

# PHOTONIC INNOVATION – AN EVENING WITH COHERENT

The background features a dynamic, abstract design of wavy lines in shades of blue and purple. These lines are punctuated by numerous small, glowing blue particles that follow the curves of the lines, creating a sense of motion and light. The overall aesthetic is modern and futuristic, suggesting themes of technology, innovation, and energy.

January 20, 2026

W Hotel San Francisco

# FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements relating to future events and expectations, including our expectations regarding our estimates and projections for our business outlook, each of which is based on certain assumptions and contingencies. The forward-looking statements are made pursuant to the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995 and relate to the Company's performance on a going-forward basis. The forward-looking statements in this investor presentation involve risks and uncertainties, which could cause actual results, performance, or trends to differ materially from those expressed in the forward-looking statements herein or in previous disclosures.

The Company believes that all forward-looking statements made by it in this presentation have a reasonable basis, but there can be no assurance that management's expectations, beliefs, or projections as expressed in the forward-looking statements will actually occur or prove to be correct. In addition to general industry and global economic conditions, factors that could cause actual results to differ materially from those discussed in the forward-looking statements in this presentation include but are not limited to: (i) the failure of any one or more of the assumptions stated herein to prove to be correct; (ii) changes in demand in the Company's end markets along with the Company's ability to respond to such market changes; (iii) risks relating to future integration and/or restructuring actions; (iv) fluctuations in purchasing patterns of customers and end users; (v) the ability of the Company to retain and hire key employees; (vi) the terms of the Company's indebtedness and ability to service such debt; (vii) the timely release of new products and acceptance of such new products by the market; (viii) the introduction of new products by competitors and other competitive responses; (ix) the risks to realizing the benefits of investments in R&D and commercialization of innovations; (x) the risks that the Company's stock price will not trade in line with industrial technology leaders; (xi) the impact of trade protection measures, such as import tariffs by the United States or retaliatory actions taken by other countries; and/or (xii) the risks relating to forward-looking statements and other "Risk Factors" identified from time to time in our filings with the Securities and Exchange Commission ("SEC"), including our Annual Report on Form 10-K for the fiscal year ended June 30, 2025, and our subsequently filed Quarterly Reports on Form 10-Q, which filings are available from the SEC. The Company disclaims any obligation to update information contained in these forward-looking statements, whether as a result of new information, future events or developments, or otherwise.

This presentation contains non-GAAP financial measures and key metrics relating to the Company's past performance. We believe the presentation of these non-GAAP financial measures enhances investors' overall understanding of our historical financial performance and assists investors in comparing our performance across reporting periods. These non-GAAP financial measures are in addition to, and not as a substitute for or superior to, measures of financial performance prepared in accordance with U.S. GAAP. There are a number of limitations related to the use of these non-GAAP financial measures versus their nearest GAAP equivalents. For example, other companies may calculate non-GAAP financial measures differently or may use other measures to evaluate their performance, all of which could reduce the usefulness of our non-GAAP financial measures as tools for comparison. As required by Regulation G, we have provided reconciliations of those measures to the most directly comparable GAAP measures in the section captioned "GAAP to NON-GAAP RECONCILIATION." The Company has not provided a quantitative reconciliation of forward-looking non-GAAP gross margin percentage, non-GAAP operating expenses, non-GAAP tax rate and non-GAAP earnings per share, because we cannot, without unreasonable efforts, forecast certain items required to develop comparable GAAP measures. These items include, without limitation, restructuring charges; integration, site consolidation and other expenses; foreign exchange gains (losses); and share based compensation expense. The variability of these items could significantly impact our future GAAP financial results and we believe that the inclusion of any such reconciliations would imply a degree of precision that could be confusing or misleading to investors.

