



Pavilion Integration Corporation

WhisperIT® Free Space 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

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 free space lasers are available with round or elliptical beams. The output power can be changed and the lasers can be modulated.



SPECIFICATIONS

System

RMS noise (20 Hz to 2 MHz)	< 0.2 %
Power Stability over 24 hours	<1% at room temperature $\Delta T=3^{\circ}\text{C}$
Circular Beam Diameter ²	0.7, 1.0, 2.7mm
Elliptical Beam Size ¹	1.3mm x 2.7mm
Beam Divergence	1 mrad for 1mm beam diameter
M-squared (M^2)	<1.3
Pointing Stability	<6 $\mu\text{rad}^{\circ}\text{C}$
Beam Static Alignment Tolerance	Position +/- 0.5mm; Angle +/- 2.5 mrad
Warm-up Time	<1min (typical 10 sec)
Polarization	>100:1; vertical +/- 30, other extinction ratios and orientations available

Environmental & Operating

Base Plate Temperature	10 to 45 ^o C Operating; -10 to 65 ^o 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)
375 +/- 5	16
405 +/- 5	100
445 +/- 5	80
473 +/- 5	16
488 +/- 5	50
638 +/- 5	100
658 +/- 5	100
680 +/- 10	30
685 +/- 10	40
705 +/- 10	35
730 +/- 10	35
750 +/- 5	15
785 +/- 10	100
810 +/- 10	120
830 +/- 10	120
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%)	1µsec

¹Measured at 1/e², Circular Beam <20% ellipticity, other beam diameters available.

²Dual voltage supply is preferred for better noise performance.

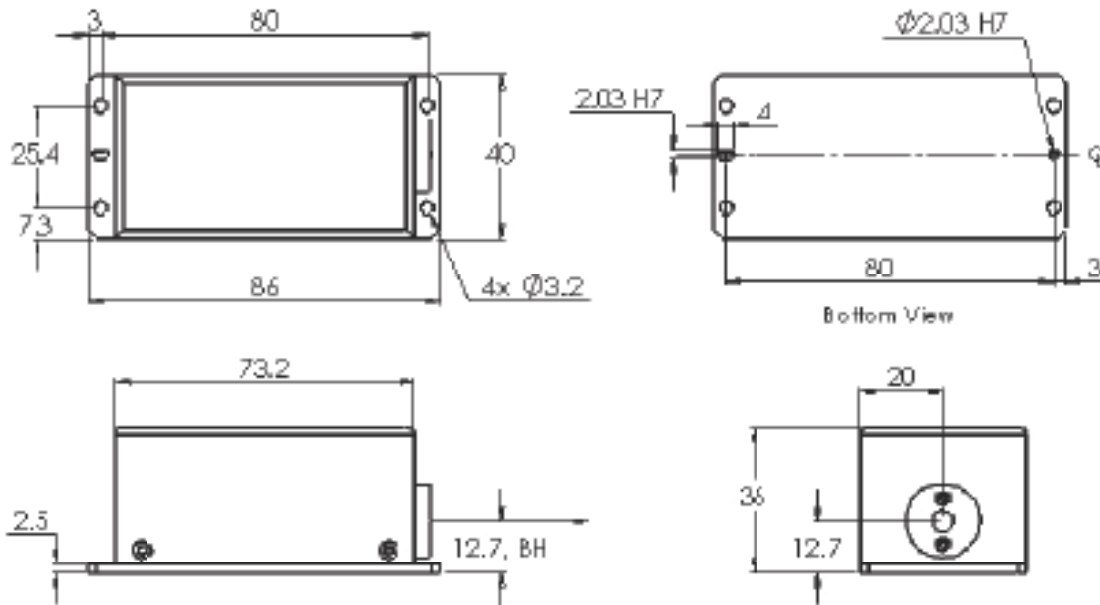
³Variable output power available.

⁴Tested values shown, other modulation rates available.

⁵Dependent upon depth of modulation required.



Dimensions (mm)



This is an OEM Product. CDRH Control box is available for samples or Laboratory use

Invisible or visible radiation is dangerous to humans and should not be viewed directly or indirectly with or without optical instruments. Please refer to IEC 825-1 "Safety of Laser Products" and 21 CFR 1040.10-1040.11 "Performance Standards for Light Emitting Products" for additional information



**VISIBLE AND/OR INVISIBLE
LASER RADIATION. AVOID DIRECT EXPOSURE
TO BEAM**
Wavelength 370 to 1500nm < 500mW
CLASS 3B LASER PRODUCT
This product does NOT comply with 21 CFR

Pavilion Integration Corporation follows a continuous improvement program.
Specifications subject to change without notice.
Pavilion Integration Corporation offers a 1 year limited warranty.