

## Versatile high-power pulsed laser





# Versatile High-power sub-nanosecond laser system

Ideal for super-resolution STED fluorescence microscopy

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



### **KATANA HP**

#### Applications

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

### Reliable

#### Pulse on demand and flexible repetiton rate In the standard configuration, the KATANA HP provides pulses of

700 ps duration.

The standard pulse repetition rate is 20-80 MHz. Continuous tuning of the repetition rate is standard.

#### Master and slave operation

The laser pulse can be triggered from an external source (in either master or slave mode).

#### Robust and maintenance-free

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

#### Ideal for STED fluorescence microscopy

The KATANA HP has already proven to be an ideal, robust source as a depletion laser for super-resolution STED fluorescence microscopy.

When combined with our SuperK Extreme multi-wavelength system (offering a spectrum between 400 nm and 2400 nm), it provides a complete solution for super-resolution STED fluorescence microscopy.

Flexible output

(specification dependant).

Features

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

Options Isolator/collimator output PM or SM fiber output

KATANA HP

### Choose the output that suits the application: Isolator or collimator, single-mode or polarization maintaining fiber

### KATANA HP

#### Support and warranty

All KATANA products come with an industryleading reliability.

The product is covered by a comprehensive warranty. Service options are available. For details, please enquire.

### Performance

#### Pulse profile - Autocorrelation



Time delay [ps]





#### Typical output power vs repetition rate

Repetition rate [MHz]



### Specifications

### Optical<sup>1</sup>

	06HP	<b>08HP</b>
Center wavelength [nm]	592 ± 2	775 ± 2
Pulse duration [ps]	700 ± 200	700 ± 200
Average Power [W]	> 1.2 @ 80 MHz	> 3 @ 80 MHz
Pulse energy [nJ]	> 15 @ 80 MHz	> 37 @ 80 MHz
Repetition rate [MHz]	20 – 80	20 – 80
Spectral bandwidth (FWHM) [nm]	< 1	< 1
Beam quality (TEM00)	$M^{2} \leq 1.3$	$M^{2} \leq 1.3$
Polarization / PER (vertical) [dB]	> 20	> 17
Amplitude noise (RMS, 12h) [%]	< 5	< 5
Timing jitter [ps]	< 130	< 20
Laser output	Collimated free-space	Collimated free-space

<sup>1</sup> Please inquire for possible combinations of wavelength, pulse duration, average power, pulse energy, and repetition rate.



SPECIFICATIONS

### Specifications

#### Mechanical/Electrical

Warm-up time [min.]	< 15
Power consumption [W]	< 300
<b>Operation temperature [°C]</b>	15 – 35
Storage temperature [°C]	-20 – 55
Laser head dimensions (WxHxL) [mm <sup>3</sup> ] <sup>1</sup>	100 x 39 x 162
Laser head cooling	Air
Power supply requirements	24 VDC/9 A or 90-264 VAC, 47-63 Hz
Laser head weight [kg]	1
Control unit dimensions (WxHxL) [mm3]	448 x 133 x 399, 19"/3U rack mount
Control unit weight [kg]	22
Control unit cooling	Air



SPECIFICATIONS

### Technical Drawings

### Laser head dimensions



### Control unit dmensions

### KATANA HP

All NKT Photonics products are produced under our quality management system certified in accordance with the ISO 9001:2015 standard.







nktphotonics.com