# WELCOME

Mark Nelson, Chief Commercial Officer

## DATACENTER and COMMUNICATIONS

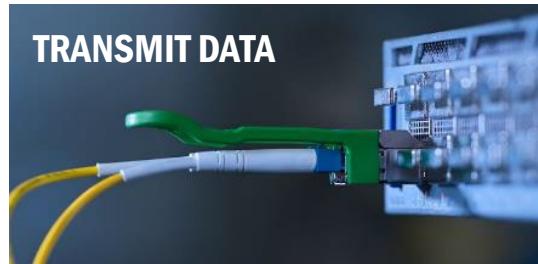


## INDUSTRIAL

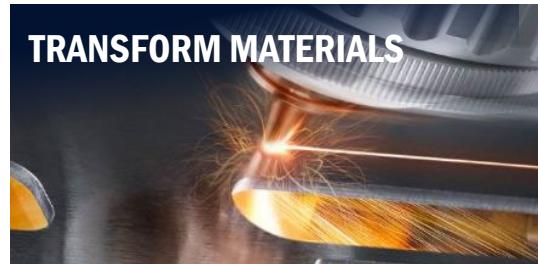


# WE HARNESSE PHOTONS TO DRIVE INNOVATION

## APPLICATIONS



TRANSFORM MATERIALS

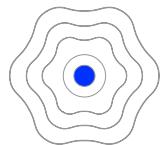


SENSE & MEASURE

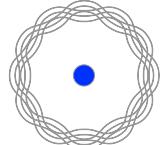


**PHOTON  
IS OUR  
FOUNDATION**

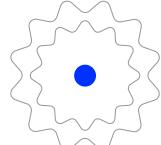
GENERATE



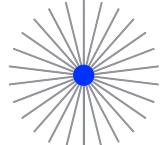
MODULATE



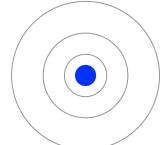
AMPLIFY



DIRECT



DETECT

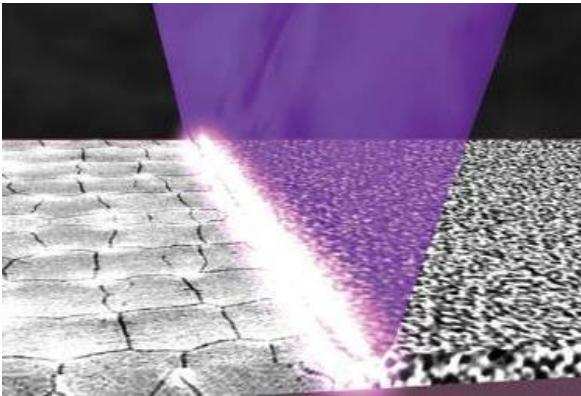


# KEY AREAS OF INNOVATION

## Semi Cap Equipment



## Display Manufacturing



## Advanced Materials



## Next-Gen Technologies



### AI Driving Demand for the Most Advanced Nodes

Enabled by our lasers, optics & materials

### 2X Expansion in OLED Surface Area

Our lasers critical for annealing

### Datacenter Thermal Management

Proprietary solutions for best-in-class thermal management

### Fusion & Quantum

Laser platforms for fusion energy, quantum computing and sensing

# AGENDA



**Mark Nelson**  
Chief Commercial Officer



**Dr. Christopher Dorman**  
EVP, Lasers



**Steve Rummel**  
SVP, Engineered Materials



**Dr. Julie Sheridan Eng**  
Chief Technology Officer

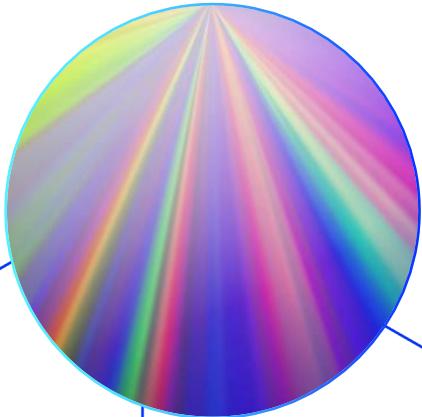
# LASERS FOR SEMICAP, DISPLAY AND INSTRUMENTATION

Chris Dorman, EVP, Lasers

# INDUSTRIAL PHOTONICS – INNOVATION ACROSS THREE PARAMETERS



Power



Wavelength



Pulse Length

**SPIE.** PHOTONICS  
WEST **2026** | COMMITTED TO INNOVATION -  
INcredible Pipeline of Products

# FULL PORTFOLIO OF LASER TECHNOLOGY = FULL RANGE OF APPLICATIONS

Excimer Laser



Ion Laser



Solid State



Fiber Laser



CO<sub>2</sub> Laser



Wavelength

UV

UV

UV – IR

IR

Far IR



Power

High

Low

All

High

High



Pulse

Long

Continuous

Continuous, Long,  
Ultrafast

Continuous

Continuous,  
Long

# BROAD PORTFOLIO OF PRODUCTS, WIDE SPECTRUM OF MARKETS

## Market



## Semi Capital Equipment



## Precision Manufacturing



## Display Manufacturing



## Instrumentation



n/a = Not applicable

# LASERS MAKE MODERN SMARTPHONE MANUFACTURING POSSIBLE



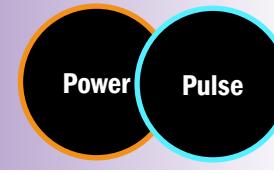
# KEY GROWTH DRIVERS IN OUR INDUSTRIAL END MARKETS



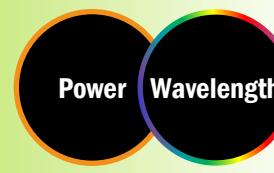
Semi Capital Equipment



Precision Manufacturing



Display Capital Equipment

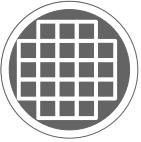


Instrumentation



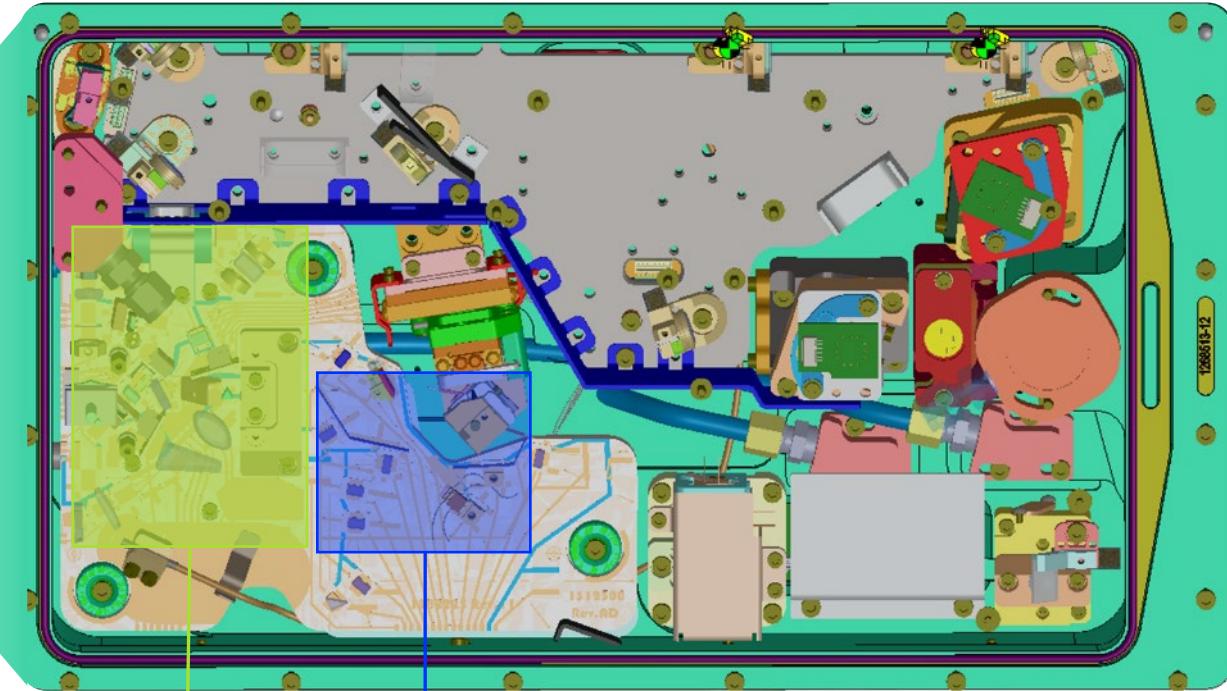
- Increasing laser processes
- Increasing laser complexity

# INCREASING USE AND COMPLEXITY OF SEMI CAP INSPECTION LASERS



Node	250 nm	3 nm	≤2 nm	Smaller node size increases process intensity and complexity
Optical Inspection Steps	3	85	100+	Steep increase in number of inspection steps
Wavelength	532 nm	266 nm	≤266 nm	Shorter wavelengths Increasing complexity

# TODAY'S SEMI CAP INSPECTION LASERS ARE 5X MORE COMPLEX



Equivalent of Entire Laser in 2002  
Cutting-Edge Software

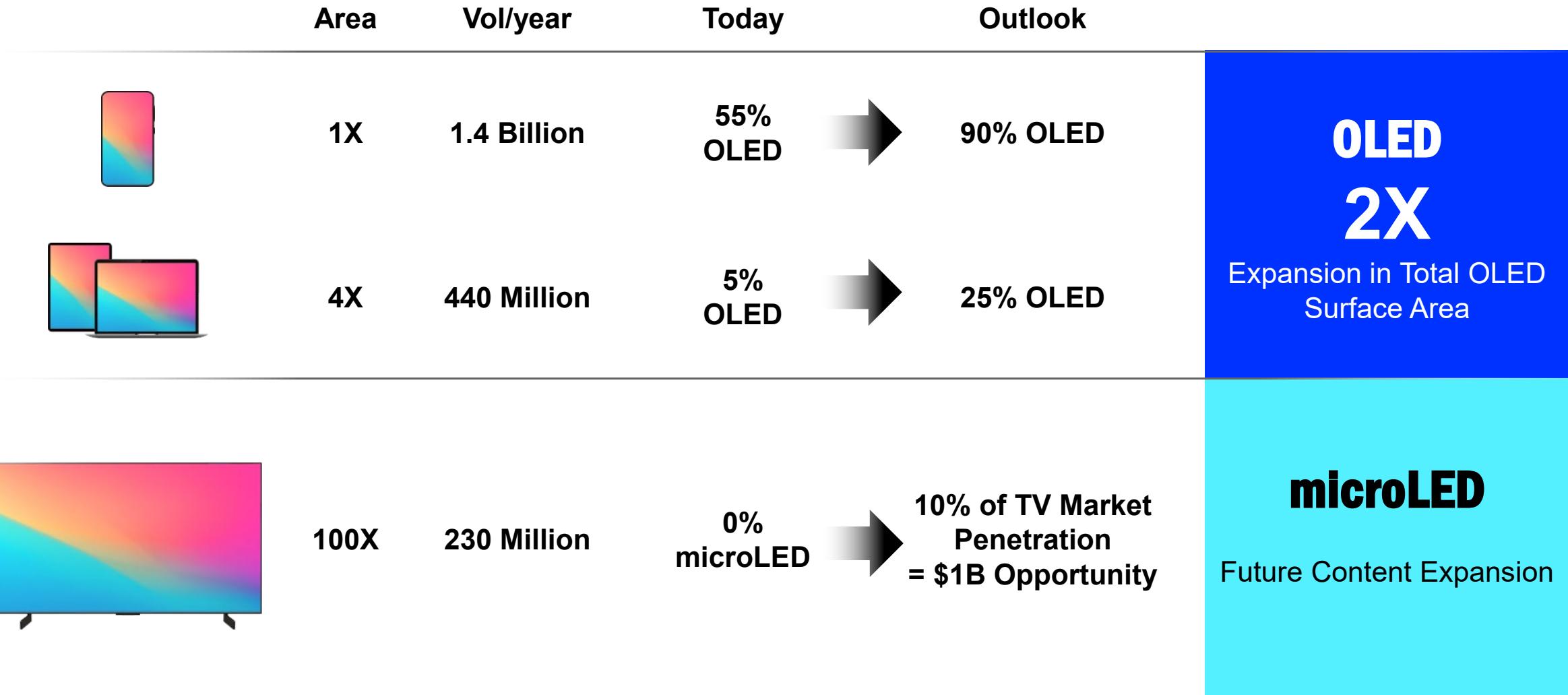
- Atomic-level mirror position control
- 20 years of internal crystal development
- Materials expertise enabling 20,000-hour lifetime

