

COMPILER Family

High-Energy DPSS Picosecond Lasers

The **Compact Picosecond Laser Emitter** series of DPSS lasers are powerful sources of short light pulses with excellent stability from pulse to pulse. The lasers operate at 1064 nm, 532 nm, 355 nm, 266 nm and 213 nm wavelengths providing the highest UV energy density available from a commercial laser.

FEATURES

- 6-8 picosecond pulse width
- >500 μJ /pulse (Compiler @1064nm)
- Upgradable to >2.3 mJ/pulse (Compiler @1064nm)
- 400 Hz standard, upgradable to 1 kHz
- TEM₀₀ mode
- Air cooled
- External triggering or computer controlled, including burst mode



APPLICATIONS

- Micromachining (diamonds, glass, metals, ceramics)
- Photo ionization
- Laser-induced breakdown spectroscopy (LIBS)
- Laser ablation, fragmentation and destruction
- Photolithography
- Single and double photon Laser-induced fluorescence (LIF)
- Raman spectroscopy
- Time resolved spectroscopy
- Remote sensing
- Medical and biomedical research

Compiler specifications*

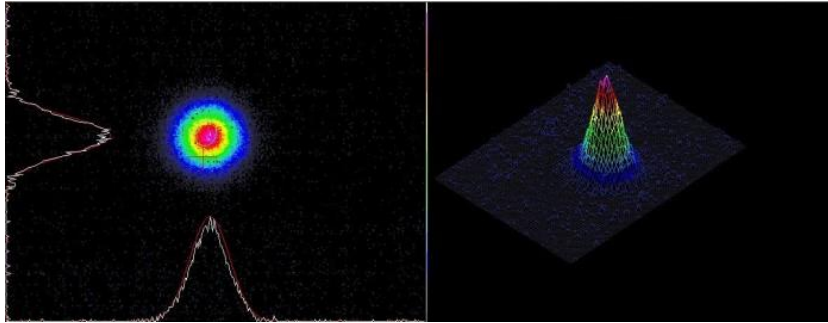
Wavelength	1064 nm	532 nm	355 nm	266 nm	213 nm
Energy output (at 400 Hz)	500 μJ	330 μJ	120 μJ	100 μJ	50 μJ
Pulse width	8 ps	7 ps	6 ps	5 ps	4 ps
Repetition rate	Internal/external triggering, 400 Hz				
Q-switch	Passive				
Beam quality	Diffraction limited				
Beam profile	TEM ₀₀ Gaussian				
Pulse-to-pulse standard deviation	3% @1064 nm (optional upon request)				
Output beam pointing stability (std dev, 1 hour)	~0.5 Diffraction limit				
External control	Connector for TTL trigger input port (4 +/-1V, 1 k Ω)				
Electrical power	~ 100-240VAC, 47-63 Hz, single phase				
Power consumption	< 80 W				
Warm-up time	Less than 2 minutes				
Operating temperature and humidity	18-28 °C; 10-85 %				

* Request **Compiler Upgrade** for a more powerful output

Delivery set

- Laser head
- Pumping unit
- Optical fiber
- Signal cable
- Power cord
- CD with manual
- and control software

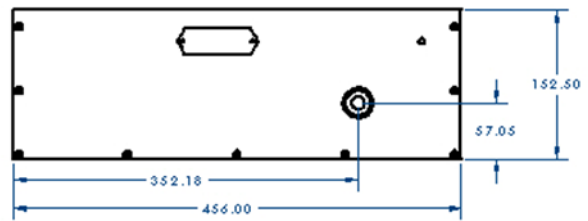
Laser Output Beam Profile



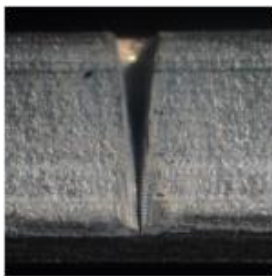
Up to 80% energy conversion efficiency from 1st to 2nd harmonics with superior pulse-to-pulse stability (~2-3%)

Pulse-to-pulse stability up to ~3-3.5% for 3rd and 4th harmonics

Laser with rack mount pumping unit, signal cable and optical fiber



Laser Micromachining Examples



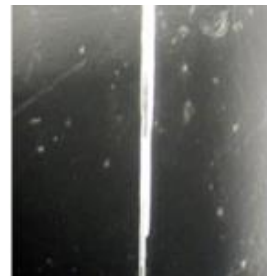
Aluminum

Cut depth: 1200 μm
Cut wall slope: 6.5 deg.



