

20+ years of experience in a box

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 FemtoTri®
- > High Adaptability with FemtoBurst®
- > Higher Throughput with GHz Burst®
- > Robust design for 24/7 Operation

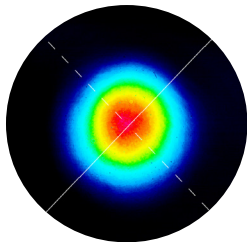
Satsuma X

Specifications

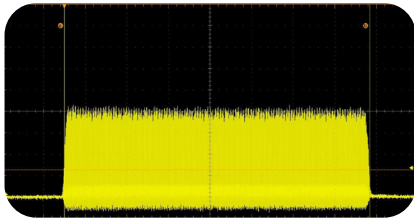
	Satsuma X - 28	Satsuma X - 50
Power (IR / SHG / THG)	28 / 14 / 7.5 W	50 / 25 / 15 W
Energy (IR / SHG / THG)	280 / 140 / 75 µJ	500 / 250 / 75 µJ

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	< 10 µrad / °C
Beam Diameter (mm)	4,5 +/- 0,5
Astigmatisme	< 25 %
Waist assymetry	< 13 %
p to p stability	< 0,5 % RMS
Power Stability (8 hrs)	< 0,5 % RMS
Burst Mode (MHz)	Up to > 100 pulses



Excellent beam quality at 500 µJ

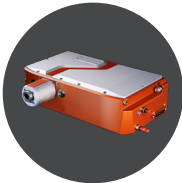


Flat-shape optimized GHz 6000 bursts 100.0 ns / div

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***

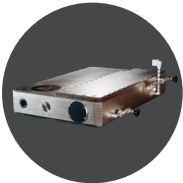
* < 500 fs at all repetition rate ** shorter pulse width on demand *** not compatible with GHz option



SHG / THG



Mango



Compress



Synclock



Harmonic Generator