



Making Light Into Life As Invisible Way!

KM Huang, PhD (黃國閔), CEO and founder
Email: km.huang@coluxinno.com

Company Info

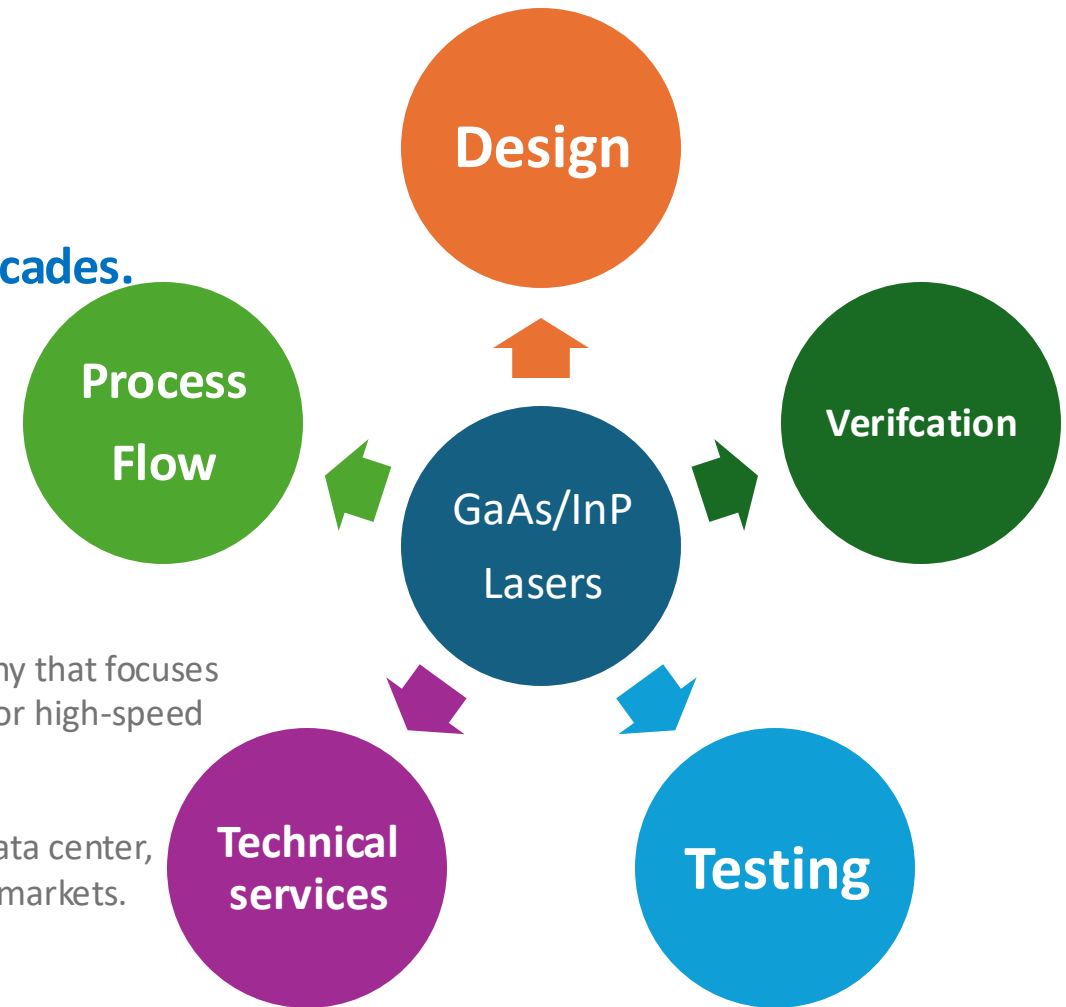
CoLuX Innovations Inc

- Startup on 2025 Mar
- Focus on GaAs and InP based lasers devices over decades.
- Fabless manufacturing and R&D labs
- Innovation, Profession, and Integrity

Establishment purpose:

CoLuX is a professional semiconductor laser design and manufacturing company that focuses on customized design, process flow, test verification, and packaging modules for high-speed and high-power semiconductor lasers.

