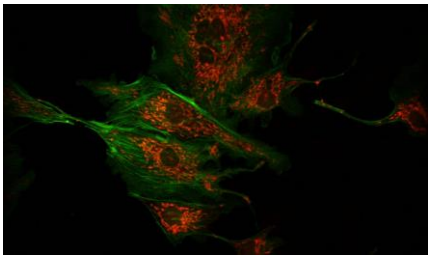
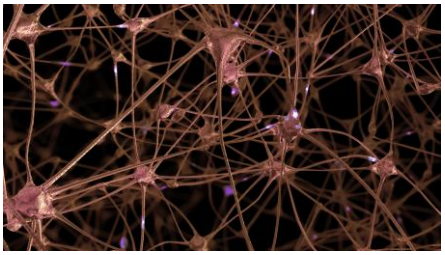
FEMTOSECOND LASER

ALTAIR



Two-photon microscopy



Neurosciences

HIGH-POWER FEMTOSECOND LASER

1035 nm / < 150 fs / Up to 20 W / Up to 1 µJ

ALTAIR is a compact fiber laser producing high average power with ultrashort femtosecond pulses (< 160 fs) at high repetition rate (80 MHz standard, others optional) in an ultra-compact and robust format.

ALTAIR provides high stability and excellent beam quality making it ideally suited for multi-photon microscopy applications. The 1 µm wavelength range offers many benefits for bioimaging including lower scattering, deeper penetration.

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

General	ALTAIR 1035-10	ALTAIR 1035-20	ALTAIR 1035-10-PP	ALTAIR 1035-10-VERSA
Wavelength	1035 +/- 5 nm (other wavelengths available)			
Average power	10 W	20 W	10 W	
Pulse duration (1)	< 150 fs			< 250 fs
Group Delay Dispersion (2)	Adjustable from 0 to -60 000 fs²			
Repetition rate (3)	80 +/- 2 MHz		Adjustable from 1 to 40 MHz	Adjustable from 0 to 40 MHz
Energy per pulse (4)	125 nJ	250 nJ	125 nJ	Up to 1 µJ (10 W at 10 MHz)
Beam parameters				
M² (5)	< 1.2			
Beam diameter (6)	1.6 +/-0.2 mm			1 +/-0.2 mm
Divergence (7)	< 0.5 mrad			
Ellipticity (8)	> 0.9			
Output beam	Collimated			
Polarization	Linear, > 100:1			
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		< 200 W	
Cooling	Air			
Mechanical				
Laser head dimensions	397 x 339 x 131 mm			
Laser head weight	13 kg			
Control unit	19”/ 3U rack			
Control unit weight	7.5 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				
Wavelengths	1064 nm or other			
GDD extension	Adjustable from 0 to -90 000 fs²			
Ultra Short Pulse duration (USP)	Pulse duration below 50 fs, 30 fs typical			
Frequency conversion	517 nm or computer selectable 517/1035 nm			
Repetition rate (11)	Any fixed frequency from 30 MHz to 80 MHz			

(1) Sech² fit, autocorrelator measurement
(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) M² measurement according ISO method
(6) Beam diameter at ouput port at 1/e²
(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.