DATASHEET
Axsun SS-OCT

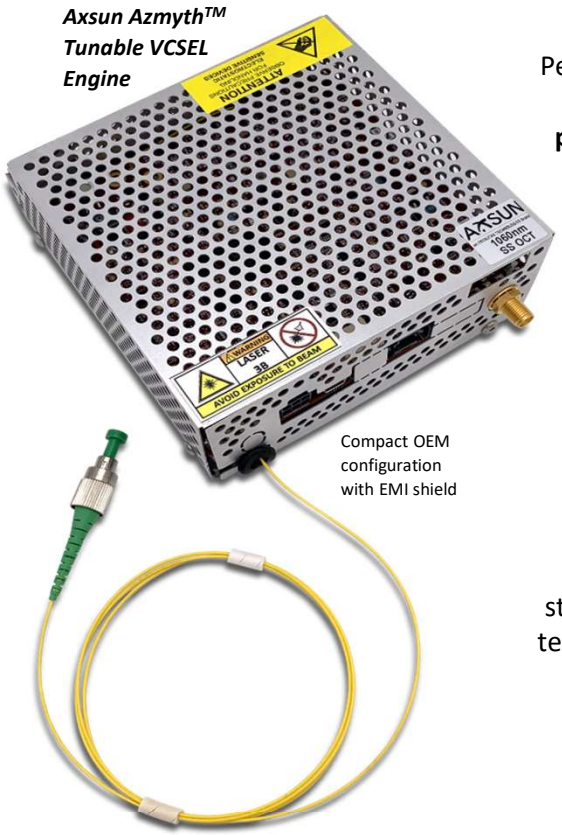
1060 nm Axsun Azmyth™ High-Speed Compact Tunable VCSEL Engine

Leading Edge Performance

The Axsun Azmyth™ VCSEL provides an **impressive balance** of tuning bandwidth, output power, sweep speed, and coherence length to enable **leading edge imaging performance** for next-generation Swept-Source Optical Coherence Tomography (SS-OCT) systems.

Compact & Scalable

The Azmyth™ VCSEL leverages Axsun's **proven tunable laser technology**, intellectual property, and volume manufacturing infrastructure to achieve a **reliable, scalable, and cost-effective** SS-OCT laser source with the highest level of performance. The enhanced Azmyth™ SS-OCT engine platform provides ultra-high-speed tuning control and valuable customization options within a compact footprint.



Axsun Azmyth™ Tunable VCSEL Engine

Compact OEM configuration with EMI shield

A Unique Laser Design

Based on Axsun's renowned micro-optical integration & precision alignment capabilities and its patented MEMS Fabry-Perot tunable filter, the Azmyth™ VCSEL is poised to become the **preferred choice** for OCT system integrators in multiple markets, including medical imaging, industrial inspection, and academic research.

Supported by Experts

Axsun has shipped over 25,000 tunable lasers into the market since 2009. Our products meet rigorous Telcordia qualification standards and are supported by a team with **decades of expertise** in tunable laser physics and OCT systems technology.

Sweep Rate	2 kHz to 400 kHz (up to 800 kHz bidirectional)
Center Wavelength	~1060 nm
Tuning Range	up to 90 nm
Coherence Length	> 100 mm
Average Output Power	> 18 mW
Scan Depth	Customizable with Integrated Digital K-clock (Analog K-clock option available)
Typical Applications	Retinal Imaging, OCT-Angiography, Anterior Segment Imaging, Optical Biometry, Inspection, Profilometry, Defect Identification, Quality Control, Ranging & LiDAR
Axsun VCSELs can operate at multiple combinations of sweep rate and tuning range to enable a variety of multi-modal OCT imaging and sensing applications.	

