

# Onefive KATANA HP

Versatile pulsed laser

- External triggering
- Continuously tunable repetition rate
- Master/slave operation
- Pulse-on-demand
- Diffraction-limited beam
- Maintenance-free 24/7 operation



If you need a versatile, sub-nanosecond pulsed laser system designed for all industrial applications, the KATANA HP laser is an excellent choice.

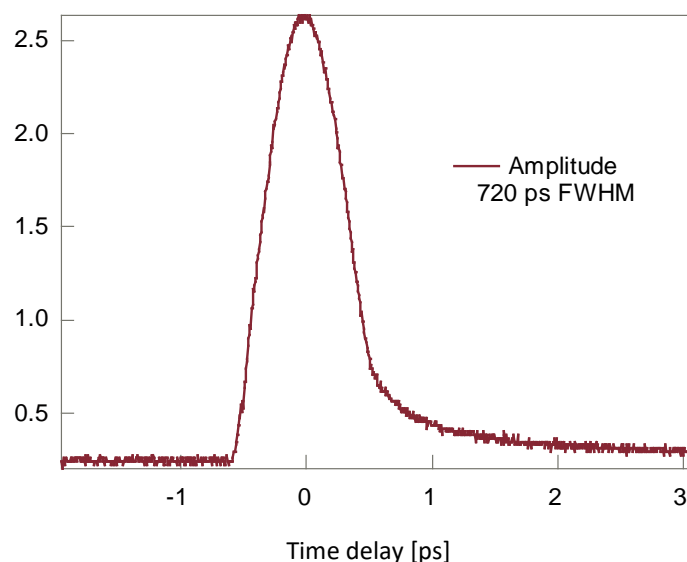
In the standard configuration, the KATANA HP provides pulses of 35 or 700 ps duration depending on the model. The standard pulse repetition rate is either 100 kHz to 1 MHz or 20 to 80 MHz. Ask us about other options.

The laser pulse can be triggered from an external source (in either master or slave mode). Continuous tuning of the repetition rate is standard.

No alignment is required making the KATANA HP maintenance-free and ensures you a low cost of ownership.

The 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 our SuperK Extreme, a multi-wavelength system platform offering a spectrum between 400nm and 2400nm.

## Typical pulse profile - Autocorrelation signal



## Applications

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

# Standard configurations

## Optical

Model	KATANA 05 HP	KATANA 06 HP	KATANA 08 HP	KATANA 10 HP	KATANA 12 HP	KATANA 15 HP
Center wavelength <sup>1)</sup>	532 ± 1 nm	592 ± 2 nm	775 ± 2 nm	1064 ± 1 nm	1184 ± 2 nm	1550 ± 5 nm
Pulse duration <sup>1)</sup>	35 ± 15 ps	700 ± 200 ps	700 ± 200 ps	35 ± 15 ps	700 ± 200 ps	700 ± 200 ps
Average power <sup>1)</sup>	>3 W at 1 MHz	>1.2 W at 80 MHz	>3 W at 80 MHz	>10 W at 1 MHz	>2.5 W at 80 MHz	>6 W at 20-80 MHz
Pulse energy <sup>1)</sup>	>3 µJ at 1 MHz	>15 nJ at 80 MHz	>37 nJ at 80 MHz	>10 µJ at 1 MHz	>30 nJ at 80 MHz	>75 nJ at 80 MHz
Repetition rate <sup>1)</sup>	100 kHz—1 MHz	20—80 MHz	20—80 MHz	100 kHz—1 MHz	20—80 MHz	20—80 MHz
Spectral bandwidth FWHM	<5 nm	<1 nm	<1 nm	<5 nm	<1 nm	<0.5 nm
Beam quality	M <sup>2</sup> <1.5, TEM <sub>00</sub>	M <sup>2</sup> <1.3, TEM <sub>00</sub>	M <sup>2</sup> <1.3, TEM <sub>00</sub>	M <sup>2</sup> <1.5, TEM <sub>00</sub>	M <sup>2</sup> <1.3, TEM <sub>00</sub>	M <sup>2</sup> <1.3, TEM <sub>00</sub>
PER	>20 dB	>20 dB	>17 dB	>20 dB	>17 dB	>13 dB
Amplitude noise	<5% rms (12h)					
Timing jitter	<10 ps	<30 ps	<20 ps	<10 ps	<30 ps	<20 ps
Laser output	Collimated free space					

i) Please inquire for possible combinations of wavelength, pulse duration, average power, pulse energy and repetition rate

