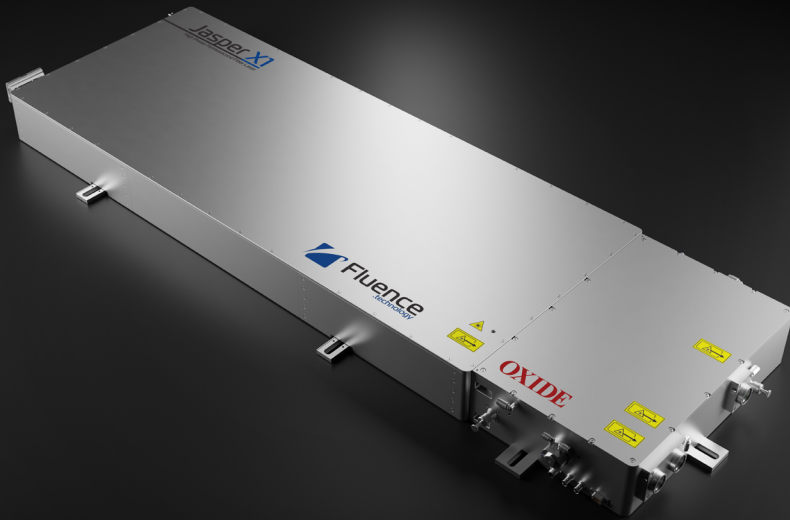


Industrial-grade Deep UV laser for semiconductor and display industries

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



Key features & performance

- >3000 h without degradation (single location)
- > 4 W average power at DUV (258 nm)
- Maximum pulse energy > 25 μ J
- Repetition rate adjustable from Single Pulse to 1 MHz
- Pulse duration < 450 fs
- Superior beam quality with $M^2 < 1.3$
- Simple maintenance and ease of exchange of DUV nonlinear crystals in-situ
- Advanced Pulse-on-Demand for precise triggering with timing jitter under 50 ns

Fluence femtosecond laser

<1% pulse-to-pulse stability $M^2 < 1.2$ <270 fs stable pulse duration

The Jasper X1 is a high-performance femtosecond laser system built for flexible, precise process optimization across a wide range of materials.

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, repeatable DUV conversion.

OXIDE Deep UV module

20+ years DUV stabilization expertise

Powered by OXIDE's proprietary nonlinear crystal and wavelength conversion technologies, 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.

Fluence meets OXIDE: why our partnership changes the game

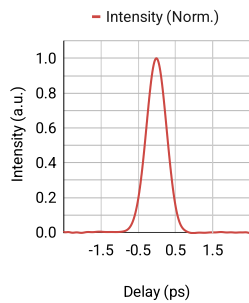
Reliable DUV generation demands two things working in perfect sync: an exceptionally stable input beam and equally precise conversion expertise. Our partnership delivers exactly that — **Jasper X1's all-fiber stability meets OXIDE's 20+ years of DUV conversion mastery, producing a robust 258 nm output neither of us could achieve alone.**

Together, we deliver a 258 nm platform with high throughput and minimum maintenance, enabling precision micromachining for semiconductor, display, medical device, and electronics manufacturing — with high yield and low cost of ownership.

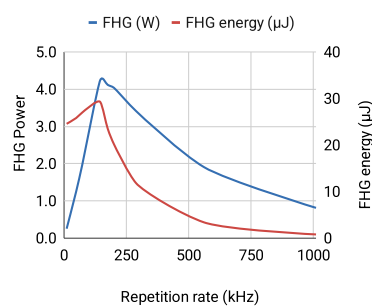
Backed by a shared service network, the complete system is supported on-site, wherever you are.

Performance

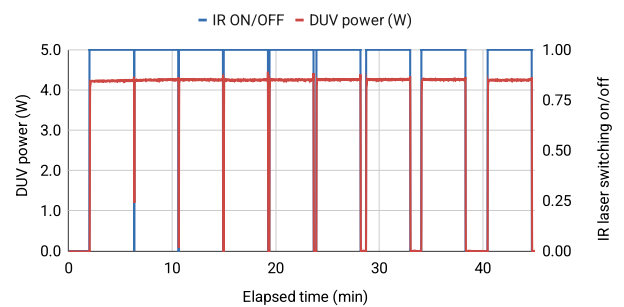
FHG temporal profile



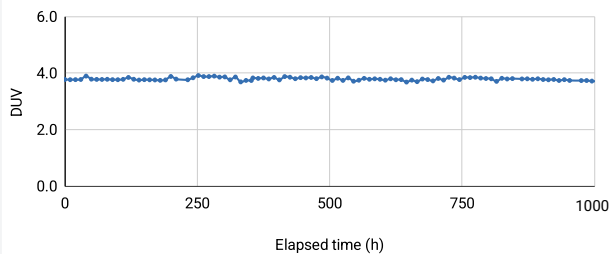
Pulse repetition rate vs FHG power



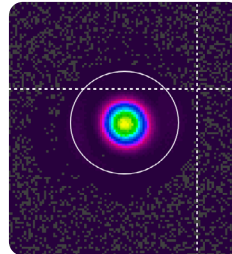
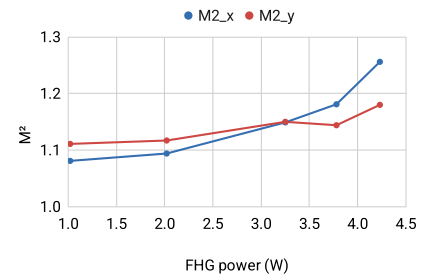
Power stability when switching laser output



Long term power stability



4W DUV beam profile at focal point

M² at each FHG power (W)

Specification

Output

	Fundamental IR	FHG DUV
Central Wavelength	1030 $\pm$ 5 nm	257.5 $\pm$ 1.25 nm
Average Power	30 W	4 W
Max. Pulse Energy	200 μJ	25 μJ
Beam Quality, M^2	<1.2 (<1.1 typical)	<1.4 (<1.3 typical)
PRR tunability	SP - 20 MHz	SP - 1 MHz
Beam Circularity	> 87%	> 80%
Beam Divergence	< 1 mrad	< 0.5 mrad
Beam Diameter	2.5 $\pm$ 0.5 mm	3.5 $\pm$ 0.5 mm
Power stability (NRMSD)	< 0.5%	< 2%
Pulse-to-Pulse Energy Stability (NRMSD)	< 1%	< 2% (< 1% typ)
Leakage from port when not selected		< 1%
DUV module expected lifetime without crystal shift		> 3000 h

Physical

	Laser Head	DUV Module
Dimensions (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 port for each wavelength

* Possibility to mount apart from laser head

Other characteristics

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

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