

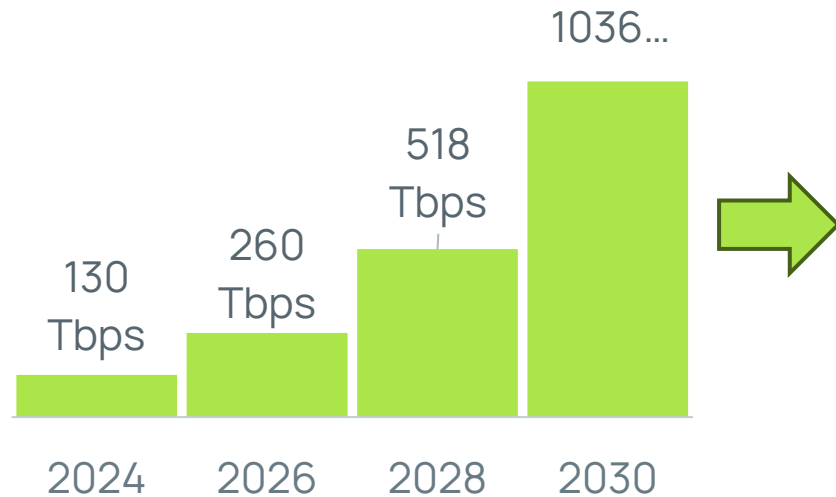
Packaging Lasers: How Heterogeneous Integration Unlocks DWDM Power for CPO

