

# WhisperIT®

## Micro Package – Free Space (WMP-FS Series)

WhisperIT® WMP-FS Micro Series Lasers are laser diode-based continuous-wave solid-state lasers that offer significantly increased lifetime and improved efficiency over DPSS, HeCd or Argon lasers. The proprietary WhisperIT® technology eliminates mode hops and delivers lasers with extremely low optical noise.

WhisperIT® WMP-FS lasers with integrated patented driver electronics for highly stable, low coherence and low speckle operation guarantees outstanding performance over time and temperature.

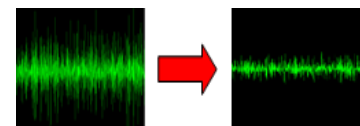
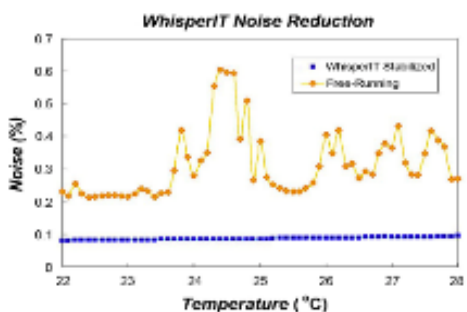
The WhisperIT® WMP-FS series lasers are available with round or customized beam shapes and are tailored to match specific application requirements.

### FEATURES

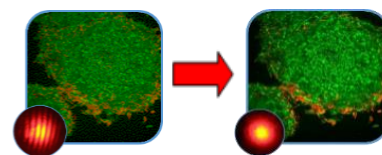
- Ultra-Low Noise
- Low Coherence
- Mode-hop Free
- Back Reflection Protection
- Integrated Control Electronics
- Digital, Analog Modulation
- Vertical or Horizontal Mount

### APPLICATIONS

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



Low Noise



Low Coherence

**Table 1. Optical Specification**

SPECIFICATIONS	WMP405	WMP488	WMP505	WMP515
Wavelength (nm)*	405	488	505	515
Output Power (mW)**	20	20,50,80,100	20,40	20,50
RMS Noise (20Hz to 20 MHz) (%)	≤0.2	≤0.2	≤0.2	≤0.2
Peak to Peak Noise (20Hz to 20kHz) (%)	<1	<1	<1	<1
Long-Term Power Stability (8hrs, ±3°C) (%)	<2	<2	<2	<2
Spatial Mode (TEM <sub>00</sub> ) M <sup>2</sup>	≤1.1	≤1.1	≤1.1	≤1.1
Beam Symmetry	≤1:1.1	≤1:1.1	≤1:1.1	≤1:1.1
Beam Diameter at 1/e <sup>2</sup> (mm)	0.7±0.1	0.7±0.1	0.7±0.1	0.7±0.1
Beam Divergence Angle (mrad, full angle)	<1.2	<1.2	<1.2	<1.2
Pointing Stability (μrad) (Over 2 hours after warm up and ±3°C)	<30	<30	<30	<30
Pointing Stability Over Temperature (μrad/°C)	<5	<5	<5	<5
Warm-up Time (From cold start) (minutes)	<5	<5	<5	<5
Polarization Extinction Ratio	>100:1	>100:1	>100:1	> 100:1
Polarization Orientation (Reference to baseplate)	Vertical ±5°	Vertical ±5°	Vertical ±5°	Vertical ±5°

