

- >240mW average power
- Pulse duration <5fs (FTL), <5.5fs (measured)
- Octave spanning spectral output
- Integrated pump laser
- Defined upgrade path for future applications



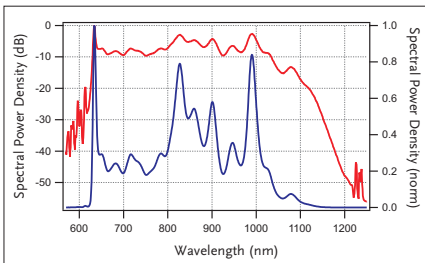
Overview

The **venteon ultra** laser system provides unique spectral properties from a monolithic breadboard designed to provide stability for long term operation. With an integrated pump laser, the system delivers >240mW of sub 6fs short pulses with an unrivalled spectral bandwidth ranging from 600-1200nm specified with >400nm @-10dBc.

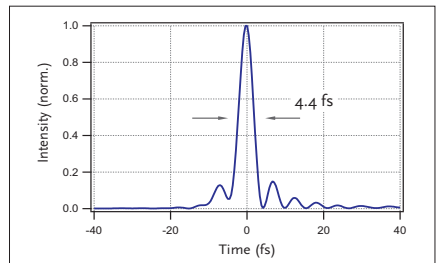
Due to this octave spanning output spectrum, the **venteon ultra** can be used for direct CEP stabilisation without any additional spectral broadening. The system can be purchased as a fully CEP stabilised laser, or with the necessary components to allow CEP upgrade at a later date.

The **venteon ultra** can be used in applications requiring synchronised pulses by the addition of a specially designed piezo transducer/stepper motor component that allows resonance free repetition rate locking up to 30kHz to a suitable microwave standard.

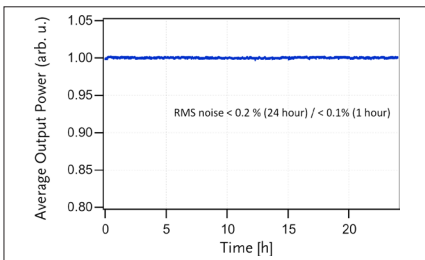
Laser Quantum supports clarity in reporting pulse duration and detailing whether our figures are theoretical values based on Fourier transform calculations or actual measured durations using SPIDER technology and instrumentation. In the case of the **venteon ultra**, the Fourier transform specification is <5fs, with a measured pulse of <5.5fs (less than two cycles). The small difference between these two values demonstrates the excellent phase control of the laser.



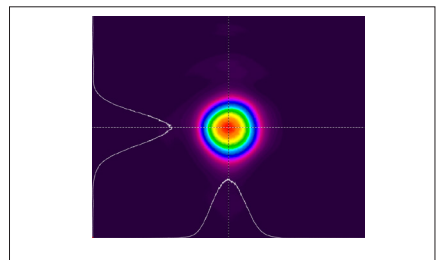
venteon ultra spectrum spanning more than 600nm. This spectrum supports the shortest pulses commercially available and is ideally suited e.g. for a direct CEP stabilisation.



venteon ultra pulse as short as 4.4 fs, measured with a **venteon SPIDER**.



Exceptional stability of the **venteon ultra** laser system resulting from the optimised thermal and mechanical design.

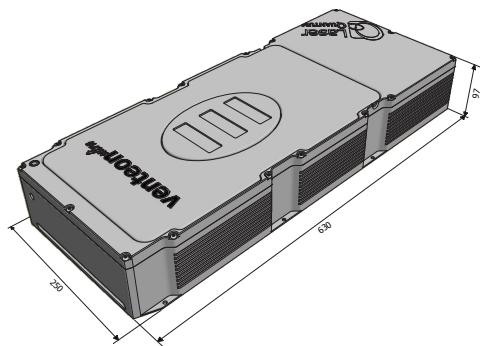


Beam profile of the **venteon ultra** laser system measured with a CCD camera.



The **venteon ultra** pump laser can be controlled across the internet via the RemoteApp™ software that also allows connection to the Laser Quantum support team for monitoring laser performance, diagnosing opportunities for and carrying out laser optimisation.

Dimensions (mm)



Other information

- Oscillator version available without pump laser
 - Weight ~65kg
 - 2 year warranty
 - Water cooling included
- Please contact us for other customisations



Drawings are for illustrative purposes only, and show the **venteon ultra** on the turn-key platform. Please contact Laser Quantum for complete engineer's drawings and details of the scientific platform.

Specifications*

	venteon ultra
Wavelength	800nm ±20nm
Average power output	>240mW
Pulse energy	>3nJ (@80MHz)
Spectral bandwidth (@-10dBc)	>400nm
Pulse duration (Measured)	<5.5fs
Pulse duration (FTL)	<5fs
rms noise ¹	<0.03%
Integrated pump	finesse
Power stability (24hours)	<1%
Divergence	<2mrad
M-Squared	<1.2
Repetition rate	80MHz

* Laser Quantum operates a continuous improvement programme which can result in specifications being improved without notice.

¹ Noise bandwidth 1Hz to 10MHz measure using **finesse pure** pump laser

Variants and upgrades*

Oscillator only: Supplied without pump laser or with integration of customer source.

CEP ready: Incorporates low noise CEPLoQ™ **finesse pure CEP** pump laser and all required preparation to allow future CEP stabilisation upgrade.

PZ option: Preparation for repetition rate stabilisation, including a slow and fast piezo/stepper motor unit to add fine control of cavity length and repetition rate.

TS option: Locking electronics, photodiode, RF analyser and oscilloscope needed for full timing stabilisation of the laser system (requires PZ option).

CEP upgrade: Upgrade to CEP stabilised output, including f-to-2f interferometer (requires CEP ready option).

* Upgrades and options available on the scientific platform.

LASER QUANTUM LTD

tel: +44 (0) 161 975 5300

email: info@laserquantum.com

web: www.laserquantum.com

LASER QUANTUM INC

tel: +1 408 467 3885

email: info@laserquantum.com

web: www.laserquantum.com

LASER QUANTUM GmbH

tel: +49 7531 368371

email: info@laserquantum.com

web: www.laserquantum.com