



Press Release

Photonics West 2022: TRUMPF presents next generation of controlled polarized VCSEL

The high technology company TRUMPF and the optics innovator Metalenz show for the first-time an illumination showcase with stable polarization for consumer electronics // VCSEL portfolio for advanced sensing applications extended

Ulm, January 20, 2022 – TRUMPF Photonic Components, a global leader in VCSEL and photodiode solutions presents at the Photonics West fair 2022 a live showcase on VCSEL with controlled polarization for illumination applications. This new VCSEL will lead to much smaller construction space needed for example in smartphones for 3D scene illumination. Together with Metalenz, a Boston based pioneer in designing and commercializing meta-optics, TRUMPF demonstrates how future consumer electronic devices benefit from these smaller and smarter components. This technology progress is enabled through the development of VCSELS with stable polarization.

Extended VCSEL portfolio

TRUMPF also presents its portfolio on single-mode and multimode VCSELS. They can be used for a wide range of advanced industrial and consumer sensing applications, from oxygen sensor to face recognition. The portfolio contains a new single-mode VCSEL for highly precise time-of-flight sensors. With ViBO (VCSEL with integrated backside optics) TRUMPF showcases another new VCSEL solution, that comes with monolithically integrated micro-optical elements. Applications such as LiDAR or AR glasses benefit from this technology, as ViBO comes with a significantly reduced footprint and offers highest freedom in design, as tailored illumination profiles can be created.

VCSEL for industrial heating and data communication

The VCSEL heating systems showcased at the show, enable direct heat treatment with fully controllable emission zones. They offer huge potential for various industrial applications – from more sustainable Li-battery production to local softening of metal automotive parts to photovoltaic applications. In production of Li-batteries for example, they enable faster and more energy-

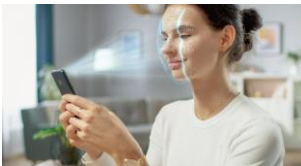
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efficient drying of active material and therefore a lot more efficient production process. The modules are highly flexible and compact, enabling high efficiency and quality.

The portfolio of TRUMPF Photonic Components is completed by VCSEL and photodiode solutions for optical communication. Media transmission via fiber optical communication is a raising field as the amount of data, that has to be transferred, is increasing. The solutions offer high data rates at low power consumption and low latency to fulfill the highest demands of data centers.

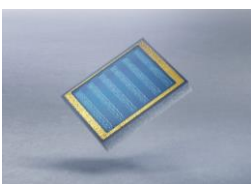
Visit TRUMPF at Photonics West 2022: booth 327

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Polarized VCSEL for smartphone applications

Illumination applications such as face recognition, 3D mapping or camera autofocus can be addressed by the polarized VCSEL. Less components are needed and overall building space within the devices can be reduced.



ViBO – VCSEL with Integrated Backside Optics

Freedom in design is given by ViBO. Various illumination profiles can be created thanks to monolithically integrated micro-optical elements.



Clean room facility of TRUMPF Photonic Components

At the clean room facility in Ulm, Germany, TRUMPF manufactures VCSELs and photodiodes.



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About TRUMPF Photonic Components

TRUMPF Photonic Components is a global technology leader, supplying VCSEL and photodiode solutions for consumer electronics, datacom, automotive, industrial sensing and heating markets. More than two billion VCSEL chips and photodiodes has been shipped worldwide so far. The employees continue to drive the technological know-how that has been established for over 20 years now in order to maintain its leadership position. The long-established technology was acquired by TRUMPF in 2019. The company has its headquarters in Ulm, Germany, with further sales locations in the Netherlands, China, Korea and the US.

TRUMPF Photonic Components belongs to the TRUMPF Group, a high-technology company that offers production solutions in the machine tool and laser sectors. TRUMPF is the world technological and market leader for machine tools used in flexible sheet metal processing, and also for industrial lasers and metal 3D printing. In 2020/21, the company employed some 14,800 people and generated sales of about 3.5 billion euros. With over 80 subsidiaries, the TRUMPF Group is represented in nearly every European country as well as in North America, South America and Asia. The company has production facilities in Germany, France, the United Kingdom, Italy, Austria, Switzerland, Poland, the Czech Republic, the United States, Mexico and China.

For more information about TRUMPF Photonic Components visit:

www.trumpf.com/s/VCSEL-solutions

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