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EKSPLO boosts micromachining capabilities with FemtoLux 50

The ultrashort laser FemtoLux 50 is engineered to deliver an output power of 50 W at 1030 nm, facilitating exceptional performance for demanding micromachining processes.

The FemtoLux 50 stands out in its power class with an innovative dry cooling system (DRC). By using this method, excess heat from the laser head is transferred via easily detachable cooling plate, which is cooled by a refrigerant agent directly. This system has already been employed in military applications, demonstrating "bulletproof" reliability – MTBF (mean time between failure) of the DRC system exceeds 90,000 hours. The laser cooling system can work 24/7/365 for more than 10 years without any downtime. The lifetime of the compressor in a DRC system is 3 to 5 times longer compared to water pumps.

Up to date the innovative Direct Refrigerant Cooling (DRC) system is the most efficient cooling method available. Its power consumption is half that of conventional water chillers and 8 times lower than TEC chillers.

For enhanced versatility, users can fully leverage the industrial laser FemtoLux 50 through advanced burst mode options, including MHz, GHz, and combined MHz+GHz configurations, along with true Pulse-on-Demand (PoD) capability.

As a result, femtosecond laser FemtoLux is the only laser in its power class with such a compact footprint. Additionally, the FemtoLux delivers outstanding performance, including power stability < 0.5% RMS and superior beam quality with $M^2 < 1.2$.

Depending on the task, it can be equipped with an optional harmonics module, enabling operation at 515 nm (20 W, >50 µJ) and 343 nm (10 W, >25 µJ).

The ultrashort laser FemtoLux 50 offers solutions for glass, metal, polymer, and other materials. Numerous feasibility studies in renowned application laboratories show the laser's applicability for various micromachining processes, from stent cutting to semiconductor manufacturing and beyond, offering limitless potential.

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