

WhisperIT®

Whisper Standard Round – Fiber Coupled (WSR- FC series)

The *WhisperIT*® WSR488 laser with PM fiber coupled, FC/APC output connector, featuring true Gaussian beam, PIC patented technology for low noise, mode-hop free, back reflection protection and stable power operation, and with digital or analog interface and standard firmware.

WhisperIT® Compact Lasers WSR488-FC are laser diode-based continuous-wave solid-state lasers that offer significantly increased lifetime, guaranteeing outstanding performance over time and temperature. The proprietary *WhisperIT*® technology eliminates mode hops and delivers lasers with extremely low optical noise.

WhisperIT® WSR488 lasers enable demanding biomedical and scientific instrumentation applications.

FEATURES

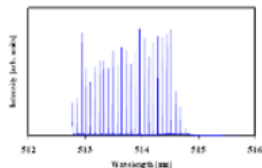
- Ultra-Low Noise
- Low Coherence
- Mode-hop Free
- Integrated Control Electronics
- Digital, Analog or Custom Modulation

APPLICATIONS

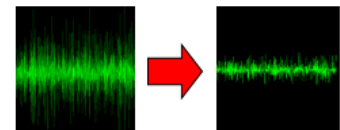
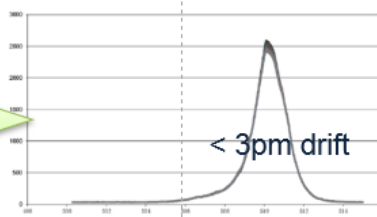
- Flow Cytometry
- DNA Sequencing
- Medical Imaging
- Confocal Microscopy
- Optogenetics
- Metrology
- Semiconductor Instrumentation



Laser diode and mode hop



Whisper IT®



Low Noise

Table 1. Optical Specification

Parameters	Conditions	Min.	Specifications Typ.	Max.	Unit
Wavelength	Max. Power	486	488	490	nm
Optical Output Power	CW Mode	20		100	mW
RMS Noise	20Hz-2MHz		0.15	0.2	%
Peak-to-Peak Noise	20Hz – 20kHz		0.5	1.0	%
Power Stability	8hrs, ±3°C, after 5 min warm-up	-1.0		1.0	%
Beam Quality (M ²)	TEM ₀₀	1.0	1.05	1.1	
Beam Asymmetry ¹⁾		1.0	1.05	1.1	
Fiber Core-to-Cladding Offset				0.5	µm
Fiber Coating Outer Diameter		230	245	260	µm
Fiber Cladding Outer Diameter		124	125	126	µm
Fiber Type		PMF			
Fiber Buffer Diameter		3mm			
Fiber Length		1.0+/- 0.1 m			
Fiber Output Connector Type		FC/APC			
Polarization Orientation		Paralleled to Connector Key			

Table 2. Environment

Parameters	Conditions	Min.	Specifications Typ.	Max.	Unit
Storage Temperature	Non-operation	-20		60	
Base Plate Temperature	Operating	15		45	°C
Base Plate Temperature	Non-operation	-20		60	°C
Humidity	Non-condensing	10		90	%
Shock (11ms duration)	Operating		1		g
Shock (11ms duration)	Non-operation		25		g
Vibration (5Hz – 500Hz)	Operation		0.3		g
Vibration (5Hz – 500Hz)	Non-operation		2		g

Table 3. Electrical

Parameters	Conditions	Min.	Specifications		Unit
			Typ.	Max.	
TEC Input Voltage		4.8	5	5.2	V
LD Input Voltage		4.8	9 (convertible)	5.2	V
TEC Current Consumption (5V)				1.5	A
LD Current Consumption (5V)				0.6	A
Heat Dissipation				11	W
Connector (laser head)	DB9	Male	Pin1: +9V (LD) Pin2: RS232_RXD Pin3: +5V (TEC) Pin4: RS232_TXD Pin5: GND for TEC Pin6: N/C Pin7: Laser Enable/ Disable H (>2.7V): Enable L (<2.2V): Disable Floating: Disable Pin8: GND for RS232 Pin9: GND for LD		
Communication Command			PIC00C2.5		

