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**Fiber Laser Drilling Report Provides First Detailed Look
At Improved Turbine Engine Fabricating Processes**

Champlin, Minnesota: Results of high power fiber laser drilling studies conducted at Prima Power Laserdyne in Champlin, Minnesota was one of several presentations that drew praise from both veteran and prospective laser processing professionals at Laserdyne's recent Technology Conference and Open House.

Peter Thompson, Technical Director for Laserdyne made the fiber laser drilling presentation that was based on results obtained using a six-axis LASERDYE 795 equipped with an IPG 15kW fiber laser. The presentation summarized the quality and throughput achieved in producing a range of hole sizes in aerospace alloys using drilling techniques that are currently accomplished with Nd:YAG and lower power fiber lasers. This latest example of a Laserdyne system with a fiber laser delivers the power, high beam quality and excellent focusability

essential for producing effusion cooling holes normal to the surface and at angles as low as 20 degrees to a part surface at high rates.

The report included photographs of holes, including cross sections that illustrated metallurgical properties. All photos showed consistent precision and high quality with holes produced at a range of drilling rates. Example pictures showed: (1) Trepan drilling - from 0.5 seconds per hole for uncoated materials at 45 degrees, to 5 seconds per hole for coated material at 20 degrees; (2) Drilling on the fly - from 2 to 10 holes per second using Laserdyne's exclusive CylPerf programming feature and percussion drilling - from 0.08 seconds per hole for long pulse length - single pulse hole drilling to 0.25 seconds per hole for multi-pulse.

These processes are extremely important to turbine engine manufacturers who require millions of these holes for cooling the hot section components of modern turbine engines. The cooling holes have a major impact on engine efficiency for reduced fuel consumption and for lower emissions.

"Laser drilling is an important technology for improving aircraft engine performance," stated Mark Barry, Vice President of Prima Power Laserdyne. "The application of the fiber laser for drilling will provide additional benefit in some applications over conventional Nd:YAG drilling. Our company has generated a wealth of knowledge in this area through our R&D and applications engineering efforts over the last 30 years. We strive to regularly bring this knowledge to the attention of the users of LASERDYNE systems as well as to prospective users worldwide."

With improvements in laser processing technology occurring rapidly, laser system operators are anxious to take advantage of the latest software and hardware to remain competitive. Laserdyne provides users the ability to upgrade capability of their systems on an ongoing, low cost basis.

Laserdyne will release information to their customers on results of a next round of testing currently underway at the Champlin facility.

Laserdyne's next Technology Conference is being planned for early Fall 2013, with exact dates announced by mid-year. Many Laserdyne users rely on these meetings to learn the latest innovations that increase their productivity and to stay up-to-date. These include ways to optimize system production with faster setups, more robust processes and more efficient implementation of programming and system maintenance.

Interested in the Fiber Laser Drilling report? Call 763-433-3700 for information or email your request to: lds.sales@primapower.com

Website: <http://www.primapower.com/en/>

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