# PRODUCT LAUNCH: SEMI/INSTRUMENTATION – SAPPHIRE XT



- 1 W visible output in a smartphone-sized footprint
- Proven OPS-based modulation, no external AOM needed
- Ultra-reliable, low-noise performance for advanced applications
- Designed for demanding applications in life sciences, quantum technologies, and semiconductor manufacturing

# DISPLAY MARKET: ENABLING OLED AREA GROWTH AND MICROLED ADOPTION



# PRODUCT LAUNCH: DISPLAY – UVTRANSFER



- World's first high-throughput turnkey system for inline microLED production, more than 50k LED per second
- MicroLED for TV-sized panels
- Brightest display, tiles for size flexibility, long lifetime, robust
- Highest power of UV photons for production-ready throughput rates
- Mass transfer time reducing from hours to minutes per TV

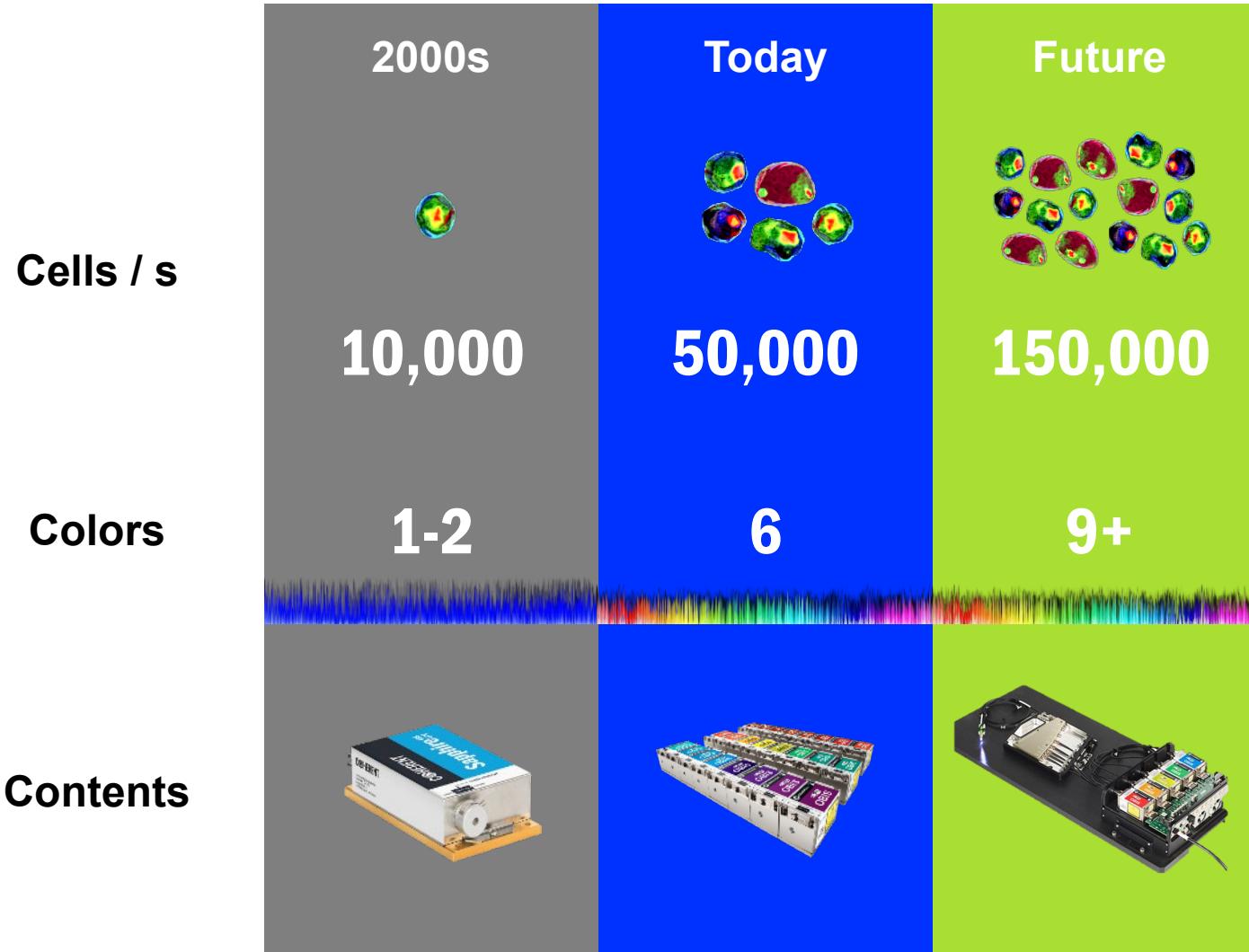


Sophisticated software stack for MicroLED manufacturing

# UV TRANSFER



# HEALTH SCIENCES REQUIRE INCREASING PHOTONIC COMPLEXITY



- Flow Cytometry: Laser-based analysis to rapidly count thousands of cells
- Detects cancers, detects diseases, assesses vaccines
- Growth driven by an aging population and personalized medicine
- High-dimensional analysis



# PRODUCT LAUNCH: INSTRUMENTATION – AXON FP



- Fiber-delivered collimated beam with exceptional quality
- Fully integrated & rack mountable architecture
- Two wavelengths (920 nm & 1064 nm)
- Designed for next-generation applications in life sciences, instrumentation, and metrology