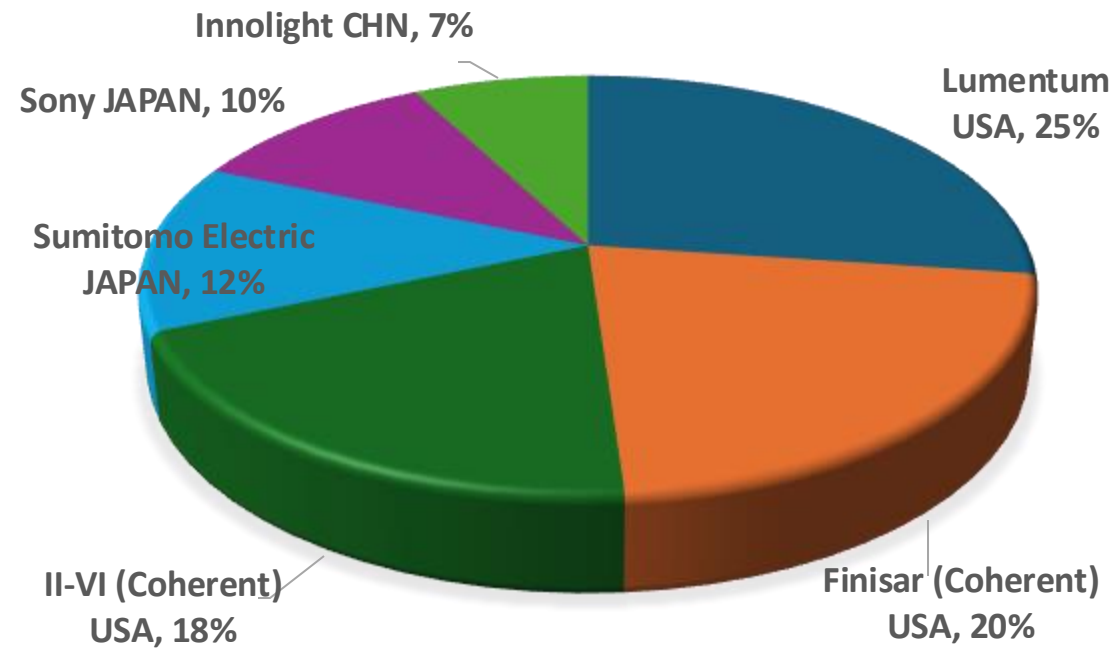
We are committed to providing advanced optoelectronic technologies for AI data center, fiber communications, silicon photonics, optical sensing, LiDAR and industries markets.



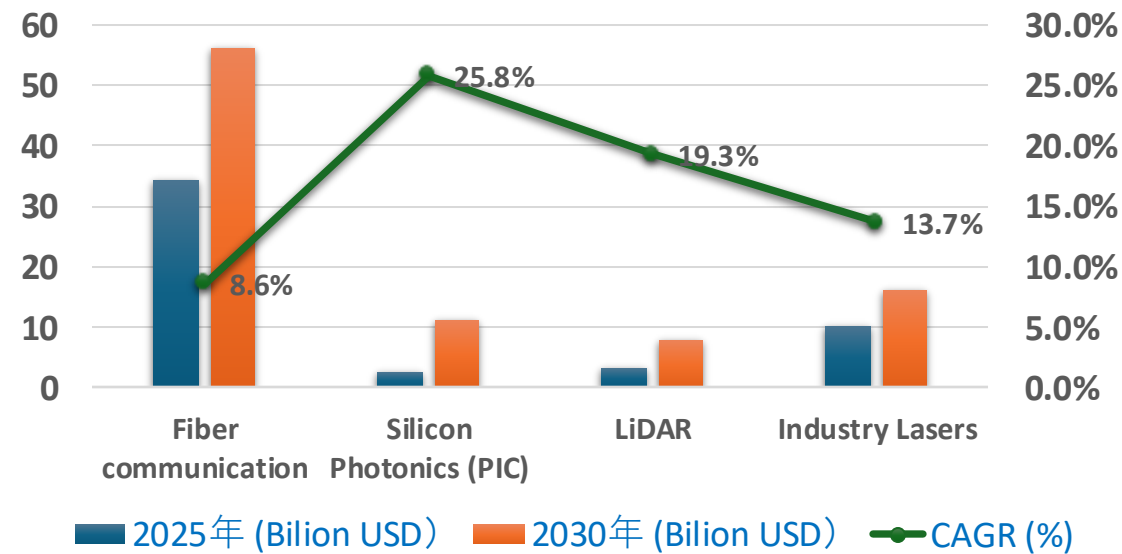
Market and Trend for Semiconductor Lasers

