



**tau**

High specification OEM CW lasers



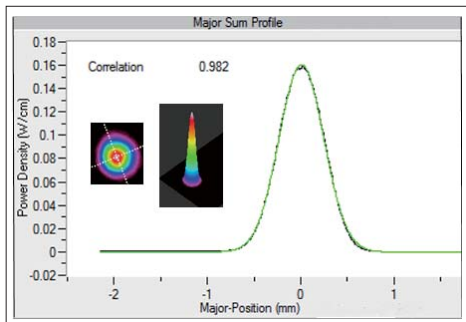
- CW 532 nm & 671 nm laser
- Low noise
- Power up to 150 mW
- Internet connectivity & optimisation
- Designed for easy OEM integration
- Long operation lifetimes



## Overview

Designed for integration into OEM and portable systems, the **tau** is Laser Quantum's most compact, economical and robust laser to date. Available at up to 150 mW, the **tau** has a highly stable, diffraction limited single transverse mode beam and is well suited to Raman and fluorescence spectroscopy and DNA sequencing. With the diode MTTF manufacturer-specified as >50,000 hours at full power, Laser Quantum de-rates the diode to further increase its lifetime, giving the **tau** itself industry leading lifetimes that allow it to be treated as a black box; to be installed and forgotten.

The **tau** family is controlled by an smd12 that provides an interface using the RS232 port. The **tau** can be operated through simple commands from DOS or DOS emulator or by the Laser Quantum RemoteApp software. The smd12 also monitors component temperatures, automatically maintains laser output power and provides diagnostic analysis.



The high beam quality of the **tau** laser family makes them ideal choices for many applications requiring M-squared values approaching unity. Each **tau** laser is supplied with certification showing its beam properties.



Fibre coupled **tau**.



**Fibre coupling:** Like most of Laser Quantum lasers, the **tau** is available with multi or single mode fibre delivery options, which allow the beam to be delivered where it is needed.



The **tau** laser range features an intelligent control unit that allows easy setting and monitoring of the laser parameters. Incorporating PowerLoQ™ technology, the **tau** lasers show extreme power stability over long periods of use.



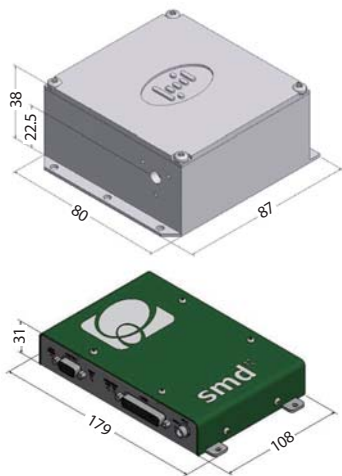
The **tau** can be controlled across the internet via the RemoteApp software that also allows connection to the Laser Quantum support team for monitoring laser performance, diagnosing opportunities for and carrying out laser optimisation.



Every **tau** laser has been subjected to a 1200 g drop-test to check that all components are correctly fitted prior to its extended 300 hour test period. This rigorous testing regime ensures long operational lifetimes.



## Dimensions (mm)



## Other information

- Umbilical length: 0.75 m
- Laser head weight: 0.5 kg
- Vertical polarisation is available on request
- Systems can be modulated
- Fibre coupling available
- LabView drivers available
- 2 years unlimited hours warranty for scientific users



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

## Specifications\*

	tau 532	tau 671
Wavelength	532 nm	671 nm
Power	30 mW to 150mW	30 mW to 50 mW
Beam diameter <sup>1</sup>	1.0 mm ± 0.2 mm	1.4 mm ± 0.2 mm
Spatial mode	TEM00	TEM00
Ellipticity	<1:1.2	<1:1.2
Bandwidth	~100 GHz	~100 GHz
Divergence	<1.0 mrad	<1 mrad
M-squared	<1.2	<1.2
Power stability (RMS) <sup>2</sup>	<1.0 %	<1.0 %
Pointing stability	<10 µrad	<10 µrad
Noise (RMS) <sup>3</sup>	≤0.5 %	≤1 %
Noise bandwidth	10 Hz to 10 KHz	10 Hz to 10 KHz
Polarisation direction <sup>4</sup>	horizontal	horizontal
Polarisation ratio	>100:1	>100:1
Coherence length (mm)	~3 mm	~3 mm
Beam angle <sup>5</sup>	<2 mrad	<2 mrad
Warm-up time	<10 minutes	<10 minutes

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

<sup>1</sup> Beam diameter defined as the average of major and minor 1/e<sup>2</sup> beam size measured at 25 cm from exit port, at specified power.

<sup>2</sup> Test duration up to 24 hrs at constant temperature.

<sup>3</sup> Measured up to 10 kHz.

<sup>4</sup> Vertical polarisation is available upon request.

<sup>5</sup> Tolerance relative to head orientation.

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