SPECIFICATIONS	WMP532	WMP553/561	WMP638	WMP785
Wavelength (nm)*	532	553/561	638	785
Output Power (mW)**	20,50,80	20,50,80	20,60	20,60
RMS Noise (20Hz to 20 MHz) (%)	≤0.2	≤0.2	≤0.2	≤0.2
Peak to Peak Noise (20Hz to 20kHz) (%)	<1	<1	<1	<1
Long-Term Power Stability (8hrs, ±3°C) (%)	<2	<2	<2	<2
Spatial Mode (TEM <sub>00</sub> ) M <sup>2</sup>	≤1.1	<1.1	≤1.1	≤1.1
Beam Symmetry	≤1:1.1	≤1:1.1	≤1:1.1	≤1:1.1
Beam Diameter at 1/e <sup>2</sup> (mm)	0.7±0.1	0.7±0.1	0.7±0.1	0.7±0.1
Beam Divergence Angle (mrad, full angle)	<1.2	<1.2	<1.3	<1.7
Pointing Stability (μrad) (Over 2 hours after warm up and ±3°C)	<30	<30	<30	<30
Pointing Stability Over Temperature (μrad/°C)	<5	<5	<5	<5
Warm-up Time (From cold start) (minutes)	<5	<5	<5	<5
Polarization Extinction Ratio	>100:1	>100:1	>100:1	> 100:1
Polarization Orientation (Reference to baseplate)	Vertical ±5°	Vertical ±5°	Vertical ±5°	Vertical ±5°

\*Other wavelengths are available to provide upon request. Wavelength tolerance: ±2nm ~ ±5nm

\*\*Output power is variable in CW mode from 10% to 100% of rated power. Specifications are valid for 100% power.

**Table 2. Mechanical & Environmental Specification**

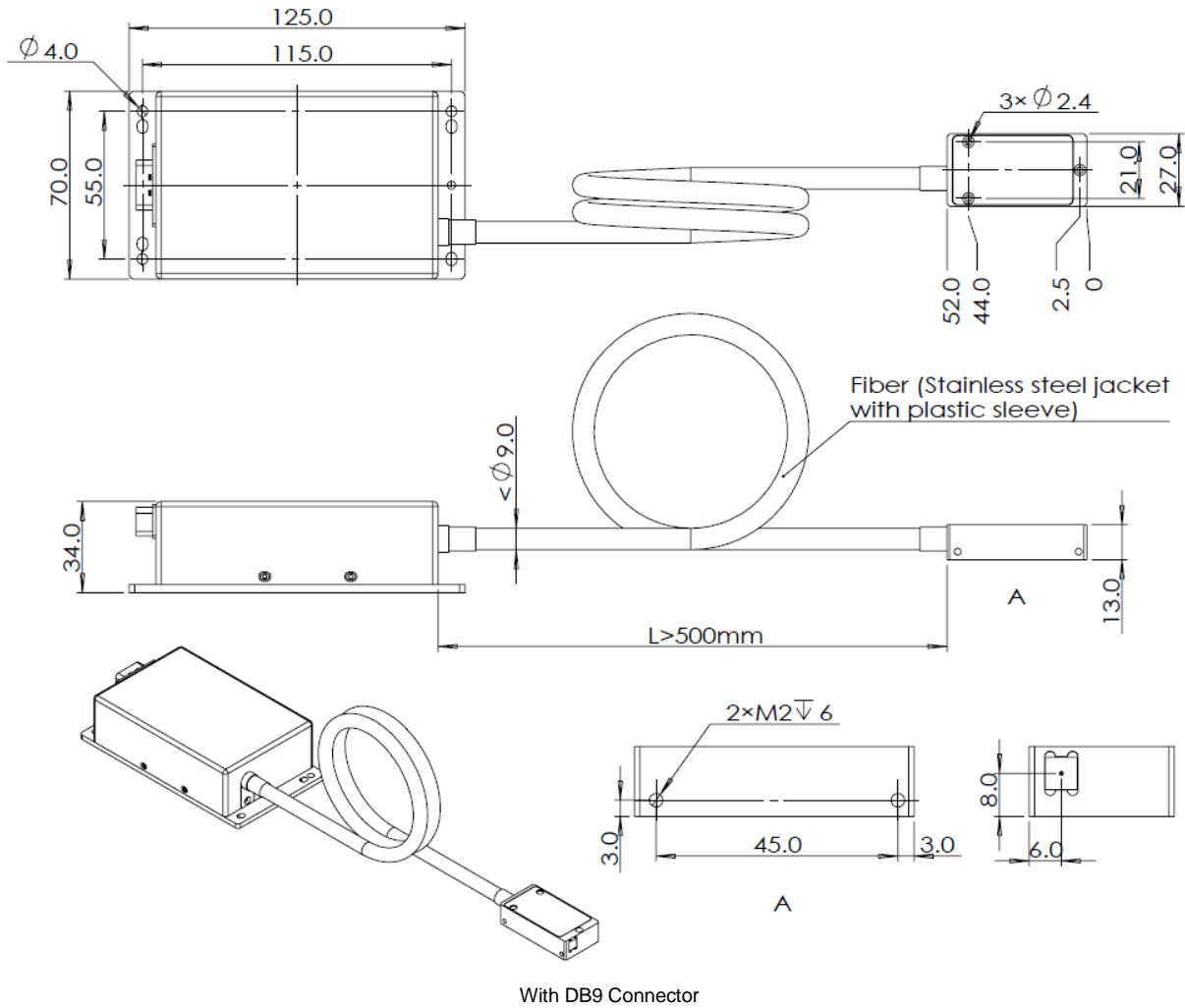
Static Alignment Tolerances	All Wavelengths
Beam Position from Reference (mm)	±0.5
Beam Angle (mrad)	±2.5
Beam Waist Position from Exit Window (mm)	±200
Laser head Dimensions (L x W x H) (mm)	52 x 27 x 13
Control Box Dimensions (L x W x H) (mm)	125 x 70 x 34 (70 x 40 x 38)
Power Consumption (W)	≤12
Laser Head Baseplate Temperature (Max. °C)	40
Heat Dissipation of Laser Head (W)	≤12
Operating Temperature (°C)	10 to 50
Storage Temperature (°C)	-20 to 60
Humidity (%)	10 to 90
Shock (11ms duration) (Operating) (g)	1
Shock (11ms duration) (Non-operating) (g)	30
Vibration (5Hz – 500Hz) (Operating) (g)	0.3
Vibration (5Hz – 500Hz) (Non-operating) (g)	3
Laser Safety Classification	3b