These fields need semiconductor lasers

COMPETITOR AND MARKETING SHARE



Marking Forecast



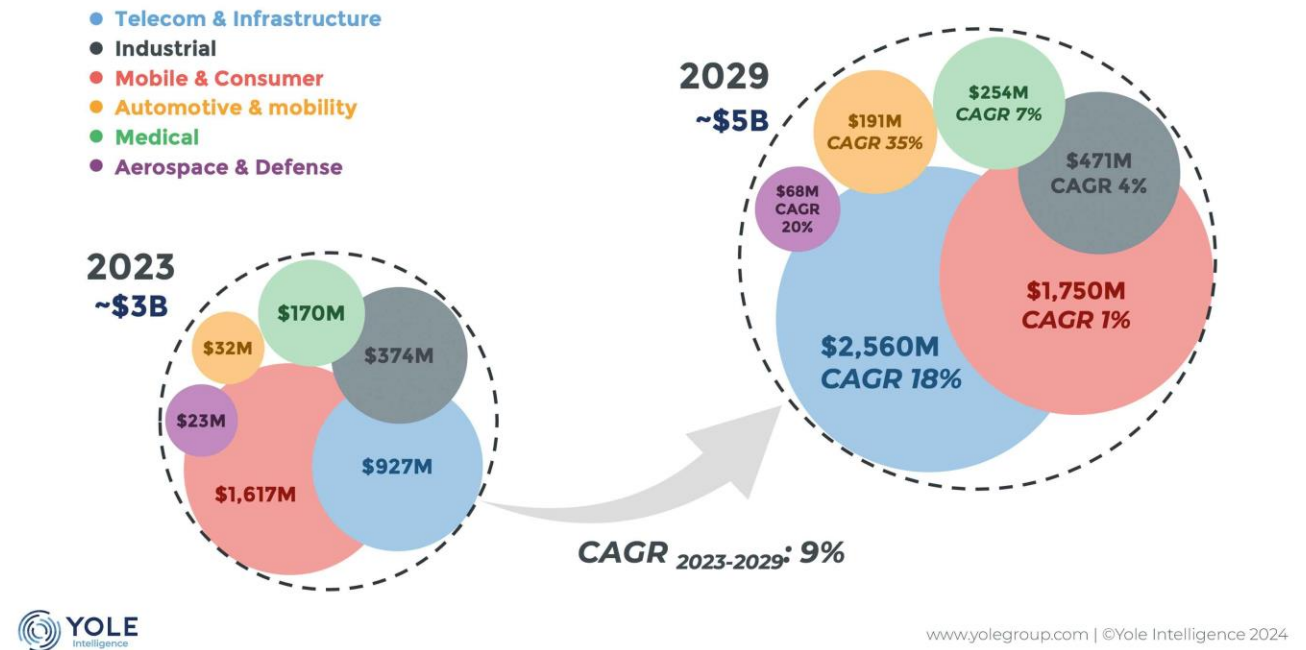
Reference by Yole and

Market and Trend for Semiconductor Lasers

- With more than **\$5 billion in 2029**
- Telecom & infrastructure remains the most important segment: more than \$2.5 billion in 2029 with a significant **18% 2023-2029 CAGR**.
- The ecosystem is highly diversified and fragmented: the wide array of applications requires unique laser system specifications.
- **Advancing semiconductor laser technology** is crucial for realizing the full potential of the markets.

SEMICONDUCTOR LASER REVENUE FORECAST BY SEGMENT – 2023 VS. 2029

Source: Semiconductor Laser Industry report, Yole Intelligence, 2024



Reference by Yole

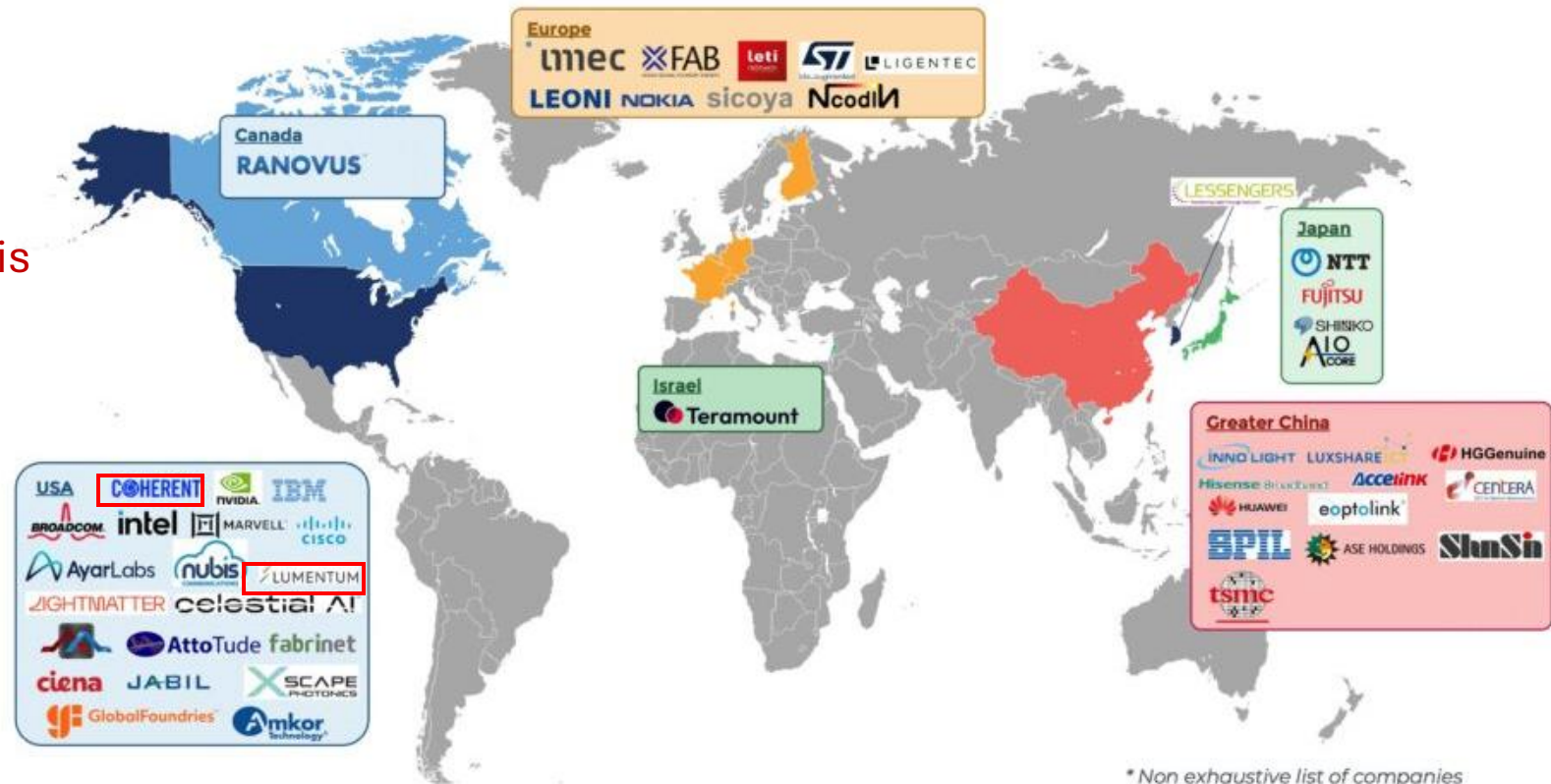
Market for Co-packaged Optics

- Laser light source is a core device in CPO future
- Now on is external light source but laser package or chip on PCB and PICs will coming soon before 2027.

