

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, 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 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



Specifications subject to change without notice, February 2017

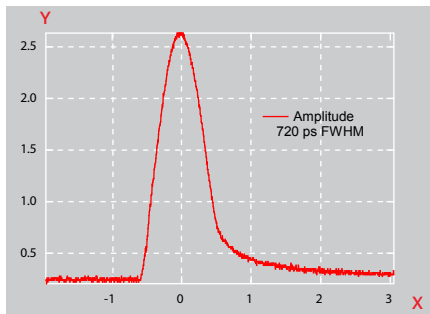
ISO 9001 : 2008
ISO 13485 : 2012

	KATANA - 05 HP	KATANA - 06 HP	KATANA - 08 HP	KATANA - 10 HP	KATANA - 12 HP	KATANA - 15 HP
CENTER WAVELENGTH	512 – 532 nm	556 – 660 nm	775 nm	1030 – 1064 nm	1112 – 1320 nm	1550 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	5 W	1 W	8 W	20 W	2 W	14 W
PULSE ENERGY [UP TO] ¹	5 μJ	50 nJ	1 μJ	10 μJ	100 nJ	3 μJ
PEAK POWER [UP TO] ¹	200 kW	2 kW	50 kW	400 kW	8 kW	100 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

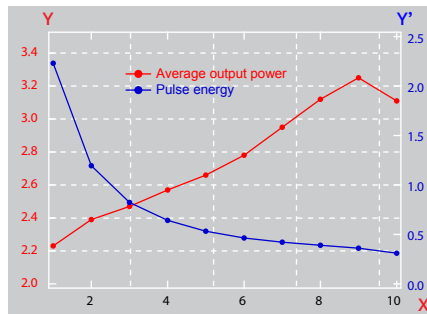


PULSE PROFILE



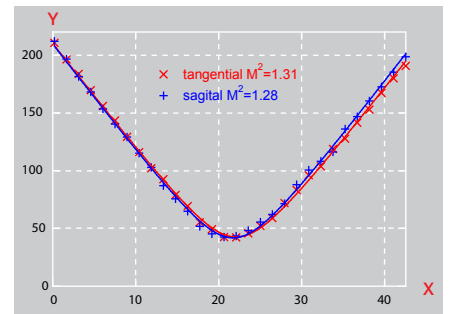
X TIME DELAY (PS)
Y AUTOCORRELATION SIGNAL

OUTPUT POWER VS REPETITION RATE



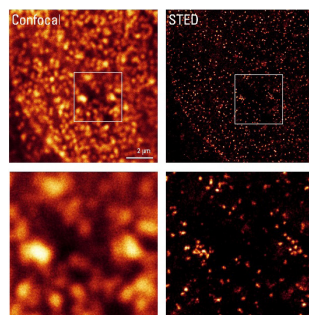
X REPETITION RATE (MHz)
Y OUTPUT POWER (W)
Y' PULSE ENERGY (μJ)

BEAM QUALITY



X DISTANCE (mm)
Y BEAM RADIUS (μm)

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