



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*

		SIRIUS	
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.

Contact : +33 (0)5 57 97 74 70 / info@spark-lasers.com

Version : June 2021 - v.1

www.spark-lasers.com



CAUTION
 CLASS 4 VISIBLE & INVISIBLE LASER
 RADIATION WHEN OPEN
 AVOID EYE OR SKIN EXPOSURE TO
 DIRECT OR SCATTERED RADIATION

PNEUM Co., Ltd.

5-15-3 Minamikoshigaya, Koshigaya-shi,
 Saitama-ken, 343-0845, Japan

TEL: 81-48-985-2720

FAX: 81-48-985-2721

info@pneum.co.jp 2108