

September 05th, 2023

High Reliability Edge Emitting Laser Diode at 905 nm

EPIC - New Product Release



Jens Krause

Applications Engineer High Performance Sensors / SPCM

Agenda

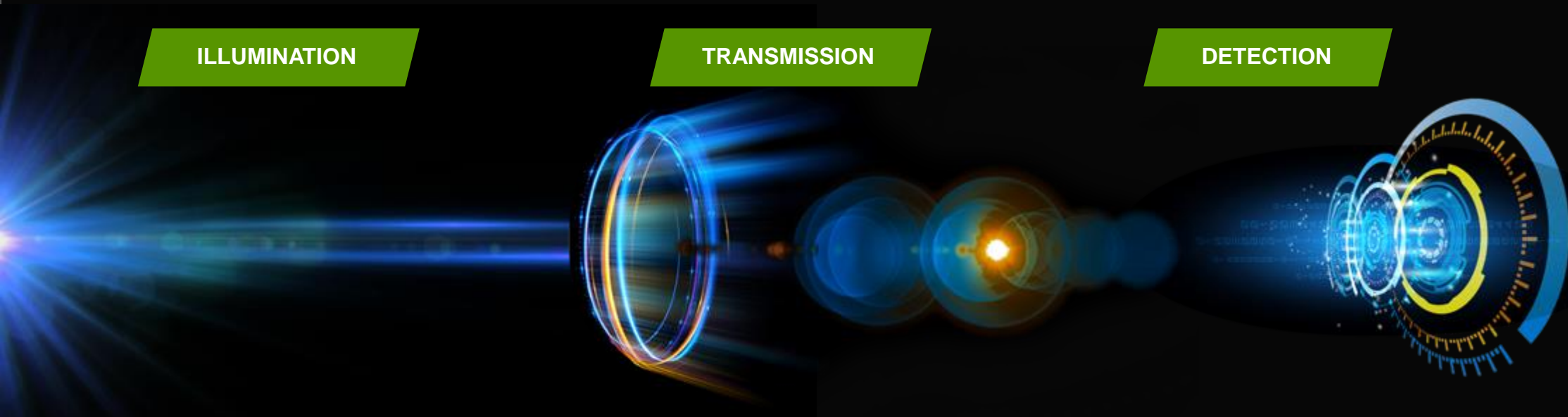
- ▶ Excelitas Overview
- ▶ Technology Overview
- ▶ New Pulsed Laser Diode with High Reliability
- ▶ Summary

