

Press Release

Laserline at EuroBLECH 2024: Highly Efficient Diode Laser Solutions for Joining, Hardening and Cladding

Focus on Multi-Spot Optics for Application-Optimized Beam Shaping and Blue High-Power Diode Lasers for Copper Processing

At EuroBLECH 2024, Laserline will be presenting highly efficient solutions for processing sheet metal, copper and aluminum components. Key topics include multi-spot optics for application-optimized beam shaping, blue 4 kW CW diode lasers for copper welding and solutions for laser curing of powder coatings.

Mülheim-Kärlich, September 16th, 2024 – Diode laser specialist Laserline will be presenting its wide range of high-power diode lasers and processing optics for customized joining, hardening and cladding applications at EuroBLECH 2024 (22 to 25 October in Hanover, Hall 26, Stand J52). The tradeshow highlights include multi-spot optics for application-optimized beam shaping. They enable beam splitting to create several individual spots as well as the spot-specific adjustment of geometry and intensity distribution. They are used for the smooth and fast brazing of hot-galvanized steel sheets or for the realization of symmetrical or asymmetrical seams with less spatters and an adaptable penetration profile. In addition, optics for aluminum welding with hot wire (Hot Wire Aluminum Welding) will be showcased. The process offers significantly greater process stability than conventional aluminum joining processes and scores points for its reduced heat input into the base material and high process speed with a high seam quality.

In addition to the processing optics, Laserline will also be exhibiting various beam sources: One focus will be on fiber-coupled mobile diode lasers from the LDF series, which offer output powers of more than 45 kW in various system configurations. The LDF lasers are characterized by their flexible scalability and can be easily upgraded in the field from 12 to 24 kW, for example. For the increasingly important industrial processing of non-ferrous metal components, Laserline is also presenting its portfolio of solutions in the field of blue high-power diode lasers - with output powers of up to 4 kW. Their wavelength of 445 nm is absorbed by copper and copper alloys five times better than infrared wavelengths, which ensures exceptionally smooth melt pools without pore formation. The most compact version of blue high-power diode lasers will be showcased at the tradeshow booth: The LDM^{blue} lasers are available with CW output powers of up to 2 kW and are particularly easy to integrate into machine and system concepts thanks to their space-saving 19" design.

Another focus of the tradeshow presentation is the laser curing of powder coatings using Ultra Wide Spot technology, which presents a compelling economic and ecological alternative to gas-fired oven processes. The laser heats only the exact area that needs to be coated, without causing any particle dispersion. Since the laser systems do not require any heating up time and the laser power can be adjusted within milliseconds while the process is running, it is possible to achieve a 90 percent increase in heating rate and significantly higher overall energy efficiency.

Additionally, Laserline is also showcasing energy- and material-efficient cladding solutions, including brake disc cladding for road vehicles. Laser cladding ensures long-term protection

against corrosion and wear and reduces the amount of fine dust caused by the braking process—dust that is harmful to both the environment and human health—by up to 90 percent. This makes a crucial contribution to more sustainable mobility.

The trade fair presentation will be rounded off with selected exhibits from individual application areas, including an underride guard for a car and samples for welding tailored blanks.

About Laserline:

Laserline GmbH, with its headquarters in Mülheim-Kärlich near Koblenz, was founded in 1997. The company is a world leader in the development and manufacture of highly efficient, modular diode laser systems with blue and infrared wavelengths. Laserline high-power diode lasers achieve output powers of up to 60 kW and a wall plug efficiency (WPE) of over 50 percent. Based on decades of experience, Laserline develops customized laser solutions for industrial applications - including high-quality beam shaping optics for the realization of variable spot geometries - and has established itself internationally as a reliable partner. More than 7,500 high-power diode lasers from Laserline are currently in use around the world, demonstrating their performance in a wide variety of processes and applications. The laser technology specialist currently employs around 400 people and has international subsidiaries in the USA, Mexico, Brazil, Japan, China, South Korea, and India as well as representatives in Europe (France, Great Britain, Italy) and in the Asia-Pacific region (Australia, Taiwan, Singapore). Further information at <https://www.laserline.com/en-int/>

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