

# GIGAJET 20

femtosecond oscillator



## highspeed femtosecond oscillators

GIGAOPTICS highspeed femtosecond oscillators operate at uniquely high repetition rates up to 3 GHz and offer a remarkable versatility and compactness. Their robust design allows them to serve as reliable tool in scientific and industrial applications.

Unprecedented signal-to-noise ratios and high data acquisition rates were achieved in time-resolved, THz- and nonlinear spectroscopy as well as in nonlinear microscopy. Our products have supported a true revolution in the field of high precision optical frequency metrology and serve as key component, i.e. as clockwork in novel optical atomic clocks.

Visit our website [www.gigaoptics.com](http://www.gigaoptics.com) to explore our products and learn more from our detailed application notes. Contact us at [info@gigaoptics.com](mailto:info@gigaoptics.com) to request further information or discuss your intended application.

We offer expertise in femtosecond technology.

# GIGAJET 20

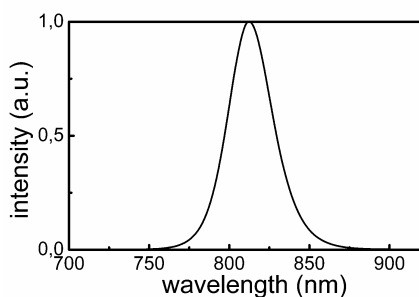
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## description

GIGAJET 20 is a femtosecond oscillator designed for moderate repetition rates at a high average power. More than  $750 \text{ mW}^{*2}$  are well suited for most spectroscopic applications. Octave-spanning frequency combs are easily achieved with standard nonlinear fibers.

The housing is fully enclosed and can be entirely temperature-stabilized with external cooling water. Passive repetition rate stability of 500 Hz has been demonstrated for cooling water stable to  $0.1^\circ\text{C}$ .

Initial installation and training in customer's application lab are provided. Protected by U.S. patent 6,618,423 and European patents.



typical output spectrum from GIGAJET 20

## applications

- precision optical spectroscopy/frequency metrology
- time-resolved spectroscopy
- THz generation and spectroscopy
- two-photon and SHG microscopy
- see our application notes for details ([www.gigaoptics.com](http://www.gigaoptics.com))

## technical specifications/system requirements

(subject to change without notice)

repetition rate	500 MHz or 1 GHz
pulse length	$\leq 30 \text{ fs}^{*1}$
output power	$750 \text{ mW}^{*2}$
central wavelength	810 nm ( $\pm 10 \text{ nm}$ )
beam quality	$M^2 \leq 1.2$
dimensions	$320 \times 200 \times 107 \text{ mm}^3$

<sup>\*1</sup> after appropriate extracavity compression (not provided)

<sup>\*2</sup> @ 5.5 W pump power in a TEM<sub>00</sub> mode pump beam of 532 nm wavelength (equivalent to a Coherent Verdi™)

operating temp.	$21^\circ\text{C} \pm 5^\circ\text{C}$
power requirements	electrical power not required
cooling water req.	flow 0.5 – 1.5 l/min. temp. $\sim 20^\circ\text{C}$ , stable to $\pm 0.1^\circ\text{C}$