

# 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 µJ), 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

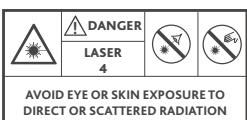
### AMPLITUDE SUPPORT AT YOUR PREMISES

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

## 20+ years of experience in a box



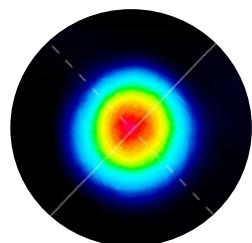
### Key Features

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

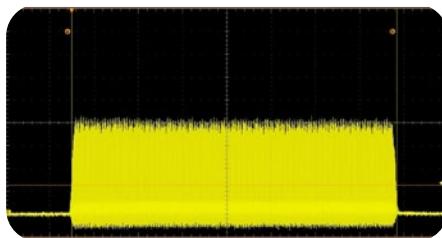
# Satsuma X

## 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 $\mu$ J            | 500/250/75 $\mu$ J |
| <b>PERFORMANCE DATA AT 1030 NM</b> |                               |                    |
| 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 $\mu$ rad / $^{\circ}$ C |                    |
| Beam Diameter (mm)                 | 4,5 +/- 0,5                   |                    |
| Astigmatism                        | <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 $\mu$ J



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

Specifications are subject to change without prior notice | © 12-2025 | Ref. 1603-H