# AXON LASERS

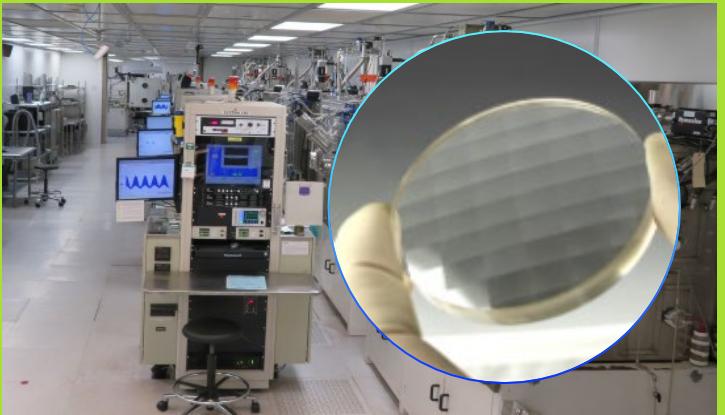


# ADVANCED MATERIALS FOR THERMAL MANAGEMENT & SEMICAP

Steve Rummel, SVP, Engineered Materials

# ENGINEERED MATERIALS

## OPTICAL SOLUTIONS



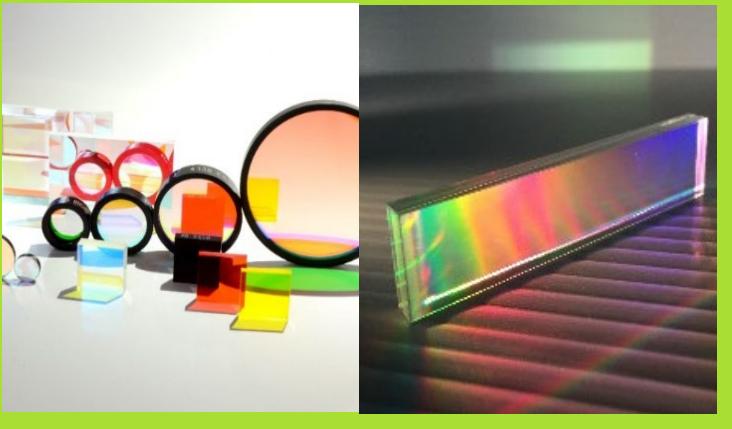
## ADVANCED CRYSTALS



## THERMAL SOLUTIONS



## ADVANCED COATINGS GRATINGS



## CERAMICS



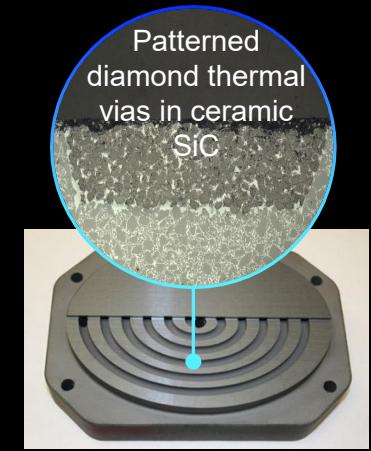
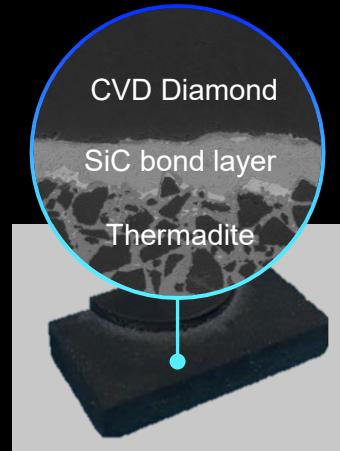
## PERFORMANCE METALS



# MORE THAN MATERIALS

## WE SHAPE

- Near-net shape & precision machining
- Grinding, lapping & etching
- 3D printing & complex geometries



Bonded near-net cast ceramics

## WE JOIN

- Electrical, mechanical & optical assemblies
- Liquid cooled assemblies
- Direct, hybrid & fusion bonding



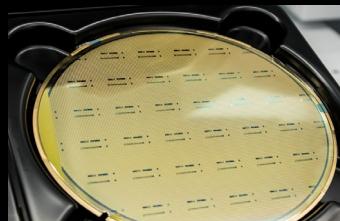
Diamond for 2.5/3D thermal management



Metallized diamond for high-power lasers

## WE FUNCTIONALIZE

- Embedded microchannels, thermal vias & thermo-electric elements
- Metallization & dielectric layers
- Optical surfaces & device grade processing

