

- 80-94 MHz options
- Pulse duration and power options
- Stable, long term mode-lock
- Integrated PZT for active repetition rate stabilisation



## Overview

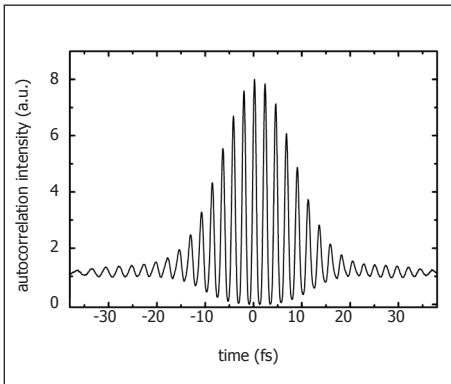
The **gecco** is a fully equipped, compact femtosecond laser in a sealed enclosure, available with an average power of  $>600$  mW and with a choice of  $<15$  fs or  $<20$  fs pulse durations. The **gecco** is offered with repetition rates of 80-94 MHz, and in both cases it is possible for the repetition rate to be locked to an external source.

Designed for simple installation and system integration, the **gecco** features a highly compact, vibration resistant laser head with an **opus 532nm** integrated pump source, and a separate, fully featured control unit connected through two detachable cables.

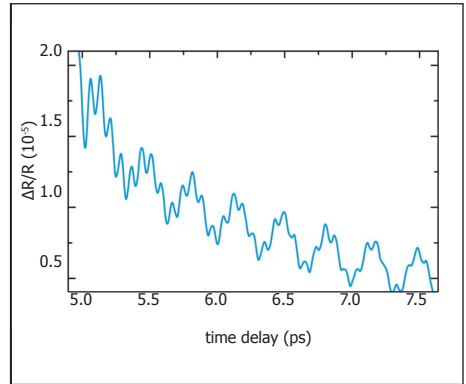
This highly stable laser boasts an industry leading lifetime and very low cost of ownership and comes with by a 2 year/unlimited hours warranty covering all operating specifications.

## Optional repetition rate and active feedback

If required, control of the repetition rate can be achieved using a low speed piezo mounted cavity mirror with active feedback added using a second, high speed piezo. Regulation through the **TL-1000** repetition rate stabilisation unit achieves a timing jitter  $<100$  fs (0.1 Hz to 100 kHz). Alternatively, the piezos can be driven by customer supplied electronics.



Autocorrelation trace of **gecco** indicating emission of pulses with 15 fs duration.

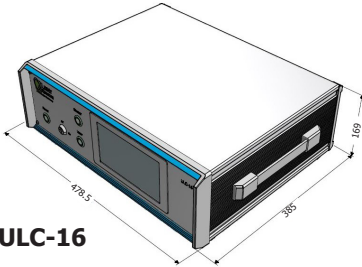
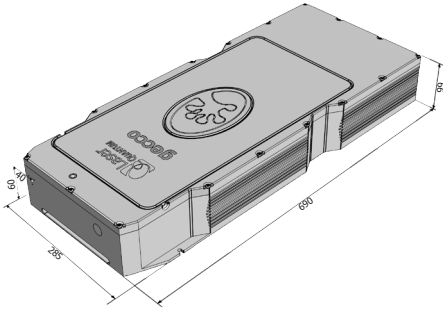


Application example: Pump-probe signature of coherent optical phonons in ZnO measured with the **gecco**.



The **gecco** can be used with the RemoteApp™ software that allows the pump laser to be controlled over the internet and connected to the Laser Quantum support team for monitoring laser performance, diagnosing opportunities for and carrying out laser optimisation.

## Dimensions (mm)



**ULC-16**

## Other information

Umbilical length: 2 m  
Cooling system included  
Laser head weight: 24 kg  
2 years warranty  
Please contact us for further details



Drawings are for illustrative purposes only. Please contact Laser Quantum for complete engineer's drawings.

## Specifications\*

	gecco one	gecco ultra
Average output power	>600 mW	
Center wavelength	800 nm +/- 20 nm	
Pulse duration <sup>1</sup>	<20 fs	<15 fs
Spectral FWHM	>40 nm	>50 nm
Repetition rate <sup>2</sup>	80-94 MHz	
Pulse energy (@80MHz)	>7.0 nJ	
Beam size	1.2 mm +/-0.2 mm	
M-squared	<1.2	
Power stability (RMS within 24 hours)	<1 %	
RMS Noise <sup>3</sup>	<0.2 % (opus pump) <0.1 % (finesse pure pump)	
Polarisation ratio	>100:1	
Polarisation direction	horizontal	
Operating temperature	21°C +/- 5°C	
Weight (head only)	~30 kg	
Warm-up time	<20 min	
Applications	amplifier seeding, ultrafast spectroscopy, THz spectroscopy & imaging, two-photon polymerisation, thin-film metrology, materials processing, CARS, nonlinear microscopy	

\* Laser Quantum operates a continuous improvement programme which can result in specifications being improved without notice.

<sup>1</sup> After appropriate extracavity dispersion compensation (not included).

<sup>2</sup> Repetition rate accuracy +/-100 kHz. Other repetition rates e.g. 100 MHz available upon request.

<sup>3</sup> Noise bandwidth 1 Hz to 1 MHz.

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