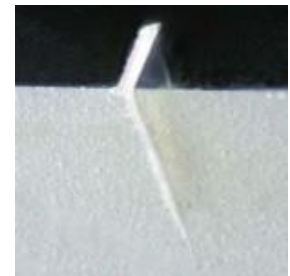
Copper

Cut depth: 900 μm
Cut wall slope: 16.5 deg.



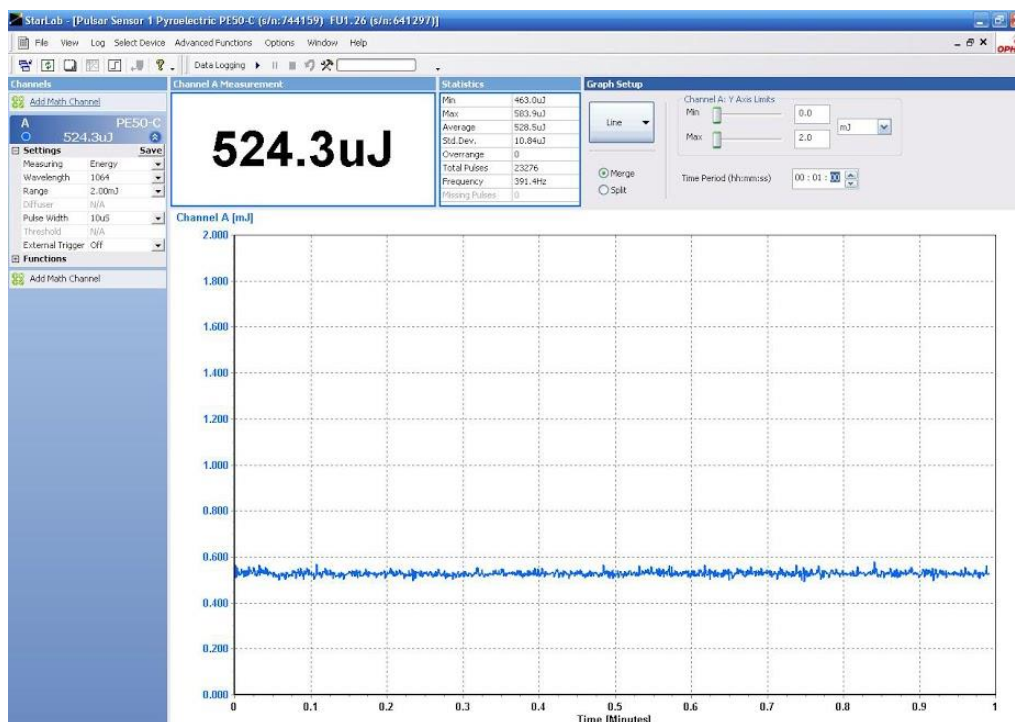
Polycarbonate

Cut depth: 4500 μm
Cut wall slope: 2.3 deg.

