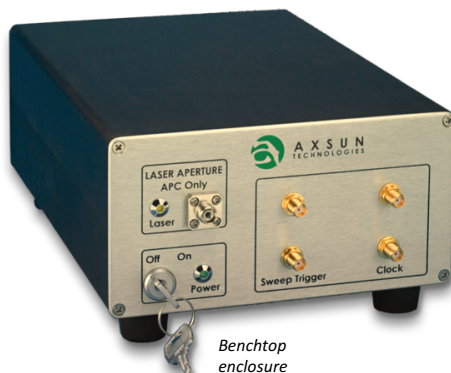
Axsun laser modules are paired with driver electronics and optional k-clock, balanced photoreceivers, interferometers, and high speed data acquisition electronics in compact and **highly cost-effective** OEM configurations or benchtop enclosures.

### 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



NEW

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	200	1-30
Tuning Range, nm (-10 dB)	110	110	140	100	110	100	30	
Coherence Length, mm <sup>1</sup>	28	20	20	16	12	10	50-80	
Average Output Power, mW	20	20 <sup>(3)</sup>	20	18	15	15	15	
Scan Depth in Air, mm <sup>2</sup>	5	5	5	5	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.					

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# 1060 & 1310 nm SWEPT LASERS FOR OCT

## FEATURES & AVAILABLE OPTIONS

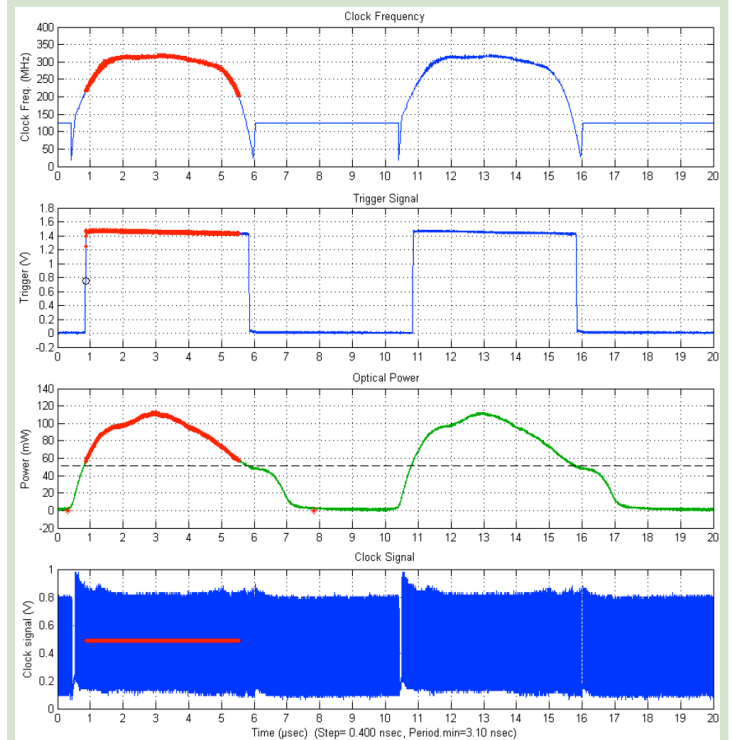
Configured in <b>Standard OEM</b> <sup>1</sup> , <b>Small Form Factor OEM</b> <sup>2</sup> , or <b>Benchtop Enclosure</b> <sup>3</sup>
Emission control via hardware line or software (Windows XP or later)
Latching hardware-based emission interlock and LED emission indicator
Quasi-linear laser sweep trajectory; $\approx 42$ -55% sampled duty cycle
Optional <b>K-clock Output</b> for direct A/D sampling <sup>(1 &amp; 3 only)</sup>
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 <b>Balanced Photoreceivers</b> (single or dual-channel) <sup>(1 only)</sup>
Optional 500MS/s, 12-bit <b>Data Acquisition Board</b> <sup>(1 only)</sup>
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 <sup>(1 only)</sup> , Optional EMI Shield <sup>(1 &amp; 2 only)</sup>
Optional OCT Mach Zehnder Interferometer and reference Variable Delay Line <sup>(1 only)</sup>

