Chromacity

The Chromacity Spark 1040 ultrafast laser

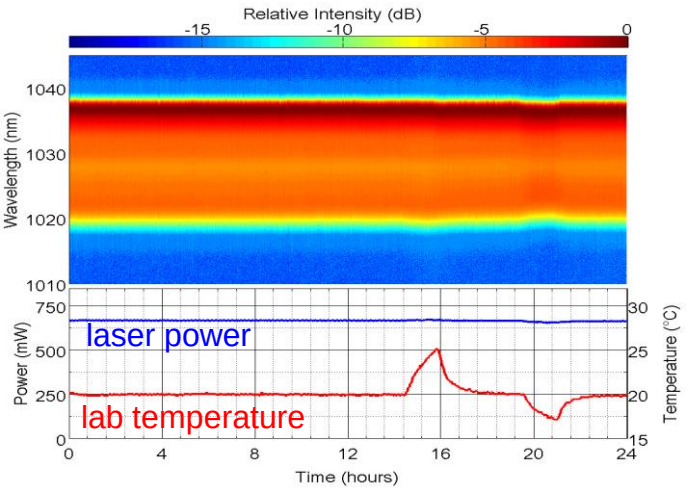
The Spark 1040 is an air-cooled, compact, ultrafast ytterbium fibre-based laser providing exceptional performance with turnkey operation. With high average power and outstanding pulse-to-pulse stability the Spark 1040 is an ideal source for the most demanding applications.

- Pulsewidth: 100 fs – 3 ps (factory set)
- 1040 nm output
- Up to 2.5 W av. power and 240 kW peak power
- 100 MHz repetition frequency
- Linearly polarized free-space output
- Lock-to-clock option
- Air-cooled operation (no water cooling)

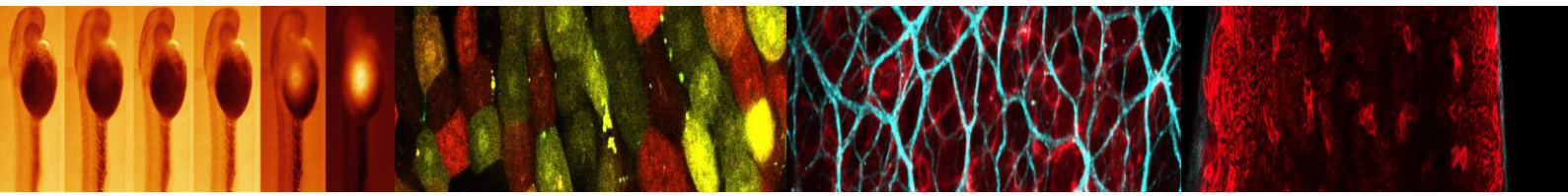
Applications

- ❑ Multiphoton and SHG microscopy
- ❑ Light sheet microscopy
- ❑ Optogenetics imaging experiments
- ❑ Amplifier seed laser source
- ❑ Pump source for nonlinear optics
  - OPOs, Frequency Combs, 4-Wave mixing
- ❑ THz generation
- ❑ Supercontinuum generation
- ❑ 3-D photo-polymerization
- ❑ Time resolved experiments (TCSPC/FLIM)
- ❑ Fluorescence measurement of dyes/quantum dots
- ❑ Waveguide inscription in soft materials
- ❑ Femtosecond micromachining
- ❑ Nanosurgery

Rock-solid operational stability



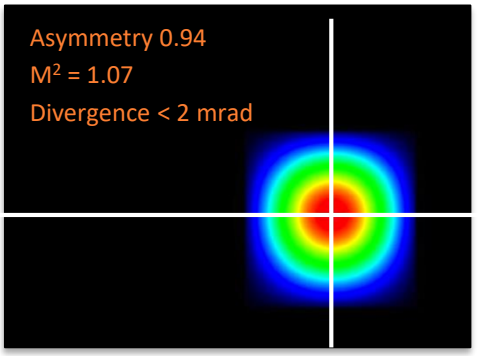
The system baseplate is milled from a solid block of high-grade aluminium providing exceptional thermal stability during operation.

