

ULTRASHORT FEMTOSECOND PULSES / HIGH PEAK POWER / HIGH REPETITION RATE

FEMTOSECOND FIBER LASER WITH $< 50 \text{ fs}$ PULSE DURATION AND $> 8 \text{ W}$

ALTAIR SP is a new generation of femtosecond fiber lasers producing very short pulse duration down to 40 fs at high repetition rate. Its characteristics are suitable for a large number of applications such as multiphoton excitation, nonlinear optics or fundamental physics.

ALTAIR SP operates with fixed energy at various repetition rate from 42 MHz down to 1.5 MHz . The optional additional modulator provides the possibility to decrease repetition rate down to single shot, pulse on demand, gating and fine power control with a response time of $< 1 \mu\text{s}$.

ALTAIR SP is designed for simple integration into complex systems. The integrated power supply into the same laser box offers extremely reduced volume while offering all advanced communication features such as USB, RS-232, TCP/IP.

TECHNICAL SPECIFICATIONS*

ALTAIR USP	
General	
Central wavelength	1030 nm
Average Power	> 8 W
Pulse width	< 50 fs (40 fs typical)
Spectral linewidth	< 70 nm
Repetition Rate (3)	42 MHz +/- 2 MHz
Energy per pulse (4)	> 250 nJ
Beam parameters	
M ² (5)	<1.3
Beam diameter (6)	2 +/-0.2 mm
Divergence (7)	< 0.5 mrad
Ellipticity (8)	> 0.9
Output beam	Collimated
Stability	
Power stability (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	< 200W
Mechanics	
Laser head	718 x 184 x 270 mm
Control unit	Integrated laser head
Environmental	
Operationnal temp range (°C)	20-30
Storage temp range (°C)	0-40
Operationnal max altitude (m)	2000
Operationnal humidity	non condensing
Storage humidity (%)	80% RH
Options	
Adjustable repetition rate	Any repetition rate in the range 40 - 2 MHz with AOM pulse picking
Advanced pulse control	Pulse on demand, pulse picking down to single shot, fine energy control, fast energy modulation and gating with < 1µs response time

(1) Sech² fit, autocorrelator measurement,
100 fs +/- 20 fs for 1W and 2W 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) M² measurement according 4Sigma method for 920 nm, 90/10 Knife Edge for 1064 nm

(6) Beam diameter at output port @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

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 2102



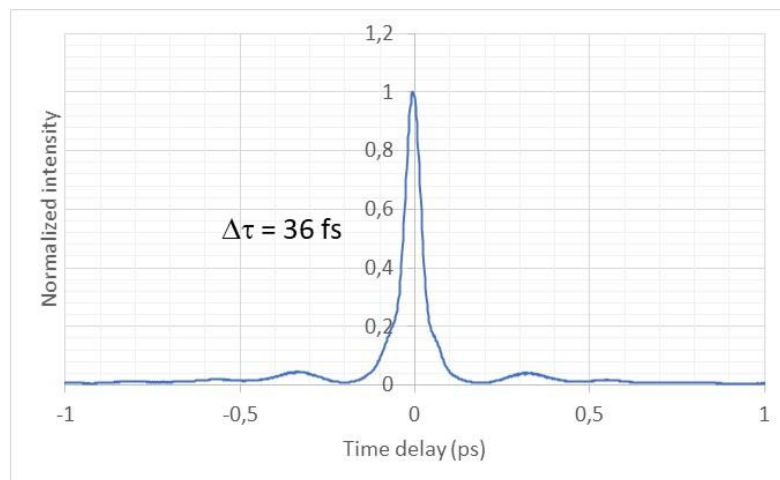
* This information is subject to modifications without prior notice.

