

Compact Ti:sapphire Laser

SESAM® Technology

Customizable

Applications

- Seeding amplifiers
- Two-photon microscopy
- Pump-probe experiments
- Time-resolved spectroscopy
- Opto-electronic testing
- SHG on nanoparticles
- Photocathode illumination

Features

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

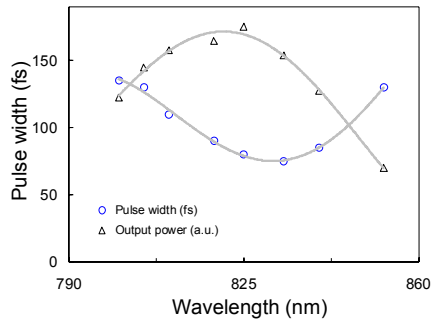
Options

- Clock synchronization
- Extended pulse widths
- Long-term power stabilization
- Remote control
- RS-232

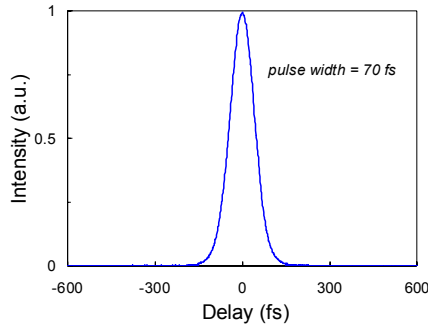


| | |
|-------------------|-----------------|
| 70 fs – 100 ps | pulse width |
| 780 nm – 860 nm | wavelength |
| 75 MHz – 200 MHz | repetition rate |
| 300 mW | output power |
| 1% / °C | power stability |
| TEM ₀₀ | spatial mode |
| 1.1 | M ² |

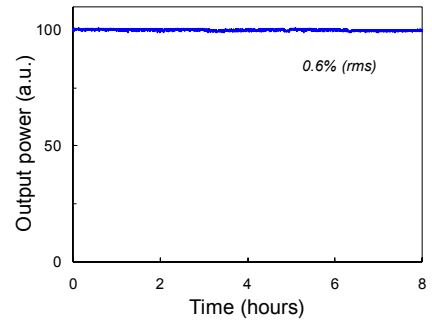
The PALLAS laser combines "soliton mode-locking" - a balance between self-phase modulation (SPM) and dispersion in the laser cavity - with Time-Bandwidth Products' patented SESAM® device for improved pulse stability and reliable self-starting, with a compact all-solid-state green pump laser integrated into the laser head. The laser has no moving parts and requires no RF drive electronics for modelocking.



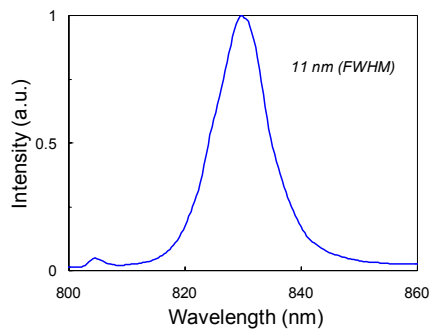
Pulse width (FWHM) and average laser output power (a.u.) versus wavelength



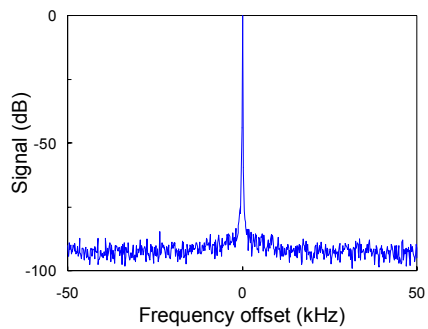
Typical non-interferometric autocorrelation trace of the PALLAS laser pulses



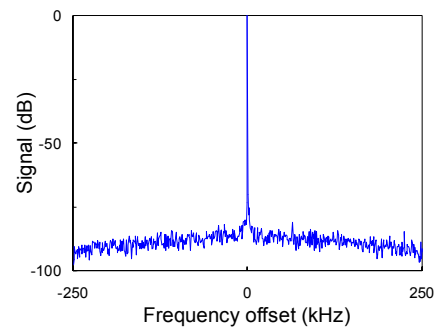
Average laser output power (long term)



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



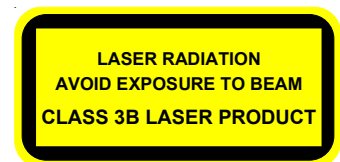
Typical microwave spectrum of the pulse train, centered at the laser repetition rate (span: 100 kHz, resolution: 30 Hz, vertical scale in dB)



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

SESAM® passive mode-locking means higher stability, reliable self-starting with no pulse drop-outs, no complicated or noisy high frequency mode-locking electronics, and a robust solid-state pump laser. The design freedom provided by the SESAM® device allows for a laser system customizable in repetition rate, wavelength, and pulse widths from femtoseconds to picoseconds. Additionally, these lasers are less sensitive to the pump laser parameters than other approaches. The sealed, turn-key platform allows for applications in more demanding laboratory or industrial environments.

| Additional specifications | PALLAS (all models) |
|-----------------------------|-----------------------------------|
| turn-on time | 10 min |
| power stability (>1kHz) | 0.5% rms |
| voltage | 100 VAC – 240 VAC |
| frequency | 50 Hz – 60 Hz |
| input power (single phase) | 1350 VA |
| laser head (size, weight) | 400 mm x 280 mm x 90 mm, 15 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 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. SESAM is a registered trademark in the following countries: USA, Switzerland, United Kingdom, Germany, Austria, Netherlands, Belgium, Luxembourg, France, Italy, Russia, China, Liechtenstein, Estonia, and Lithuania. This product is protected by one or several of the following patents: US6,538,298, US6,466,604, US5,987,049, EP1064527