

Onefive ORIGAMI HP

High power, high repetition rate industrial femtosecond laser

- Lowest phase noise on the market
- Transform-limited soliton pulses of outstanding cleanliness
- Diffraction-limited beam quality
- No Kelly sidebands or spectral ripple
- No amplifier built-in/no ASE noise
- Plug & Play
- Maintenance-free 24/7 operation



Our ORIGAMI HP is specifically designed for OEM integration. It is the high-power industrial-grade, ultra-compact, mode-locked, femtosecond laser that provides the lowest phase noise and timing jitter on the market.

It emits transform-limited pulses down to less than 120 fs duration with a repetition rate of 80 MHz and a power level in excess of 3W. The free-space output provides diffraction-limited beam quality and excellent pointing stability.

Options are analog pump power control, repetition rate control and tunability, synchronization to external clock for ultra-low timing jitter and Carrier-Envelope-Phase (CEP) stabilization ready.

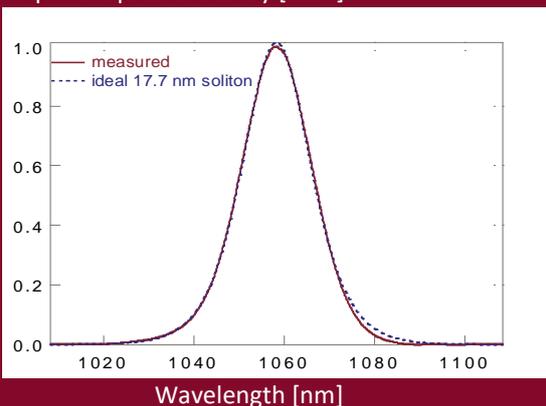
The ORIGAMI HP is a maintenance-free laser module packaged in a sealed and robust enclosure allowing for operation in the harshest environments. No alignment is required, and it guarantees high stability, low drift and 24/7 operation.

Applications

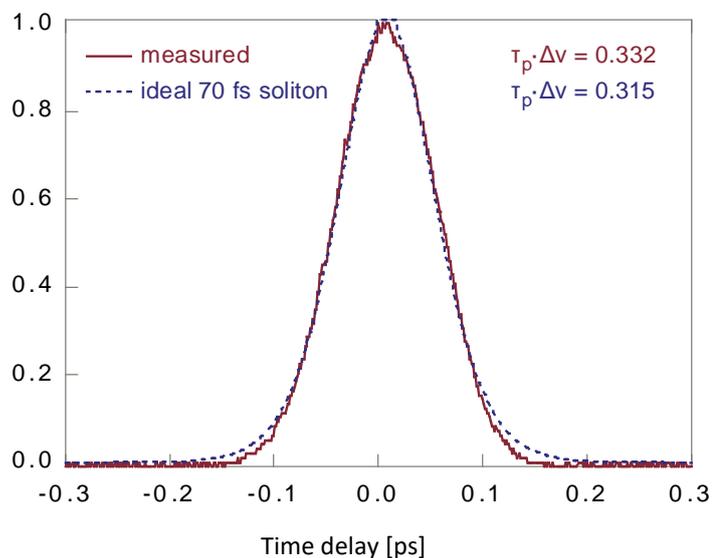
- Supercontinuum generation
- Multi-photon polymerization
- Multi-photon microscopy
- Seed for amplifiers
- THz generation
- Inspection

Typical optical spectrum

Spectral power density [nm^{-1}]



Typical pulse profile - Autocorrelation



Specifications

Optical

Model	ORIGAMI 10 HP
Center wavelength*	1055 ± 5 nm
Pulse duration*	< 120 fs
Spectral bandwidth	Transform-limited, soliton shape, no ripples, no pedestals, un-chirped
Max average power	3 W
Pulse energy*	>37 nJ
Peak power	<350 kW
Repetition rate*	80 ± 2 MHz
Beam quality	$M^2 \leq 1.1$, TEM ₀₀
Amplitude noise	<1% rms
PER	>23 dB vertical
Output power	0.5—100% (via optional variable attenuator)
Timing jitter	<50 fs [1 kHz -10 MHz]
Pointing stability	< 5 μrad/°C, 18—35°C
Laser output	Collimated free space

* Please inquire for possible combinations of average power, pulse energy and repetition rate

Mechanical/Electrical

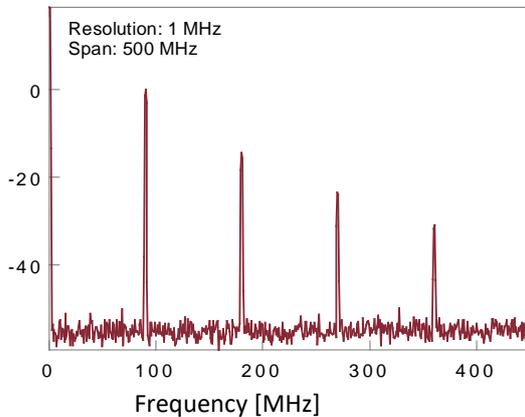
Warm-up time	<15 minutes
Operation temperature	18°C — 32°C
Storage temperature	-20°C — 55°C
Size laser head	57 x 275 x 300 mm ³
Weight laser head	5 kg
Size control unit	133 x 483 x 400 mm ³ (19"/3U rack mount)
Weight control unit	7 kg
Power supply	24 VDC/9A or 90-264 VAC, 47-63 Hz
Power consumption	<300 W
Cooling laser head	Water cooled
Cooling control unit	Air cooled

All ORIGAMI products are produced under our quality management system certified in accordance with the ISO 9001:2015 and ISO 13485:2016 standard.



Typical RF spectrum

Noise spectral density [dBc/MHz]



Support and warranty

All ORIGAMI products come with industry leading reliability and are backed by our standard 2 year warranty.

However, should you need the extra security of an extended warranty this is available in our support and warranty extension package.

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