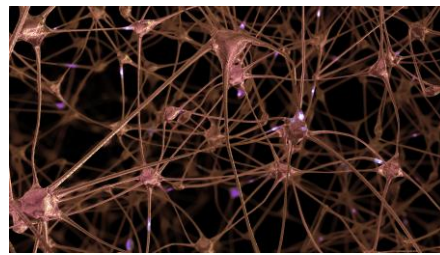


Two-photon microscopy



Neurosciences



## COMPACT HIGH-POWER FEMTOSECOND LASER

920 nm and 1064 nm / < 100 fs / Up to 5 W

Spark Lasers' ALCOR is specifically designed for two-photon excitation. It offers clean femtosecond pulses with the highest guaranteed peak power on the market, in an unprecedented compact format and with fixed wavelengths of 920 and 1064 nm.

ALCOR's standard specifications include computer controlled GDD precompensation, and many features are available as options, such as an AOM for fast power modulation and power adjustment or fiber delivery. ALCOR offers air cooling, ease of integration with the possibility to install the laser head in any orientation. ALCOR's innovative fiber-based design offers high stability, high reliability without any maintenance making it the perfect industrial laser for scientific applications.

# TECHNICAL SPECIFICATIONS\*

General	ALCOR 920-1	ALCOR 920-2	ALCOR 920-4	ALCOR 1064-2	ALCOR 1064-5
Wavelength	920 nm			1064 nm	
Average power	> 1 W	> 2 W	> 4 W	> 2 W	> 5 W
Pulse duration (1)	100 fs		< 130 fs	100 fs	< 110 fs
Group Delay Dispersion (2)	Adjustable from 0 to -60 000 fs²				
Repetition rate (3)	80 +/- 2 MHz				
Energy per pulse (4)	> 12.5 nJ	> 25 nJ	> 50 nJ	> 25 nJ	> 62.5 nJ
Beam parameters					
M² (5)	< 1.2		< 1.3	<1.2	
Beam diameter (6)	1.4 +/- 0.2 mm		1.7 +/- 0.2 mm	1.5 +/- 0.2 mm	
Divergence (7)	< 1 mrad				
Ellipticity (8)	> 0.9		> 0.85	> 0.9	
Output beam	Collimated				
Polarization	> 95 %, vertical				
Stability					
Power stability RMS (9)	< 1%				
Pulse to pulse stability RMS (10)	< 1%				
Electrical					
External interfaces	RS-232, USB, TCP/IP				
Synchronization output	TTL				
Software interfaces	GUI, RS-232 serial communication protocol				
Power consumption	< 150 W				
Cooling	Air				
Mechanical					
Laser head dimensions	286 x 165 x 79 mm				
Laser head weight	5 kg				
Control unit	19" / 3U height				
Control unit weight	7.5 kg				
Umbilic length	3 m		1.5 m	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				
Option XSight (Integrated AOM for fine power control and fast power modulation)					
Transmission	85%				
Beam diameter	1 +/- 0.2 mm				
Beam divergence	< 1 mrad				
ON/OFF response time	< 1 µs				
Analog modulation bandwidth	> 1 MHz				
Power control	Adjustable from 0 to 100%, alignment mode				
Other options					
DUAL	2 independently controlled laser heads operating at 920 and 1064 nm				
FLeX Fiber delivery	2 meter long fiber with < 120 fs pulse duration and 50% transmission				
GDD extension	From 0 to -90 000 fs²				
Wavelength	1035 +/- 5 nm				
Repetition rate (11)	Any fixed frequency from 30 MHz to 80 MHz				
Frequency conversion	460 nm			532 nm, 266 nm	

(1) Sech<sup>2</sup> fit, autocorrelator measurement, 100 fs +/- 20 fs for 1 W and 2 W version

(2) User adjustable group delay dispersion compensation

(3) Other value upon request

(4) Energy defined as the ratio between average power and repetition rate

(5) M<sup>2</sup> measurement according to ISO method

(6) Beam diameter at output port at 1/e<sup>2</sup>

(7) Half divergence, far field measurement, ISO method

(8) Minor over major diameter ratio, far field measurement

(9) Over 12 hours or more, at room temperature +/- 1°C

(10) Pulse to pulse stability measurement performed with oscilloscope and photodiode

(11) Change in repetition rate may affect average output power. Energy will be unchanged

\* This information is subject to modifications without prior notice.

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

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