



MATERIALS THAT MATTER

VCSELS for emerging applications

EPIC meeting

13th June 2022

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New Applications drive new Illumination



OMS/DMS

Wider FOI
Eye Safety

AR / VR

Wider FOI
Compact Illumination
Low Power Consumption



LIDAR

High peak power
Wide T° range
Fast modulation
Addressability

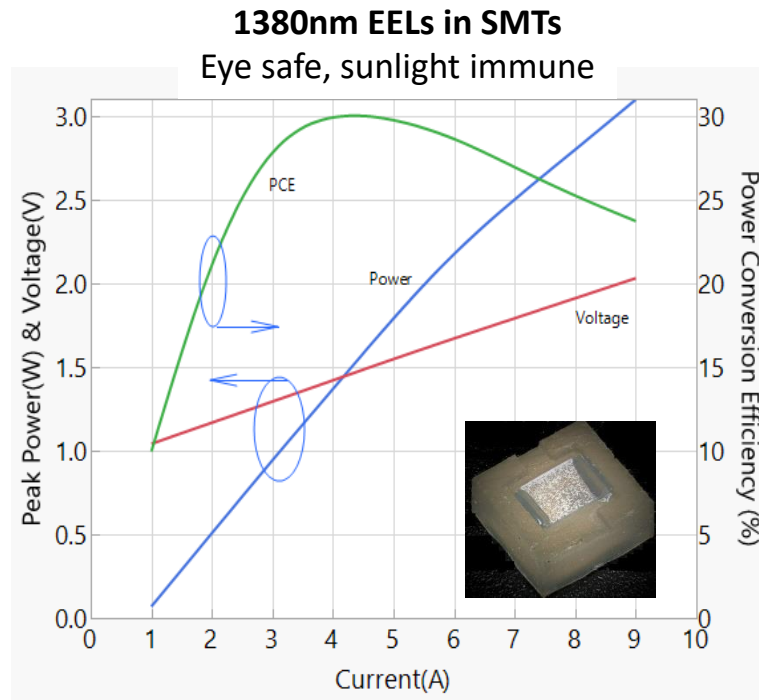
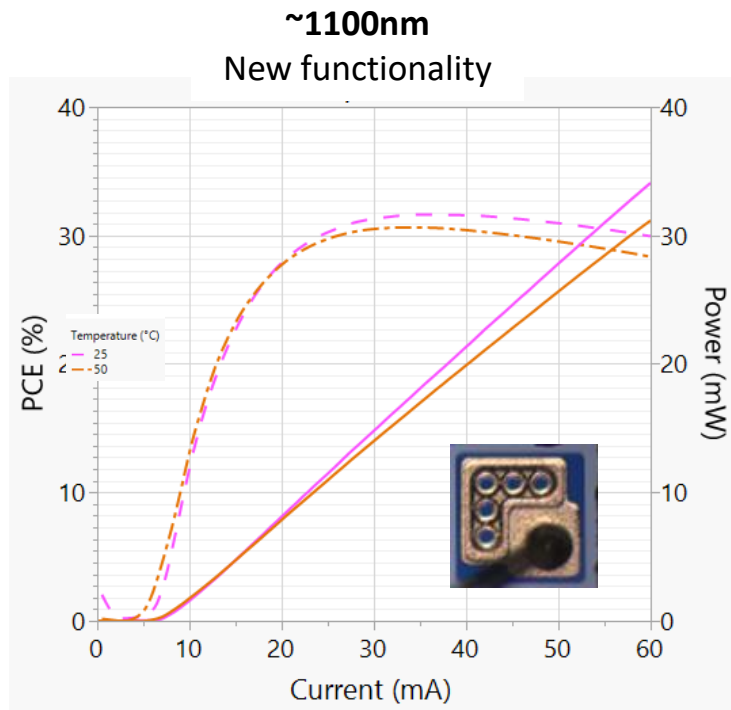
AGV

High peak power
Solar immunity
Wide T° range



Wavelength Extension

- New wavelengths availability enable new applications

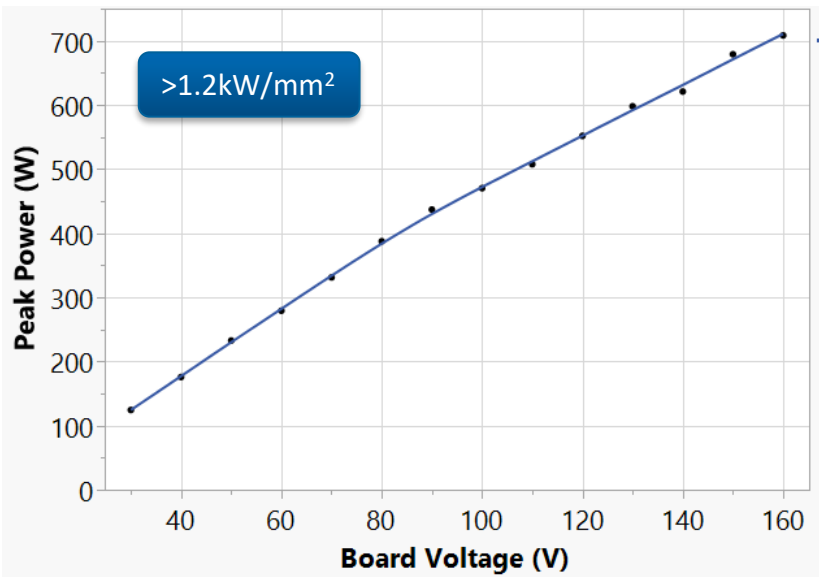


Added functionalities at chip level

- New Features are being integrated on the chip level
 - Multi junction for longer reach, reduced EMI, lower cost
 - Polarized light emission for optical design flexibility

