IPG Photonics Announces New Results in Thick Plate Welding with 20 Kilowatt Fiber Laser

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IPG's Fiber Lasers Provide Alternative to Expensive Electron Beam Welding

OXFORD, Mass., Dec 10, 2007 (BUSINESS WIRE) -- IPG Photonics Corporation, the leading global manufacturer of high-power lasers and amplifiers for diverse applications in numerous markets, today announced that its application center in Germany achieved a record high-quality deep penetration welding on thick stainless steel plates at rapid speeds. By using IPG's unique 20 kW continuous wave (CW) 1070 nm commercial fiber laser, it is now possible to weld 1" 304 stainless steel at a speed of 0.85 meters/minute, and 3/4" samples at a speed of 2 meters/minute using a 200 micron fiber cable with a 420 micron focus spot size.

In other experiments, IPG also was able to produce high-quality welds on 2" 304 stainless steel samples by applying laser beams from both sides with a total penetration depth of 54-56 mm per pass. IPG's YLR-20,000 fiber laser is the only laser in the world that can produce 20 kW of CW output at 1 micron. Because of the laser's record electro-optic efficiency, high reliability, simplicity to use, compact design, and low maintenance operation, it has the potential to become a powerful and practical tool for indoor and outdoor thick metal-based applications.

"The new results confirm that IPG's 20 kW laser can have a major impact on applications requiring deep penetration welds that previously could only be obtained with very expensive electron beam welding machines requiring a full or partial vacuum," said William H. Shiner, IPG's Vice President - Industrial Markets. "Heavy industry applications, such as shipbuilding, pipelines, gas tanks, aerospace, and construction, can now weld thick metals outdoors or very large pieces at the highest power levels with the flexible beam delivery of IPG's lasers."

Customers are welcome to provide thick metal samples to IPG for application development at one of IPG's application development centers.

About IPG Photonics Corporation

IPG Photonics is the leading global manufacturer of high-performance fiber lasers and amplifiers for diverse applications in numerous markets, such as materials processing, communications, medical, and scientific and research. Founded in 1990, IPG Photonics pioneered the development and commercialization of optical fiber-based lasers, a new generation of optical sources that combine the advantages of semiconductor diodes with the high amplification and precise beam qualities of specialty optical fibers. Fiber lasers deliver superior performance, reliability and usability at a lower total cost of ownership compared with conventional lasers, allowing end-users to increase productivity and lower operating costs. IPG has its headquarters in Oxford, Massachusetts, and has additional plants and offices throughout the world. For more information, please visit www.ipgphotonics.com.

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