

Pulsar TW

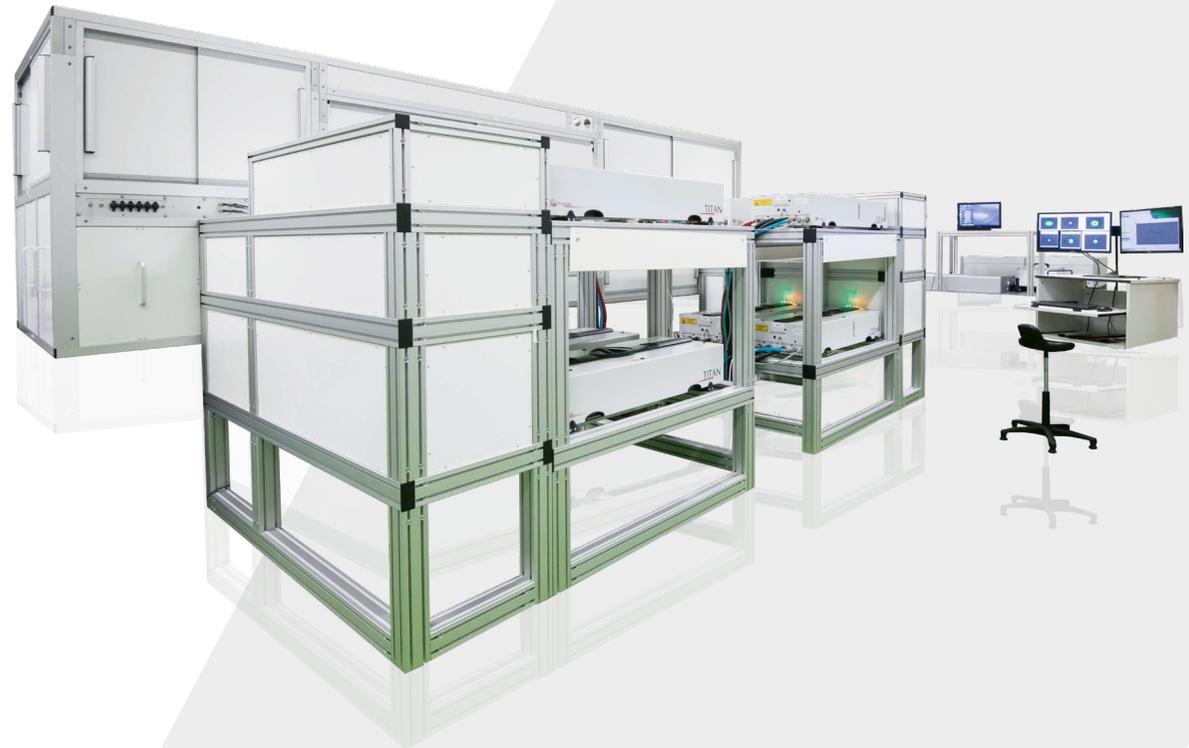
Ultra intense ultrafast laser

State-of-the-art Ultra Intense Ultrafast Lasers

Pulsar TW is the state-of-the-art high intensity lasers for high field science. It offers the best-in-class performance with industrial-grade reliability in a compact footprint. This laser family has been designed to ensure the highest temporal quality at both femtosecond and picosecond timescales. The beam quality is unmatched thanks to the optimal coupling between our high energy pump lasers and amplifiers. Pulsar TW reaches the highest intensities with unsurpassed energy and pointing stabilities.

Pulsar TW comes with an embedded, flexible and user friendly monitoring and control software to further enhance the user experience and system long term reliability.

The system versatility is expanded by a large offer of instrumentation and options for user specific needs.



Applications

Medical:

> X-Ray Imaging

Science:

> Attoscience,
High Harmonic
Generation, XUV
> Accelerators

Key Features

- > Up to 6.5 J
- > Highest contrast ratio better than $10^{10} : 1$
- > Up to 10 Hz repetition rate
- > Ultra-short sub-20 fs pulses
- > Readily upgradable
- > Advanced Monitoring System

Specifications

	Pulsar 60	Pulsar 140	Pulsar 250
Repetition Rate (Hz) ^{1,2}	Up to 5		
Peak Power (TW) ³	> 60	> 140	> 250
Energy Per Pulse (J)	> 1.5	> 3.5	> 6.25
Central Wavelength (nm)	800 ± 10		
Pulse Width (fs FWHM) ⁴	< 25		
Pulse To Pulse Energy Stability (% RMS)	< 1.5	< 1.2	< 1.0
Nanosecond Contrast	> 10 ⁸ : 1		
Picosecond Contrast	> 10 ³ : 1 beyond 1 ps		
	> 10 ⁶ : 1 beyond 5 ps		
	> 10 ⁸ : 1 beyond 10 ps		
ASE Contrast	> 10 ¹⁰ : 1 beyond 100 ps		
Strehl Ratio ⁵	> 0.9	> 0.85	
Pointing Stability (μrad RMS) ⁶	< 10		

Utilities

Dimensions

Pulsar 60	~ 6.5 m ² / 70 ft ²
Pulsar 140	~ 12 m ² / 130 ft ²
Pulsar 250	~ 13 m ² / 140 ft ²

Others

Max Total Electrical Power ⁷	15 to 33 kW
Max water Cooling Capacity ⁷	6 to 20 kW
Laboratory Temperature Range	18 - 23 °C
Laboratory Temperature Stability	+/- 1 °C

¹ Single shot to 5 / N Hz (N = 1..5)

² 10 Hz operation option available

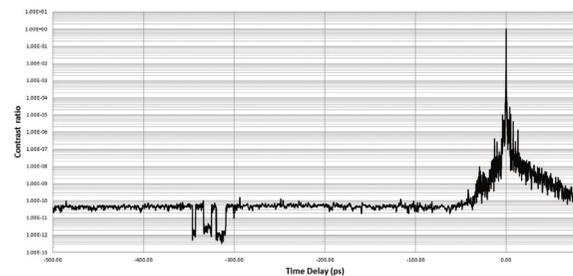
³ Calculated at 25 fs

⁴ Sub- 20 fs Ultra short pulse option available

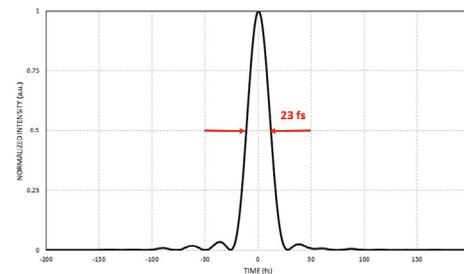
⁵ With Deformable mirror (in Option)

⁶ Under stable controlled environment

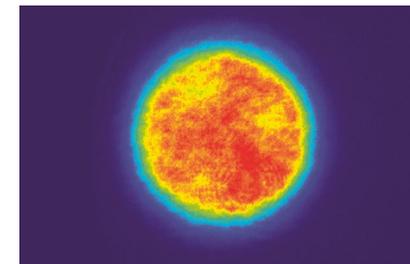
⁷ Depends on model



Pulsar 500 HR Sequoia contrast measurement



Pulsar 250 typical Wizzler pulse width measurement



Pulsar 60 typical Near Field beam profile at full energy

