

# Whisper IT<sup>®</sup> Excitation Modules

## Whisper Compact Package Plus – Free Space (WCP-Plus Series)

Whisper WCP Plus is upgraded versions of the WCP Series. *WhisperIT<sup>®</sup>* Series are laser diode-based continuous-wave solid-state lasers that offer ultra-low noise, significantly reduced footprint, increased lifetime, and improved efficiency over DPSS, HeCd, HeNe and Argon lasers. The proprietary *WhisperIT<sup>®</sup>* technology eliminates mode hops and delivers lasers with extremely low optical noise.

Including the beam shaping inside the laser, the laser is able to provide a focused light spot for flow cytometry applications. With superior stable output power, to ensure it is well suited for demanding applications.

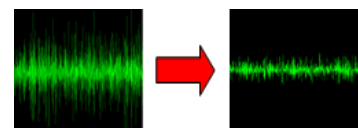
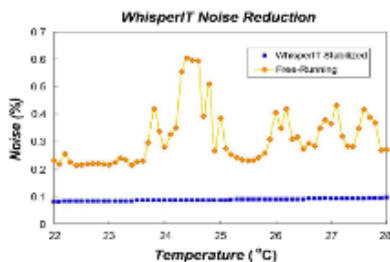
Easy to integrate into existing systems and its compact size allows for easy installation and maintenance. Whisper WCP plus Series has a long lifetime and low power consumption, making it a reliable and cost-effective solution especially for FCM applications.

### FEATURES

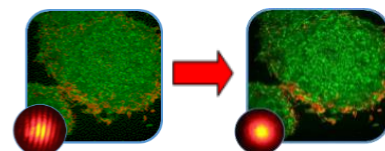
- Ultra-Low Noise
- Low Coherence
- Mode-hop Free
- Back Reflection Protection
- Integrated Control Electronics
- Digital, Analog Modulation

### APPLICATIONS

- Flow Cytometry
- Multiple FCM
- Confocal Microscopy



Low Noise



Low Coherence

**Table 1. Optical Specification**

SPECIFICATIONS	WCP405	WCP488	WCP532	WCP553/561	WCP638
Wavelength (nm)*	405	488	532	553/561	638
Output Power (mW)**	20,50,80,100,200	20,50,80,100,200,300	20,50,80,100	20,50,80,100,200	20,50,80,100,200
RMS Noise (20Hz to 20 MHz) (%)	≤0.1	≤0.1	≤0.25	≤0.25	≤0.1
Peak to Peak Noise (20Hz to 20kHz) (%)	<0.5	<0.5	<1	<1	<0.5
Long-Term Power Stability (8hrs, ±3°C) (%)	<2	<2	<2	<2	<2
Spatial Mode (TEM <sub>00</sub> ) M <sup>2</sup>	≤1.2	≤1.2	≤1.1	<1.2	≤1.2
Beam Symmetry	≤1:1.1	≤1:1.1	≤1:1.1	≤1:1.1	≤1:1.1
Focus Beam Diameter in Vertical (μm) (1/e <sup>2</sup> )*** @20mm WD	14±2	14±2	20±2	20±2	13±2
Focus Beam Diameter in Horizontal (μm) (1/e <sup>2</sup> )*** @20mm WD	60±5	60±5	60±5	60±5	60±5
Focus Beam Side-lobe	<5%	<5%	<5%	<5%	<5%
Pointing Stability (μrad) (Over 2 hours after warm up and ±3°C)	<30	<30	<30	<30	<30
Pointing Stability Over Temperature (μrad/°C)	<5	<5	<5	<5	<5
Warm-up Time (From cold start) (minutes)	<5	<5	<5	<5	<5
Polarization Extinction Ratio	>100:1	>100:1	>100:1	>100:1	>100:1
Polarization Orientation (Reference to baseplate)	Vertical ±5°	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)*	80 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