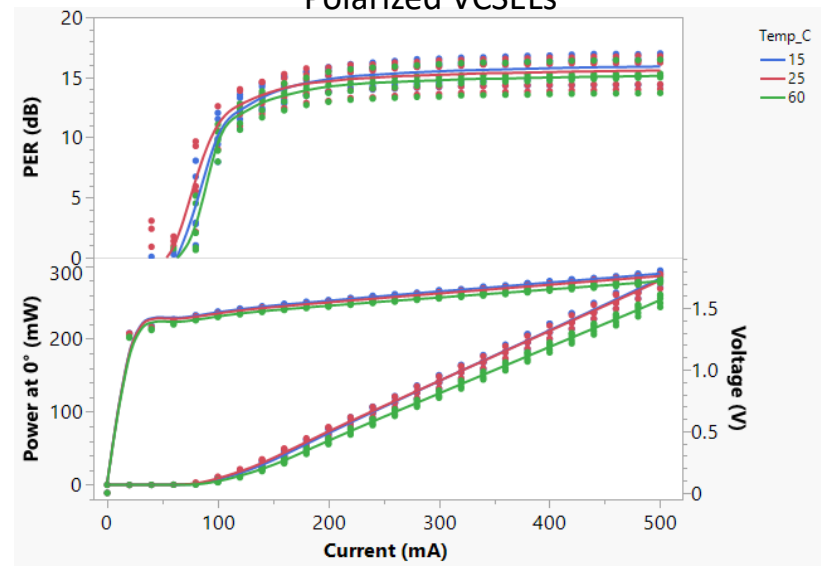
Longer Reach

Short Pulse, 5J chip for dTOF

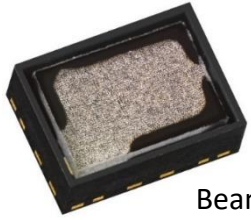


Optical design flexibility

Polarized VCSELS



Added functionality at Package level



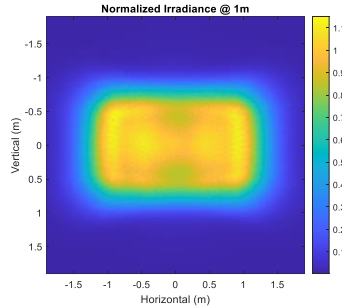
Flood Illuminator (2 in 1)

VCSEL, PD, Optics,

Beam shaping(FOI, Profile, Dot Projectors,..)

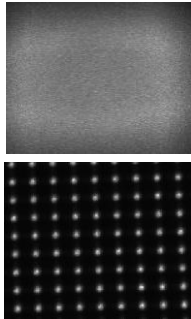
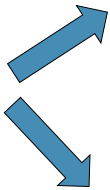
PD can be used for Eye Safety

AECQ-102 Qualified



Integrated Driver (3 in 1)

- VCSEL, Driver, PD, Optics, EMI shielding
- Beam shaping(FOI, Profile, Dot Projectors,..)
- PD can be used for Eye Safety

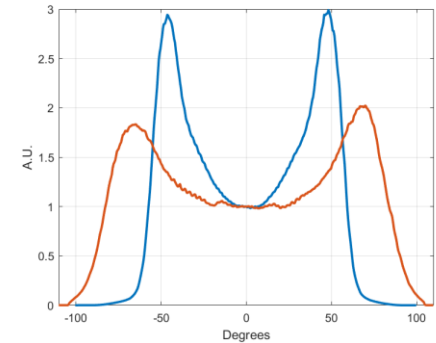
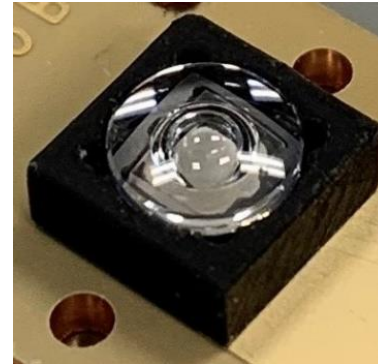


Example:

- 2 Channels DJ VCSEL.
- Flood and Dot Projector
- Spot size 0.25 deg
- CR 25, 4'000 dots

Ultra Wide Field of Illumination (>170°)

- Much wider FOI than other avail solutions
- Material/process Automotive Compliant.



II-VI

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