Optica OIM: Enabling High-Volume Photonic Integration w/ Advanced Packaging

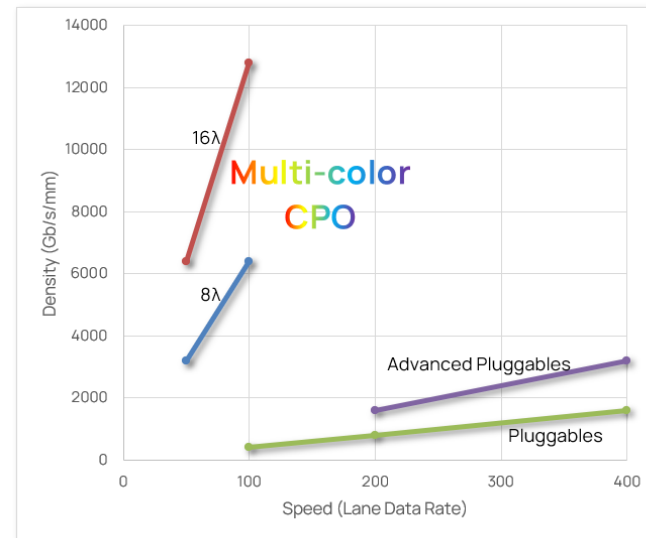
John Anderton, CCO - 12 May 2026

AI datacenters will be powered by multi-wavelength lasers

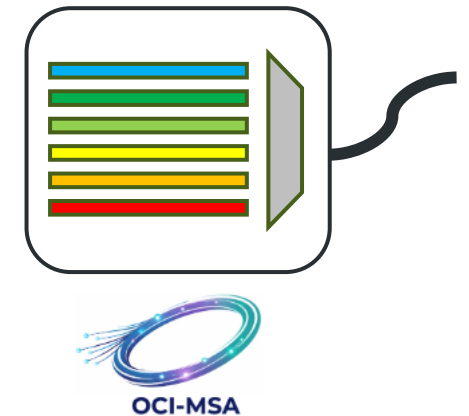
GPU data rate doubles every two years



Multi-color CPO unlocks speed*density @low latency

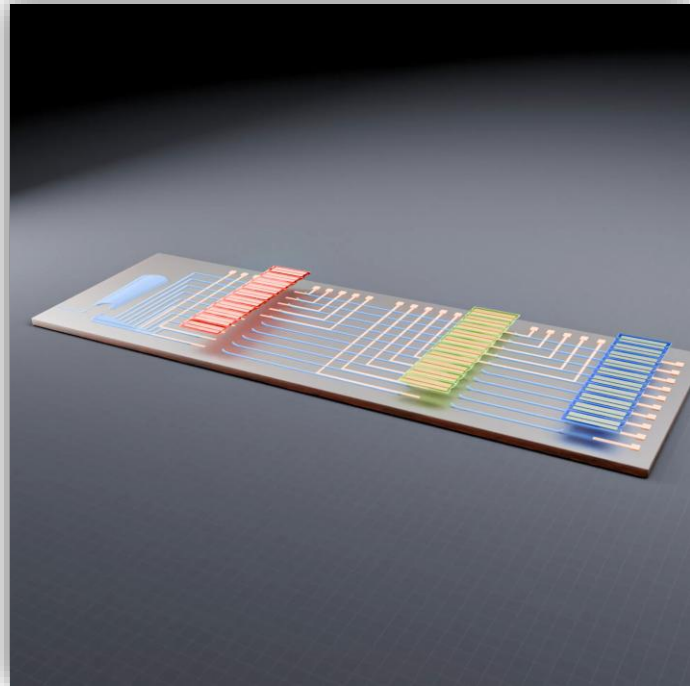


Powered by multi-wavelength laser sources



How do you package 8, 16, 32 lasers in a way that is actually manufacturable at volume, at the right power?

A platform built for laser packaging



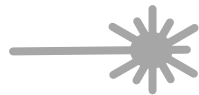
Single-step optical & electrical bonding

Concurrent I/O attach eliminates costly additional optical assembly steps



Full passive alignment to < 200nm

Flip chip placement at $\sim 2\mu\text{m}$ resolved to < 200nm
No active tuning, high yield, unlimited optical I/Os per chip



Thick-film waveguides: high power & on-wavelength

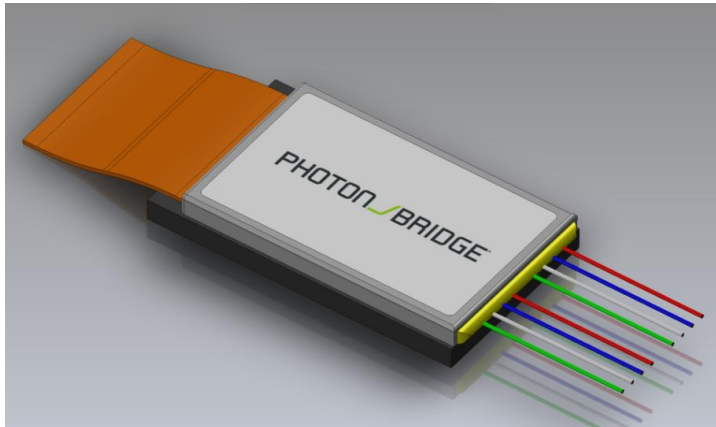
1W power handling
Low process sensitivity – MUX on channel without tuning



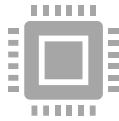
Manufacturable laser attach

Standard flip chip tools, i-line lithography ... no exotic processes required

Photon Bridge laser source – designed to scale

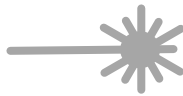


Photon Bridge TOSA



On-silicon wavelength multiplexing

Fewer components, fewer connections, fewer failure points



High on-silicon power

Thick film silicon

Complete InP integration: full optical mode sees laser gain



Scale colors by addition, not amplification

Moving to 16 and 32 colors adds laser elements

Laser stress does not increase with channel count



Multi-foundry supply-resilience

Fully manufactured InP die – path to multiple qualified sources, no single supplier lock-in.

Target performance >30mW per wavelength, per fiber 16% WPE

Working on CPO Integration or Advanced Packaging?

If you are working on:

- CPO integration & laser sources
- Silicon photonics platform development
- Advanced packaging for optical I/O

We want to talk



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