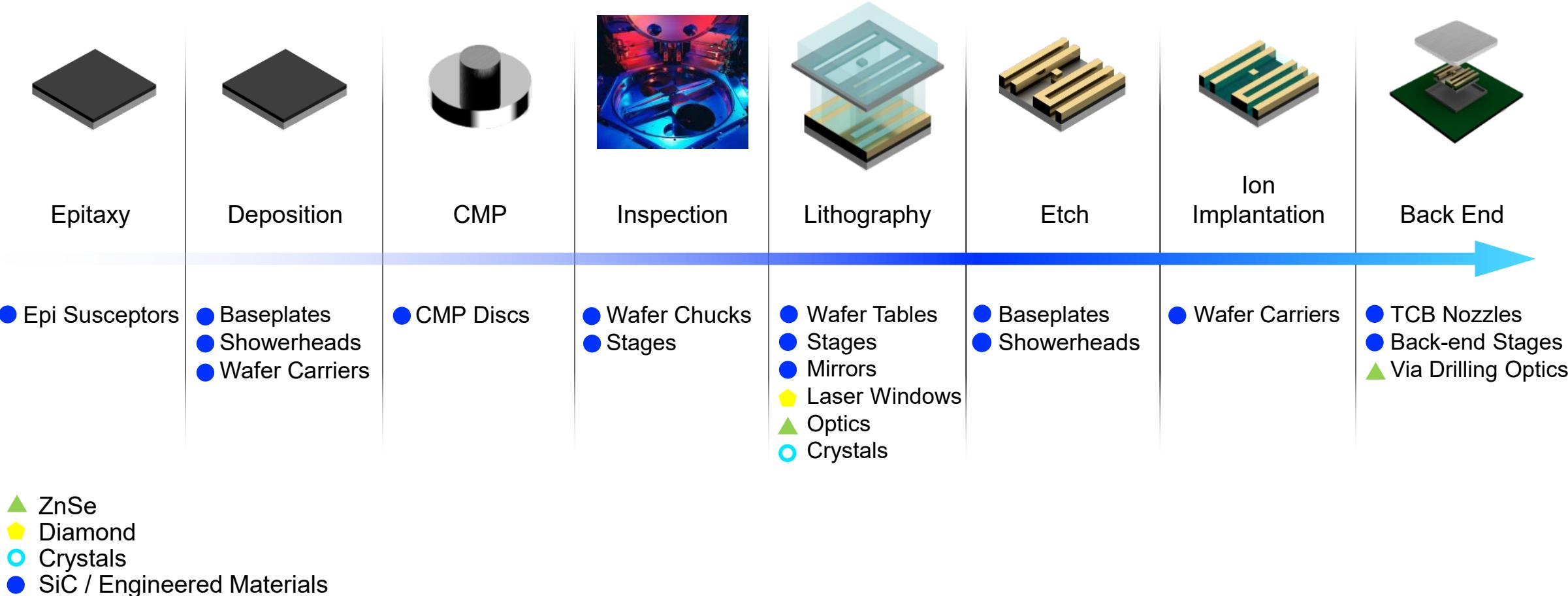


Extensive semiconductor process & packaging expertise

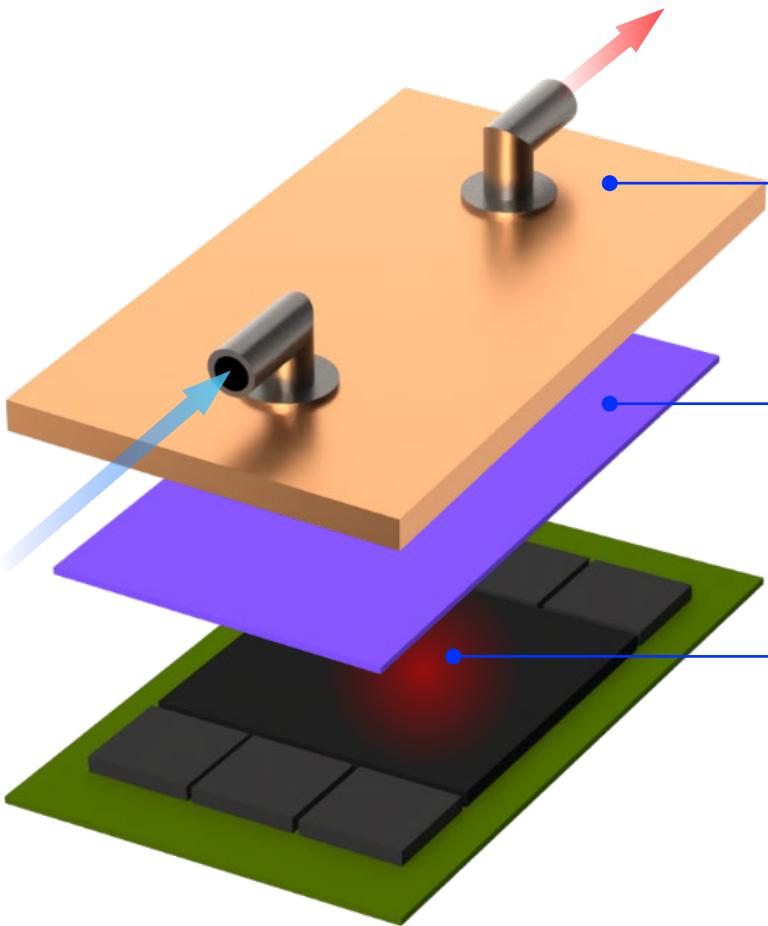


Diamond microchannel devices

# ADVANCED MATERIALS MAKE MODERN SEMICONDUCTORS POSSIBLE



# ADVANCED MATERIALS FOR THERMAL MANAGEMENT



## CURRENT SOLUTIONS

- 1 Cold Plates (Copper)**  
Copper limited thermal conductivity
- 2 Thermal Interface Material (TIM)**  
High thermal resistance between chip and cold plate
- 3 Device Substrate (Silicon)**  
Poor heat spreading performance
- 4 Turning heat waste into energy**  
Energy harvesting

**Thermal margin vs copper**  
(800 W GPU)

## COHERENT THERMAL SOLUTIONS

**Thermadite™ /Diamond Cold Plate**  
Thermal conductivity 2 – 5X copper

**Eliminate TIM layer by Direct Bondable Diamond**  
Close to zero thermal resistance between cold plate and die

**SiC/Thermadite**  
Thermal conductivity 3 – 5X Silicon

**Thermoelectric Generators**  
Recover 1% of heat waste to energy

Thermadite™ 800: -8.4°C  
CVD Diamond 2200: -15.1°C

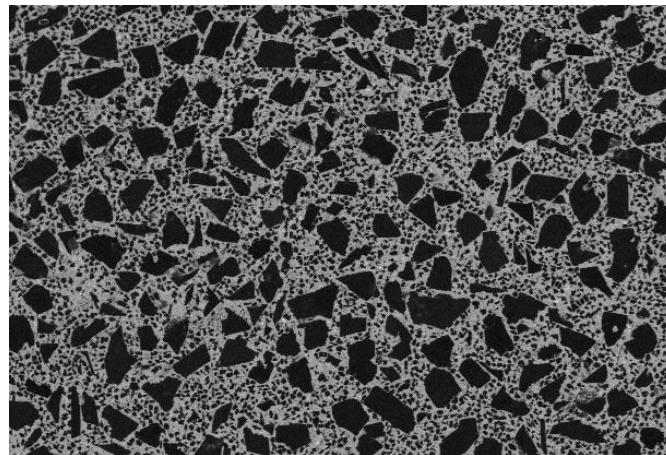
# THERMADITE™ - WHAT IS IT ?

## THERMADITE™ 550



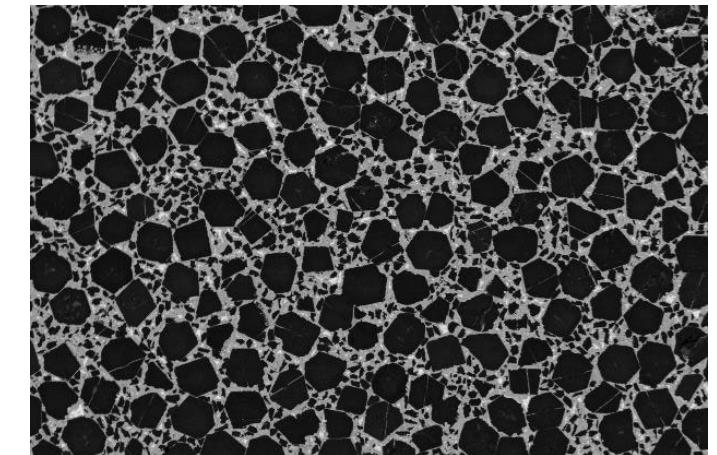
550 W/m-K

## THERMADITE™ 700



700 W/m-K

## THERMADITE™ 800



800 W/m-K

- Patented Coherent composite combining Si, SiC, and diamond
- Tuned by design: multiple grades, based on diamond content
- Built for extreme performance in thermal conductivity and/or wear resistance

# NEXT GEN TECHNOLOGIES – FUSION & QUANTUM

Julie Eng, Chief Technology Officer

# FUSION ENERGY: TECHNOLOGY TRENDS

## Magnetic Fusion

- Requires high temperature superconducting (HTS) tape, deposited by Pulsed Laser Deposition (PLD) using Coherent LEAP excimer laser
- 100,000+ km of HTS tape by 2034, grown by excimer lasers

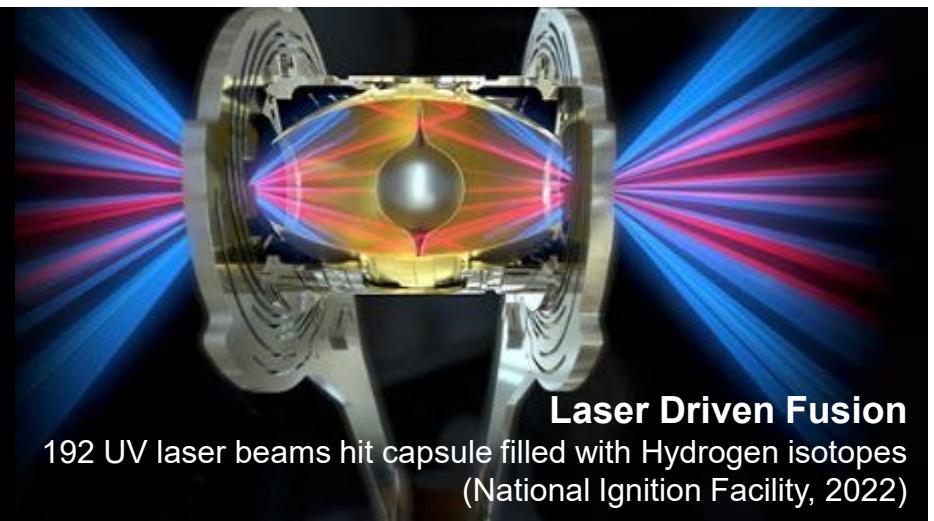
## Laser Fusion

- National Ignition Laser Facility (NIF) demonstrated fusion ignition Dec 2022
- Laser fusion requires kW laser bars, diode pump modules, nonlinear crystals, high power lasers

