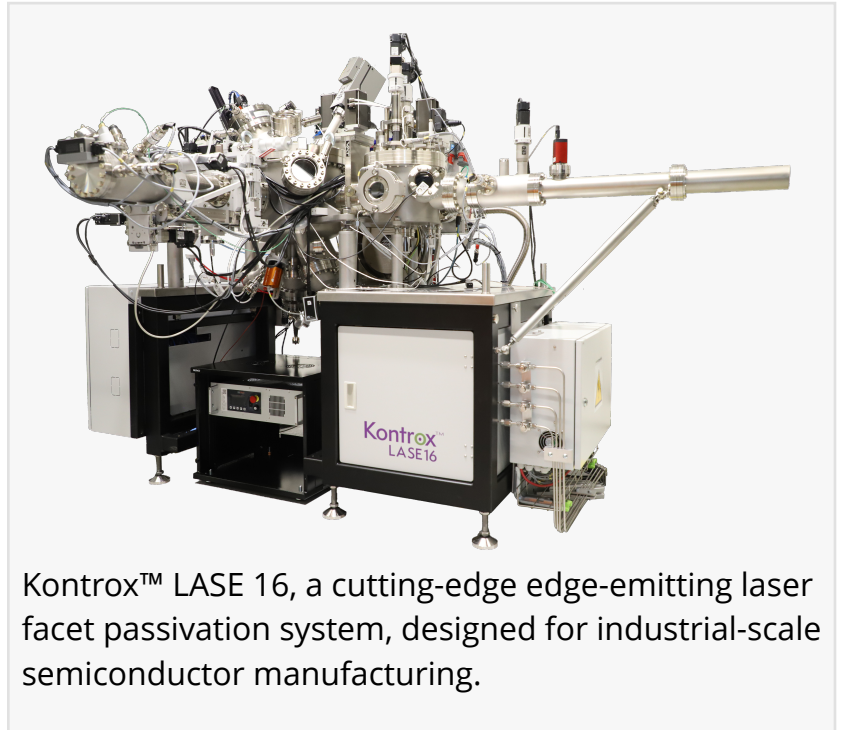


Comptek Solutions Launches Kontrox™ LASE 16 for Industrial-Scale Edge-Emitting Laser Facet Passivation

Comptek Solutions unveils Kontrox™ LASE 16, a cutting-edge laser facet passivation system, advancing semiconductor manufacturing for edge-emitting lasers.

TURKU, VARSINAIS-SUOMI, FINLAND, March 11, 2025 /EINPresswire.com/ -- Comptek Solutions, a leading provider of advanced semiconductor passivation technology, is proud to announce the launch of its industrial-grade [Kontrox™ LASE 16](#), marking a significant milestone in its development journey. Following significant advancements in optimizing Kontrox technology for passivating edge-emitting lasers, the Kontrox LASE 16 is designed to transform laser facet processing, providing manufacturers with a more efficient and cost-effective solution for enhanced laser diode performance.



Kontrox™ LASE 16, a cutting-edge edge-emitting laser facet passivation system, designed for industrial-scale semiconductor manufacturing.

As the global laser diode market is projected to grow at a CAGR of 10.94%, reaching approximately USD 25.84 billion by 2034 (Source: Precedence Research), manufacturers are facing increasing demands to improve performance, reliability, and scalability all while maintaining cost-effectiveness. A key challenge in this evolution is addressing Catastrophic Optical Mirror Damage (COMD)—a major failure mode caused by oxidation-induced absorption at laser facets.

The industrial-grade Kontrox LASE 16 tackles this challenge by integrating Comptek Solutions' proprietary Kontrox(TM) passivation technology, which precisely controls the oxidation process of the compound semiconductor materials used in laser diodes. This advanced process creates a stable crystalline native oxide barrier on the facets, protecting against further oxidation and significantly enhancing laser diode performance. Delivering passivation results comparable to leading industry standards such as ZnSe and E2 process, the Kontrox LASE 16 stands out with its lower cost, reduced technical complexity, higher throughput, and outstanding facet stability over time. Treated facets remain highly stable even after extended periods under air exposure after



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Vicente Calvo Alonso, CEO and Co-Founder of Comptek Solutions

the passivation step, offering manufacturers greater flexibility by eliminating time constraints for the subsequent mirror coatings process.

Designed for high-volume, industrial-scale operations, the Kontrox LASE 16 combines several advanced processing techniques, optimized and tuned to effectively clean and passivate laser facets, making it an ideal turnkey solution for mass production. Its compact, user-friendly design integrates multiple processes—cleaning, passivation, and sealing—into a single processing chamber. This integration boosts flexibility, accelerates throughput, and reduces

operational complexities, driving significant cost and time savings compared to traditional passivation methods.

Product Highlights:

- **Exceptional Passivation Quality:** Achieve high-quality passivation comparable to industry standards, with a remarkable value-to-cost ratio.
- **Optimized Multi-Process Chamber:** Combines cleaning, passivation, and sealing into one compact system, simplifying operations.
- **High Throughput:** Processes up to 1,800 laser bars per day, with 8 stacking jigs for continuous production.
- **Enhanced Facet Stability:** Passivated facets remain stable for days, removing time pressure and improving flexibility for mirror coatings.
- **Supports Multiple Recipes:** Tailored process recipes for various laser bar designs in one setup, maximizing versatility and efficiency.

“The industrial launch of the Kontrox LASE 16 represents a pivotal advancement in laser facet passivation,” said Vicente Calvo Alonso, CEO and Co-Founder of Comptek Solutions. “Purpose-built to meet the high demands of edge-emitting laser diode manufacturers, it offers a superior alternative to traditional passivation methods. With its industrial-grade readiness, optimized design and unmatched facet stability, the Kontrox LASE 16 delivers significant operational advantages, improving efficiency, reducing complexity, and enabling flexible production timelines. This machine embodies years of engineering expertise and semiconductor innovation, delivering a transformative solution to the industry’s evolving needs.”

During the piloting phase with selected customers, the Kontrox turnkey passivation machine has generated significant interest among laser manufacturers worldwide, leading to multiple requests for proof of concepts and trial runs. With the Kontrox LASE 16 now available for full commercial deployment, Comptek Solutions invites laser chip manufacturers to integrate this transformative passivation solution into their production lines, enhancing performance and setting a new industry standard.

About Comptek Solutions

Comptek Solutions is a leading technology provider specialized in turnkey passivation solutions for the compound semiconductor industry. From lasers to microLEDs, spanning power electronics and beyond, our cutting-edge solutions empower manufacturers with enhanced power efficiency and optimized manufacturing processes.

At the core of our success is Kontrox(TM), our breakthrough technology tackling native oxidation in compound semiconductors, enabling significant improvements in power efficiency and manufacturing optimization. With 38 granted and pending patents covering various aspects of our technology, we are dedicated to driving sustainable innovation and advancing the future of semiconductor technology globally from our tech base in Turku, Finland.

For more information, please visit www.comptek-solutions.com.

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