Your innovation partner for **end-to-end** photonic solutions

ILLUMINATION

TRANSMISSION

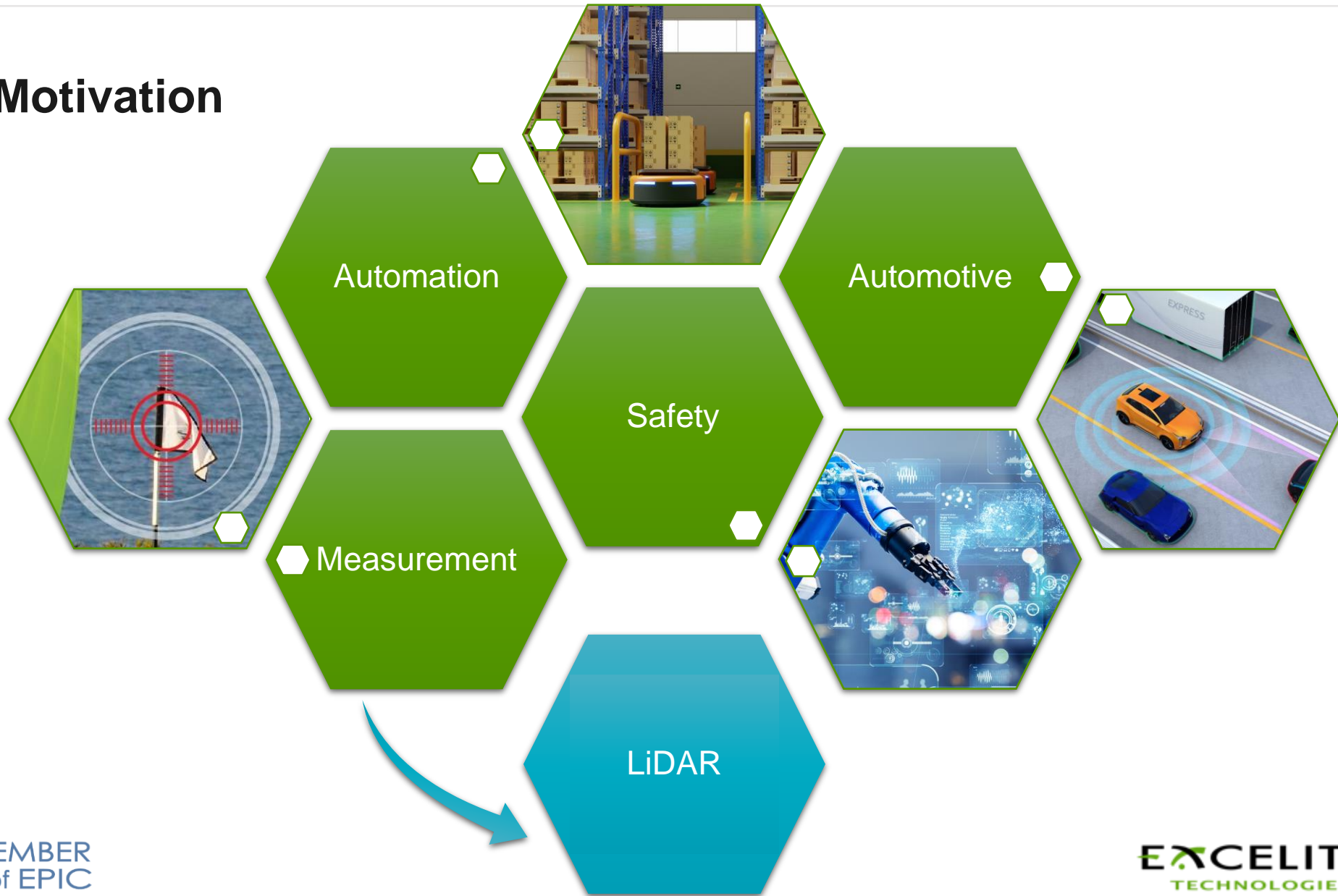
DETECTION



From source to sensor... and everything in between

- Illumination & Lasers
- Optics & Optomechanics
- Sensors & Detectors
- Electronics & Power
- Sophisticated Custom Integration