CO-PACKAGED OPTICS (CPO) INDUSTRY OVERVIEW*

Source: Co-packaged Optics for Datacenter 2025 report, Yole Group

World's laser chip supplier is
Lumentum and Coherent



* Non exhaustive list of companies

Reference by Yole

Core Technologies

- Customized: Wavelength, Optical power, Bandwidth, and Single mode
- BH and Hetero structures QW: Increased PIE and High-speed modulation

- EEL DFB and VCSEL
- Wavelength: 1270-1550nm, 850, 940nm
- Optical Power: 5mW-500mW
- Bandwidth: >30GHz
- Mode: Single Mode and SMSR>40dB

- Reduced thermal effect by different material
- Chip downsizing : < 0.25mm²
- Quantum dot for Efficiency and life

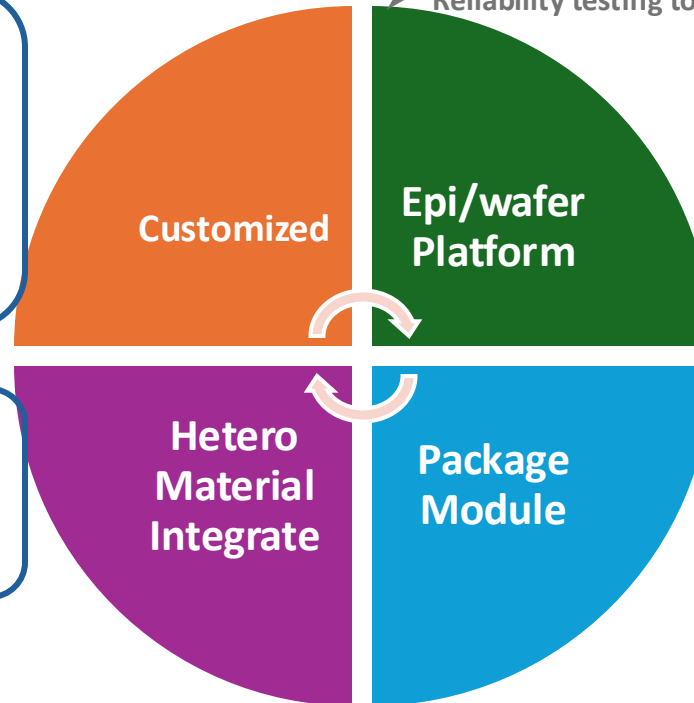
- Heterostructures material and lasers for photonics integrated circuits (PICs)
- R&D BH-DFB QC lasers with SSC, SOA, QD

- Epitaxy and wafer platform:
- Laser devices opto-electric performance verifications
- Reliability testing to meet GR-468 core specification

Platform : Epitaxy, Grating, wafer process, facet
Testing : DC and RF measurement
Reliability : HTOL, Aging, 85C/85%RH

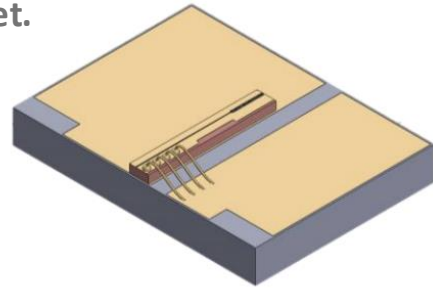
- TEC cooling: 0-55C
- Fiber couple and optics
- High power driver

- Butterfly package with TEC to increase stability/life for Po and wavelength
- High power driver for ultra high-speed data communication for AI core chip



Strategies

- Laser chips with photonic integrated circuit (PIC) to improve yield and repairable.
- The goal is to achieve SiPh integrated laser chips on 2026 and enter the high-data rate module market.

