

ps ns

MULTI-WAVELENGTH, HIGH POWER, PULSED LASER MODULE

KATANA HP



SWISS MADE

THE HIGH POWER, PICOSECOND LASER IN GREEN, YELLOW, ORANGE RED AND INFRARED

Katana HP is a versatile, **sub-nanosecond** pulsed laser system designed for all industrial applications that require continuous tuning of the repetition rate, maintenance-free operation and low cost of ownership. The Katana laser can be triggered from **pulse-on-demand** up to **100 MHz** from either an internal or an external source (master or slave mode), and can provide pulses from 30 ps up to 10 ns in pulse duration. Katana HP has already proven to be an ideal, robust source as a depletion laser for super-resolution STED fluorescence microscopy, for which application it can also provide a complete solution when combined with the Katana single-box multi-wavelength excitation system.

OPTIONS:

- + UVA 355 nm
- + UVC 266 nm
- + Burst mode
- + Isolator /collimator output
- + More options on request

MAIN APPLICATIONS:

- + Depletion laser for STED microscopy
- + Fluorescence microscopy
- + Solar cell scribing and contacting
- + Spectroscopy
- + Laser ranging

OUTSTANDING FEATURES :

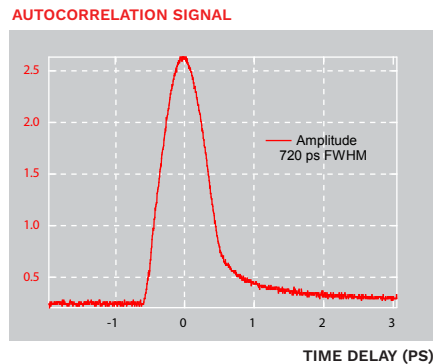
- + Infrared: 775, 1064, 1200 & 1550 nm
- + Orange: 556 – 620 nm
- + Red: 620 – 660 nm
- + Green: 532 nm
- + Pulse duration: 30 ps – 10 ns
- + Continuously tunable pulse repetition rate
- + Master/slave operation
- + External triggering
- + Pulse-on-demand
- + Maintenance free – no alignment required
- + 24/ 7 operation

| | KATANA - 15 HP | KATANA - 12 HP | KATANA - 10 HP | KATANA - 08 HP | KATANA - 06 HP | KATANA - 05 HP |
|---|---|------------------|-----------------|-----------------|------------------|-----------------|
| CENTER WAVELENGTH | 1550 nm | 1112 – 1320 nm | 1030 – 1064 nm | 775 nm | 556 – 660 nm | 512 – 532 nm |
| PULSE DURATION ¹ | < 30 ps – 10 ns | < 200 ps – 10 ns | < 30 ps – 10 ns | < 30 ps – 10 ns | < 200 ps – 10 ns | < 30 ps – 10 ns |
| AVG. OUTPUT POWER [UP TO] ¹ | 14 W | 2 W | 20 W | 8 W | 1 W | 5 W |
| PULSE ENERGY [UP TO] ¹ | 3 μJ | 100 nJ | 10 μJ | 1 μJ | 50 nJ | 5 μJ |
| PEAK POWER [UP TO] ¹ | 100 kW | 8 kW | 400 kW | 50 kW | 2 kW | 200 kW |
| PULSE REPETITION RATE ¹ | pulse-on-demand – 100 MHz | | | | | |
| SPECTRAL BANDWIDTH | > 0.1 nm | | | | | |
| BEAM QUALITY | $M^2 < 1.3$, TEM ₀₀ | | | | | |
| PER | > 23 dB | | | | | |
| AMPLITUDE NOISE | < 4.0 % rms (10 h) | | | | | |
| LASER OUTPUT | Collimated free-space | | | | | |
| ENVIRONMENTAL | | | | | | |
| WARM-UP TIME | < 15 minutes | | | | | |
| OPERATION TEMPERATURE | 15 °C – 35 °C | | | | | |
| STORAGE TEMPERATURE | - 20 °C – 65 °C | | | | | |
| ON/OFF CYCLES | > 10000 | | | | | |
| MECHANICAL | | | | | | |
| SIZE LASER HEAD | 39 x 100 x 162 mm ³ | | | | | |
| WEIGHT LASER HEAD | 1 kg | | | | | |
| SIZE CONTROL UNIT | 133 x 483 x 400 mm ³ (19"/3U rack mount) | | | | | |
| WEIGHT CONTROL UNIT | 7 kg | | | | | |
| ELECTRICAL | | | | | | |
| POWER SUPPLY | 24 VDC/9A or 90 – 264 VAC, 47 – 63 Hz | | | | | |
| POWER CONSUMPTION | < 300 W | | | | | |
| COOLING | | | | | | |
| LASER SYSTEM | air cooled | | | | | |

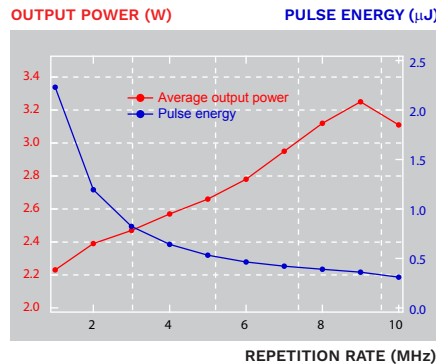
¹ Please inquire for possible combinations of wavelength, pulse duration, pulse energy and repetition rate



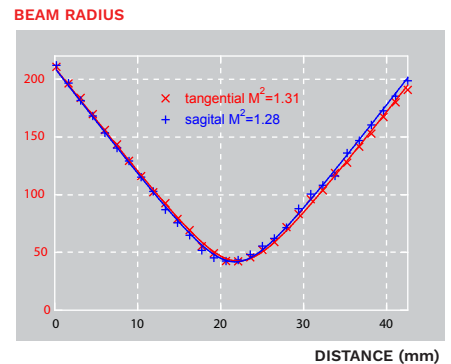
PULSE PROFILE



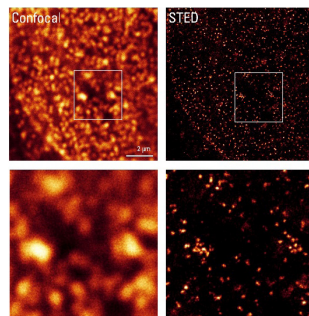
OUTPUT POWER VS REPETITION RATE



BEAM QUALITY



APPLICATION



Resolution enhancement achieved with Leica TCS SP8 STED 3X microscope and the 775 nm Katana-08 HP pulsed laser, compared to the resolution achieved with confocal microscopy. Courtesy of Leica Microsystems