Motivation



Excelitas High Performance Sensors



Pulsed
Laser Diodes

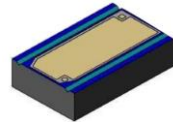


APD / PIN
Photodiodes

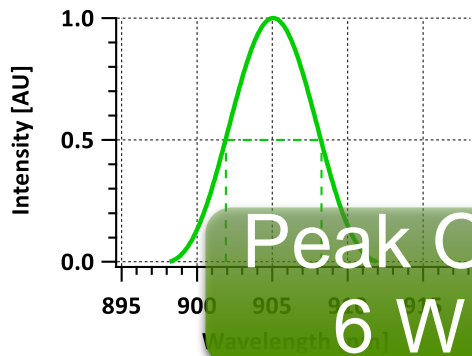
Excelitas High Performance Sensors



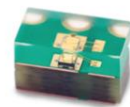
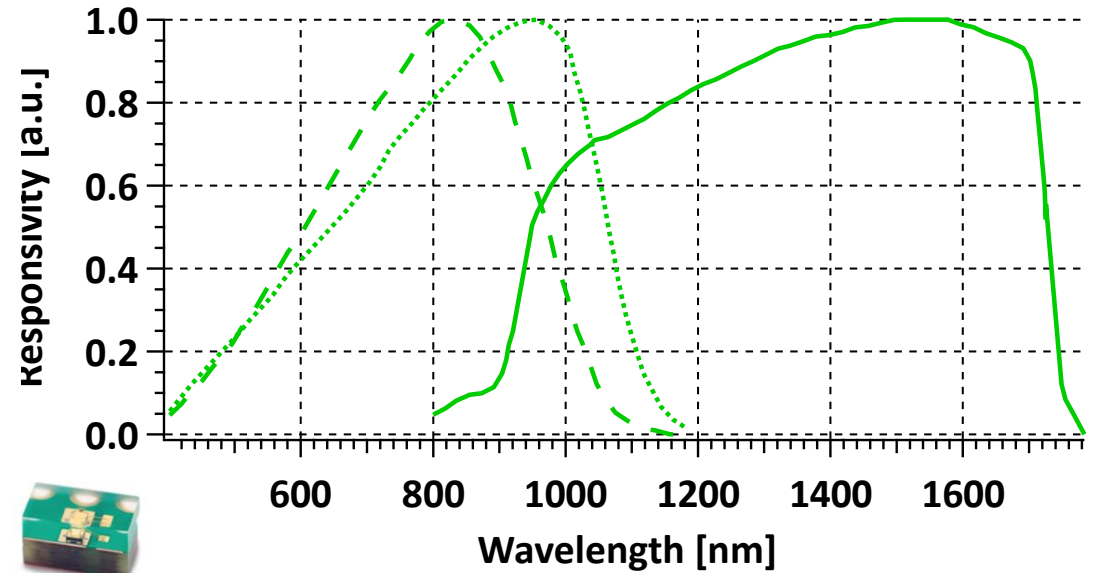
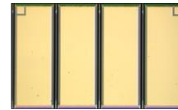
Pulsed Laser Diodes



APD / PIN Photodiodes



Peak Output Power
6 W ... 360 W





„Generation 3“

New Pulsed Laser Diode

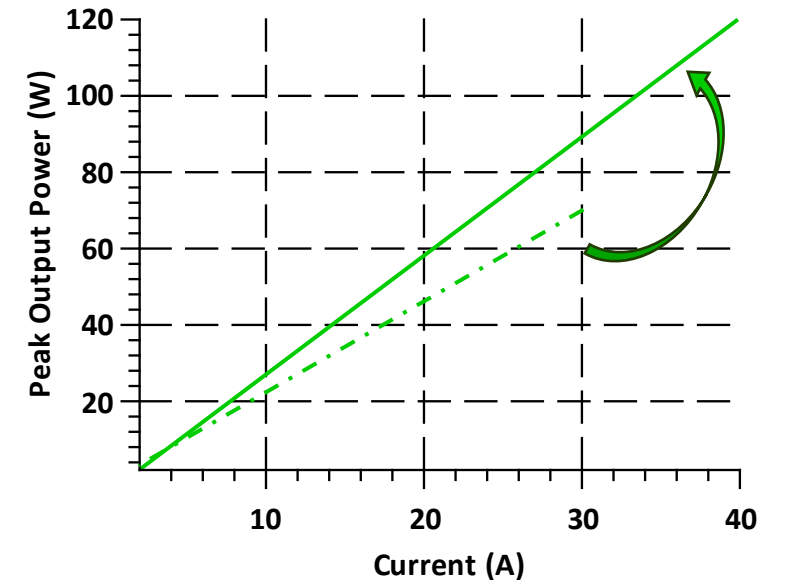
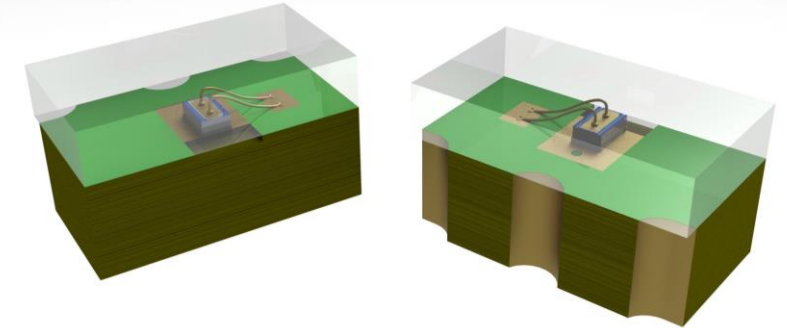
Generation 3 Pulsed Laser Diode

