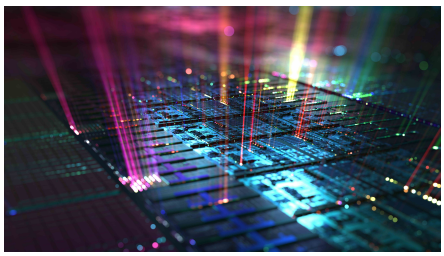
AOI Introduces New Ultra High-Power Semiconductor Laser to Support Silicon Photonics and CPO

December 18, 2025

SUGAR LAND, Texas, Dec. 18, 2025 (GLOBE NEWSWIRE) -- Applied Optoelectronics Inc. (NASDAQ: AAOI), a leading provider of advanced optical and HFC networking products that power the internet, today announced a new 400-milliwatt narrow-linewidth pump laser designed to meet growing demand for silicon photonics and co-packaged optics (CPO) in AI data centers.

A few years in development, the new 400mW laser addresses situations where lasers with broader line width or higher noise figures lasers limit performance. It can source directly into semiconductor chip-scale systems to provide hyperscalers with a robust, high-performance light source for CPO, silicon photonics and other applications that demand precision and power from a single, stable wavelength. 400mW laser-powered chips can also serve as high-efficiency external sources that can provide the necessary pump power to feed multiple optical communication channels.

AOI Introduces New Semiconductor Laser to Support Silicon Photonics and CPO in AI Data Centers



Applied Optoelectronics, Inc. (AOI)

Key Benefits Include:

- **Closes 800G / 1.6T power budgets** by delivering enough optical power to overcome coupling, splitting, and routing losses without exceeding thermal limits near AI switch ASICs
- **Enables shared and external laser architectures** by reliably feeding many silicon photonics lanes or wavelengths from a single centralized source
- **Stabilizes silicon photonics devices** by minimizing wavelength drift and noise in ring modulators, micro-ring lasers, and on-chip nonlinear elements
- **Improves system yield and uptime** by reducing calibration effort, simplifying wavelength locking, and maintaining consistent lane-to-lane performance as systems scale

Key Performance Specifications:

- DFB with AOI's mature buried hetero (BH) structure laser platform with excellent reliability
- Optical power over 400mW at 50°C
- Narrow linewidth

"Sophisticated architectures need high performance optical sources. We have spent the last several years working on the specs to produce an ultra high-power laser that will meet the demands of optical networks today and specifically support the CPO architectures of the future," said Fred Chang, Senior Vice President and North American General Manager at AOI. "With this new technology, we are raising the bar on laser power, coherence, and stability to offer customers the ideal solution for unlocking scalable optical I/O, simplifying system design, and accelerating the industry's transition to co-packaged optics at 800G and beyond."

Samples are now available to select customers, with volume production expected later in 2026.

Additional Resources:

- AOI Semiconductor Lasers

About AOI
Applied Optoelectronics, Inc. (AOI) is a leading developer and manufacturer of advanced optical and HFC networking products that are the building blocks for AI datacenters, CATV and broadband fiber access networks around the world. AOI supplies this critical infrastructure to tier-one customers across cloud computing, CATV broadband, telecom, and FTTH markets. The company has R&D facilities in Atlanta, and R&D, engineering and manufacturing facilities at its corporate headquarters in Sugar Land, TX, as well as in Taipei, Taiwan and Ningbo, China. For additional information, visit www.ao-inc.com.

Media contact:
Sara Cicero
sara_cicero@ao-inc.com
770-331-0269

A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/8ab210d5-0815-4c84-af56-f51a05321f59