

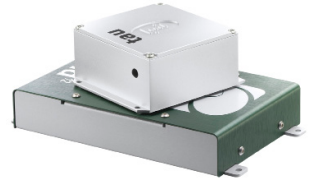


tau

High specification OEM CW lasers



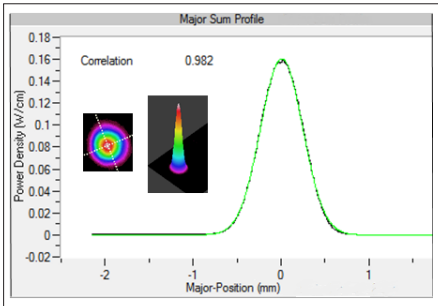
- CW 532nm & 671nm laser
- Low noise
- Power up to 150mW
- Internet connectivity & optimisation
- Designed for easy OEM integration
- Long operation lifetimes



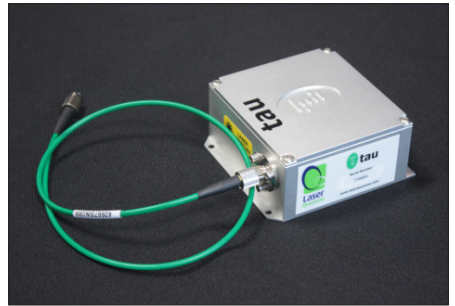
Overview

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 150mW, 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.

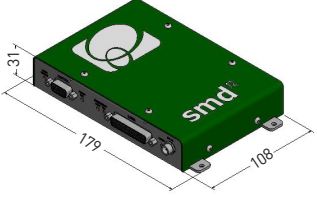
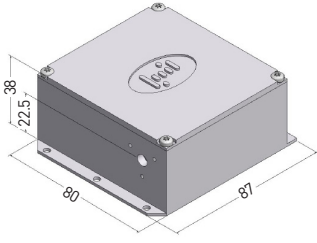


The **tau** can be controlled across the internet via the RemoteApp software that also allows connection to the Laser Quantum support team for monitoring laser performance, diagnosing opportunities for and carrying out laser optimisation.



Every **tau** laser has been subjected to a 1200g 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: 0.75m
 Laser head weight: 0.5kg
 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	532nm	671nm
Power	30mW to 150mW	30mW to 50mW
Beam diameter ¹	1.0mm±0.2mm	1.4mm±0.2mm
Spatial Mode	TEM ₀₀	
Ellipticity	<1:1.2	
Bandwidth	~100GHz	
Divergence	<1.0mrad	
M-squared	<1.2	
Power stability ²	<1.0% RMS	
Beam pointing stability	<10µrad/°C	
RMS noise ³	≤0.5%	≤1.0%
Noise bandwidth	10Hz to 10kHz	
Polarisation ratio	>100:1	
Polarisation direction ⁴	horizontal	
Coherence length	~3mm	
Beam angle ⁵	<2mrad	
Operating temperature	22°C to 37°C	
Warm-up time	<10 minutes	
Applications	PIV, Raman spectroscopy, fluorescence spectroscopy, biomedical imaging	

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

¹ Beam diameter defined as the average of major and minor 1/e² beam size measured at 25cm from exit port, at specified power.

² Test duration up to 24 hrs at constant temperature.

³ Measured up to 10kHz.

⁴ Vertical polarisation is available upon request.

⁵ Tolerance relative to head orientation.

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