



SWISS MADE

**HIGH POWER
AND HIGH
REPETITION
RATE
COMPACT
INDUSTRIAL
LASER**

Origami HP is an industrial-grade, cost-effective femtosecond laser that emits transform-limited pulses down to **70 fs** duration at high power levels. This laser platform is available at repetition rates above **40 MHz** and power levels up to **4W**. The free-space output provides diffraction-limited beam quality and excellent pointing stability. Origami HP is available in infrared, green and UV models. Origami HP is a maintenance-free laser module which comes in a compact, dust-sealed **OEM package**. It guaranties high repeatability and **24/7 operation**.

OPTIONS:

- + UVA 343 – 355 nm
- + UVC 257 – 266 nm
- + Synchronization to external clock for ultra-low timing jitter
- + Electrical interface for pump power control
- + Repetition rate tunability

MAIN APPLICATIONS:

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

OUTSTANDING FEATURES :

- + Low amplitude and phase noise
- + Transform-limited clean soliton pulses
- + Diffraction-limited beam quality
- + No Kelly-sidebands / no spectral ripple
- + No amplifier built-in / no ASE noise
- + Maintenance free / no alignment required
- + Plug & Play
- + 24/ 7 operation



	ORIGAMI - 05 HP	ORIGAMI - 08 HP	ORIGAMI - 10 HP	ORIGAMI - 15 HP
CENTER WAVELENGTH	514 – 532 nm	765 – 780 nm	1028 – 1065 nm	1530 – 1560 nm
PULSE DURATION ^{1,2}	100 fs – 1 ps	70 – 300 fs	70 fs – 1 ps	< 500 fs
AVG. OUTPUT POWER [UP TO] ²	2 W	300 mW	4 W	3 W
PULSE ENERGY [UP TO] ²	40 nJ	8 nJ	80 nJ	30 nJ
PEAK POWER [UP TO]	160 kW	60 kW	350 kW	60 kW
SPECTRAL BANDWIDTH	3 nm – 0.3 nm	9 nm – 2 nm	16 nm – 2.5 nm	9 nm
	$\tau_p \cdot \Delta\nu \sim 0.32$ (transform-limited)			$\tau_p \cdot \Delta\nu < 0.7$
PULSE REPETITION RATE ²		40 MHz – 200 MHz		40 MHz – 100 MHz
BEAM QUALITY PER		$M^2 < 1.2$, TEM ₀₀		
		> 20 dB		
AMPLITUDE NOISE [1 H]		< 0.5% rms, < 1.0% pk-pk		
CENTER WL DRIFT [1 H]		< 0.3 nm pk-pk		
POINTING STABILITY [12 H]		4 < 50 μ rad rms		
LASER OUTPUT	collimated free space			
ENVIRONMENTAL				
WARM-UP TIME	< 15 minutes			
OPERATION TEMPERATURE	18 °C – 32 °C			
STORAGE TEMPERATURE	- 20 °C – 65 °C			
ON/OFF CYCLES	> 10000			
MECHANICAL				
SIZE LASER HEAD ³	57 x 275 x 300 mm ³			
WEIGHT LASER HEAD ³	5 kg			
SIZE CONTROL UNIT	133 x 483 x 400 mm ³ (19"/3U rack mount)			
WEIGHT CONTROL UNIT	7 kg			
ELECTRICAL				
POWER SUPPLY	24 VDC / 9A or 90 – 264 VAC, 47 – 63 Hz			
POWER CONSUMPTION	< 300 W			
COOLING				
LASER HEAD	air cooled or water cooled			
LASER CONTROLLER	air cooled			

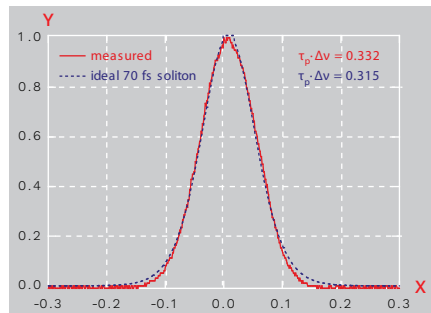
1 Tunable (requires external adjustable power supply)

2 Please inquire for possible combinations of pulse duration, average power and repetition rate

3 Exact size and weight depend on pulse repetition rate and wavelength

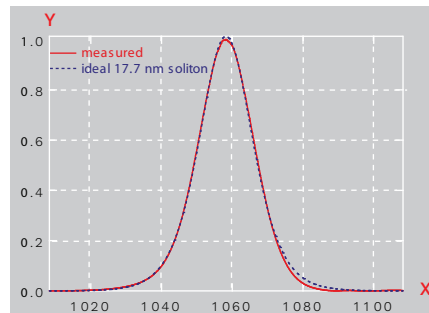


PULSE PROFILE



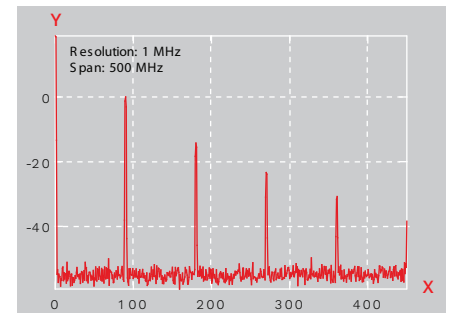
X TIME DELAY (PS)
Y AUTOCORRELATION SIGNAL

OPTICAL SPECTRUM



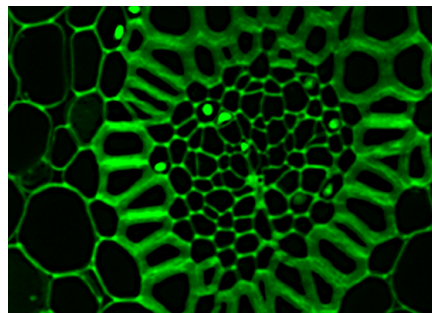
X WAVELENGTH (nm)
Y SPECTRAL POWER DENSITY (nm⁻¹)

RF SPECTRUM



X FREQUENCY (MHz)
Y NOISE SPECTRAL DENSITY (dBc/MHz)

APPLICATION



2-PHOTON MICROSCOPY IMAGE OF THE RHIZOME SECTION REALIZED WITH THE **ORIGAMI HP** LASER.