

Mini-WhisperIT®

Miniaturized Package – Free Space (WMN-FS Series)

Mini-WhisperIT® WMN-series laser modules are diode-based continuous-wave lasers in an ultra-compact package offering significantly increased lifetime, and improved efficiency over DPSS, HeCd or Argon lasers.

The proprietary WhisperIT® technology eliminates mode hops and delivers with extremely low optical noise. WhisperIT® WMN lasers include patented integrated driver electronics for highly stable, low coherence and low speckle operation guarantees outstanding performance over time and temperature.

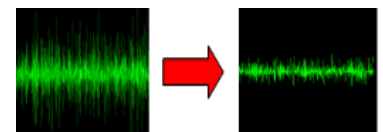
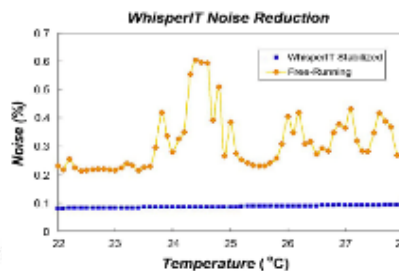
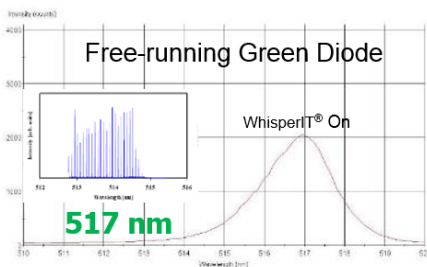
The WhisperIT® WMN-series lasers are available with round or customized beam shape and are tailored to match specific application requirements.

FEATURES

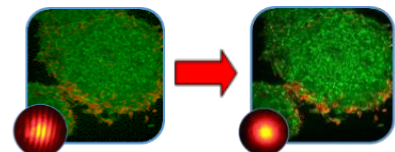
- Miniaturized Size
- Ultra-low Noise
- Low Coherence
- Mode-Hop Free
- Back Reflection Protection
- Extremely Stable
- Integrated Control Electronics

APPLICATIONS

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



Low Noise



Low Coherence

Table 1. Optical Specification

SPECIFICATIONS	WMN375	WMN405	WMN488	WMN505
Wavelength (nm)*	375	405	488	505
Output Power (mW)**	20,50	20,50,80,100, 150,200,250	20,50,80 100,150,200,250	20,50,80
RMS Noise (20Hz to 20 MHz) (%)	≤0.1	≤0.1	≤0.1	≤0.1
Peak to Peak Noise (20Hz to 20kHz) (%)	<0.5	<0.5	<0.5	<0.5
Long-Term Power Stability (8hrs, ±3°C) (%)	<1	<1	<1	<1
Spatial Mode (TEM ₀₀) M ²	≤1.2	≤1.2	≤1.2	≤1.2
Beam Diameter at 1/e ² (mm) (Typ.)@150mm	0.9*1.7	0.9*1.75	0.75*2.9	0.7*1.75
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	WMN520	WMN532	WMN638	WMN730
Wavelength (nm)*	520	532	638	730
Output Power (mW)	20,50,80	20,50,80, 100	20,50,80, 100,150	20,30
RMS Noise (20Hz to 20 MHz) (%)	≤0.2	≤0.2	≤0.1	≤0.1
Peak to Peak Noise (20Hz to 20kHz) (%)	<0.5	<0.5	<0.5	<0.5
Long-Term Power Stability (8hrs, ±3°C) (%)	<1	<1	<1	<1
Spatial Mode (TEM ₀₀) M ²	≤1.2	≤1.2	≤1.2	≤1.2
Beam Symmetry	N/A	≤1:1.1	NA	NA
Beam Diameter at 1/e ² (mm)	0.85*2.9	0.7±0.1	0.8*1.5	0.75*1.5
Beam Divergence Angle (mrad, full angle)	<1	<1	<1.2	<1.3
Pointing Stability (μrad) (over 2 hours after warming 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

