Pavilion Integration Corporation
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WhisperIT®

WhisperIT Laser – Fiber Coupled (W-FC series)

WhisperIT® W-FC Series are laser diode-based continuous-wave solid-state lasers that offer significantly reduced footprint, increased lifetime, and improved efficiency over DPSS, HeCd, HeNe and Argon lasers. The proprietary WhisperIT® technology eliminates mode hops and delivers lasers with extremely low optical noise.

WhisperIT® W-FC Series lasers have low coherence and reduced speckle, near immunity to damage from back reflected light and the lowest noise available among all commercially available diode lasers.

WhisperIT® W-FC Series lasers benefit from Pavilion's extensive experience in the design of rugged, low-footprint, user friendly lasers for demanding OEM applications. Utilizing long life and highly reliable laser diodes enables first-class quality laser products with great simplicity and robustness.

WhisperIT® W-FC Series lasers offer the best value for broad applications with the smallest form factors on the market today. The lasers are available with round or customized beam shape that are tailored to match specific application requirements.

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**

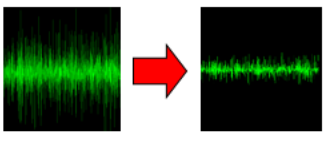

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Table 1. Optical Specification

SPECIFICATIONS	W405	W488	W505	W515
Wavelength (nm)*	405±5	488±5	505±5	515±5
Output Power (mW)**	20, 50, 80, 100	20, 50, 80, 100, 150	20, 50	20, 50, 80, 100
RMS Noise (20Hz to 20 MHz) (%)	≤0.2	≤0.2	≤0.2	≤0.25
Peak to Peak Noise (20Hz to 20kHz) (%)	<2	<2	<2	<2
Long-Term Power Stability (8hrs, ±3ºC) (%)	<2	<2	<2	<2
Spatial Mode (TEM_{00}) M^2	≤1.1	≤1.1	≤1.1	≤1.1
Beam Symmetry	≥90%	≥90%	≥90%	≥90%
Warm-Up Time (from cold start) (minutes)	<5	<5	<5	<5
Fiber Type	PM Fiber	PM Fiber	PM Fiber	PM Fiber
Fiber Jacket Diameter	3mm or 0.9mm cable	3mm or 0.9mm cable	3mm or 0.9mm cable	3mm or 0.9mm cable
Fiber Length (m)	1	1	1	1
Fiber Connector	FC/APC or FC/PC with Narrow key	FC/APC or FC/PC with Narrow key	FC/APC or FC/PC with Narrow key	FC/APC or FC/PC with Narrow key
Polarization Ratio (dB)	>50:1	>50:1	>50:1	>50:1
Polarization Orientation	Parallel or Perpendicular to the Key position.	Parallel or Perpendicular to the Key position.	Parallel or Perpendicular to the Key position.	Parallel or Perpendicular to the Key position.

SPECIFICATIONS	W532	W561	W638	W785
Wavelength (nm)*	532±5	561±1	638±5	785±5
Output Power (mW)**	20, 50, 80	20, 30	20, 50, 80, 100	20, 50, 80, 100
RMS Noise (20Hz to 20 MHz) (%)	≤0.25	≤0.25	≤0.2	≤0.2
Peak to Peak Noise (20Hz to 20kHz) (%)	<1	<1	<2	<2
Long-Term Power Stability (8hrs, ±3ºC) (%)	<2	<2	<2	<2
Spatial Mode (TEM_{00}) M^2	≤1.1	≤1.1	≤1.1	≤1.1
Beam Symmetry	≥90%	≥90%	≥90%	≥90%
Warm-Up Time (from cold start) (minutes)	<5	<5	<5	<5
Fiber Type	PM Fiber	PM Fiber	PM Fiber	PM Fiber
Fiber Jacket Diameter	3mm or 0.9mm cable	3mm or 0.9mm cable	3mm or 0.9mm cable	3mm or 0.9mm cable
Fiber Length (m)	1	1	1	1

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Fiber Connector	FC/APC or FC/PC with Narrow key	FC/APC or FC/PC with Narrow key	FC/APC or FC/PC with Narrow key	FC/APC or FC/PC with Narrow key
Polarization Ratio (dB)	>50:1	>50:1	>50:1	>50:1
Polarization Orientation	Parallel or Perpendicular to the Key position.	Parallel or Perpendicular to the Key position.	Parallel or Perpendicular to the Key position.	Parallel or Perpendicular to the Key position.

*Other wavelengths are available.

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

Table 2. Mechanical and Environmental Specification

Dimensions (L x W x H) (mm)	86 x 40 x 43
Power Consumption (W)	≤15
Laser Head Baseplate Temperature (Max. ºC)	35
Heat Dissipation of Laser Head (W)	≤12
Operating Temperature (ºC)	10 to 40
Storage Temperature (ºC)	-20 to 60
Humidity (%) (Non-condensing)	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 Specifications

DB 9 Connector PIN Assignment	Digital Interface	Analog Interface
1*	LD_9V or 5V	LD_9Vor 5V
2	Rx for RS232	NC
3	TEC_5V	TEC_5V
4	Tx for RS232	NC
5	TEC_GND	TEC_GND
6	NC	ADJ

