Lampo: the compact ultrafast DPSS laser by Bright Solutions

Bright Solutions is glad to introduce *Lampo*, the new family of compact ultrafast lasers generating high peak power ps laser pulses at a repetition rate selectable over a wide frequency range, externally triggerable from 50 kHz to 40 MHz.

Figure 1: Lampo laser head including driving electronics and air cooling fans.

The pulses emitted by Lampo have a duration of few tens of picoseconds, with MegaWatt-level peak power, and wavelengths ranging from IR (1064 nm) to deep UV (266 nm). Pursuing the all-in-one philosophy of most of Bright Solutions industrial and airborne lasers, Lampo is built in a rugged air-cooled single-unit laser head including the monolithic optical section as well as power and signal electronics.

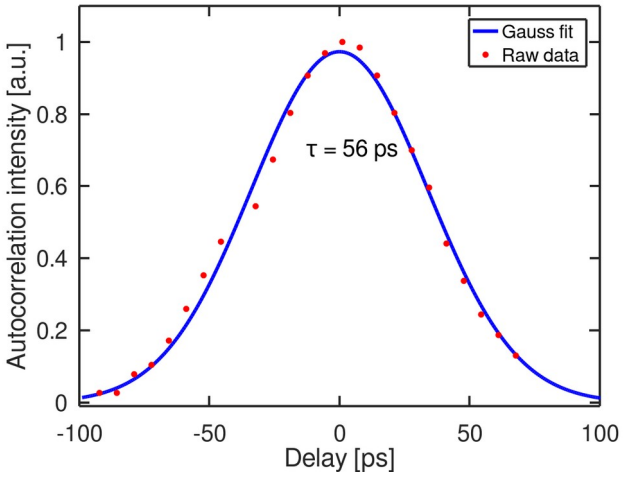

Figure 2: Lampo laser autocorrelation signal, showing the typical laser pulsewidth.

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Fields of Applications

Bright Solutions propose Lampo lasers as new valuable tools for several application fields from scientific to industrial, from defence to medical, from biological to LIDAR applications.

Leveraging decades of experience in manufacturing DPSS lasers with well recognized compactness, robustness, efficiency, characterized by high beam quality and high peak power, Bright Solutions has developed Lampo as a unique robust, flexible and affordable laser tool, easy to run and integrate in sophisticated laser systems as well as in lab applications. Freely controllable pulse trains, extra-wide range of pulse repetition frequency, high peak power and wide wavelength choice make these ps laser ideal for laser-processing a wide range of materials such as metals, semiconductors, polymers, glass, sapphire and other optically transparent substrates.

The Lampo ultrafast lasers can be also integrated into long-range and high-precision LIDAR systems: short pulse duration and high peak power together with conveniently narrow bandwidth and wide range of repetition rates may lead to concrete improvements on instrument resolution and data collection speed.

***Lampo* main features**

Laser Properties	Lampo IR	Lampo SHG	Lampo Deep-UV	Notes
Laser wavelength	1064nm	532nm	266nm	*355nm versions available on request*
Pulse duration	50 - 70ps	< 70ps	<70ps	
Pulse Rep. Rate	50kHz to 40MHz	50kHz to 40MHz	50kHz to 40MHz	*< 50 kHz PRR available on request*
Laser Average power	Up to 20W	Up to 10W	Up to 1.5W	
Laser Beam Quality	<1.6	<1.5	<1.5	
External Pulse Trigger	yes			
Laser pulse energy	Up to 250uJ	Up to 150uJ	Up to 30uJ	*Pulse energy depends on PRR*
Laser peak power	Up to 4.5MW	Up to 2.5MW	Up to 0.5MW	*Peak power depends on PRR*
Laser linewidth	<0.4nm	<0.2nm	<0.1nm	
Sync Signal output	yes			
Laser supply voltage	24V			
Laser supply power	< 350W			
Laser air cooling	yes			*Water cooling available*
Operating temperature range	15 – 35 °C			*Extended range available on request*
Laser head dimensions	30x15x13cm^3	30x15x13cm^3	40x15x13cm^3	
Weight	<10kg			

Bright Solutions will exhibit at Photonics West in San Francisco. Our team will be glad to provide more info about this new lasers and about the complete BRIGHT SOLUTIONS's standard and custom product range.

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