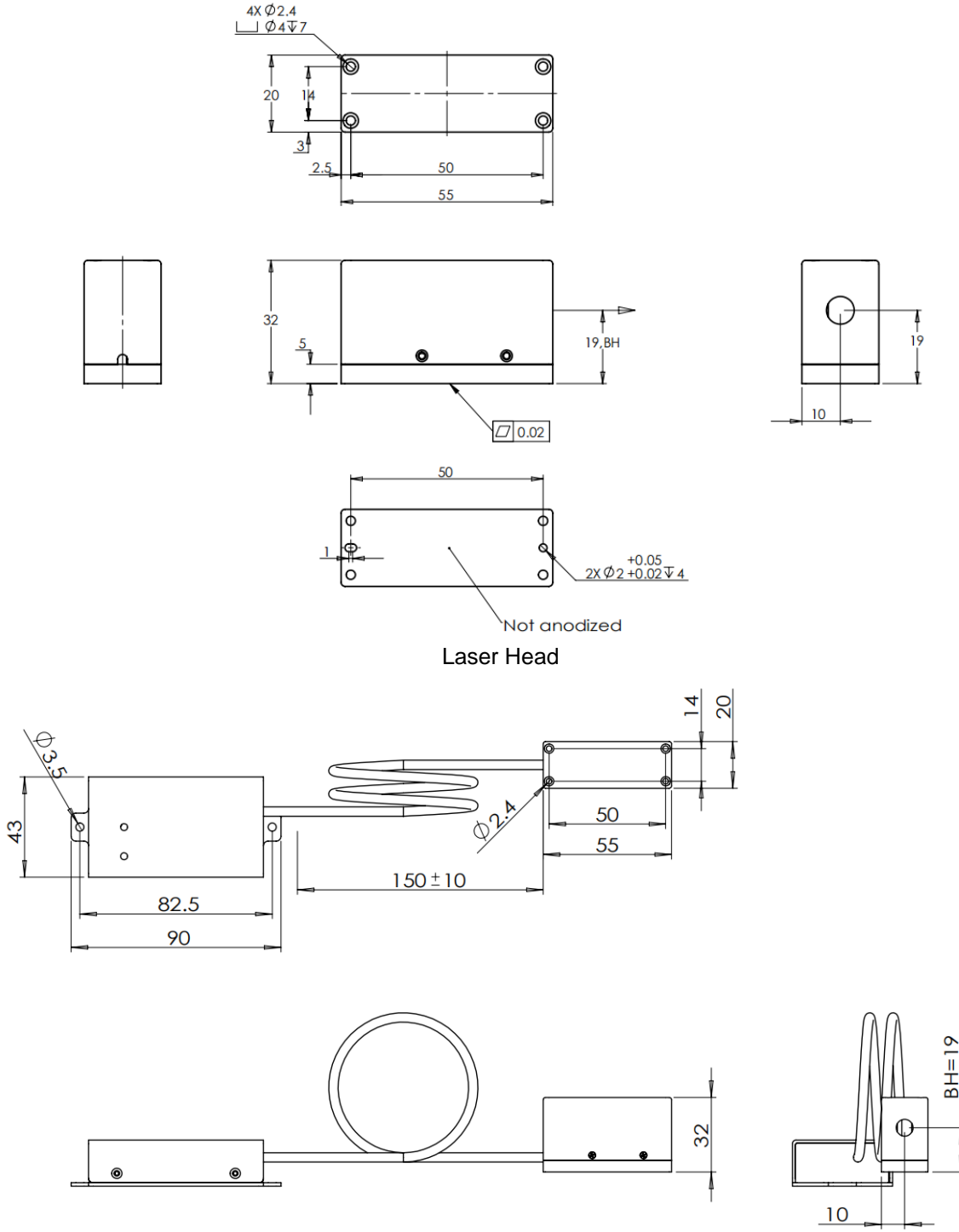
Static Alignment Tolerances	All Wavelengths
Beam Position from Reference (mm)	±0.5
Beam Angle (mrad)	±2.5
Beam Waist Position from Exit Window (mm)	±200
Dimensions (L x W x H) (mm)	55 x 20 x 32
Power Consumption (W)	≤12
Laser Head Baseplate Temperature (Max. °C)	40
Heat Dissipation of Laser Head (W)	≤12
Operating Temperature (°C)	10 to 40
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

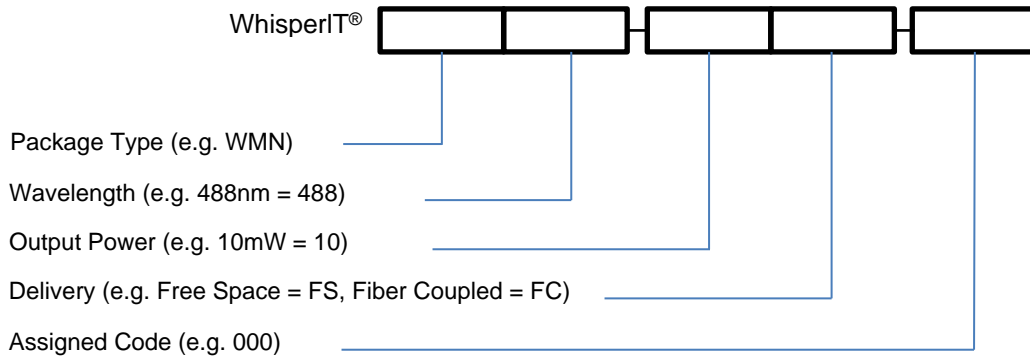
MECHANICAL SPECIFICATIONS



Laser Head

With PCB Control Box

Order Code



Example: WMN488-20FS-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

