Compact Femtosecond / Picosecond Laser

SESAM™ Technology
Customizable

Applications

- Two-photon microscopy
- Pump-probe experiments
- Fluorescence Spectroscopy
- Opto-electronic testing
- Electro-optic sampling
- RF photocathodes
- Seeding amplifiers

Features

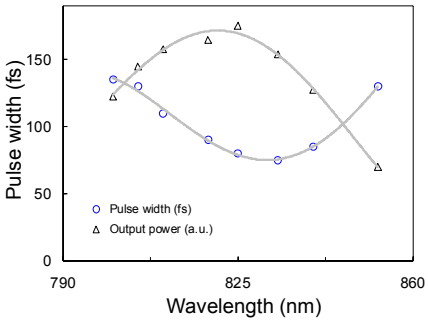
- **Passively mode-locked DPSSL**
- **Integrated pump laser**
- **Turn-key operation**
- **Customizable design**
- **Low maintenance**

Options

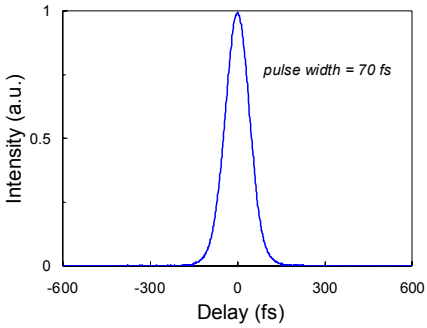
- Clock synchronization
- Long pulses
- Long term power stabilization
- Remote control
- RS-232

70fs - 100ps	pulse width
780nm - 860nm	wavelength
75MHz - 200MHz	repetition rate
500mW	output power
1% / °C	power stability
TEM_{00}	spatial mode
1.1	M^2

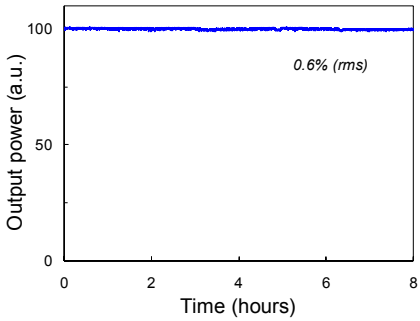
The mode-locking technique of the PALLAS is the so called "soliton mode-locking" with Time-Bandwidth® Products' patented SESAM™ device which has several advantages over common used mode-locking techniques like Kerr lens mode-locking or active mode-locking with acousto-optical modulators.



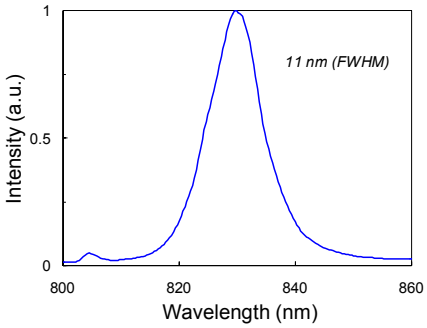
Pulse width (FWHM) and average laser output power (a.u.) versus wavelength



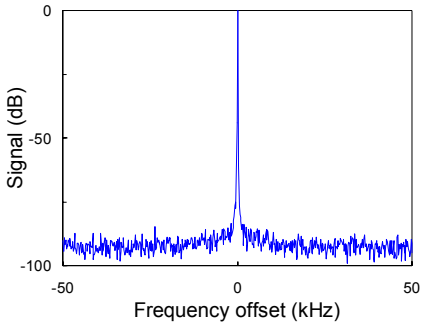
Typical non-interferometric autocorrelation trace of the PALLAS laser pulses



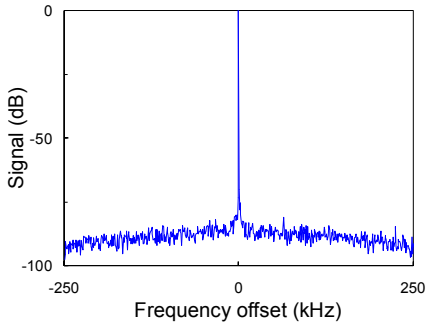
Average laser output power (long term)



Optical spectrum of the PALLAS laser pulses at the center wavelength (resolution: 0.1 nm)



Typical microwave spectrum of the pulse train, centered at the laser repetition rate (span: 100 kHz, resolution: 30 Hz, vertical scale in dB)



Typical microwave spectrum of the pulse train, centered at the laser repetition rate (span: 500 kHz, resolution: 100 Hz, vertical scale in dB)

In contrast to Kerr lens mode-locking the PALLAS is not operated at one end of the stability regime. SESAM™ passive mode-locking means no complicated and noisy high frequency electronic is needed. Furthermore the PALLAS is all solid-state, so no degeneration of the pump or the mode-locker like in ordinary ultra-fast laser systems will take place.

Additional specifications	**PALLAS (all models)**
turn-on time	10 min
power stability (>1kHz)	0.5 % rms
voltage	85 VAC - 264 VAC
frequency	50 Hz - 60 Hz
input power (single phase)	500 VA
laser head (size, weight)	280 mm x 90 mm x 400 mm, 20 kg
power supply (size, weight)	360 mm x 160 mm x 380 mm, 13.5 kg
chiller (size, weight)	220 mm x 390 mm x 280 mm, 9.5 kg

Does the PALLAS laser system not match your requirements? Please let us know the specifications of the laser you are looking for. A superior technology and a strong team enable us to tailor our products to your special needs.

All specifications are subject to change without notice. All numbers given in this datasheet are typical values and may depend on the specific laser configuration.

Technoparkstrasse 1
CH-8005 Zürich
Switzerland
+41 (0)1 445 3120
info@tbwp.com
www.tbwp.com

Time-Bandwidth® Products

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