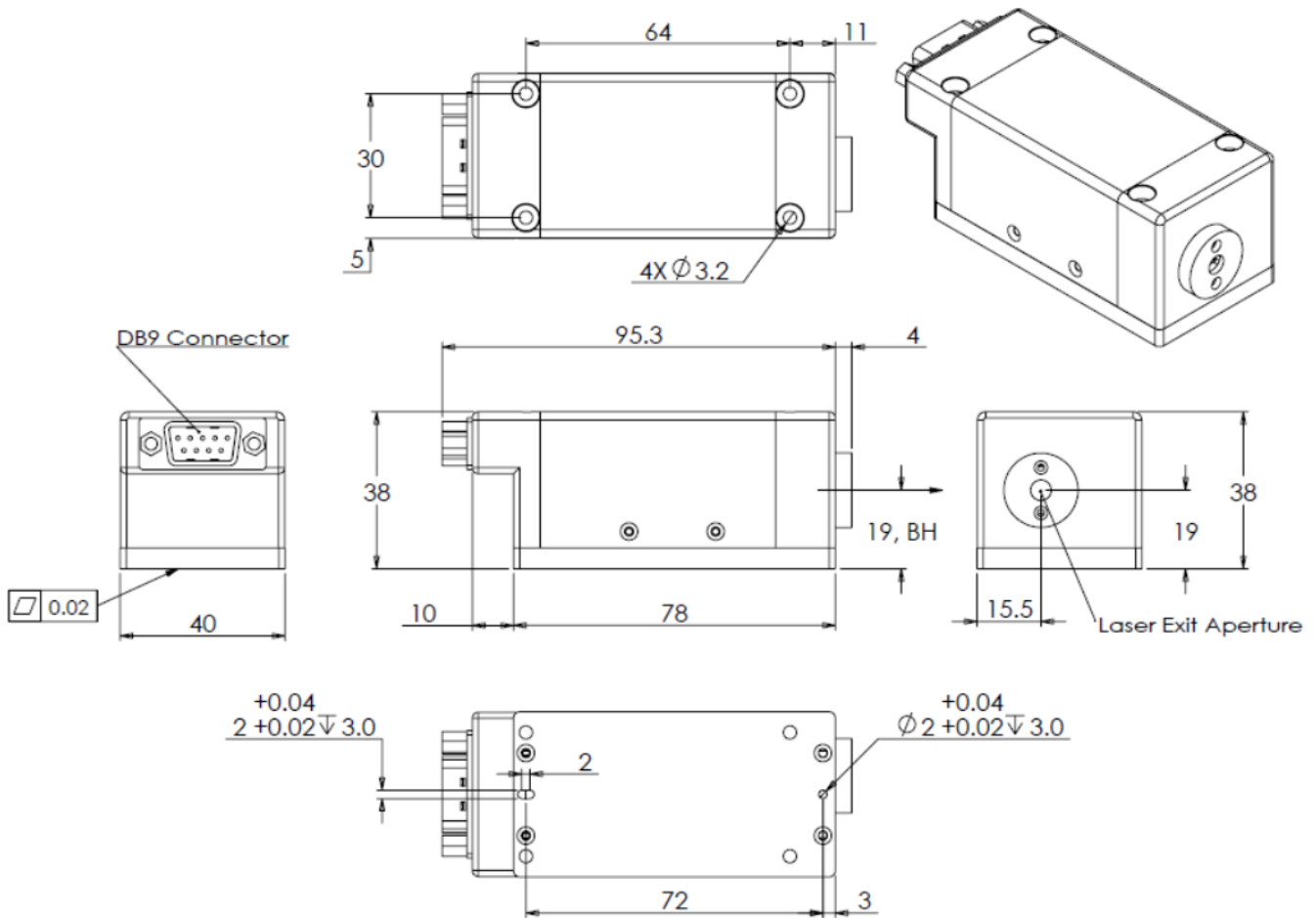
\*532nm and 561nm be longer in L, specifics upon request.

**Table 3: Electrical Specification**

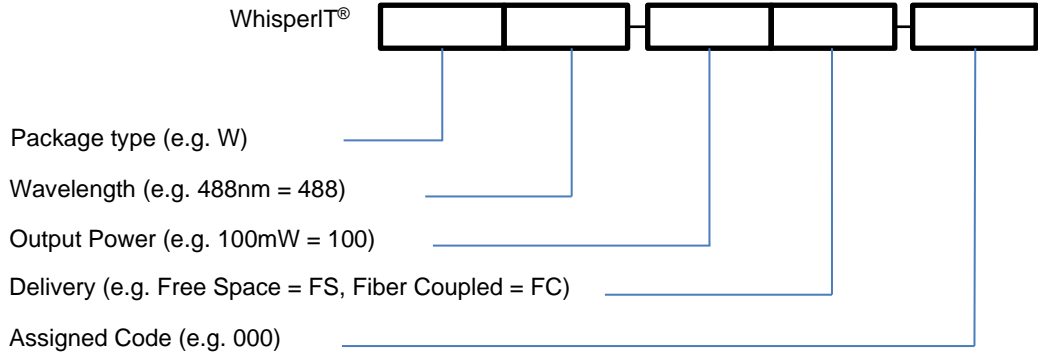
DB9 Connector PIN Assignment	Digital Interface	Analog Interface
1*	LD_5V / 9V / 12V	LD_5V / 9V / 12V
2	Rx for RS232	NC
3	TEC 5V	TEC 5V
4	Tx for RS232	NC
5	TEC GND	TEC GND
6	NC	Power Adj
7	NC	Enable
8	GND for RS232	NC
9	LD GND	LD GND

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

**MECHANICAL SPECIFICATIONS**



**Order Code**



Example: WCP488-100FS-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**

