



A new generation of ultrafast lasers

s-Pulse is a diode pumped femtosecond amplified laser setting new standards for performance and ease of use.

s-Pulse takes advantage of new, high quality Ytterbium materials and advanced diode pumping technology to take high energy femtosecond lasers out of the laboratory and into the real world. Ytterbium doped laser materials can be directly diode pumped with low consumption, high reliability semiconductor laser diodes. They do not require any of the intermediate pump lasers used in traditional Titanium:Sapphire lasers.

s-Pulse is built on a single, compact, and hermetically sealed monolithic housing for improved stability. It features simple control electronics, user adjustable repetition rate without internal laser adjustment, complete set of diagnostics, and no requirements for external water cooling. Low electrical consumption and long lifetime laser diodes keep operating costs at a minimum.

s-Pulse offers exceptional optical performances such as a high repetition rate, high energy, short pulse duration, and a high output beam quality.

s-Pulse is an ideal laser source for laser ablation, micro-machining, non linear optics, etc.

Diode pumped femtosecond amplifier

Application examples:

Micro-machining
> Laser ablation

Marking and engraving
> Traceability and antifraud

Analytical chemistry
> Laser assisted ICP-MS

Eye surgery
> Vision correction

s-Pulse

Diode pumped
femtosecond amplifier

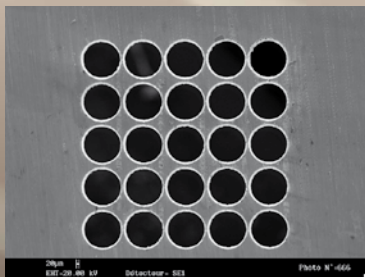
Application example:

Micro-machining

High precision micro-machining can now benefit from important advances in ultrafast femtosecond laser technology.

A femtosecond laser emits very high intensity pulses with an extremely short duration. The short duration of the laser pulse virtually eliminates heat diffusion in the surrounding area. The high peak power enables machining of almost any material, including glass, ceramics, metals, or even explosive or hazardous materials. Complex shapes with micrometer sized features can be machined with both high flexibility and exceptional quality.

s-Pulse high energy per pulse and short pulse duration ensure high quality micro-machining. Its high repetition rate improves process productivity. Its low electrical consumption and long lifetime components guarantee minimal operating costs.



Specifications:

	s-Pulse	s-Pulse HR	s-Pulse HP	s-Pulse PS
Pulse duration	400 fs	500 fs	500 fs	< 3ps
Pulse energy	> 100 µJ	> 10 µJ	> 1 mJ	> 50 µJ
Repetition rate	0 to 10 kHz	100 kHz	0 to 100 kHz	100 kHz
Wavelength	1030 nm	1030 nm	1030 nm	1030 nm
Beam quality	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀
Dimensions	75 cm x 50 cm	75 cm x 50 cm	75 cm x 50 cm	75 cm x 50 cm
SHG & THG	Optional	Optional	Optional	Optional

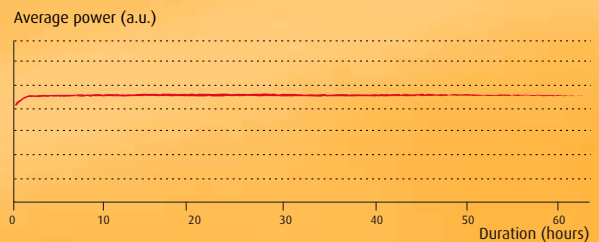
Other specifications available on request. Please consult us.

Typical data:

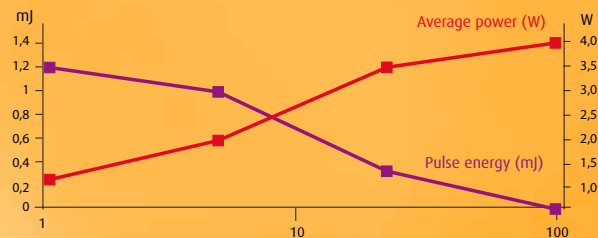
TEM₀₀ beam profile



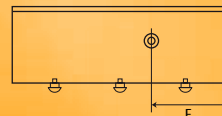
Long term stability



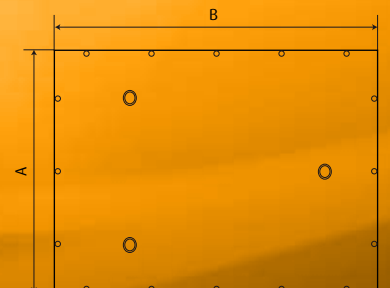
Typical performance



Mechanical interface:



A	B	C	D	E
19.70 inch	29.55 inch	6.80 inch	5.99 inch	7.09 inch
500 mm	750 mm	172,5 mm	152 mm	180 mm



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