



Nonlinear Optics



Micromachining



COMPACT HIGH-ENERGY PICOSECOND LASER

< 10 ps / Up to 60 μ / > 5W / Single shot to 1 MHz

SIRIUS is a compact, high-energy hybrid ultrafast laser which produces < 10 ps pulse duration with energy exceeding 60 μ J and > 5 W of average power.

SIRIUS is a fully configurable laser offering various pulse generation modes : selectable frequency, pulse on demand, burst, gating and fine energy control. SIRIUS is also available with green or UV wavelengths.

TECHNICAL SPECIFICATIONS*

General	SIRIUS 1064-5	SIRIUS 532-2
Wavelength	1064 nm	532 nm
Average power	> 5 W	> 2 W
Pulse duration (1)	< 10 ps	
Repetition rate (2)	Single pulse to 1 MHz	
Energy per pulse (3)	> 60 μ J	> 32 μ J
Beam parameters		
M ² (4)	< 1.3	
Beam diameter (5)	1 +/- 0.2 mm	
Divergence (6)	< 1 mrad	
Ellipticity (7)	> 0.85	
Output beam	Collimated	
Polarization	Vertical, > 100:1	
Stability		
Power stability RMS (8)	< 2%	
Pulse to pulse stability RMS (9)	< 2%	
Electrical		
External interfaces	RS-232, USB, TCP/IP	
Synchronization output	TTL	
Software interfaces	GUI, RS-232 serial communication protocol	
Power consumption	< 400 W	
Cooling	Water	
Mechanical		
Laser head dimensions	464 x 290 x 111 mm	
Laser head weight	16 kg	
Control unit	19" / 3U rack	
Control unit weight	12 kg	
Umbilic length	3 m	
Environmental		
Operational temp range	19-30°C	
Storage temp range	0-40°C	
Operational max altitude	2000 m	
Operational humidity	non condensing	
Storage humidity	80% RH	
Options		
Frequency conversion module	Computer selectable wavelength between 1064/532 nm	

- (1) Sech² fit, autocorrelator measurement
 (2) > 1MHz also available on request
 (3) Energy defined as the ratio between average power and repetition rate
 (4) M² measurement according 4Sigma method
 (5) Beam diameter at output port at 1/e²
 (6) Half divergence, far field measurement, ISO method
 (7) Minor over major diameter ratio, far field measurement
 (8) Over 12 hours or more, at room temperature +/-1°C
 (9) Pulse to pulse stability measurement performed with oscilloscope and photodiode

* This information is subject to modifications without prior notice.