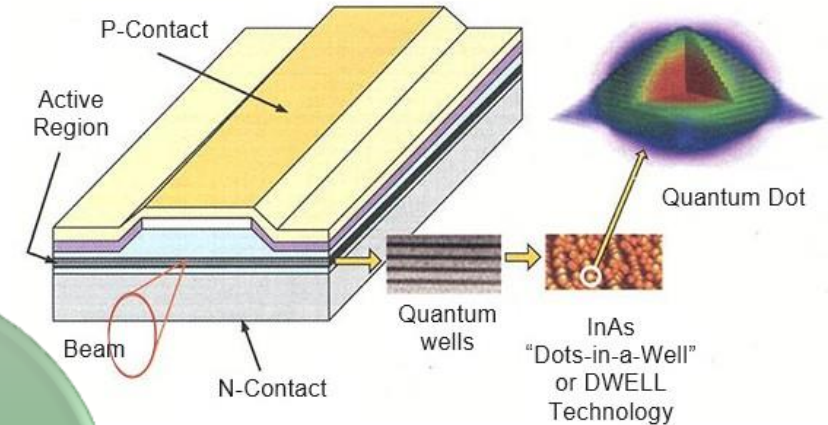
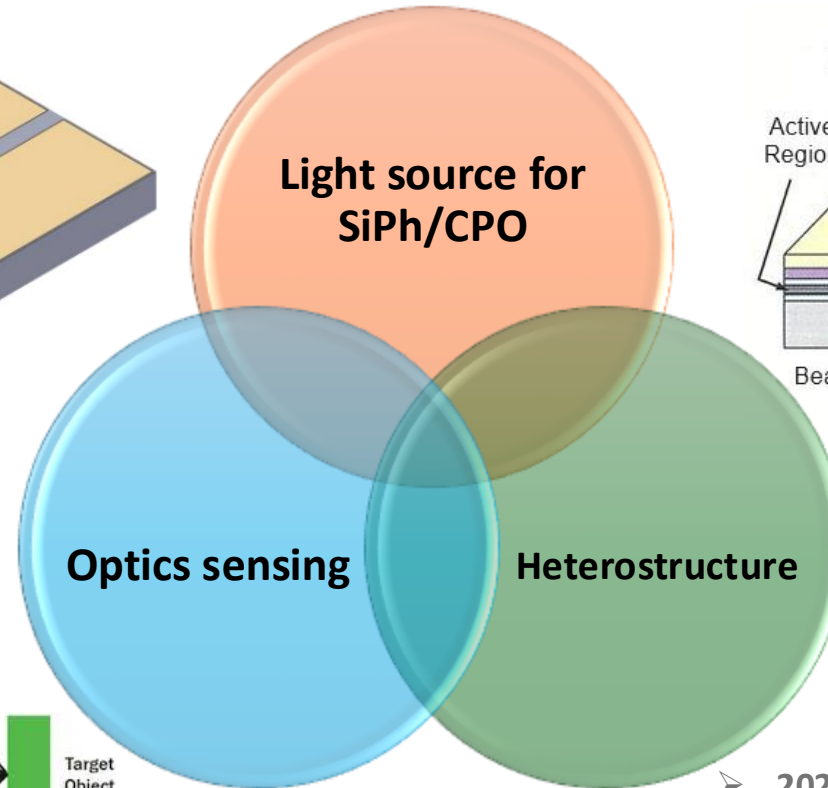
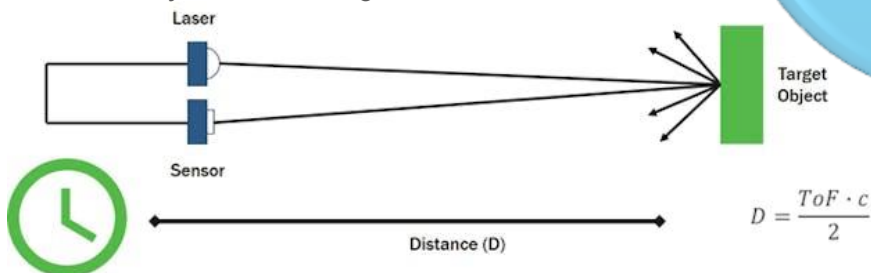


Reference by photodigm.com

Chip on Submount (CoS)

- 2026 milestone: Develop 1550nm high-power laser for L4/L5 autonomous driving systems

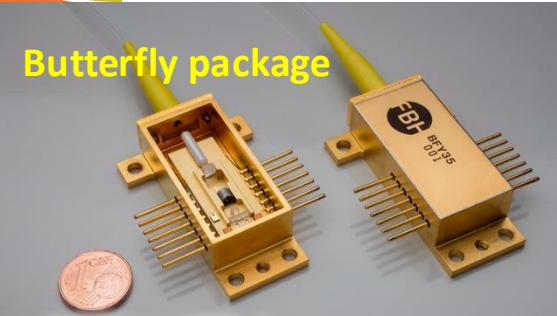
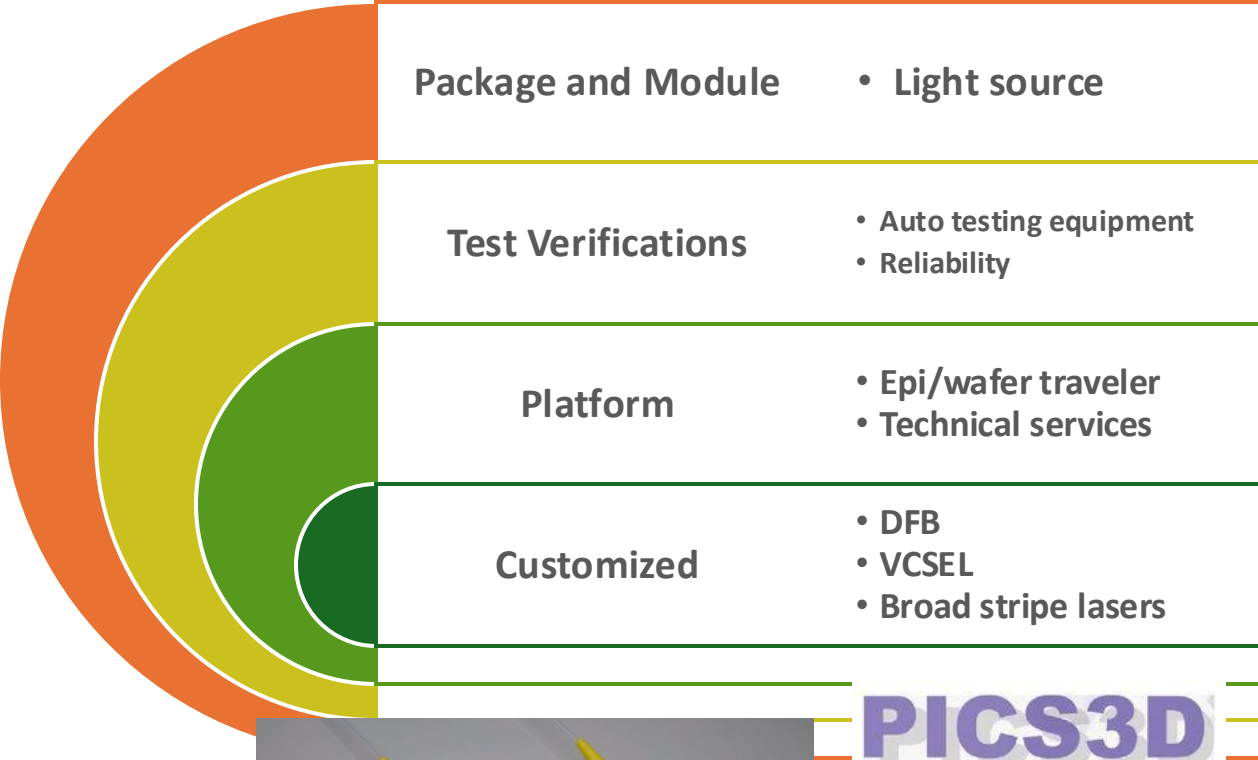
Reference by electronicdesign.com/markets/



