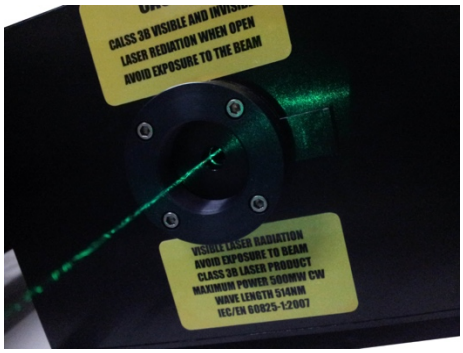
HONG KONG QUANTUM TECH LIMITED
Rm 502, Arion Centre, 2-12 Queen's Rd.West, Sheung wan Hong Kong.
T: 00852-68522889 F: 00852-28541913 E: info@qtmtch.com

785nm High Power Diode Laser

- High Quality Beam and Long Working Life

Overview

The **QUANTUMTECH** encompasses a range of high specification systems for desktop use in research laboratories and for integration into OEM products. Available at 3 green and 3 infra-red wavelengths, and at powers from 50 mW to 3 W (dependent on wavelength), the **QUANTUMTECH** enhanced linear cavity produces a highly stable and near diffraction limited CW beam.



Applications

The **QUANTUMTECH** is designed to meet the highspec requirements of advanced photonics research and high-tech commercial applications. The patented cavity produces a highly stable, low noise and diffraction limited beam, while still using the minimum number of optical components in a small, durable shell.

The **QUANTUMTECH** is Quantum's most diverse range of lasers, serving applications such as raman spectrography, fluorescence microscopy and particle image velocimetry. Its portability and ease of use contribute towards its reputation as a highly flexible bench-top laser.

The power supply is recommended for research applications, as it provides a satisfying level of control through the controller and intuitive operational controls. Alternatively, the compact, silent smd6000 is ideal for OEM integration into commercial packages. It also allows direct modulation of the beam, via blanking of the diode, at up to 30 kHz.

Stability and Noise

The cavity is isolated from environmental thermal variations by an array of four PID temperature regulators, driven by the controller. Furthermore, the geometry of the cavity forms a highly effective noise filter, dramatically reducing green-noise through a unique, patented approach.

In aerospace qualification tests, our technology has demonstrated that it can maintain its high stability and low noise spec at temperatures ranging from -34^{O} to $+74^{O}$ C.

Construction

Quantum Tech manufactures all products to a very high standard; the QUANTUMTECH is no exception.

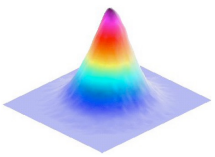
The effects of shock impacts are minimised by the use of zero-stress, nonadjustable mounts throughout the cavity and the lasers feet are designed to elastically deform under stress, eliminating mechanical stress in the head.

The head itself is manufactured from a single, solid block of aluminium, and is thermally relaxed to further reduce any possibility of strain, and therefore misalignment.

Before shipment each QUANTUMTECH is subjected to rigorous quality assurance, in line with ISO9001. Every unit is N2 purged and hermetically sealed. There follows a prolonged burn-in, under user-realistic conditions.

Beam Quality

The near perfect, circular gaussian profile is a consequence of the extremely low M2, nearing unity.



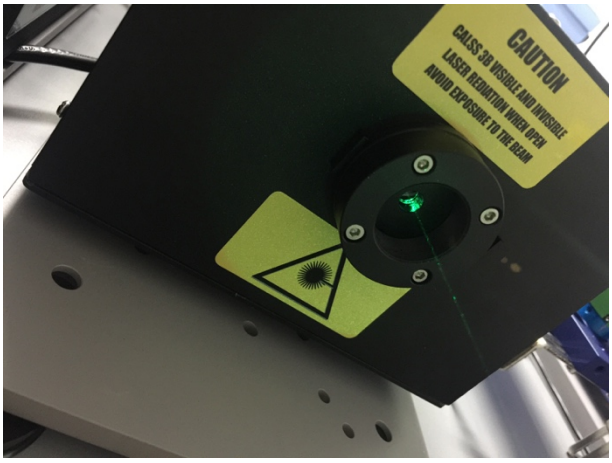
HONG KONG QUANTUM TECH LIMITED
Rm 502, Arion Centre, 2-12 Queen's Rd.West, Sheung wan Hong Kong.
T: 00852-68522889 F: 00852-28541913 E: info@qtmtch.com

Laser Control

The **QUANTUMTECH** serials Diode laser was controlled by Win xp/Win7/Win10 based software. You can conveniently setup output laser power by typing value you want and double click to execute the setup. You can also change the output power continuously with step size 0.1mW by clicking up and down arrow. When you want a coffee break, Using 'ShutDown' manual can set laser to standby mode. The laser will run with minimum current to keep warm. 'Restart' manual will start the laser immediately works at laser power it originally worked.

Laser Cooling

Diode Heating up will be result in power output drop down and wavelength shifting. Keeping diode temperature stable is important to get stable laser beam. The laser diode is cooled by Peltier. Laser head sited on heatsink. There is additional cooling fan to help on system heat transmitting.



Mounting

Special designed 'Kinematic' mounting base perfectly fix the laser on to any kinds of table. It is easy operation and high repeatability when install or repair.

CE

DANGER
CLASS IIIB LASER PRODUCT

HONG KONG QUANTUM TECH LIMITED
Rm 502, Arion Centre, 2-12 Queen's Rd.West, Sheung wan Hong Kong.
T: 00852-68522889 F: 00852-28541913 E: info@qtmtch.com

Technical Data Sheet – Laser Head

QUANTUMTECH

785nm CW scientific laser

The QUANTUMTECH 785nm laser is a high specification single transverse mode CW NIR laser, providing variable power up to 500 mW. A unique and innovative laser cavity design has resulted in a highly stable and near diffraction limited beam. Contained within a compact package, this extremely efficient system is suited to both laboratory and OEM applications.

Specifications

power	max 500 mW
wavelength	784.8±0.5nm
beam size	1.4x1.7 mm
spatial mode	Multimode
bandwidth	0.04nm
divergence	2.5mrad
power stability	<2.0% rms*
RMS noise	<0.5%
polarisation ratio	100:1
polarisation direction	horizontal
operating temperature	10-40 deg C
warm-up time	5 min
Wavelength Stability	± 0.02 nm*

* test duration 8 hrs

Features

compact design diffraction limited beam zero stress, permanently aligned cavity hermetically sealed scientific power supply, OEM option extended warranty available single phase mains driven diode 18,000 hours MTBF direct modulation upto 30 kHz RS232

HONG KONG QUANTUM TECH LIMITED
Rm 502, Arion Centre, 2-12 Queen's Rd.West, Sheung wan Hong Kong.
Tel: 00852-68522889 Fax: 00852-28541913 Email: info@qtmtch.com