COHERENT
Superior Reliability & Performance

PRESS RELEASE | No. 1450

**Technical Contact**
Joseph Henrich
+1 (408) 764-4219
joseph.henrich@coherent.com

**PR Contact**
David Kuntz
+1 (310) 377-5393
davidkuntz@cox.net

For Immediate Release:

# New Femtosecond Amplifier Provides Unmatched Performance and Versatility

**Santa Clara, CA, June 24, 2019** – The new Monaco HE is an ultrafast amplifier that delivers higher pulse energy over a wider operating range. Specifically, it delivers pulse energies of up to 2 mJ at repetition rates as high as 10 kHz (at 1030 nm) and provides up to 25 W of average power at repetition rates as high as 250 kHz, with independent adjustment of both the pulse repetition rate and the pulse energy. Because the pulse width can be software varied from <350 fs to >10 ps, this amplifier can service demanding scientific applications, as well as advanced materials processing tasks. In addition, the Monaco HE measures a compact 70.4 x 46.5 x 29.6 cm, making it attractive for both end users and OEMs.

Until now, laser amplifier users had to choose between titanium:sapphire systems that offer high pulse energy at low (1-10 kHz) repetition rates, or ytterbium-based amplifiers that typically feature high repetition rates but lower pulse energy. By combining several innovations in ytterbium laser technology, the all-new Monaco HE delivers both high pulse energy and high pulse repetition rates, and thus provides access to the performance gap that previously existed between these two technologies. Just as important, the Monaco HE was designed and manufactured from inception using rigorous HALT/HASS protocols. These techniques are essential to delivering exceptional levels of reliability and operational stability in lasers and amplifiers, and are a cornerstone of Coherent's *Industrial Revolution in Ultrafast Science*.

The combination of high pulse energy and high repetition rate makes the Monaco HE well-suited for spectroscopic applications such as multidimensional spectroscopy and time-resolved spectroscopy, where it can also be used to pump tunable optical parametric devices such as an OPA or OPCPA. The high peak power also enables efficient THz generation, providing easier access to this spectral region of increasing interest and research activity. In addition, Monaco HE supports cutting edge industrial applications including two-photon polymerization and materials processing of thin, delicate films, where the high average power enables high throughput.

###