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For Immediate Release:

Advanced Pulse Synchronization Improves Picosecond Laser Micromachining

Santa Clara, CA, June 24, 2019 – The Coherent HyperRapid NXT is a high-power picosecond laser that employs advanced pulsing technology to enable micromachining with precision and a minimal heat affected zone (HAZ). Specifically, HyperRapid NXT implements Coherent's PulseEQ technology, which delivers strings of synchronous, invariant pulses on demand from an external trigger signal. This jitter-free, precision triggering and advanced energy control enables system builders to benefit from the high-speed synchronization capabilities now available from state-of-the-art scanners and stages.

HyperRapid NXT is a family of picosecond (pulsewidth <15 ps) lasers available in IR, Green and UV wavelengths, at a variety of output powers. This includes outputs of 100 W average power (250 µJ pulse energy) at 1064 nm, and 30 W average power (75 µJ pulse energy) at 355 nm. All models offer fully adjustable pulse repetition frequencies, from single shot to 5 MHz. In addition, these lasers are also designed, manufactured and tested to deliver the exceptional reliability and stability required for operation in industrial 24/7 environments.

HyperRapid NXT combines high output power, the ability to deliver targeted laser energy (regardless of scan speed), and the inherent benefits of virtually athermal picosecond processing. These characteristics make it an appropriate source for a variety of micromachining tasks that require high spatial precision and minimum HAZ. Typical applications include OLED cutting, SmartCleave® glass and sapphire filamentation cutting, and semiconductor wafer and low-κ material scribing, as well as cutting of modified polyimide (MPI) and liquid crystal polymer (LCP) – two constituents in the fabrication of 5G cellular phone antennas.

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