For all industrial and scientific needs

AXIS

Maximum throughput, uncompromised process control

AXIS embodies beam stability and precise process control: two essential requirements for industrial micromachining where consistency, reproducibility, and uptime are critical. Delivering advanced functionalities and process flexibility while pushing performance further with significantly higher average power, AXIS offers up to **120 W** and enables a new level of throughput for applications where our lasers' versatility has already proven its value, simply by increasing scan speed and repetition rate.

Its amplifier cooling technology and temperature stability ensure reliable **24/7 industrial operation**, with a high level of EMC immunity and radiation robustness. AXIS is particularly well-suited for high-throughput industrial applications, including multibeam processing and advanced display manufacturing, with UV output available **up to 45 W** and operation at repetition rates **up to 1.2 MHz**, as well as DUV-compatible configurations.

For customers who have developed processes based on the versatility of Satsuma X, AXIS represents the next step forward: the same process toolbox, now fueled by higher average power, enabling breakthrough equipment productivity by simply increasing scan speed.

Applications

Industry:
> Ceramics micro-drilling
> OLED Cutting UV and DUV
> Metal large area texturing

Science:
> X-Ray Imaging
> Accelerators

Key Features

> Real Pulse on Demand with FemtoTrig®
> High Adaptability with FemtoBurst®
> Higher Throughput with GHz Burst®
> High Energy Burst up to 4.5 mJ within a burst

Specifications

	AXIS	SATSUMA X-50
Power	120 W	50 W
Energy	Up to 700 µJ	up to 500 µJ
Pulse Duration	< 500 fs	
Adjustable Pulse Duration	Up to 10 ps	
Repetition Rate	Single shot to 40 MHz	
Repetition Rate for Max energy	240 kHz	100 kHz
Ellipticity at output	< 13 %	
Waist assymetry	< 10 %	
Astigmatism	< 25 %	
Wavelength	1030 nm +/- 3 nm	
Spectrum Bandwidth	< 3 nm	
M2	< 1.2	
Beam Diameter at output	3,25 mm + / - 0,25 mm	
Pointing Stability	< 10 µrad / °C	
Power Stability (8 hrs)	< 0,5 % RMS	
Laser Head dimension	680 x 555 x 182 mm	730 x 310 x 230 mm

CE

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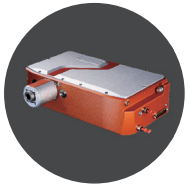
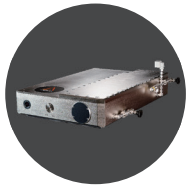
Options

Femtotrig®	Energy level locked for a constant fluence & overlap when repetition rate is driven by an external device (galvo or stage)
Femtoburst®	Burst shaping
GHz burst	from 32 to more than 6,000 pulses (1.28 GHz)
Harmonic	SHG / THG monowave module or Harmonic Generator*

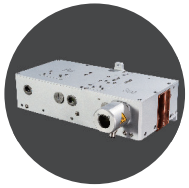
*not compatible with GHz option



SHG / THG



Compress



Harmonic Generator

Synclock

https://amplitude-laser.com/products/femtosecond-lasers/lasers-for-industry/axis/