BIOPHOTONICS FEMTOSECOND FIBER LASER

ALTAIR SERIES

SPARK LASERS

1 µm / >20 W / <160 fs PULSES / QCW

HIGH-POWER, HIGH REPETITION RATE FEMTOSECOND LASER FOR BIOPHOTONICS

ALTAIR is ideally suited for multi-photon microscopy applications. The 1 µm wavelength offers many benefits for bioimaging : lower scattering, deeper penetration.

Integrating state of the art, high-power, fully packaged fiber amplifiers and pulse management, ALTAIR offers remarkable pulse quality at high average power with no maintenance required, in an ultra compact and robust format.

ALTAIR range produces high average power with ultrashort femtosecond pulses (<160 fs) that SPARK LASERS has especially designed for multiphoton microscopy instrumentation and industrial OEM integration working with 24/7 operations, in an ultra-compact and robust format. Integrating state of the art high-power full package amplifiers and pulse management, ALTAIR series offers remarkable pulse quality while being air-cooled and designed with utmost accuracies allowing eased and simplified use (plug n' play with on-the-fly parameters).

ALTAIR is the perfect fit for all deep excitation applications of red-shifted indicators such as RCaMP, dtTomato, MCherry for light stimulation two-photon microscopy. ALTAIR embeds the ultimate technologies allowing to benefit from superior and unequalled performances >20 W average output power, 1.5 MW of peak power.

ALTAIR offers the widest tunability range for GDD precompensation that can possibly be found on the market.

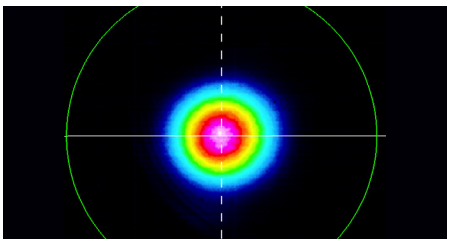
ALTAIR can be optionally equipped with fully integrated electronics for fine and fast power modulation through GUI or TTL signal with gating and even pulse picking to cover multiple applications.

Contact : +33 557 977 472 / info@spark-lasers.com

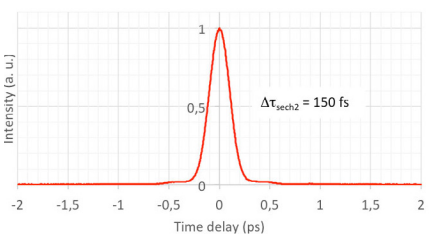
TECHNICAL SPECIFICATIONS*

	ALTAIR IR-5	ALTAIR IR-10	ALTAIR IR-20
AVERAGE POWER	5W	10W	20W
WAVELENGTH	1040 nm (OTHER OPTIONAL)		
PULSE DURATION	< 160 fs with GDD precompensation tunable from 0 down to - 30 000 fs² (OTHERS OPTIONAL)		
REPETITION RATE	80 MHz (OTHER OPTIONAL)		
M^2	< 1.2		
OUTPUT BEAM DIAMETER	1 mm		
BEAM POINTING STABILITY	< 25 µrad/°C		
ELLIPTICITY	> 0.9		
WARM-UP TIME	< 5 min		
POWER OUTPUT	FREE SPACE		
POWER STABILITY & RMS NOISE	< 1% RMS	< 1%	
POLARIZATION	linear, > 100:1		
ELECTRICAL			
EXTERNAL INTERFACES	High speed external synchronisation (Sync. Out), communication through USB, RS 232, TCP/IP with remote control		
SOFTWARE INTERFACES	Intuitive GUI, Serial communication protocol		
POWER CONSUMPTION	100 to 240 VAC, < 200 W		
MECHANICAL			
LASER HEAD DIMENSIONS & WEIGHT	397 x 339 x 131 mm3 – 13 kg		
LASER CONTROLLER DIMENSIONS & WEIGHT	19"/3U rack – 7,5 kg		
STANDARD UMBILICAL LENGTH	3 m		
TECHNICAL DRAWINGS FOR DOWNLOAD	ALTAIR IR		
COOLING	Air cooled		
OPTIONS			
GDD	OPTIONAL Group Delay Dispersion pre-compensation variable down to -90 000fs² or -130 000 fs²		
F-SYNC	Fine-tuning PRF synchronization +/- 1 MHz around a fixed central frequency. Can synchronize with any 3rd party master device, it includes interleaving. Electronic setting.		
CUSTOM PRIMARY WAVELENGTH	1030 nm, 1055 nm, 1064 nm		
ADDITIONAL WAVELENGTH	515 nm, 520 nm, 532 nm		
CUSTOM PULSE REPETITION FREQUENCY	40 MHz, 20 MHz or others		
POWER MODULATION	For power modulation through GUI or TTL signal		
PULSE PICKING	Available with 40 MHz seeder allowing to pulse pick 1/n to decrease frequency		

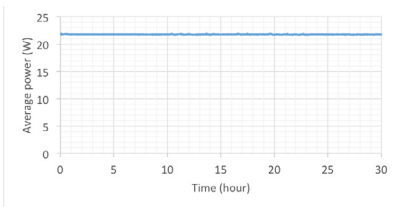
PERFORMANCE



BEAM PROFILE



AUTOCORRELATION TRACE



AVERAGE POWER STABILITY

* This information is subject to modifications without prior notice.

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

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