

Satsuma X

Powerful & Versatile Ultrafast Laser

Satsuma X is an all-in-one, and robust femtosecond laser dedicated to all needs in industry and science. Coming with a full suite of unique features, Satsuma X fits any material processing targets, such as battery patterning, nozzle drilling, high quality texturing, wafer dicing, OLED cutting, etc. Satsuma X also gives full satisfaction to research laboratories for diverse applications such as life science, cellular imaging, accelerators, X-ray imaging, neuroscience & optogenetics, etc.

Satsuma X is a robust 50 W femtosecond platform combining high energy (500 μ J), high repetition rate (tunable up to 40 MHz), and high beam quality. It is designed for most demanding applications such as 24/7 industrial operation.

This ultrafast laser is not only powerful, but it is also versatile. According to the needs, it can be equipped with:

- > FemtoTrig™: uniquely adjusts in real time laser frequency to scan speed by accurately controlling pulse emission using our patented technology (ideal for processing round corners)
- > GHz Burst: increases throughput thanks to cumulative energy deposition at GHz rate using our patented technology (up to thousands pulses)
- > FemtoBurst™: Shaping capability in all burst sequence
- > SHG, THG, FHG option

AMPLITUDE SUPPORT AT YOUR PREMISES

Get the most out of your Amplitude laser thanks to our Laser 4.0® Program and numerous internal sensors: a helpful set of digital services to accompany you throughout the laser's life cycle.

Applications

Industry:

- > Ceramics micro-drilling
- > OLED Cutting UV and DUV
- > Metal large area texturing
- > Transparent material welding

Science:

- > X-Ray Imaging
- > Accelerators
- > Life Science
- > Cellular Imaging
- > Neuroscience & Optogenetics

Key Features

- > Real Pulse on Demand with FemtoTrig™
- > High Adaptability with FemtoBurst™
- > Higher Throughput with GHz Burst™
- > Robust design for 24/7 Operation

20+ years of experience in a box



Satsuma X

Specifications

Satsuma X - 28

Satsuma X - 50

Power (IR/SHG/THG)	28/14/7.5 W	50/25/15 W
Energy (IR/SHG/THG)	280/140/75 μ J	500/250/75 μ J

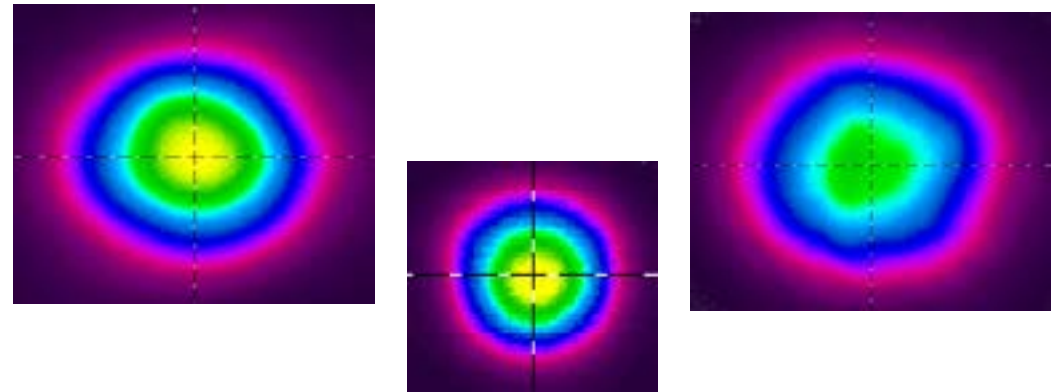
PERFORMANCE DATA AT 1030 NM

Pulse Width (fs)	From 400 fs to 10 ps* **
Repetition Rate	Tunable up to 40 MHz
Ellipticity	<13%
Wavelength	1030 nm +/- 2 nm
Spectral Bandwidth	< 3 nm
M2	< 1.2
Pointing Stability	< 20 μ rad / $^{\circ}$ C
Beam Diameter (mm)	4,5 +/- 0,5
Astigmatisme	<25%
Waist assymetry	<13%
Pointing Stability	<20 μ rad/ $^{\circ}$ C
p to p stability	<1%RMS
Power Stability (8 hrs)	<0.5%RMS
Burst Mode (MHz)	Up to >80 pulses

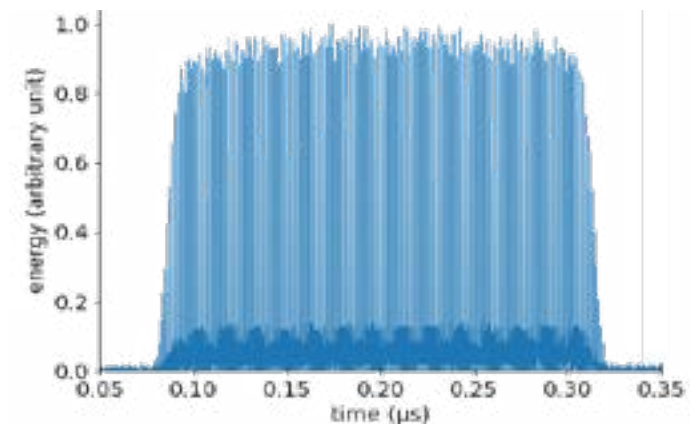
OPTIONS

Femto trig - real pulse on demand	Down to single shot
Femtoburst - arbitrary burst shaping	Yes
GHz burst	from 32 to more than 6,000 pulses (1.28 GHz)
Harmonic	Add-on: SHG / THG in additional module***

* <500 fs at all repetition rate ** shorter pulse width on demand ***not compatible with GHz option



Excellent beam quality at the waist plane (center) and on both sides around the waist plane (left and right)



Shape optimized GHz burst

Specifications are subject to change without prior notice | © 01-2025 | Ref. 1603-f

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