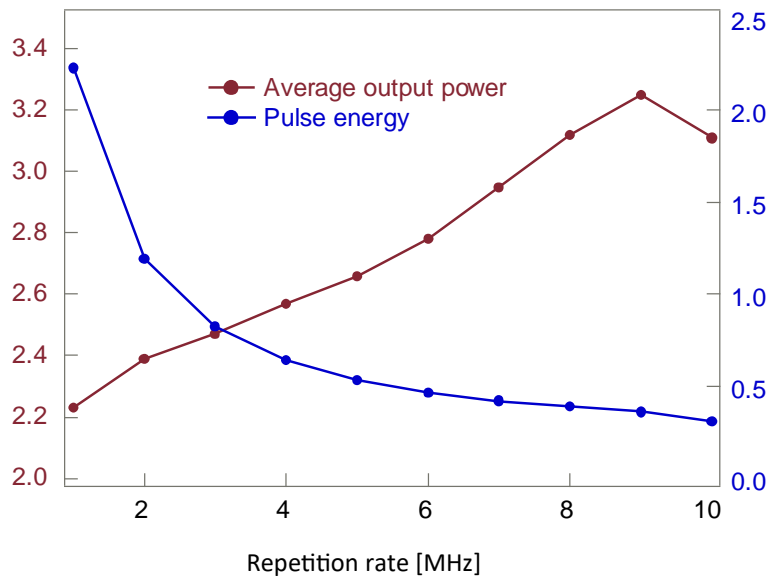
## Mechanical/Electrical

Warm-up time	<15 minutes
Operation temperature	15°C—35°C
Storage temperature	-20°C—55°C
Power supply	24 VDC/9 A or 90—264 VAC, 47—63 Hz
Power consumption	<300 W
Size laser head	39 x 100 x 162 mm <sup>3</sup>
Weight laser head	1 kg
Size control unit	133 x 483 x 400 mm <sup>3</sup> (19"/3U rack mount)
Weight control unit	7 kg
Cooling	Air

## Typical output power vs repetition rate

Output power [W]

Pulse energy [ $\mu$ J]



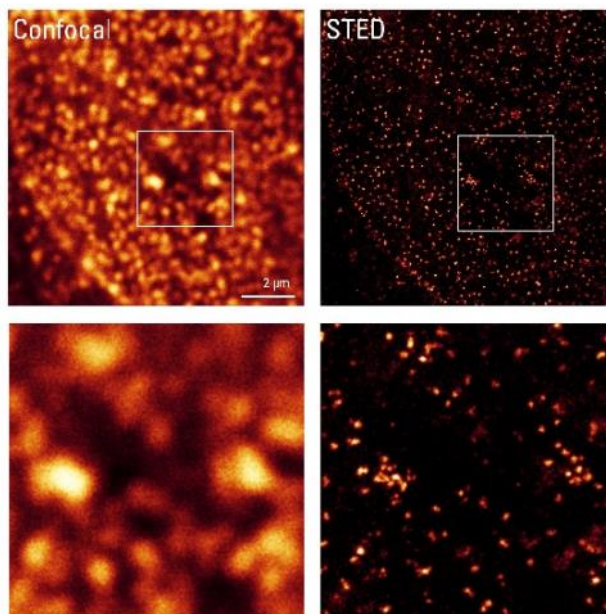
All KATANA HP lasers are rack-mountable in a 19"/3U rack.

## Support and Warranty

All KATANA products come with industry-leading reliability and are backed by our standard 2 year warranty. However, should you need the extra security of an extended warranty and remote diagnostics support this is available in our support and warranty extension package.

Please contact your sales representative for more information.

## Resolution enhancement



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

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All KATANA products are produced under our quality management system certified in accordance with the ISO 9001:2015 and ISO 13485:2016 standard.