## INTERFACE SPECIFICATIONS

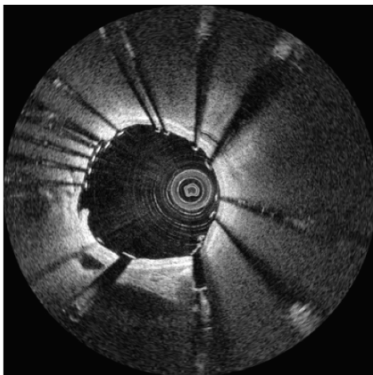
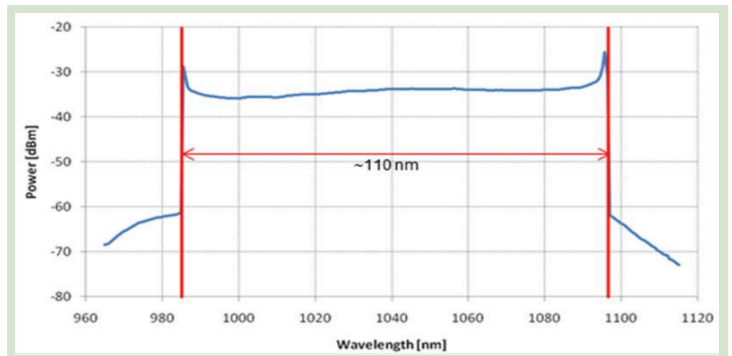
Optical Output	OEM: $\approx 1$ m 900 $\mu$ m-jacketed fiber, FC/APC connector Benchtop: FC/APC bulkhead
Sweep Trigger Output	Standard OEM: LVDS (1.0-1.4V), 100 $\Omega$ termination, SATA* Benchtop & SFF OEM: LVTTTL (0-3.3V), unterminated, SMA
K-clock Output	Standard OEM: ECL (1.6-2.4V), 100 $\Omega$ termination, SATA* Benchtop: 0.2-0.8V, 50 $\Omega$ 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 <sub>DC</sub> supply included
Mechanical Dimensions	<sup>1</sup> Standard OEM: 54 x 144 x 178 mm (2.1 x 4.5 x 7") <sup>2</sup> SFF OEM: 25 x 85 x 110 mm (1 x 3.5 x 4.5") <sup>3</sup> 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

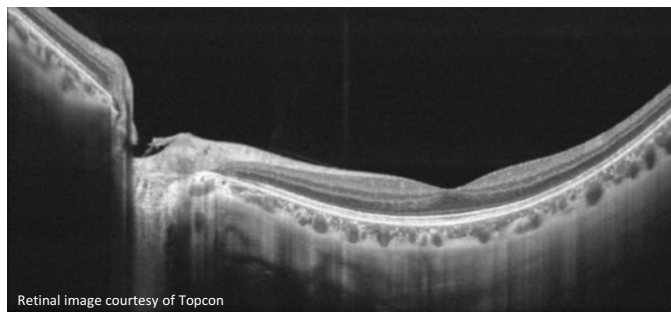
## TYPICAL OSCILLOSCOPE CAPTURE (100 kHz)



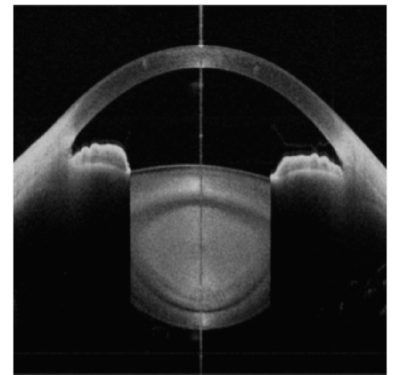
## TYPICAL OPTICAL SPECTRUM (1060 nm)



## CONTACT US WITH SPECIAL REQUESTS!



Retinal image courtesy of Topcon



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