**Table 3: Electrical Specification**

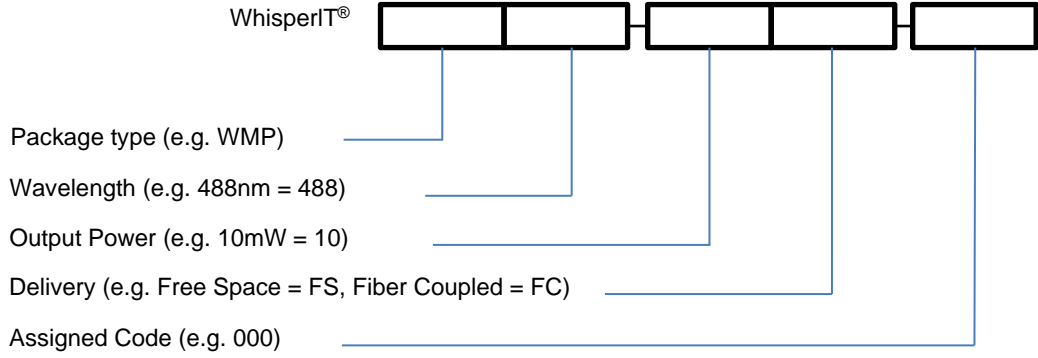
DB9 Connector PIN Assignment	Digital Interface	Analog Interface
1*	LD_5V / 9V / 12V	LD_5V / 9V / 12V
2	Rx for RS232	NC
3	TEC_5V	TEC_5V
4	Tx for RS232	NC
5	TEC_GND	TEC_GND
6	NC	Power Adj
7	NC	Enable
8	GND for RS232	NC
9	LD_GND	LD_GND

\*405/488/505/515nm LD driving voltage: 9V or 12V; 532/561/638/785nm LD driving voltage: 5V

## MECHANICAL SPECIFICATIONS



**Order Code**



Example: WMP488-20FS-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.

**ISO9001 & ISO13485 Registered**

