



Pavilion Integration Corporation

WhisperIT[®] Fiber Coupled Series



Features and Benefits

Compact
Efficient
Stable

Optics and Electronics in one small package
Power Consumption and heat load < 4W
WhisperIT[®] technology provides low noise output under all operating conditions

Power on Demand

Fast warm-up and turn on
Modulation up to 1 MHz
Variable output power



Applications

Biotechnology

Flow Cytometry
DNA Sequencing
Medical Imaging
Confocal Microscopy
Raman Spectroscopy

Semiconductor Metrology

WhisperIT[®] Lasers are laser diode based continuous-wave solid-state lasers. Laser architecture based on laser diodes enables a compact and efficient (<4W) laser design. Laser diodes can exhibit mode hops which can result in increased optical noise. The WhisperIT[®] technology eliminates such mode hops and turns laser diode light into stable light output.

The Fiber Coupled series lasers are available with different options for the fiber termination:

FC/APC Connector

Collimator

Collimator with beam shaping, power monitoring, and polarized output



SPECIFICATIONS

System

RMS noise (20 Hz to 2 MHz)	< 0.2 %
Power Stability over 24 hours	<2% at room temperature $\Delta T=3^{\circ}\text{C}$
Fiber Type	PM Fiber (SM and MM available)
Fiber Termination	FC/APC (Collimator option available)
Fiber Length / Jacketing	2 m / 0.9mm or 3mm (other options available)
Fiber N.A. ¹	0.12 (Typical)
Warm-up Time	<1min (typical 10 sec)
Beam Size with Collimator	0.7 mm (other sizes available)
M-squared (M^2) with Collimator	< 1.1
Polarization ratio (remote head only)	> 100:1

Environmental & Operating

Base Plate Temperature	10 to 45°C Operating; -10 to 65°C Non-operating
Shock (11ms duration)	1g Operating; 25g Non-operating
Vibration	0.3g Operating; 2g Non-operating
Humidity	5% - 95% Non-condensing
Altitude	< 3,000m Operating; < 20,000m Non-operating
Safety Certification	IEC60825-1
DC Power Supply ²	9V +/- 10%, 0.2 Amp and 5V +/- 10%, 2 Amp (12V and 15V versions available)
Optional Interface	Remote On (Low) and Off (Hi); Power Monitoring 0 – 2.5 V; External Power Adjustment 0 – 2.5 V
Optional AC Power Supply	CDRH compliant control box available with built-in AC power supply
Mounting Surface Flatness	0.03mm
Dimensions	86mm (L) x 40 mm (W) x 36 mm (H)



SPECIFICATIONS
Wavelength Options

Wavelength (nm)	Output Power ³ (mW)
405 +/- 5	35
445 +/- 5	50
473 +/- 5	8
488 +/- 5	25
638 +/- 5	65
658 +/- 5	60
680 +/- 10	20
685 +/- 10	20
705 +/- 10	18
730 +/- 10	18
750 +/- 5	10
785 +/- 10	50
810 +/- 10	60
830 +/- 10	60
1500 +/- 5	300

Modulation Option (Typical Values)

Modulation Signal	TTL
Modulation Rate ⁴	Up to 1 MHz
Modulation Depth	>1,000:1
Overshoot / Undershoot	< 0.1%
Modulated Pulse Power Variation	< 1%
Duty Cycle Distortion ⁵	< 0.1% - 2%
Rise/Fall Times (90-10%)	1 μsec

¹Measured at 1% power level.

²Dual voltage supply is preferred for better noise performance.

³Variable output power available

⁴Tested values shown, other modulation rates available.

⁵Dependent upon depth of modulation required.



Dimensions (mm)