Contact : +33 557 977 470 / info@spark-lasers.com

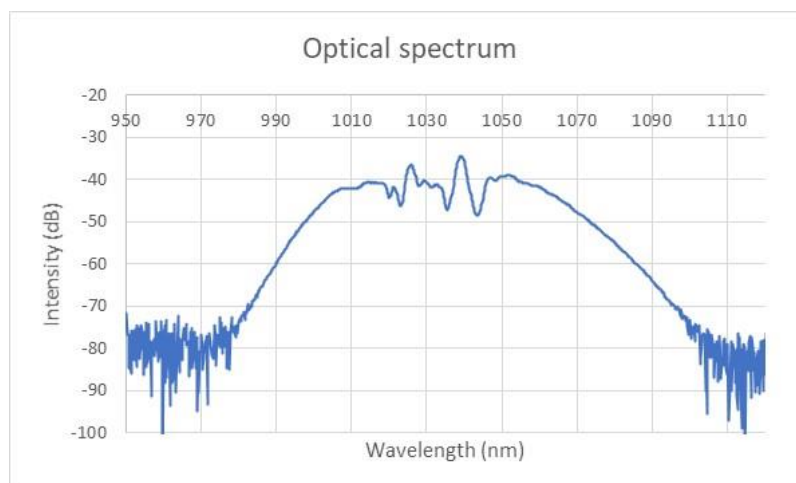
www.spark-lasers.com

TECHNICAL CHARACTERISTICS

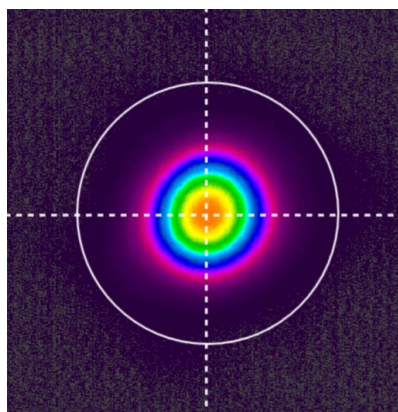
Typical autocorrelation trace



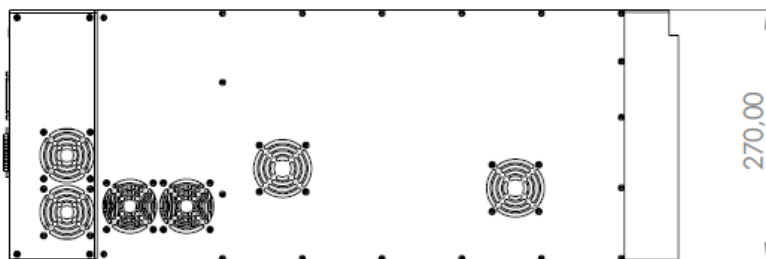
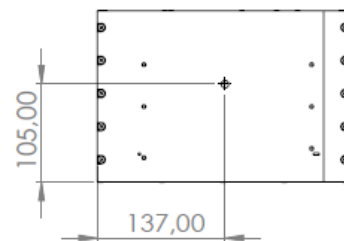
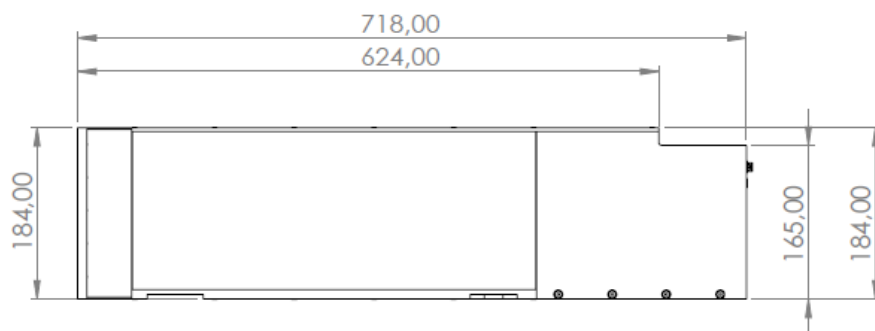
Typical output spectrum



Typical beam profile



TECHNICAL DRAWINGS*



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 2102

* This information is subject to modifications without prior notice.

Contact : +33 557 977 470 / info@spark-lasers.com

www.spark-lasers.com