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IPG Photonics Corporation, the world leader in fiber lasers, today introduced a new ultra-reliable, super-efficient and low cost platform of direct diode systems operating at 900 to1000 nm spectral range and capable of delivering over 1kW of optical power by a conventional multimode fiber. The advanced direct diode laser line establishes new performance, reliability and cost standards for this class of systems and opens the door for various new applications in material processing.

The DLR Series is based upon state-of-the-art fiber combining of emission of new and super-bright diode modules that IPG started mass production of 18 months ago. At present, each of the diode modules provides up to 20W power in the 100um fiber core, with a numerical aperture less than 0.13.

"We believe that their relative brightness is over five times higher than what is available from other sources" said Dr. Valentin Gapontsev, CEO and Chairman of IPG Photonics. "Taking into account the unique reliability of these diodes, which exceeds 200,000 hours with passive cooling, IPG's proprietary technology now allows us to build fiber-delivered multi-kilowatt direct diode systems with record wall-plug efficiency up to 40-45% from the AC line. Last quarter, we produced over 250kW of diode power and we expect to triple the production by the end of the year. IPG now has enough diode reserves to allocate our pump diodes to direct diode systems in addition to our high priority multi-kW fiber lasers."

"We are working hard to increase the power of a single module up to 50W shortly" added Dr. Alex Ovtchinnikov, Director of the Laser Diode Unit at IPG. "It will allow us to extend available optical power in the flexible 600-800um fibers up to 3-4kW. Higher optical powers are available now using a fiber bundle delivery."

The DLR Series can be used in industrial and medical applications and is a replacement to diode laser systems that incorporate bars. With the high reliability of the proprietary single emitter diodes that IPG uses, customers will not need to replace diodes in the DLR Series or provide other maintenance.

Offering performance, reliability and cost advantages over conventional, diode bar-based laser systems, the DLR-series will extend the commercial breakthroughs in the laser market which IPG started by introduction of its super-high power fiber lasers.

About IPG Photonics

IPG Photonics has been a global development pioneer and production leader for over thirteen years in the design and manufacture of high performance fiber lasers, fiber amplifiers, and Raman pump lasers for materials processing, aerospace, telecom, test and measurement, and other commercial applications.

IPG's proprietary technology, materials science expertise and vertically integrated manufacturing operations enable IPG to produce the world's largest range of cost-effective high and low power fiber lasers, direct diode systems and amplifiers with superior efficiency, performance, reliability and quality.

IPG Photonics has its world headquarters in Oxford, Massachusetts and manufacturing facilities and sales operations in Massachusetts, Germany, Russia, Italy, Japan, India, Korea and the United Kingdom. For more information, visit http://www.ipgphotonics.com/. IPGP-G

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