**\$8B funding, 45 companies, 9 national labs, 50 universities**



**Magnetic Fusion Drives need for HTS Tape**



**Laser Driven Fusion**

192 UV laser beams hit capsule filled with Hydrogen isotopes  
(National Ignition Facility, 2022)

# PRODUCTS AND TECHNOLOGIES FOR FUSION

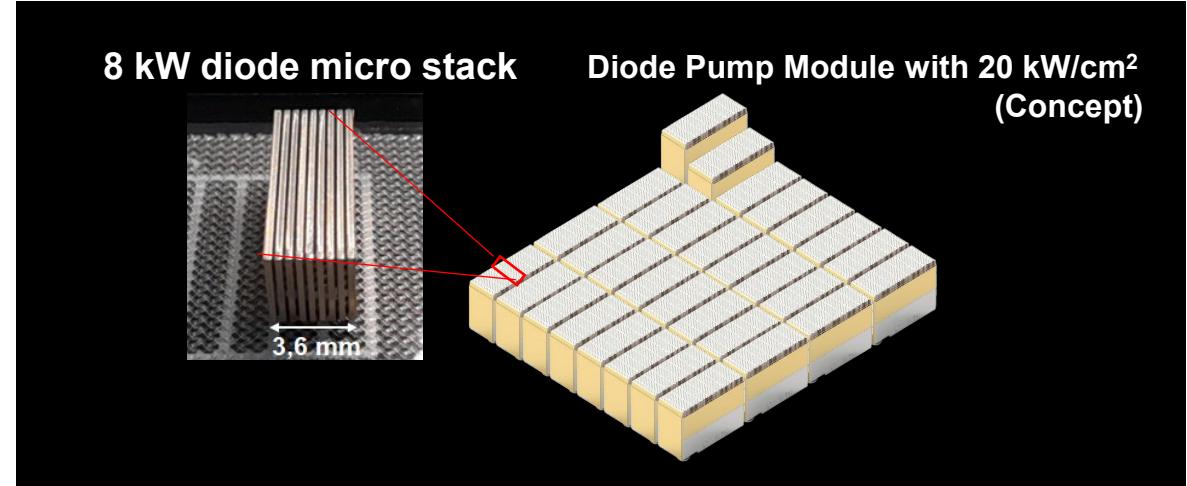
## Magnetic Fusion

- Coherent offers LEAP excimer lasers for Pulsed Laser Deposition of HTS tape
- Today, 80% global HTS tape produced with LEAP lasers
- Ramping capacity to support growth of HTS tape
- 600W LEAP laser launched June 2025, provides 2X throughput improvement in PLD of HTS tape

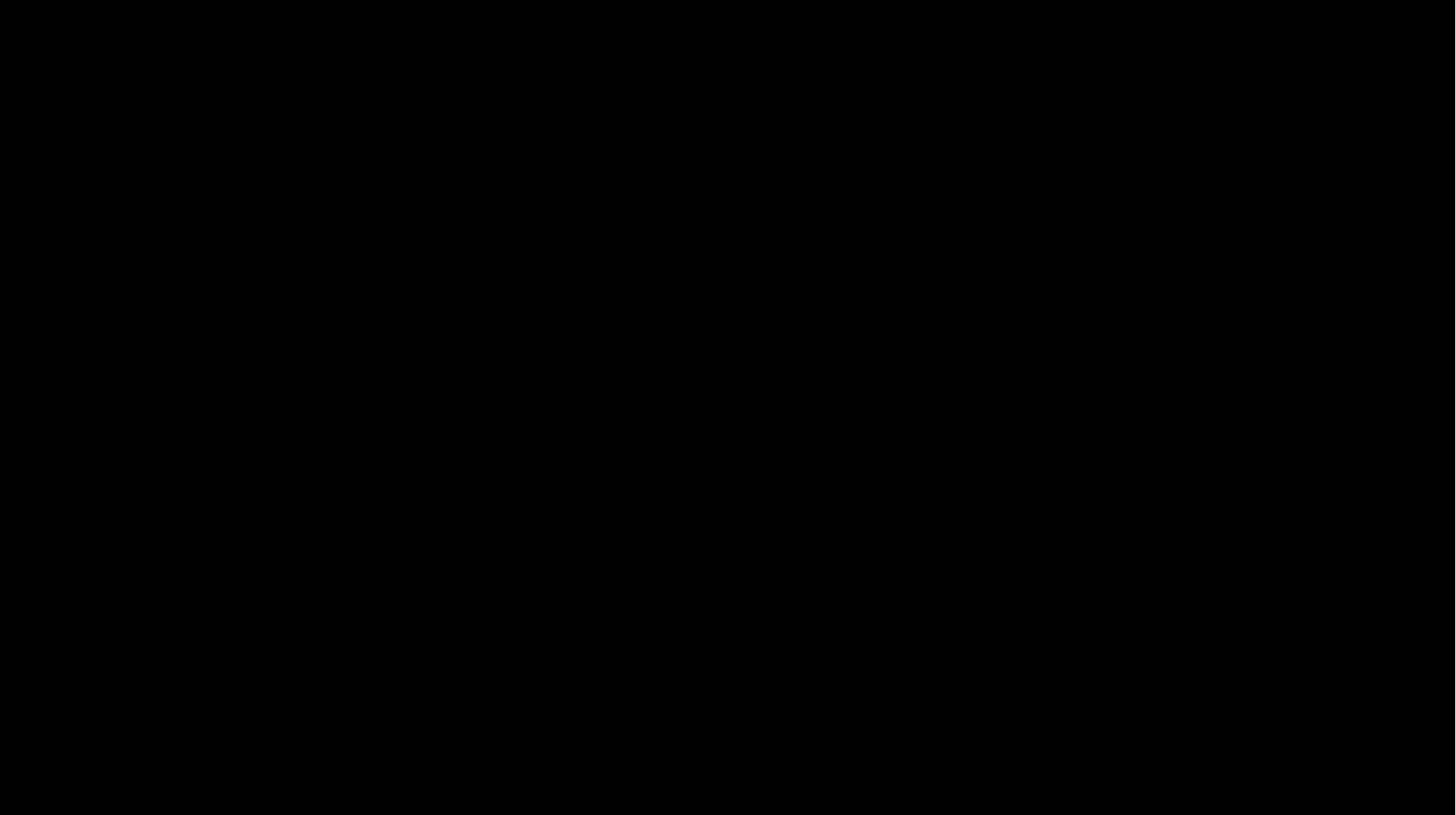


## Laser Fusion

- Coherent offers kW laser bars, diode pump modules, and nonlinear crystals, critical elements in laser fusion
- Demonstrated industry-leading 1 kW laser bars
- Volume capability to stack bars into module assemblies
- Market-leading large nonlinear crystal growth capability and material quality



