

NIR VCSELs: Very High Performance – Ultra Low Power Consumption

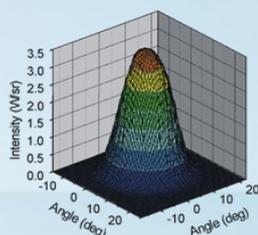
NIR Lasers (VCSELs) for 2D Arrays for 3D Sensing from 1.27 μm to 2 μm

VERTILAS® has developed 2D Array VCSELs for 3D Sensing with a few mWs to 10s and 100s Watts optical power (pulsed mode) for a vast range of applications such as Illumination, ToF, Automotive, Health Care, Robotics and AR/VR. These applications require > 1000 nm to improve eye safety and reduce impact of sunlight radiation. Our long wavelength VCSELs are ideal for these applications. Number of emitters in 2D VCSEL Arrays and configurations can be designed per output power requirements.

VCSEL chips can be combined and integrated into one package to multiply optical power

# of emitters	Po (qcw)
12	0.125 W
24	0.25 W
48	0.5 W
160	1.5 W
300	3 W
480	5 W
800	8 W

- From single emitter to > 1000 emitters
- From few mWs to 10s and 100s of Watts (pulsed mode)
- Single mode and multi mode versions
- Configurations can be designed per demand



Target Applications

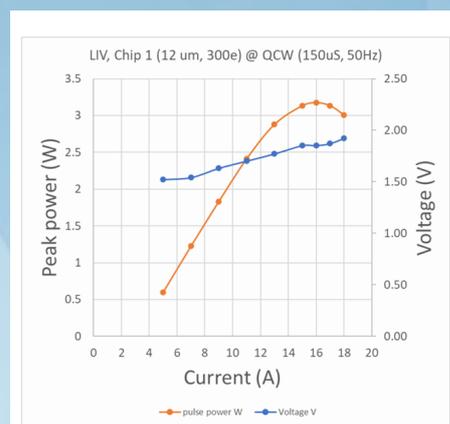
- Illumination
- ToF
- SWIR Camera
- Automotive
 - In-cabin monitoring and LiDAR
- Health care
- Robotics, autonomous vehicles
- AR/VR
- Consumer electronics



Application Scenarios / Requirement for LW VCSEL Arrays

- Eye safety
- Reduced sunlight interference
- Special applications / markets requiring wavelengths > 1 μm

300 Emitter 1.3 μm 2D VCSEL Array

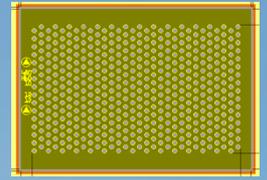


3.2W optical power (qcw)





VERTILAS®



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TriEye and Vertilas Collaboration

Cutting Edge CMOS-Based Camera and InP VCSEL Laser Technology

- **16.04.2024, CS 2024, Brussels:** TriEye and Vertilas announce demonstration of high performance SWIR sensing solution with InP VCSEL 2D Arrays
- Designed for consumer and mobile robotics applications
- Provides long range performance in any ambient environment
- Eye-safe sensing and imaging at 1350nm
- For more information contact info@trieye.tech

TriEye MAVI SWIR illuminator with Vertilas InP VCSELS

