

FLAST-PrecisionMark

Fiber Laser Marking Systems

Over the last few years new applications have emerged within material processing. The need for high precision micromachining, with the aim to produce micron-scale features such as hole and grooves while avoiding thermal damage and minimizing heat affected zone, issued in the use of shorter pulses. Picosecond laser pulses offer unique advantages over nanosecond laser pulses for accomplishing this.

Picosecond lasers are applied in a wide range of applications: micro-structuring, scribing and/or hole drilling for the fabrication of printed circuit boards, forming and marking integrated circuit packages, sensor trimming and repairing lithography masks. They are well tailored for drilling and marking of automotive and aircraft parts, microelectronics, biotechnology products, smart phone manufacturing and solar cell production.

For such applications, FiberLAST has developed **FLAST-Precision** Fiber Laser Series. **FLAST-Precision's** picosecond regime pulse delivers its energy at rapid speed resulting in very little noticeable HAZ. Picosecond pulses of **FLAST-Precision** are 1000 times shorter than pulses of nanosecond system. These shorter pulses render superior edge quality, no melts, no burrs, no micro-cracks, no damages caused to adjacent structures, no surface debris, no heat transferred to surrounding material. Thanks to cold ablation feature, FLAST-Precision allows the machining of materials that have low absorption as glass or some polymers and are difficult to process with existing lasers.

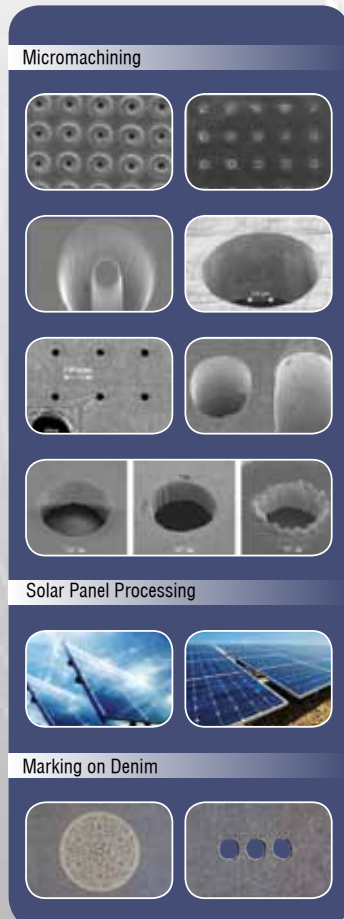
FLAST-Precision Fiber Laser Series offer unique and advantageous outcomes in micromachining applications and micro-material processing applications. FiberLAST produces highly reliable picosecond fiber laser systems with proprietary design.

APPLICATIONS

- *Micro material processing*
- *Solar cell manufacturing*
- *Ablation*
- *Precise surface treatment*
- *Marking of flammable and explosive substances*
- *Spectroscopic applications*
- *Thin film removal*
- *Microstructures for embossing*
- *Medical applications*
- *Material recognition*
- *Marking*

ADVANTAGES

- *No thermal damage*
- *High peak power*
- *Processing of various materials*
- *Air cooled*
- *Maintenance free*
- *OEM solutions*
- *Customer oriented solutions*



FiberLAST, Year 2012, Winner of TUBITAK
(The Scientific & Technological Research Council of Turkey)
"10th Technology Award"

FiberLAST

LASER	FLAST-Precision 5W	FLAST-Precision 10W	FLAST-Precision 15W	UNIT
Laser type	Yb-doped fiber laser			
Mode of operation	pulsed			
Wavelength	1060±2			nm
Bandwidth	15			nm
Average power	5	10	15	W
Repetition rate	30			kHz
Pulse width	50			ns
Peak power	10			kW
Pulse energy	0.5			mJ
Beam quality M ²	< 1,2			
Polarization	random			
Laser output ⁽¹⁾	collimator with isolator			

Telescope

Pointer	var			
Wavelength (pointer)	620-670			nm
Laser input diameter ⁽¹⁾	14			mm
Objective focal length ⁽¹⁾	160			mm
Marking area ⁽¹⁾	110 x 110			mm ²

Laser Driver

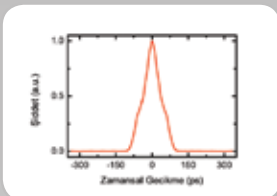
Input voltage range	176-264			V(AC)
Input frequency range	47-63			Hz

Environmental Conditions

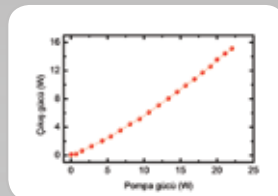
	Minimum	Maximum	
Operating temperature	+15	+35	°C
Storage temperature	+10	+60	°C
Humidity	%10	%90	

⁽¹⁾ Options available upon request.
PS: Oscillator can be delivered separately.

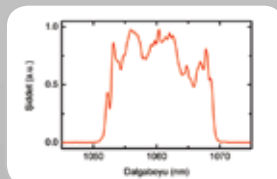
All specifications are subject to change without notice.



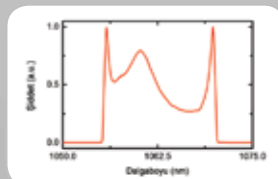
Laser Pulse Width Measurement



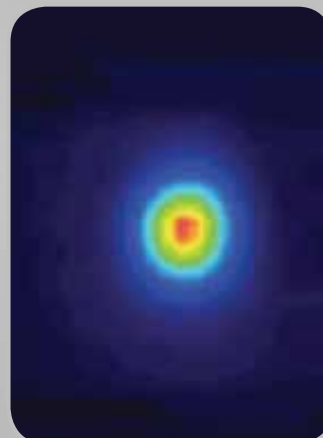
Laser Output Power



Laser Output Spectrum



Oscillator Output Spectrum



Beam Profile