# PULSED LASER DEPOSITION WITH NEW LEAP LASER

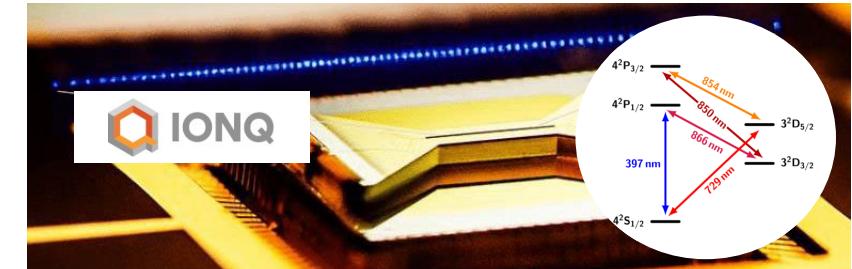


# QUANTUM COMPUTING, SENSING, NETWORKING: TECHNOLOGY TRENDS

> \$50B funding for quantum technologies, > 50 quantum-specific companies

## Quantum Computing

- Uses quantum physics to compute, enabling exploration of large spaces like materials science, chemistry, or drug discovery
- Will augment, not replace, classical computing
- Superconducting and optical approaches



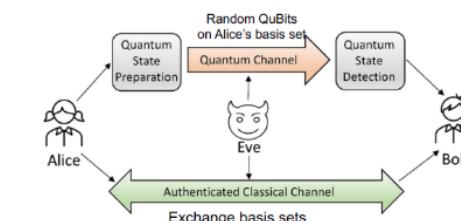
## Quantum Sensing

- Uses quantum properties to measure physical quantities with unprecedented precision, enabling ultra-sensitive measurements
- Applications: Navigation without GPS, brain activity mapping
- Some approaches use diamond and green lasers



## Quantum Networking

- Uses quantum states of light to securely transmit information, guaranteeing unbreakable security



# PRODUCTS AND TECHNOLOGIES FOR QUANTUM

## Quantum Computing

- Visible CW Optically-Pumped Semiconductor Lasers for electronic excitation
- Mode-locked UV and green lasers for Qubit rotation and ion trapping

## Quantum Sensing

- Quantum-Grade Diamond for Quantum Sensing
- Diamond growth technology developed in-house
- Ability to grow, cut, polish, and coat
- Designed to provide uniform distribution of nitrogen vacancy (NV) spin centers with ultra low strain

## Quantum Networking

- Quantum Random Number Generator Demo at Photonics West 2026
- Quantum key distribution demo at ECOC 2025 for Secure Networking



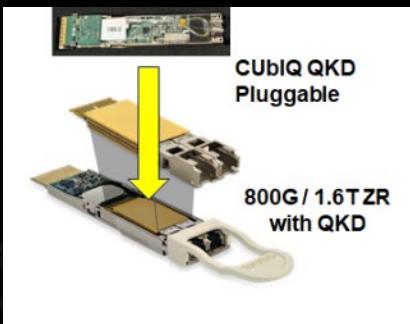
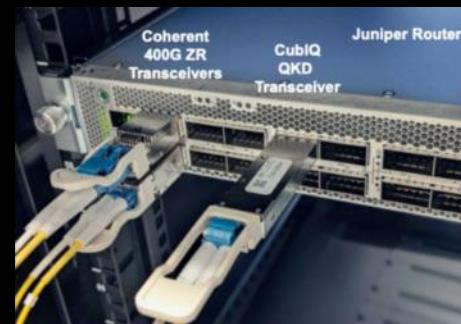
OBIS 532 nm in 2-QuBit  
Quantum computer of SaxonQ  
Based on NV Diamond



Quantum-grade Diamond for Quantum Sensing



2025 QKD Demonstration with Coherent Transceiver



# VCSEL-BASED QUANTUM RANDOM NUMBER GENERATORS (QRNGs) FOR QUANTUM-SAFE NETWORKING

- Cryptographic security depends on high-quality, security-grade Random Number Generators (RNGs)
- Classical RNGs rely on physical or algorithmic assumptions that can introduce predictability and weaken security
- As systems transition toward post-quantum cryptography, the need for secure randomness increases
- Quantum Random Number Generators (QRNGs) leverage quantum processes to generate fundamentally unpredictable cryptographic keys
- Coherent and Quside have demonstrated a VCSEL-based QRNG
- This approach enables a path to low-cost, high volume, scalable, high refresh-rate QRNGs for post-quantum security

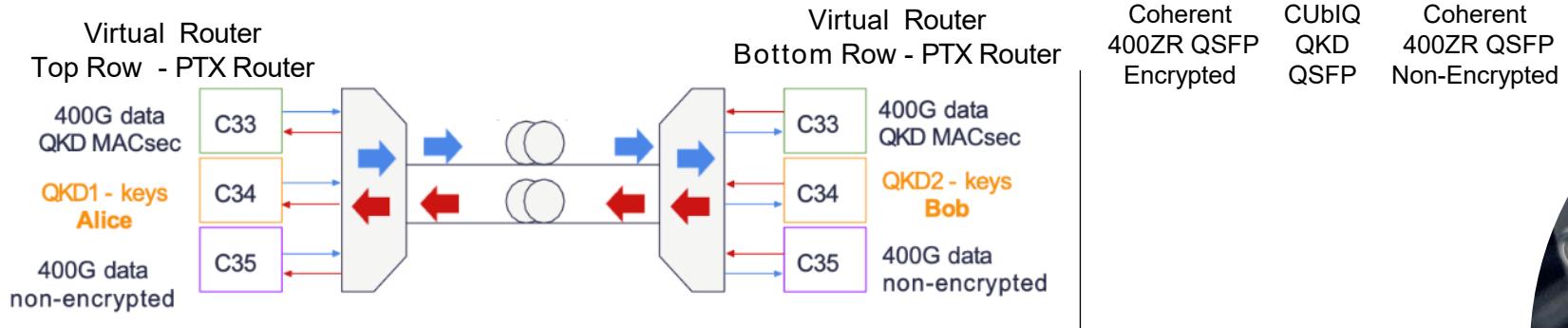
## VCSEL-BASED QRNG DEMO PHOTONICS WEST 2026



# QUANTUM-SAFE NETWORKING WITH QUANTUM KEY DISTRIBUTION (QKD) IN QSFP FORM FACTOR

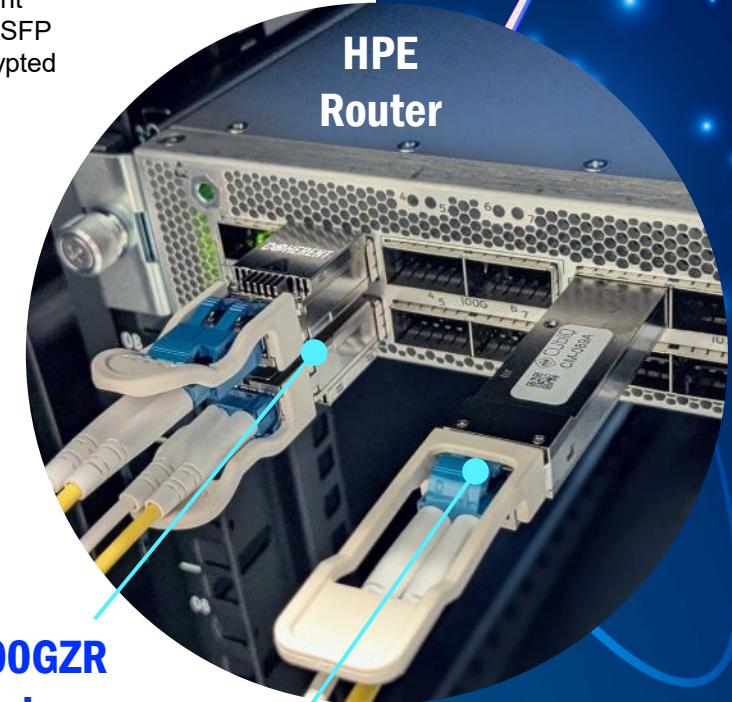
LIVE DEMO  
ECOC 2025



- Quantum computers will break traditional encryption by ~ 2030
- QKD demonstrated, to date is bulky and costly
- First demo of QKD in QSFP with CUBiQ, HPE, and Liberty Global
- Successful transmission of quantum key alongside live traffic
- First step toward QKD-enabled transceivers and toward QKD in telecom and in the datacenter