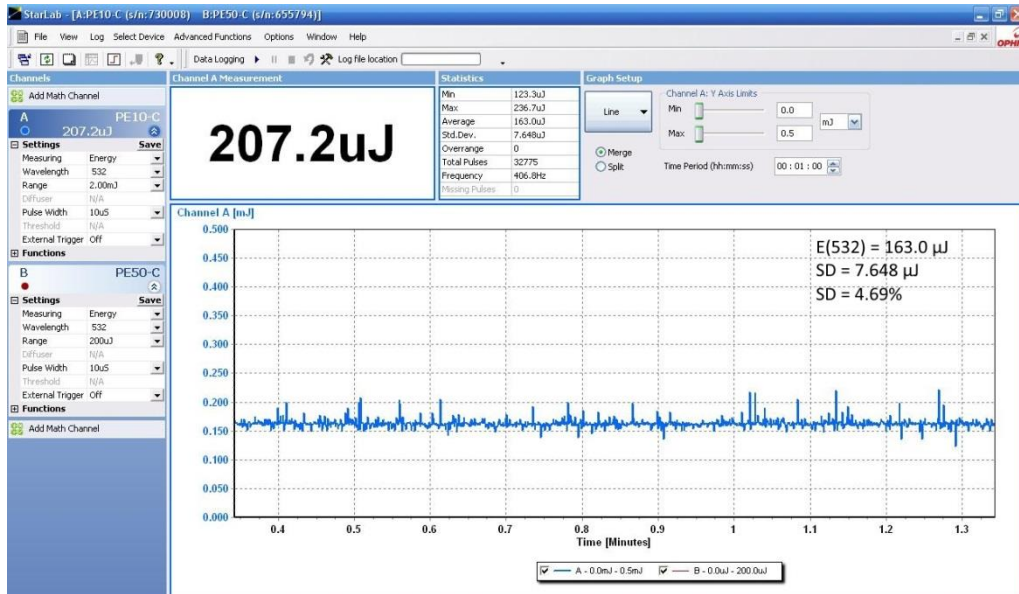


Glass

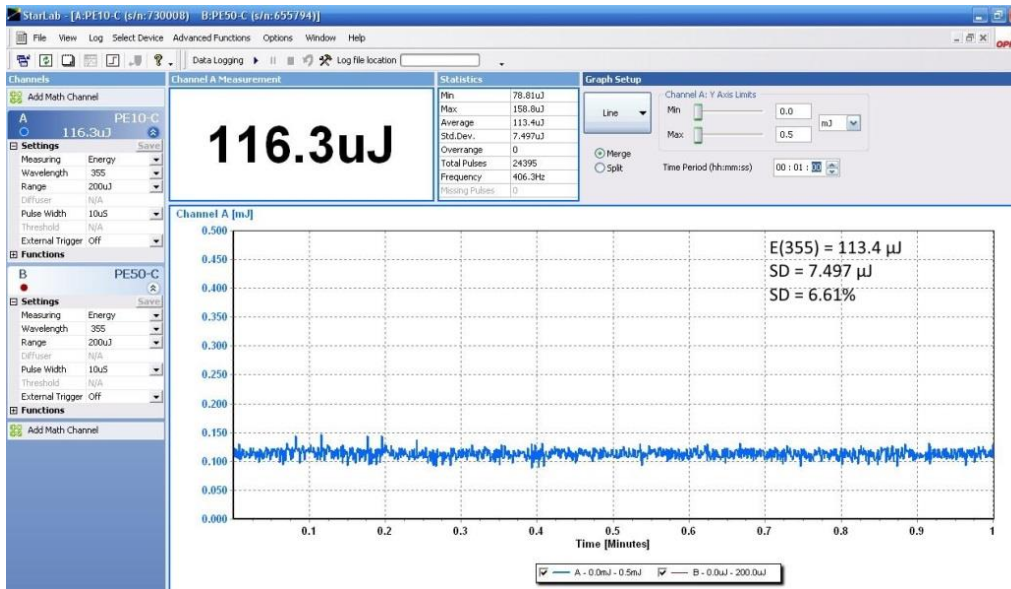
Cut depth: 1200 μm
Cut wall slope: 1.5 deg.



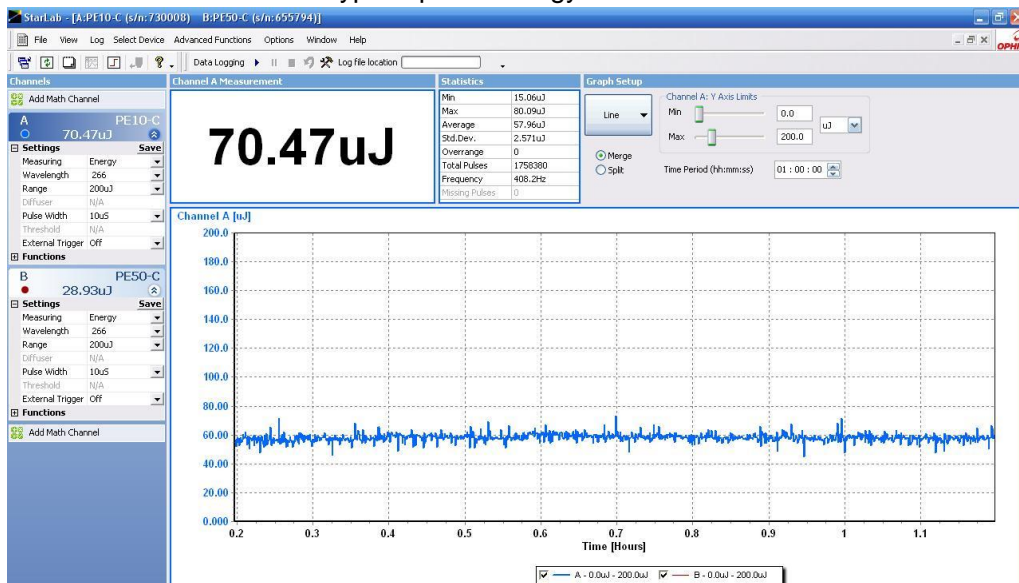
typical pulse energy at 1064nm



typical pulse energy at 532nm



typical pulse energy at 355nm



typical pulse energy at 266nm