

# 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:

> Particle accelerators  
> Secondary sources

## Key Features

- > Up to 9 J
- > Highest contrast ratio better than  $10^{10} : 1$
- > Up to 10 Hz repetition rate
- > Ultra-short sub-20 fs pulses
- > Readily upgradable
- > Advanced Laser 4.0 HE laser control system
- > Data logging

# PULSAR: TW Class

## Specifications

	25	50	120	220	400
Repetition Rate (Hz) <sup>1</sup>	10	5	5 or 10		0.1
Peak Power (TW)	> 25	> 50	> 120	> 220	> 400
Energy Per Pulse (J)	> 0.5	> 1	> 2.7	> 5	> 9
Central Wavelength (nm)	800 ± 10				
Pulse Width (fs FWHM) <sup>2</sup>	< 20 fs		< 23 fs		
Pulse To Pulse Energy Stability (% RMS)	< 1.5%	< 1.2%		< 1.0%	< 1.5%
Nanosecond Contrast	> 10 <sup>8</sup> : 1				
Picosecond Contrast	> 10 <sup>3</sup> : 1 beyond 1 ps				
	> 10 <sup>6</sup> : 1 beyond 7 ps				
	> 10 <sup>7</sup> : 1 beyond 20 ps				
ASE Contrast	> 10 <sup>10</sup> : 1 beyond 100 ps				
Strehl Ratio <sup>3</sup>	> 0.9		> 0.85		
Pointing Stability (μrad RMS) <sup>4</sup>	< 10				

<sup>1</sup> Please contact the factory for other repetition rate

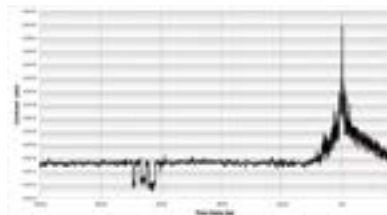
<sup>2</sup> Sub- 20 fs Ultra short pulse option available

<sup>3</sup> With Deformable mirror (in Option)

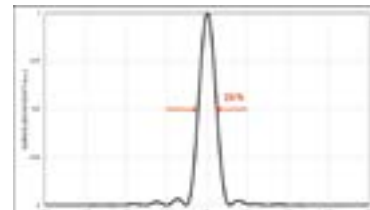
<sup>4</sup> Under stable controlled environment

## Options

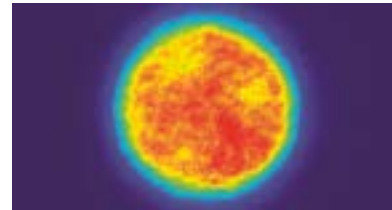
- External synchronization
- Laser 4.0 HE system control software
- Reduced repetition rate / single shot
- Energy attenuator
- Isolation of experimental reflected beam
- Diode beam alignment



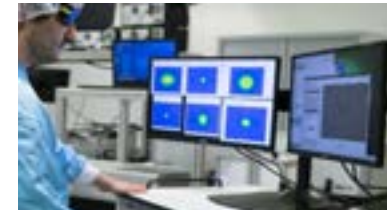
Pulsar 500 HR Sequoia contrast measurement



Pulsar 250 typical Wizzler pulse width measurement



Pulsar 60 typical Near Field beam profile at full energy



Laser 4.0 HE laser system control platform

