

Contact and Sender:
High Q Laser Innovation GmbH
Dr. Sandra Zoppel
Marketing and Communications
Sandra.Zoppel@highqlaser.at
Phone +43 (5576) 43040-17

High Q Laser presents the new UC-INDUSTRIAL series Femto- and picosecond amplifiers for the industrial market

picoREGEN[™] UC-INDUSTRIAL **femtoREGEN[™] UC-INDUSTRIAL**

High Q Laser in Hohenems / Bregenz, Austria, presents their new series of ultra compact pico- and femtosecond regenerative amplifiers "picoREGEN UC-INDUSTRIAL" and "femtoREGEN UC-INDUSTRIAL", especially designed to meet industrial demands. The design goals were a maintenance interval of 12 months and a life time of 5 years. The available power of the all-in-one amplifiers is 30 W for the "picoREGEN[™] UC-INDUSTRIAL" with a pulse duration of 12 ps and 8 W for the "femtoREGEN[™] UC-INDUSTRIAL" with a pulse duration of 350 fs.

The UC-INDUSTRIAL ultra-fast amplifiers present high robustness and reliability. They are the ideal laser sources to be integrated as OEM products, due to their compact size with a footprint of just 78 cm x 34 cm, their all-in-one controller and their ability for full remote control and signal read out.

The femto- and picosecond pulses can be triggered via TTL signals from single pulses up to the maximum repetition rate of 500 kHz providing constant energy from the first pulse on (no first pulse excess energy).

Combining high power and high repetition rates High Q Laser's pico- and femtosecond all-in-one Regenerative Amplifiers are perfect tools for a wide range of applications in Nano- and Microprocessing such as solar cell structuring and scribing, thin film ablation, hole drilling, precision cutting or tissue ablation.

Hohenems / Bregenz, Austria. April, 2008



picoREGEN[™] UC-INDUSTRIAL

30 W
1064 nm
12 ps

femtoREGEN[™] UC-INDUSTRIAL

8 W
1040 nm
350 fs

Single pulse to 500 kHz TTL Trig.

The **femtoREGEN[™] UC-INDUSTRIAL** and **picoREGEN[™] UC-INDUSTRIAL** regenerative amplifiers integrate all pump laser diode modules, the seed oscillator and the amplifier into a single all-in-one ultra-compact housing. With a footprint of just 78 cm x 34 cm they are the most compact all-in-one ultrafast amplifiers in the market. The seed oscillator is designed as a High Q Laser ultra compact (UC) module itself for high stability and compactness. The UC seed oscillator is operating with "de-rated" nominal pump current for longest MTBF and is based on High Q Laser's patented resonator folding technique withstanding a 50 g shock test for most robust performance. The semiconductor saturable absorber mirror (SESAM) assures passive and self-starting mode locking for high temporal stability.

The **UC-INDUSTRIAL** series comprise the resonator of the regenerative amplifier and the Pockels cell in one monolithic module, the proven High Q Laser IC (Industrial Compatible) module. The Pockels cell and its electric driver modules can both be independently replaced for an easy service in the field. The pico- or femtosecond laser pulses can be triggered via TTL signals from single pulses to the maximum repetition rate of 500 kHz providing constant energy from the first pulse on (no first pulse excess energy).

The **UC-INDUSTRIAL** series have a single 19" „all-in-one" control unit (240VAC or 110VAC) hosting all supply and control functions for easy and true "turn-key" operation and facilitates system integration for OEM customers with a CAN bus and 24V power supply. The control unit also integrates the 19" liquid to air chiller.

The **femtoREGEN UC-INDUSTRIAL** is based on high-end Yb-doped laser materials for future power and repetition rate scaling. It utilizes High Q Laser's patent pending Intra-Cavity-Chirped-Pulse-Amplification (ICCPA) for ultra compact design.

The **UC-INDUSTRIAL** series is optionally available with frequency doubling, tripling or quadrupling for enhanced precision.

The **UC-INDUSTRIAL** series is designed for a 12 months maintenance interval. Customers benefit from the ongoing OEM production in quality, performance and investment cost. The high modularity ensures high temporal and spatial stability as well as easy service and maintenance resulting in low operation cost and high MTBF. It presents high robustness and reliability and can be customized to an OEM integrators needs.

Combining high power and high repetition rates – controlled by an external TTL trigger – High Q Laser's pico- and femtosecond all-in-one Regenerative Amplifiers are perfect tools for a wide range of applications:

Micro / Nano Processing: solar cell structuring and scribing, thin film ablation as well as hole drilling or precision cutting. Precise laser ablation in metals, ceramics, semiconductors and dielectrics.

Semiconductor: Wafer scribing, dicing or cutting; thin film ablation, memory repair, nano scale thin film ablation, waveguide writing

Medical/Life Sciences: "Cold Ablation" of biological tissue in neurology and dentistry, ceramics machining, femtosecond laser dissection, cell nano manipulation

Research: Ultrafast spectroscopy together with our High Q Laser ps-OPA and wavelength conversion systems (harmonics generation), non linear optics

For more information on HIGH Q LASER call +43 (5576) 43040 17 or e-mail Sandra.Zoppel@highqlaser.at
High Q Laser's headquarter is located at Kaiser-Franz-Josef-Str. 61, Hohenems / Bregenz, Austria.

For more than 9 years HIGH Q LASER has been a leading supplier of diode pumped pico- and femtosecond all-solid-state oscillators and amplifiers based on Direct Diode Pumping and Semiconductor Saturable Absorber Mode Locking.

For additional photo formats, b/w prints or electronic files of the attached image(s) please call Sandra Zoppel at HIGH Q LASER, Marketing Communications, phone +43 (5576) – 430 40- 17 or e-mail: Sandra.Zoppel@highqlaser.at

© Copyright 2008 HIGH Q LASER. All rights reserved.

