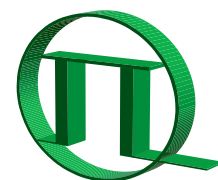


VisUV

NEW



PICOQUANT

Versatile Picosecond Laser Module

- Center emission wavelength 266, 355, and 532 nm
- Pulse width typ. 70 ps (FWHM)
- Average output power between 2 mW and 300 mW (depending on wavelength)
- Repetition rates from single shot up to 80 MHz, external or internal triggering
- Collimated output



Applications

- Time-resolved fluorescence spectroscopy/microscopy (FLIM, FRET, FCS)
- Stimulated Emission Depletion Microscopy (STED)
- Biochemical analytics
- Diffuse Optical Tomography (DOT)
- Quantum optics
- LIDAR, Ranging
- 3D polymerization

The VisUV laser is a versatile and flexible platform based on a Master Oscillator Fiber Amplifier (MOFA) concept with frequency conversion. The master oscillator generates infrared picosecond pulses at 1064 nm with variable repetition rates up to 80 MHz using the proven gain-switching techniques from PicoQuant. The output of this seed laser is directly connected to a multi-stage fiber amplifier, which boosts the output from the seed laser by several dB while maintaining the other characteristics of the seed laser beam like the emission wavelength, polarization and the pulse width.

Flexible wavelength configuration

The high pulse energies of the amplified 1064 nm infrared laser permit efficient wavelength conversions using second, third, and fourth harmonic generation (SHG, THG, FHG). In that way it is possible to generate picosecond pulses at 532, 355, and 266 nm with average optical power values of more than 250, 5 and 2 mW respectively.

Any wavelength can be offered individually or in combination with one or with both other wavelengths. Each wavelength is emitted from a separate beam output equipped with an individual shutter.

Flexible repetition rate

The VisUV can be operated at 12 different internally selectable repetition rates between 31.25 kHz and 80 MHz and can also be triggered externally by TTL or NIM signals at any repetition rate between single shot and 80 MHz.


Excellent beam quality

The VisUV features nearly perfectly circular and gaussian shaped beam profiles (TEM₀₀) which can be specified as a value of M² < 1.1 and M² < 1.2 at 532 nm and 355 nm, respectively.

Compact stand alone device

The VisUV is a stand alone device with a special design optimized for maximum heat dissipation. It includes all driving functions of the established PDL series laser driver such as choice of repetition rate and trigger source. An optional remote control for the VisUV allows to set the trigger source, the repetition rate, and the general output power of the laser.

Specifications

Optical output		
Center wavelength*	266 ± 1 nm	355 ± 1 nm 532 ± 2 nm
Maximum average output power	> 2 mW	> 5 mW > 250 mW**
Pulse width (FWHM)	< 70 ps	< 70 ps < 70 ps
Spectral width	< 1 nm	< 1 nm < 1 nm
Output	collimated beam***	collimated beam collimated beam
Divergence	< 2 mrad	< 0.5 mrad < 0.5 mrad
Beam diameter	1.0 mm ± 0.2 mm	1.5 mm ± 0.2 mm 2.1 mm ± 0.2 mm
Beam quality	M ² < 1.1 (vertical), M ² < 1.5 (horizontal)	M ² < 1.2 (typical ~ 1.1), TEM ₀₀
		M ² < 1.1 (typical ~ 1.02), TEM ₀₀
Max time delay between outputs	< 1 ns	< 1 ns < 1 ns
PER	> 25 dB	> 25 dB > 25 dB
Power stability (12 hours, ΔT _{ambient} < 0.5 K)	< 3 % rms	< 3 % rms < 3 % rms
Repetition rates		
<i>Internal</i>		
Range	user selectable: 80, 40, 20, 10, 5 or 2.5 MHz (80 MHz base frequency) 1000, 500, 250, 125, 62.5 or 31.25 kHz (1 MHz base frequency)	
<i>External via NIM input</i>		
Range	< 1 Hz to 80 MHz	
Trigger level	fixed trigger level at -400 mV	
Connector	NIM-CAMAC	
<i>External via TTL input</i>		
Range	< 1 Hz to 80 MHz	
Amplitude	- 5 V to + 5 V (maximum limits)	
Trigger level	adjustable between -1 V and +1 V	
Connector	BNC	
Synchronization output		
Amplitude	< -800 mV into 50 Ohms (NIM)	
Connector	SMA	
Dimensions		
Size (l × w × h)	352 × 336 × 82.5 mm	
Weight	ca. 9 kg	
Operation		
Temperature range	10 °C - 35 °C	
Maximum power consumption	115 W	
<p>* all wavelengths available simultaneously, single or any combination of two ** average power @ 532 nm > 300 mW for the VisUV-532 (green beam only), > 250 mW for a multi-beam VisUV *** limited collimation range</p>		
		
<p>VISIBLE AND INVISIBLE LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION CLASS IV LASER PRODUCT Complies with IEC 60825-1:2007 / 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated 24-June-07 MAXIMUM OUTPUT < 10 W / WAVELENGTH = 250 nm - 1100 nm SEE MANUAL</p>		

All Information given here is reliable to our best knowledge. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications and external appearances are subject to change without notice. Trademarks or corporate names are used for explanation and identification, to the owner's benefit and without intent to infringe.

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