Origami XP

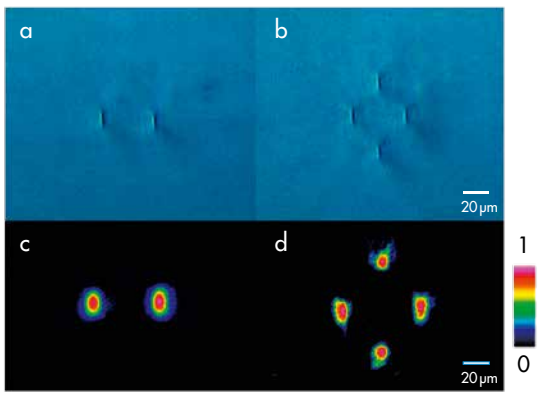
High energy single-box femtosecond laser module

Swiss Made

NEW FEATURE

The first all-in-one, air-cooled, microjoule, femtosecond laser

Origami XP is the first all-in-one, single-box, microjoule femtosecond laser available on the market. The laser head, controller and air-cooling system are integrated in one box. Being as small as 280×498×155 mm it even fits into a hand-luggage. Origami XP is based on the unique low noise ultra-stable Origami femtosecond seed laser. A simple and compact chirped pulse amplification system is capable of >40 µJ pulse energy, 4 W average power and pulse duration below 400 fs. The laser platform offers remote control capability. Origami XP has been designed for the easiest and most cost-effective possible system integration. It comes with removable handles, offers simple through-hole mounting and contains precise mechanical reference planes for simple drop in applications.



1×2 and 2×4 beam splitter structures achieved by direct femtosecond-laser inscription in PMMA bulk acrylic glass using the Origami-10 XP laser.
© W.-H. Yuan et al., Optical Materials 49, 110-115, 2015

Laser outstanding features:

- Air-cooled, single-box, dust sealed OEM package
- Mountable in any direction
- Real-time pulse energy measurement and control
- Burst mode
- Excellent pulse quality
- Outstanding energy and pointing stability
- Maintenance free – no alignment required
- Complete remote control
- 24/7 operation

Options:

- Up to 60 µJ pulse energy
- Up to 5 W output power
- UVC 258 nm
- Synchronization to external clock
- Picosecond operation
- Circular polarization
- Water cooling

Main applications:

- High precision laser surgery
- Micromachining
- Plasma generation
- Nonlinear optics
- LIBS
- THz generation

Femtosecond Laser

Origami XP

Laser specifications	Origami-03 XP	Origami-05 XP	Origami-10 XP
Center wavelength	**343 nm**	**515 nm**	**1030 nm**
Pulse Duration	<400 fs	<400 fs	<400 fs
Avg. output power (up to)	1 W	2 W	4 W
Pulse energy (up to)	10 µJ	20 µJ	40 µJ
Peak power (up to)	13 MW	35 MW	100 MW
Pulse repetition rate	single shot – 1 MHz		
Spectral bandwidth	< 1.8 nm	< 2.5 nm	< 4 nm
Beam quality	M^2 < 1.4, TEM_{00}	M^2 < 1.2, TEM_{00}	M^2 < 1.2, TEM_{00}
Ellipticity	< 1.3	< 1.1	< 1.1
Amplitude noise (12 h)	< 4.0% rms	< 2.0% rms	< 1.0% rms
PER	> 23 dB vertical		
Energy contrast	23 dB		
Pointing stability	< 30 µrad rms (12 h) const. temp., < 5 µrad/°C 18-35°C		
Laser output	collimated free space		
Environmental			
Warm-up time	<10 minutes		
Operation temperature	18 °C – 32 °C		
Storage temperature	-20 °C – 65 °C		
On/Off cycles	>10000		
Mechanical			
Size laser system	280 x 498 x 156 mm^3		
Weight laser system	32 kg		
Electrical			
Power supply	24 V / 20 A DC or 90 – 264 VAC, 47 – 63 Hz		
Power consumption	<500 W		
Cooling			
Laser system	air cooled or water cooled		

RoHS compliant

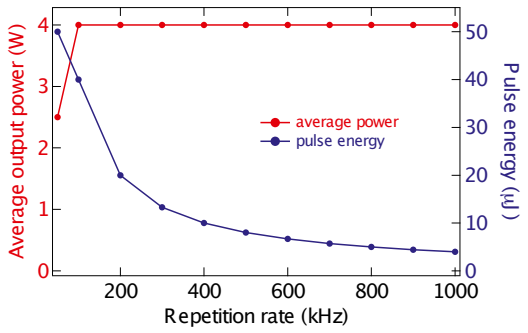
CE

DANGER
CLASS 4 LASER

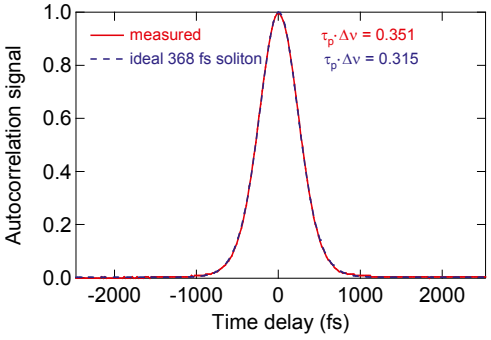
IEC Compliant Product
IEC 60068-2-27:2008
IEC 60068-2-6:2007
Shock & Vibration Test
IEC 61010-1:2010
IEC 61326-1:2012
Electromagnetic Compatibility
IEC 60825-1:2014
Laser Radiation Safety

ISO Certified Company
ISO 9001:2008
ISO 13485:2012

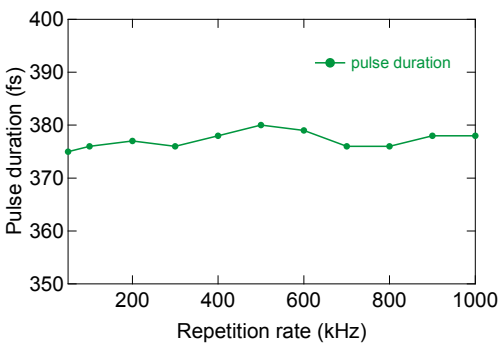
Output power vs Repetition Rate



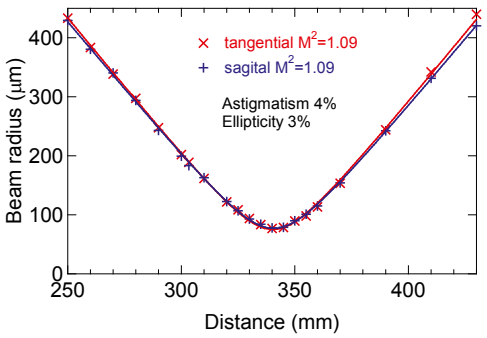
Pulse profile



Pulse duration vs Repetition Rate



Beam quality



Specifications subject to change without notice, December 2016

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