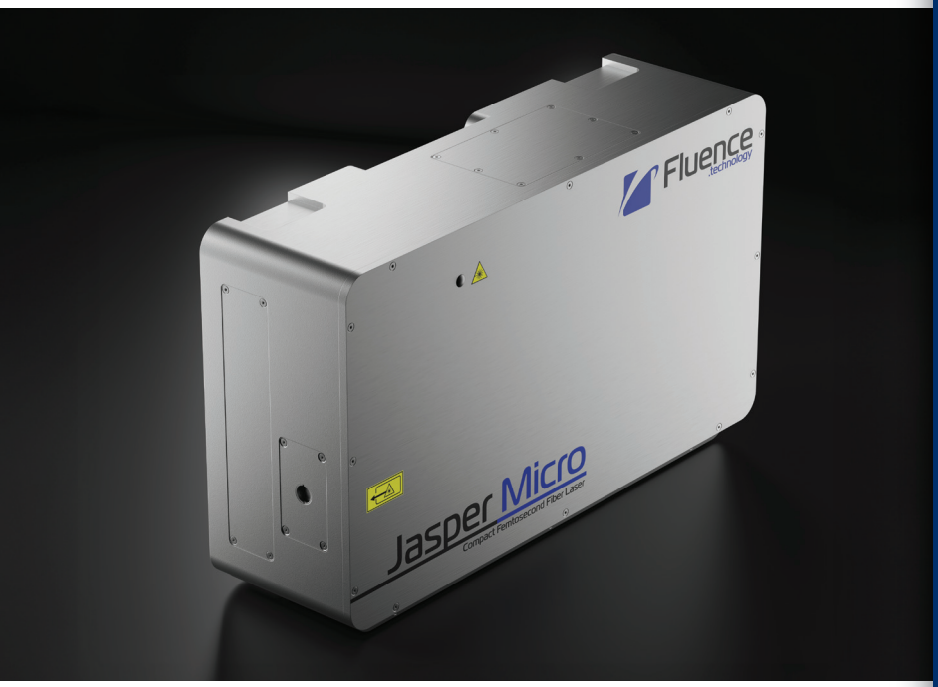
Jasper Micro

Compact Femtosecond Fiber Laser



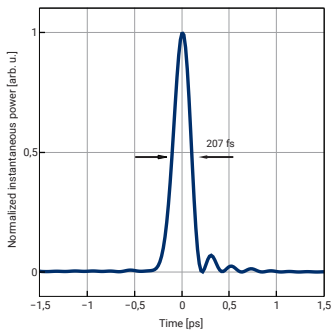
Key features:

- Proven stability & exceptional lifetime with average power up to 7 W
- Maximum pulse energy of up to 5.0 µJ
- Pulse duration tunability from < 250 fs to 20 ps in an ultra-small footprint
- Passively cooled compact laser head
- Custom Envelope Burst option
- **5-year warranty** on the oscillator and 2-year on the complete laser as a standard

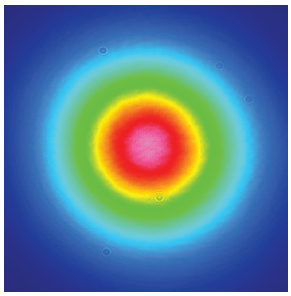
Jasper Micro combines all essential features of the most advanced femtosecond laser within a tiny box. It includes a pulse picker, burst mode with envelope adjustment (CEB), and pulse duration tuning ranging from < 250 fs to 20 ps with pulse repetition rate up to 20 MHz for maximum flexibility.
With market-leading peak power from such a compact system, Jasper Micro sets a new standard in femtosecond laser technology.

The all-fiber, SESAM-free design ensures long-term, maintenance-free performance, along with superior stability and exceptional beam quality. Jasper Micro is passively cooled and can be mounted in any orientation, enabling easy OEM integration into virtually any workstation.

