

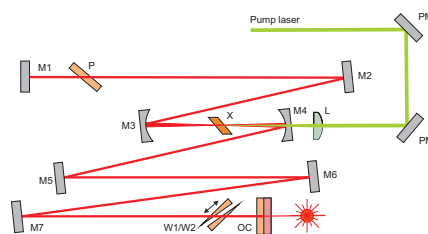
Femtosecond Ti:Sapphire Oscillators

_ General Information & Product Overview

- ▶ The **VENTEON | PULSE : ONE** femtosecond oscillator family offers a superior performance at a competitive price. Four main oscillator configurations fulfil all requirements concerning femtosecond laser pulses and are with their unique spectral characteristics the heart of the VENTEON laser systems. The oscillators' robust and flexible modular design allows for additional upgrades and custom-designed specifications.
- ▶ The **PULSE : ONE Basic Edition (BE)** oscillator provides a spectral bandwidth enabling pulse durations < 8 fs at low pump powers (3 W), sufficient for a wide range of applications. If more pulse energy is needed, our **Power Edition (PE)** oscillator delivers impressive 560 mW at the same spectral bandwidth. The shortest pulses with sub-6 fs, the broadest spectral bandwidth respectively, are provided by our **Ultrabroad (UB) Version** or the **Octave-Spanning (OS) Version** which both feature an octave-spanning spectrum. Both oscillators allow for a direct CEP stabilization without additional spectral broadening.
- ▶ All oscillator specifications are available from the **VENTEON | PULSE : ONE laser systems** including a suitable green DPSS pump laser pre-installed on an extended, monolithic breadboard. The BE oscillator is heart of the **BASIC** laser system featuring a low pump threshold, compact footprint and attractive price, whereas the PE oscillator powers the new **VENTEON | PULSE : ONE POWER** laser system. Based on the UB oscillator, the **VENTEON | PULSE : ONE OPCPA SEED** laser system represents the ideal front-end for broadband few-cycle OPCPA systems. Next to few-cycle pulse durations, this laser delivers a high power level @ 1030 nm for seeding an Yb-based amplifier serving e.g. as OPCPA pump stage.





▶ Specifications

- Prism-less resonator design
- Unique broadband dispersion compensating mirror pairs
- Water-cooled breadboard
- Enclosure with cover gas connector
- External KLM-starting mechanism
- Dimensions: 550 x 350 x 165 mm³
- Weight: ~35 kg (~78 lbs)



- ▶ Robust laser design with sealed enclosure and all water-cooled breadboard for stable and reliable laser performance.
- ▶ Prism-less optical setup (L: focussing lens, M1-M7: dispersion compensating mirrors (DCMs), OC: output-coupling mirror, P: BaF₂ plate, PM: pump aligning mirror, W1/W2: BaF₂ wedge pair, X: Ti:Sapphire crystal).
- ▶ Nanolayers NANEО | CHORD High-precision dispersion compensating mirrors for broadband reflectivity and dispersion compensation.

▶ Oscillator Overview

	 Basic Edition	 Power Edition	 Octave-Spanning	 Ultrabroad
Pulse duration	< 8 fs	< 8 fs	< 6 fs	< 6 fs
Pulse energy	> 2 nJ	> 7 nJ	> 1.5 nJ	> 2.5 nJ
Spectral bandwidth	> 200 nm	> 200 nm	> 600 nm	> 400 nm
Average output power	> 200 mW	> 560 mW	> 150 mW	> 220 mW