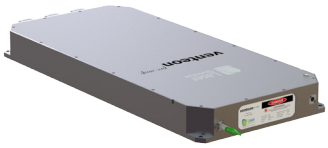
venteon pre-amp

Femtosecond preamplifier modules

- 1030 nm amplification
- Amplification and pulse picking
- >1 nJ output
- Ideal for amplifier seeding



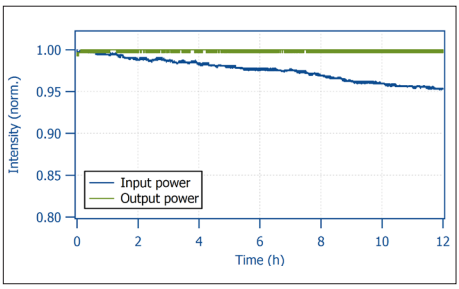
Overview

The **venteon pre-amp** modules have been developed for the amplification of low energy pulses (~10 pJ) to significant higher power levels. Designed for amplifying the narrowband 1030 nm output of the **venteon dual** laser system, the alignment-free preamplifier modules can also be used as an independent amplification module for other laser systems.

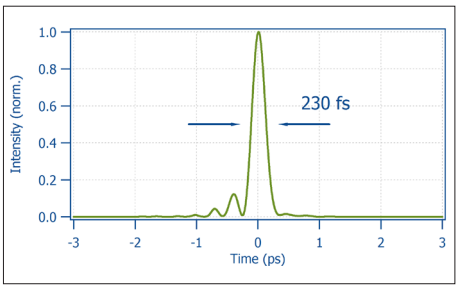
The different versions of the **venteon pre-amp** modules allow for a simple scaling of the pulse energy (**pre-amp 1**) and a reduction of the fundamental repetition rate of the seed oscillator using a fibre coupled pulse picker directly implemented within the amplifier module (**pre-amp 2**).

The control electronics contain several interlock functions as well as output power stabilisation technology to ensure reliable long term operation. Therefore the **venteon pre-amp** modules are best suited for seeding high power stages such as ROD-Type fibre amplifiers, regenerative amplifiers or slab amplifiers.

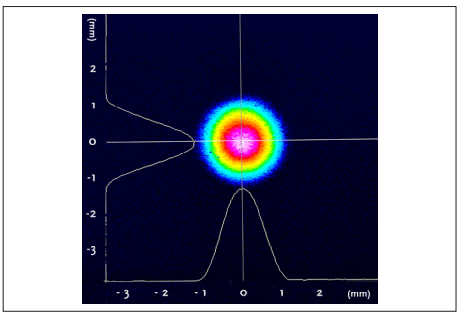
Typical performance



Typical output power of a preamplifier module measured over 12 hours. The output power is stabilised and therefore independent of seed power fluctuations in a range up to 20%.



Example of an externally compressed pulse of **pre-amp 1** using a grating compressor (Treacy configuration) measured with a **venteon SPIDER**. The pulse duration is as short as 230 fs.



Measured output beam profile of a **venteon pre-amp 1**.

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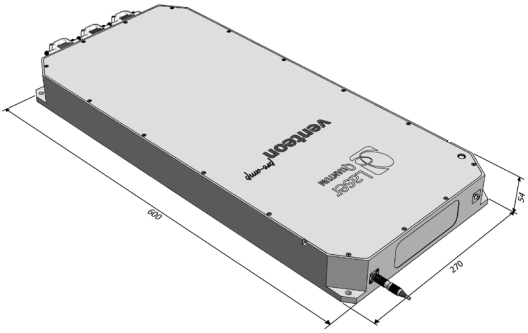
Dimensions (mm)

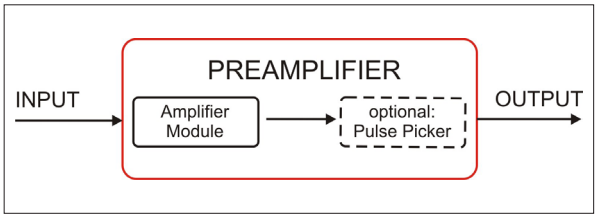


Drawings are for illustrative purposes only. Please contact Laser Quantum for complete engineer's drawings.

System overview

Input

	pre-amp
Pulse duration	>150 fs
Spectral bandwidth (FWHM)	>10 nm
Average input power	>2 mW (@80 MHz)
Central wavelength	1030 nm



Output

	venteon pre-amp1	venteon pre-amp2
Center wavelength[1]	1030 nm	1030 nm
Spectral bandwidth (FWHM)	> 8 nm	> 8 nm
Average output power	depending on repetition rate	depending on repetition rate
Repetition rate	determined by seed oscillator	0.3 - 80 MHz (variable)
Pulse energy	1 nJ	> 0.5 nJ
Pulse duration (measured)[2]	> 10 ps	> 10 ps

[1] Other wavelength up to 1064nm available upon request
[2] Output is streched

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