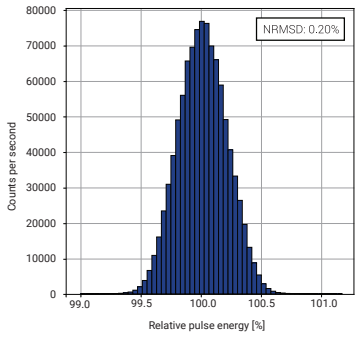
Typical temporal profile



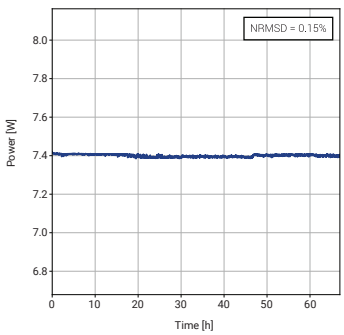
Typical beam profile



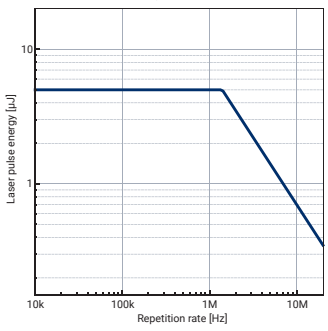
Typical energy stability



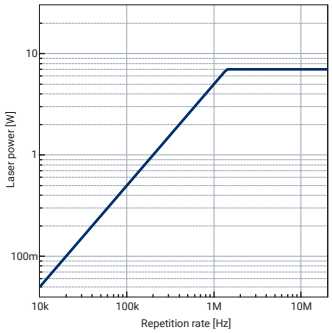
Typical power stability



Pulse energy vs. repetition rate



Laser power vs. repetition rate



All specifications are subject to change without prior notice due to continuous improvements.

Reliable ultrafast laser sources for industry

Light confined in fiber for minimum maintenance and superior stability

Specifications

Model	JM7 - 5

Output characteristics:

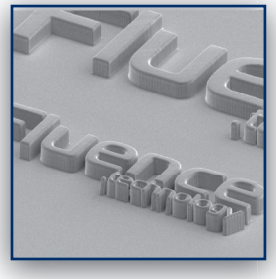
Central Wavelength	1030 ± 5 nm
Average Power	> 7 W (1)
Max. Pulse Energy	> 5.0 µJ @1.4 MHz (1)
Pulse Width	< 250 fs @5.0 µJ
Tuning Range	< 250 fs - 8 ps (2)
Peak Power	> 20 MW
Pulse Repetition Rate (PRR)	Single-Shot to 20 MHz (3)
Pulse Picker	< 2 MHz
Burst Mode	Optional (4)
Beam Quality, M^2	< 1.2 (1.1 typical)
Beam Circularity	> 87%
Beam Divergence	< 1 mrad
Beam Diameter	2.5 ± 0.5 mm (5)
Polarization	Linear Vertical, PER > 28 dB
Beam Pointing Stability - 24h	< 25 µrad (6)
Long Term Power Stability - 72h	< 0.5% (7)
Pulse-to-Pulse Energy Stability - 24 h	< 1% (7)

Other characteristics:

Pulse Control	Internal / External Analog Modulation, Pulse Picker, Pulse-on-Demand (8)
Options	**Custom Burst Envelope** (9), Harmonic Module - 515 nm, 343 nm, Automated Mechanical Shutter **NEW**
Cooling	Air, Passive
Control Interface	GUI (USB) / SCPI (RS232) / TTL (BNC) / Analog (BNC)
Umbilical length	2.5 m (more upon request)
Laser head dimensions (L x W x H)	400 x 230 x 116 mm **NEW**
Power supply unit size (L x W x H)	4U 19" rack unit; 495 x 449 x 177 mm
Operating ambient temperature	15 - 30°C
Relative humidity	10 - 80 % (non-condensing)

1. Typical max. power 7.5 W, typical max. pulse energy 5.5 µJ.
2. Extended range < 250 fs - 20 ps upon request.
3. Max. PRR 20.0 ± 0.5 MHz.
4. MHz burst option upon request.
5. $1/e^2$, measured at 1 m.
6. RMS after 1h warm-up under stable environmental conditions.
7. NRMSD under stable environmental conditions.
8. Based on pulse picker, with jitter < 750 ns.
9. Setting arbitrary burst envelope and adjusting amplitude of individual pulse within a burst.

Flexible Power for Demanding Applications:



3D printing

Ophthalmology

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