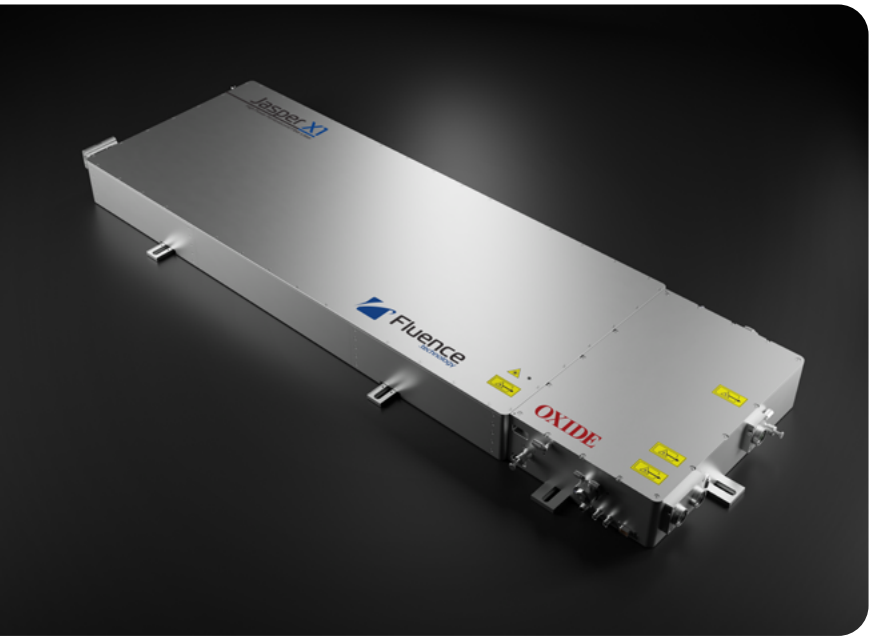
Jasper DUV

AVALIABLE Q1 2027

Industrial-grade Deep UV laser for semiconductor and display industries

Co-engineered by Fluence and OXIDE — two experts, one solution

4W at 258 nm | > 25 µJ | < 500 fs | $M^2 \leq 1.3$ (typ.) | Long-term power stability



Key features & performance

- > 3000 h without degradation (single location)
- Maximum pulse energy > 25 µJ
- Repetition rate adjustable from Single Pulse to 1 MHz
- Well-balanced power vs pulse energy characteristic for optimal material processing
- Pulse duration < 500 fs
- Superior beam quality with M^2 < 1.4 (<1.3 typ.)
- Advanced Pulse-on-Demand for precise triggering with timing jitter under 50 ns
- Easy maintenance and in-situ exchange of DUV nonlinear crystals
- User-replaceable consumables
- Comprehensive, long-term support at the customer site

Fluence femtosecond laser

The Jasper X1 is a high-performance industrial femtosecond laser system built for advanced materials processing. With Advanced Pulse-on-Demand (APoD) and nanosecond-level jitter, it delivers exceptional timing precision for sharp edges, clean corners, and maximized duty cycles — all from a robust, all-fiber, SESAM-free design built for maintenance-free 24/7 operation. Its all-fiber architecture also delivers exceptional pulse-to-pulse energy and power stability, a clean symmetric beam mode, and consistent pulse duration — the exact input quality required for efficient, stable DUV conversion.

OXIDE Deep UV module

Powered by the proprietary nonlinear crystal and wavelength conversion technologies of Japan-based OXIDE, this Deep UV Module delivers high-power 258 nm femtosecond laser output with outstanding beam quality, enabling precision micromachining with minimal heat-affected zones for advanced manufacturing. Backed by over 20 years of OXIDE's experience stabilizing DUV laser radiation for the semiconductor industry.

Two experts' knowledge, one integrated product

Reliable DUV generation demands two critical elements working in perfect harmony: an exceptionally stable input beam and precise wavelength conversion expertise. Our partnership represents the ideal match — creating a powerful synergy where Jasper X1's all-fiber stability meets OXIDE's 20+ years of DUV conversion mastery, producing a robust 258 nm output neither could achieve alone.

Together, we deliver a DUV platform engineered for high efficiency and top-tier stability, enabling precision micromachining for semiconductor, display, medical device, and electronics manufacturing. By maximizing your production yield and ensuring consistent, long-term performance, we provide ultimate peace of mind and unwavering operational reliability. Backed by a shared global service network, the complete system is fully supported onsite, wherever you are.

