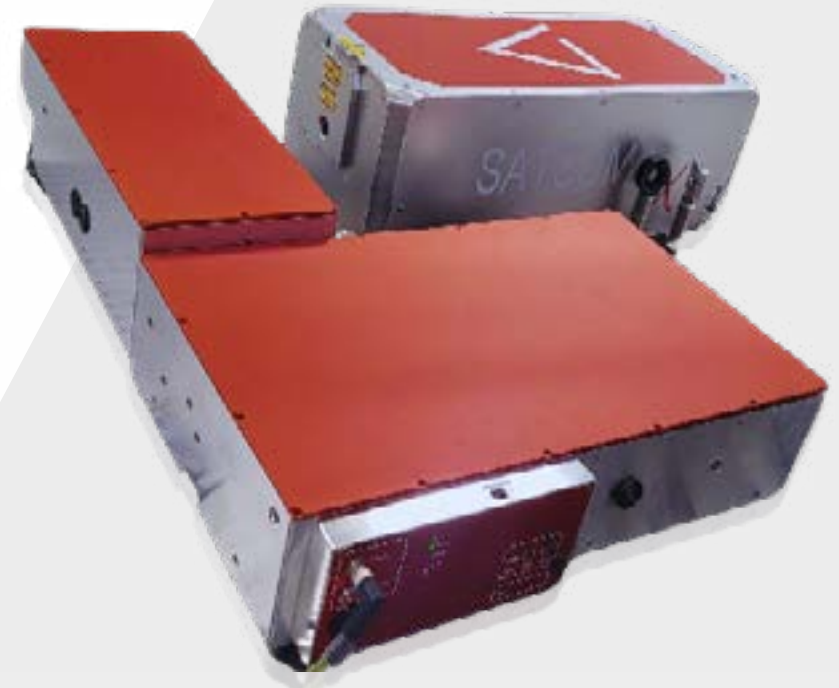


# TwinStarzz

## *Compact and versatile OPA system*

With its innovative and ultra-stable design, the twinStarzz delivers short tunable pulses with the highest efficiency in the MIR with an unprecedented simplicity, opening new possibilities for the most demanding applications. The availability of wavelength extensions from 235nm to 1800nm makes the twinStarzz the ideal tool for a wide range of spectroscopy experiments, and a unique all-in-one, cost and space-saving OPA solution. Pulses in the MIR are also inherently CEP-stable, and an actuator can be implemented as an option.

The system architecture is optimized for high power SatsumaX and Tangor femtosecond pump lasers, to cover a wide range of energies and repetition rates with unprecedented stability. Housed in a monolithic, compact, purged, temperature-controlled and fully automatized module, the twinStarzz series are designed for hands-off and trouble-free operation, and are the perfect choice for applications requiring the highest performance and reliability.



### Applications

#### Scientific:

- > Broadband vibrational sum-frequency generation (VSFG) spectroscopy
- > Two-dimensional infrared (2D IR) spectroscopy
- > High-harmonic generation (HHG) in solids

### Key Features

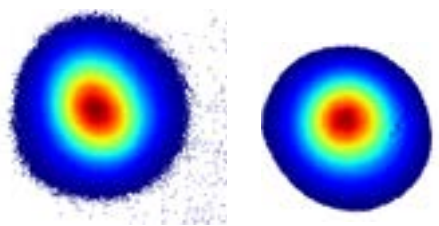
- > Highest efficiency in the MIR from 2.5 to 10  $\mu\text{m}$
- > Up to 50W pump power, up to 500  $\mu\text{J}$  pump energy
- > Integrated active beam pointing stabilization system and beam diagnostic

### Options

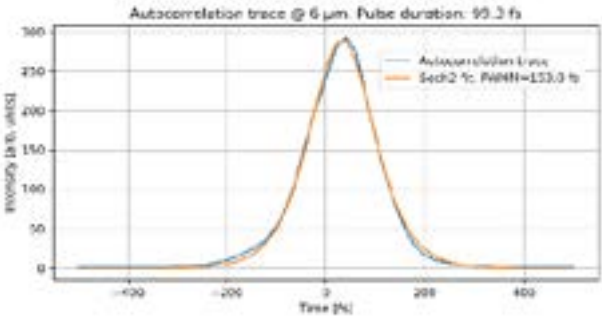
- > CEP actuator
- > Wavelength extensions down to 235 nm
- > Long pulse

|  |                                             |         |         |                      |          |           |           |
|--|---------------------------------------------|---------|---------|----------------------|----------|-----------|-----------|
|  | General                                     |         |         |                      |          |           |           |
|  | ▶ Pump models                               |         |         | ▶ SatsumaX or Tangor |          |           |           |
|  | ▶ Pump energy (μJ)                          |         |         | ▶ 140 to 500         |          |           |           |
|  | ▶ Maximum pump power (W)                    |         |         | ▶ 50                 |          |           |           |
|  | Main output (MIR)                           |         |         |                      |          |           |           |
|  | ▶ Tuning range (μm)                         |         |         | ▶ 2.5 to 10          |          |           |           |
|  | ▶ Efficiency at peak (%) *                  |         |         | ▶ Up to 2.5          |          |           |           |
|  | ▶ Pulse duration FWHM (fs)                  |         |         | ▶ <120               |          |           |           |
|  | ▶ Spectral bandwidth at 1/e2 (cm-1)         |         |         | ▶ >200               |          |           |           |
|  | ▶ Long term power stability at peak (% rms) |         |         | ▶ <1.5               |          |           |           |
|  | ▶ Pulse to pulse stability at peak (% rms)  |         |         | ▶ <1.5               |          |           |           |
|  | Wavelength extensions                       |         |         |                      |          |           |           |
|  | SWIR 1 FHG                                  |         | NIR SHG | SWIR 1 SHG           | NIR      | SWIR 1    | SWIR 2    |
|  | Tuning range (nm)refreshing time            | 290-350 | 350-460 | 575-700              | 700-930  | 1150-1400 | 1400-1800 |
|  | Pulse energy (μJ)                           | Up to 1 | Up to 4 | Up to 4              | Up to 12 | Up to 12  | Up to 10  |
|  | Pulse duration (fs)                         | < 100   | < 50    | < 100                | < 50     | < 100     | < 100 **  |

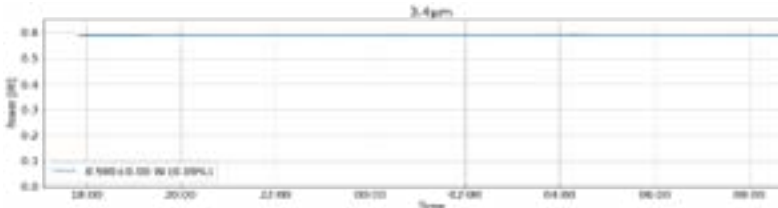
\* Specified as a percentage of total input power  
 \*\* Only with SatsumaX pump



Near and far-field beam profiles at 6 $\mu\text{m}$



Autocorrelation of twinStarzz MIR output at 6 $\mu\text{m}$



Long term power stability at 3.4 $\mu\text{m}$  : <0.1% RMS