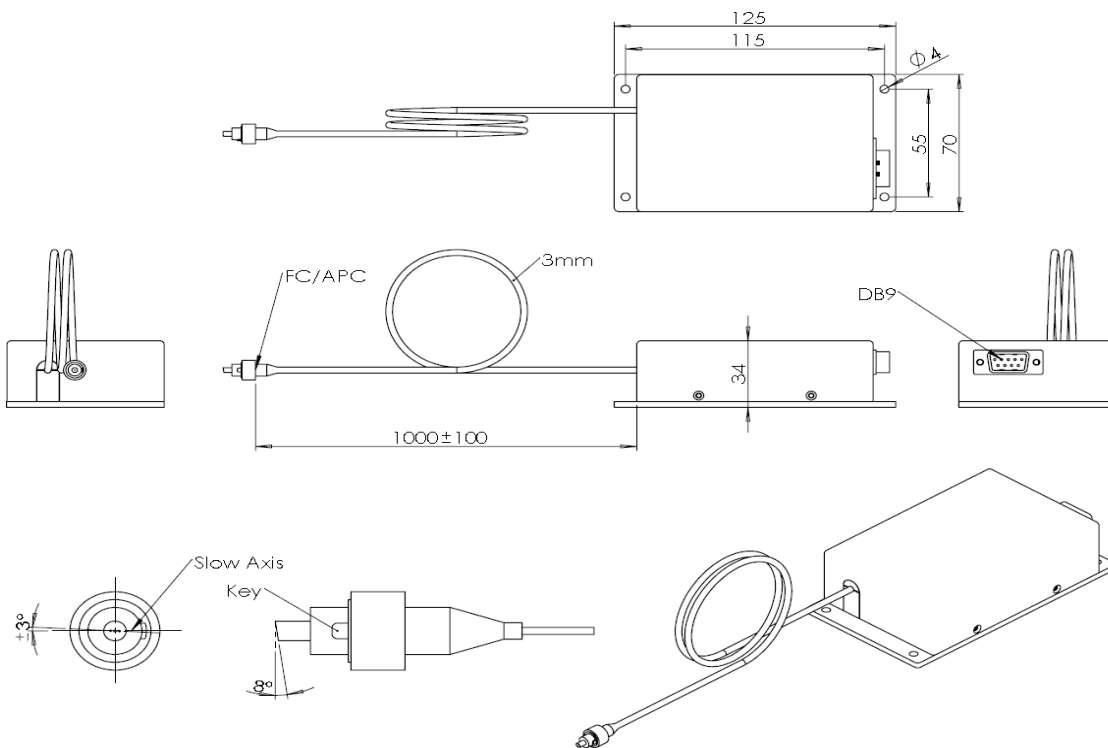
Table 4. Optional Electrical Interface

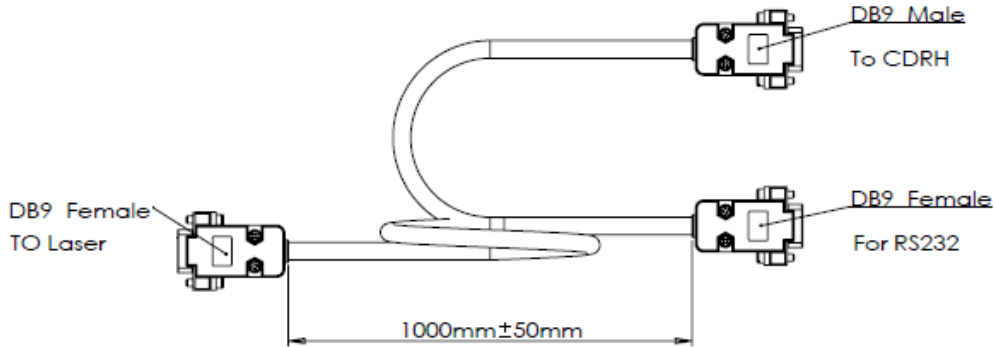
DB9 Connector PIN Assignment	Digital Interface	Analog Interface
1	LD_9V	LD_9V
2	Rx for RS232	NC
3	TEC_5V	TEC_5V
4	Tx for RS232	NC
5	TEC_GND	TEC_GND
6	NC	ADJ.
7	NC	Enable
8	GND for RS232	NC
9	LD_GND	LD_GND

Table 5. Mechanical

Parameters	Conditions	Min.	Specifications		Unit
			Typ.	Max.	
Laser Head Dimension	L x W x H		125 x 70 x 34		mm
Laser Head Weight			400		g
Cable Length			1		m

Mechanical Diagram





Order Code

WhisperIT®

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Package type (e.g. WSR)

Wavelength (e.g. 488nm = 488)

Output Power (e.g. 10mW = 10)

Delivery (e.g. Free space = FS, Fiber coupled = FC)

Assigned Code (e.g. 000)

Example: WSR488-10FC-000

This OEM laser does not comply with 21 CFR 1040.10 and 1040.11 without appropriate integration. Please contact Pavilion Integration Corp. for additional support or questions.