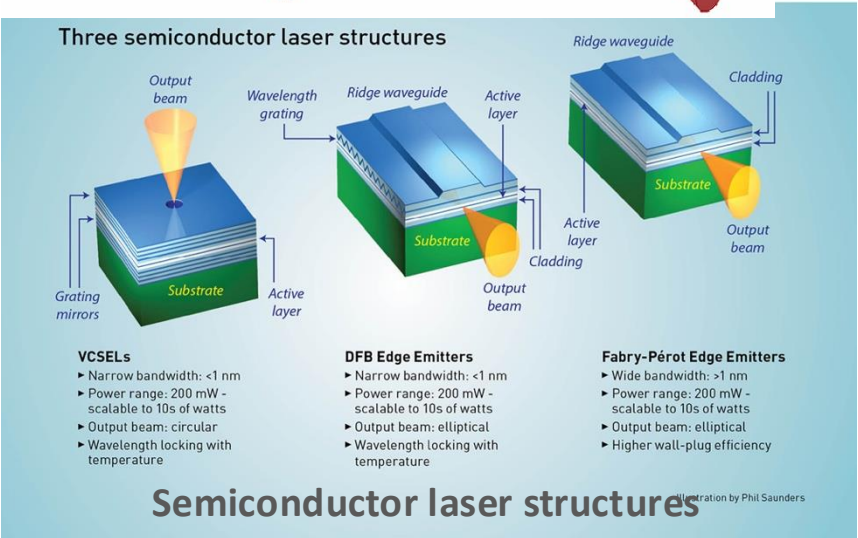
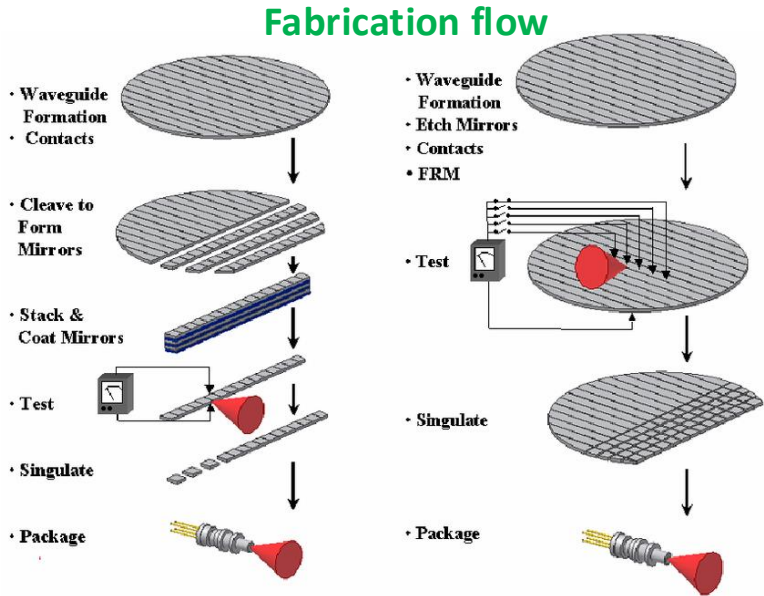
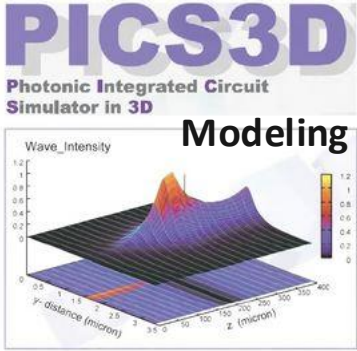
Reference by gophotonics.com/community