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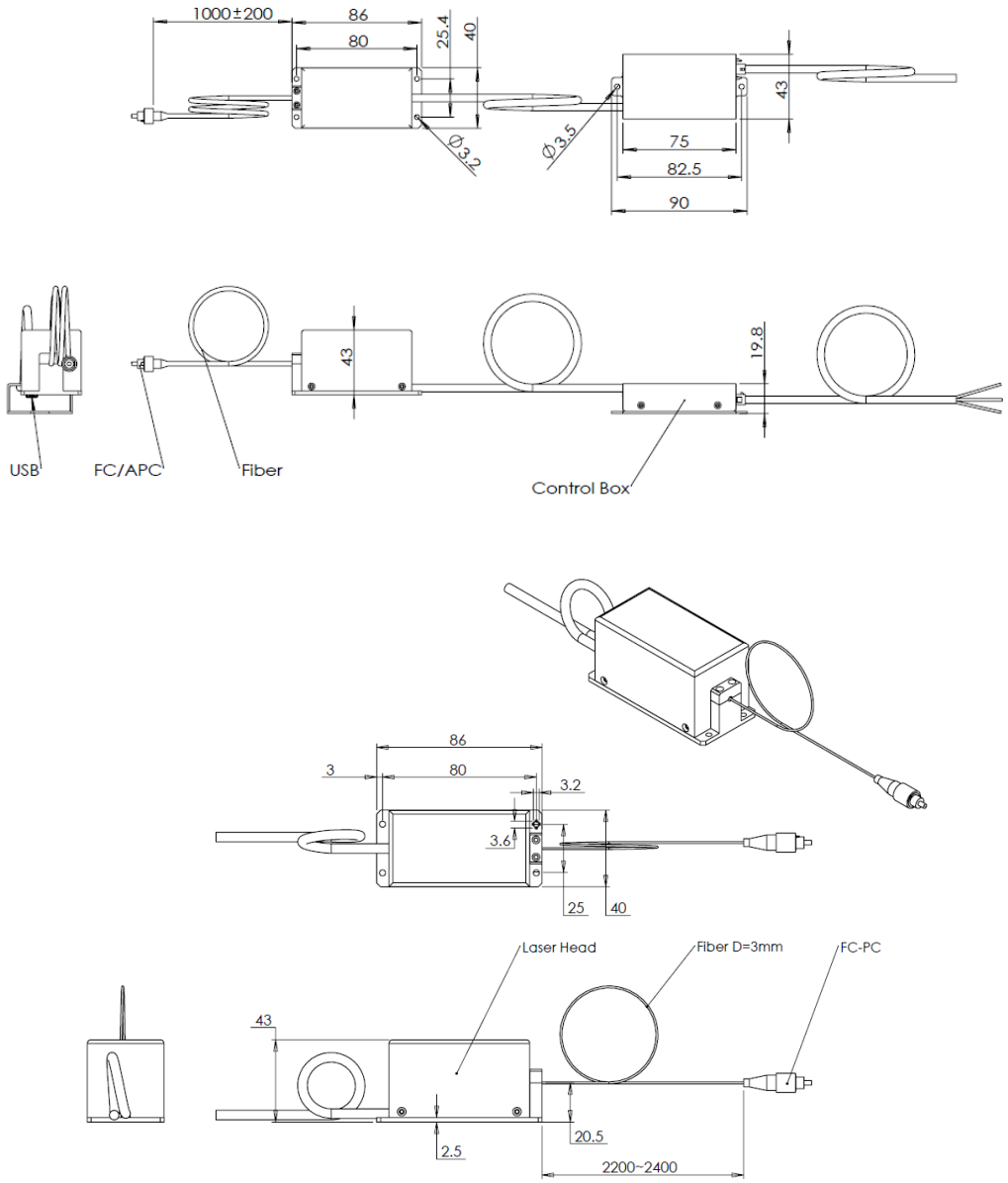
7	NC	Enable
8	GND for RS232	NC
9	LD_GND	LD_GND

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

MECHANICAL SPECIFICATIONS



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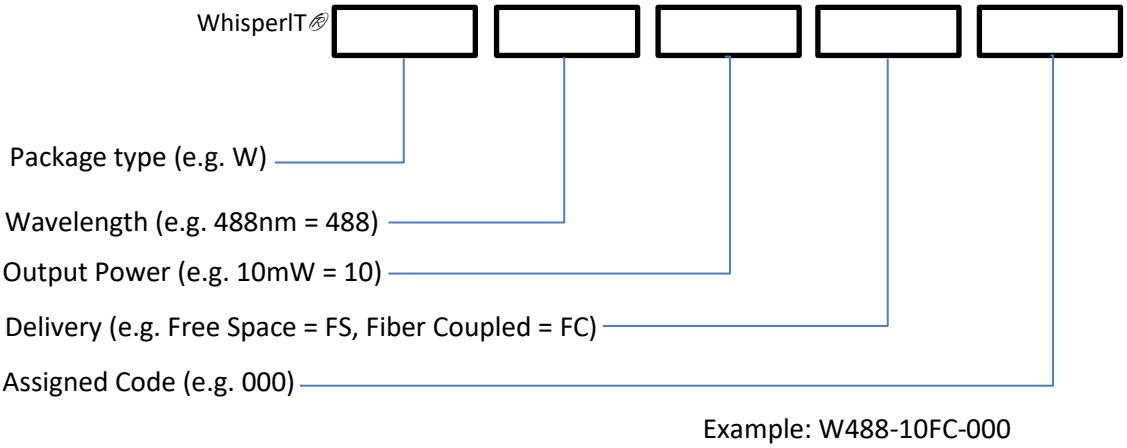

Example: W488-10FC-000

ISO9001 & ISO13485 Registered

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