Key Features

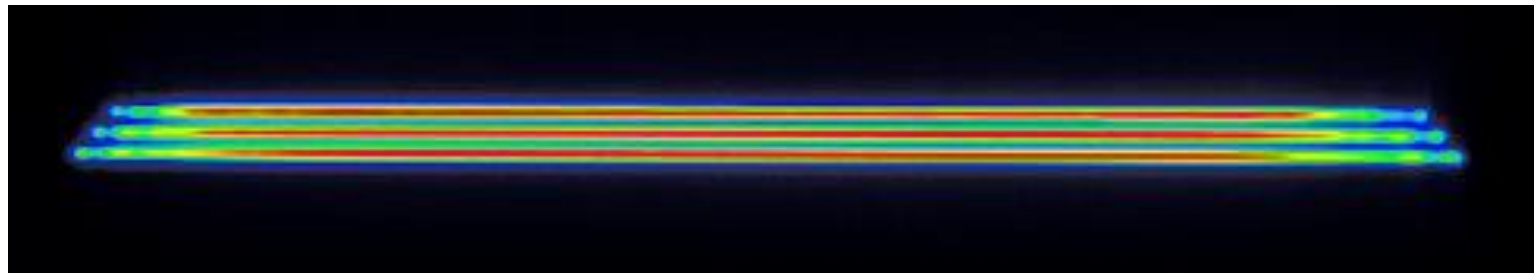
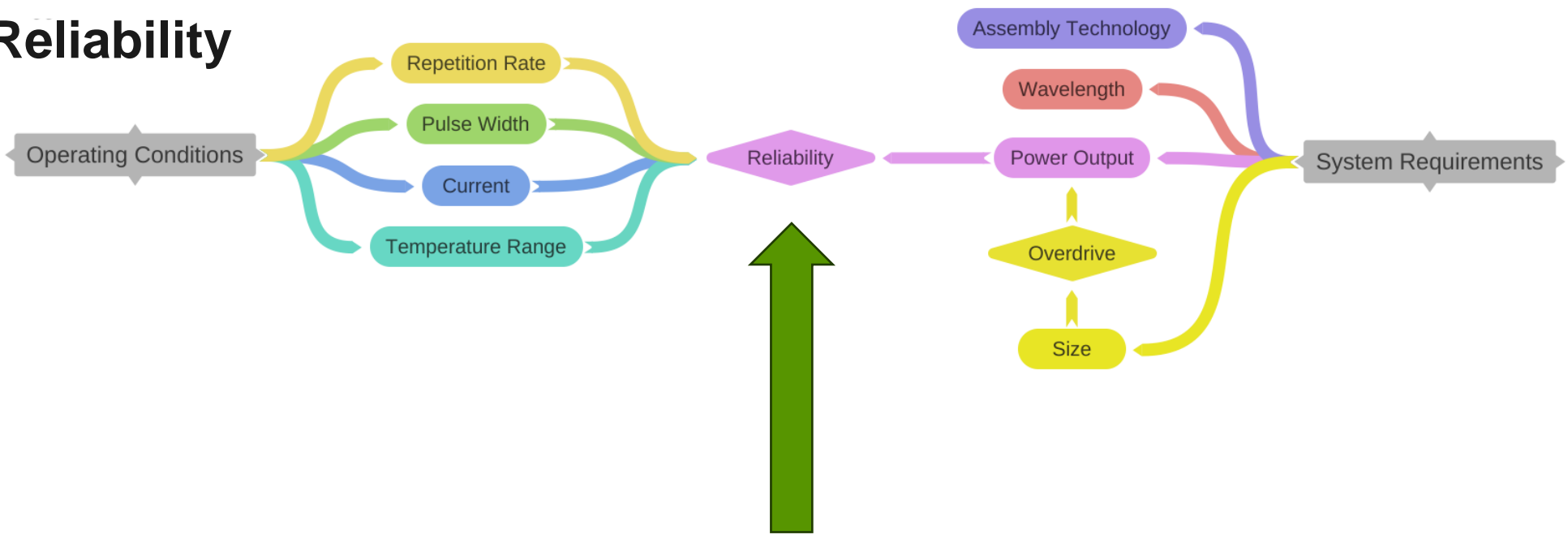
- High Reliability
- Low Bias Voltage
- Typical 3 W/A Power Slope

