



Lightmatter Delivers Open Rack CPO Switch and XPU Scale-Up Server Through Independent Collaborations with Flex and Other Industry Partners

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MHS-based CPO switch production validation system developed with Flex and separate XPU demo system powered by Lightmatter Passage CPO and Guide DR Showcased at OCP Global Summit

- First ORv3 and MHS-based systems with Passage[®], Guide[®] DR and vClick[™]
- Next gen 204.8 Tbps CPO switch tray in 1RU developed with Flex as a production validation system
- Next gen 102.4 Tbps CPO XPU tray with 4 accelerators leveraging DC-MHS chassis infrastructure provided by a major ODM partner

SAN JOSE, Calif. – October 12, 2026 – [Lightmatter](#), the leader in photonic (super)computing, today unveiled Passage[®] co-packaged optics (CPO), Guide[®] DR external laser modules and vClick[™] Optics integrated into a switch tray and an XPU tray built to Open Compute Project (OCP) rack and server specifications at the 2026 OCP Global Summit. Flex collaborated with Lightmatter on the CPO switch tray as a production validation platform. Separately, the CPO XPU tray, developed by Lightmatter leveraging Data Center Modular Hardware (DC-MHS) Infrastructure provided by another major ODM and expanded beam PRIZM[®] TMT optical connector technology from Corning Incorporated, is the first proof of concept for the [“Architecture Vision: Open Silicon Photonics for AI Systems”](#) white paper contributed to OCP. Showcased at Lightmatter booth A36, both designs are based on Open Rack Version 3 (ORv3) and Modular Hardware System (MHS) and use fiber connectivity from SENKO. Lightmatter and these partners also work together in the Open Silicon Photonics for AI Systems initiative, [announced in August](#), which now includes more than 20 companies.

Lightmatter Passage CPO and Guide DR laser modules pack high-bandwidth, bidirectional (BiDi) optical connectivity into a compact footprint and are designed to work within existing and emerging AI system specifications and server designs in OCP. Together, they enable ultra-high bandwidth designs in 1 rack unit (RU) height: next gen scale-up 204.8T switch tray and an OCP, MGX-like 102.4T XPU tray. Collaboration on the switch tray leverages the engineering and manufacturing expertise of Flex, integrating eight Passage CPO BiDi engines powered by Guide DR laser modules in a liquid-cooled chassis. Compared to conventional ELSFP lasers and unidirectional fiber harnesses, next-generation switch systems, powered by Lightmatter Passage and Guide, are 2-4x more efficient in rack faceplate density.

“In an AI factory, interconnect bandwidth sets the ceiling on compute,” said Nick Harris, Ph.D., Founder and CEO at Lightmatter. “Alignment towards a unified rack architecture for silicon photonics will significantly accelerate adoption. That’s exactly what open silicon photonics is for. With Flex, we’re showing for the first time a Passage-based open switch tray that packs the optical bandwidth of a two-to-four rack unit design into one. We’re excited to partner with Flex to enable our joint customers to deploy photonics-enabled AI supercomputers.”

“Partnering with Lightmatter brings advanced silicon photonics integration into standard data center rack hardware,” said Colin Chapman, Senior Vice President at Flex. “We brought our engineering and manufacturing expertise to this production validation platform to validate a manufacturing path for integrating co-packaged optics into production systems at scale. Showing it at OCP Global Summit demonstrates how our joint work can help customers accelerate deployment of high-bandwidth photonics at scale, with more efficient use of rack space and cooling.”

Today, the size of AI scale-up systems is limited to one or two racks due to the reach limitations of massive copper backplanes. Independently, the XPU tray prototype replaces that copper with photonic interconnects, demonstrating the architecture outlined in the Open Silicon Photonics for AI Systems white paper. Lightmatter and its partners have collaborated on the infrastructure to integrate into the ORv3 and DC-MHS specifications, enabling the development of an all-liquid-cooled compute tray built directly within a standardized chassis and showcased at the OCP Global Summit. The XPU tray houses four accelerator ASICs and two CPUs with 102.4 Tbps of combined scale-up bandwidth, interconnected by four BiDi Passage CPO engines and Guide DR laser modules that blind mate as they slide into the rack, eliminating the need for copper connections. Making its public debut at the summit, it is the industry's first compute tray to carry four XPUs connected with 102.4 Tbps of scale-up optical bandwidth in a 2U rack height.

The two systems also mark industry-first displays of Guide DR and vClick™ Optics in OCP systems. Guide DR, a high-density laser in an innovative Laser Network Interface Card (“LNIC”) form factor, is showcased in both trays. Lightmatter's vClick optics, a low-loss, detachable fiber connector compatible with mold-and-grind advanced packaging, connects the fiber to the XPU inside the compute tray. Lightmatter developed its vClick optics connector solution in collaboration with SENKO. The solution incorporates SENKO's SEAT™ detachable optical interface and Metallic Pic Coupler (MPC) technologies, enabling the high-density, detachable optical interface required for advanced packaging and serviceable co-packaged optics deployments. High density fiber arrays and connectors for both systems are provided by SENKO and Corning.

“Scaling photonics within the server tray requires connectivity that is dense, reliable and straightforward to service,” said Philip Ward, Director of Strategic Marketing at SENKO. “SENKO brings a proven track record of developing advanced solutions for evolving network architectures. Our collaboration with Lightmatter on both systems has enabled us to apply that expertise from the outset, and we look forward to supporting the broader ecosystem as these designs progress towards deployment.”

“Optical fiber is poised to replace copper in AI infrastructure with connections that are as practical as they are powerful,” said Claude Echahamian, Vice President & General Manager, Emerging Businesses and EMEA, Corning Optical Communications. “Only fiber creates networks dense enough for next-generation bandwidth, reliable enough for production environments, and simple enough to service at rack scale.”

“Optics can win a significant share of the nearly \$350 billion we forecast for AI networking spend in 2030 but cloud operators have been clear about their terms,” said Brendan Burke, Research Director at Futurum. “They want chips and switches from different vendors to connect over an open optical interface and require roadmap stability. Building optical switch and compute trays to open rack standards with established manufacturers creates a path to volume production within two years, giving operators systems that fit the racks they already deploy and the supply certainty they need to commit.”

At the OCP Global Summit, Lightmatter will present two technical sessions on extending MHS server platforms for optical interconnect. The first, “Open Silicon Photonics for AI Systems: Extending the MHS Platform Contract,” runs Tuesday, October 13, at 4:25 p.m. PT (concourse level 212). The second, “High-Speed Open Silicon Photonics Reference Designs,” runs Wednesday, October 14, at 1:30 p.m. PT (concourse level 210AE). For details, visit

<https://lightmatter.co/event/2026-ocp-global-summit-2/>.

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.

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