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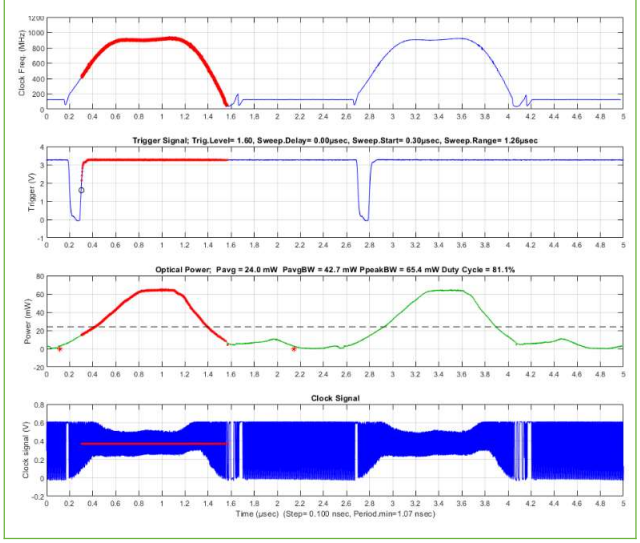
Features & Available Options

Compact OEM footprint including EMI shield enclosure for easy handling
Emission control via direct hardware input or via USB connection to host PC
Latching hardware-based emission safety interlock and LED emission indicator
Optional MZI-based Digital K-clock output for Direct A/D Sampling
Phantom sample clock generated during laser fly-back for compatibility with Axsun's and other common 3rd-party data acquisition boards
Programmable K-clock time delay to manage time-of-flight difference between K-clock and main OCT interferometers
Optional Analog K-clock output for Software Resampling
Optional single- or dual-channel balanced photoreceivers and other system options on roadmap
Electrical I/O and power connectors are backward-compatible with prior generation of Axsun OEM laser engine products for plug-and-play upgrade

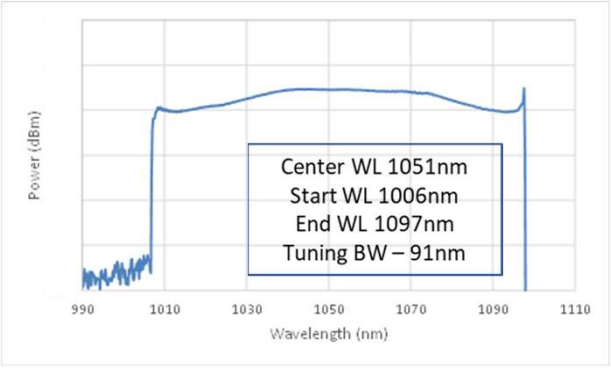
Typical O-Scope Capture (@ 400 kHz)



Interface Specifications

Optical Output	≈1m 900µm-jacketed fiber, FC/APC connector
Sweep Trigger Output	LVDS (1.0-1.4V), 100Ω termination, SATA connector or LVTTL via SMA connector
K-clock Output	Digital: ECL (1.6-2.4V), 100Ω termination, SATA Analog: +/- 200 mV sine wave via MCx connector
USB 2.0 Control & Diagnostics	Mini-B receptacle; Windows and Linux APIs
Power Consumption	22 W typical at 25˚C, 12 V_{DC} supply included (optional K-clock PCB consumes additional power)
Dimensions	44 x 111 x 123 mm (1.73 x 4.37 x 4.84")
Environmental Requirements	Maintain heatsink @ 10-45˚C 10-90% humidity NC

Typical Optical Spectrum



Contact Us with Special Requests!

About Excelitas Technologies

Excelitas Technologies® Corp. is a leading industrial technology manufacturer focused on delivering innovative, market-driven photonic solutions to meet the illumination, optical, optronic, imaging, sensing, detection and imaging needs of our OEM and end-user customers.

Serving a vast array of applications across biomedical, scientific, semiconductor, industrial manufacturing, safety, security, consumer products, defense, and aerospace sectors, Excelitas stands committed to enabling our customers' success in their many various end-markets. Our team consists of more than 7,500 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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