Fluence .technology OXIDE

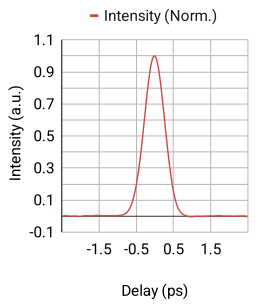
www.fluence.technology www.opt-oxide.com

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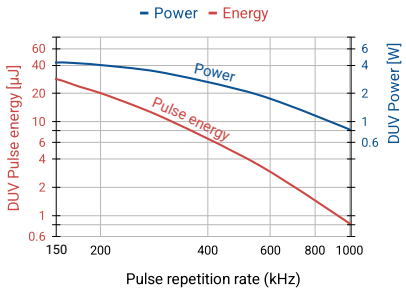
PRELIMINARY

Performance

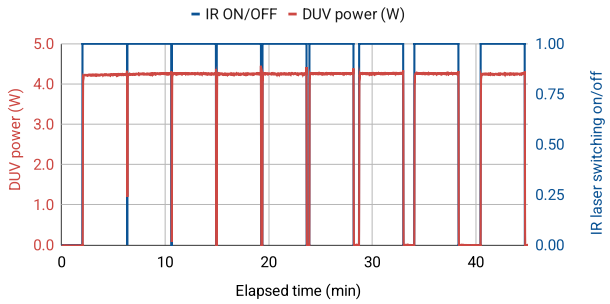
FHG TEMPORAL PROFILE



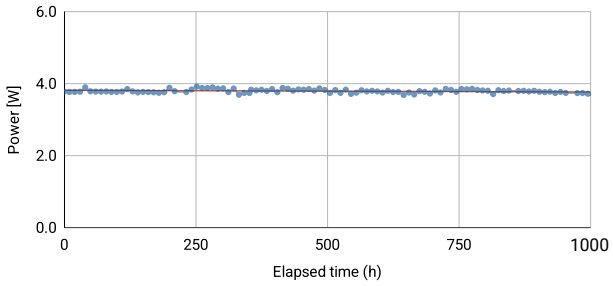
PULSE REPETITION RATE VS FHG POWER



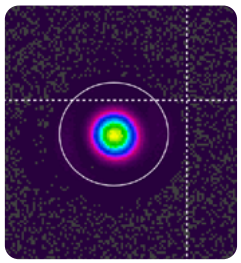
POWER STABILITY WHEN SWITCHING LASER OUTPUT



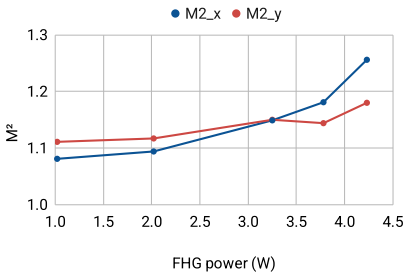
LONG TERM POWER STABILITY



4W DUV BEAM PROFILE AT FOCAL POINT



M² AT EACH FHG POWER (W)



PRELIMINARY

Specification

Output

	FHG DUV
Central wavelength	257.5 ± 1.25 nm
Average power	4 W
Max. pulse energy	25 µJ
Pulse duration	< 500 fs
Beam quality, M¬≤	< 1.4 (< 1.3 typical)
PRR tunability	SP - 1 MHz
Beam circurality	> 80%
Beam divergence	< 0.5 mrad
Beam diameter	3.5 ± 0.5 mm
Power stability (NRMSD)	< 2%
Pulse-to-pulse energy stability (NRMSD)	< 2% (< 1% typ.)
Leakage from port when not selected	< 1 %
DUV module expected lifetime without crystal shift	> 3000 h

Physical

	JASPER X1	DUV MODULE
Dimension (L x W x H)	1096 x 446 x 100 mm	275 x 426 x 100 mm*
Weight	75 kg	13 kg
Optical output ports	1	One per each wavelength (1030 nm; 515 nm; 258 nm)

* Possibility to mount apart from laser head

Other characteristics

	WHOLE UNIT
Cooling	Water
Manual shutter	Manual mechanical cover can be attached on each output port
Module mounting method	The module can be attached to Jasper X1 laser head or be mounted separately
Purging requirement	External purging by clean dry air
Advanced Pulse-on-Demand	Included

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