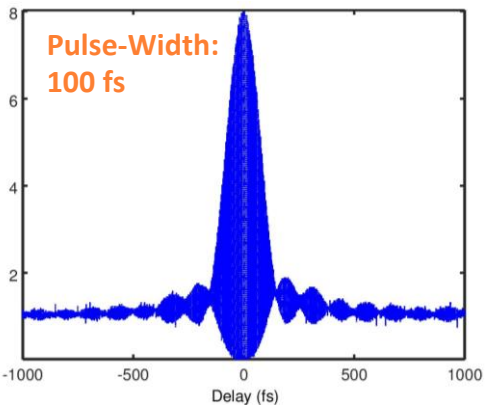


Specifications

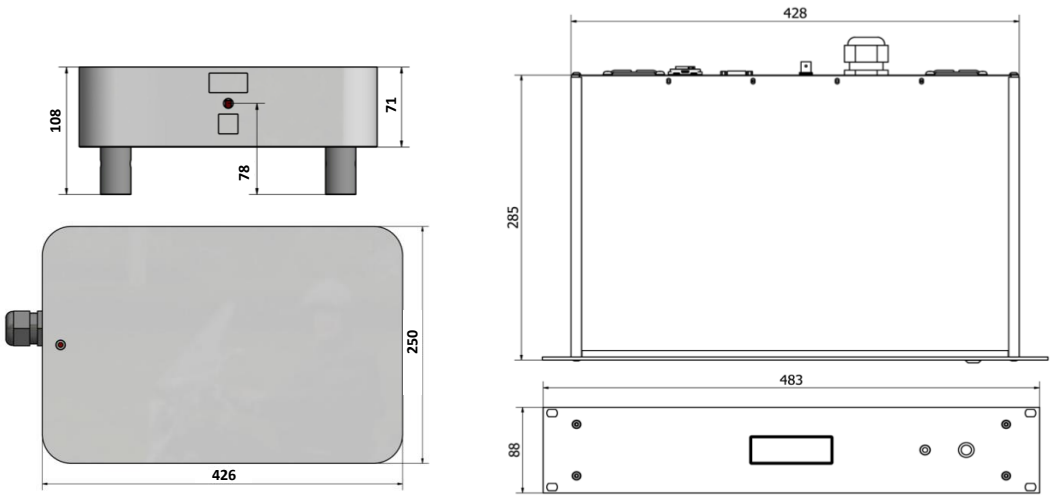
	Spark 1040 500mW	Spark 1040 2.5W
Output power	500 mW	2.5 W
Wavelength	1030 nm	1040 nm
Pulse duration	150 fs – 1 ps Factory pre-set in this range	100 fs – 3 ps Factory pre-set in this range
Bandwidth	15 nm – 40 nm	
Repetition frequency	100 MHz (140 Hz RMS - 50 hours) Monitor photodiode included Repetition frequency can be set from 80 – 200 MHz	
Beam quality	Free space, M^2 < 1.2, Linearly polarized Divergence < 2 mrad, Beam diameter 0.5 – 3 mm	
Pulse energy	5 nJ	25 nJ
Peak power	~30 kW @ 150 fs – ~4.5 kW @ 1 ps	~240 kW @ 100fs – ~7.5 kW @ 3 ps
Control interface	Ethernet, web page interface RS232 port (for control via LabView/MatLab)	
Power Stability	±1%	
Dimensions	426 x 250 x 78 mm (laser head) 483 x 285 x 86 mm (control unit)	
Weight	7.5 kg (laser head) 2 kg (control unit)	
Electrical	Voltage 110 – 240 V AC, Frequency 50 – 60 Hz, Power 80W	
Warranty	12 months (Terms & Conditions apply)	
Operating conditions	Lab temperature Range: 15-25^{0}C, Max 70% humidity Mount on an optical table in a dust free atmosphere	
Laser classification	Class 4 Laser	

Specifications subject to change

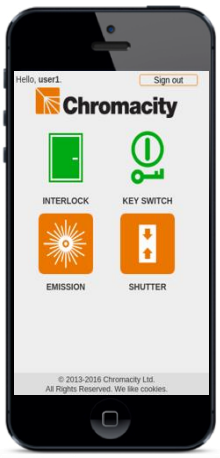




System Dimensions



Web-browser Control



Model Options	Wavelength	Pulsewidth	Power	Fixed Repetition Rate	Pulse Energy
Spark 1040 500 mW	1030 nm	150 fs - 1 ps*	500 mW	100 MHz (80-200 MHz option)	5 nJ
Spark 1040 2.5 W	1040 nm	100 fs - 3 ps*	2.5 W	100 MHz (80-200 MHz option)	25 nJ

*pulsewidth can be chosen within this range at time of order

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