Coherent 400GZR  
QSFP-DD Transceivers

CUBiQ  
QKD QSFP  
Transceivers

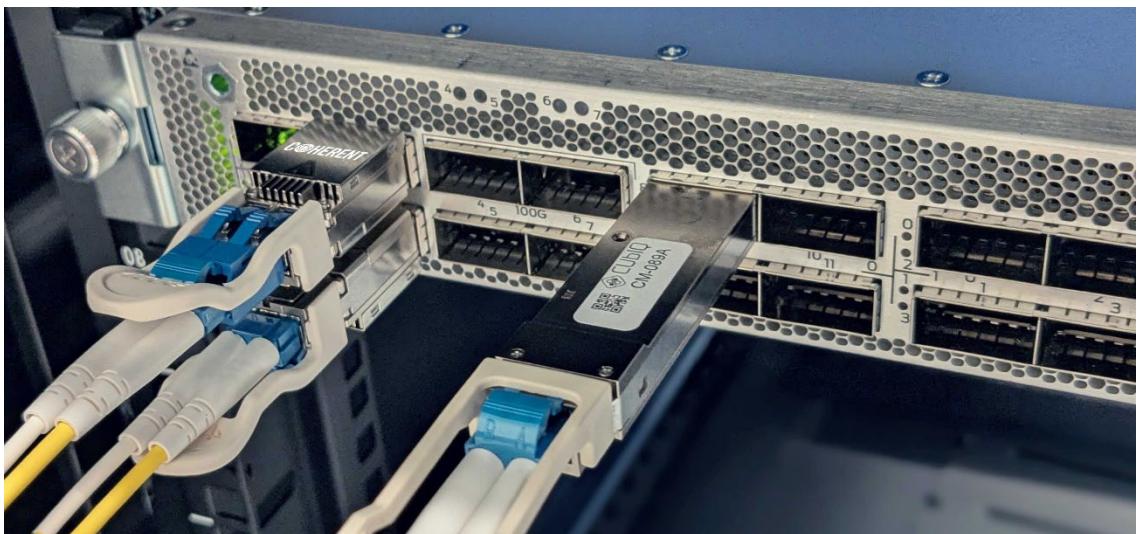
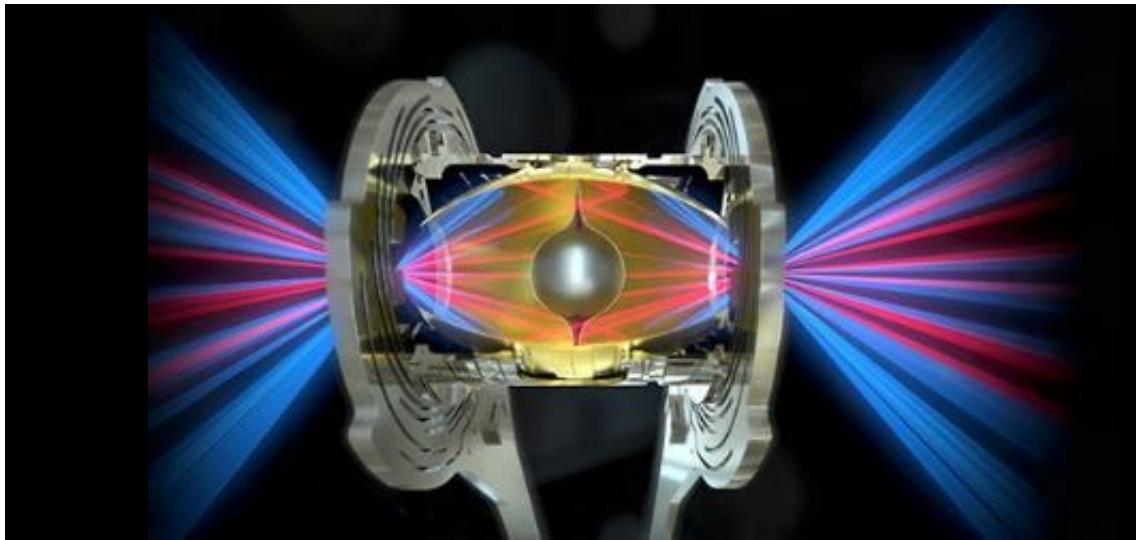


COHERENT HPE

CUBiQ



# SUMMARY: FUSION AND QUANTUM



## Key Takeaways

- LEAP excimer laser technology for Pulsed Laser Deposition of High Temperature Superconducting Tape for Magnetic Fusion
- kW laser bars, laser diode modules, and nonlinear crystals for Laser Inertial Fusion
- Laser Sources for Quantum Computing
- Diamond and Sources for Quantum Sensing
- Demonstration of QKD for Quantum Networking

**Coherent is interested to engage with customers in all of these forward-looking technologies**

## DATACENTER and COMMUNICATIONS

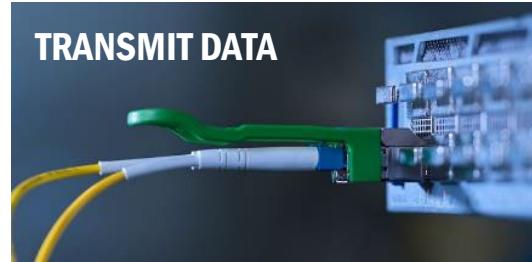


## INDUSTRIAL

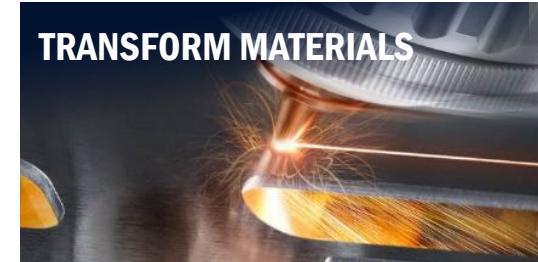


# WE HARNESSE PHOTONS TO DRIVE INNOVATION

## APPLICATIONS



TRANSMIT DATA



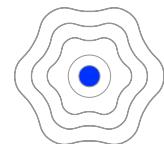
TRANSFORM MATERIALS



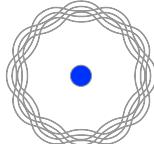
SENSE & MEASURE

**PHOTON  
IS OUR  
FOUNDATION**

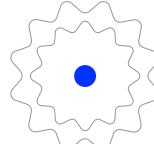
GENERATE



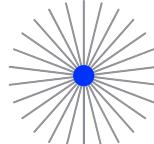
MODULATE



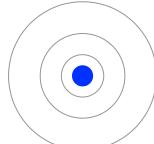
AMPLIFY



DIRECT



DETECT



The logo for COHERENT features the word "COHERENT" in a bold, white, sans-serif font. The letter "O" is replaced by a blue circular icon containing a stylized atomic symbol with three elliptical orbits intersecting at a central point.