

# femtoREGEN™ Industrial

All-in-one femtosecond regenerative amplifier system



femtoREGEN™	UC-1035-2000	UC-1040-8000
Wavelength <sup>1)</sup>	1035 +/- 5 nm	1040 +/- 5 nm
Pulse width (FWHM), typical	< 400 fs	
Average output power	2 W	8 W
Pulse repetition rate <sup>2)</sup>	Single pulse - 200 kHz (TTL-Trigger)	Single pulse - 1 MHz (TTL-Trigger)
Pulse energy <sup>3)</sup>	20 µJ @ 100 kHz	16 µJ @ 500 kHz
Laser material <sup>4)</sup>	Ytterbium	
Power stability, typical	< 1 % RMS (12h)	
Beam quality	TEM <sub>00</sub> ; M <sup>2</sup> ≤ 1.25	
Polarization	horizontal or vertical	
Beam height	101.6 mm (4"), not including pedestals	
Laser head size	860 x 340 x 210 mm <sup>3</sup> , not including pedestals	
Controller size	19" rack, 600 x 590 x 550 mm <sup>3</sup> (l x w x h), including closed-loop, recirculation water chiller	
Power supply	90 VAC - 240 VAC, 50/60 Hz, < 2000 W	
Operation ambient temp.	18 °C to 26 °C	
<b>Optional SHG and THG modules</b>		
Average output power	0.8 W @ 517 nm / 0.4 W @ 345 nm	3.2 W @ 520 nm / 1.6 W @ 347 nm
Modules size	150 x 400 x 160 mm <sup>3</sup> (l x w x h)	

All specifications are typical data and subject to change without notice in order to provide the best product possible.

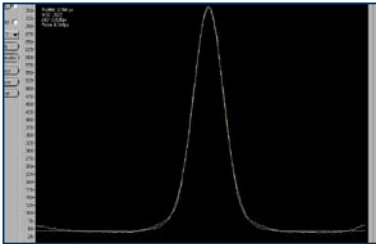
1) other wavelengths on request

2) up to 2 MHz on request

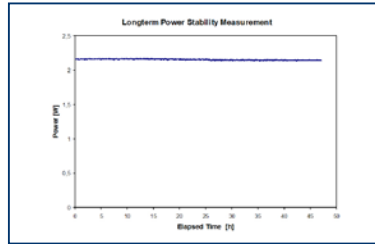
3) higher pulse energy available

4) different laser materials on request

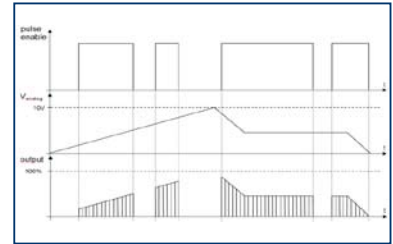
Main Features	Customer benefits
• Integrated femtoTRAIN™ Ultra Compact seed laser	• Industrial MTBF and up-time
• Passive self-starting modelocking by saturable bragg reflectors	• Service interval > 1 year
• User replaceable fiber-coupled diode module (URDM)	• Integrated pulse-picker: TTL pulse enable and attenuator function
• Shock and vibration tested	• Burst mode for arbitrary pulse sequences
• Modular Pockels-cell and Pockels-cell driver	• High temporal and spatial stability
• All-in-one controller system	• USB / CAN bus remote control (optional via internet)
• Diode modules with de-rated pump current (long lifetime)	• Remote maintenance via internet (optional)



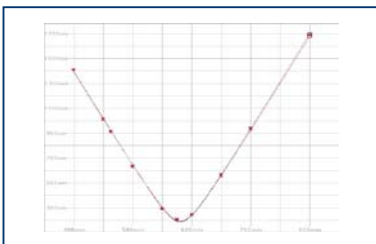
**Typical Intensity Autocorrelation**  
Autocorr. duration 535 fs  
Pulse duration 348 fs



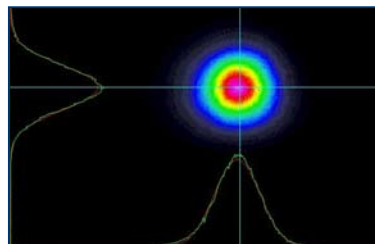
**Typical power stability**  
Measurement duration 50h  
Mean 2.15 W | RMS 0.36 %



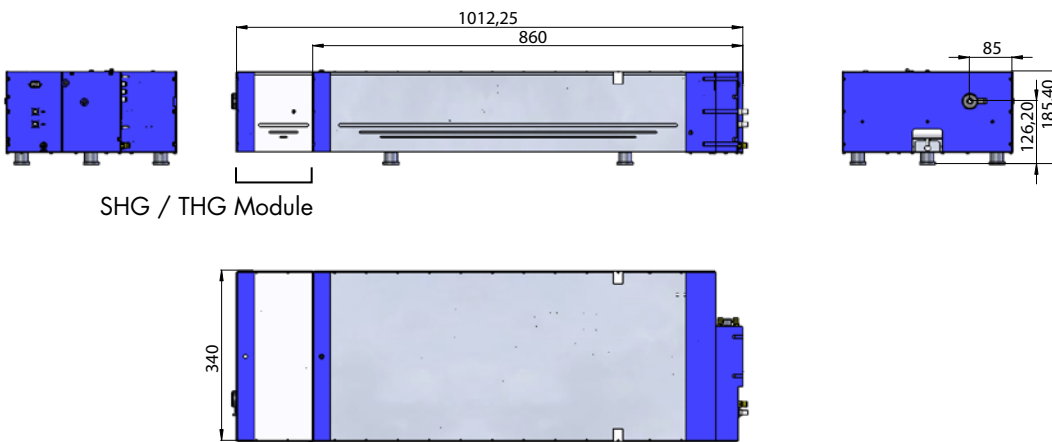
**TTL pulse enable and fast 300 MHz attenuator signal resulting in burst mode for arbitrary pulse sequences**



**Typical Beam Quality**  
 $M^2_X$  1.06,  $M^2_Y$  1.08  
Ellipticity 1.02



**Typical IR beam profile of femtoREGEN Yb**



SHG / THG Module

## Applications

- Femtosecond Laser Dissection
- Thin Film Ablation
- OPA pumping
- Femtosecond Spectroscopy
- Nonlinear Optics
- Nano Processing
- Waveguide Writing
- Biological Tissue Ablation and Machining

## Please Inquire About

- *femtoTUNE*™: Tunable output from 200 nm - 3000 nm
- High pulse energy option up to 500 μJ
- Tunable pulse duration up to 0.4 ps to 10 ps
- Applications laboratory for sample testing
- OEM and customized versions
- Shorter pulse duration down to 250 fs

