Lightmatter Unveils vClick™ Optics, Industry-First Detachable Fiber Array Unit for CPO Advanced Packaging and High-Volume Production

March 11, 2026

Enabling massively deployable and serviceable high-bandwidth Passage 3D photonic interconnects

MOUNTAIN VIEW, Calif. — March 11, 2026 — Lightmatter, the leader in photonic (super) computing, today announced vClick™ Optics, a breakthrough technology enabling detachable fiber array units (FAU) that overcome the critical scaling challenges of Co-Packaged Optics (CPO). Optimized for high-volume manufacturing (HVM), vClick Optics accelerates the industry roadmap toward advanced packaging for 3D CPO-enabled XPUs and switches by demonstrating a low insertion loss of less than 1.5 dB. With support for high-bandwidth Dense Wavelength Division Multiplexing and unmatched field serviceability, this technology provides the essential foundation for 32-100Tbps+ next-generation optical interconnects, including Lightmatter's Passage L-Series**.**

vClick Optics: Shifting Left to Scale Photonic Interconnect Production

The development of high-bandwidth optical engines (OEs) requires integration with advanced packaging (AP) technologies. The delivery of known-good OEs with detachable FAUs is essential for ensuring high production yields in advanced packaging flows. To address this challenge, vClick Optics enables the integration of SENKO's SEAT™ and MPC Connector solutions with Lightmatter's vertically expanded-beam photonic technology. This creates a detachable optical interface between fiber arrays and photonic integrated circuits (PICs) that is mold-and-grind compatible, as demonstrated in ASE's advanced packaging flows. The integration of vClick Optics capability directly into the wafer fabrication process enables a "shift left" in the assembly cycle; a critical innovation required to scale next-generation 3D CPO production. By allowing manufacturers to verify "known good optical engines" before final integration, vClick significantly reduces the risk of yield loss when integrating optics with high-cost ASIC die structures in advanced XPU or switch chip packages.

Key advantages of vClick include:

- **High Bandwidth DWDM Compatibility:** Supports broadband (up to 80+ nanometers) Coarse Wavelength Division Multiplexing (CWDM) and Dense Wavelength Division Multiplexing (DWDM) to enable massive optical bandwidth density and flexibility.
- **Advanced Packaging Compatible:** The technology is mold-and-grind compatible across advanced packaging flows of the world's largest foundries and outsourced semiconductor assembly and test (OSAT) vendors.
- **Automated Assembly:** Does not require active fiber alignment during production, minimizing assembly and testing time.

- **Field Serviceability:** A demonstrated insertion and re-insertion loss of less than 1.5 dB, preserves the optical power required to drive field-serviceable CPO with 100Tbps or more of bandwidth.

Executive Perspectives

"The increasing complexity in advanced AI chip packages and their production processes necessitates a move toward a known good optical engine at the wafer level," said Ritesh Jain, SVP, Engineering and Operations of Lightmatter. "With vClick Optics, we are providing physical optical engine connectivity that integrates seamlessly into the world's largest and most advanced semiconductor supply chains, ensuring that our L-Series 3D CPO platform is hyperscale volume-ready."

"Collaborating with Lightmatter on this milestone underscores our commitment to advancing scalable packaging solutions for evolving AI infrastructure," said Calvin Cheung, VP, Engineering and Business Development of ASE. "Integrating vClick technology into high-volume advanced packaging flows is a vital step toward enabling detachable fiber connectivity for co-packaged optics and emerging XPU platforms."

"Our partnership with Lightmatter on vClick Optics moves detachable fiber connectors closer to mainstream adoption," said Kazu Takano, President, Senko Emerging Technologies Group and Corporate Officer of SENKO Advanced Components. "By integrating our SEAT and MPC technologies into Lightmatter's 3D CPO architecture, we are enabling detachable fiber interfaces that meet the manufacturability, performance, and serviceability requirements of large-scale AI infrastructure."

An FAU serves as the critical bridge between optical fibers and Photonic Integrated Circuits (PICs). vClick Optics represents a major step forward as the industry's first detachable FAU that is compatible with advanced packaging, transforming once-permanent fiber attachment into a "must-have" plug-and-play FAU. With this new technology, Lightmatter ensures that high-density 3D CPO solutions like Passage L-Series are both massively deployable and easily serviceable for mission-critical hyperscale AI data center applications.

To provide comprehensive coverage across the CPO roadmap, Lightmatter also revealed eClick™ Optics, a high-performance edge-coupling solution optimized for larger die complexes like those enabled by the Passage M1000 reference platform. By utilizing an edge-attach method to minimize the impact on PIC die area, eClick achieves very low insertion loss in large-scale implementations, serving as a complementary alternative for specialized, large-format hardware.

Lightmatter will showcase its latest innovations, including vClick Optics, at the Optical Fiber Communication conference in Los Angeles, from March 15-19, 2026. For more information, please visit https://lightmatter.co/event/ofc-2026/.

About Lightmatter

Lightmatter® is leading a revolution in AI data center infrastructure, enabling the next giant leaps in human progress. The company's groundbreaking Passage™ platform—the world's first 3D-stacked silicon photonics engine—and Guide®—the industry's first VLSP™ light engine—connect thousands to millions of processors. Designed to eliminate critical data bottlenecks, Lightmatter's technology delivers unprecedented bandwidth density and energy efficiency for the most advanced AI and high-performance computing workloads, fundamentally redefining the architecture of next-generation AI infrastructure. Visit www.lightmatter.co to learn more.

Lightmatter, Passage, Guide, VLSP, vClick and eClick are trademarks of Lightmatter, Inc. Any other trademarks or registered trademarks mentioned in this release are the property of their respective owners.

Media Contact:

Lightmatter

Katie Maller

press@lightmatter.co