PRESS RELEASE

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January 30, 2017

No. 1395

New Femtosecond Lasers Offer Higher Pulse Energy and Higher Repetition Rates

Santa Clara, Calif., 01/30/2017 –Coherent has significantly extended the performance of their Monaco series of industrial-grade femtosecond lasers by increasing their adjustable pulse repetition rate to a maximum of 50 MHz. Plus, the company has launched a new high energy Monaco that provides up to 60 µJ/pulse in the near infrared (1035 nm), or, optionally 30 µJ in the green (517 nm). These improvements provide enhanced performance in precision materials processing applications, particularly for delicate and/or tough materials, and also deliver increased frame rates in demanding multiphoton microscopy imaging applications. All Monaco lasers produce a high quality ($M2 < 1.2$) beam, enabling tight focusing for high brightness and high spatial resolution. Additionally, the pulsewidth can be user set from under 400 fs to over 10 ps.

The improved Monaco 1035-40 provides 40 watts of average power in the near-IR (1035 nm), with the user selecting pulse repetition rates of 1, 2, 3, 4, 5, 10, and 50 MHz from a simple pull-down menu in the laser GUI, with no effect on output pulsewidth. The Monaco 517-20 provides 20 watts of green output with the same operational and output specifications. The all-new infrared Monaco 1035-60 and green Monaco 517-30 provide an additional operating point at 670 kHz for users requiring very high pulse energy: 60 µJ in the near-IR, and 30 µJ in the green. These lasers are ideal for cutting thicker substrates and drilling deep holes in ceramics, glass, and materials used for bio-absorbable stents. The short pulsewidth ensures excellent edge and surface quality without the need for post-processing steps in most applications.

In bio-imaging applications, these high repetition rate lasers enable higher frame rates than competitive products, particularly for power hungry applications such as photoactivation in optogenetic experiments. Here, the near-IR output can be used directly for two-photon excitation of red fluorophores such as mFruits. Or it can also be used to pump the Opera-F, a variable pulsewidth optical parameter amplifier (OPA) that then provides smoothly tunable output across the entire microscopy imaging spectral window.

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Founded in 1966, Coherent, Inc. is one of the world's leading providers of lasers and laser-based technology for scientific, commercial and industrial customers. Our common stock is listed on the Nasdaq Global Select Market and is part of the Russell 2000 and Standard & Poor's MidCap 400 Index. For more information about Coherent, visit the company's website at http://www.coherent.com/ for product and financial updates.