



ventus¹⁰⁶⁴

High power scientific lasers



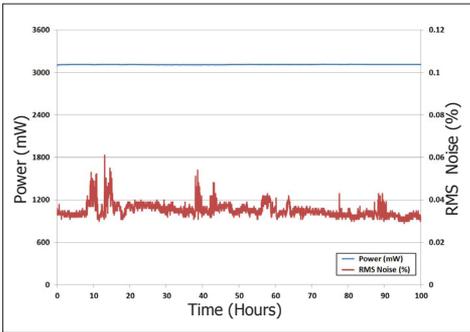
- CW 1064nm IR up to 5W
- Extremely low noise
- High stability
- Long lifetimes



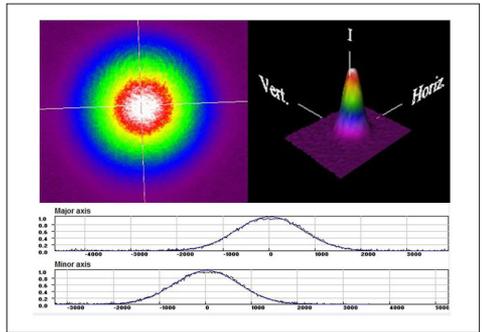
Overview

The **ventus 1064** is a versatile and highly valued laser within the scientific community owing to its robust design, low rms noise and range of powers up to 5W. This broad power range, and optional fibre-delivery, enables the **ventus 1064** to be used in multiple applications including optical trapping and manipulation. The **ventus 1064** also has industry leading lifetimes achieved because the diode MTTF is manufacturer-specified as >40,000 hours at full power, Laser Quantum de-rates the diode to further increase its lifetime.

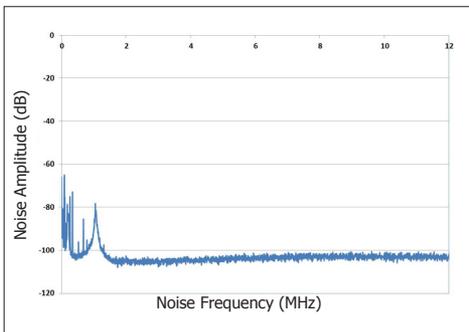
The mpc6000 controller provides an interface for the **ventus 1064** control both directly and remotely, using the RS232 port. Direct control is available through an intuitive and user-friendly menu displayed on the LCD screen, easily navigated using two buttons and a dial. Remote use can be through simple commands with use of a terminal emulator. In addition to acting as a user interface, the mpc6000 monitors the **ventus 1064** laser head component temperatures whilst providing diagnostic analysis. The mpc6000 is a highly advanced, fully featured unit that compliments the **ventus 1064**.



Typical noise and power stability of a 3W **ventus 1064nm** laser over 100 hours.



Typical beam profile of a 3W **ventus 1064nm** laser illustrating 2D profile, 3D profile and Gaussian fit.



Noise amplitude profile of the ventus 1064nm laser shown for a range of frequencies up to 12MHz.



Every **ventus** 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.



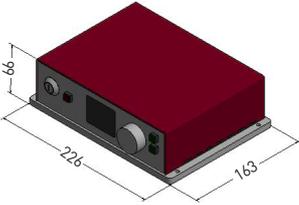
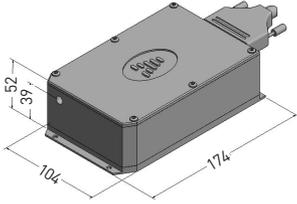
The **ventus** is available with multi or single mode fibre delivery options, allowing the beam to be delivered where it is needed. Fibre coupling is possible with the majority of Laser Quantum lasers.



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Dimensions (mm)



Other information

- Umbilical length 1.5m
- Laser head weight: 1.3kg
- Cooling options available
- Systems can be modulated
- smd power supply also available



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

Specifications*

	ventus 1064	
Wavelength	1064nm	
Power	50mW to 750mW	1.5W to 5W
Beam diameter ¹	2.0mm±0.2mm	2.4mm±0.2mm
Spatial mode	TEM ₀₀	
Ellipticity	<1:1.2	
Bandwidth	80GHz	
Divergence	<0.6mrad	
M-squared	<1.4	
Power stability ²	<0.2% RMS	
Beam pointing stability	<5µrad	
RMS noise ³	<0.2%	
Noise bandwidth	10Hz to 100MHz	
Polarisation ratio	>100:1	
Polarisation direction	vertical	
Coherence length	~4mm	
Beam angle ⁴	<1mrad	
Operating temperature	10 to 40°C	
Warm-up time	<10 minutes	
Applications	Non linear, optics pump source, optical trapping & manipulation	

* 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 >100 hrs at constant temperature.

³ Measured at specified power.

⁴ Tolerance relative to head orientation.

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