

Sprite XT

DATASHEET

Pulsed Tunable NIR

WIDELY TUNABLE, AUTOMATED  
ULTRAFAST TI:SAPPHIRE LASER

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## TUNABLE, ULTRAFAST TI:SAPPHIRE LASER

An ultrafast laser source combining flexibility with stability, reliability and productivity - available as femtosecond, picosecond and fixed wavelength or tunable versions.

### FEATURES

- **ULTRA STABLE**  
Sprite XT has exceptionally stable power, beam and pulses of any ultrafast Ti:Sapphire laser sources and amplitude noise (<0.1%). Sprite XT auto-aligns once or twice a day, not every few minutes like other systems.
- **COMPACT DESIGN**  
Sprite XT is less than half the size of comparable lasers. The laser can be self-installed and the power supply easily disconnected from the compact laser head, allowing for one-person movement of the laser to another location or experiment.
- **INTEGRATED PUMP**  
Integrated pump with active pump beam alignment for superb power stability.
- **BROAD TUNING RANGE**  
Sprite XT provides fully automated, simple and rapid tuning from 720-980 nm delivering >1.5 W at the peak. Tuning can be extended to >1000 nm, and frequency conversion modules allow for stable access to visible and IR wavelengths.
- **FULLY AUTOMATED**  
Wavelength tuning and locking is easy via a web interface or via a published set of TCP/IP controls, facilitating automated control and option to use third party applications such as LabVIEW and MATLAB.

# SPECIFICATIONS<sup>[1]</sup>

TUNING RANGE	720-980 nm
OUTPUT POWER (MODELOCKED)	> 0.7 W at -725 nm / > 1.5 W at -800 nm / > 0.7 W at -935 nm
PULSE WIDTH	< 150 fs <sup>[2]</sup>
AMPLITUDE NOISE <sup>[3]</sup>	< 0.1%
OUTPUT POWER STABILITY <sup>[4]</sup>	< ± 0.25%
PULSE REPETITION RATE	80 MHz
POLARISATION	< 500:1
SPATIAL MODE	TEM <sub>00</sub> (M <sup>2</sup> < 1.1)
BEAM DIAMETER	1.2 mm +/- 0.1 mm
BEAM ELLIPTICITY <sup>[5]</sup>	< 1.1
ASTIGMATISM	< 10 %
BEAM POINTING	< 0.4 µrad/nm
SPRITE XT LASER DIMENSIONS	534 x 214 x 174 mm (LxWxH)
ICE BLOC CONTROLLER DIMENSIONS	34 cm x Half Rack x 2U (LxWxH)
OPERATING VOLTAGE	90-264 Vac, 47-63 Hz
MAXIMUM OPERATING CURRENT	< 3 A at 100 Vac < 1.5 A at 230 Vac (laser head + integrated pump + controller + PC) < 6 A at 100 Vac (closed-loop chiller. Upper limit, actual value depends on laboratory conditions)
OPERATING TEMPERATURE RANGE	20 to 35°C (68 to 95°F)
LABORATORY REQUIREMENTS	Mount on optical table with air free of dust (Laminar airflow box recommended)

[1] Unless stated otherwise, all specifications apply to the peak of tuning curve, ambient temperature change of < ±2°C, after 60-minute warm-up, provided the pump laser is operated at its nominal rated output power with recommended pump source and provided Sprite is not operated on or near strong atmosphere absorption lines without purge.

[2] Assumes sech<sup>2</sup> (t) deconvolution of 0.65x autocorrelation width. Specified at peak of timing range.

[3] Measured RMS in a 10 Hz to 20 MHz bandwidth.

[4] Output power change measured in any two-hour period after one-hour warm-up with less than +/- 1°C ambient temperature change.

[5] Ratio of major to minor 1/e<sup>2</sup> intensity beam diameter at output port.

## CONTACT US

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