- 2027 milestone: Develop quantum dot lasers to integrate heterogeneous materials and develop laser transistor

Services



Butterfly package



Progress in etched facet technology for GaN and blue lasers - art. no. 64731F

Laser and Photodetector Testing Services

- Edge emitting lasers and VCSEL chips or COC
- Light output power ($>10 \text{ uW}$)
- Wavelength: 400nm-1700nm
- S parameter: fixed 850nm, 940nm, 1310nm, 1550nm by OE module
- Eye diagram: Max NRZ 56Gbps or PAM4 56Gbaud (back to back)
- Temperature depend (10-100C)

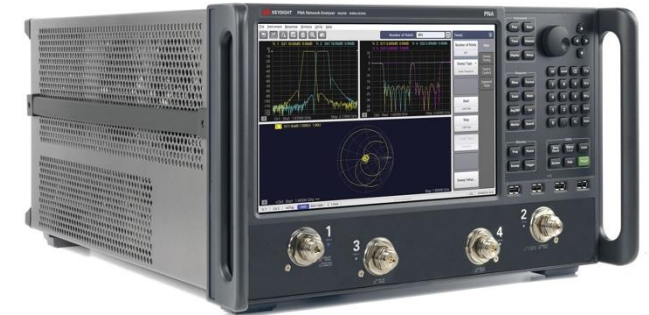


DC chip tester

Optical spectrum analyzer, OSA



Bit error rate tester, BERT

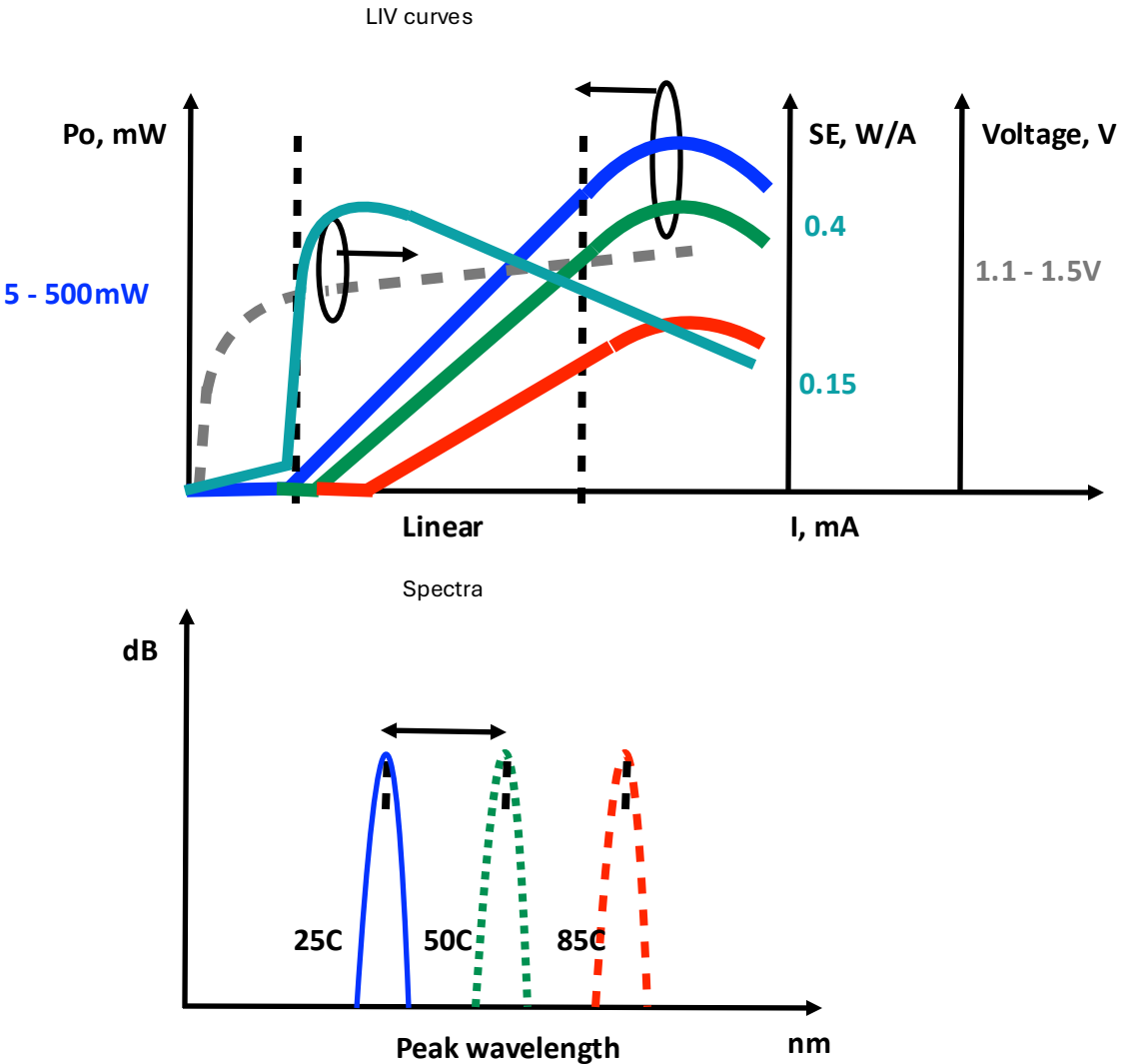


Vector network analyzer, VNA

Laser testing items

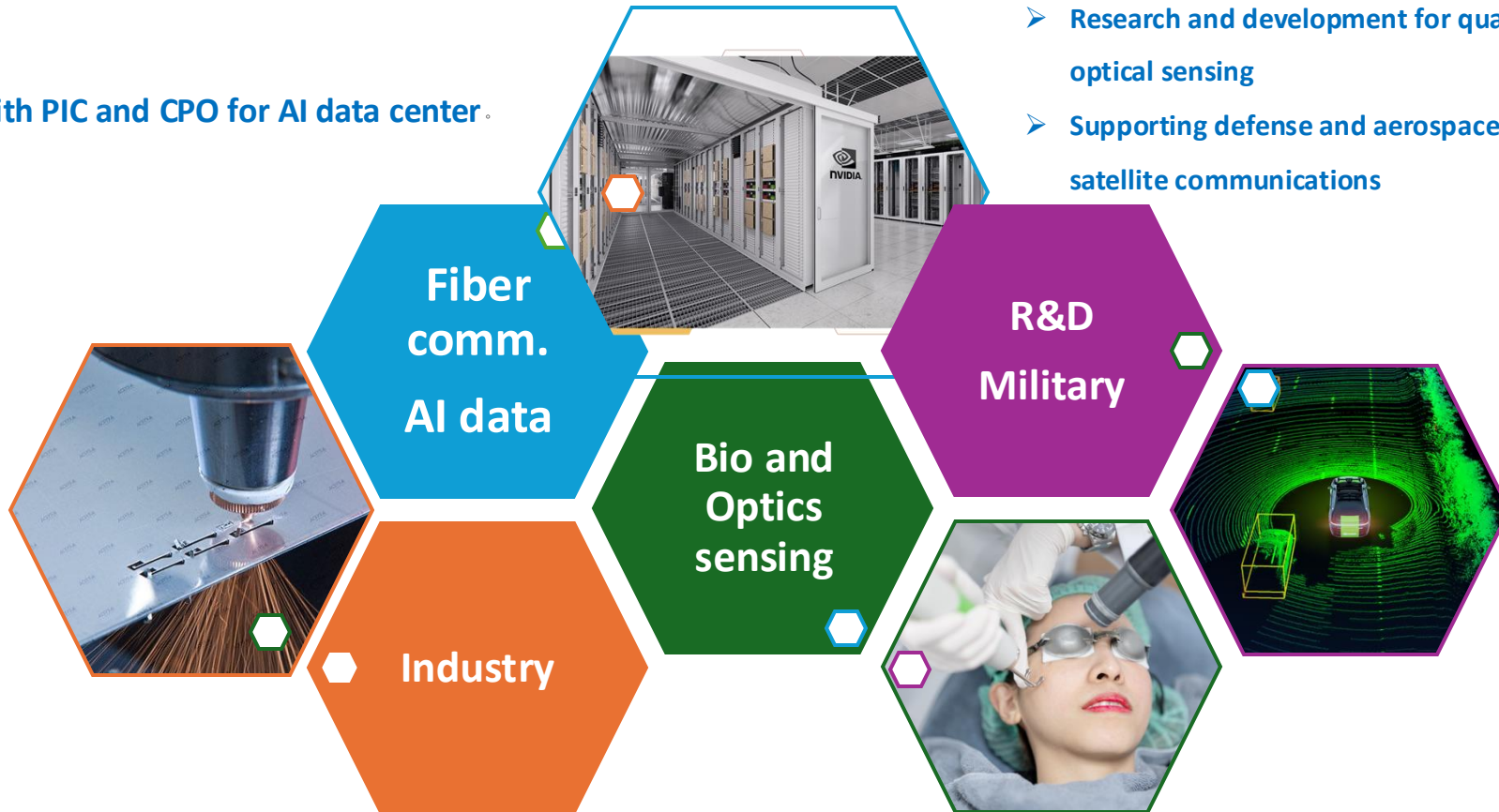
Parameter	Symbol	Unit
Optical output power	Po*	mW
Threshold current	Ith*	mA
Operation current	Iop	mA
Forward current	Vop	V
Slope efficiency	SE	W/A
Center wavelength	λc*	nm
Side mode suppression ratio	SMSR*	dB
Temperature coefficient	Δλ/ΔT	nm/C
Far field angle or	θv	degree
Beam divergence angle	θH	degree
Kink	kink	%
Spectral bandwidth	Δλs	nm
Differential series resistance	Rs	Ω
Relative intensity noise	RIN	dB
Frequency bandwidth	f-3dB	GHz

* Temperature dependent



Applications

- Light source with PIC and CPO for AI data center



- Research and development for quantum technology, LiDAR, optical sensing
- Supporting defense and aerospace fields, drones and satellite communications

- High-power laser technology for laser cutting, welding, micromachining and 3D printing
- Develop high-power laser arrays to improve metal welding and micromachining efficiency and precision

- Developed for biological imaging and optical coherence tomography (OCT)
- Developing high-power semiconductor laser technology for skin treatment and ophthalmic surgery

Reference by Nvidia, yaomeilicorp, shangchenlaser

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Security A+