



Pavilion Integration Corporation

WhisperIT®
Free Space Series

WSR Series



Features and Benefits

Compact	Optics and Electronics in one small package
Efficient	Power Consumption and heat load < 4W
Stable	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® WSR Lasers are laser diode based continuous-wave solid-state lasers. Laser architecture based on laser diodes offers significantly increased lifetime, reduced footprint, and improved efficiency (<4 W) over HeCd or Argon lasers. 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 highly stable light output.

The WSR series lasers are available with round or elliptical beams. The output power can be changed and the lasers can be directly modulated up to 1 MHz.



SPECIFICATIONS

System Specifications

WSR445-40FS

WSR488-25FS

Laser Wavelength	445 +/- 5 nm	488 +/- 4 nm (+/- 2 nm available)
Maximum Output Power ¹	40 mW	25 mW
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, 2.7 mm	
Beam Divergence	1 mrad for 1mm beam diameter	
M-squared (M^2)	<1.1	
Pointing Stability	<3 $\mu\text{rad}/^{\circ}\text{C}$	
Beam Static Alignment Tolerance	Position +/- 0.5 mm; Angle +/- 2.5 mrad	
Warm-up Time	<1 min (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	< 3,000 m Operating; < 20,000 m Non-operating
Safety Certification	IEC60825-1
DC Power Supply ³	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	0.03 mm
Dimensions	125 mm (L) x 70 mm (W) x 34 mm (H)



SPECIFICATIONS

Modulation Option (Typical Values)

Modulation Signal	TTL
Modulation Rate⁴	Up to 1 MHz
Modulation Depth	> 1,000:1
Overshoot / Undershoot	< 0.1%
Modulated Pulse Power Variation	< 1%
Duty Cycle Distortion⁵	< 0.1% - 2%
Rise Fall Times (90-10%)	1 μsec

¹Variable output power available
²Measured at 1/e², Circular Beam <20% ellipticity, other beam diameters available.
³Dual voltage supply is preferred for better noise performance.
⁴Tested values shown, other modulation rates available.
⁵Dependent upon depth of modulation required.

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



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



Dimensions (mm)