Market-driven Innovation

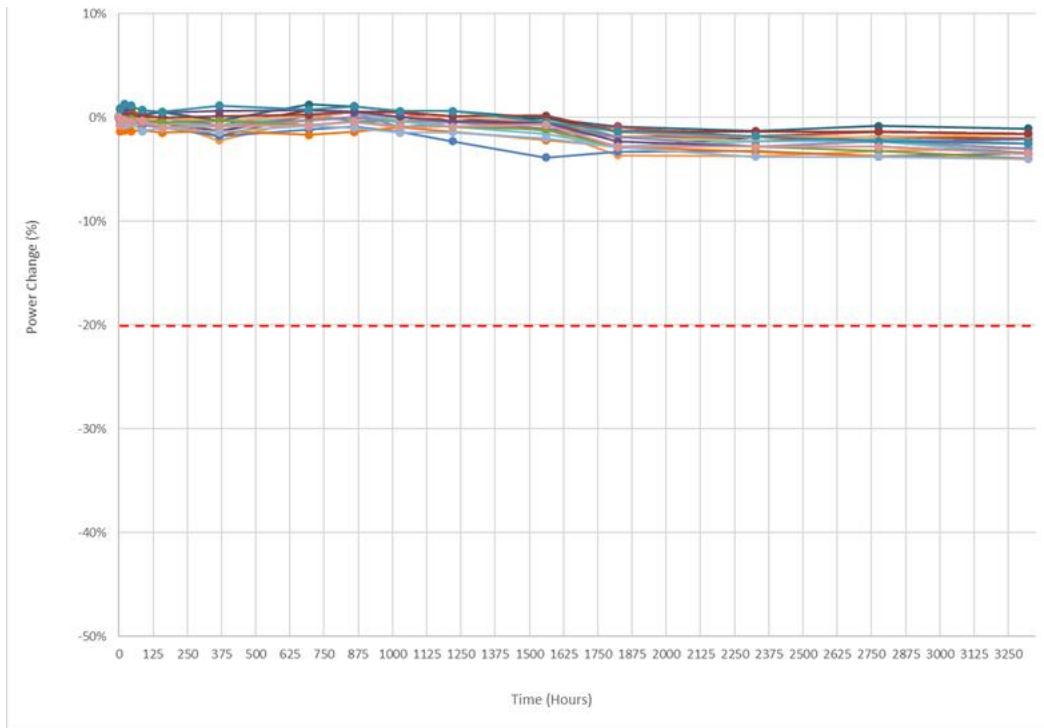
- 70 W @ 30 A → 120 W @ 40 A
- High conversion efficiency
- Horizontal and vertical emission
- Baseline for future performance updates



Reliability



125 °C High Temperature Lifetime Test



Stable performance after more than 3000 hrs

MTTF = 41 years

Laser Diode meets AEC-Q102 requirements

In Summary

New Pulsed Laser Diode features
High Reliability at low bias voltage

- Catalog Part as SMD Package
- Typically 120 W Output Power
- Customizable Offerings for short pulse widths
- Roadmap for future market requirements

Questions?



The logo for Excelitas Technologies features the word "EXCELITAS" in a large, white, sans-serif font. The letter "X" is stylized with a green swoosh that starts under the "E", goes over the top of the "X", and ends under the "A". Below "EXCELITAS" is the word "TECHNOLOGIES" in a smaller, green, sans-serif font.

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